

**MINISTRY OF HEALTH & FAMILY WELFARE
(GOVT OF INDIA)
LOKPRIYA GOPINATH BARDLOI, REGIONAL
INSTITUTE OF MENTAL HEALTH (LGBRIMH)
TEZPUR, ASSAM- 784001**

TENDER

FOR

**PACKAGE-I : Construction of Hospital Buildings
including PHE, Electrical, HVAC, Fire fighting &
Other Internal & External Services in (LGBRIMH),
Tezpur, Assam**

VOLUME - V

BILL OF QUANTITY

JULY' 2012



(Consultants & Engineers for Mega Hospitals & Laboratories)
E - 6 (A), Sector - I, NOIDA (U.P.) - 201 301 (INDIA)

PHONE : 91-2542436, 2542440 FAX : 91-11-91-254244791-2542443,
2542445 E- mail : HSCC www.hsccltd.co.in

E-mail: LGBRIMH: www.lgbrimh.org

Tender No HSCC/163/PM/PG-1/ LGBRIMH/2012

Name of Work: PACKAGE-I : Construction of Hospital Buildings with associated services for Lokpriya Gopinath Bardoloi, Regional Institute of Mental Health (LGBRIMH) Post Box NO.15, Tezpur, Assam-784001.

SUMMARY OF QUOTED PRICE

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

**Project Name: Construction of Hospital Building in LGBRIMH Campus,
Tezpur, Assam.**

ABSTRACT OF COST (CIVIL WORK)

S.No	DESCRIPTION OF WORK		Amount
	PART A		
1	EARTHWORK	Rs	
2	CONCRTE WORK	Rs	
3	RCC WORK	Rs	
4	BRICK WORK	Rs	
5	DOORS & WINDOWS	Rs	
6	STEEL WORK	Rs	
7	FLOORING	Rs	
8	CEILING & ROOFING	Rs	
9	FINISHING	Rs	
10	Road Work and Development	Rs	
11	SIGNAGES	Rs	
	TOTAL	Rs	
	PART B		
	Credit for demolition and disposal by sale	Rs	
	Net Amount (Part A- Part B)	Rs	

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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	10033.00	cum			
b)	Ordinary rock	3345.00	cum			
c)	Hard rock (blasting prohibited)	3345.00	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.	126.00	cum			
b)	Ordinary rock	42.00	cum			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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)	Hard rock (blasting prohibited)	42.00	cum			
1.03	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.	18202.00	cum			
1.04	Extra for every additional lift of 1.5 m or part there of in.					
a)	All kinds of soil.	2100.00	cum			
1.05	Supplying and filling in plinth with river sand under floors including, watering. ramming consolidating and dressing complete.	1253.00	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	6300.00	CUM			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
1.07	Supplying and stacking of good earth at site including royalty and carriage up to 1 km (earth measured in stacks will be reduced by 20% for payment).	8169.00	CUM			
1.08	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	210.00	100sqm			
1.09	Felling trees of the girth (measured at a height of 1 m above ground level) including cutting of trunks and branches removing the roots and stacking of serviceable material and disposal of unserviceable material.					
a)	Beyond 30 cm girth upto and including 60 cm girth	11.00	Each			
b)	Beyond 60 cm girth upto and including 120 cm girth	6.00	Each			
c)	Beyond 120 cm girth upto and including 240 cm girth	6.00	Each			
d)	Above 240 cm girth	6.00	Each			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
1.10	Supplying chemical emulsion in sealed containers including delivery as specified. Chlorpyriphos/ Lindane emulsifiable concentrate of 20%	1050.00	Ltr			
1.11	Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) :					
a)	Along external wall where the apron is not provided using chemical emulsion @ 7.5 litres / sqm of the vertical surface of the substructure to a depth of 300 mm including excavation channel along the wall & rodding etc. complete:					
i)	With Chlorpyriphos/ Lindane E.C. 20% with 1% concentration.	2625.00	Sqm			
	Total					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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)	51.00	cum			
b)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	648.00	cum			
c)	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	1352.00	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)	33.00	cum			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
2.03	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).	315.00	sqm			
2.04	Extra for providing and mixing water proofing material in CC/RCC work @ 1 kg per 50kg of cement.	105.00	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.	315.00	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.	350.00	Cum			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
2.07	Making plinth protection 50 mm thick of cement concrete 1:3:6 (1: cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size) over 75 mm bed of dry brick ballast 40 mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.	1391.00	sqm			
	Total					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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 mixed cement concrete of specified grade for reinforced cement concrete including pumping of concrete 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. Note: The contractor shall install a concrete pump alongwith pipe, fittings etc for this work suitable for pumping of concrete up to terrace/mumty roof level, for which nothing extra is payable.	19575.00	cum			
3.02	Add or deduct for providing richer or leaner mixes respectively at all floor levels.					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
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..	2500.00	cum			
3.03	Centering and shuttering including strutting, propping etc. and removal of form for:					
a)	Foundations, footings, bases of columns, etc. for mass concrete.	3411.00	sqm			
b)	Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	6064.00	sqm			
c)	Suspended floors, roofs, landings, balconies and access platform.	29942.00	sqm			
d)	Shelves (Cast in situ)	182.00	sqm			
e)	lintels, beams, plinth beams. girders. bressumers and cantilevers.	32637.00	sqm			
f)	Columns, Pillars, Piers, Abutments, Posts and Struts.	14641.00	sqm			
g)	Stairs, (excluding landings) except spiral-staircases	1546.00	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.	3242.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
	i) Edges of slabs and breaks in floors and walls. Under					
	i) 20 cm wide	210.00	metre			
	ii) Above 20 cm wide	53.00	sqm			
	J) Extra for shuttering in circular work for					
	i) columns	285.00	Sqm			
	ii) Beams	23.00	sqm			
3.04	Extra for additional height in centering, shuttering wherever required with adequate bracing, propping etc. including cost of decshuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured)					
a)	Suspended floors, roofs, landings, beams and balconies (Plan area to be measured).	29942.00	sqm			
3.05	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.					
a)	Thermo-Mechanically Treated bars	2846329.00	Kg			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
3.06	Deduct for using less cement than the quantity as provided in the item of batch mix concrete/RMC as arrived as per mix design.	158.00	Qtl			
3.07	Providing and fixing machine moulded aluminium covering of approved pattern & design, made out of machine cut aluminium sheet and machine holed for receiving screws, over expansion joints on vertical surfaces/ceilings with full threaded, cadmium plated steel screws 4mm dia. stem, 30mm long and aluminium washers 2mm thick, 15mm dia. at a staggered pitch of 200mm centre to centre including drilling holes in the receiving surface and providing expandable plastic sleeves in holes etc. complete.					
a)	Powder coated aluminium sheet 2.5mm thick (minimum thickness of powder coating 50 micron)	258.00	kg			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
3.08	Providing and filling in position bitumen mix filler of Proportion 80 kg. of hot bitumen, 1 kg. of cement and 0.25 cubicmetre of coarse sand for expansion joints.	185.00	per cm depth per cm width per 100m			
3.09	Providing and fixing in position 12mm thick bitumen impregnated fibre board conforming to IS: 1838 including cost of primer, sealing compound in expansion joints.	2771.00	per cm depth per 100m			
Total						

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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)	2387.00	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)	11258.00	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)	98.00	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)	27160.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
4.05	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).	27160.00	sqm			
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)	1530.00	Metre			
Total						

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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 PARTITIONS					
5.01	Providing and fixing pressed steel door frames confirming to IS: 4351 manufactured from commercial mild steel sheet of 1.25 mm thickness including hinges jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25mm, or base ties of 1.25mm pressed mild steel welded or rigidly fixed together by mechanical means, adjustable lugs with split end tail to each jamb including steel butt hinges 2.5mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge:					
a)	Profile B	2395.00	metre			
b)	Profile C	1597.00	metre			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
5.02	Providing and fixing aluminium work for doors, windows, ventilators, partitions and louvers with extruded built up standard tubular <i>sections</i> / appropriate Z sections/ sheet strips and other modular sections of approved make conforming to IS: 733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to be paid for separately) :					
a)	For fixed portion					
i)	Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	28992.00	kg			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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)	For shutters of doors, windows & ventilators including providing and fixing hinges/pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required (Fittings shall be paid for separately).					
i)	Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	14072.00	kg			
5.03	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.	4251.00	kg			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
5.04	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item) :					
a)	With float glass panes of 5.50 mm thickness	2816.00	sqm			
5.05	Providing and fixing powder coated aluminium grills made out with special extruded sections fixed with suitable means approved and as directed by Engineer in Charge including all complete.					
		9381.00	kg			
5.06	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS : 6315 marked, for doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge.					
a)	With brass cover plate	9.00	each			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
5.07	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.	2498.00	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. 9.20 and 9.21.	2498.00	sqm			
5.09	Extra of providing vision panal not exceding 0.1sqm in all type of flush doors. (Cost of glass excluded). Over all area of doors shutters to be measured.					
a)	Rectalgular of square	1250.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
5.10	Extra for providing frosted glass panes 4 mm thick instead of ordinary float glass panes 4 mm thick in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	282.00	sqm			
5.11	Providing glass panes, with wooden fillets wherever necessary.					
a)	4 mm thick Glass panes weighing 10 kg./sqm.	105.00	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)	95.00	sqm			
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					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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)	1.0 mm thick.	4996.00	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.					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

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
	The shutter is suitable for mounted on the door frame, as per the item given below.. Both frame and shutter shall be fitted with fire & smoke intumescent seal of Viper or equivalent make of size 20 x 4mm on all the three sides except bottom. The pasting of the ply/veneer/laminate should be done using automatic machine and should be free from any nails or perforations. The board shall be Resistant to vermin, mould growth, minor impact, abrasion and short term water attack. The shutter shall be fixed with the frame with the help of SS 304 grade ball bearing hinges of size 100x76x2mm with necessary screws and making cut out for vision panel. Provisions/reinforcement for fixing all fixtures shall be built in on the door prior to the supply.					
a)	Single/Double Shutter	175.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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 881 or 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.	315.00	Metre			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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 Briton IR make IVES coordination with model no. COR 52 US 28X FL32/ Superbright make UL 600 or approved equivalent Make) for coordination of double leaf doors, with minimum one year warrantee.	53.00	Each			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
5.18	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	5.00	sqm			
	ALUMINIUM FITTINGS					
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.	1075.00	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	215.00	each			
b)	250x16 mm	860.00	each			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
5.21	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	2149.00	each			
b)	150x10 mm	8671.00	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	2711.00	each			
b)	100 mm	3799.00	each			
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	1356.00	each			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
5.24	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).	1075.00	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	7235.00	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.	17.00	each			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
5.27	Providing and fixing 100mm brass locks (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	5.00	each			
5.28	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	17.00	each			
5.29	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	53.00	Each			
5.30	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.	53.00	Each			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
5.31	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.	53.00	Each			
5.32	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.	105.00	Each			
Total						

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

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
Bill of Quantity (Civil work)						
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.	1050.00	kg			
b)	Fixed to brick wall openings /wooden frames with rawl plugs, screws etc.	1050.00	Kg			
6.02	Extra for powder coating over M.S. Grills, Stair case railing, balcony railing etc.	2100.00	kg			
6.03	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete:	20213.00	kg			
6.04	Steel work welded in built up sections/ framed work including cutting ,hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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)	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	2100.00	Kg			
6.05	Providing and fixing railing of approved size by welding etc. to parapet railing, balcony railing and staircase railing including applying a priming coat of approved steel primer.					
a)	M.S. tube.	9499.00	Kg			
b)	M.S. sheet.	24868.00	Kg			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
6.06	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	13467.00	Kg			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
6.07	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including the cost of providing and fixing necessary 27.5cm long wire springs grade No.2 and M.S. top cover of required thickness for rolling shutters.					
a)	80x1.25mm M.S. laths with 1.25 mm thick top cover.	29.00	sqm			
6.08	Providing and fixing ball bearing for rolling shutters.	7.00	each			
6.09	Extra for providing grilled rolling shutters manufactured out of 8 mm dia. M.S. bar instead of laths as per design approved by Engineer-in-charge.(area of grill to be measured).	29.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
6.10	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2mm and braced with flat iron diagonals 20x5mm size with top and bottom rail of T-iron 40x40x6mm with 40mm dia, steel pulleys complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer.	53.00	sqm			
Total						

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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.	477.00	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.	63.00	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.	1050.00	Metre			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
7.04	Marble stone flooring with 18mm thick marble stone (sample of marble shall be approved by Engineer-in-charge) over 20 mm (average) thick base of cement mortar 1:4 (1 cement: 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing complete with:					
a)	Raj Nagar White	3929.00	sqm			
b)	Udaipur green marble	5250.00	sqm			
c)	Jaisalmer Stone	1091.00	sqm			
7.05	18mm thick Prepolished Granite (Base Rate 250/- Sqft) in Risers, skirting and dado (upto 90 cm height) 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.	105.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
7.06	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.	6556.00	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.					
		735.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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.	4515.00	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.	1733.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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 polished vitrified floor 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	5437.00	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					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
i	Area of slab upto 0.50 sqm	21.00	sqm			
ii	Area of slab over 0.50 sqm.	168.00	sqm			
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.	261.00	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.	261.00	Meter			
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.	131.00	each			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning etc. complete on 20 mm thick bed of cement mortar 1:4 (1 cement : 4 coarse sand).					
a)	Medium shade using 50% white cement 50% Grey cement.	1694.00	sqm			
7.16	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,caster 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	53.00	Sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
7.17	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) :					
a)	Medium shade using 50%white cement 50% ordinary cement	10292.00	Sqm			
7.18	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), 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.	1091.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
7.19	18mm thick Prepolished Granite (Base Rate 250/- Sqft) flooring in Treads, Landing,Risers and skirting (upto 30 cm height) 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.	1619.00	sqm			
7.20	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.	174.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
7.21	Crazy marble stone flooring including filling the gaps with light shade pigment with white cement marble powder mixture (3 parts of white cement : 1 part of marble powder) by weight in proportion of 4:7 (4 cement marble powder mix : 7 white, black or white and black marble chips of sizes from 1mm to 4mm nominal size by volume) and under layer 25mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) rubbing, polishing and cement slurry etc. complete :					
a)	18 mm thick crazy marble stone white, black or as specified.	2574.00	sqm			
	Total					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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, requiried, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke deterctors etc.exposed					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

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
	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 leve lclips spaced at 1200 m center to center along main T, bottom width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete at all heights as per specificaitons drawings and as directed by Engineer-in-Charge.Only Mineral Fibre false ceiling area will be measured for the purpose of payment.					
	The Mineral Fibre Ceiling shall either be precast (mulded) or wetted product and shall have NRC value of 0.5 (minimum) CAC 35-39, light reflection 84% (minium), fire rating class A as per ASTM E-84, suitable for 95% relatie humidity and also having Thermal Resistance "(R)" =0.33 sqm deg. C/W					
	The job to be carried out by reputed agency having sufficient similar work experience, and approved by the engineer in charge.	5129.00	Sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
8.02	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 havin□□□□□□□□□□□□□□□□□□□□□□□□□□□□					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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.	10590.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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 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.					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
	The whole work is to be done through reputed and approved vendor having experience in polycarbonate work in Commercial/Govt/Corporate buildings as per architectural elevation drawings including filling of joints with silicon sealent and also with masonry/RCC work, at all heights including double heights, straight or curved etc. complete in all respect. (Plan Area shall be measured for the payment) (Framing to be paid seprately)	1011.00	Sqm			
8.04	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed pprtions of W.C., kitchen and the like consisting of :					
i)	1st course of applying cement slurry @ 4.4 Kg/sqm mixed with water proofing compound conforming to 18 2645 in recommended proportions including rounding off junction of vertical and horizontal surface.					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
ii)	IInd course of 20mm cement plaster 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface.					
iii)	IIIrd course of applying blown or residual bitumen applied hot at 1.7 Kg. per sqm of area.					
iv)	IVth course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet Should be 100 mm wide and pasted to each other with bitumen @ 1:7 Kg/sqm.)	1903.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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 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					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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	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 :					
	With average thickness of 120mm and minimum thickness at khurra as 65 mm.	13540.00	sqm			
	Total					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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)	26747.00	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)	40121.00	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).	28152.00	sqm			
9.04	6 mm cement plaster of mix:					
a)	1:3 (1 cement: 3 fine sand)	25141.00	sqm			
9.05	Neat cement punning	525.00	sqm			
9.06	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers.	1575.00	of 50 kg cement used in			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
9.07	Extra for plastering exterior walls of height more than 10 m from .ground level for every additional height of. 3 m or part thereof.	12560.00	sqm			
9.08	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete	46004.00	Sqm			
9.09	Providing and applying ready made putty of approved quality in required layers and thickness over plastered surface to prepare the surface even and smooth complete	46004.00	Sqm			
9.10	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade					
a)	New work (two or more coats) over and including priming coat with cement primer.	29507.00	sqm			
9.11	Applying one coat of cement primer of approved brand and manufacture on wall surface:					
a)	Cement primer.	68847.00	sqm			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
9.12	Finishing walls with textured 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).	21537.00	sqm			
9.13	Finishing walls with Acrylic smooth 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.	2205.00	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.	10366.00	sqm			
9.15	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade:					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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	68847.00	sqm			
9.16	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.	4200.00	sqm			
Total						

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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	ROAD WORK & DOVELOPEMENT					
10.01	Preparation of sub grade by excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and disposal of surplus earth lead upto 50 Metres.	17325.00	SQM			
10.02	Supplying & stacking of graded stone aggregate at site of size range.					
a)	90 mm to 45 mm	2339.00	CuM			
b)	63 mm to 45 mm	2166.00	CuM			
c)	53 mm to 22.4 mm size stone aggregate.	2166.00	CuM			
d)	Stone screening 13.2 mm nominal size (Type A)	210.00	CuM			
e)	Stone screening 11.2 mm nominal size (Type B)	210.00	CuM			
f)	Moorum	210.00	CuM			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
10.03	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.	3465.00	Cum			
10.04	Providing & applying tack coat using hot straight run bitumen of grade 80/100 including heating the bitumen, spraying bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning & preparing existing road surface as per specifications					
a)	On W.B.M. @ 0.75 kg/SqM	17325.00	SQM			
b)	On bituminous surface @ 0.50 Kg/sqm.	5198.00	SQM			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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 Bitumen Penetration Macadam with hard stone aggregate of quality, size and grading as specified, with bitumen of suitable penetration grade including required key aggregate as specified, spreading coarse aggregate with the help of self propelled/ tipper tail mounted aggregate spreader and applying bitumen by a pressure distributor and then sprading key aggregate with the help of aggregate spreader complete including consolidation with road roller of minimum 8 to 10 tonne capacity to achieve specified values of compaction and surface accuracy.					
a)	For 50mm compacted thickness using coarse aggregate of size 50-20 mm graded @0.60CUM per 10 sqm key aggregate of size 12.5 mm graded @0.15 cum per 10 SqM With paving asphalt 80/100 @ 50 kg/10 SqM	17325.00	SQM			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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 seal coat of premixed fine aggregate (passing 2.36 mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade 80/100 bitumen per CuM of fine aggregate and 0.60 CuM of fine aggregate per 100 SqM of road surface including rolling and finishing with road roller all complete.	17325.00	SQM			
10.07	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).	525.00	Cum			
10.08	Providing and laying in position bitumen hot sealing compound for expansion joints etc					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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)	Using grade 'A' sealing compound.	1050.00	Per cm depth per cm width per m length			
10.09	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction and of approved size and design/ shape laid in required colour and pattern over and including 50mm thick compacted bed of course sand, filling the joints with coarse sand etc. all complete as per the direction of Engineer-in-charge.	2100.00	SqM			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
10.10	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).	139.00	Cum			
10.11	Supplying & stacking sludge or manure at site including royalty & carriage upto 1 km (sludge measured in stacks will be reduced by 8% for payment)	3150.00	Cum			
10.12	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).	3150.00	Cum			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
10.13	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).	3150.00	Cum			
10.14	Rough dressing the trenched ground including breaking colds & uprooting weeds from the trenched are after 10 to 15 days of its flooding with water (including disposal of uprooted vegetation)	31500.00	Sqm			
10.15	Supply & sprinkling of Neem cake (at the rate of 6 kg per 100 sq. metres) and fine dressing the ground.	31500.00	Sqm.			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
10.16	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.	31500.00	Sqm.			
10.17	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.	210.00	Each			
b)	Holes 60 cm dia, and 60 cm deep.	210.00	Each			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
10.18	Preparation of granular sub-base road pavement using local suitable granular soil , so as to achieve minimum field C.B.R. of 20 including mixing, rolling with road roller curing etc. all complete.	4200.00	cum			
Sub Total						

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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	SIGNAGES					
11.01	Providing and fixing sinages of varing sizes and shapes using stainless steel sheet of minimum 16g thickness brass finished including engraving / etching of letters of required size filled with colour as desired by the engineer, fixing with ss screws on walls.	10500.00	sqinch			
11.02	Providing and laying and making kerb channel 30cm wide and 50mm thick cement concrete 1:3:6 over 75mm bed of dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth etc. complete and as per direction of engineer in charge	630.00	mtr			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
11.03	Providing fabricating and fixing of signages of varying sizes and shapes using three mm thick PVC sheet at base with self adhesive coloured vinyl with graphicson top of glow tape complete including fixing on wall with screws and washers or hanging on ceiling with GI chain/GI Bar complete as per technical specifications and directions of Engineer.	21000.00	sq inch			
11.04	Providing and fixing of sinages of varying sizes and shapes using 12mm prelaminated MDF board of approved shade , colour and shape with allround lipping of anodised/powder coated aluminum section including hanging with aluminum/GI/MS with painting rods of minimum 10/12mm dia.or lipping with alround SS pipe of suitable dia and SS lipping welded with SS rod to hang it from the ceiling complete including lettering and pictogram on vinyle as per technical specifications and directions of Engineer.	420.00	sqft			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
11.05	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	4200.00	sqinch			
11.06	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.	945.00	sqft			
11.07	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.	3360.00	Kg			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
11.08	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.	231.00	sqft			
11.09	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 .	525.00	sq ft			
11.10	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.	525.00	sqft			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
11.11	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.	2100.00	sqinch of each letter			
11.12	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.	15750.00	sqinch			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
11.13	Providing. Fabricating and fixing of ACP alu minium 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 tubelight 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	1575.00	sq.ft.			
11.14	Providing, fabricating and fixing of frontlit signages with solvent printing on 13 oz hanwa/lg make flex printing on vutek/ sytec/ edgeprint etc with uv cure inks with minimum life of 1 year for non fading, stretched on 25mm sq m.s. pipe, with 28 guage 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 atleast 4ft protruding outside.	2100.00	sq.ft.			

