

**Ministry of Health & Family Welfare,
Government of India, New Delhi**

Tender

For

Package-II

**Construction of OPD Block for Regional Institute of Medical
Sciences (RIMS), Imphal (Manipur)**

Volume-V

Bill of Quantities

October' 2011



**HSCC (INDIA) LTD.
(CONSULTANTS & ENGINEERS FOR MEGA HOSPITALS & LABORATORIES)
E-6(A), sector-1, NOIDA(U.P) 201301 (India)**

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PQ tender No. HSCC/BU-HP-I/ 176/2011

**Name of Work: Package-II : Construction of OPD Block for RIMS, Imphal
(Manipur)**

Summary of total quoted price

S. No.	Description	Amount (In Rs.)
1	Civil	
2	Plumbing	
3	Fire fighting	
4	Electrical Works	
5	HVAC Works	
	TOTAL	

Project Name: Construction of OPD Block, RIMS Imphal

ABSTRACT OF COST(Civil Work)		
S.No	DESCRIPTION OF WORK	AMOUNT (Rs)
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	Road Work and Development	
	TOTAL	

Project Name: Construction of OPD Block, RIMS Imphal						
BOQ for Civil Work						
Item No	Description Of Item	Total 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	8100.00	cum			
b)	Ordinary rock	20.00	cum			
c)	Hard rock (blasting prohibited)	20.00	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.	50.00	cum			

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
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.	7900.00	cum			
1.04	Extra for every additional lift of 1.5 m or part there of in.					
a)	All kinds of soil.					
i)	1.5 to 3.0m	3000.00	Cum			
1.05	Supplying and filling in plinth with river sand under floors including, watering. ramming consolidating and dressing complete.	219.00	cum			
1.06	Extra for disposal of excavated earth for additional lead beyond 50m or part thereof upto 9 such additional leads					
a)	All kinds of soil	3000.00	cum			
1.07	Supplying and filling in plinth/foundation with river sand and gravel of sizes not more than 50 mm mixed in required proportion(so as to form a firm base) in layers not exceeding 20 cm in depth, consolidating each deposited layer by watering,ramming,conso	1815.00	Cum			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
1.08	Treatment of soil by boring, filling and compacting granular material with the following specification:					
	i)Boring by bailer with casing at required spacing and of required depth and diameter(As per drawing) using tripod and rig					
	ii)Filling the well graded granular stone aggregate material 2 to 75 mm in layers of 300-450 mm depth.					
	iii)Withdrawing the casing partially and compacting the backfill with 2.5-4.0 KN hammer, as specified or to the satisfaction of Engineer in charge. Bottom of casing should be atleast 0.30 m below the top of rammed fill.					
	iv) Add additional granular charge and repeat the above process until the desired level is reached.(Cost of granular material to be paid for seperately).					
a)	550 mm dia. Piles(Length of pile/treatment may vary from 5 to 10 mtr)	7500.00	Mtr			
1.09	Supplying and stacking at site well graded granular material (stone aggregate) 2 to 75 mm size for the above item including royalty, cartage etc all complete.(5% deduction for voids shall be made from stack measurement).	2700.00	Cum			
Total						

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
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)	40.00	cum			
b)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	510.00	cum			
c)	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	219.00	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)	25.00	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).	58.00	sqm			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
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.	15.00	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.	58.00	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.	73.00	Cum			
	Total					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
3.00	REINFORCED CEMENT CONCRETE					
3.01	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete work including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement. including Admixtures in recommended proportions as per IS 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. M-25 grade reinforced cement concrete by using 380 kg. of cement per cum of concrete. All work up to floor V level.	5600.00	cum			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
3.02	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.	300.01	Cum			
3.03	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..	600.00	cum			
3.04	Centering and shuttering including strutting, propping etc. and removal of form for:					
a)	Foundations, footings, bases of columns, etc. for mass concrete.	325.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
b)	Walls (any thickness) including attached pilasters, buttermesses, plinth and string courses etc.	1142.00	sqm			
c)	Suspended floors, roofs, landings, balconies and access platform.	7953.00	sqm			
d)	Shelves (Cast in situ)	50.00	sqm			
e)	lintels, beams, plinth beams. girders. bressumers and cantilevers.	6400.00	sqm			
f)	Columns, Pillars, Piers, Abutments, Posts and Struts.	4256.00	sqm			
g)	Stairs, (excluding landings) except spiral-staircases	260.00	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.	20.00	sqm			
i)	Extra for shuttering in circular work for					
i)	columns	30.00	Sqm			
ii)	Beams	30.00	sqm			
3.05	Extra for additional height in centering, shuttering wherever required with adequate bracing, propping etc. including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured)					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
a)	Suspended floors, <i>roofs</i> , landings, beams and balconies (Plan area to be measured).	7953.00	sqm			
3.06	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete (At all levels).					
a)	Thermo-Mechanically Treated bars	833463.00	Kg			
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.	50.00	Qtl (-)			(-)
	Total					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
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)	200.00	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)	1230.00	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)	10.00	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)	3760.00	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).	3770.00	sqm			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
4.06	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)	180.00	Metre			
	Total					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.00	DOORS, WINDOWS AND FITTINGS					
5.01	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required EPDM rubber/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and paneling to be paid for separately) :					
5.01.1	For fixed portion					
a)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	6565.00	kg			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
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 EPDM rubber / neoprene gasket required (Fittings shall be paid for separately).					
a)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	2330.00	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 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.	273.00	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.	10.00	Sqm			

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Item No	Description Of Item	Total 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 EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item) :					
a)	With float glass panes of 5.50 mm thickness	800.00	sqm			
5.05	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	2.00	each			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.06	Providing and fixing powder coated aluminium grills (minimum thickness of powder coating 50 micron) of required size and approved pattern and quality made out with special extruded sections conforming to relevent IS Codes, fixed with rawl plugs and screws or with expansion hold fasteners fixed with suitable means as approved and as directed by Engineer in Charge including C.P. brass / stainless steel screws, all complete as per architectural drawings/ directions of Engineer-in-charge.	2676.00	kg			
5.07	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.	230.00	sqm			
5.08	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.	230.00	sqm			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.09	Extra for providing vision panel not exceeding 0.1 sqm in all type of flush doors (cost of glass excluded) (overall area of door shutter to be measured) :					
a)	Rectangular or square.	115.00	sqm			
5.10	Extra for providing frosted glass panes 4/5.5 mm thick instead of ordinary float glass panes 4/5.5 mm thick in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	30.00	sqm			
5.11	Providing glass panes, with wooden fillets wherever necessary.					
a)	Float glass panes of thickness 4 mm	10.00	Sqm			
5.12	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)	10.00	sqm			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.13	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					
a)	1.0 mm thick.	460.00	sqm			
5.14	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/m ³ , 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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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	<p>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.</p>					
a)	Single/Double Shutter	20.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total 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 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 Teak Wood (Ivory Coast)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.	50.00	Metre			

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BOQ for Civil Work						
Item No	Description Of Item	Total 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 UL listed door Co-ordinator (of Becker Fire Solutions or approved equivalent Make) for coordination of double leaf doors, of approved brand and manufacture with minimum one year warrantee.	8.00	Each			
5.17	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 as per manufacturer specifications including the cost of centering and shuttering required . The FPSS system must provide min. two hour fire rating as per IS 12458-1989 having CERTIFICATION from CBRI, Roorkee or any other approved equivalent Govt. laboratory, for 2 hr. Fire rating.	5.00	sqm			
5.18	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	2.00	sqm			

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1	2	3	4	5	6	7
5.19	Providing and fixing IS : 3564 marked Aluminium die cast body tubular type universal hydraulic door closer with necessary accessories and screws etc. complete.	100.00	each			
5.20	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	4.00	each			
b)	250x16 mm	4.00	each			
5.21	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	200.00	each			
b)	150x10 mm	537.00	each			
5.22	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	300.00	each			
b)	100 mm	10.00	each			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.23	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	155.00	each			
5.24	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).					
		155.00	each			
5.25	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	600.00	each			
5.26	Providing and fixing aluminium tubular handle bar 32 mm outer dia, 3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction of Engineer-in-Charge.					
a)	Powder coated minimum thickness 50 micron aluminium tubular handle bar.	4.00	each			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.27	Providing and fixing 100mm brass locks (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	2.00	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.	600.00	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					
a)	Powder coated minimum thickness 50 micron aluminium	2.00	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	5.00	each			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
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.	8.00	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 SCHLAGE (IR) EL2020 or approved equivalent manufacturer having 1 year manufacturers warranty.	8.00	each			
5.33	Providing and fixing 300 mm long stainless steel grade 304 D type back to back pull handle (of Dorset or approved equivalent make) with necessary bolts with alen key arrangement etc complete.	16.00	each			
Total						

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
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.	50.00	kg			
6.02	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:	5000.00	kg			
6.03	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing and staircase railing including applying a priming coat of approved steel primer.					
a)	M.S. tube.	50.00	Kg			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
6.04	Fabrication, supply and installation of SS 304 grade 900mm high railing for staircase made of SS 304 grade handrail pipe of 50 mm OD and 1.6 mm thickness polished with automatic round polishing machine to get a uniform hairline finish mounted with the hel of adjustable solid neck support on balustrade of approved design at 1200mm c/c and at every turn, supporting 3 mid rails of 12mm OD and 1.6 mm thickness with the help of solid connectors of 23 mm dia holding the mid rails by M6 grub screws inserted in baluster and screwed through the baluster with M6 counter sunk screws overall mounted on SS 304 grade base plate with the help of dash fasteners to be treated with K2 solution at all welding joints and passivated.					
		180.00	Mtr			
	Total					

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BOQ for Civil Work						
Item No	Description Of Item	Total 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.	20.00	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.	5.00	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.	50.00	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 Plain	550.00	sqm			
b)	Udaipur green marble	900.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
c)	Jaisalmer Stone (Base rate Rs 170 per sft)	50.00	sqm			
7.05	18mm thick Prepolished Granite (Base Rate 250/- 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.	1000.00	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.	2600.00	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.	300.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total 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.	450.00	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.	230.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total 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 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	1620.00	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	20.00	sqm			
ii	Area of slab over 0.50 sqm.	50.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total 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.	50.00	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.	80.00	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.	16.00	Nos			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.15	Providing and fixing 2 mm thick homogeneous PVC flooring with total weight 3.600 g/m ² polyurethane reinforced(PUR) ,Abrasion group μ : \leq 0.30mm,residual identification approx..06 mm,castor wheel test qualified,,dimensional stability \leq 0.40%,static electrical charge < 2kv,impact sound reduction approx +4db,good resistance of chemical and fire,doesn't favour in growth of fungi & bacteria. slip resistant (R9 \geq 0.300	250.00	Sqm			
7.16	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	577.00	sqm			
7.17	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.	266.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.18	Providing and fixing 10mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding and joints filled with acid and/or alkali resisting cement as per IS : 4457 complete as per the direction of Engineer-in- Charge.					
a)	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand).	20.00	Sqm			
b)	In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand).	5.00	Sqm			
7.19	Providing and laying 3mm thick epoxy resin based jointless anti static floor coating in three coats (primer coat, base, top coat (2mm thick)) preparation of cement concrete flooring including cutting of grooves, providing copper wiring, connections etc. for elimination of static charge between the equipment base and floor surface to ensure leakage resistance of 10^4 to 10^8 ohms in static decay test of 0.02sec., all complete as specified and as per the direction of Engineer-in-Charge.The work shall be carried out through specialised agency.	700.00	Sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.20	Granite stone flooring with 18 mm thick granite (Base Rate Rs. 250/- 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.	100.00	Sqm			
Total						

