

**NATIONAL INSTITUTE OF UNANI MEDICINE (NIUM),
BANGALORE**

TENDER

FOR

**Construction of Regimenal Therapy Block , Auditorium
& Pharmacy building under Phase-III works for National
Institute of Unani Medicine (NIUM), Bangalore**

VOLUME - V

BILL OF QUANTITIES

OCTOBER 2011

HSCC (INDIA) LTD.

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Tender No HSCC/112C/BU-HP-I/NIUM PH-III/2011

BILL OF QUANTITIES

CIVIL WORKS & SERVICES

Project Name: Proposed construction of NIUM (Phase III), Banglore

BOQ for Civil Work

Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
1.00	EARTH WORK					
1.01	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m, disposed earth to be levelled and neatly dressed.					
a)	All kinds of soil	1344.00	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.	1757.00	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.					
		2738.00	cum			

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1	2	3	4	5	6	7
1.04	Extra for every additional lift of 1.5 m or part there of in.					
a)	All kinds of soil.					
i)	1.5 to 3.0m	767.18	cum			
1.05	Supplying and filling in plinth with river sand under floors including, watering. ramming consolidating and dressing complete.	220.00	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	6024.00	cum			
	Total					

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
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)	8.00	cum			
b)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	103.00	cum			
c)	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	240.00	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)	10.00	cum			
2.03	Providing and laying damp-proof course 40mm thick with cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 12.5mm nominal size).	206.00	sqm			

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1	2	3	4	5	6	7
2.04	Extra for providing and mixing water proofing material in CC/RCC work @ 1 kg per 50kg of cement.	55.00	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.	206.00	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.	64.00	Cum			
Total						

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
3.00 REINFORCED CEMENT CONCRETE						
3.01	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete work including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement. including Admixtures in recommended proportions as per IS 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. M-25 grade reinforced cement concrete by using 380 kg. of cement per cum of concrete. All work up to floor V level.	1715.00	cum			
3.02	Add or deduct for providing richer or leaner mixes respectively at all floor levels.					
i)	Providing M-30 grade concrete by using 400kg of cement per cum of concrete instead of M-25 grade B.M.C/ R.M.C..	430.00	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.	559.00	sqm			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
b)	Walls (any thickness) including attached pilasters, buttermesses, plinth and string courses etc.	110.00	sqm			
c)	Suspended floors, roofs, landings, balconies and access platform.	3112.00	sqm			
d)	Shelves (Cast in situ)	56.00	sqm			
e)	lintels, beams, plinth beams. girders. bressumers and cantilevers.	4256.00	sqm			
f)	Columns, Pillars, Piers, Abutments, Posts and Struts.	2724.00	sqm			
g)	Stairs, (excluding landings) except spiral-staircases	235.00	sqm			
h)	Arches, domes, vaults up to 6 m span	100.00	Sqm			
I)	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.	23.00	sqm			
J)	Extra for shuttering in circular work for					
i)	columns	35.00	Sqm			
ii)	Beams	130.00	sqm			
3.04	Extra for additional height in centering, shuttering wherever required with adequate bracing, propping etc. including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured)					

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1	2	3	4	5	6	7
a)	Suspended floors, <i>roofs</i> , landings, beams and balconies (Plan area to be measured).	3936.00	sqm			
3.05	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete (At all levels).					
a)	Thermo-Mechanically Treated bars	277967.00	Kg			
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.	85.00	Qtl			
	Total					

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1	2	3	4	5	6	7
4.00	BRICK WORK					
4.01	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in:					
a)	Cement mortar 1:6 (1 cement: 6 coarse sand)	347.00	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)	1175.00	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)	25.00	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)	2572.00	sqm			
4.05	Extra for providing and placing in position 2 Nos. 6mm dia. M.S. bars at every third course of half brick masonry (with F.P.S. bricks).	2597.00	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)	501.00	Metre			
	Total					