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
11.15	Providing, fabricating and fixing digital posters inside the hospitals on 5mm sunboard 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	315.00	sq.ft.			
11.16	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 item 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.	2100.00	sq.inch			
SUB TOTAL						

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

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
	PART B: Demolition /Disposal by sale					
	Dismantling of existing buildings/ward and other structures comprising of concrete, RCC, brick work, flooring, finishes ,pavement, external services etc.including taking out all doors, windows and ventilators,roofing, electrical,water supply, sanitary installations, rain water pipe with all fittings and fixtures etc. complete . The job also include all excavations, fillings, levelling and stacking of all servicable material at desired location and including the cost of transportation and disposal of all the unservicable materials to the nearest municipal dumping ground complete.					
	The entire site of dismantled buildings/ structures shall be cleared and levelled as directed. Approx. covered area of buildings at all floors to be dismantled is mentioned in the enclosed drawing.					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

				Bill of Quantity (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
	All servicable and unserviceable material shall be the property of the bidder except all electrical fittings, fans, airconditioners, furniture, and other loose articles belonging to the owner which shall be deposited by the bidder to the owner's store at no extra cost.					
	An indicative drawing is enclosed here with for the convenience of bidders, However the bidders may actually verify the detail from the site. No claim on this shall be entertained.					
	All malba and unserviceable materials obtained as a result of dismantling/demolition shall be disposed off by the bidder outside the premises to the nearest municipal dumping ground or at the bidder;s place, for which nothing extra is payable.					

Project Name: Construction of Hospital Building in LGBRIMH Campus, Tezpur, Assam.

Bill of Quantity (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
	The bidder has to quote the credit rate for demolition and disposal by sale, the rate should include all costs involved in dismantling/demolition of the existing structures as shown in the enclosed drawing, disposal of unserviceable materials, cost of serviceable materials, clearing of site and taking all precautions so as not to harm the adjacent buildings and mankind in the premises.					
	Credit amount to be quoted by the bidder					

ABSTRACT

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam

S.No.		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	EXTERNAL WATER SUPPLY	
7.00	RAIN WATER PIPING	
8.00	BOREWELL	
9.00	SOLAR WATER HEATING SYSTEM & RECIRCULATING SYSTEM	
10.00	WATER TREATMENT PLANT ,PUMP & EQUIPMENT	
11.00	WATER SUPPLY ELECTRICAL PANEL	
12.00	STP	
13.00	EXTERNAL WATER SUPPLY(for use of recycling of STP treated water for horticulture)	
	TOTAL	

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		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	17.1	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)	17.1.1	White vitreous china orissa pattern W.C. pan of size 580 x 440 mm with integral type foot rests	Each	100.0			
1.02	17.3	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)	17.3.2	W.C. pan with ISI black solid plastic seat & lid.	Each	200.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
1.03	17.4	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)	17.4.1	One urinal basin with 5 litre white PVC automatic flushing cistern	Each	4.0			
b)	17.4.2	Range of two urinal basin with 5 litre white PVC automatic flushing cistern.	Each	15.0			
c)	17.4.3	Range of three urinal basin with 10 litre white PVC automatic flushing cistern.	Each	30.0			
1.04	17.7	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)	17.7.3	White vitreous china wash basin size 550x 400 mm with a pair of 15mm C.P. brass pillar tap.	Each	350.0			
b)	17.7.9	White Vitreous Surgeon type wash basin of size 660 x 460 mm with a pair of 15 mm C.P. brass pillar taps, with elbow operated levers.	Each	10.0			
1.05	17. 10	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:					
a)	17.10.2.1	610x510 mm bowl depth 200 mm.	Each	15.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
1.06	17. 11	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)	17.11.2	Size 600x450x200 mm	Each	50.0			
1.07	17. 14	Extra for using coloured W.C. pan instead of white W.C pan					
a)	17.14.1	Orissa pattern W.C. pan 580x440 mm	Each	100.0			
1.08	17. 16	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	200.0			
1.09	17. 32	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)	17.32.2	Rectangular shape 453x357 mm	Each	350.0			
1.10	17. 33	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	150.0			
1.11	17. 34	Providing and fixing toilet paper holder .					
a)	17.34.2	Vitreous china	Each	300.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
1.12	17. 71	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	250.0			
1.13	NS	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	300.0			
1.14	NS	Providing and fixing soap tray with CP brass lid and brackets fixed to wooden cleats with CP brass screws.	Each	150.0			
1.15	NS	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	Each	350.0			
1.16	NS	Providing and fixing brass coat hook of approved quality and make complete with material of fixing	Each	200.0			
1.17	NS	Extra for providing and fixing white vitreous china oval shape wash basin in place of normal wash basin with CI/MS brackets painted white, 15 mm CP brass pillar taps, 32 mm CP brass waste of standard pattern, including painting of fittings and brackets cutting and making good the walls wherever required					
a)		Counter top oval shape wash basin size 550x470 mm with centre tap hole, single 15 mm CP brass swan neck type pillar tap	Each	350.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
1.18	NS	Providing and fixing white vitreous china wall hung type water closet (European type) 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	100.0			
1.19	NS	Supply , installation, testing and commissioning of compact floor mounted pedestal base surgical scrub sink tailor made to suit the site available compatiable 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 satain finish including connecting to drainage and water points and making good cutting of walls and floor surface all complete and as directed					
	b)	Tailor made surgical scrub sink (2 bay) Approximate size 1.4 mX0.54mX0.84m with 1 user elbow operated mixture tap, soap dispensers, drain outlet ,thermostatic control of water temperature	Each	2.0			
		Tailor made surgical scrub sink (1 bay) Approximate size0.9mX0.54mX0.84m with 1 user elbow operated mixture tap, soap dispensers, drain outlet ,thermostatic control of water temperature	Each	1.0			
1.20	NS	Providing and fixing stainless steel grab bar 20mm dia of required length with PVC cleats, C.P. brass screws etc. complete.	Each	300.0			
1.21	NS	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	10.0			
SUB TOTAL(SANITARY FIXTURES)							

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
2.00		SOIL, WASTE AND VENT PIPES					
2.01	17. 35	Providing and fixing soil, waste and vent pipes.					
a)	17.35.1	100 mm dia.					
a i)	17.35.1.2	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	4000.0			
b)	17.35.2	75 mm dia					
bi)	17.35.2.2	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	1000.0			
c)		150 mm dia					
	NS	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	2800.0			
2.02	17. 37	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)	17.37.1	for 100 mm dia. pipe	Each	700.0			
b)	17.37.2	for 75 mm dia. pipe	Each	200.0			
c)	NS	for 150 mm dia pipe	Each	300.0			
2.03	17. 38	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.					
a)	17.38.1	100 mm					
a ii)	17.38.1.2	Sand cast iron S&S as per IS-3989	Each	350.0			
	17.38.2	75 mm					
b)	17.38.2.2	Sand cast iron S&S as per IS-3989	Each	50.0			
c)	NS	150 mm dia					
		Sand cast iron S&S as per IS-3989	Each	350.0			
2.04	17. 39	Providing and fixing plain bend of required degree.					
a)	17.39.1	100 mm					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
a ii)	17.39.1.2	Sand cast iron S&S as per IS:3989	Each	650.0			
b)	17.39.2	75 mm					
b i)	17.39.2.1	Sand cast iron S&S as per IS:3989	Each	50.0			
c)	NS	150 mm dia Sand cast iron S&S as per IS-3989	Each	50.0			
2.05	17. 40	Providing and fixing heel rest sanitary bend.					
a)	17.40.1	100 mm dia					
a.ii)	17.40.1.2	sand cast iron S&S as per IS-3989	Each	55.0			
b)	17.40.2	75 mm					
	17.40.2.2	sand cast iron S&S as per IS-3989	Each	10.0			
c)	NS	150 mm dia Sand cast iron S&S as per IS-3989	Each	35.0			
2.06	17. 43	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3mm thick, bolts and nuts complete.					
a)	17.43.1	100x100x100mm					
a.ii)	17.43.1.2	sand cast iron S&S as per IS-3989	Each	150.0			
b)	17.43.2	75x75x75mm Centrifugally cast (spun) iron S&S					
b.ii)	17.43.2.2	sand cast iron S&S as per IS-3989	Each	20.0			
c)	NS	150x150x150 mm dia Sand cast iron S&S as per IS-3989	Each	100.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
2.07	17. 44	Providing and fixing single equal plain junction of required degree					
a)	17.44.1	100x100x100mm					
a.ii)	17.44.1.2	sand cast iron S&S as per IS-3989	Each	200.0			
b)	17.44.2	75x75x75mm Centrifugally cast (spun) iron S&S					
b.ii)	17.44.2.2	sand cast iron S&S as per IS-3989	Each	20.0			
2.08	17. 48	Providing and fixing single unequal plain junction of required degree					
a)	NS	150x150x100 mm					
a.ii)		sand cast iron S&S as per IS-3989	Each	200.0			
2.09	17. 55	Providing and fixing door piece, insertion rubber washer 3mm thick, bolts and nuts complete					
a)	17.55.1	100 mm					
a.ii)	17.55.1.2	sand cast iron S&S as per IS-3989	Each	50.0			
2.10	17. 56	Providing and fixing terminal guard.					
a)	17.56.1	100 mm	Each	55.0			
a.ii)	17.56.1.2	sand cast iron S&S as per IS-3989					
b)	17.56.2	75 mm					
b.ii)	17.56.2.2	sand cast iron S&S as per IS-3989	Each	10.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
c)	NS	150 mm dia Sand cast iron S&S as per IS-3989	Each	35.0			
2.11	17. 57	Providing and fixing collar					
a)	17.57.1	100 mm					
a.ii)	17.57.1.2	Sand cast iron S&S as per IS-3989	Each	230.0			
b)	17.57.2	75 mm					
b.ii)	17.57.2.2	Sand cast iron S&S as per IS-3989	Each	10.0			
c)	NS	150 mm dia Sand cast iron S&S as per IS-3989	Each	150.0			
2.12	17. 58	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:					
a)	17.58.1	100 mm	Each	3200.0			
b)	17.58.2	75 mm	Each	300.0			
c)	NS	150 mm	Each	2000.0			
2.13	NS	Providing Drip seal joint of approved make for the sand cast iron/centrifugally cast iron pipes where the workability of lead joint can be effected due to space constraints.					
a)		100 mm	Each	150.0			
b)		75 mm	Each	50.0			
c)		150 mm	Each	100.0			
2.14	17. 59	Providing and fixing M.S. stays and clamps for sand cast iron / centrifugally cast (spun) iron pipes of diameter :					
a)	17.59.1	100 mm	Each	55.0			
b)	17.59.2	75 mm	Each	10.0			
c)		150 mm	Each	35.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
2.15	17. 60	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)	17.60.1	100 mm inlet and 100 mm outlet					
a i)	17.60.1.1	Sand cast iron S&S as per IS-3989	Each	550.0			
2.16	17. 61	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)	17.61.1	100 mm diameter pipe	Metre	150.0			
b)	17.61.2	75 mm diameter pipe	Metre	20.0			
c)	NS	150 mm diameter pipe	Metre	50.0			
2.17	17. 65	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)	17.65.1	100 mm diameter pipe	Metre	2500.0			
b)	17.65.2	75 mm diameter pipe	Metre	700.0			
c)	NS	150 mm diameter pipe	Metre	1800.0			
2.18	NS	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	60.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
2.19	NS	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	350.0			
2.20	NS	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	200.0			
2.21	NS	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	1500.0			
b)		75 mm dia	Metre	300.0			
c)		150 mm dia	Metre	800.0			
2.22	NS	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 50 mm long minimum & shall be capable of taking 6 tonnes load and also include the supporting angles 35x35 mm/steel structures as per drawing.	Each	50.0			
2.23	NS	Providing and fixing clean out/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					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		100 mm dia	Each	90.0			
		75 mm dia	Each	2.0			
		150 mm dia	Each	40.0			
2.24	NS	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	550.0			
2.25	NS	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	300.0			
b)		40 mm dia nominal bore (Sink, Urinal to floor trap)	Metre	250.0			
c)		50 mm dia nominal bore (Floor Drain to Floor Trap)	Metre	100.0			
SUB TOTAL(SOIL, WASTE AND VENT PIPES)							

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
3.00		WATER SUPPLY					
3.01	18.7	Providing and fixing Chlorinated Polyvenyl Chloride(CPVC)pipes having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.0 m spacing.This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in charge.					
		Internal work – Exposed on wall					
a)	18.7.1	15 mm nominal outer dia pipes (SDR-11)	Metre	20.0			
b)	18.7.2	20 mm nominal outer dia pipes (SDR-11)	Metre	300.0			
c)	18.7.3	25 mm nominal outer dia pipes (SDR-11)	Metre	550.0			
d)	18.7.4	32 mm nominal outer dia pipes (SDR-11)	Metre	75.0			
e)	18.7.5	40 mm nominal outer dia pipes (SDR-11)	Metre	150.0			
f)	18.7.5	50 mm nominal outer dia pipes (SDR-11)	Metre	150.0			
g)	NS	62.5 mm nominal outer dia pipes (SDR-11)	Metre	650.0			
3.02	18. 8	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.					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		Concealed work including cutting chases and making good the walls etc.					
a)	18. 8.1	15 mm nominal outer dia pipes (SDR-11)	Metre	3000.0			
b)	18.8.2	20 mm nominal outer dia pipes (SDR-11)	Metre	2000.0			
c)	18. 8.2	25 mm nominal outer dia pipes (SDR-11)	Metre	250.0			
3.03	18. 9	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)	18.9.3	25 mm nominal outer dia pipes (SDR-11)	Metre	100.0			
b)	18.9.6	50 mm nominal outer dia pipes (SDR-11)	Metre	75.0			
3.04	18.10	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					
a)	NS	80 mm dia nominal bore	Metre	100.0			
3.05	18. 13	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. commplete including obtaining approval for connection from DJB/Municipal corporation :					
a)	18.13.2	50 to 80 mm nominal bore (SDR-11)	Each	6.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
3.06	18. 17	providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)					
a)	18.17.1	25 mm nominal bore	Each	38.0			
b)	18.17.2	32 mm nominal bore	Each	10.0			
c)	18.17.3	40 mm nominal bore	Each	2.0			
d)	18.17.4	50 mm nominal bore	Each	2.0			
e)	18.17.5	65 mm nominal bore	Each	8.0			
g)	18.17.6	80 mm nominal bore	Each	4.0			
3.07	18. 18	Providing and fixing ball valve (brass) of approved quality, High or low pressure with plastic floats complete					
a)		20mm	Each	8.0			
3.08	18.20.3	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main					
a)		25 mm nominal bore	Each	6.0			
b)		32 mm nominal bore	Each	4.0			
3.09	18. 21	Providing and fixing unplasticised PVC connection pipe with brass unions:					
a)	18.21.2	45 cm length					
a i)	18.21.2.1	15 mm nominal bore	Each	1200.0			
3.10	18. 22	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet					
a)	18.22.2	150 mm diameter	Each	15.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
3.11	18. 32	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)	18.32.1	With F.P.s bricks	Each	8.0			
3.12	18. 33	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)	18.33.1	With F.P.s bricks	each	3.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
3.13	18. 38	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)	18.38.1	15 mm nominal outer dia pipes	Metre	20.0			
b)	18.38.2	20 mm nominal outer dia pipes	Metre	380.0			
c)	18.38.3	25 mm nominal outer dia pipes	Metre	550.0			
d)	18.38.4	32 mm nominal outer dia pipes	Metre	75.0			
e)	18.38.5	40 mm nominal outer dia pipes	Metre	150.0			
f)	18.38.6	50 mm nominal outer dia pipes	Metre	150.0			
g)	NS	65 mm nominal outer dia pipes	Metre	650.0			
h)	NS	80 mm nominal outer dia pipes	Metre	100.0			
3.14	18. 40	Painting G.I. /CPVC pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality.					
a)	18.40.3	25 mm diameter pipe	Metre	100.0			
b)	18.40.6	50 mm diameter pipe	Metre	75.0			
3.15	18. 41	Providing and filling sand of grading zone V or coarser grade all-round the G.I./CPVC pipes in external work					
a)	18.41.3	25 mm diameter pipe	Metre	100.0			
b)	18.41.6	50 mm diameter pipe	Metre	75.0			
3.16	18. 48	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					
a)		Treated water Tank and Untreated water tank	per litre	137000.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
3.17	18. 49	Providing and fixing C.P brass bib cock of approved quality.					
a)	18.49.1	15 mm nominal bore	Each	500.0			
3.18	18. 50	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, Jainco, Rybo)					
a)	18.50.1	15 mm nominal bore	Each	80.0			
3.19	18. 53	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931.					
a)	18.53.1	15 mm nominal bore	Each	1200.0			
	18.52	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to 18:8931.					
	18.52.1	15mm nominal bore.	Each	30.0			
3.20	18. 60	Providing and fixing enclosed type water meter (bulk type) conforming to IS : 2373 and tested by muncipal board complete with bolts,nuts rubber, insersions etc. (the tail plases if required will be paid seperatly)					
a)	18. 60. 1	80mm dia nominal bore	Each	1.0			
3.21	18. 62	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)	18.62.4	40 mm nominal bore, 206 mm long weighin not less than 690 gms	Each	4.0			
b)	18.62.5	50 mm nominal bore, 242 mm long weighin not less than 1240 gms	Each	8.0			
3.22	18.76	Cutting holes upto 30x30 cm in walls including making good the same					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
	18.76.1	with F.P.S bricks	Each	100.0			
3.23	18. 77	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	100.0			
3.24	NS	Extra for providing wash basin mixer pillar tap in place of normal pillar tap	Each	350.0			
3.25	NS	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	50.0			
b)		20 mm diameter	Each	45.0			
3.26	NS	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	5.0			
b)		20 mm diameter	Each	5.0			
c)		40 mm diameter	Each	2.0			
d)		50 mm diameter	Each	4.0			
e)		65 mm diameter	Each	4.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
3.27	NS	Providing & fixing 9 mm thick thermal insulation tubing of elastomeric flexible material on hot water supply/return pipes having hermetic blistered closed cell structure of expanded synthetic rubber over pipes/ fitting as per manufacturer's specifications etc.complete.					
a		15 mm to 25 mm diameter	Meter	400.0			
b)		32 mm to 50 mm diameter	Meter	150.0			
3.28	NS	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	60.0			
3.29	NS	Extra for in place of pillar trap in wash basin/scrub sink providing and installing INFRA-RED controlled electrically operated (220V, AC mains) automatic tap of approved make instead of pillar tap, comprising of :					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		Light sensing device fixed in tap, 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	100.0			
3.30	NS	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 (Aqua bath, Jaquar, Marc)	Each	50.0			
3.31	NS	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	30.0			
3.32	NS	Supplying, fixing, testing and commissioning of storage type water heater (Geyser) etc. with Stainless steel body , copper container , automatic thermostatic control electric element, pressure release valve, M.S. nuts and bolts etc. conforming to IS: 2082					
a	a)	35 Litre Capacity	Each	15.0			
b)	b)	25 Litre Capacity	Each	20.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
3.33	NS	Providing & fixing water storage cooler of approved make and brand with SS body having minimum flow rate of 40 ltrs. Per hour and storage capacity 80 ltrs. Complete in respects.(VOLTAS/ BLUE-STAR/ USHA SHRIRAM)	Each	18.0			
3.34	NS	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 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	18.0			
		SUB TOTAL(Water Supply)					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
4.00		SEWARAGE & DRAINAGE					
4.01	19. 1	Providing laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the pro-portion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete.					
a)	19.1.1	100 mm diameter	Metre	200.0			
4.02	19. 2	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design:					
a)	19.2.1	100 mm diameter S.W. pipe/RCC NP2	Metre	200.0			
b)	19.2.2	150 mm diameter S.W. pipe/RCC NP2	Metre	250.0			
4.03	19. 3	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)	19.3.1	150 mm diameter S.W.pipe	Metre	300.0			
b)	19.3.2	250 mm diameter s.W. pipe	Metre	900.0			
4.04	19. 4	Providing and fixing square-mouth S.W. gully trap grade 'A' complete with C.I. grating, brick masonry chamber with water tight C.I. cover with frame of 300x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:.					
a)	19.4.2	150x100mm size P type					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
a.i)	19.4.2.1	F.P.S. Bricks class designation 75	Each	90.0			
4.05	19. 6	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)	19.6.2	150 mm dia R.C.c. pipe	Metre	550.0			
b)	19.6.3	250 mm dia R.C.C. pipe	Metre	900.0			
4.06	19. 7	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand), R.C.C. top slab with 1:2:4 mix (1cement : 2 coarse sand : 4graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 (1cement : 4 coarse sand : 8graded stone aggregate 40 mm nominal size), inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, and making necessary channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement all complete as per standard design.					
a)	19.7.1	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)	19.7.1.1	With F.P.S. bricks with class designation 75	Each	80.0			
4.07	19. 8	Extra depth for manholes					
a)	19.8.1	Size 90 x 80 cm					
a i)	19.8.1.1	With F.P.S. bricks class designation 75	Metre	20.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
4.08	19. 9	Constructing brick masonry circular type manhole 0.91m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement :4 coarse sand), in side cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement: 3 coarse sand: 6 graded stone aggregate 40mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement all complete as per standard design:					
a)	19.9.1	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)	19.9.1.1	With F.P.S. bricks class designation 75	Each	38.0			
4.09	19. 10	Extra depth for circular type manhole 0.91m dia (at bottom) with beyond 0.91m to 1.67 m					
a)	19.10.1	With F.P.S. bricks class designation 75	Metre	15.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
4.10	19. 11	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement: 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 mix (1 cement :3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominalsize) fineished with a floating coat of neat cement complete as per standard design.					
a)	19.11.1	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)	19.11.1.1	With F.P.S. bricks with class designation 75	Each	12.0			
4.11	19. 12	Extra depth for circular type manhole 1.22 m internal dia (at bottom) with beyond 1.68 m to 2.29 m					
a)	19.12.1	With F.P.S. bricks with class designation 75	Metre	5.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
4.12	19. 16	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	1500.0			
4.13	19. 21	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)	19.21.1	For pipes 100 to 230 mm dia	Each	1.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
4.14	19. 22	Providing sand cast iron drop connection externally for 60 cm drop from branch sewer line to main sewer manhole including inspection and cleaning eye with chain and lid sand cast Iron drop pipe and bend encased all-round with cement concrete 1 :5:1 0 (1 cement:5 fine sand: 10 graded stone aggregate 40 mm nominal size) with all centering and shuttering required, cutting holes in walls and making good with brick work in cement mortar 1:4 (1 cement: 4 coarse sand) plastered with cement mortar 1:3 (1 cement: 3 coarse sand) on, inside of the manhole wall lead caulked joints between sand cast iron pipes and fittings, stiff cement mortar 1:1 (1 cement: 1 fine sand) joints between sand cast iron tee and S.W. pipe, making required channels complete as per standard design and specifications:					
a)	19.22.2	150 mm dia. sand cast iron drop connection	Each	30.0			
	19. 27	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:					
	19.27.1	With F.P.S. bricks	Each	100.0			
4.15	19. 34	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)	NS	250 mm dia	Each	1.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
4.16	NS	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.					
a)		25cm drain 30cm average depth With F.P.S bricks	Metre	800.0			
b)		45cm drain 75cm average depth With F.P.S bricks	Metre	300.0			
4.17		Constructing grease trap 1.8x1.5x1.2m (inside) with one brick thick brick masonry wall with inlet and outlet drain with bricks of class designation 75 in cement mortar 1:4 (1 cement:4 fine sand) plastered 12mm thick with 1:4 (1 cement : 4 coarse sand) finished with a floating coat of neat cement on inside and exposed surfaces having baffled walls with 40mm flooring in cement concrete 1:2:4 (1 cement:2 coarse sand 4: graded stone aggregate 12.5 mm nominal size) with a floating coat of neat cement including all earth excavation, refilling and disposal of surplus earth complete as per standard design.					
a)		With F.P.S bricks	Each	2.0			
SUB TOTAL(SEWERAGE AND DRAINAGE)							