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BOQ for Civil Work						
Item No	Description Of Item	Total 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 15mm thick Mineral Fibre False Ceiling Tiles or equivalent of size 600x600 mm in true horizontal levelsuspended on inter locking metalgrid of hot dipped galvanied steel sectios (Galvanized @ 170 gsm/sqm) consisting of main "T" runner suitably spaced at joints to get required length and of size 24x38mm made from 0.30 mm thick (minimum)sheet spaced at 1200 mm center to center and cross "T" of size 24x25mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600mm panel to form grids of 600x 600mm and laying 15 mm thick mineral fibre false ceiling tiles of approved texture in the grid including, wherever, requried, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke deterctors etc. Main "T" runners to besuspended from ceiling using GI slotted cleats fixed to ceiling with 6 mm dia and 50 mm long dah fasteners, 4 mm GI adjustable rods with galvanised level clips spaced at 1200 m center to center along main T, bottom exposed width of 24 mm of all T-Secitons shall be pre-painted with					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	polyester paint, all complete at all heights as per specifications drawings and as directed by Engineer-in-Charge. Only Mineral Fibre false ceiling area will be measured for the purpose of payment.					
a)	With Mineral Fibre Ceiling tiles having NRC value of 0.5 (minimum) CAC 35-39, light reflection 84% (minimum), fire rating class A as per ASTM E-84, suitable for 95% relative humidity and also having Thermal Resistance "(R)" =0.33 sqm deg. C/W	2000.00	sqm			
Note	The job to be carried out by an approved reputed company having sufficient work experience.					
8.02	Providing and fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Fibre glass wool conforming to IS : 8183 density 24kg/m ³ , 50mm thick, wrapped in 200 G Virgin Polythene bags fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5mm x 24g wire and mesh, for top most ceiling of building.	2000.00	Sq Mtr.			

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BOQ for Civil Work						
Item No	Description Of Item	Total 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 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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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
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.	2000.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total 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 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) (M.S. Framing to be paid for seprately)	100.00	Sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.05	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of :					
i)	v) 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)	vi) 11nd 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)	vii) 111rd course of applying blown or residual bitumen applied hot at 1.7 Kg. per sqm of area.					
iv)	viii) 1Vth 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.)	242.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.06	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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BOQ for Civil Work						
Item No	Description Of Item	Total 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.	2000.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.07	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 viscosity 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	100.00	Sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.08	Providing and applying three coats of two component high performance elastomeric cementitious acrylic polymer modified coatings of approved brand and quality over sloping RCC roof @ 2.85 kg /sqm (total) over the damp concrete surface with reinforcement of glass fibre cloth of 45 gsm over wet first coat and then second coat at right angle to first coat & finally applying third coat. Sprinkle coarse sand @ 6dm ³ per sqm over third coat and terminating as per manufacturers recommendation.(Work to be carried out by specialized agency).	100.00	Sqm			
8.09	Providing and laying pressed clay (Manglore) tiles (as per approved pattern 20 mm nominal thickness and of approved size) on roofs jointed with cement mortar 1:4 (1 cement : 4 coarse sand) mixed with 2% integral water proofing compound laid over a bed of 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) and finished neat complete.	200.00	Sqm			
Total						

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
9.00	Finishing					
9.01	12 mm cement plaster of mix:					
a)	1:6 (1 cement: 6 fine sand)	7000.00	sqm			
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)	10000.00	sqm			
9.03	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement: 5 coarse sand) finished with a top layer 6mm thick cement plaster 1:6 (1 cement: 6 fine sand).	9500.00	sqm			
9.04	6 mm cement plaster of mix:					
a)	1:3 (1 cement: 3 fine sand)	7300.00	sqm			
9.05	Neat cement punning	50.00	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.	3500.00	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	23000.00	Sqm			
9.08	White washing with lime to give an even shade:					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
a)	New work (three or more coats)	150.00	sqm			
9.09	Distemping 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.	7350.00	sqm			
9.10	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 kgl10 sqm).	500.00	sqm			
9.11	Applying one coat of cement primer of approved brand and manufacture on wall surface:					
a)	Cement primer.	13300.00	sqm			
9.12	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.	9000.00	sqm			
9.13	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade:					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
a)	Two or more coats on new work	13300.00	sqm			
9.14	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.	500.00	sqm			
9.15	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.	500.00	sqm			
9.16	Applying chemical resistant epoxy resin wall coating over plastered surface including preparing of the surface, applying acrylic primer, putty and painting of approved brand and manufacture.					
a)	New work (three or more coats) over and including priming coat with acrylic primer and putty.	5000.00	sqm			
Total						

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.00	Miscellaneous					
10.01	Providing and fixing dry cladding upto 10 metre heights with gang saw cut stone with (machine cut edges) of uniform colour and size upto 1mx1m, fixed to structural steel frame work and/ or with the help of cramps, pins etc. and sealing the joints with approved weather sealant as per Architectural drawing and direction of Engineer-in-charge. (The steel frame work, stainless steel cramps and pins etc. shall be paid for separately.)					
a)	25 mm thick Granite Stone of approved quality (Base Rate Rs 250/- per Sqft, Base rate is inclusive of polishing and/or flaming or sand blasting as required)	800.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.02	Providing and fixing structural steel frame (for dry cladding with gang saw cut with machine cut edges stone) on walls at all heights using M.S. square/ rectangular tube in the required pattern as per architectural drawing including cost of cutting, bending, welding etc. The frame work shall be supported in wall with the help of MS brackets/ lugs of angle iron/ flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement:2 coarse sand :4 graded stone aggregate 20mm nominal size) of size 300x230x300mm including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface including drilling necessary holes. Approved cramps/ pins etc. shall be welded to the frame work to support stone cladding the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-charge and painted with two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-charge for approval before execution). The frame work shall be fixed in true					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.)	2400.00	Kg			
10.03	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.	4000.00	each			
10.04	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	171.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.05	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.	50.00	Sqm			

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.06	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	50.00	Sqm			
10.07	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 service of drivers, fuel, oil,					
a)	Indica or equivalent as required	18000.00	Km			
Total						

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.00	ROAD WORK, DEVELOPEMENT AND SIGNAGE					
11.01	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm. depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth lead upto 50 metres.	1750.00	SQM			
11.02	Supplying and stacking at site.					
a)	90 mm to 45 mm	225.00	CuM			
b)	63 mm to 45 mm	199.50	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.	300.00	Cum			

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total 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).	225.00	Cum			
11.05	Providing and laying in position bitumen hot sealing compound for expansion joints etc					
a)	Using grade 'A' sealing compound.	3000.00	Per cm depth per cm width per m length			
11.06	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 fine sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	250.00	sqm			

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total 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 at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement: 3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	67.50	Cum			
11.08	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).	1500.00	Cum			
11.09	Supplying and stacking sludge at site including royalty and carriage up to 1 km (sludge measured in stacks will be reduced by 8% for payment).	125.00	Cum			

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total 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).	125.00	Cum			
11.11	Rough dressing the trenched ground including breaking clods & Uprooting weeds from the trenched area after 10 to 15 days of its flooding with water including disposal of uprooted vegetation.	2500.00	Sqm			
11.12	Supply & sprinkling of Neem cake (at the rate of 6 kg per 100 sq. metres) and fine dressing the ground.	2500.00	Sqm.			
11.13	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.	2500.00	Sqm.			

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total 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	Digging holes in ordinary soil and refilling the same with the exca-vated earth mixed with manure or sludge in the ratio of 2:1 by volume (2 parts of stacked volume of earth after reduction by 20% : 1part of stacked volume of manure after reduction by 8%) flooding with water, dressing including removal of rubbish and surplus earth, if any with all leads and lifts (cost of manure, sludge or extra good earth if needed to be paid for separately):					
a)	Holes 1.2 m dia and 1.2 m deep.	50.00	Each			
b)	Holes 60 cm dia, and 60 cm deep.	50.00	Each			
11.15	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 graphics on 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.	1800.00	sq inch			
11.16	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	16896.00	sqinch			

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.17	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 vinyle sheet and pasting on it with pictogram complete as per technical specifications and directions of Engineer.	750.00	r/ft			
11.18	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.	90.00	sqft			
11.19	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.	1080.00	Kg			

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.20	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.	250.00	sqft			
11.21	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 .	48.00	sq ft			
11.22	Providing fabricating installation and fixing of backlit flex signages on Hanwa/star 18 ounce flex signages printed on high resolution printer mounted 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.	250.00	sqft			

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.23	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.	1000.00	sqinch of each letter			
11.24	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.	15000.00	sqinch			
11.25	Providing fabricating , installation and fixing of poster frame with digitally printed transparent film technova sandwiched between 2-3 mm clear acrylic sheet fixed on the wall/MS with the help of suitable steel studs	1000.00	sqft			

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.26	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.	1000.00	sq inch			
11.27	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	600.00	sq.ft.			