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
5.00		EARTH WORK					
5.01	2.6	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)	2.6.1	All kinds of soil	cum	240.0			
5.02	2.10	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)	2.10.1	All kinds of soil					
a.ii)	2.10.1.2	Pipes, cables etc, not exceeding 80 mm dia but not exceeding 300 mm dia	metre	1550.0			
5.03	2.25	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	70.0			
		SUB TOTAL(EARTH WORK)					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
6.00		EXTERNAL WATER SUPPLY					
6.01	2.10	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)	2.10.1	All kinds of soil					
a.ii)	2.10.1.2	Pipes, cables etc, not exceeding 80 mm dia but not exceeding 300 mm dia	metre	1750.0			
6.02	18.19	Providing and fixing gun metal non-return valve of approved quality (screwed end)					
a)	NS	100 mm nominal bore					
a.i)	NS	Horizontal	each	4.0			
6.03	18.31	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)	18.31.1	100 mm diameter					
a.i)	18.31.1.1	Class I	each	8.0			
c)	18.31.3	150 mm diameter					
c.i)	18.31.3.1	Class I	each	2.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
6.04	18. 33	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)	18.33.1	With F.P.S. bricks	each	4.0			
6.05	18. 34	Constructing masonry chamber90x90x100 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)	18.34.1	With F.P.S.bricks	each	2.0			
6.06	18. 40	Painting G.I./DI pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality					
a)	18.40.2	20 mm diameter pipe	metre	50.0			
d)	NS	100 mm diameter pipe	metre	1550.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
6.07	18. 41	Providing and filling sand of grading zone V or coarser grade all-round the G.I./CPVC pipes in external work					
a)	18.41.2	20 mm diameter pipe	metre	50.0			
b)	18.41.9	100 mm diameter pipe	metre	1550.0			
6.08	18. 47	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)	18.47.2	20 mm nominal bore	each	5.0			
b)	NS	100 mm diameter pipe	metre	5.0			
6.09	18. 59	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)	18.59.1	50 mm dia	each	1.0			
b)	18.59.2	80 mm dia	each	1.0			
6.10	18. 68	Providing and laying D.I. specials of class k-12 suitable for push-on jointing as per IS:9523					
a)	18.68.1	Upto 600 mm dia	quintal	50.0			
6.11	18. 70	Providing push-on-joints to Centrifugally (Spun) Cast Iron pipes or Ductile Iron Pipes including testing of joints and including the cost of rubber gasket					
a)	18.70.1	100 mm dia pipes	joint	650.0			
b)	18.70.2	150 mm dia pipes	joint	80.0			
6.12	18. 72	Providing and laying S&S Centrifugally Cast (Spun)/Ductile Iron pipes confirming to is:8329:					
a)	18.72.1	100 mm dia Ductile Iron Class k-7 pipes	metre	1550.0			
b)	18.72.1	150 mm dia Ductile Iron Class k-7 pipes	metre	200.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
6.13	18. 80	Disinfecting C.I./D.I. water mains by flushing with water containing bleaching powder at 0.5 gms per litre of water and cleaning the same with freash water, operation to be reaeated three times including getting the sample of water from the disinfected main tested in the municipal laboratory					
a)	18.80.2	100 mm diameter C.I./D.I. pipe	100 metre	16.0			
b)	18.80.3	150 mm diameter C.I./D.I. pipe	100me tre	2.0			
6.14	NS	Providing and fixing puddle flanged including 60 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	8.0			
b)		For 100 mm dia pipe	Each	10.0			
c)		For 150 mm dia pipe	Each	4.0			
6.15	NS	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)		100mm Dia	Each	8.0			
6.16	NS	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	12.0			
6.17	NS	Providing and fixing garden hydrant of approved quality and make complete in all respect	each	50.0			
6.18		Providing and fixing G.I. pipes class B complete with G.I. fittings and clamps, including cutting and making good the walls etc.					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
a)		100 mm dia nominal bore	Metre	20.0			
b)		150 mm dia nominal bore	Metre	20.0			
		SUBTOTAL (EXTERNAL WATER SUPPLY)					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
7		RAIN WATER PIPING					
7.01	12. 44	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	110.0			
7.02		Providing and fixing rain water ,soil, waste and vent pipes.					
a)		100 mm dia.					
a i)	17.35.1.2	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	500.0			
c)	NS	150 mm dia pipe as per IS:3989	Metre	800.0			
7.03	17. 37	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)	17.37.1	for 100 mm dia. pipe	Each	280.0			
c)	NS	for 150 mm dia pipe	Each	450.0			
7.04		Providing and fixing plain bend of required degree.					
a)		100 mm					
a ii)	17.39.1.2	Sand cast iron S&S as per IS:3989	Each	40.0			
c)	NS	150 mm	Each	200.0			
7.05		Providing and fixing heel rest sanitary bend.					
a)		100 mm dia					
a.ii)	17.40.1.2	sand cast iron S&S as per IS-3989	Each	20.0			
c)	NS	150 mm dia	Each	100.0			
7.06		Providing and fixing collar					
a)		100 mm					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
a.ii)	17.57.1.2	Sand cast iron S&S as per IS-3989	Each	150.0			
c)	NS	150 mm	Each	300.0			
7.07		Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:					
a)	17.58.1	100 mm	Each	300.0			
c)	NS	150 mm	Each	600.0			
7.08	17. 65	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)	17.65.1	100 mm diameter pipe	Metre	500.0			
c)	NS	150 mm diameter pipe	Metre	800.0			
		SUB TOTAL(Rain Water pipe & fitting)					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
8.00		BOREWELL(2 No)					
8.01	NS	Drilling by suitable rig as per IS : 2800-1979 (percussion or combination rig) or Reverse Rotary to suit site condition from ground level in all kind of soils and weathered rock including boulders (excluding rock) diameter of bore 450mm including carry out hydrological survey report before boring & getting the approval based on Hydrogeological survey before start of the work.Also getting approval from local authority if any required					
a)		0-30m	metre	60.0			
b)		30-60m	metre	60.0			
c)		60-90m	metre	60.0			
d)		90-120 m	metre	60.0			
8.02	NS	Extra additional for drilling in Ordinary Rock if any found	metre	50.0			
8.03	NS	Extra additional for drilling in Hard Rock if any found	metre	50.0			
8.04	NS	Providing and lowering uPVC casing/housing pipe 200mm dia. with wall thickness 10 mm conforming to IS :12818 including sockets of standard design.	metre	140.0			
8.05	NS	Providing & fixing uPVC screen/slotted pipe with 1.5 mm to 3mm (slots as per strata condition) including sockets of standard design as per IS: 12818/1992.					
a)		200 mm dia uPVC socketed pipe with wall thickness 10.0 mm	metre	160.0			
8.06	NS	Providing and fixing in position threaded iron cap with locking arrangement of approved design to prevent foreign matters getting into the bore-hole as required.	Each	2.0			
8.07	NS	Providing and laying rounded pea gravel washed & served 3 to 6 mm nominal boreas per relevant ISI code.	Cum	32.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
8.08	NS	Providing and laying cement concrete 1:2:4 mix for sanitary sealing of well at top.	Cum	2.0			
8.09	NS	Supplying, lowering and fixing in position reducer ,PVC bail plug with "U" hooks as per IS:2800-1964.	Each	2.0			
8.10	NS	Development of Tubewell including testing of yield depression & quality of water (for all parameters of potable water), contractor to obtain certificate for quality for water from Competent Authority approved by client or Engineer- In -Charge.					
	i)						
a)		Development of Tube well by high capacity air compressor till the clear water discharge but not more than 100 hours.	per hour	160.0			
b)		Additional development of Tube well by high an over pumping unit till complete development of tube well does not clear by maximum 100 hours air compressor	per hour	100.0			
8.11	NS	Tranportation, mobilisation and demobilisation or drilling equipment and ancillary equipment to site including clearing and cleaning the site after completion of work.	set	1.0			
8.12	NS	Providing and fixing brass full way valve with C.I. wheel of approved make, tested to a pressure of 21 kg/sqcm.					
a)		100 mm dia	Each	2.0			
8.13	NS	Providing and fixing gunmetal non return valve of approved make tested to a pressure of 21kg/sqcm.					
a)		100 mm dia	Each	2.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
8.14	NS	Providing & fixing G.I. pipes (heavy class)confirming to IS with special fittings in external works including earthwork ,excavationin all kinds of soil including ordinary rock,refilling, painting pipes & fitting complete in all respects.					
	a)	100 mm dia	Metre	200.0			
8.15	NS	Providing & filling sand of grading zone V or coarser grade all around GI pipe in external work					
	a)	100 mm dia	Metre	200.0			
8.16	NS	Submersible pumps					
		Providing and installing submersible pump and electrical panel suitable for 8" dia casing of bore with SS impeller, high tensile SS shaft, copper wound squirrel cage wet type induction motor 2880 rpm, 415 V, 50 Hz,3 phase A.C. supply, conforming to ISS: 8034-1976, capacity 500 litre per minute at 70-120 m head/ or suitable as per the hydrological survey report along with a directly coupled submersible type squirrel cage electric induction 5 H.P(minimum) . motor suitable for operation on 400 V, 3 phase, 50 c.p.s. A.C. supply, water lubricated bearings and provided with pivoted segment type thrust bearings to withstand non-vertical lead with minimum wear and tear and duly fitted with device to take up the expansion of water with heating of motor, including supply, testing and commissioning of elctrical panel from the same manufacturer, complete with all accessories in all respects. The contractor to obtain approval for model and make of pumpset & suitable Electrical panel after having yield report of fully developed tube well and submite actual bore strata chart.					
		1 No, DOL starter of 10 HP with thermal overload relay, Push Buttons, Single Phase Preventer and Switches etc complete as required.	set	2.0			
		including supplying laying and fixing water proof PVC insulated flat submersible cable 3x10 sqmm with end termination with its accessories. complete in all respect as required.					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
8.17		Carrying out Electrical logging of Borewell before lowering of pipe for analysiing of water quality including Electrical logging report, calculation etc.	Job	2.0			
		SUBTOTAL (BOREWELL)					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
10		SOLAR WATER HEATING SYSTEM & RECIRCULATION OF HOT WATER SYSTEM (1 Nos)					
10.01	NS	Supply, installation, testing and commissioning of solar water heating system, Thermosyphon type, all complete based on Flat plat collector system (Cu-Cu Type only) comprising of but not limited to the following:					
a)		Requisite number of Flat plate collectors of 2 sq. mtr. collector area. Collector absorber plate to be made of copper tubes & copper fins only					
b)		Hot water storage tank made of stainless steel 304- food grade quality with 100 mm Glass wool insulation and cladding with 24 SWG Aluminum sheet. One temperature measuring device and suitable inlet, outlet and drain connections on the storage tank to be provided. Suitable Electrical Heater backup to be provided inside the tank along with thermostat					
c)		Heat Exchanger - Cage type Internal Heat Exchanger made of SS pipes shall be provided inside the Solar Tank. Heat exchangers shall have min. heat transfer area of 0.24 sq. mtrs. for every 100 LPD calacity. Suitable make up tank for the Heat Exchanger circuit shall also be provided					
d)		Interconnecting system piping shall consist of B Class insulated GI pipes covered with 50mm thick glasswool & clad with 26 SWG Aluminium Sheet. All Gate/Ball valves shall be of ISI make.					
e)		Electrical control panel, cabling from panel to pumps and electrical heaters shall also be provided					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
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 and required nos. of electric heating element of 3 KW each controlled by thermostat. 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.					
i)		Solar System of Capacity 1500 Litre/day (With minimum 12 nos of Collect) of 2.0 Sqm area	each	9.0			
10.02	NS	Recirculation system (on return line) -Designing, Supply, Installation, Commissioning & Integration with Solar System of Recirculation System consisting of - Insulated Auxiliary Tank MS with epoxy paints (half day Hot water demand) and with Electrical Backup, Pump, of requisite capacity DTC, Sensor PT100, Control Panel wiring,RS 485 mod bus communication port for BMS as per technical specification, MS standand etc. (but does not include the return piping & fitting)	each	4.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
10.03	18. 7	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)	18.7.1	15 mm nominal outer dia pipes (SDR-11)	metre	200.0			
b)	18.7.2	20 mm nominal outer dia pipes (SDR-11)	metre	150.0			
c)	18.7.3	25 mm nominal outer dia pipes (SDR-11)	metre	160.0			
d)	18.7.4	32 mm nominal outer dia pipes (SDR-11)	metre	60.0			
e)	18.7.5	40 mm nominal outer dia pipes (SDR-11)	metre	120.0			
10.04	18. 8	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)	18. 8.1	15 mm nominal outer dia pipes (SDR-11)	metre	600.0			
b)	18.8.2	20 mm nominal outer dia pipes (SDR-11)	metre	250.0			
c)	18. 8.3	25 mm nominal outer dia pipes (SDR-11)	metre	100.0			
10.05	18. 17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):					
a)	18.17.1	25 mm nominal bore	each	10.0			
b)	18.17.2	32 mm nominal bore	each	8.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
10.06	NS	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)	a)	15 mm dia to 25 mm dia	each	1010.0			
b)	b)	32 mm dia to 50 mm dia	each	60.0			
10.07	NS	Providing and fixing gun metal ball valve of approved quality					
a)		15 mm nominal bore	each	10.0			
b)		20 mm nominal bore	each	8.0			
		SUBTOTAL(SOLAR WATER HEATING SYSTEM & RECIRCULATING SYSTEM)					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
11.00		WATER TREATMENT PLANT , PUMPS &EQUIPMENT					
11.01		WATER TREATMENT PLANT (/Domestic use)					
		Planning, Designing, Detailing, Manufacturing, Supplying, Erection, Testing and Commissioning of Water treatment plant for supply of treated water for use of domestic purpose comprising of filter and pumps. The plant is to be installed in pump room and Raw water supply is available in UGT including design and execution of all Civil, Structural, Electrical, Mechanical, Plumbing and processing, ancillary equipments & works etc required to complete the package, getting approval from HSCC/client etc.					
		The shop drawings & design of WTP shall also be prepared in such a way that it comprise of the following units of required size as per detail design requirements. The work has to be carried through authorised vendor, dealer/representative of approved make (Ion exchange, Pollucon technologies, AKAR Impex,Thermax, Aquaprocess, Fontus).					
i)		Providing and fixing horizontal monobloc single/ multi-stage raw water filter feed pumps with CI volute and SS impellar and with stainless steel shaft, mechanical seal and chrome steel shaft sleeve, connected to a TEFC induction motor suitable for 400/440 volts,1500 RPM, 3 phase 50 cycles A.C. supply having IP 55 protection enclosure. complete with base frame, vibration eliminating pads, nuts and bolts etc. (Necessary RCC foundations as per requirement and as per instructions shall be provided by the agency)					
		Raw water , filter feed pumps(only for domestic use). Capacity : 400 lpm (Each)					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		Head 35 m Power : 6 HP or as required (1 working + 1 stand by) -1 set					
ii)		Providing and fixing C.I. "Y" Type suction strainer with stainless steel perforated sheet screen,flangfd ends iner installed outside water tanks. (Make: Leader / Zoloto / Kartar or equivalent)					
		100/80 mm dia (4 nos.) (min.) or required size and required number					
iii)		Providing and fixing gun metal or bronze ball valves/butterfly valve/NRV/Rotameter, tested to 15.00 Kg / cm2, screwed end connections complete . (Make: Leader/ Zoloto or equivalent)					
		80/65 mm NB (min.) or required size and number					
iv)		Filtration Plant : Vertical Downflow Multigrade Pressure Sand Filter in MS Welded construction fabricated in accordance with IS 2825 from minimum 6 mm thick M.S. plate on shell and minimum 8 mm thick M.S. plate on dished ends as per applicable IS standards. The filter shall have :					
		a) One no pressure tight manhole and at least one no. pressure tight side hole for maintenance purposes.					
		b) Initial charge of Filter Media.					
		c) Complete underdrain system and raw water distributor as per manufacturer's design.					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		d) M.S. heavy class fabricated - epoxy coated / post galvanised face piping comprising of connections with CI Butterfly Valves of required size for inlet, outlet, backwash inlet, backwash drain and rinse drain. Air release line with GM Ball Valve of required size.					
		e) Pressure gauges (100 mm dia bourdon type pressure gauge) / Sampling points with SS isolation cocks at inlet and outlet.					
		f) All internal parts of the filtration plant shall be coated with two coats of food grade epoxy paint after thorough sand blasting. All external surfaces of the plant including piping shall be coated with two coats of red iron oxide / zinc chromate primer followed by two coats of high gloss enamel paint .					
		g) The filter shall be complete with all gaskets / fasteners of standard quality as required.					
		h) The filter shall be designed to give rated output at given raw water quality and flow rate without any operational problem and should not get any loss of performance as long as the operating pressure remains within the given range. Any additional provision is required to make the item complete, the same should be included herein. The work has to be carried through authorised vendor, dealer/representative of approved make (Ion exchange, Pollucon technologies, AKAR Impex, Thermax, Aquaprocess, Fontus). The filter water will be supplied to treated water tank through U.V. water steriliser					
		Capacity - 400lpm					
		Filtration rate - 20,000 lph/sqm (min.)					
		Filter dia approx. 1200 mm (min.)					
		Filter HOS Min. : 1250 mm (min.)					
		Working pressure : 3.0 Kg/sq cm.					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		Test pressure : 4.5 Kg/sq cm					
		No. of Filters : One Set					
v)		UV WATER STERILISERS(between filter &clear water tank)					
		High performance on line UV water sterilisers of capacity 18000 lph designed on at least 250 J/Sq. M. UV dosage, comprising of glass UV chamber in SS 316 housing, UV lamp and electrical circuit, wall mounted model / line mounted model, capacity 250lpm, minimum lamp rating :120 watts - 2 Nos.					
vi)		Providing and fixing G.I.pipes/CPVC pipes to I.S. 3589/1239 (Heavy class) with G.I./CPVC Fittings e.g., Tee, elbow reducers, unions, end cap etc., flanges & clamps, including supporting the pipes with G.I. supports, cutting and making good the walls etc. complete. For Suction & Delivery headers.					
		65 mm dia (min.) (Interconnection between units)/ Drain lines etc. as per plant room requirement. (All piping and fitting of required size inside the plant room included in the item)					
vii)		Painting G.I./CPVC pipes with two or more coats of synthetic enamel paint of approved quality and shade over a coat of approved priming coat as directed by the Project-in-charge (shade as per pipe colour code).					
		50 mm dia (min.) (as per required length)					
		Complete W.T.P as mentioned above including testing, training and trial run till comissioning of W.T.P.	Job	1.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
11.02		Providing and fixing of OxiLyte (Mixed Oxidant)Generation System , based on ECA technology, producing non toxic mixed oxidant solution at 1000 ppm of Oxidant concentration or any other approved disinfection method excepted by HSCC. The solution should be at a pH 3+-0.5 suitable for 24x7 operations should produce 720 L per day. The system should be supplied complete with appropriate dosing pumps, valves,piping,fittings,chemical dosing tank etc. complete in all respect(Lot-1),	Lot	2.0			
11.03		STRUCTURAL STEEL WORK					
i)		Supply, fabrication, erection, painting of pipe supports of structural steel, for piping work in the production areas and anchoring them. 2 coats of zinc chromate primer and one coat of finishing paint	Kgs.	300.0			
11.04		Supplying, assembly, erection, testing and commissioning of level controllers based on level switches and necessary auxillary circuits included in the electric panel ,including all accessories required for the performance of the system to the satisfaction of the engineer in charge complete including providing and fixing wiring from control panel to the level switches of required size,all interconnections as required . Note : The required transformers / associated equipment shall be designed keeping in view the actual distance of various tanks from the control panel, particularly the distance of Terrace water tank from panel. The most suitable route of sensor cable travel between the panel and the tank shall have to be worked out by the contractor according to site conditions and in consultation with engineer in charge. All cabling / switch installation should be done in an easy to maintain manner.					
		One way one tank level controller as under.					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
i)		To switch on the tube well pump when the level of water in the UG raw water tank is low and to cut off the pump when the level in the underground raw water tank is high. (Approx. control cable requirement -200 meters.)	Set	1.0			
		Two way - Two tank level controller as under.					
ii)		For Filter Feed Pumps for Domestic Water.(Operating between the raw water tank and the under ground treated water tank near the plant room. (Approx. control cable requirement - 50 meters.)	Set	1.0			
iii)		For Feed Pumps for Softener.(Operating between the Treated water tank and the under ground soft water tank near the plant room. (Approx. control cable requirement - 50 meters.)	Set	1.0			
iv)		For Treated water supply Pumps(Operating between the under ground treated water tank near the plant room and the Terrace treated water tank . (Approx. control cable requirement - 125 meters.)	Set	1.0			
v)		For Raw water supply Pumps(Operating between the under ground Raw water tank near the plant room and the Terrace Raw water tank . (Approx. control cable requirement - 125 meters.)	Set	1.0			
vi)		For soft water supply Pumps(Operating between the under ground soft water tank near the plant room and the Terrace soft water tank .(Approx. control cable requirement - 125 meters.)	Set	1.0			
11.05	NS	Providing and fixing gun metal foot valve with stainer of approved quality/model complete in all respect					
a)		80 mm dia	each	2.0			
b)		100 mm dia	each	2.0			
c)		150 mm dia	each	2.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
11.06	NS	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).					
		Domestic water pumps (Treated water transfer pump to terrace tank)					
a)		Capacity 400 lpm Head 45 M	Each	2.0			
		Domestic water pumps (Raw water Transfer pump to terrace tank)					
		Capacity 300 lpm Head 45 M	Each	2.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
11.07	NS	Supply, installing, testing and commissioning vertical fully floodable type submersible drainage pump in close coupled design single stage, suitable for handling minimum 12 mm dia solids for trans ferring waste water from sump to outside the building with float switch for automatic start and stop arrangement with panel and wiring, chain and pulley, mechanical seal complete in all respect as per instruction of the Engineer in charge (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): Corrosion Resistant in general : Casing — Cast Iron : Impeller — Stainless Steel : Shaft — Stainless Steel : Bearings — Anti friction, prelubricated ball bearings, packed with grease for life.					
		Motor: — Dry Motor with built in over load protection Protection - IP68. Insulation Class - F					
		Duty of each pump 150 LPM against 12 M head (for Pump Room)	each	2.0			
11.08	NS	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(up to 5 lac ltr tank)	set	1.0			
11.09	NS	SOFT WATER TREATMENT PLANT (1 Nos)					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		Planning, Designing, Detailing, Manufacturing, Supplying, Erection, Testing and Commissioning of Water treatment plant for supply of treated water for use in Laundry/Air conditioning purpose comprising of pumps. The plant is to be installed in pump room and filter water supply is available in UGT including design and execution of all Civil, Electrical, Mechanical, Plumbing and processing, ancillary equipments & works etc required to complete the package, getting approval from HSCC/client etc.					
		The shop drawings & design of WTP shall also be prepared in such a way that it comprise of the following units of required size as per detail design requirements. The work has to be carried through authorised vendor, dealer/representative of approved make (Ion exchange, Pollucon technologies, AKAR Impex,Thermax, Aquaprocess, Fontus).					
i)		Providing and fixing horizontal monobloc single/ multi-stage filter water softener feed pumps with CI volute and SS impellar and with stainless steel shaft, mechanical seal and chrome steel shaft sleeve, connected to a TEFC induction motor suitable for 400/440 volts, 1500 RPM,3 phase 50 cycles A.C. supply having IP 55 protection enclosure. complete with base frame, vibration eliminating pads, nuts and bolts etc. (Necessary RCC foundations as per requirement and as per instructions shall be provided by the agency)					
		Filter water (Softener) feed pumps.					
		Capacity : 50LPM					
		Head 35 m					
		Power : 1 HP or as required					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		(1 working + 1 stand by) -1 sets					
ii)		Soft water Supply Pumps Capacity :50 LPM Head 35 m Power : 1 HP or as required (1 working + 1 stand by) -1 sets					
iii)		Providing and fixing GI/CPVC epoxy coated pipe & fittings and specials for suction and discharge side of pumps as required to connect Suction strainers and isolation butterfly valves on suction side and isolation valves and NRVs on discharge size , and to make a common discharge header from 2 pumps. Individual pump suction and discharge size minimum : 50 mm x 40 mm. The pumps shall have 50 mm NB butterfly valves and 50 mm NB flanged Y type strainers on suction side and common discharge header size : 50 mm NB including required numbers of matching flange, bolts, nuts, rubber gaskets, all complete as required / as per drawings or specifications. (complete lot)					
iv)		Providing and fixing C.I. "Y" Type suction strainer with stainless steel perforated sheet screen,flangfd ends iner installed outside water tanks. (Make: Leader / Zoloto / Kartar or equivalent) 50 mm dia (4 nos.) (min.) or required size and required number					
v)		Providing and fixing G / M or bronze ball valves/butterfly valve/NRV/Rotameter, tested to 15.00 Kg / cm2, screwed end connections complete . (Make: Leader/ Zoloto or equivalent) 50/40 mm NB (min.) or required size and number					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
vii)		Providing and fixing, testing and commissioning M.S. Vertical Upflow "Cation" Ion Exchange water Softener fabricated in accordance with IS 2825 from minimum 6 mm thick M.S. plate on shell and minimum 8mm thick M.S. plate on dished ends as per applicable IS standards. The vessel shall be internally lined with 5.00 mm thick rubber, tested to 60 - 80 shore hardness, 15000 RMS volts spark test for continuity. The softener shall have :					
		a) Strainer plates at top and bottom with P.P. strainers with removable nuts and check nuts fixed on the plates.					
		b) GI/CPVC heavy class fabricated internally rubber lined face piping comprising of connections with CI Diaphragm Valves of required size for inlet, outlet, and rinse drain etc.					
		c) Regeneration assembly comprising of power valve, ejector, brine suction valve, and all necessary piping incorporated into the main pipework.					
		d) Pressure gauges (100 mm dia bourdon type pressure gauge) / Sampling points with SS isolation cocks at inlet and outlet.					
		e) All external surfaces of the plant including piping shall be coated with two coats of red iron oxide / zinc chromate primer followed by two coats of high gloss enamel paint .					
		f) The softener shall be complete with all gaskets / fasteners of standard quality as required.					
		g) Initial charge of Ion Exchange resin.					
		h) The softener shall be designed to give rated output at given raw water quality and flow rate without any operational problem and should not get any loss of performance as long as the operating pressure remains within the given range. Any additional provision is required to make the item complete, the same should be included herein.					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		i) M.S.5 mm rubber lined vertical, cylindrical self supporting open tank for salt mixing and brine saturation with air agitation arrangement comprising of G. I. heavy class air distributor laid at the bottom of tank, roots type air blower complete in all respects of suitable capacity to agitate the required quantity of brine, piping interconnection between air blower and air distributor. The brine tank to have nozzles for outlet, overflow and drain. Outside finished with high gloss enamel paint over two coats of zinc chromate primer complete including testing and commissioning. Net usable capacity of the tank excluding free board etc., should be at least 10 % more than actual capacity required.					
		Capacity of softening plant : 50 LPM					
		Raw Hardness : 700-1400 mg/l. / or as per water test report					
		Regeneration period 8 hrs.					
		Quantity of soft water between two regenerations = 20000 lit					
		Approximate Dia = 500 mm, HOS 2000 mm (min.) or as required					
		Type of Resin : Strongly acidic cation resin					
		Make of Resin : Ion Exchange / Rohm & Haas					
		Min. qty. of resin : 500 Ltrs.					
		Operating pressure : 3.0 kg/sqcm					
		Test pressure : 5.50 kg/sqcm (Set-1)					
		No. of Softner- 1 no.					
		Providing and fixing G.I.pipes/CPVC pipes to I.S. 3589/1239 (Heavy class) with G.I./CPVC Fittings e.g., Tee, elbow reducers, unions, end cap etc., flanges & clamps, including supporting the pipes with G.I. supports, cutting and making good the walls etc. complete. For Suction & Delivery headers.					
		50 mm dia (min.) (Interconnection between units)/ Drain lines etc. as per plant room requirement. (All piping and fitting of required size inside the plant room included in the item)					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		Painting G.I./CPVC pipes with two or more coats of synthetic enamel paint of approved quality and shade over a coat of approved priming coat as directed by the Project-in-charge (shade as per pipe colour code).					
		50 mm dia (min.) (as per required length)					
		Complete W.T.P/softner as mentioned above including testing, training and trial run till comissioning of W.T.P. (Soft water/domestic use)	set	1.0			
Subtotal (Water treatment Plant,Pump and Equipment)							

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
12.00	NS	WATER SUPPLY PUMP PANEL Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, wall mounted type, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, powder coat painted and having following incoming and outgoing switchgears complete as required. Panel shall have IP-42 protection.					
		INCOMER : 125 Amp 415 volts, 35 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In.					
		R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 no. 0 to 500 V Digital voltmeter with selectot switch					
		1 to 0 to 125 Amps Digital ammeter with selector switch with one set of 125/5A C.T. s					
		BUSBARS : 160 Amp TPN busbars of aluminium					
		OUTGOINGS : 2 Sets of following (For Submersible Pump)					
		1 No. 63 Amp. 415/500 volts,25 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.					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		1 No. 3 Phase, fully automatic star-delta starter of 15 HP with thermal overload relay, Timer, Push Buttons and Auto-manual selector switch etc complete as required.					
		Single Phase preventer					
		1 to 0 to 63 Amps Digital ammeter with selector switch with one set of 63/5A CT,s.					
		1 Set of phase indicating lamp with 2A SP control MCBs					
		Neon indicating Lamps for "ON" and "OFF" indication with 2A SP control MCBs.					
		5 Set of following (For Filter Feed Pump)					
		1 No. 32 Amp. 415/500 volts,25 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 7.5 HP with thermal overload relay, Push Buttons and Switches etc complete as required.					
		Single Phase preventer					
		1 Set of phase indicating lamp with 2A SP control MCBs					
		Neon indicating Lamps for "ON" and "OFF" indication with 2A SP control MCBs.					
		6 Set of following (For Drainage Pump)					
		1 No. 16 Amp. 415/500 volts,25 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 1 HP with thermal overload relay, Push Buttons and Switches etc complete as required.					
		Single Phase preventer					
		1 Set of phase indicating lamp with 2A SP control MCBs					
		Neon indicating Lamps for "ON" and "OFF" indication with 2A SP control MCBs.					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		ESDB-WATER SUPPLY PUMP Panel as mentioned above	Set	1.0			
		Sub Total (Water Supply Electrical Panel)					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
13.00	NS	SEWAGE TREATMENT PLANT					
		Planning,Designing,Detailing,Supplying, Erection,Testing and Commissioning of Package Sewage treatment plant based on MBBR (Moving bed Bio Reactor)/FAB technology of average flow rate of 450 cu.m/day for sewer including provision of recirculation of treated sewage/effluent for the use of horticulture purposes including design and execution of all civil,structural,electrical,mechanical, plumbing and processing,ancillary equipments and works etc required to complete the package, getting approval from state pollution control board and other statutory bodies as well as from consultant (HSCC) including the cost of STP building for electrical room, treated sewage under ground storage tank of 80 cu.m capacity etc.					
		All the water retaining structure shall be designed as water retaining structure as per provision of IS code and water proofing with fixed or any other approved chemical shall be carried out by approved agency with 10 year (minimum) garanty. All the unit shall be painted by epoxy or any other approved paints.					
i)		The shop drawings & design of STP shall be prepared by the agency . As per site condition/available space most of the unit will be placed below ground under road/green area.The STP shall comprising of the following units of required size as per detail process and hydraulic design.The structure design shall be carried as per provision of IS code.The agency has to get their structure drawing checked and approved by IIT Delhi or any other govt. Engineering college approved by HSCC.(set-1)					
ii)		RCC Suitable size Bar Screen chamber with minimum free board 300 mm and minimum size 0.5m x 1m x 0.3m SWD and suitable size SS Bar screen with minimum size of bar 5x25 mm is installed at suitable angle at the inlet of raw sewage sump before pumping and manual system to collect and transport the screening material . The unit shall be designed for peak flow - 2 no.(min.) .					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		Electrical & mechanical(2 Nos)					
		Civil (1Nos)-will be paid seperately in civil work					
iii)		Supply, installing, testing and commissioning vertical fully floodable type submersible drainage pump of non-corrosive material with shredder/cutter in close coupled design single stage, suitable for handling 20 mm dia solids for transferring raw sewer from sump to outside the building with float switch for automatic start and stop arrangement with panel and wiring, chain and pulley, mechanical seal complete in all respect as per instruction of the Engineer in charge. (The shop drawing or the pumps along with its characteristics curves, model and technical data etc. are to be submitted for approval before purchase of pump).Star delta suitable starter complete in all respect for automatic/manual operation of pump,start and stop push button contactor with required overload production and single phase preventor.					
		Material of Construction (M.O.C): Corrosion Resistant in general					
		: Casing — Cast Iron					
		: Impeller — Ductile cast iron/SS					
		: Bearings — Anti friction, prelubricated ball bearings, packed with grease for life.					
		Motor: — Dry Motor with built in over load protection					
		Protection - IP68.					
		Insulation Class - F					
		RAW SEWAGE PUMP-(4 nos min.)					
		Capacity - 190 LPM (min.)					
		Head - 15 m					
		Solid handing - 10-20mm					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
iv)		RCC Equalisation tank with hydraulic retention time Min.6 Hrs HRT of suitable Size free Board 500 mm,the effluent of equalisation tank is agitated with diffused air that is fed by an air blower, including pipe non-corrosive material and its complete system. (1 unit)					
a)		Civil-will be paid seperately in civil work					
b)		Mechanical & Electrical					
v)		RCC MBBR-(4 nos. minimum) with minimum 4hr. retention time of each reactor of suitable size with Air grid CPVC pipe material of construction or corrosion resistant material,Air diffusers (fine bubble), HDPE approved make Bio media (MM Aqua/Thermax or any other approved make) for each aeration tank,with minimum water depth of 3.8 m.					
a)		Electrical & mechanical(2 Nos)					
b)		Civil(2 Nos)-will be paid seperately in civil work					
vi)		ROTARY AIR BLOWERS					
		Providing and Installation of Rotary air blowers for air scouring, driver through v-belt or directly coupled through flaxble coupling. Motor shall be of suitable HP for 400-440 volts, ,1500RPM, 3 phase, alongwith air filter, non-return valve, safetyvalve, base plate and necessary air piping fittings, valves, flowmeters etc.					
		(Blower capacity and pressure head shall be suitable to meet the requirement of equalisation tank and Bio reactor suitable for average flow rate of sewer of 450cu.m per day)- 6 nos.(4working +2 stand by)					
vii)		RCC secondary tube settler -2 no. maximum Hydraulic loading 2.0 cu.m/sq.m/hr and with approved quality media. (2 units) .SWD-2.4m					
a)		Electrical & mechanical(2 No.)					
b)		Civil(1No.)-will be paid seperately in civil work					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
viii)		Providing and fixing of OxiLyte (Mixed Oxidant) Generation System , based on ECA Technology, producing non toxic mixed Oxidant Slution at 1000 ppm of Oxidant Concentration or any other approved disinfection method excepted by HSCC. The solution should be at a pH 3+-0.5 suitable for 24x7 operations should produce 100litre per hour. The system should be supplied complete with appropriate dosing pumps , valves, piping, fittings, chemical dosing tank etc. complete in all respect. (2 unit)					
ix)		RCC supernatant tank /Filter feed tank minimum 40 cu.m capacity (1 unit) with filter feed pumps - The civil work will be paid seperately					
		FILTER FEED PUMPSETS					
		Providing and installation horizontal single/multistage centrifugal monoblock pumping set with CI body, SS impeller, coupled with totally enclosed fan cooled indluction motor mounted on common structural base plate with all pump accessories complete as per specifications inclusive rubber vibration eleminators motor suitable for 415 volts, 1500RPM, 3 phase 50 HZ. A/c supply.					
		Type of pump - Horizontal					
		Capacity -200 LPM					
		Head - 30 M					
		Nos.- 2 (min.)					
x)		MULTI GRADE FILTER					
		Providing and installation of mild steel pressure vessel (as per IS:2825) 6 mm thick natural rubber lining fabrication standard multi grade filter complete in all respects, of total capacity 150LPM, complete with dished ends, supporting legs, manhole cover, frontal pipe work fitting with valves. Plant shall be provided with inlet, outlet pressure gauge, sample cocks, charge of filter media graded sand and internals consisting of strainers fitted on plate for collection. (No. of unit-2)					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		Dia of vessel -1200mm (minimum)					
		Shell thickness -6mm (minimum.)					
		Dish end thickness-8mm (minimum.)					
		Nozzie plate -10mm thick (minimum.)					
		Manhole -450mm					
xi)		ACTIVATED CARBON FILTER					
		Providing and installation of mild steel pressure vessel (as per IS:2825) 6 mm thick natural rubber lining fabrication standard multi grade filter complete in all respects, of total capacity 200LPM, complete with dished ends, supporting legs, manhole cover, frontal pipe work fitting with valves. Plant shall be provided with inlet, outlet pressure gauge, sample cocks, charge of approved quality activated carbon media. (No. of unit-2)					
		Dia of vessel -1200mm (minimum)					
		Shell thickness -6mm (minimum.)					
		Dish end thickness-8mm (minimum.)					
		Nozzie plate -10mm thick (minimum.)					
		Manhole -450mm					
xii)		RCC sludge sump (15cu.m minimum) and sludge pump set with CI body, SS impeller and shaft coupled with to a totally enclosed fan cooled iniduction motor complete with HDPED/F pipings, sluice valves, non return valves, fittings etc as required. Motor suitable for 415 volts, 3 phase 50Hz. A/c supply with control auto start float switch with return sludge line upto Bioreactor.					
		SLUDGE PUMP- (2 nos. minimum)					
		Capacity -35 LPM					
		Head - 8 m					
		Solid handing - 50mm (minimum)					
		Civil - RCC sludge sump and piping(1 Nos)-will be paid seperately in civil work					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
xiii)		Providing and fixing 24 plates 600 x 600mm size hydraulic operated filter press - 2no. with suitable sludge pump(screw type) and sludge tank of 3,000 ltrs. (min.) capacity alongwith piping, fittings valve etc. complete in all respects.					
xiv)		Providing and fixing dust and vermine proof cubical type motor control panel centre for the various pumps, blower etc. required. It is fabricated from 2mm thick CRCA sheet with stove enamelled finish and comprising of:Panel should have at least 20% spare feeders.					
a.		One incomming main MCCB of required capacity suitable rating					
b.		MCCB/MPCB, one for each motor					
c.		Fully automatic DOL/star delta starters suitable for different motors/pumps used in the ETP.Upto 7.5 HP DOL may be used and above star/delta starter used with push buttons one for each motor and on/off indicating neon lamps.					
d.		Single phasing preventors of appropriate rating for each motor.					
e		rotary type selector switch					
f		Panel type ampere meters, one for each motor shall be with rotary selector switch to monitor line currents.					
g		Panel type volt meters, on incoming main with rotary selecting switch to monitor voltage between phase to neutral and phase to phase.					
h		Neon phase indicating lamps and indicating lamp for each motor on incoming mains.					
l		Rotary switch for manual or auto operation for each pump					
j		Fully taped separate aluminium bus bar of required capacity for normal and emergency supply.					
k		The panel shall be pre-wired with coded wiring. All intercnnting wiring from incoming main to switchgear, meters and accessories within the switchboard panel shall have suitable copper ferrules					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
xv)		Electrical works (including supply, installation and termination of cables of suitable size as per HP of all pumps with all structural supports, clamps and cable trays as per approved design/specifications,installation will be as per relevant Indian standard and CPWD specification alongwith control cable of suitable size).(1 lot). Any other electrical and mechanical item required to complete the work.					
xvi)		Providing and fixing digital type flow meter etc. complete in all respects. (1 no.)					
xvii)		Providing and fixing lab. Equipments including digital type pH meter, COD kit, TDS kit, bicker, conical flask etc. complete in all respects. (1 set)					
xviii)		Sludge drying beds (5.0X3.0X1.4) (minimum size)-4 nos. (complete piping & mechanical work)-civil work will be paid seperately					
xix)		Rooms for Pumps & control panel (60 sq.m.) (minimum size)					
a)		Civil-will be paid seperately in civil work					
b)		Electrical & mechanical					
xx)		RCC Treated water tank (80m3) (minimum)-will be paid seperately in civil work					
		Note: The rate also be included the cost of trial run for period of two month from the date of handing over and operation and maintenance of the plant for a period of one year from the expiry of trial run period including the cost of consumables complete as specification as directed .Obtain required no. of test report of treated/raw sewer during trial run. Tentative raw sewage generation & characteristics for designing of the plant are mentioned below. The bidder has to take this own judgment for designing the system					
		Average daily flow (cum/day) : 450 CuM per day					

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
		pH : 5.5 - 8.5					
		BOD (5 days at 20 degree C) (mg/l) : 150-400					
		COD (mg/l) : 250-600					
		Suspended solids (mg/l): 200-400					
		Oil & grease (mg/l) :20-50					
		The treated effluent characteristics shall be as per local pollution control board standards. The treated effluent (indicative) shall have following standard:-					
		BOD : Less than 10 Mg/l					
		COD : Less than 100 mg/l					
		Suspended solids: Less than 10 mg/l					
		Oil & grease : Less than 10 mg/l					
		pH : 6.5 - 8.0					
		Bio-assay test : Survival of fish after 96 hrs 100 %					
		Odor-Odorless					
		On the basis of the above and as per site condition the detailed drawing along with design calculation (Hydraulics, process, Structure etc.) shall be submitted to HSCC for the approval of the same before the start of the work The STPhas to be designed and installed by the approved vendor (Geo Miller, Ion Exchange, Fontus,Thermax, Pollucon Technologies, INDWA, AKAR Implex (P) Ltd.).					
		Complete functional STP 450 KLD capacity as mentioned aboveThe work to be executed as per approved shop drawings/design which meet the functional requirement quoted by the agency.The price quoted by the bidder shall include all the items stated above and also any other item/work required for completion of the work and efficient functioning of STP nothing extra shall be paid beyond above rates (BOQ item no. 15.00 subhead i to xx) except civil item cost.	Set	1			
SUB TOTAL(Sewage Treatment Plant)							