Project Name: Construction of OPD Block, RIMS Imphal

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.28	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.	1300.00	sq.ft.			
11.29	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	400.00	sq.ft.			
11.30	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.	1100.00	sq.inch			
Sub Total						

ABSTRACT

Name of Work: BOQ of Plumbing work of Proposed Buildings at
RIMS,Imphal(OPD Block)

S.No.	DESCRIPTION	Amount in figures(in RS.)
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	EXTERNAL WATER SUPPLY	
8.00	RAIN WATER HARVESTING	
9.00	SOLAR WATER HEATING SYSTEM & RECIRCULATING SYSTEM	
	TOTAL	

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	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	10.0			
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	50.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	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	1.0			
b)	Range of two urinal basin with 5 litre white PVC automatic flushing cistern	Each	1.0			
c)	Range of three urinal basin with 10 litre white PVC automatic flushing cistern	Each	4.0			
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	75.0			
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:					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
a)	Kitchen sink without drain board					
a i)	610x510 mm bowl depth 200 mm.	Each	2.0			
1.06	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug 40 mm C.P. brass waste and 40 mm brass trap with necessary C.P. brass unions complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required:					
a)	Size 600x450x200 mm	Each	2.0			
1.07	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	50.0			
1.08	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	75.0			
1.09	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	15.0			
1.10	Providing and fixing toilet paper holder .					
a)	Vitreous china	Each	50.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)

Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
1.11	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	60.0			
1.12	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	50.0			
1.13	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	15.0			
1.14	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	75.0			
1.15	Providing and fixing brass coat hook of approved quality and make complete with material of fixing	Each	100.0			
1.16	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					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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	50.0			
1.17	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	50.0			
1.18	Providing and fixing Hospital white vitreous china bed pan sink with P trap, size 600 x 450 mm with 10 litres C.I. High level flushing cistern flush pipe, C.I./M.S. bracket painting with 3 coats of white paint complete with accessories, C.P. brass fittings with vertical jet horizontal spray complete with control cocks.	Each	2.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
1.19	Supply , installation, testing and commissioning of compact floor mounted pedestal base surgical scrub sink tailor made to suit the site available compatible with all the regular and standard plumbing system, with inbuilt geyser designed for use in operation theatre fabricated from 16 gauge 304 type stainless steel seamless welded,polished to satin finish including connecting to drainage and water points and making good cutting of walls and floor surface all complete and as directed					
a)	Tailor made surgical scrub sink (3 bay) Approximate size 1.9 mX0.54mX0.84m with 3 user elbow operated mixture tap, two soap dispensers, two drain outlet ,thermostatic control of water temperature	Each	1.0			
b)	Tailor made surgical scrub sink (1 bay) Approximate size 0.9 mX0.54mX0.84m with 1 user elbow operated mixture tap, soap dispensers, drain outlet ,thermostatic control of water temperature	Each	1.0			
1.20	Providing and fixing stainless steel grab bar 20mm dia of required length with PVC cleats, C.P. brass screws etc. complete.	Each	20.0			
SUB TOTAL(SANITARY FIXTURES)						

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	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	800.0			
b)	75 mm dia					
bi)	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	50.0			
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	200.0			
b)	for 75 mm dia. pipe	Each	20.0			
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	35.0			
b)	75 mm dia					
bi)	Sand cast iron S&S as per IS-3989	Each	5.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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	80.0			
b)	75 mm					
bi)	Sand cast iron S&S as per IS:3989	Each	5.0			
2.05	Providing and fixing heel rest sanitary bend.					
a)	100 mm dia					
a.ii)	sand cast iron S&S as per IS-3989	Each	30.0			
b)	75 mm dia					
bi)	sand cast iron S&S as per IS-3989	Each	2.0			
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	100.0			
b)	75x75x75 mm					
bi)	sand cast iron S&S as per IS-3989	Each	2.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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	20.0			
b)	75x75x75 mm					
bi)	sand cast iron S&S as per IS-3989	Each	5.0			
2.08	Providing and fixing single unequal junction of required degree with access door, insertion rubber washer 3mm thick, bolts and nuts complete.					
a)	100x100x75mm					
ai)	sand cast iron S&S as per IS-3989	Each	10.0			
2.09	Providing and fixing single unequal plain junction of required degree					
a)	100x100x75 mm					
ai)	sand cast iron S&S as per IS-3989	each	10.0			
2.10	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	2.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
2.11	Providing and fixing terminal guard.					
a)	100 mm	Each	30.0			
a.ii)	sand cast iron S&S as per IS-3989					
b)	75 mm					
bi)	sand cast iron S&S as per IS-3989	Each	2.0			
2.12	Providing and fixing collar					
a)	100 mm					
a.ii)	Sand cast iron S&S as per IS-3989	Each	40.0			
b)	75 mm					
bi)	Sand cast iron S&S as per IS-3989	Each	2.0			
2.13	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:					
a)	100 mm	Each	800.0			
b)	75 mm	Each	50.0			
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	30.0			
b)	75 mm	Each	2.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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	60.0			
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	25.0			
b)	75 mm diameter pipe	Metre	2.0			
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	460.0			
b)	75 mm diameter pipe	Metre	30.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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	20.0			
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	75.0			
2.20	Providing and fixing C.P. brass bottle trap for sinks & urinal basin including CP waste fittings complete 40 mm dia complete in all respect of approved quality.	Each	15.0			
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	340.0			
	75 mm dia	Metre	20.0			
2.22	Providing and fixing dash fastner made of rust proof plated steel for holding the soil/waste supply pipes complete in all respect					
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	70.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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	2.0			
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	2.0			
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	40.0			
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	75.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
b)	40 mm dia nominal bore (Sink,Urinal to floor trap)	Metre	10.0			
b)	50 mm dia nominal bore (Floor Drain to Floor Trap)	Metre	40.0			
2.27	Providing & fixing SS floor trap grating 143x143x5mm thick screwablewith SS fixed frame of 150x150 mm size as per approved make & model	Each	60.0			
SUB TOTAL(SOIL, WASTE AND VENT PIPES)						

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	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 ciomplete as per direction of Engineer in charge.					
	Internal work – Exposed on wall					
a)	15 mm nominal outer dia pipes (SDR-11)	Metre	50.0			
b)	20 mm nominal outer dia pipes (SDR-11)	Metre	170.0			
c)	25 mm nominal outer dia pipes (SDR-11)	Metre	90.0			
d)	32 mm nominal outer dia pipes (SDR-11)	Metre	190.0			
e)	40 mm nominal outer dia pipes (SDR-11)	Metre	150.0			
f)	50 mm nominal outer dia pipes (SDR-11)	Metre	80.0			
g)	62.5 mm nominal outer dia pipes (SDR-11)	Metre	15.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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	350.0			
b)	20 mm nominal outer dia pipes (SDR-11)	Metre	100.0			
c)	25 mm nominal outer dia pipes (SDR-11)	Metre	50.0			
d)	32 mm nominal outer dia pipes (SDR-11)	Metre	20.0			
e)	40 mm nominal outer dia pipes (SDR-11)	Metre	5.0			
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	30			
b)	40 mm nominal outer dia pipes (SDR-11)	Metre	10			
c)	50 mm nominal outer dia pipes (SDR-11)	Metre	30.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)

Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
d)	62.5 mm nominal outer dia pipes (SDR-11)	Metre	10			
e)	75 mm nominal outer dia pipes (SDR-11)	Metre	5			
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	50.0			
c)	100 mm dia nominal bore	Metre	20.0			
3.05	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc.					
a)	50 mm dia nominal bore	Metre	10			
b)	65 mm dia nominal bore	Metre	10			
c)	80 mm dia nominal bore	Metre	10			
3.06	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	2.0			
3.07	providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)					
a)	25 mm nominal bore	Each	4.0			
b)	32 mm nominal bore	Each	3.0			
c)	40 mm nominal bore	Each	1.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)

Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
d)	50 mm nominal bore	Each	1.0			
e)	65 mm nominal bore	Each	1.0			
3.08	Providing and fixing ball valve (brass) of approved quality, High or low pressure with plastic floats complete					
a)	25 mm nominal bore	Each	2.0			
3.09	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main					
a)	40 mm nominal bore	Each	1.0			
3.10	Providing and fixing unplasticised PVC connection pipe with brass unions:					
a)	45 cm length					
a i)	15 mm nominal bore	Each	150.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
3.11	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	20.0			
3.12	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	50.0			
b)	20 mm nominal outer dia pipes	Metre	70.0			
c)	25 mm nominal outer dia pipes	Metre	90.0			
d)	32 mm nominal outer dia pipes	Metre	90.0			
e)	40 mm nominal outer dia pipes	Metre	50.0			
f)	50 mm nominal outer dia pipes	Metre	80.0			
g)	65 mm nominal outer dia pipes	Metre	15.0			
3.13	Providing and filling sand of grading zone V or coarser grade all-around the G.I./CPVC pipes in external work					
a)	25 mm diameter pipe	Metre	30.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)

Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
b)	40 mm diameter pipe	Metre	10.0			
c)	50 mm diameter pipe	Metre	30.0			
d)	65 mm diameter pipe	Metre	10.0			
e)	80 mm diameter pipe	Metre	5.0			
3.14	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	35000.0			
3.15	Providing and fixing C.P brass bib cock of approved quality.					
a)	15 mm nominal bore	Each	60.0			
3.16	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	4.0			
3.17	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	150.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
3.18	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	4.0			
3.19	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	2.0			
b)	50 mm nominal bore, 242 mm long weighin not less than 1240 gms	Each	2.0			
3.20	Cutting holes upto 30x30 cm in walls including making good the same					
a)	with F.P.S bricks	Each	45.0			
3.21	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	25.0			
3.22	Extra for providing wash basin mixer pillar tap in place of normal pillar tap	Each	10.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
3.23	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	4.0			
b)	20 mm diameter	Each	6.0			
3.24	Providing and fixing mosquito proof coupling of approved Municipal design for scour and vent pipes for RCC overhead tanks complete in all respects					
a)	15 mm diameter	Each	1.0			
b)	20 mm diameter	Each	4.0			
c)	25 mm diameter	Each	4.0			
d)	32 mm diameter	Each	3.0			
e)	50 mm diameter	Each	1.0			
3.25	Providing & fixing solid state fully hygienic no touch hand drier of approved make rated for continuous repeat usage with solid state time delay LSF protection, with independent ambient light level & seasonal control temperatures including providing necessary C.I./M.S. brackets painted with two or three coats of enamel paint of approved shade over a coat of primer, wiring cables from drier to plug, plug tops etc. complete including cutting and making good the walls wherever required.	Each	4.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
3.26	Extra for providing and installing INFRA-RED controlled electrically operated (220V, AC mains) automatic flushing system of approved make instead of urinals with flushing cistern. The automatic flushing system shall comprising of :					
	Light sensing device fixed in recessed metallic box with tamper resistant stainless steel outercase Solenoid valve housed in a recessed metallic box with openable cover mounted at high level (at desired height from finished floor level) complete with interconnecting control wiring in recessed PVC conduit between solenoid valve and sensing unit, including cutting and making good the walls & floor complete and all necessary fittings to make it operational as directed	Each				
			8.0			
3.27	Providing and fixing C.P. brass lab sink pillar tap with long elbow operating lever handle of approved model and make complete in all respect (, Jaguar,Marck,Jainco,orthello Rybo)	Each				
			2.0			
3.28	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				
			4.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
3.29	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	4.0			
	SUB TOTAL(Water Supply)					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
4.00	SEWARAGE & DRAINAGE					
4.01	Providing laying and uPVC pipe confirming to IS 4985(6 kg/sq.m) including heavy class fittings and approved solvent jointing including testing of joints etc. complete.					
a)	110 mm diameter	Metre	40.0			
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 uPVC pipe/RCC NP2	Metre	40.0			
b)	150 mm diameter uPVC pipe/RCC NP2	Metre	150.0			
c)	250 mm diameter uPVC pipe/RCC NP2	Metre	130.0			
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	50.0			
b)	250 mm diameter s.W. pipe	Metre	50.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
4.04	Providing and fixing square-mouth gully trap consist of uPVC trap of 100 mm dia of approved make 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 (uPVC)					
a.i)	F.P.S. Bricks class designation 75	Each	20.0			
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	200.0			
b)	250 mm dia R.C.C. pipe	Metre	180.0			
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.					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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	20.0			
4.07	Extra depth for manholes					
a)	Size 90 x 80 cm					
a i)	With F.P.S. bricks class designation 75	Metre	8.0			
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:					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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	8.0			
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	1.0			
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 nominal size) finished with a floating coat of neat cement complete as per standard design.					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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	1.0			
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	1.0			
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	70.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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	1.0			
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 cenment: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	1.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
4.15	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:					
a)	With F.P.S. bricks	Each	20.0			
4.16	Providing and fixing S.W.intercepting trap in manholes with stiff mixture of cement mortar 1:1 (1 cement:1 fine sand) including testing of joints etc. complete					
a)	150 mm dia	Each	1.0			
4.17	Providing and laying S&S Centrifugally Cast (Spun)/Ductile Iron pipes confirming to is:8329:					
a)	200 MM DIA Ductile Iron Class k-7 pipes	metre	20.0			
4.18	Providing push-on-joint to centrifugally (spun) cast iron pipes or Ductile iron pipes including testing of joints and including the cost of rubber gasket					
a)	200mm dia pipes	metre	10.0			
4.19	Providing and laying DI specials of class K-2 suitable for push-on jointing as per IS:9523					
a)	up to 600 mm dia	quintal	1.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
4.20	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.					
	25cm drain 30cm average depth					
a)	With F.P.S bricks	Metre	200.0			
	SUB TOTAL(SEWERAGE AND DRAINAGE)					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	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	50.0			
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					
	Pipes, cables etc. not exceeding 80 mm dia	metre	10.0			
a.ii)	Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia	metre	410.0			
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	15.0			
	SUB TOTAL(EARTH WORK)					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)

Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
6.00	RAIN WATER PIPING					
6.01	Providing and fixing on wall face/Concealed unplasticised rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring conforming to IS:5382 leaving 10 mm gap for thermal expansion. (i) Single socketed pipes					
a)	110 mm diameter (6 kg/sq. cm)	Metre	240.0			
b)	160 mm diameter (6 kg/sq. cm)	Metre	160.0			
6.02	Providing and fixing on wall face/Concealed unplasticised - PVC moulded fittings/accessories for unplasticised rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring conforming to IS:5382 leaving 10 mm gap for thermal expansion.					
a)	Single tee without door					
i)	110x110x110mm	Each	15.0			
ii)	160x160x160 mm	Each	10.0			
b)	Bend 87.5 degree					
i)	110 mm bend	Each	15.0			
ii)	160 mm bend	Each	10.0			
c)	Shoe (Plain)					
i)	110 mm shoe	Each	15.0			
ii)	160 mm shoe	Each	10.0			
6.03	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	50.0			
6.04	Providing and fixing rain water ,soil, waste and vent pipes.					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)

Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
a)	100 mm dia.					
a i)	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	240.0			
c)	150 mm dia pipe as per IS:3989	Metre	160.0			
6.05	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	120.0			
c)	for 150 mm dia pipe	Each	80.0			
6.06	Providing and fixing plain bend of required degree.					
a)	100 mm					
a ii)	Sand cast iron S&S as per IS:3989	Each	15.0			
c)	150 mm	Each	10.0			
6.07	Providing and fixing heel rest sanitary bend.					
a)	100 mm dia					
a.ii)	sand cast iron S&S as per IS-3989	Each	15.0			
c)	150 mm dia	Each	10.0			
6.08	Providing and fixing collar					
a)	100 mm					
a.ii)	Sand cast iron S&S as per IS-3989	Each	25.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
c)	150 mm	Each	15.0			
6.09	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:					
a)	100 mm	Each	160.0			
c)	150 mm	Each	80.0			
6.10	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	240.0			
c)	150 mm diameter pipe	Metre	160.0			
	SUB TOTAL(Rain Water pipe & fitting)					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
7.00	EXTERNAL WATER SUPPLY					
7.01	Providing and fixing G.I.pipes complete with G.I. fittings including trenching and refilling etc. (External work)					
a)	20 mm dia nominal bore	metre	50.0			
b)	65 mm dia nominal bore	metre	50.0			
c)	80 mm dia nominal bore	metre	200.0			
d)	100 mm dia nominal bore	metre	100.0			
7.02	Providing and fixing G.I. pipes complete with G.I. fittings and clamp including cutting and making good the walls etc.					
	Internal work-Exposed on wall-					
	65 mm diameter	metre	10.0			
	80 mm diameter	metre	20.0			
	100 mm diameter	metre	10.0			
7.03	Providing and fixing gun metal non-return valve of approved quality (screwed end)					
a)	80 mm nominal bore					
	Horizontal	each	2.0			
b)	65 mm nominal bore	each	2.0			
	Horizontal					
7.04	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :					
a)	65 mm nominal bore	each	2.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
b)	80 mm nominal bore	each	2.0			
7.05	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)	100 mm diameter					
ai)	Class I	each	2.0			
b)	150 mm diameter					
bi)	Class I	each	2.0			
7.06	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	2.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
7.07	Constructing masonry chamber 90x90x100 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	3.0			
7.08	Painting G.I./CPVC pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality					
a)	20 mm diameter pipe	metre	50.0			
b)	65 mm diameter pipe	metre	50.0			
c)	80 mm diameter pipe	metre	200.0			
d)	100 mm diameter pipe	metre	100.0			
7.09	Providing and filling sand of grading zone V or coarser grade all-around the G.I./CPVC pipes in external work					
a)	20 mm diameter pipe	metre	50.0			
b)	65 mm diameter pipe	metre	50.0			
c)	80 mm diameter pipe	metre	200.0			
d)	100 mm diameter pipe	metre	100.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
7.10	Providing and fixing G.I. Union in existing G.I. pipe line, cutting and threading the pipe and making long screws including excavation, refilling the earth or cutting of wall and making good the same complete wherever required:					
a)	65 mm nominal bore	each	2.0			
b)	80 mm nominal bore	each	2.0			
c)	100 mm diameter pipe	each	2.0			
7.11	Providing and fixing C.I. double acting air valve of approved quality with bolts, nuts, rubber insertions etc. complete (The tail pieces, tapers etc. if required will be paid separately):					
a)	50 mm dia	each	1.0			
b)	80 mm dia	each	1.0			
7.12	Disinfecting C.I./D.I./GI water mains by flushing with water containing bleaching powder at 0.5 gms per litre of water and cleaning the same with fresh water, operation to be repeated three times including getting the sample of water from the disinfected main tested in the municipal laboratory					
a)	100 mm diameter C.I./D.I. /GI pipe	100	1.0			
c)	80 mm diameter C.I./D.I. /GI pipe	100	2.0			
7.13	Providing and fixing puddle flanged including 40 cm long GI pipe piece welded/threaded with MS plates 450x450x6 mm thick with both end screwed/flanged.					
a)	For 80 mm dia pipe	Each	2.0			
b)	For 100 mm dia pipe	Each	2.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
c)	For 150 mm dia pipe	Each	2.0			
7.14	Providing and fixing suitable G.I. vent pipe upto 1m high Class-B (medium quality) with fittings complete as per drawing and as directed.					
a)	For 80 mm dia pipe	Metre	2.0			
b)	For 100 mm dia pipe	Metre	2.0			
7.15	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	4.0			
7.16	Providing all materials and labour for supplying and fixing multi-level indicator cum controller, operating in electronic sensing probe and having the controller equipped with level monitoring system and phase monitoring system for automatic operations of various pumps and indicating water levels for various tanks and having multi-level 4 nos. visual indications on panel with alarm system and timer including necessary cable and acknowledge facilities as per requirement and all complete as approved.					
	Water tanks					
	controller/Multilevel indicators					
	Electronic sensing probe to cut-off raw water pumps at low level in raw water tank.					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
	Electronic sensing probe to cut-off pumps at high level in receiving tanks.	set	1.0			
7.17	Providing and fixing gun metal foot valve with stainer of approved quality/model complete in all respect					
	80 mm dia	each	2.0			
	100 mm dia	each	2.0			
7.18	Supplying, installing, testing and commissioning horizontal monobloc 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 (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).					
	1 No, DOL(type-II) starter of 5 HP with thermal overload relay, Push Buttons, Single Phase Preventer and Switches etc complete as required.					
	1 No, DOL(type-II) starter of 3 HP with thermal overload relay, Push Buttons, Single Phase Preventer and Switches etc complete as required.					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
	Domestic water pumps					
	Capacity 175 lpm					
	Head 30 M	Each	2.0			
	Capacity 80 lpm					
	Head 25 M	Each	2.0			
7.19	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 transferring 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 (One additional stand by pump to be kept in the store). (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):					
	: Impeller — Stainless Steel					
	: Shaft — Stainless Steel					
	: Bearings — Anti friction,					
	Motor: — Dry Motor with built in over					
	Protection - IP68.					
	Insulation Class - F					
	Duty of each pump					
	150 LPM against 10 M head (for Pump Room)	each	1.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
7.20	Providing and fixing garden hydrant of approved quality and make complete in all respect	each	5.0			
	Providing & fixing anti-corrosion protection to GI pipe & accessories by wrapping pipekot 4mm thick 500mm wide tar baased plymaric corrosion protection tape or equivalent suitable to GI/ MS pipe line including applying uniform coat of cold pipekot primer complete 1m below the ground level, erfilling in layers not exceeding 20 cm in deapth consolidated each deposited layer by ramming & watering complete in all respect as per IS:1002 (under ground)					
	50 to 150 mm dia pipe	Metre	400.0			
7.21	Testing Underground tank for water sepage 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	set	1.0			
SUBTOTAL (EXTERNAL WATER SUPPLY)						

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	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	2.0			
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	40.0			
8.03	Extra for drilling in Ordinary Rock	Metre	10.0			
8.04	Providing and lowering of 200 mm dia uPVC blank/ slotted pipe with ribs, special fittings, jointing conforming to IS 12818 - 1992.	Metre	40.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
8.05	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	2.0			
SUBTOTAL (RAIN WATER HARVESTING)						

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	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					

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
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					
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 makeThe 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 geysers).					
	Solar System of Capacity 1500 Litre/day (With minimum 12 nos of Collector of 2.0 Sqm area each)	each	1.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
9.02	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.					
	Internal work- Exposed on wall					
a)	15 mm nominal outer dia pipes (SDR-11)	metre	50.0			
b)	20 mm nominal outer dia pipes (SDR-11)	metre	30.0			
c)	25 mm nominal outer dia pipes (SDR-11)	metre	10.0			
d)	32 mm nominal outer dia pipes (SDR-11)	metre	10.0			
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.					
	Concealed work including cutting chases and making good the walls etc.					
a)	15 mm nominal outer dia pipes (SDR-11)	metre	40.0			
b)	20 mm nominal outer dia pipes (SDR-11)	metre	20.0			
	25 mm nominal outer dia pipes (SDR-11)	metre	10.0			

Name of Work: BOQ of Plumbing work of Proposed Buildings at RIMS,Imphal(OPD Block)						
Sl. No.	Description of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
9.04	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):					
a)	25 mm nominal bore	each	6.0			
b)	32 mm nominal bore	each	2.0			
9.05	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	160.0			
b)	32 mm dia to 50 mm dia	each	10.0			
9.06	Providing and fixing gun metal ball valve of approved quality					
a)	15 mm nominal bore	each	6.0			
b)	20 mm nominal bore	each	4.0			
	SUBTOTAL(SOLAR WATER HEATING SYSTEM & RECIRCULATING SYSTEM)					