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
14.00		EXTERNAL WATER SUPPLY(for use of recycling of STP treated water for horticulture)					
12.01	18. 31	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)	18.31.1	100 mm diameter					
	18.31.1.1	Class I	each	6.0			
b)	18.31.3	150 mm diameter					
	18.31.3.1	Class I	each	4.0			
12.02	18. 34	Constructing masonry chamber90x90x100 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)	18.34.1	With F.P.S.bricks	each	6.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
12.03	18.35	Constructing masonry chamber120x120x100 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)	18.35.1	With F.P.S.bricks	each	4.0			
12.04	18. 59	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)	18.59.2	80 mm dia	each	2.0			
12.05	18.61	Providing and fixing C.I. dirt box strainer for bulk type water meter with nuts, bolts, rubber insertions etc. complete confirming to IS:2373					
a)	18.61.2	100 mm dia	each	1.0			
b)	18.61.3	150 mm dia	each	2.0			
12.06	18. 68	Providing and laying D.I. specials of class k-12 suitable for push-on jointing as per IS:9523					
a)	18.68.1	Upto 600 mm dia	quintal	23.0			
12.07	18. 70	Providing push-on-joints to Centrifugally (Spun) Cast Iron pipes or Ductile Iron Pipes including testing of joints and including the cost of rubber gasket					
a)	18.70.1	100 mm dia pipes	joint	240.0			
b)	18.70.2	150 mm dia pipes	joint	40.0			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
12.08	18. 72	Providing and laying S&S Centrifugally Cast (Spun)/Ductile Iron pipes confirming to is:8329:					
a)	18.72.1	100 mm dia Ductile Iron Class k-7 pipes	metre	700.0			
b)	18.72.2	150 mm dia Ductile Iron Class k-7 pipes	metre	100.0			
12.09	18. 80	Disinfecting C.I./D.I. water mains by flushing with water containing bleaching powder at 0.5 gms per litre of water and cleaning the same with freash water, operation to be reaeated three times including getting the sample of water from the disinfected main tested in the municipal laboratory					
a)	18.80.2	100 mm diameter C.I./D.I. pipe	100 metre	6.0			
b)	18.80.4	150 mm diameter C.I./D.I. pipe	100 metre	1.0			
12.10	18. 12	Providing and fixing G.I.pipes complete with G.I. fittings including trenching and refilling etc. (External work)					
a)	18.12.2	20 mm dia nominal bore	metre	100.0			
12.11	NS	Providing and fixing puddle flanged including 60 cm long GI pipe piece welded/threaded with MS plates 450x450x6 mm thick with both end screwed/flanged.					
a)		For 100 mm dia pipe	Each	2.0			
b)		For 150 mm dia pipe	Each	2.0			
12.12	NS	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			

Name of Work:BOQ of Plumbing work of LGB Mental Hospital, Tezpur,Assam							
Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
12.13	NS	Providing and fixing garden hydrant self rotary with spray arm with 20 mm outlet complete with bolts,nuts and rubber insertion etc. and control valve,adopter complete in all respect as per approved make and model by Engineer-incharge.	each	40.0			
		SUBTOTAL (EXTERNAL WATER SUPPLY for use of recycling of STP treated water for horticulture)					

**PROJECT NAME : Construction of LGB Mental
Hospital,Tezpur,Assam**

Fire Fighting ABSTRACT OF COST Mental Hospital

S.No.		Amount in figures(in Rs.)
	Fire Fighting System	
A	Fire Fighting works(PHE)	
B	Fire Fighting works(Electical)	
	TOTAL (Rs)	

PROJECT NAME : Construction of LGB Mental Hospital, Tezpur, Assam							
Name of Works: BOQ Fire Fighting Works of LGB Mental Hospital, Tezpur, Assam							
SI. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	5	6	7	8
1.00		FIRE FIGHTING SYSTEM					
A		Fire Fighting works(PHE)					
1.1	18.72	Supplying and laying S&S centrifugally cast (spun) / Ductile iron pipes conforming to IS: 8329					
1.1.1	18.72.16	150 mm dia Ductile Iron class K-9	Metre	800.00			
1.2	18.69	Providing & Laying D.I. Specials of class K-12 suitable for mechanical jointing as per IS:9523					
1.2.1	18.69.1	Upto 600 mm dia	quintal	40.00			
1.3	18. 70	Providing push-on-joints to centrifugally (Spun) cast iron pipes of ductile iron pipes including testing of joints and including the cost of rubber gasket					
1.3.1	18.70.2	150 mm dia pipes	joints	350.00			
1.4	2. 10	Excavating trenches of required width for pipes, cables etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5m including getting out the excavated soil, and then returning the soil as required, inlayers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed within a lead of 50 m					
1.4.1	2.10.1.2	Pipes, cables etc exceeding 80 mm dia but not exceeding 300 mm dia	Metre	800.00			

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.05		Heavy class M.S. 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.					
	a)	200 mm dia (5.2 mm thick)	Metre	30.00			
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.					
	a)	150 mm dia (with Flanged joints)	Metre	1200.00			
	b)	100 mm dia (with Flanged joints)	Metre	1300.00			
	c)	80 mm dia (with Flanged joints)	Metre	50.00			
	d)	65 mm dia	Metre	300.00			
	e)	50 mm dia	Metre	400.00			
	f)	40 mm dia	Metre	500.00			
	g)	32 mm dia	Metre	2500.00			
	h)	25 mm dia	Metre	4500.00			
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	60.00			
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	70.00			

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
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	50.00			
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	60.00			
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	2.00			
1.12		Providing and fixing Set of "Siamese" quadruplet instantaneous fire brigade connections comprising of two gunmetal instantaneous male inlet coupling 63mm dia with plug and cap, chain bends, tees etc for inlet to the static tank.	Each	1.00			
1.13		Providing & Fixing 150 mm dia, 4 way suction coupling for firebrigade withdrawal of water from the fire tank	Each	1.00			

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.14		Providing and fixing 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	35.00			
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	25.00			
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	30.00			
b)		80 mm dia	Each	29.00			
c)		50 mm dia	Each	16.00			
1.17		Supplying, testing, installation & commissioning of pressure switches for pumps including necessary wiring upto the control panel.	Each	9.00			

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.18	18.34	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.	Each	10.00			
	18.34.1	with F.P.S. bricks					
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	35.00			
1.20	18..31	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)	18.31.4.2	200 mm dia	Each	2.00			
b)	18.31.3.2	150 mm dia	Each	6.00			
c)	NS	80 mm dia	Each	4.00			
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 caliberation of 0 - 16 Kg / cm ² .	Each	39.00			

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.22		Supplying and Fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926	Each	35.00			
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	18.00			
1.24		Providing, Fixing, Testing and Commissioning of Sprinkler Installation Control Valve of Cast iron body and brass / bronze working parts comprising of water motor, alarm, bronze seat clapper and clapper arm, hydraulically driven mechanical gong bell to sound continuous alarm when the Sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc. of size 200 mm dia, as required.	Each	6.00			
1.25		Supplying, Installation, Testing & Commissioning modular construction master control annunciation panel for sprinkler with provision for requider No. of Zone (30% additional spares),eachsprinkler hydrant will have atleast 2 zone on each floor as approved by engineer.The panel shall have but not limited to the following arrangment.					
a)		Indication of Zone sprinkler					
b)		Indication of zone fault					
c)		Fire/fault hooter					
d)		Alarm cancel for fire/fault					
e)		Battery for emergency back up of 4 Hrs.	Set	2.00			

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.26		Providing and Fixing 15 mm dia gunmetal / brass quartzoid type Sprinkler Head with quartz bulb and set to operate at specified temperature.					
a)		Pendent / Upright type, 68 C, Chrome plated	Each	2500.00			
b)		Side wall extended throw 20 mm dia 68 C, Chrome plated	Each	200.00			
1.27		Fabricating, Supplying, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header on the top of each riser fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve complete with suitable drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes 1.2 Metre high and 250 mm dia	Each	14.00			
1.28		Supply, Installation, Testing and Commissioning External Yard Hydrant Stand Post comprising of GI pipe 80 mm dia (heavy duty C class) from existing ringmain to about 1 meter above ground level and Single Headed Yard Hydrant Valve with 80 mm dia flanged inlet, instantaneous gunmetal coupling of 63 mm dia with cast iron wheel ISI marked, conforming to IS : 5290 (Type A), with ABS cap and chain etc.complete with all accessroies as required.	Each	25.00			
1.29	18.48	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	20000.00			

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.30		Supply, erection, testing & commissioning of exit glow sign board of size 200mm x 350 mm wall mounting signage consisting of photo luminescent coating on acrylic cover	Each	200.00			
1.31		Providing and fixing fire extinguisher of carbon dioxide type consisting of brand new high pressure steel cylinder bearing IS: 7285 mark and having the approval of controller of explosives Nagpur, wheel type valve bearing IS:3224 mark internal discharge tube, 1 meter long high pressure discharge hose, non conducting horn, suspension bracket, fully charged bearing IS: making fixed to wall as directed.					
		4.5kg capacity cylinder	Each	50.00			
1.32		Providing and fixing 9 liters capacity fire extinguisher water type gas pressure conforming to IS marking, fixed to wall.	Each	50.00			
1.33		Providing and fixing ABC type fire extinguishers complete in all respects.					
		Capacity 5.0 Kg.	Each	50.00			
1.34		Fabricating, Supplying, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header in pump house fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve, complete with drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes					
		2 Metre high and 450 mm dia suitable to operate Jockey Pump, Main Fire Pump & Diesel Engine Driven Fire Pump	Each	3.00			
1.35		Providing and fixing C.I. non-return valve complete with gunmetal seat, bolts, nuts washer & rubber insertions as required conforming to IS:5312.					
a)		150 mm dia	Each	7.00			
b)		80 mm dia	Each	2.00			

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
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).					
a)		Fire pump with SS-306 impeller shall be horizontal split casing centrifugal suction type multistage having following capacity and head so as to ensure a minimum pressure of 3.0 kg per square cm. at the highest and farthest out let at the specified flow complete with necessary strainer / foot valve suction side and pressure gauge on the delivery side including by pass arrangement for periodical testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.					
b)		Squirrel cage type TEFC motor suitable for operation on 415V, 10%, 3 phases 50 Hz. system of suitable HP for the above pump with synchronous speed of 1500 RPM and flexible coupling. The pump motor should conform to IS: 325-1978.					
c)		Common bed plate fabricated from mild steel channel or cast iron type.					
d)		Suitable cement concrete pump foundation & vibration damping arrangement with cushy foot mounting as required.					
l)		Capacity 2280 LPM and Head 65 Metres	Each	2.00			
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.)					

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
a)		Horizontal centrifugal type multi-stage, fire pump with SS-306 impeller 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.					
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 65 Metres	Each	1.00			

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.38		Supplying, installation, testing and periodic commissioning of electric motor driven automatic pressurization pump set consisting of the following (as per specification)					
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 SS impellor ; mechanical seal & S.S. shaft necessary strainer, pressure gauge on delivery side etc. including by-pass arrangement for testing of the working of the pumping set as required .					
b)		Squirrel cage A.C. induction motor suitable for operation on 415 V, 10% 3 phase 50 Hz. A.C. supply and of minimum 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 - 65 Metres	Each	2.00			
1.39		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 amendmendts).					

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
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 25m so as to ensure a minimum pressure of 3.0 kg/sqm at the highest and farthest out at the specified flow complete with necessary strainer with foot valve in suction side and pressure gauge on the delivery side including bypass arrangement for periodic testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.(Including taking necessary approval of complete fire fighting scheme from local fire authority before and after start of work) {Agency also has to submit characteristic curve of the pumps, model & other technical data for approval before placing the order}					
b)		Squirrel cage AC induction motor suitable for operation of 415 V ,+/- 10%, 3 phase 50 HZ, AC supply and of minimum 15 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 base plate fabricated from mild steel channel or cast iron type					
d)		Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot mounting as required	Each	4.00			
1.40		Providing & fixing electrical gang bell with all inter-connecting cables for an audio annunciation of pumps failure, complete in all respects.	Each		1.00		
1.41		Providing & fixing half mile range siren with all inter connecting cables and wires complete in all respects.	Each		1.00		

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1.42		Providing & fixing puddle flanged including 40 cm long GI pipe piece welded / threaded with MS plates 450x450x6mm thick with both end screwed / flanged					
		For 80 mm dia pipe	Each	8.00			
		for 150 mm dia pipe	Each	6.00			
		Total of Fire Fighting works(PHE)					

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
2.00		Fire Fighting works(Electical)					
2.01		FIRE PANEL Emergency					
		Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, wall mounted type, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, powder coat painted and having following incoming and outgoing switchgears complete as required. Panel shall have IP-42 protection.					
		INCOMER :					
		320 Amp 415 volts, 35 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In.					
		R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 no. 0 to 500 V Digital voltmeter with selectot switch					
		1 to 0 to 320 Amps Digital ammeter with selector switch with one set of 320/5A C.T. s					
		BUSBARS :					
		400 Amp TPN busbars of aluminium					
		OUTGOINGS :					
		2 Sets of following					
		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.					

Sl. No.	DSR-2007 No.	Description of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
		1 No. 3 Phase, fully automatic star-delta starter of 60 HP with thermal overload relay, Timer, Push Buttons and Auto-manual selector switch etc complete as required.					
		Single Phase preventer					
		1 to 0 to 125 Amps Digital ammeter with selector switch with one set of 125/5A CT,s.					
		1 Set of phase indicating lamp with 2A SP control MCBs					
		Neon indicating Lamps for "ON" and "OFF" indication with 2A SP control MCBs.					
		5 Sets of following					
		1 No. 32 Amp. 415/500 volts,25 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 Set of phase indicating lamp with 2A SP control MCBs					
		Neon indicating Lamps for "ON" and "OFF" indication with 2A SP control MCBs.					
		2 Set of following (in a separate cubicle)					
		One no. Diesel engine auto starting kit with all necessary relay, controls, wiring etc to start 60 HP diesel engine when electrical driven fire pump fail to start.					
		One no rectifier circuit, battery charger, batteries, DC Voltmeter, DC Ammeter etc.					
		ESDB-FIRE PUMP Panel as mentioned above	Set	1.00			
		Total					

SUMMARY OF COST ESTIMATE - ELECTRICAL WORKS

S.No.	Description	Amount In Figure (In Rs.)	Amount in Words (Rs.)
1	SUBHEAD 1: H.T. SUB STATION		
2	SUB HEAD 2: MAIN LT PANEL :		
3	SUB HEAD 3 : DG SETS		
4	SUB HEAD 4 : MV PANELS:		
5	SUB HEAD-5: MCB DISTRIBUTION BOARDS.		
6	SUB HEAD: 6 - WIRING		
7	SUB HEAD: 7 - LIGHT FIXTURE AND FANS		
8	SUB HEAD 8: TELEPHONE SYSTEM		
9	SUB HEAD 9: CCTV		
10	SUB HEAD 10: FIRE DETECTION AND ALARM SYSTEM		
11	SUB HEAD 11: CONDUITING FOR TV OUTLETS		
12	SUB HEAD 12:CONDUITING FOR COMPUTER SYSTEM .		
13	SUB HEAD 13: LIGHTENING PROTECTION		
14	SUB HEAD 14 : LIFTS		
15	SUB HEAD 15: LT CABLES		
16	SUB HEAD 16: EARTHING SAFETY EQUIPMENT AND MISC. ITEMS		
17	SUBHEAD 17.00 : OUTDOOR LIGHTING :		
18	SUB HEAD 18:00 PUBLIC ADDRESS SYSTEM.		
19	SUB HEAD 19: NURSE CALL BELL SYSTEM.		
20	SUBHEAD 20 : UPS SYSTEM		
	GRAND TOTAL FOR ALL ELECTRICAL WORKS		

BOQ FOR ELECTRICAL WORKS OF MENTAL HOSPITAL AT LGB REGIONAL INSTITUTE OF MENTAL HEALTH, TEZPUR, ASSAM.

S.No.	DESCRIPTION	Unit.	Total Qty	Rate in Figures (in Rs.)	Rate in words (in Rs.)	Amount in Rs.
1	2	3	5	6	7	8
	SUBHEAD 1: H.T. SUB STATION					
1.00	SUBSTATION EQUIPMENTS					
	Main Substation : (In Hospital)					
1.01	HT Panel :					
	Supply, erection, testing and commissioning of 7 panel indoor type HT Panel having 630A, 33 kV, 3 Phase, 50 Hz., metal clad, dead front, 18.4 KA rupturing capacity Vacuum Circuit Breakers with interlocking scheme for the operation of different VCB, connections etc. complete with following incomers and outgoing including interlocking as per technical specifications and as required.					
	a INCOMER :					
	i 2 No. VCB Panel having following					
	1 No. 630A, 33 kV, 3 Phase, 50Hz., metal clad, dead front, 18.4 KA rupturing capacity, Fully Drawout type, Vacuum Circuit Breaker (VCB)					
	1 set of 33kV/110V Potential Transformers with HRC fuses for metering and protection.					
	1 Set of Phase indicating lamps with HRC fuses					
	1 No.digital voltmeter.					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY					
	2 No. Push button for CLOSE and TRIP					
	1 set of Current Transformer for metering and protection or as required by state electricity board.					
	1 No. digital ammeter .					
	1 Set of CDG 61 (2 No. O/C, 1 No. E/F) relay					
	8 window Alarm annunciator with separate hooter, accept and rest push buttons.					

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 Set of undervoltage relay and Overvoltage relay					
	1 set of trip circuit supervision relay					
	Auxiliary Relay with shunt trip coil.					
	1 No. Master Trip relay					
	1 No. digital Power factor meter					
	1 No. digital Frequency meter					
	1 No. 3-Phase digital Trivector Meter of suitable rating					
	BUSBARS :					
	33KV, 630 Amps, 18.4 KA Three Phase busbars of Copper.					
b	OUTGOINGS :					
i	4 No. VCB Panels each having following					
	1 No. 630A, 33kV, 3 Phase, 50Hz., metal clad, dead front, 18.4 KA rupturing capacity, Fully Drawout type, Vacuum Circuit Breaker (VCB)					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY					
	Push buttons for CLOSE and TRIP					
	1 set of Current Transformer for metering and protection as per requirement.					
	1 set of 33kV/110V Potential Transformers with HRC fuses for metering and protection.					
	1 No. digital Amps ammeter .					
	1 Set of CDG 61 (2 No. O/C, 1 No. E/F) relay					
	1 No. Master Trip Relay					
	1 set of trip circuit supervision relay					
	Auxiliary Relay with shunt trip coil.					
	8 window Alarm annunciator with separate hooter, accept and rest push buttons.					
c	BUSCOUPLER :					
i	1 No. VCB Panels each having following					

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 No. 630A, 33kV, 3 Phase, 50Hz., metal clad, dead front, 18.4 KA rupturing capacity, Fully Drawout type, Vacuum Circuit Breaker (VCB)					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY					
	Push buttons for CLOSE and TRIP					
	1 set of Current Transformer for metering and protection as per requirement.					
	1 set of 33kV/110V Potential Transformers with HRC fuses for metering and protection.					
	1 No. digital Amps ammeter .					
	HT Panel as mentioned above.	Set	1			
1.02	Four pole structure with GOD, AB switch/ D.O. fuse and lightening arresters, pin/ disc insulators etc of 33 KV grade complete with foundation of pole, fencing, gate etc complete as per requirements of State Electricity Board and as required.	Set	1			
1.03	BATTERY CHARGER PANEL					
	Supply, erection, testing and commissioning of battery charger panel totally enclosed, free standing type, dust, damp and vermin proof powder coated panel made up of CRCA sheet, with 24 V DC continuous out put for control supply of HT panel complete with battery, control cabling etc. as required. Capacity of battery charger panel should be suitable for above mentioned H.T. Panels.					
	2 numbers Sealed Maintenance Free (SMF) battery of minimum 150 AH ampere hour capacity.					
	Boost and Trickle charger suitable for above items.					

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 No. AC Voltmeter (0-500Volt)					
	1 No. DC Voltmeter					
	1 No. DC Ammeter					
	1 set of AC and DC indicating lamps					
	1 No. DC Battery charging position indicator					
	DC distribution board suitable for above application to incoming & outgoing MCBs include tripping, closing and indication etc.					
	Control cabling between DC Distribution panel to the HT panel of the Substation with suitable core 1.5 sqmm copper cable					
	Battery Charger as mentioned above.	Set	1			
1.04	H.T. CABLE					
	Supply of following sizes of 33 kV grade, multicore aluminium conductor XLPE armoured and overall HR PVC sheathed power cable as per IS : 7098.					
	i 3 Core, 240 sq mm	Metre	800			
1.05	Supplying and making end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size 3 Core, XLPE aluminium conductor cable of 33kV grade as required.					
	i 240 sqmm indoor type	Each	4			
	ii 240 sqmm outdoor type	Each	4			

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
1.06	Providing and laying of 150mm dia non pressure NP2 class (heavy duty) RCC pipe with colar joint with stiff mixture of cement (1 cement : 2 fine sand) including testing the joints,digging and back filling the trench etc. as required for laying of pipe to be laid 1100 mm below ground level.	Metre	100			
1.07	Laying of one number 33 kV, XLPE, power cable of 3 core 240 Sqmm in existing RCC pipe of 150mm dia complete as required	Metre	800			
1.08	Making of manhole size 1.5 m (length) X 0.6 m (width) X 1.1 m (depth) with monkey ladder and brick work on sides. Bottom will be soft soil to absorb water and cover shall be of RCC of suitable size as approved by site incharge complete as required.	Nos	5			
1.09	Supply & laying of 33 KV cable route marker of suitable location & internal.	Nos	15			
1.10	TRANSFORMER-(HOSPITAL AREA)					

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
	Supply, erection, testing and commissioning of Cast Rasin Dry Type 1250 KVA, 33/0.433 kV, 3 Phase, 4 wire, 50 Hz.,Dyn11 vector group, copper wound, class F insulation associated with winding temperature indicator/ controller actuated by means of resistance temperature detector embedded in LV windings, indoor type transformer , tappings for on load operation on HV side from -15% to +5% in steps of 2.5%, cable box at primary (HT side) and secondary end (LT side) shall be connected through busduct, complete with all fittings and accessories and confirming to IS 11171 ammended upto date, interconnection of control cables and accessories etc complete. The transformer will be as per detailed CPWD technical specifications and as required.	each	2			
1.11	BUS DUCTS (Hospital area)					
	i) Supply, Installation, testing and commissioning of the following, 415 V, 3 Phase, 4 Wire, sandwich construction Aluminium Bus Duct including bends, flexible joints, earth bus (2 runs of aluminium strips), supports for installation, supporting arrangements, etc. complete as per technical specifications and as required.					
	i) 2000 phase and neutral four pole	Mtrs.	30			
	TOTAL FOR SUB HEAD 1: H.T. SUB STATION					
2.00	SUB HEAD 2: MAIN LT PANEL :					
	LT Panel. (Hospital Block) :					

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
2.01	Supply, installation, testing and commissioning of LT Panel, cubicle type, totally enclosed, free standing type, dust ,damp and vermin proof panel , powder coated, made up of CRCA sheet, complete with aluminium busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, necessary interlocking, and having incoming and outgoing switchgears with cable alley in front as mentioned below and complete as per technical specifications and as required. The size of cable alley shall be sufficient enough to accomodate the cable sizes as mentioned in the SLD/ specifications/ drawings etc.					
	Note :					
	1. All relays to operate at 240Volts, Single phase, 50Hz., AC supply through UPS of suitable rating. UPS is in the scope of supply.					
	A. INCOMERS :					
	i) 2 No. ACB Panels each having following:					
	1 No. 2000 A, 415/500V, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit & earth Fault trip including under voltage release and lockable trip push button. ACB should have I _{cw} =I _{cs} = 50 KA for 1 sec.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
	Push button to CLOSE the ACB.					
	1 set of 2000/5 set of CT for measurement and protection.					