	PROJECT NAME: RIMS IMPHAL			
ABSTRACT OF COST for RIMS IMPHAL (OPD)				
S.No	DESCRIPTION OF WORK		Amount in figures(in Rs.)	
1	Sub Total (Fire Fighting PHE items)			
2	Sub Total (Fire Fighting Electrical items)			
	Sub Total(Fire Fighting work)			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7
1.00	FIRE FIGHTING SYSTEM					
1.01	Supplying and laying S&S centrifugally cast (spun) / Ductile iron pipes conforming to IS: 8329					
a)	150 mm dia Ductile Iron class K-9	Metre	350.0			
1.02	Providing & Laying D.I. Specials of class K-12 suitable for mechanical jointing as per IS:9523					
a)	Upto 600 mm dia	quintal	20.0			
1.03	Providing flanged joints to double flanged centrifugally (Spun) cast iron pipes /ductile iron pipes and specials including testing of joints .					
a)	150 mm dia pipes	joints	150.0			
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					

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
a)	Pipes, cables etc exceeding 80 mm dia but not exceeding 300 mm dia	Metre	350.0			
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 excavation and trenching, wrapping pipekot 4mm thick 500mm width tar based polymeric corrosion protection tape or equivalent suitable to GI/ MS pipe line including applying uniform coat of cold pipekot 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	20			
b)	80 mm dia G.I. Pipe with flange joints	Metre	50			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
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	10			
b)	100 mm dia (with Flanged joints)	Metre	10			
c)	150 mm dia (with Flanged joints)	Metre	60.0			
d)	80 mm dia (with Flanged joints)	Metre	50			
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	22			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
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	30.0			
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	14			
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	22			
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.					
a)	4 Way - 150mm dia	Each	2			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.12	Providing and fixing Set of "Siamese" quadraplet 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	1			
1.13	Providing & Fixing 150 mm dia, 4 way suction coupling for firebrigade withdrawal of water from the fire tank	Each	1			
1.14	Providing and fixing door for Fire hose cabinet with glazed door shutter and frame 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	15			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
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	7			
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	12			
a)	100 mm dia	Each	4.0			
a)	80 mm dia	Each	2			
1.17	Supplying, testing, installation & commissioning of pressure switches for pumps including necessary wiring upto the control panel.	Each	12			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
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	4			
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, confirming to IS 884/1995 with upto date amendments, complete with the following as required.					
	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	15			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
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)	100 mm dia	Each	2			
b)	150 mm dia	Each	4			
c)	200 mm dia	Each	1			
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	22			
1.22	Supplying and Fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926	Each	15			
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	12			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.24	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	3			
1.25	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 accessroies as required.	Each	7			
1.26	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	20000			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.27	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	30			
1.28	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	15			
1.29	Providing and fixing 9 liters capacity fire extinguisher water type gas pressure conforming to IS marking, fixed to wall.	Each	15			
1.30	Providing and fixing ABC type fire extinguishers complete in all respects.					
a)	Capacity 5.0 Kg.	Each	15			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.31	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	1			
1.32	Providing and fixing C.I. non-return valve complete with gunmetal seat, bolts, nuts washer & rubber insertions as required conforming to IS:5312.					
a)	80 mm dia	Each	2			
b)	100 mm dia	Each	1			
c)	150 mm dia	Each	4			
1.33	Supplying, fixing, installation, testing and commissioning, control valves comprising of :					
a)	150 mm dia					
b)	1 No. alarm motor & gong (hydraulically operated.					
c)	1 No. main stop valve					
d)	1 No. alarm valve.					

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
e)	Pressure gauges drain pipe.	Set	1.0			
1.34	Providing & fixing electrical gang bell with all inter-connecting cables for an audio annuciation of pumps failure, complete in all respects.	Each	1.0			
1.35	Providing & fixing half mile range siren with all inter connecting cables and wires complete in all respects.	Each	1.0			
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.					

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
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.					
l)	Capacity 2280 LPM and Head 60 Metres	Set	1			
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).					

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
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.					

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in 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 60 Metres	Set	1			
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 .					

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
b)	Squirrel cage A.C. induction motor suitable for operation on 415 V, 10% 3 phase 50 Hz. A.C. supply and of minimum 20 HP 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.					
d)	Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot or similar mounting as per required.					
l)	Head - 60 Metres	set	1			
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	1			
b)	for 100 mm dia pipe	Each	2			
c)	for 150 mm dia pipe	Each	3			
d)	for 200 mm dia pipe	Each	2			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.40	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 amendmndts).					
a	Fire pump with stainless steel impeller CI casing, SS shaft shall be horizontal end suction centrifugally type having a capacity of 450 LPM against a total head of 30m 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 mechamical 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 characterstic curve of the pumps, model & other technical data for approval before placing the order}					
b	Squirrel cage AC induction motor suitable fot operation of 415 V ,+/-10%, 3 phase 50 HZ, AC supply and of minimum 7.5 HP for the above pump with flexible coupling as per spwcification and conforming to IS 325-1978 and shall be TEFC type only					
c	Common base plate fabricated from mild steel channel ot castiron type					

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
d	Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot mounting as required					
e	1 No. 3 Phase, DOL starter of 7.5 HP with thermal overload relay, Push Buttons and Switches, power cable of suitable size from motor to starter including cable gland ,lugs,earth connection etc complete as required.	set	2.0			
Sub Total (Fire Fighting items)						

	PROJECT NAME: RIMS IMPHAL					
	Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)					
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
2.00	ESDB- PUMP PANEL (RIMS)					
	FIRE PUMP PANEL (OPD RIMS Imphal)					
	Supply, installation, testing and commissioning of M.V. cubicle type, front access, totally enclosed free standing type, Compartmentalised, dust, damp and vermin proof Motor Control Centre complete with busbars, M.V. danger notice plate, ammeter, voltmeter, selector switch, Relays, Starters, Single Phase Preventer, Pressure Sensor, indicating lamps, CT's, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, including interconnections of control cables from pressure Sensor to contactor of Jockey pump, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switchgears complete as required.					
	INCOMER :					
	160 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 have spreader links & phase barriers.					
	1 Set of phase indicating lamp with 2A SP control MCBs					
	1 No 0-160 A ampere meter with ASS & CT					
	1 No. 0-500 V volt meter with VSS & HRC fuse.					

	PROJECT NAME: RIMS IMPHAL					
	Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)					
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
	1 set of 160/5A CTs					
	BUSBARS :					
	250 Amp TPN busbars of aluminium					
	OUTGOINGS :					
	1 Sets of following (For main Fire Pump)					
	1 No. 125 Amp. 415/500 volts,35 KA, three Pole, 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 50 HP with thermal overload relay, Timer, Push Buttons and Auto-manual selector switch etc complete as required.					
	Single Phase preventer					
	1 No. 0-125 Amp. Ammeter with selector switch and CT's.					
	1 Set of phase indicating lamp with 2A SP control MCBs					
	Neon indicating Lamps for "ON" and "OFF" and "TRIP" indication with 2A SP control MCBs.					
	2 Set of following (For jocky pump)					

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
	1 No. 32 Amp. 415/500 volts,35 KA, three Pole, 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 5 HP with thermal overload relay, Push Buttons and Switches etc complete as required.					
	Single Phase preventer					
	1 No. 0-32 Amp. Ammeter with selector switch and set of CTs.					
	1 Set of phase indicating lamp with 2A SP control MCBs					
	Neon indicating Lamps for "ON" and "OFF" and "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 50 HP diesel engine when electrical driven fire pump fail to start.					
	One no rectifier circuit, battery charger, batteries, DC Voltmeter, DC Ammeter etc.					
	FIRE PUMP PANEL as mentioned above.	SET	1.0			

PROJECT NAME: RIMS IMPHAL						
Name of Works: BOQ of Fire Fighting Works RIMS campus IMPHAL (OPD)						
Item No	Description Of Item	Unit	Total Qty.(OPD)	Rate in words(in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
Sub Total (Fire Fighting Electrical items)						

SUMMARY OF COST ESTIMATE - ELECTRICAL WORKS

S.No.	DESCRIPTION	Amount Figure (In Rs.)	In	Amount in Words (Rs.)
1	SUB HEAD 1 : DG SET & ACCESSORIES			
2	SUB HEAD 2 :MAIN FLOOR PANELS			
3	SUB HEAD 3 : SUB FLOOR PANELS :			
4	SUB HEAD- 4: MCB DISTRIBUTION BOARDS.			
5	SUB HEAD 5: WIRING			
6	SUB HEAD: 6 - LIGHT FIXTURE AND FANS			
7	SUB HEAD 7 : TELEPHONE SYSTEM			
8	SUB HEAD 8:CONDUITING FOR COMPUTER SYSTEM .			
9	SUB HEAD 9: CONDUTING FOR TV OUTLETS			
10	SUBHEAD 10 : UPS SYSTEM			
11	SUB HEAD : 11 PUBLIC ADDRESS SYSTEM			
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			

	GRAND TOTAL FOR ALL ELECTRICAL WORKS		
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BILL OF QUANTITIES FOR ELECTRICAL WORKS OF OPD, RIMS - IMPHAL.

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
1.00	SUB HEAD 1 : DG SET & ACCESSORIES					
	SOUND PROOF DG SETS OF 200 KVA: (OPD Block)					
1.01	Supply, installation, testing and commissioning of sound proof (silent type) Diesel Generating set having 200 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. Panel shall be suitable for manual and automatic operation (AMF) and shall be complete as required.					
	AMF Panel should consist the following:.					

a)	2 No MCCB as per following details/ specification: (1 for normal supply and 1 for DG supply)					
	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					
b)	Auto change over switch / arrangement 400 A for automatic change over of DG power on the emergency panel.					
c)	PROTECTION AND AMF COMPONENTS for above mentioned DG set.					
-	Auto/manual/test/off selector switch					
-	2 Nos over voltage relay, 2 nos. reverse power relay and 2 nos. under voltage relay.					
-	3 sets of current transformers 15 P 10 accuracy for protection and 15 VA class - I for metering					
-	Energy analyzer unit to indicate current voltage frequency power factor and KWH					
-	Indicating lamps for load on mains and load on set.					
-	Fuse for instruments.					
-	Battery charger, complete with transformer/rectifier, DC voltmeter and ammeter, selector switch for trickle, off and boost the current adjustment.					
-	Main supply failure monitor.					
-	Supply failure timer					
-	Restoration timer.					
-	Control unit with three impulse automatic engine start / stop and failure to start lockout.					
-	Impulse counter with locking and reset facility.					
-	On/Off/ Control circuit switch with indicator.					