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
	R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs					
	Restricted earth fault protection system with one set of CT.					
	1 set of Digital multi function meter with LCD display and measurement of parameters like voltages, currents, p.f, frequency, active and reactive power and energies etc					
	One set of dual core dual ratio CT of 2000/1000/5/5A for capacitor panel.					
ii)	1 No. ACB Panels each having following (for DG):					
	1 No. 800 A, 415/500V, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit & earth Fault trip including under voltage release and lockable trip push button. ACB should have I _{cw} =I _{cs} = 50 KA for 1 sec.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
	Push button to CLOSE the ACB.					
	1 set of 800/5 set of CT for measurement and protection.					
	R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs					
	1 set of Digital multi function meter with LCD display and measurement of parameters like voltages, currents, p.f, frequency, active and reactive power and energies etc					
B.	BUSBARS :					
	2500 Amps Phase TPN busbars of aluminium.					
C.	BUS COUPLER :					

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
	<i>1 No. ACB Panels each having following:</i>					

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 No. 2000 A, 415/500V, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & earth Fault trip including under voltage release and lockable trip push button. The ACB should have $I_{cw} = I_{cs} = 50KA$ for 1 sec.					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP.					
	Push button to CLOSE the ACB.					
	1 Set of Ammeter with ASS and CTs.					
	D. OUTGOING.					
	i 3 No. ACB Panels each having following:					
	800A, 415/500V, Motorised, Fully Drawout type (EDO), TPN, Air Circuit Breaker with microprocessor based overload, short circuit & earth Fault trip including under voltage release and lockable trip push button. ACB should have $I_{cw} = I_{cs} = 50 KA$ for 1 sec.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
	Push button to CLOSE the ACB.					
	R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs					
	1 set of 800/5 set of CT.					
	1 Set of Digital Ameter with ASS.					
	1 set of CT operated Digital Energy metre.					
	ii 3 Nos. MCCB as per following details / specifications:					

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
	400 Amp 415 volts, 50 KA (Ics) TPN MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamp with 2A control SP MCB to indicate OPEN ,CLOSE, TRIP for MCCB.					
	1 set of 400/5 Amp CT.					
	1 Set of Digital Ameter with ASS.					
	1 set of CT operated digital energy metre.					
iii	3 Nos. MCCB as per following details / specifications:					
	320 Amp 415 volts, 50 KA (Ics) TPN MCCB with variable current settings In 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 lamp with 2A control SP MCB to indicate OPEN ,CLOSE, TRIP for MCCB.					
	1 set of 320/5 Amp CT .					
	1 Set of Digital Ameter with ASS.					
	1 set of CT operated digital energy metre.					
iv	4 Nos. MCCB as per following details / specifications:					

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
	250 Amp 415 volts, 50 KA (Ics) TPN MCCB with variable current settings In 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 lamp with 2A control SP MCB to indicate OPEN ,CLOSE, TRIP for MCCB.					
	1 set of 250/5 Amp CT.					
	1 Set of Digital Ameter with ASS.					
	1 set of CT operated digital energy metre.					
v	6 Nos. MCCB as per following details / specifications:					
	200 Amp 415 volts, 50 KA (Ics) 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 lamp with 2A control SP MCB to indicate OPEN ,CLOSE, TRIP for MCCB.					
	1 set of 200/5 Amp CT.					
	1 Set of Digital Ameter with ASS.					
	1 set of CT operated digital energy metre.					
vi	3 Nos. MCCB as per following details / specifications:					

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
	160 Amp 415 volts, 50 KA (Ics) 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 lamp with 2A control SP MCB to indicate OPEN ,CLOSE, TRIP for MCCB.					
	1 set of 160/5 Amp CT.					
	1 Set of Digital Ameter with ASS.					
	1 set of CT operated digital energy metre.					
vii	3 Nos. MCCB as per following details / specifications:					
	100 Amp 415 volts, 35 KA (Ics) 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 lamp with 2A control SP MCB to indicate OPEN ,CLOSE, TRIP for MCCB.					
	1 set of 100/5 Amp CT.					
	1 Set of Digital Ameter with ASS.					
	1 set of CT operated digital energy metre.					
viii	2 Nos. MCCB as per following details / specifications:					

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
	63 Amp 415 volts, 35 KA (Ics) 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 lamp with 2A control SP MCB to indicate OPEN ,CLOSE, TRIP for MCCB.					
	1 set of 63/5 Amp CT .					
	1 Set of Digital Ameter with ASS.					
	1 set of CT operated digital energy metre.					
E.	UPS					
	A UPS of suitable capacity single phase input and single phase output, 240V 50 Hz AC online, with inbuilt 1 Hour battery back up in the form of sealed maintenance free (SMF) batteries with power wiring to the control bus for suply to relays.					
F.	ENCLOSURE :					
	Fabrication, PVC Sleeving, Control/Power Wiring and hardware					
	Interlocking between incoming breakers and buscouplers as per interlocking scheme with cabling, necessary hardware and auxiliary contacts					
	LT PANEL Hospital Block as mentioned above.	Set	1			
2.02	CAPACITOR PANELS (Hospital Block)					

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
	Supply, installation, testing and commissioning of M.V. cubicle type totally enclosed free standing type, powder coated, dust, damp and vermin proof Capacitor Panel complete with busbars, M.V. danger notice plate, ammeter, ammeter selector switch, indicating lamps, CT's, Extra heavy duty, APP type Capacitors suitable for non linear loads upto 20%, total operating losses not more than 0.5 W / KVAR, contactors suitable for capacitor switching (current limiting contactor circuit to suppress switching inrush current) interconnections with suitable capacity aluminium leads/solid aluminium strips, rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as required.					
A.	INCOMER :					
	1 No. 800A, 415/500V, 35 KA (Ics) FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP.					
	R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs					
	Day & Night mode selector switch					
	10 steps Intelligent microprocessor based Automatic Power factor Correction relay having measurment sensitivity of 1 %.					
	Extension of incoming busbars for connection of multicore armoured aluminium cables.					

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
	B. METERING :					
	1 set of digital Amp. Meter, digital Power factor meter and Digital voltmeter					
	C. BUSBARS :					
	1000 Amp FP busbars of aluminum					
	D. OUTGOINGS :					
	i) 1 Nos . as per following details/ specification:					
	200 Amp 415 volts, 50 KA (Ics) 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.					
	200Amps, 415 volts, TP, Power Contactor suitable for capacitive switching including current limiting contactor circuit to supress switching inrush current					
	ON/ OFF delay timers for switching capacitor circuit.					
	"ON" and "TRIP" LED indicating lamp and 2A control SP MCBs					
	100 KVAR Extra heavy duty, APP type Capacitors suitable for non linear loads upto 20%, total operating losses not more than 0.5 W / KVAR.					
	ii) 4 Nos . as per following details/ specification:					
	100 Amp 415 volts, 50 KA (Ics) 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.					

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
	100 Amps, 415 volts, TP, Power Contactor suitable for capacitive switching including current limiting contactor circuit to suppress switching inrush current. ON/ OFF delay timers for switching capacitor circuit. "ON" and "TRIP" LED indicating lamp and 2A control SP MCBs					
	50 kVAR Extra heavy duty, APP type Capacitors suitable for non linear loads upto 20%, total operating losses not more than 0.5 W / KVAR.					
	iii) 3 Nos . as per following details/ specification:					
	63 Amp 415 volts, 50 KA (Ics) 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.					
	63 Amps, 415 volts, TP, Power Contactor suitable for capacitive switching including current limiting contactor circuit to suppress switching inrush current. ON/ OFF delay timers for switching capacitor circuit. "ON" and "TRIP" LED indicating lamp and 2A control SP MCBs					
	25 kVAR Extra heavy duty, APP type Capacitors suitable for non linear loads upto 20%, total operating losses not more than 0.5 W / KVAR					
	iv) 1 Nos . as per following details/ specification:					
	32 Amp 415 volts, 50 KA (Ics) TPN MCCB with thermal magnetic release having variable current settings.					

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
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	32 Amps, 415 volts, TP, Power Contactor suitable for capacitive switching including current limiting contactor circuit to suppress switching inrush current.					
	ON/ OFF delay timers for switching capacitor circuit.					
	"ON" and "TRIP" LED indicating lamp and 2A control SP MCBs					
	10 kVAR Extra heavy duty, APP type Capacitors suitable for non linear loads upto 20%, total operating losses not more than 0.5 W / KVAR.					
	Capacitor Panels for Hospital block as mentioned above	Set	2			
	TOTAL SUBHEAD 2: MAIN LT PANEL					
	SUB HEAD 3 : DG SETS					
3.00	DG Set and Accessories					
3.01	DG SET OF 500 KVA. (Hospital Block)					

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
	Supply, installation, testing and commissioning of sound proof (silent type) Diesel Generating set having 500 KVA Prime Power Ratings , 415 volt at 1500 RPM, 0.8 lagging power factor suitable for 50 Hz, 3 phase system,.85 load factor with suitable bhp, radiator 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 length 4 meter above the building top/ as per 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.					

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
-	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.					
-	Supply, installation and testing of mild steel "C" class cooling water piping complete with fittings supports, strainers, valves etc. as per specifications and schematic drawings.					
-	Black mild steel pipe with all necessary fittings bends, tees, reducers, flanges, supports, hanger, isolators etc.					
-	Butterfly valves, Non-Return Valve, Pressure Gauge, Y strainer, or any other valve, 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, two no. 15A power sockets, wiring for light fixtures and power sockets, etc.					
-	Any other item required for completion of system above (D.G. set)					
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 SWG CRCA sheet, 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.					

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
	Note :					
	1. All relays to operate at 240Volts, Single phase, 50Hz., AC supply through UPS					
	2. Panel shall be suitable for manual and automatic operation (AMF) and shall be complete as required.					
	Auto change over switch with bypass provision should be provided for auto change over of DG on LT panel.					

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
B.	1 No. ACB as per following details/ specification:					
	1 No. 800 A, 415/500V, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit & earth Fault trip including under voltage release and lockable trip push button. ACB should have Icw=Ics = 50 KA for 1 sec.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
	Push button to CLOSE the ACB.					
	1 set of 800/5-5 A CT for measurement and protection.					
	R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs					
	1 set of Digital multi function meter with LCD display and measurement of parameters like voltages, currents, p.f, frequency, active and reactive power and energies etc					
C.	DG PROTECTION AND AMF COMPONENTS:					
	- Reverse power and Reactive power relay					
	- Over Voltage relay					
	- Under Voltage relay					
	- Over frequency relay					
	- Trip circuit supervision relay					
	- Master lockout relay					
	- Master trip/supervisory relay					
	- Battery charger (with trickle and boost charging).					
	- DC voltmeter and ammeter.					
	- DC ammeter.					
	- 8 window Alarm annunciator with separate hooter, accept, reset and rest push button.					
	- Hooter.					

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
	- Engine Cranking Relay.					
	- Main supply voltage monitor, alternator voltmeter monitor and Engine Starting Relays.					
	- Auxillary relays, timer, push button and control fuses.					
	- Phase sequence relay					
	D. ENCLOSURE :					
	- Fabrication, PVC Sleeving, Control/Power Wiring and necessary hardware for complete synchronisation and load sharing					
	DG Set with AMF Panel as mentioned above (for hospital block)	Set	1			
	TOTAL SUBHEAD 3: DG SETS					
4.00	SUB HEAD 4 : MV PANELS: MV PANELS (HOSPITAL BLOCK)					
4.01	Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, wall mounted type, powder coated, 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, and having following incoming and outgoing switchgears complete as required.					
	i) MV PANEL GROUND FLOOR (1 & 6) (Emergency)					
	a) INCOMER:					
	1 no. 200 Amps , 415 volts, 35KA (lsc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					

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
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 200 Amp Digital ammeter with selector switch with one set of 200/5A C.Ts.					
b)	BUSBARS:					
	250 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	3 Nos. MCCB as per following details / specifications:					
	100Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	"ON" LED indicating lamp and 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
ii)	6 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL GROUND FLOOR (1& 6) (Emergency) as mentioned above	Set	2			
ii)	MV PANEL Ground Floor (1 & 6) (UPS)					
a)	INCOMER:					
	1 no. 63 Amps , 415 volts, 35KA (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					

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
	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 63 Amp Digital ammeter with selector switch with one set of 63/5A C.Ts.					
	b) BUSBARS:					
	100 Amp TPN Aluminium busbars					
	c) OUTGOING:					
	3 no. 32 Amps , 240 volts, 9 KA ,double Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	2 no. 25 Amps , 240 volts, 9 KA ,double Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Ground Floor (1 & 6) (UPS) as mentioned above	Set	2			
iii	MV PANEL First Floor (1 & 6) (Emergency)					
	a) INCOMER:					
	1 no. 100 Amps , 415 volts, 35KA (lsc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 200 Amp Digital ammeter with selector switch with one set of 200/5A C.Ts.					
	b) BUSBARS:					
	160 Amp TPN Aluminium busbars					

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
	c) OUTGOING:					
	i) 3 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	ii) 1 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL First Floor (1 & 6) (Emergency) as mentioned above	Set	2			
	iv) MV PANEL Second Floor (1), (6) (Emergency)					
	a) INCOMER:					
	1 no. 100 Amps , 415 volts, 35KA (lsc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 100 Amp Digital ammeter with selector switch with one set of 100/5A C.Ts.					
	b) BUSBARS:					
	160 Amp TPN Aluminium busbars					
	c) OUTGOING:					
	i) 2 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	ii) 1 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	SDB Second Floor (1), (6) (Emergency) as mentioned above	Set	2			
	v) MV PANEL GROUND FLOOR (2), (5) (Emergency)					

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
a)	INCOMER: 250 Amp 415 volts, 50 KA (Ics), TPN microprocessor based MCCB with variable settings and having microprocessor based O/L, S/C & E/F protection release. R,Y&B phase indicating lamp (LED type) with 2A control SP MCB Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter with selector switch. 1 No. 0 to 250 Amp Digital ammeter with selector switch with one set of 250/5A C.Ts.					
b)	BUSBARS: 315 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	4 Nos. MCCB as per following details / specifications: 100Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings. "ON" LED indicating lamp and 2A control SP MCB Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
ii)	3 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
iii)	2 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL GROUND FLOOR (2), (5) (Emergency) as mentioned above	Set	2			

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
	vi	MV PANEL GROUND FLOOR (2), (5) (Normal)					
	a)	INCOMER:					
		1 no. 200 Amps , 415 volts, 35KA (lsc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
		R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		1 No. 0 to 200 Amp Digital ammeter with selector switch with one set of 200/5A C.Ts.					
	b)	BUSBARS:					
		250 Amp TPN Aluminium busbars					
	c)	OUTGOING:					
	i)	2 Nos. MCCB as per following details / specifications:					
		100Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings.					
		"ON" LED indicating lamp and 2A control SP MCB					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	ii)	1 Nos. MCCB as per following details / specifications:					
		63Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
		"ON" LED indicating lamp and 2A control SP MCB					

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
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	MV PANEL GROUND FLOOR (2), (5) (Normal) as mentioned above	Set	2			
vii	MV PANEL Ground Floor (2), (5) (UPS)					
a)	INCOMER:					
	1 no. 63 Amps , 415 volts, 35KA (lsc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 63 Amp Digital ammeter with selector switch with one set of 63/5A C.Ts.					
b)	BUSBARS:					
	100 Amp TPN Aluminium busbars					
c)	OUTGOING:					
	3 no. 32 Amps , 240 volts, 9 KA ,double Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	3 no. 25 Amps , 240 volts, 9 KA ,double Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Ground Floor (2), (5) (UPS) as mentioned above	Set	2			
viii	MV PANEL First Floor (2), (5) (Emergency)					
a)	INCOMER:					

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 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					
	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 100 Amp Digital ammeter with selector switch with one set of 100/5A C.Ts.					
b)	BUSBARS:					
	160 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	3 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
ii)	3 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL First Floor (2), (5) (Emergency) as mentioned above	Set	2			
ix	MV PANEL Second Floor (2), (5) (Emergency)					
a)	INCOMER:					
	1 no. 100 Amps , 415 volts, 35KA (lsc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					

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 No. 0 to 100 Amp Digital ammeter with selector switch with one set of 100/5A C.Ts.					
b)	BUSBARS: 160 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	3 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
ii)	3 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Second Floor (2), (5) (Emergency) as mentioned above	Set	2			
x	MV PANEL Third Floor (2), (5) (Emergency)					
a)	INCOMER:					
	1 no. 100 Amps , 415 volts, 35KA (lsc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 100 Amp Digital ammeter with selector switch with one set of 100/5A C.Ts.					
b)	BUSBARS: 160 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	3 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
ii)	3 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					

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
	MV PANEL Third Floor (2), (5) (Emergency) as mentioned above	Set	2			
xi	MV PANEL Fourth Floor (2), (5) (Emergency)					
a)	INCOMER:					
	1 no. 100 Amps , 415 volts, 35KA (lsc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings.					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 100 Amp Digital ammeter with selector switch with one set of 100/5A C.Ts.					
b)	BUSBARS:					
	160 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	3 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
ii)	3 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Fourth Floor (2), (5) (Emergency) as mentioned above	Set	2			
xii	MV PANEL GROUND FLOOR (3) (Emergency)					
a)	INCOMER:					
	400 Amp 415 volts, 35 KA (lcs), TPN microprocessor based MCCB with variable settings and having microprocessor based O/L, S/C & E/F protection release.					

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
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 400 Amp Digital ammeter with selector switch with one set of 400/5A C.Ts.					
	b) BUSBARS:					
	500 Amp TPN Aluminium busbars					
	c) OUTGOING:					
	2 Nos. MCCB as per following details / specifications:					
	200Amps,415 volts, TPN, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	"ON" LED indicating lamp and 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	2 Nos. MCCB as per following details / specifications:					
	100Amps,415 volts,TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings.					
	"ON" LED indicating lamp and 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	2 Nos. MCCB as per following details / specifications:					

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
	63Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings . "ON" LED indicating lamp and 2A control SP MCB Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	2 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL GROUND FLOOR (3) (Emergency) as mentioned above	Set	1			
xiii	MV PANEL GROUND FLOOR (3) (Normal)					
a)	INCOMER:					
	250 Amp 415 volts, 35 KA (Ics), TPN microprocessor based MCCB with variable settings and having microprocessor based O/L, S/C & E/F protection release. R,Y&B phase indicating lamp (LED type) with 2A control SP MCB Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 250 Amp Digital ammeter with selector switch with one set of 250/5A C.Ts.					
b)	BUSBARS:					
	315 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	2 Nos. MCCB as per following details / specifications:					

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
	125 Amps,415 volts, TPN, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings.					
	"ON" LED indicating lamp and 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
ii)	3 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL GROUND FLOOR (3) (Normal) as mentioned above	Set	1			
xiv	MV PANEL Ground Floor (3) (UPS)					
a)	INCOMER:					
	1 no. 100 Amps , 415 volts, 35 KA (Isc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 100 Amp Digital ammeter with selector switch with one set of 100/5A C.Ts.					
b)	BUSBARS:					
	125 Amp TPN Aluminium busbars					
c)	OUTGOING:					
	6 no. 40 Amps , 240 volts, 9 KA ,double Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	4 no. 25 Amps , 240 volts, 9 KA ,double Pole, Miniature Circuit Breaker, with ON/ OFF indication.					

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
	MV PANEL Ground Floor (3) (UPS) as mentioned above	Set	1			
xv	MV PANEL First Floor (3) (Emergency)					
a)	INCOMER:					
	1 no. 200 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					
	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. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
ii)	4 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	SDB First Floor (3) (Emergency) as mentioned above	Set	1			
xvi	MV PANEL First Floor (3) (Normal)					
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					

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
	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 125 Amp Digital ammeter with selector switch with one set of 125/5A C.Ts.					
b)	BUSBARS:					
	160 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	3 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL First Floor (3) (Normal) as mentioned above	Set	1			
xvii	MV PANEL Second Floor (3) (Emergency)					
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					
	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 100 Amp Digital ammeter with selector switch with one set of 100/5A C.Ts.					
b)	BUSBARS:					
	160 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	3 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					

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
ii)	3 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Second Floor (3) (Emergency) as mentioned above	Set	1			
xviii	MV PANEL Third Floor (3) (Emergency)					
a)	INCOMER:					
	1 no. 63 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					
	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 63 Amp Digital ammeter with selector switch with one set of 63/5A C.Ts.					
b)	BUSBARS:					
	100 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	4 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Third Floor (3) (Emergency) as mentioned above	Set	1			
xix	MV PANEL Fourth Floor (3) (Emergency)					
a)	INCOMER:					
	1 no. 63 Amps , 415 volts, 35 KA (lsc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					

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
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 63 Amp Digital ammeter with selector switch with one set of 63/5A C.Ts.					
b)	BUSBARS:					
	100 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	4 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Fourth Floor (3) (Emergency) as mentioned above	Set	1			
xx	MV PANEL GROUND FLOOR (4) (Emergency)					
a)	INCOMER:					
	400 Amp 415 volts, 35 KA (Ics), TPN microprocessor based MCCB with variable settings and having microprocessor based O/L, S/C & E/F protection release.					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 400 Amp Digital ammeter with selector switch with one set of 400/5A C.Ts.					
b)	BUSBARS:					
	500 Amp TPN Aluminium busbars					

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
c)	OUTGOING:					
i)	2 Nos. MCCB as per following details / specifications:					
	200 Amps,415 volts, TPN, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	"ON" LED indicating lamp and 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
ii)	1 Nos. MCCB as per following details / specifications:					
	100 Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	"ON" LED indicating lamp and 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
iii)	4 Nos. MCCB as per following details / specifications:					
	63 Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	"ON" LED indicating lamp and 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
iv)	7 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL GROUND FLOOR (4) (Emergency) as mentioned above	Set	1			

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
xxi	MV PANEL GROUND FLOOR (4) (Normal)					
a)	INCOMER:					
	320 Amp 415 volts, 35 KA (Ics), TPN microprocessor based MCCB with variable settings and having microprocessor based O/L, S/C & E/F protection release.					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 320 Amp Digital ammeter with selector switch with one set of 320/5A C.Ts.					
b)	BUSBARS:					
	400 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	2 Nos. MCCB as per following details / specifications:					
	200 Amps,415 volts, TPN, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	"ON" LED indicating lamp and 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
ii)	2 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL GROUND FLOOR (4) (Normal) as mentioned above	set	1			

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
xxii		MV PANEL Ground Floor (4) (UPS)					
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					
		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 160 Amp Digital ammeter with selector switch with one set of 160/5A C.Ts.					
b)		BUSBARS:					
		150 Amp TPN Aluminium busbars					
c)		OUTGOING:					
i)		1 Nos. MCCB as per following details / specifications:					
		63 Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
		"ON" LED indicating lamp and 2A control SP MCB					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
ii)		3 no. 40 Amps , 240 volts, 9 KA ,double Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
iii)		3 no. 32 Amps , 240 volts, 9 KA ,double Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
iv)		1 no. 25 Amps , 240 volts, 9 KA ,double Pole, Miniature Circuit Breaker, with ON/ OFF indication.					

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
v)	2 no. 16 Amps , 240 volts, 9 KA ,double Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Ground Floor (3) (UPS) as mentioned above	Set	1			
xxiii	MV PANEL First Floor (4) (Emergency)					
a)	INCOMER:					
	1 no. 200 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					
	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. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
i)	4 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL First Floor (4) (Emergency) as mentioned above	Set	1			
xxiv	MV PANEL First Floor (4) (Normal)					
a)	INCOMER:					

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 no. 200 Amps , 415 volts, 35 KA (Isc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 200 Amp Digital ammeter with selector switch with one set of 200/5A C.Ts.					
b)	BUSBARS:					
	250 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	5 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL First Floor (4) (Normal) as mentioned above	Set	1			
xxv	MV PANEL Second Floor (4) (Emergency)					
a)	INCOMER:					
	1 no. 100 Amps , 415 volts, 35 KA (Isc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 100 Amp Digital ammeter with selector switch with one set of 100/5A C.Ts.					

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
	b) BUSBARS: 150 Amp TPN Aluminium busbars					
	c) OUTGOING: 3 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Second Floor (4) (Emergency) as mentioned above	Set	1			
xxvi	MV PANEL Third Floor (4) (Emergency)					
	a) INCOMER: 1 no. 63 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					
	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 63 Amp Digital ammeter with selector switch with one set of 63/5A C.Ts.					
	b) BUSBARS: 100 Amp TPN Aluminium busbars					
	c) OUTGOING: 4 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Third Floor (4) (Emergency) as mentioned above	Set	1			
xxvii	MV PANEL Fourth Floor (4) (Emergency)					
	a) INCOMER:					

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 no. 63 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					
	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 63 Amp Digital ammeter with selector switch with one set of 63/5A C.Ts.					
b)	BUSBARS:					
	100 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	4 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Fourth Floor (4) (Emergency) as mentioned above	Set	1			
xxviii)	MV PANEL Ground Floor (7), (8) (Emergency)					
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					
	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 160 Amp Digital ammeter with selector switch with one set of 160/5A C.Ts.					

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
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.					
i)	5 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
i)	3 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Ground Floor (7), (8) (Emergency) as mentioned above	Set	1			
xxix	MV PANEL Ground Floor (7), (8) (UPS)					
a)	INCOMER:					
	1 no. 63 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					
	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 63 Amp Digital ammeter with selector switch with one set of 63/5A C.Ts.					
b)	BUSBARS: 100 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	3 no. 32 Amps , 240 volts, 9 KA ,double Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL Ground Floor (7), (8) (UPS) as mentioned above	Set	1			

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
xxx	MV PANEL First Floor (4) Equipment (Emergency)					
a)	INCOMER:					
	320 Amp 415 volts, 35 KA (Ics), TPN microprocessor based MCCB with variable settings and having microprocessor based O/L, S/C & E/F protection release.					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 320 Amp Digital ammeter with selector switch with one set of 320/5A C.Ts.					
b)	BUSBARS:					
	400 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	2 Nos. MCCB as per following details / specifications:					
	250 Amps,415 volts, TPN, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings.					
	"ON" LED indicating lamp and 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
i)	3 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL First Floor (4) (Emergency) as mentioned above	Set	1			

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
	xxxix	MV PANEL Ground Floor (UPS) (Emergency)					
	a)	INCOMER:					
		1 no. 200 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					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		1 No. 0 to 200 Amp Digital ammeter with selector switch with one set of 200/5A C.Ts.					
	b)	BUSBARS:					
		300 Amp TPN Aluminium busbars					
	c)	OUTGOING:					
	i)	2 Nos. MCCB as per following details / specifications:					
		125 Amps,415 volts, TPN, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
		"ON" LED indicating lamp and 2A control SP MCB					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	ii)	1 Nos. MCCB as per following details / specifications:					
		100 Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings (0.8 to 1.0 In)					
		"ON" LED indicating lamp and 2A control SP MCB					

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
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
iii)	6 Nos. MCCB as per following details / specifications:					
	63 Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .					
	"ON" LED indicating lamp and 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
iv)	2 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker .					
	MV PANEL Ground Floor (UPS) (Emergency) as mentioned above	set	1			
xxxii	MV Panel -LIFTS					
a)	INCOMER:					
	1 no. 160 Amps , 415 volts, 35 KA (Isc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings.					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	1 No. 0 to 160 Amp Digital ammeter with selector switch with one set of 160/5A C.Ts.					

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
	b) BUSBARS: 200 Amp TPN Aluminium busbars					
	c) OUTGOING: 07 No. 63 Amp 415 volts, 10 KA, Four Pole, Moulded Case Circuit Breaker, with phase indicating lamps.					
	01 No. 32 Amp 415 volts, 10 KA, Four Pole, Moulded Case Circuit Breaker, with phase indicating lamps.					
	MV Panel - Lifts as mentioned above	Set	1			
	TOTAL SUB HEAD 4 : MV PANELS :					
5.00	SUB HEAD-5: MCB DISTRIBUTION BOARDS.					
	MCB DISTRIBUTION BOARD					
5.01	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	34			
	ii 6 way (8+18), Double door	Each	33			
	iii 8 way (8+24), Double door	Each	52			
	iv 12 way (8+36), Double door	Each	2			

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
5.02	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),					
ii	6 way SPN	Each	10			
iii	8 way SPN	Each	6			
iv	10 way SPN	Each	12			
v	12 way SPN	Each	7			
vi	16 way SPN	Each	5			
5.03	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	68378			
ii	Single pole & neutral (DP)	Each	40			
5.04	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.					

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
	i	32 Amps	Each	10			
	ii	40 Amps	Each	61			
	iii	63 Amps	Each	42			
5.05		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.					
	ii	32 Amps	Each	10			
	iii	40 Amps	Each	61			
	iv	63 Amps	Each	42			
5.07		Supplying & fixing following rating, double pole, 415 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
	ii	32 Amps	Each	40			
5.08		Supplying and fixing Single pole Blanking plate in the existing MCB DB complete as required.	Each	22793			
		TOTAL SUBHEAD: 5- MCB DISTRIBUTION BOARD.					
6.00		SUB HEAD: 6 - WIRING					
6.01		WIRING					

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
	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	4300			
6.02	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.					

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
	iii	Note :					
	iv	i) Unless otherwise specified all the conduiting work to be done in recess					
		Wiring for twin control light points as mentioned above	Point	90			
6.03		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 MS conduit (including supply and recess laying of MS conduit) as per technical specifications and as required.	Point	200			
6.05		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	200			
6.06		Wiring for 16 amp power plug with 2X4 sqmm PVC insulated, FRLS copper conductor, single core/multistrand 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/multistrand cable for loop earthing etc per technical specifications & as required.					
	i	Directly from MCB-Distribution Board to the Socket Outlets	Point	500			

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
6.07	Wiring for 20 amp power plug with 2X6 sq.mm. PVC insulated, FRLS copper conductor, single core/multistrand cable in surface/recessed MS conduit (including supply and recess laying of MS conduit with all accessories) along with 6 sqmm PVC insulated, copper conductor, single core/multistrand cable for loop earthing, as per technical specifications & as required.	Point	76			
6.08	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	45			
6.10	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	10103			
ii)	2X4 Sqmm with 1 No. 4 sqmm PVC insulated, copper conductor for earthing	Metre	36			
iii)	2X6 Sqmm with 1 No. 6 sqmm PVC insulated, copper conductor for earthing	Metre	144			
iv)	2X10 Sqmm with 1 No. 10 sqmm PVC insulated, copper conductor for earthing	Metre	540			

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
vii)	4X6 Sqmm with 2 No. 6 sqmm PVC insulated, copper conductor for earthing	Metre	180			
viii)	4X10 Sqmm with 2 No. 10 sqmm PVC insulated, copper conductor for earthing	Metre	1098			
ix	4X16 Sqmm with 2 nos 16 sq mm PVC insulated, copper conductor for earthing.	Metre	756			
6.11	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing 5 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	200			
6.13	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	500			
6.14	Supply and fixing following 20 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with 20amps plug top) 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	121			

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
6.15	Supply, Installation, Testing & Commissioning 63 Amps, TPN MCCB in a sheet steel enclosure, extended rotary operating mechanism complete with all accessories as required.	Each	6			
6.16	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	200			
	TOTAL SUBHEAD: 6- WIRING					
	SUB HEAD: 7 - LIGHT FIXTURE AND FANS					
7.00	LIGHT FIXTURES AND FANS					
7.01	Supply of following light fixture with high efficiency electronic ballast, starter, capacitor, tubes/lamps, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
	i 1X TL5 28 watt box type fluorescent light fixture (Philips TMS 122M 1XTL5 28W EBT or approved equivalent) ^{136B/136BW}	Each	692			
	ii 2X28 watt box type fluorescent light fixture with reflector (Philips TMS 122M2XTL528 W EBT or approved equivalent) ^(236b)	Each	465			

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
iii	1X 36 watt surface mounted luminaire suitable for 36 watt TLD lamps with clear acrylic diffuser (GE : GETC1X36 AC S HF or approved equivalent). (136CAC)	Each	275			
vi	1X36watt surface mounted fluorescent light fixture (Philips TCS 605 1XTLD 36W EBE or approved equivalent) (136 SMO2)	Each	36			
vii	2X 36 watt surface mounted mirror optic fluorescent light fixture with tapered ripple lamellae (Philips TCS 398 M 2XTLD 36W ICM2 or approved equivalent). (236 SMO1/236SMO2)	Each	446			
viii	2X TL5 28 watt recess mounted mirror optics fluorescent light fixture (Philips TBS 050 2XTLD 36W EBE MI or approved equivalent). (236RMO1/236 RMO2)	Each	245			
ix	1X36watt recess mounted fluorescent light fixture (Philips TBS 050 1XTLD 36W EBE MI or approved equivalent) (136RMO1)	Each	425			
x	2X 36 watt surface mounted luminaire (Philips TCS 398 M 2 XTLD 36 WIC M6 or approved equivalent). (236 SMO3)	Each	80			
xiii	2X 36 watt recess mounted mirror optics fluorescent light fixture (Philips TBS 090 2XTLD 36 W IC or approved equivalent). (236RMO3/236RMO4)	Each	210			

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
xiv	3X36 watt recessed mounted light fixture (Philips FBS 300 M 3XPLL 36W IC P5 or approved equivalent) (236 RMSQ1)	Each	50			
7.02	Supply of following compact flourescent light fixture with electronic ballast, starter, capacitor, 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/2P11ACO HPF or approved equivalent)	Each	50			
iii	1x10 watt CFL surface mounted downlight fixture (Decon 03 UW or approved equivalent)DL1/DL2/DL3	Each	5			
vi	2X13 watt Mirror top (Decon 05UB or approved equivalent) Wtoilet	Each	365			
vii	2X11 watt surface mounted mirror optics (Philips FCS0 31 2XPLS/2P 11 or equivalent)211CFLRECT	Each	380			
viii	2 X 13 watt CFL recessed mounted down light fixture with horizontal lamp (GE:GE CFL C 2 X13 DN PA R (H) Ovolo or approved equivalent) (DL3)	Each	10			
ix	2 x 13 watt CFL surface mounted down light fixture type - IV with horizontal lamp without frosted glass (GE: GE CFL C 2X13 DN FG S Lento or approved equivalent) (DL4)	Each	10			

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
	x	2 x 18 watt CFL recessed mounted down light fixture type - V with horizontal lamp (GE: GE CFL C 2X18 DN R-BI(H) BI-Lux or approved equivalent) (DL5/DL6)	Each	42			
	xi	1 X 10 watt CFL recessed ceiling mounted (GE CFL C 1X10 DN R (V) or approved equivalent) used as a night lamp NLCM.	Each	44			
	xii	1 X 70 watt post top with opal diffuser & spun aluminium canopy finished in black from outside with HPSV lamp. (Crompton Greaves SPT 1207IL/WI 70 W HPSV (E) or equivalent)	Each	60			
7.04		Supply of following ceiling fans (Crompton Greaves High Breeze plus 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					
	ii	1200 mm sweep	Each	630			
7.05	i	Supply of 900 RPM, 230 mm exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply (Crompton Greaves Trans air or approved equivalent) complete with motor, louvers/shutters etc. complete as required.	Each	200			
	ii	Supply of 1400 RPM, 450 mm heavy duty exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with louvers/shutters etc. complete as required.	Each	20			

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
7.06	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	5			
7.07	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	2924			
7.08	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	966			
7.10	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 PVC insulated, copper conductor single core cable as required.	Each	630			

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
7.11	Installation, testing and commissioning of exhaust fan up to 300 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	220			
7.12	Installation, testing and commissioning of wall mounted fan up to 450 mm sweep including supply and fixing wall bracket arrangement complete as required.	Each	5			
	TOTAL SUBHEAD 7: LIGHT FIXTURE & FANS					
	SUB HEAD 8: TELEPHONE SYSTEM					
8.00	TELEPHONE SYSTEM SYSTEM & EPABX					
8.01	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 from pairs, helically wrapped with polyster 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	255			
ii	2 pair cord outlet (Jack Type)	point	20			

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
8.02		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	300 Pair	Each	1			
	ii	100 Pair	Each	2			
	iii	50 Pair	Each	3			
	iv	30 Pair	Each	2			
	v	20 Pair	Each	3			
	vi	10 Pair	Each	17			
8.03		Supplying and drawing of following pairs .61mm dia annealed tinned copper conductor FR PVC sheathed unarmoured telephone cable in surface/recess steel conduit complete as required.					
	i	100 Pair	Metre	200			
	ii	50 Pair	Metre	200			
	iii	30 Pair	Metre	200			
	iv	20 Pair	Metre	50			
	v	10 Pair	Metre	255			
8.05		EPABX					
	i)	Supply, installation testing and commissioning of IP ready a digital EPABX system having 32 trunk lines (P&T Lines), 32 digital extensions and 300 analog extensions expandable upto 512 ports with one 24 key operators console including software, etc. complete as per technical specifications & as required.	Set	1			

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
ii)	FCBC of suitable capacity for 8 hours battery backup with SMF batteries	Set	1			
iii)	Supply, installation, testing and commissioning of Main Distribution Frame (MDF) crone type for 364 pair (port) with box as per technical specifications and as required.	Set	1			
iv)	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 :	Set	250			
v)	Supply, installation, testing and commissioning of digital phone sets (KTS) with display, 12 storage keys and speaker suitable for the connection with the above EPABX system complete as per technical specification and as required :	set	10			
vi)	Copper earthing system including Earth Pits, copper strips 25x5, copper earth electrodes 600x600x3, charcoal, salt etc for EPABX system, as per the recommendations of manufacturers and complete as required	set	2			
	TOTAL : SUB HEAD 8 :TELEPHONE SYSTEM & EPABX					
	SUB HEAD 9: CCTV					
9.00	CLOSED CIRCUIT TELEVISION SYSTEM (CCTV)					

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
9.01		Supply and fixing of following size of MS conduit along with 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	1200			
	ii)	25 mm dia	Metre	800			
9.02		Wiring with 2x1.5 mm + 1x 1.5 mm (for earthing) PVC insulated FRLS copper conductor in the existing MS conduit for power supply to the camera.	Metre	6975			
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 protected with PVC sheath in the existing surface / recessed steel conduit as required.	Metre	6975			
9.04	A	CAMERAS :					
	i)	Supply, installation, testing and commissioning of indoor minimum 520 TVL high resolution, weatherproof, vandal proof dome type, 1/3-inch CCD imager colour Day-Night camera with varifocal lens, 3.6-8mm including Connectors, Lens, camera Mounts, baclight compensation . Power Supply and all ancillary equipment required for the proper functioning of the camera. The black ivory enclosure the mounting will be ceiling / wall complete as per technical specifications and as required of approved makes.	Each	8			

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
	ii)	Supply, installation, testing and commissioning of indoor minimum 520 TVL high resolution, vandal proof dome type, 1/3-inch CCD imager colour with varifocal lens, 3.6-8mm including Connectors, Lens, camera Mounts, backlight compensation. Power Supply and all ancillary equipment required for the proper functioning of the camera.	Each	88			
9.05.	B.	DVR					
	i)	Supply, installation, testing and commissioning of 16 channel real time, 400 fps, embedded Digital Video Recorder (DVR) with 2 video outputs and facility to record multiple camera signals while simultaneously providing live multi-screen viewing, recording, play back, remote viewing and archiving of recorded data. DVR having capacity of 2 TB HDD storage capacity. DVR will do real time recording at CIF resolution & H.264 compression. DVR will be embedded IP based web enabled DVRs. DVR racks and any other item required in the commissioning is in the scope of supply.	Each	6			
	C.	Monitor					
		Supply, installation, testing and commissioning of 22" CCTV colour LED flat screen monitor including all accessories	Each	6			
		TOTAL SUBHEAD 9 : CCTV					
		SUB HEAD 10: FIRE DETECTION AND ALARM SYSTEM					
10.00		FIRE DETECTION AND ALARM SYSTEM					

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
10.01	Supply and drawing of following sizes of PVC insulated FRLS copper conductor single core cable in surface/recessed ISI marked MS conduit (including Supplying and fixing of ISI marked MS Conduit) complete as required.					
	i 2X1.5 sqmm	Metre	16888			
10.02	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	887			
	ii Heat Detector	Each	20			
	iii Manual Break call point.	Each	60			
	iv Fire Alarm Hooter cum speaker of suitable range to cover the complete floor, in enclosure.	Each	60			
	v Response indicator	Each	300			
10.05	Supply, Installation, testing and commissioning of 12 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 be able to connect on a network and each panel shall have a communication module and HI 485 network card. The panel should have rectifier, loop card, min 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			

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
10.06	Supply testing and commissioning of isolator module as per specifications.	Set	36			
10.07	Supply, Installation, testing and commissioning of addressable control modules.	Each	15			
10.08	Supply, Installation, testing and commissioning of addressable monitor modules.	Each	2			
10.09	Supply, Installation, testing and commissioning of flow switch	Each	1			
10.10	Supplying, drawing, connecting, testing & commissioning of 4 core, 1.5 sq. mm ,1100 volts FRLS copper conductor with PVC armoured cable with steel brading for mechanical protection and over all shielded with aluminium myler tape complete as required.	Metre	1000			
10.11	Supply, installation, testing and commissioning of 48 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			
10.12	Supply, installation, testing and commissioning talkback unit with telephone handset in 16 SWG red body housing with locking protection.	Each	48			

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
	TOTAL SUB HEAD 10 : FIRE DETECTION AND ALARM					
	SUB HEAD 11: CONDUITING FOR TV OUTLETS					
11.00	CONDUITING FOR TV OUTLETS					
11.01	Supply and fixing of following sizes of MS conduit alongwith the accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required					
	i 20 mm dia	Metre	675			
	ii 25 mm dia	Metre	169			
11.02	Supplying and fixing 2 module modular metal box in recess with modular cover plate including fixing 1 no. coaxial TV outlet connection and all accessories complete as required	Each	45			
10.03	Supply and drawing Coaxial TV Cable RG - 6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Metre	1125			
	TOTAL SUB HEAD 11: CONDUITING FOR TV OUTLETS					
	SUB HEAD 12:CONDUITING FOR COMPUTER SYSTEM .					
12.00	CONDUITING FOR COMPUTER SYSTEM .					

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
12.01	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	4100			
	ii 25 mm dia	Metre	1025			
12.02	Supplying and fixing two module modular plate (suitable for RJ-45 computer socket) with GI box complete as required.	Each	205			
	TOTAL SUB HEAD: 12 CONDUITING FOR COMPUTER SYSTEM					
	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 with charcoal or coke and salt) complete as required.	Set	16			
13.02	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	36			

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
13.03	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	700			
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 vertical runs).	Metre	300			
13.05	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	16			
13.06	Providing and laying GI tape, 32 mm X 6 mm thick, from test joint upto earth electrode directly in ground as required.	Metre	100			
	TOTAL SUB HEAD 13: LIGHTENING PROTECTION					
	SUB HEAD 14 : LIFTS					
14.00	LIFT					
	PASSENGER CUM HOSPITAL LIFT					
14.01	Design, manufacture, supply, installation, testing and commissioning of 26 passenger (1768 kg) lift ,with travel speed 1 MPS serving different floors in the lift shaft including lift well pressurization as per detailed specification/ drawing enclosed and as under: Speed 1 MPS Floors G+4 Travel: As per architectural drawing.					