	- Audio/ Video annunciation for :					
	- High stator temperature.					
	- Low lubricating oil pressure					
	- Engine over speed					
	- Engine fails to start					
	- Full load/ maximum load warning.					
	D. 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.					
	200 KVA DG SET WITH AMF PANEL as mentioned above	Set	1			
	TOTAL SUBHEAD 1: DG SETS					
	SUB HEAD 2 :MAIN FLOOR PANELS					
2.00	Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, free standing type, dust, damp and vermin proof, indoor type, powder coated 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, and having following incoming and outgoing switchgears complete as required.					
A1	OPD					
2.01	MAIN FLOOR PANEL (NORMAL) AT GROUND FLOOR ELECTRICAL ROOM:					
	a) INCOMER:					
	630 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.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 600 Amp Digital ammeter with selector switch with one set of 600/5A C.Ts.					
b)	BUSBARS:					
	800 Amp FP Aluminium busbars					
c)	OUTGOING:					
i)	1 Nos. MCCB as per following specifications:					
	400 Amp 415 volts, 35 KA (Isc), 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.					
ii)	4 Nos. MCCB as per following specifications:					
	200 Amp 415 volts, 35 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.					
iii)	2 Nos. MCCB as per following specifications:					
	125 Amp 415 volts, 35 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.					
	iv) 3 Nos. MCCB as per following specifications:					
	63 Amp 415 volts, 35 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.					
	MAIN FLOOR PANEL (NORMAL) AT GROUND FLOOR ELECTRICAL ROOM as mentioned above	Set	1			
2.02	MAIN FLOOR PANEL (EMERGENCY) AT GROUND FLOOR ELECTRICAL ROOM:					
	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.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB					
	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 FP Aluminium busbars					
c)	OUTGOING:					
i)	3 Nos. MCCB as per following specifications:					
	160 Amp 415 volts, 35 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.					
ii)	2 Nos. MCCB as per following specifications:					
	125 Amp 415 volts, 35 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.					
iii)	3 Nos. MCCB as per following specifications:					
	100 Amp 415 volts, 35 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.					
iv)	5 Nos. MCCB as per following specifications:					

	63 Amp 415 volts, 35 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.					
	MAIN FLOOR PANEL (EMERGENCY) AT GROUND FLOOR ELECTRICAL ROOM as mentioned above	Set	1			
2.03	MAIN FLOOR PANEL (COMPUTER DB) AT GROUND FLOOR ELECTRICAL ROOM:					
	a) INCOMER:					
	125 Amp 415 volts, 35 KA (Isc), FP 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.					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Digital Volt Metre with VSS					
	b) BUSBARS:					
	200 Amp FP Aluminium busbars					
	c) OUTGOING:					
	i) 5 Nos. MCCB as per following specifications:					
	63 Amp 415 volts, 35 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.					
		MAIN FLOOR PANEL (COMPUTER DB) AT GROUND FLOOR ELECTRICAL ROOM as mentioned above	Set	1			
		TOTAL SUB HEAD 2 : MAIN FLOOR PANEL					
		SUB HEAD 3 : SUB FLOOR PANELS :					
3.00		Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, free standing type/ 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	OPD					
3.01		SUB FLOOR PANEL NORMAL AT GROUND, FIRST & SECOND FLOOR :					
	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					
		Indicating lamps (LED Type) with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB					
		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: 250 Amp TPN Aluminium busbars					
	c)	OUTGOING:					
	i)	4 no. 100 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	ii)	2 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
		SUB FLOOR PANEL AT GROUND, FIRST & SECOND FLOOR as mentioned above :					
				3			
3.02		SUB FLOOR PANEL NORMAL AT THIRD FLOOR :					
	a)	INCOMER:					
		1 no.125 Amps , 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					
		Indicating lamps (LED Type) with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB					
		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)	3 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	ii)	2 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					

		SUB FLOOR PANEL NORMAL AT THIRD FLOOR as mentioned above :		1			
3.03		SUB FLOOR PANEL EMERGENCY AT GROUND & THIRD FLOOR :					
	a)	INCOMER:					
		1 no.160 Amps , 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					
		Indicating lamps (LED Type) with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB					
		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:					
		200 Amp TPN Aluminium busbars					
	c)	OUTGOING:					
	i)	1 no. 100 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	ii)	4 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
		SUB FLOOR PANEL EMERGENCY AT GROUND & THIRD FLOOR as mentioned above :		2			
3.04		SUB FLOOR PANEL EMERGENCY AT FIRST & SECOND FLOOR :					
	a)	INCOMER:					
		1 no.100 Amps , 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				
		Indicating lamps (LED Type) with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB				
		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:				
		150 Amp TPN Aluminium busbars				
	c)	OUTGOING:				
	i)	4 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.				
		SUB FLOOR PANEL EMERGENCY AT FIRST & SECOND FLOOR as mentioned above :		2		
3.05		SUB FLOOR PANEL COMPUTER DB (GRND,1ST,2ND,3RD FLOOR):				
	a)	INCOMER:				
		1 no.63 Amps , 415 volts, 35 KA (Isc),TPN, 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				
		Indicating lamps (LED Type) with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB				
		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 60 Amp Digital ammeter with selector switch with one set of 60/5A C.Ts.				
	b)	BUSBARS:				

		100 Amp DP Aluminium busbars				
	c)	OUTGOING:				
	i)	4 no. 25 Amps , 415 volts, 9 KA ,double pole, Miniature Circuit Breaker, with ON/ OFF indication.				
		SUB FLOOR PANEL COMPUTER DB (GRND,1ST,2ND,3RD FLOOR) as mentioned above :		4		
		TOTAL SUB HEAD-3: SUB FLOOR PANELS				
		SUB HEAD- 4: MCB DISTRIBUTION BOARDS.				
4.00		MCB DISTRIBUTION BOARD				
4.01		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	4 way (8+12), Double door	Each	7		
	ii	6 way (8+18), Double door	Each	9		
	iii	12 way (8+36), Double door	Each	8		

4.02		Supplying & fixing following way, single pole and neutral, prewired, sheet steel, MCB distribution board, 240 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	16 way (4+12), Double door	Each	10			
4.03		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	401			
	ii	Single pole & neutral (DP)	Each	10			
	iii	Triple pole & neutral (FP)	Each	3			
4.04		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	11			
	ii	63 Amps	Each	2			
	iii	100 Amps	Each	8			
4.05		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.					

	i	25 Amps	Each	3		
	ii	32 Amps	Each	0		
	iii	40 Amps	Each	11		
	iv	63 Amps	Each	2		
	v	100 Amps	Each	8		
4.06		Supplying and fixing Single pole Blanking plate in the existing MCB DB complete as required.	Each	134		
		TOTAL SUB HEAD-4: MCB DISTRIBUTION BOARDS.				
		SUB HEAD 5: WIRING				
5.00		WIRING				
5.01	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	1086		

5.02	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	56			
5.03		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	76			
5.04		5 A light plug wiring same as above but plug point is in the switch board itself.	Point	20			
5.05		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	55			

5.06	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	158			
5.07	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	50			
5.08	Wiring for 32 amp power plug with 2X6 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 1X6 sqmm PVC insulated, copper conductor, single core cable for loop earthing, as per technical specifications & as required.	Point	0			
5.09	Supply, Installation, testing & commisioning of AC mobular metal box with 25 A socket and indiacting light plug with 32 A single pole MCB.	Point	15			
5.10	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	2141			

	ii)	2X4 Sqmm with 1 No. 4 sqmm PVC insulated, copper conductor for earthing	Metre	346			
	iii)	4X4 Sqmm with 2 No. 4 sqmm PVC insulated, copper conductor for earthing		92			
	iv)	4X10 Sqmm with 2 No. 10 sqmm PVC insulated, copper conductor for earthing	Metre	301			
	v)	4X16 Sqmm with 2 nos 16 sq mm PVC insulated, copper conductor for earthing.	Metre	80			
	vi)	4X25 Sqmm with 2 nos 25 sq mm PVC insulated, copper conductor for earthing.	Metre	265			
5.11		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	76			
5.12		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	158			
5.13		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	50			
5.14		Supply, Installation, Testing & Commisioning 63 Amps, TPN MCCB in a sheet steel enclosure,extended rotary operating mechanism complete with all accessories as required.	Each	2			

5.15	Supply, Installation, Testing & Commisioning 125 Amps, TPN MCCB in a sheet steel enclosure,extended rotary operating mechanism complete with all accessories as required.	Each	0			
5.16	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	55			
5.17	Supplying, providing & fixing cordless musical bell, battries etc of approved make complete as required.	Each	10			
TOTAL SUBHEAD: 5- WIRING						
SUB HEAD: 6 - LIGHT FIXTURE AND FANS						
6.00	LIGHT FIXTURES AND FANS					
6.01	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 28 W EBT or approved equivalent) (136b/136bw)	Each	169			
ii	2X28 watt box type flourescent light fixture with reflector (Philips; TMS 122M2XTL528 W EBT or approved equivalent) (236b)	Each	50			
iii	1X 36 watt surface mounted luminare suitable for 36 watt TLD lamps with clear acrylic diffuser (GE : GETC1X36 AC S HF or approved equivalent). 136CAC	Each	20			
iv	1X36watt surface mounted flourescent light fixture (Philips TCS; 306 1XTLD 36W EBE or approved equivalent) 136smo1	Each	72			

v	1X36watt recess mounted flourescent light fixture (Philips TBS 0501XTLD36 W EBE MI or approved equivalent) 136RMO1	Each	30			
vi	2X 36 watt recess mounted mirror optics flourscent light fixture (Philips TBS 050 2XTLD 36W EBE MI or approved equivalent). (236RMO1/236 RMO2)	Each	116			
vii	2 X TL 5 28 watt surface mounted flourescent light fixture (Philips TCS 306 2XTL5 28W EBP or approved equivalent) 236SMO1/236SMO2	Each	25			
viii	2X TL5 28 watt surface mounted flourescent light fixture (Philips TCS 350 2XTL5 28W EBE C5 or approved equivalent) (236SMO3/236 SMSQ1) .	Each	150			
ix	3X 36 watt recess mounted mirror optics flourscent light fixture (Philips FBS 300M 3XPLL36W EBP P5 or approved equivalent). (336 RMSQ1)	Each	216			
6.02	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	10			
ii	2X18 watt recessed downlight fixture with CFL lamp (Philips FBH 145 M 2XPLC/4P 18W EBW 240 V or approved equivalent) opd	Each	15			
iii	2X26 watt surface mounted downlight fixture with CFL lamp (Crompton greaves DWL226EBRGR or approved equivalent) opd	Each	12			

	iv	2X13 watt surfac mounted downlight fixture with CFL lamp (GE CFL C2X13 DN FGS (Lento)or approved equivalent) DL1/DL2	Each	28			
	v	2 X 11 watt surface mounted mirror optics (Philips FCS 031 2XPLS/2P11W I 240 VOR EQUIVALENT) (211CFLRECT)	Each	60			
	vi	3X11 watt Tornado Mirror top light fixture (Decon 62YU 01 or approved equivalent) (w toilet)	Each	45			
	vii	Surface mounted Batten holder (Plastic) with 13 watt CFL	Each	10			
6.03		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	30			
	ii	1200 mm sweep	Each	186			
6.04		Supply of 900 RPM, 300 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	29			
6.05		Supply of 900 RPM, 450 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	2			

6.06	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	10			
6.07	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	632			
6.08	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	180			
6.09	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	216			
6.10	Installation, testing and commossioning 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	29			
6.11	Installation, testing and commissioning of wall mounted fan up to 450 mm sweep including supply and fixing wall bracket arrangement complete as required.	Each	10			

		TOTAL SUBHEAD 6 : LIGHT FIXTURE & FANS					
		SUB HEAD 7 : TELEPHONE SYSTEM					
7.00		TELEPHONE SYSTEM					
7.01		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	62			
	ii	2 pair cord outlet (Jack Type)	point	10			
7.02		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	100 Pair	Each	1			
	ii	20 Pair	Each	3			
7.03		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	20 Pair	Metre	50			
	ii	10 Pair	Metre	20			

7.04	EPABX					
	i) Supply, installation testing and commissioning of IP ready digital EPABX system having 16 trunk lines (P&T Lines), 8 digital extensions and 96 analog extensions expandable upto 240 ports including software & UPS of suitable capacity for four hour back-up with SMF batteries as approved by engineer incharge complete as per technical specifications & as required. Model as approved by Engieer incharge out of approved makes	Set	1			
	ii) Supply, installation, testing and commissioning of Main Distribution Frame (MDF) crone type for above EPABX with box as per technical specifications and as required.	Set	1			
	iii) Supply, installation, testing and commissioning of analog push button type telephone instrument having hold-on and tone/pulse switch facility suitable for the connection with the above EPABX system complete as per technical specification and as required : Model as approved by Engieer incharge out of approved makes	Set	90			
	v) Supply, installation, testing and commissioning of digital phone sets (KTS) with 3*24 line display, 24 storage keys and speaker suitable for the connection with the above EPABX system complete as per technical specification and as required : Model as approved by Engieer incharge out of approved makes	Set	8			
	TOTAL : SUB HEAD 7:TELEPHONE SYSTEM					
	SUB HEAD 8:CONDUITING FOR COMPUTER SYSTEM .					
8.00	CONDUITING FOR COMPUTER SYSTEM .					

8.01		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	1100		
	ii	25 mm dia	Metre	275		
8.02		Supplying and fixing two module modular plate (suitable for RJ-45 computer socket) with GI box complete as required.	Each	55		
		TOTAL SUB HEAD: 8 CONDUITING FOR COMPUTER SYSTEM				
		SUB HEAD 9: CONDUITING FOR TV OUTLETS				
9.00		CONDUITING FOR TV OUTLETS				
9.01		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	120		
	ii	25 mm dia	Metre	24		
9.02		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	12		
9.03		Supply and drawing Coaxial TV Cable RG - 6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and potected with PVC sheath in the existing surface/ recessed steel/ PVC coduit as required.	Metre	50		
		TOTAL SUB HEAD 9: CONDUITING FOR TV OUTLETS				

		SUBHEAD 10 : UPS SYSTEM					
10.00		UPS SYSTEM					
		UPS of 20 KVA.					
10.01	i)	Supply of 20 KVA True Online double conversion and fully Microprocessor Controlled UPS system with IGBT based Rectifier with minimum input pf 0.95 , with minimum 94% overall efficiency, THDI less than 5% on non linear loads including accessories and suitable Power Management software including IGBT/PWM technology based inverter, automatic bi - directional static switch, manual bypass switch, input phase reversal protection, provision for separate input for rectifier and for bypass. UPS should be with 3 phase input & 3 phase out put.					
	ii)	Rack mounted external battery bank of 12 V Sealed Maintenance Free batteries for 30 Min backup.					
	ii)	Installation & commisioning of 20 KVA UPS with battery and accessories.					
		Supply, installation , testing and commissioning of 20 KVA UPS as mentioned above.	Set	1			
		TOTAL SUBHEAD 10 : UPS SYSTEM					
11.00		SUB HEAD : 11 PUBLIC ADDRESS SYSTEM					
		PA SYSTEM :					
11.01		Supply, installation, testing and commissioning of master announcement along with Amplifier console minimum of suitable wattage duly wired with terminal strip etc complete with housing, including the following main components and as required. (Contractor has to design and submit the details of PA equipment as per the requirement of this block for approval)					
	-	1 Mic & 1 Aux Inputs, with individual volume control & Aux inputs jacks at one point at ground floor.					

	-	CD Player with 3 CD changer, with auto/ manual programming					
	-	Terminals & patch cables					
	-	Any other item required for proper working of PA system including racks for mounting PA system					
		PA SYSTEM as mentioned above:	Set	1			
11.02		Supply and fixing of following sizes of steel 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 conduit as recessed required					
	i)	20 mm dia	Metre	750			
11.03		Supply and drawing twin twisted 32/0.2mm PVC insulated copper conductor speaker wire in existing conduit including earth wire complete as required (for speakers). This includes wiring for the amplifier as well.	Metre	800			
11.04		Supply and installation of metal enclosed 6 watt false ceiling mounted speaker with adjustable volume to cover all areas of floor, to be mouted in corridors complete as required .	Each	50			
		TOTAL FOR SUBHEAD 11.00 PUBLIC ADDRESS SYSTEM.					
		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	4996			

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	258		
	ii	Heat Detector	Each	2		
	iii	Manual Break Glass Unit in MS enclosure	Each	12		
	iv	Fire Alarm Bell / Hooter of suitable range to cover the complete floor, in MS enclosure.	Each	12		
	v	Response indicator	Each	52		
12.03	Supply, Installation, testing and commissioning of 4 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		
12.04	Supply testing and commissioning of isolator module as per specifications.		Set	17		
12.05	Supply, Installation, testing and commissioning of addressable control modules.		Each	10		
12.06	Supply, Installation, testing and commissioning of addressable monitor modules.		Each	2		
12.07	Supply, Installation, testing and commissioning of flow switch		Each	1		

12.08	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	500			
12.09	Supply, installation, testing and commissioning of 12 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			
12.10	Supply, installation, testing and commissioning talkback unit with telephone handset in 16 SWG red body housing with locking protection.	Each	12			
	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	8			
13.02	Extra for using charcoal and salt for GI or copper plate earth electrode as required.	Set	8			
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	16			

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	214			
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	120			
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	8			
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	120			
TOTAL SUB HEAD 13: LIGHTENING PROTECTION						
SUB HEAD 14 : LIFTS						
14.01	Design, manufacture, supply, installation, testing and commissioning of following 26 passenger (1768 kg) lift , serving different floors in the lift shaft including lift well pressurization. The lift should be as per detailed specification/ drawing enclosed as required and as under:					
	- Speed : 0.5 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 with / without attendant.					
	- 415 V, 3 phase, 50 Hz, 4 wire system					

	-	Type of doors: a) Car : Power operated, telescopic opening for hospital lift horizontal sliding stainless steel scratch proof. (b) Landing doors: Stainless steel scratch proof.					
	-	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.					
		Following 26 Passenger Lift serving following floors , stops & openings as mentioned below:					
	i	Floors : G+3 (Total four floors) , 4 stops & 4 openings	Each	2			
		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	50			
	ii	3.5 Core 35 Sqmm.	Metre	10			
	iii	3.5 Core 50 Sqmm.	Metre	10			
	iv	3.5 Core 70 Sqmm.	Metre	50			
	v	3.5 Core 95 Sqmm.	Metre	10			
	vi	3.5 Core 120 Sqmm.	Metre	5			
	vii	3.5 Core 185 Sqmm.	Metre	50			
	viii	3.5 Core 300 Sqmm.	Metre	1806			

	ix	3 Core 4 Sq mm	Metre	10			
	x	4 Core 16 Sq mm	Metre	50			
	xi	2 Core 10 Sq mm	Metre	1000			
	xii	2 Core 16 Sq mm	Metre	100			
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	300			
	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	1806			
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	100			
	ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	Metre	150			
	iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	Metre	200			
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	20			
	ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	Metre	25			
	iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	Metre	35			
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	2			
	ii	3.5 Core 35 Sqmm.	Each	2			
	iii	3.5 Core 50 Sqmm.	Each	2			
	iv	3.5 Core 70 Sqmm.	Each	2			

	v	3.5 Core 95 Sqmm.	Each	2		
	vi	3.5 Core 120 Sqmm.	Each	2		
	vii	3.5 Core 185 Sqmm.	Each	2		
	viii	3.5 Core 300 Sqmm.	Each	6		
	ix	3 Core 4 Sq mm	Each	10		
	x	4 Core 16 Sq mm	Each	2		
	xi	2 Core 10 Sq mm	Each	10		
	xii	2 Core 16 Sq mm	Each	10		
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	100		
	ii	300 mm. width x 62.5 mm. depth x 2.0 mm. thickness	Metre	20		
	iii	450 mm. width x 62.6 mm. depth x 2.0 mm. thickness	Metre	50		
	iv	600 mm. width x 62.6 mm. depth x 2.0 mm. thickness	Metre	50		
		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	8		

16.03	Extra for using charcoal and salt for GI or copper plate earth electrode as required.	Set	14			
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	1			
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	1			
16.06	Supplying and laying 25mmX5mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	100			
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	15			
16.08	Providing and fixing 25mmx5mm G.I. strip in 40mm dia G.I. pipe from earth electrode as required.	Metre	5			
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	100			
16.10	Supplying and laying 25mmX5mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	30			
16.11	Providing and fixing 25mmx5mm copper strip in 40mm dia G.I. pipe from earth electrode as required.	Metre	20			

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	120		
	ii	300mm dia	Metre	150		
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	30		
16.15	Supplying and laying of 12kV grade 1 metre wide anti skid chequered type rubber mat.		Metre	10		
16.16	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	4		
16.17	Supplying and fixing CO2 type 4.5 Kg capacity fire extinguishers as approved by ISI complete as required.		Set	10		
16.18	Supplying and fixing CO2 type 9 Kg capacity trolley mounted fire extinguishers as approved by ISI complete as required.		Set	8		
16.19	Supplying and fixing Foam type 9 ltrs capacity fire extinguishers as approved by ISI complete as required.		Set	2		
16.20	Supplying and fixing Foam type 50 ltrs capacity fire extinguishers trolley mounted as approved by ISI complete as required.		Set	0		

16.21	Supplying, storing, handling and fixing in position First Aid Medical Box complete as per technical specifications as required.	Each	1			
16.22	Supply and testing of 11kV ISI marked hand gloves	Set	1			
16.23	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			
	100 mm dia nominal bore	Metre	100			
	TOTAL SUB HEAD 16: EARTHING, SAFETY EQUIPMENT AND MISC. ITEMS					
	GRAND TOTAL FOR ALL ELECTRICAL WORKS					