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
	Stops & opening: 5 stops & 5 openings					
	Controller: A.C. variable voltage & variable frequency					
	Automatic rescue device complete with dry maintenance free batteries as required.					
	The lift should be handicap friendly i.e. inclusive of Braille buttons and fixtures etc.					
	Operation: Microprocessor based single automatic push button/ simplex selective collective/duplex collective selective with / without attendant as approved by HSCC.					
	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.					
	Car Enclosure : Scratch proof stainless steel					
	A hand rail guide not less than 600 mm long at 900 mm above floor level or stretcher guide as the case may be to be fixed adjacent to control panel in the lift car.					
	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.					

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
	Passenger Cum Hospital Lift as mentioned above.	Each	6			
	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 3.5C X 300 Sq.mm	Metre	750			
	ii 3.5C X 185 Sq.mm	Metre	1000			
	iii 3.5C X 150 Sq.mm	Metre	750			
	iv 3.5C X 95 Sq.mm	Metre	500			
	vi 3.5C X 50 Sq.mm	Metre	700			
	vii 3.5C X25 Sq.mm	Metre	700			
	xi 4C X 6 Sq.mm	Metre	100			
	xii 2 Core 6 Sq mm	Metre	500			
	xiii 2 Core 10 Sq mm	Metre	500			
	xv 3 Core 6 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	1900			
	ii Size exceeding 25 sq.mm but not exceeding 120 sq.mm	Metre	1200			
	iii Size exceeding 120 sq.mm but not exceeding 300 sq.mm	Metre	1750			

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
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	1900			
	ii Size exceeding 25 sq.mm but not exceeding 120 sq.mm	Metre	1200			
	iii Size exceeding 120 sq.mm but not exceeding 300 sq.mm	Metre	1750			
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	1900			
	ii Size exceeding 25 sq.mm but not exceeding 120 sq.mm	Metre	1200			
	iii Size exceeding 120 sq.mm but not exceeding 300 sq.mm	Metre	1750			
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 3.5C X 300 Sq.mm	Each	12			
	ii 3.5C X 185 Sq.mm	Each	10			
	iii 3.5C X 150 Sq.mm	Each	8			
	iv 3.5C X 95 Sq.mm	Each	10			
	vi 3.5C X 50 Sq.mm	Each	10			
	vii 3.5C X25 Sq.mm	Each	15			
	xi 4C X 6 Sq.mm	Each	24			
	xii 2 Core 6Sq mm	Each	10			
	xiii 2 Core 10 Sq mm	Each	6			
	xv 3 Core 6 Sq mm	Each	6			

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
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	500			
ii	300 mm. width x 62.5 mm. depth x 2.0 mm. thickness	Metre	450			
iii	450 mm. width x 62.6 mm. depth x 2.0 mm. thickness	Metre	350			
iv	600 mm. width x 62.6 mm. depth x 2.0 mm. thickness	Metre	200			
	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	14			
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	36			

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
16.03	Extra for using charcoal and salt for GI or copper plate earth electrode as required.	Set	50			
16.04	Supplying and laying 50mmX6mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	50			
16.05	Providing and fixing 50mmX6mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	200			
16.06	Supplying and laying 25mmX5mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	20			
16.07	Providing and fixing 25mmX5mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	50			
16.08	Providing and fixing 25mmx5mm copper strip in 40mm dia G.I. pipe from earth electrode as required.	Metre	0			
16.09	Supplying and laying 25mmX5mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	150			
16.11	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	500			

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
16.13	Providing and laying of following sizes non pressure NP2 class (light duty) RCC pipe with collar joint with stiff mixture of cement (1 cement : 2 fine sand) including testing the joints etc. as required.					
	i 150mm dia	Metre	100			
	ii 300mm dia	Metre	150			
16.14	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	40			
16.15	Providing and fixing H.T. (11kV) danger notice plate of 250mmX150mm made of mild steel, atleast 2mm thick and vitreous enameled white on both sides and with inscription in signal red colour on front side as required.	Each	4			
16.16	Supplying and laying of 1.1kV grade 1 metre wide anti skid chequered type rubber mat.	Metre	50			
16.17	Supplying and laying of 12kV grade 1 metre wide anti skid chequered type rubber mat.	Set	30			
16.18	Design, manufacture, supply and installation of Fire Buckets 13 litre capacity 4 Nos. duly filled with sand and GI pipe support stand for these buckets including painting etc. complete as required.	Set	4			

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
16.19	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			
16.20	Supplying and fixing CO2 type 4.5 Kg capacity fire extinguishers as approved by ISI complete as required.	Set	40			
16.21	Supplying and fixing CO2 type 9 Kg capacity trolley mounted fire extinguishers as approved by ISI complete as required.	Set	4			
16.22	Supplying and fixing Dry Chemical powder type 10 Kg capacity fire extinguishers as approved by ISI complete as required.	Set	4			
16.23	Supplying and fixing Foam type 9 ltrs capacity fire extinguishers as approved by ISI complete as required.	Set	4			
16.25	Supplying, storing, handling and fixing in position First Aid Medical Box complete as per technical specifications as required.	Set	2			
16.26	Supply and testing of 11kV ISI marked hand gloves	Each	4			
16.27	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.					
i	50 mm dia nominal bore	Metre	100			

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
	TOTAL SUB HEAD 16: EARTHING, SAFETY EQUIPMENT AND MISC. ITEMS					
	SUBHEAD 17.00 : OUTDOOR LIGHTING :					
17.00	OUT DOOR LIGHTING					
17.01	Supply, erection, testing and commissioning of external swaged steel tubular pole with following specifications & items :					
	9.0 Mtrs. high swaged steel tubular pole (Single arm of suitable length each around 1.5 Metre), the construction of					
	i the pole shall be as per IS 410 SP-33 with base plate 450mmX450mmX6mm complete as per requirement with two coats of spray paints (shade as approved)					
	ii 1X150 watts street light fixture with 150watts high pressure sodium vapour (HPSV) lamp complete with control gear, acrylic cover cover etc. and its wiring with 2X4 sq.mm. PVC insulated, FRLS copper conductor and 1,5 sqmm PVC insulated, FRLS copper earth wire from control box complete as required - 1 No. (Philips SPX 086/150 or approved equivalent)					
	iii Suitable size 32 A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 6A DP MCB complete as required - 1 Set					
	iv Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry					
	v Providing foundation including excavation, shuttering, alingment of poles, casting etc. including lean concrete at the bottom as per CPWD/ BIS specifications.					

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
	vi The above installations shall be completed as CPWD specifications and as required					
	A. Steet Tubular Poles(9M) Single Arm as mention above	Set	50			
17.02	Supply, installation, testing and commissioning of external post top lantern with following accessories and complete as required :					
	i) 4m high (3.3m above ground) 50mm dia GI pole as approved, adopting socket at top for fixture mentioned below, base plate 300 x 300 x 6mm and provision for mounting junction box etc. - 1 set.					
	ii) Supply, installation, testing and commissioning of Post top lantern with 70W HPSV lamp (Crompton Greaves SPT 1107IL/BF or equivalent) and its wiring with 2 x 2.5 sq.mm PVC insulated copper wire and 1.5 sqmm PVC insulated copper earth wire from control box - 1 set.					
	iii) Suitable size 20A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 1 nos. 5A HRC fuses complete 1 set.					
	iv) Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry					
	v) Providing 400x400x1000mm deep 1:3:6 ratio cement concrete including excavation shuttering alignment of poles casting etc. including 100mm thick lean concrete shall be provided at the bottom					
	Supply, installation, testing and commissioning of external post top lantern as mentioned above	Set	50			

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
17.03	Supply, installation, testing and commissioning of bollard lamps 1X18 watts CFL (Philips HCS360 1XPL-C/2P 18W GR Sonara bollard in gree color or equivalent) control box - 1 set.	Each	30			
17.04	Road Lighting Panel Supply, installation, testing and commissioning of following outdoor type with canopy, IP-54 protected M.V. cubicle type totally enclosed, free standing type, dust, damp and vermin proof, MV Panel, busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switchgears complete as required. INCOMER: 1 No. 63 Amp 415 volts, TPN Switch Disconnecter Fuse Unit with HRC Fuses 1 Set of phase indicating lamp with HRC fuses 1 Set of photo sensor & 100A TP contactor with nuetral link (for street lights control) . BUSBARS: 100 Amp TPN Aluminium busbars OUTGOING: 10 Nos. 32 Amp 415 volts, DP MCB Feeder Pillar as mention above	Set	2			

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
17.05	Spiral earthing made out of 6 SWG GI wire , 50mm Dia, 115 turns closely wound ,1.5 mtr below ground, earth pit of 350 Dia., 1.5 mtr depth including providing charcoal and salt for earthing at alternate layers of 300 mm depth (total 3 layers),connections etc. complete as required.	Set	25			
	TOTAL SUB HEAD 17: OUTDOOR LIGHTING					
	SUB HEAD 18:00 PUBLIC ADDRESS SYSTEM.					
18.00	PUBLIC ADDRESS SYSTEM					
18.01	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)					

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 Mic & 1 Aux Inputs, with individual volume control & Aux inputs jacks for each floor (Ground Floor- 7 Nos, First Floor-- 6 Nos., Second Floor -6 Nos , Third Floor - 3 nos and forth floor 3 nos) at different loactions on each floor.					
-	CD Player with 3 CD changer, with auto/ manual programming					
-	Terminals & patch cables					
-	Any other item required for proper working of PA system.					
	PA System as mentioned above	Set	1			
18.02	Supply and installation of system junction box complete as required .	Each	1			
18.03	Supply and fixing of suitable module modular metal box on surface or in recess with modular cover plate and all accessories complete as required	Each	10			
18.04	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	4000			
18.05	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	8000			

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
18.06	Supply and installation of metal enclosed suitable wattage false ceiling mounted speaker with adjustable volume to cover all areas of floor, to be mouted in corridors complete as required .	Each	220			
	PUBLIC ADDRESS SYSTEM as mentioned above					
	TOTAL SUB HEAD 18: PUBLIC ADDRESS SYSTEM					
19.00	SUB HEAD 19: NURSE CALL BELL SYSTEM.					
	NURSES CALL BELL SYSTEM					

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
19.01	Supplying, fixing testing and commissioning of nurses station terminal monitor with in built LED display & alarm, suitable for following way complete with back up, batteries, battery charger etc. as per technical specifications and as required.					
	i) 20 Way	Each	1			
	ii) 10 Way	Each	2			
19.02	Supplying, fixing testing and commissioning of call push button (with cord), call reset, call indication station for each bed complete as required.	Each	20			
19.03	i) 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					
	25 mm dia	Metre	300			
19.04	Supply & laying three pair 0.5 Sq. mm solid, annealed bare copper conductor insulated with high density polythlene. The insulated cores twisted to from pairs, helically wrapped with polyster tape with over all insulation of FR PVC insulated unarmoured telephone cable in existing MS conduit complete as required.	Metre	501			
19.05	Supplying, fixing testing and commissioning of LED's Indicators outside each ward	Each	10			

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
	TOTAL SUB HEAD 19: NURSE CALL BELL SYSTEM.					
	SUBHEAD 20 : UPS SYSTEM					
20.00	UPS SYSTEM					
20.01	UPS of 80 KVA.					
i)	Supply of 80 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 at 50% load and 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, provsion 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 80 KVA UPS with battery and accessories.					
	Supply, installation , testing and commisioning of 80 KVA UPS as mentioned above.	Set	1			
	TOTAL SUBHEAD 20 : UPS SYSTEM					
	GRAND TOTAL FOR ALL ELECTRICAL WORKS					

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

	<u>MENTAL HOSPITAL, TEZPUR</u>		
<u>SUMMARY SHEET FOR HVAC WORKS</u>			
	DESCRIPTION OF WORK	AMOUNT(Rs.) IN FIGURES	AMOUNT(Rs.) IN WORDS
	TOTAL FOR HVAC WORKS AT HOSPITAL BLOCK		
	GRAND TOTAL		

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (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						
1.0	Supplying, installation, testing and commissioning of 5.5 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.					
	Indoor Unit-for Minor OT at Second Floor					
	a) Fan Section and canvass connection (Double Skin Type)					
	b) Centrifugal Blower with Capacity of 2000 CFM and 125mm Static Pressure.					
	c) Cooling Coil Section/s with 5.5 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 arangement guard etc.					
	g) Necessary vibration isolator and supporting arrangements.					
	h) Fresh air intake arrangement, necessary water drain and air purge valve wherever required etc.					

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	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					
	Outdoor Unit for above					
	Suitable Air Cooled Type Condenser with Aluminium Fins & Copper Tube Coilsfor above indoor unit.					
	b) Scroll Type Hermetically sealed Comperssor.					
	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	1	Nos.			
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 expended polysterene (T.F. Quality) complete with incommining MCB, humidstate and control wiring for OTs.					
2.1	Capacity : 6.0 KW	1	Nos.			
3.0	WINTER/MONSOON HEATING ARRANGEMENT FOR OT AHU					

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	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/ geysers 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	1.5KWx 2 banks	1	Nos.			
4.0	DUCTABLE SPLIT TYPE A/C					
	Supply, installation, testing and commissioning of ceiling mounted ductable split type air conditioners of following capacity complete with hermetically sealed compressor, fan section with fan & motor, air cooled condenser, filter section with filters,required no. of strip heaters with fixing arrangement in the plenum, interconnecting refrigerant piping with refrigerant & necessary electrical power cabling,control cabling, earthing, supports, controls,necessary safety measures and voltage stablizer & electrical panel,necessary fresh air intake arrangement,necessary GI drain piping of required size & required length from indoor unit to suitable drain location, complete in all respect as per specifications, drawing & technical schedule.					
4.1	7.5 TR capacity, Minimum 3-Star Rated by BEE	1	Nos.			

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	Extra Refrigerant Piping for 7.5 TR	10	Rmt.			
	Extra drain piping	10	Rmt.			
4.2	5 TR capacity, Minimum 3-Star Rated by BEE	3	Nos.			
	Extra Refrigerant Piping for 5 TR	10	Rmt.			
	Extra drain piping	10	Rmt.			
5.0	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.					
5.1	Capacity : 1.5 TR	40	Nos.			

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
5.2	Capacity : 2.0 TR	7	Nos.			
6.0	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					
6.1	1.5 TR	12	Nos.			
6.2	2.0 TR	2	Nos.			
7.0	Propeller Fans					
	Supply, instalation, 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:					
7.1	150 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	80	Nos			
7.2	225 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	18	Nos			

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
7.3	300 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	71	Nos			
8.0	Axial Flow fans					
	Supply, installation,testing and commisioning of tube axial flow fans as shown in drawings, Each fan shall be direct driven.. Fan motor shall be suitable for 3 Phase, 415+/- 10% V, 50Hz AC supply . Fan shall be complete with gravity louvers. Fan shall be 250 deg C, 2hrs fire rated.					
8.1	Duty: DG/ESS Exhaust					
	Air Quantity : 10000 CFM	2	Nos.			
	Static Pressure : 25 mm wg					
8.2	Duty : Liftwell Pressurisation					
	Air Quantity : 3000 CFM	2	Nos.			
	Static Pressure : 25 mm					
8.3	Duty : Liftwell Pressurisation					
	Air Quantity : 3750 CFM	4	Nos.			
	Static Pressure : 25 mm					
8.4	Duty : Laundry Exhaust					
	Air Quantity : 15000 CFM	1	Nos.			

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	Static Pressure : 25 mm					
8.5	Duty : Kitchen Exhaust (in case of fire) Air Quantity : 15000 CFM Static Pressure : 25 mm	2	Nos.			
9.0	Centrifugal Fan Section Supplying, installing, testing and commissioning of Double skin construction draw thru type AIR HANDING UNITS FAN SECTION as per specification, each complete with squirrel cage induction motor, centrifugal fan belt drive and vibration isolators. Motor shall be suitable for 415±10% volts, 50 cycles, 3 phase AC supply and static pressure shall be 1.5 inches. Air moving capacity shall be as follows:					
9.1	13500 cfm (FA for Laundry) 40mm static pressure	1	Nos.			
9.2	20000 cfm (FA for Kitchen) 40mm static pressure	1	Nos.			
10.0	Exhaust Air Scrubber					

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	Providing and fixing of kitchen scrubber having pre filter section for removal of oil grease, followed by intaks louvers, impingement plate section, high pressure water atomisation section, mist eliminator and outlet cone section, fan section with fan, expansion chamber, nozzles, strainer, belt drive with guard, gasket tight access door, eliminators, water circulation pump, isolation valve for pumps, vibration isolators for blower distribution panel etc. complete as per specifications.					
10.1	22000 CFM, 70 MM WG	1	No.			
11.0	DUCTING					
11.1	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:					
11.1.1	24 gauge	400	Sqm.			
11.1.2	22 gauge	200	Sqm.			
11.1.3	20 gauge	150	Sqm.			
11.1.4	18 gauge	100	Sqm			

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
11.2	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.					
11.2.1	22 gauge	30	Sqm.			
11.2.2	20 gauge	25	Sqm.			
11.2.3	18 gauge	25	Sqm			
12.0	FIRE DAMPERS					
12.1	Supply, installation, testing and commissioning of moterised combined smoke and fire dampers made out of GI sheet of at least 120 minutes fire rating complete with GI damper of required size, smoke sensor etc as per specifications and shop drawings.	4	Sqm			
12.2	Actuator & Control panels	4	Nos.			
13.0	CEILING DIFFUSERS					
13.1	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.	12	Sqm			

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
13.2	Supply, installation, testing and balancing of square/circular return air diffusers of powder coated extruded aluminium construction without volume control dampers.	12	Sqm			
14.0	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.	5	Sqm			
15.0	GRILLES					
	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.					
15.1	Supply air grilles in single louvers with volume control dampers.	8	Sqm			
15.2	Return air grilles in single louvers without volume control dampers.	8	Sqm			
16.0	LAMINAR FLOW DIFFUSERS					

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	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	12	Nos.			
17.0	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 drawings.	100	Nos.			
18.0	AHU PANEL					

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	Supply, installation, testing and commissioning of AHU panel suitable for 415 V, 3 phase, 4 wires, 50 Hz power distribution system. The panel shall be cubicle non draw out type free standing floor mounting sheet metal enclosed flush front with aluminium busbars, separate earth bus bars to be provided throughout the length of the panel. The incoming & outgoing feeder breakers, fuses, indicating lamps etc. shall be accommodated in a modular multirack arrangement. The painting shall be done as per relevant codes as specified in the specifications. Adequate size cable tray shall be provided all round the panel and in the back for each cable bending and termination. The outgoing feeders inside the panel shall be connected through solid bus bar. Flexible cable links are not acceptable. Bus bars shall be provided with sleeves or heat resistant insulated paint. The panel shall be suitable for cable entry from top. The panel shall be fabricated after the approval of fabrication drawings. All the panels shall have minimum 20% spare capacity.					
	i) All doors to have pad locking and shrouding arrangement.					
	ii) All switches to be heavy duty type base mounted having operating handle.					
18.1	AHU PANEL (Minor OT)					
	INCOMER					
	1 no. 100 A, 35 KA FP MCCB					
	1 set indication lamps with control fuses.					
	1 no. (0-500V) voltmeter with selector switch.					
	1 no. (0-100 A) ammeter with selector switch with CT's					

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	BUSBARS :					
	100 A TPN Aluminium bus bar 415V , 50 Hz.					
	OUTGOING					
	1 set 63 A, 25 KA FP MCCB, ON-OFF indication lamps, for 5 TR AC unit and associated panels.					
	1 set-32 A, 25 KA MCCB, contactor of suitable rating, ON-OFF-TRIP indication lamps, for heater banks					
	1 set-32 A, 25 KA MCCB ,contactor of suitable rating, ON-OFF-TRIP indication lamps, for humidifiers for OT.					
	1 set - 16 A, 15 KA MCCB, 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 , 25 KA MCCB as spares.					
	1 sets 32 A , 25 KA MCCB as spares.					
	Complete Panel as above	1	set			
19.0	FAN STARTER PANELS					

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	Supply, installation, testing and commissioning of cubicle type totally enclosed wall/floor mounted free standing type, dust, damp and vermin proof for AHU made of 2mm thick CRCA sheet steel in compartmentalized design as per specification and drawings. These distribution boards shall be mounted on 50x50x6 MS angle frame work grouted to floor/walls of recessed. The rate includes the angle iron frame, support, painting, numbering, earthing etc. as required					
19.1	FAN STARTER PANEL OUTGOING :					
	1 No. 100 Amps MCCB 15 KA for 25 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 motor as required.	1	Nos.			
19.2	FAN STARTER PANEL OUTGOING :					
	1 No. 63 Amps MCCB 15 KA for 12.5 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 kitchen fan motor as required.	1	Nos.			
19.3	FAN STARTER PANEL OUTGOING :					

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	1 No. 63 Amps MCCB 15 KA for 7.5 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 fan motor as required.	1	Nos.			
19.4	FAN STARTER PANEL OUTGOING :					
	1 No. 32 Amps MCCB 15 KA for 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 fan motor as required.	5	Nos.			
19.5	FAN STARTER PANEL OUTGOING :					
	1 No. 16 Amps MCCB 10 KA for 1/1.5/2 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 fan motor as required.	6	Nos.			
20.0	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.					

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
20.1	4 C X4 sq. mm. Cable	200	Rmt			
20.2	4 C X6 sq. mm. Cable	20	Rmt			
20.3	4 C X10 sq. mm. Cable	50	Rmt			
20.4	4 C X16 sq. mm. Cable	50	Rmt			
20.5	3.5 X50 sq.mm Cable	50	Rmt			
21.0	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					
21.1	150 mm widthx50 mm deep x1.6 mmthickness	20	Rmt			
21.2	100 mm widthx50 mm deep x1.6 mmthickness	25	Rmt			
22.0	EARTHING					
22.1	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			

BOQ FOR HVAC WORKS AT MENTAL HOSPITAL , TEZPUR

ITEM NO 1	DESCRIPTION OF ITEM 2	TOTAL QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
22.2	Providing and fixing GI earth strip on walls/ trenches complete as per specifications and as required.					
22.2.1	25mm x 3mm	40	Rmt			
23.0	Providing and fixing earth wire of complete as per specifications as required.					
23.1	6 SWG wire	20	Rmt			
23.2	8 SWG wire	150	Rmt			
TOTAL FOR HVAC WORKS						