BILL OF QUANTITIES (HVAC WORKS), OPD Block

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL Quantity 3	UNIT 4	RATE IN FIGURES (in RS) 5	RATE IN WORDS (in RS) 6	AMOUNT (Rs.) 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						
<u>Sub Head -A, Equipments</u>						
1.0	Supplying, installation, testing and commissioning of 5 TR, programmable microprocessor based, Air-cooled Package Type DX units complete with condensing unit, scroll compressor, air-cooled condenser with fan and evaporator,interconnecting refrigerant piping with indoor and outdoor units,pre charge refrigerant necessary insulation. Microprocessor Based Control Panel should be capable for Heating, Cooling & Humidification controls and interlocking with control wiring etc. complete with following and as per specifications and requirement.	2	Nos.			
Indoor Unit-for OPD Minor OT at Gf and Third Floor						
	a) Fan Section and canvass connection (Double Skin Type)					
	b) Centrifugal Blower with Capacity of 1600 CFM and 125mm Static Pressure.					
	c) Cooling Coil Section/s with 5 TR cooling coil/s as per specifications.					
	d) Pre Filter with filter section as required.					
	e) Drain Pan and Drain Connection.					
	f) Drive motor, Drive arrangement guard etc.					
	g) Necessary vibration isolator and supporting arrangements.					
	h) Fresh air intake arrangement, necessary water drain and air purge valve wherever required etc.					
	i) Canvass connection ,necessary foundations,2 nos pressure gauge,2nos thermometer etc					
	j) double skin section for housing fine, microvee and Hepa filters as required complete as per specifications					

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL Quantity 3	UNIT 4	RATE IN FIGURES (in RS) 5	RATE IN WORDS (in RS) 6	AMOUNT (Rs.) 7
	Outdoor Unit for above					
	Suitable Air Cooled Type Condenser with Aluminium Fins & Copper Tube Coils for above indoor unit.					
	b) Scroll Type Hermetically sealed Compressor.					
	c) Suitable condenser fans for the condensing unit.					
	d) necessary hard drawn copper refrigerant piping per circuit with kinnifoam insulation along with clamps, supports, fittings such as bends, tees, reducers etc complete as per specifications and requirement.					
2.0	Supplying, installation, testing and commissioning of Pan Type Humidifier made from minimum 2mm thick stainless steel sheet top closed and insulated with 50mm thick expanded polystyrene (T.F. Quality) complete with incoming MCB, humidistat and control wiring for OTs.					
2.1	Capacity 6.0 KW	2	nos.			
3.0	WINTER/MONSOON HEATING ARRANGEMENT FOR OT AHUs					
	Supply, installation, testing & commissioning of winter/monsoon heating/reheating arrangements fixed in ducts/ plenums complete with strip heaters, fixing frame work, insulators, fire protection insulation in duct, controls such as heating thermostats, humidistats etc. The heaters banks shall be controlled by independent thermostats/ humidistats through electro magnetic type contactors and safety thermostats/ geysersstats as specified complete with wiring for interconnections with 1.5 sq.mm copper conductor multi core armoured cable. The heater capacity shall be as per schedule of equipment and specifications, drawing etc.					
3.1	1KW x 2 banks	2	nos.			
3.2	1.5 KW x 2 banks	2	nos.			

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL Quantity 3	UNIT 4	RATE IN FIGURES (in RS) 5	RATE IN WORDS (in RS) 6	AMOUNT (Rs.) 7
4.0	SPLIT AIR CONDITIONERS					
	Supply , installation , testing and commisioning of HI wall split air conditioner comprising of the following.					
	a) Outdoor condensing Units					
	b) Indoor Evaporative Units					
	c) Interconnecting Refrigerant and drain piping with insulation wherever required, refrigerant and oil. The unit shall include refrigerant piping, power cabling and drain piping.					
	c) Safety and operational controls					
	e) Hiwall splits shall be suitable for single phase power supply and complete with voltage stablizer.					
	f) Mounting arrangement and structural supports for outdoor unit are included.					
	g) The units should have atleast 3 star rating from BEE.					
4.1	Capacity : 1.5 TR	4	Nos.			
4.2	Capacity : 2 TR	2	Nos.			
5.0	Window Air Conditioner					
	Supply , installation , testing and commisioning of Window Acs complete with transformer, electrical cabling as required along with mounting arrangement,Voltage stablizer.Complete in all respect as per specifications. The units should have 3 star rating from BEE.					
	Capacity					
5.1	1.5 TR	2	Nos.			
5.2	2.0 TR	1	Nos.			

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL Quantity 3	UNIT 4	RATE IN FIGURES (in RS) 5	RATE IN WORDS (in RS) 6	AMOUNT (Rs.) 7
6.0	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:					
6.1	150 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	24	Nos			
6.2	225 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	8	Nos			
7.0	Axial Flow fans					
	Supply, installation, testing and commissioning 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.					
7.1	Duty: Lift well pressurisation Air Quantity : 3000 CFM, Static Pressure : 20 mm wg	2	Nos.			
7.2	Duty: Lift Lobby pressurisation Air Quantity : 3500 CFM, Static Pressure : 20 mm wg	1	Nos.			

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL Quantity 3	UNIT 4	RATE IN FIGURES (in RS) 5	RATE IN WORDS (in RS) 6	AMOUNT (Rs.) 7
	<u>Sub Head- B, Air Distribution</u>					
8.0	DUCTING					
8.1	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. complete as per specifications & drawings:					
8.1.1	1.25 mm (18 G) GSS	15	Sqm			
8.1.2	1.0 mm (20 G) GSS	15	Sqm			
8.1.3	0.80 mm (22 G) GSS	20	Sqm			
8.1.4	0.63 mm (24 G) GSS	20	Sqm			
8.2	ALUMINIUM DUCTING					
	Supply, fabrication, installation and testing of aluminium ducts in accordance with the approved shop floor drawing and specifications. Material should confirm to IS 737 latest edition.					
8.2.1	22 gauge	80	Sqm.			
8.2.2	20 gauge	50	Sqm.			
8.2.3	18 gauge	40	Sqm			

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL Quantity 3	UNIT 4	RATE IN FIGURES (in RS) 5	RATE IN WORDS (in RS) 6	AMOUNT (Rs.) 7
9.0	FIRE DAMPERS					
9.1	Supply, installation, testing and commissioning of fire dampers made out of GI sheet of at least 90 minutes fire rating complete with GI damper of required size, links, fusible links etc as per specifications and shop drawings.	2	Sqm			
10.0	CEILING DIFFUSERS					
10.1	Supply, Installation, testing and balancing of square/circular supply air diffusers of powder coated extruded aluminium construction with attached volume control dampers as per specs. and drawings.	2	Sqm			
10.2	Supply, installation, testing and balancing of square/circular return air diffusers of powder coated extruded aluminium construction without volume control dampers.	2	Sqm			
10.3	VOLUME CONTROL DAMPERS					
	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.	2	Sqm			
10.4	LAMINAR FLOW DIFFUSERS					
	Providing & fixing of stainless steel plenum duly reinforced and made 100% air tight complete with 55% free perforated grilles(18 Gauge SS) at bottom for laminar flow in OTs. The plenum shall be insulated with 15 mm closed cell polyethylene insulation & shall be manufactured & installed by specialised agency as per designed to be approved by customer/Consultant.					
	Size: 600 x 900	16	Nos			

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL Quantity 3	UNIT 4	RATE IN FIGURES (in RS) 5	RATE IN WORDS (in RS) 6	AMOUNT (Rs.) 7
11.0	GRILLES					
11.1	Supply, installation, testing and balancing of supply/return air grilles with/without volume control dampers of powder coated extruded aluminium construction suitable for installation in walls, false ceiling boxing etc as per specifications and drawings.					
11.1.1	Supply air grilles in single louvers with volume control dampers.	1	Sqm			
11.1.2	Return air grilles in single louvers without volume control dampers.	1	Sqm			
12.0	DUCTING INSULATION					
	Supply and fixing of 15 mm thick foil faced FR Closed Cell Chemically Crossed Linked Polyethylene Foam insulation for supply air ducting as per the specifications and approved shop drawing.	150	Sqm			

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL Quantity 3	UNIT 4	RATE IN FIGURES (in RS) 5	RATE IN WORDS (in RS) 6	AMOUNT (Rs.) 7
	<u>Sub Head - C, Electrical</u>					
13.0	AHU MAIN DISTRIBUTION PANEL (OT area)					
	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 alley 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.					
13.1	AHU PANEL					
	INCOMER					
	1 no. 100 A, 415/500 V, TPN-FSU					
	1 set indication lamps with control fuses.					
	1 no. (0-500V) voltmeter with selector switch.					
	1 no. (0-125 A) ammeter with selector switch with CT's					
	BUSBARS :					

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL Quantity 3	UNIT 4	RATE IN FIGURES (in RS) 5	RATE IN WORDS (in RS) 6	AMOUNT (Rs.) 7
	150 A TPN Aluminium bus bar 415V , 50 Hz.					
	OUTGOING					
	1 set 63 A, 415 V TPN-FSU with HRC fuses of suitable rating , ON-OFF indication lamps, for 5 TR AC units and associated panels.					
	1 set-32 A, 415 V TPN-FSU with HRC fuses of suitable rating ,contactor of suitable rating, ON-OFF-TRIP indication lamps, for heater banks					
	1 set-32 A, 415 V TPN-FSU with HRC fuses of suitable rating ,contactor of suitable rating, ON-OFF-TRIP indication lamps, for humidifiers for OT.					
	1 set - 16 A, 415 V TPN-FSU with HRC fuses of suitable rating, single phase preventor, 3.0 HP suitable starters for motor with thermal overload protection and spare NO-NC contacts for interlocking, ON-OFF indication lamps with push button for motor as required.					
	1 sets 63 A , 415 V TPN-FSU as spares.					
	1 sets 32 A , 415 V TPN-FSU as spares.					
	Complete as above	2	set			
13.2	FAN STARTER PANEL					
	OUTGOING :					
	1 No. 16 Amps MCCB 10 KA for 1/ 0.5 HP Motor with suitable 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 axial fan motor as required.	3	Nos.			

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL Quantity 3	UNIT 4	RATE IN FIGURES (in RS) 5	RATE IN WORDS (in RS) 6	AMOUNT (Rs.) 7
14.0	CABLING					
	Supplying, laying, effecting proper connections, testing & commissioning of following size of 1.1 kv PVC insulated aluminium conducting armoured cables along with necessary cable tray as per IS 1554 Part- 1 laid on surface of wall/ceiling etc. & termination with brass compression glands as required.					
14.1	4 C X4 sq. mm. Cable	50	Rmt			
14.2	4 C X6 sq. mm. Cable	30	Rmt			
14.3	4 C X10 sq. mm. Cable	20	Rmt			
14.4	4 C X16 sq. mm. Cable	20	Rmt			
14.5	3.5 X50 sq.mm Cable	50	Rmt			
15.0	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					
15.1	150 mm widthx50 mm deep x1.6 mmthickness	25	Rmt			
15.2	100 mm widthx50 mm deep x1.6 mmthickness	15	Rmt			

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL Quantity 3	UNIT 4	RATE IN FIGURES (in RS) 5	RATE IN WORDS (in RS) 6	AMOUNT (Rs.) 7
16.0	EARTHING					
16.1	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	1	Set			
16.2	Providing and fixing GI earth strip on walls/ trenches complete as per specifications and as required.					
	25mm x 3mm	25	Rmt			
17.0	Providing and fixing earth wire of complete as per specifications as required.					
17.1	6 SWG wire	20	Rmt			
17.2	8 SWG wire	50	Rmt			
	TOTAL					