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1	2	3	4	5	6	7
5.00	DOORS, WINDOWS AND FITTINGS					
5.01	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required EPDM rubber/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and paneling to be paid for separately) :					
5.01.1	For fixed portion					
a)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	4386.00	kg			

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1	2	3	4	5	6	7
5.01.2	For shutters of doors, windows & ventilators including providing and fixing hinges/pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately).					
a)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	1750.00	kg			
5.02	Providing and fixing anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868. Minimum anodic coating of grade AC 15) sub frame work for windows and ventilators a with extruded built up standard tubular sections of approved make conforming to IS: 733 and IS : 1285 fixed with rawl plugs and stainless steel screws etc.	643.00	kg			
5.03	Providing and fixing 12mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.					
a)	Pre-laminated particle board with decorative lamination on both sides.	28.36	Sqm			

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5.04	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item) :					
a)	With float glass panes of 5.50 mm thickness	239.00	sqm			
b)	with Toughened & Translucent glass panels of 12mm thickness	50.73				
5.05	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS : 6315 marked, for doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge.					
a)	With brass cover plate	8.00	each			
5.06	Providing and fixing powder coated aluminium grills of required size and approved pattern and quality made out with special extruded sections fixed with suitable means as approved and as directed by Engineer in Charge.	711.00	kg			

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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.	352.00	sqm			
5.08	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of shutters (over all area of door shutter to be measured) over item no. 5.09 above.	352.00	sqm			
5.09	Extra for providing vision panel not exceeding 0.1 sqm in all type of flush doors (cost of glass excluded) (overall area of door shutter to be measured) :					
a)	Rectangular or square.	176.00	sqm			
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).	7.00	sqm			

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1	2	3	4	5	6	7
5.11	Providing glass panes, with wooden fillets wherever necessary.					
a)	Float glass panes of thickness 4 mm	9.00	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)	16.00	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					
a)	1.0 mm thick.	704.00	sqm			

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1	2	3	4	5	6	7
5.14	Providing and installation of fully insulated wooden fire rated shutter of 120min. fire rating conforming to BS: 476 part 22 and IS:3614 Part II as per the prototype tested and certified by CBRI Roorkee, of 55mm thickness, comprising of 75mm x 49mm hardwood internal timber frame work, with infill of 96 kg/m ³ , ceramic fiber blankets, coated with VIPER FR or equivalent intumescent coating on both sides for insulation. The coated insulation shall be sandwiched between 12mm thick, Non combustible Boards (Calcium Silicate) on both sides (edge to edge on internal Hardwood frame) and clad with 3mm thick commercial ply of approved quality & 1mm thick laminate of approved brand and manufacture on both sides, with 55mm x 14mm 2nd class teak wood lipping all round the shutter.					

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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	32.00	sqm			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.15	Providing and fixing door frames as per BS: 476 part 22, IS:3614 Part II as per the prototype certified by CBRI Roorkee made out of 2nd class Teak Wood (Ivory Coast)frame of section 140x65mm for fire resistant doors of 120 minutes fire rating, with heat activated intumescent fire seal strips of size 20 x 4 mm(for smoke sealing) provided in grooves on all three sides of the frame with one coat of approved brand of fire retardant primer including two coats of fire retardant paint FR 881or equivalent un thinned on cleared hard wood surface of door frames (@3.5 sq.m. per litre per coat) including preperation of base surface as per recommendations of manufacturer to make the surface fire retardant, including fixing the frame with 8 nos. 100 mm long, 10 mm dia metal dash fastners complete as per directions of the Engineer in charge NOTE:- cost of fire seal strips, dash fastners are included in the item. Nothing extra shall be paid if size of any component of material exceeds the limit mentioned in the item.	56.00	Metre			
5.16	Providing and fixing UL listed door Co-ordinator for coordination of double leaf doors, of approved brand and manufacture with minimum one year warrantee.	9.00	Each			

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1	2	3	4	5	6	7
5.17	<p>Providing & fixing of Fire-stop Fire sealing System Board Type(barriers) of Navair or equivalent make for sealing of floors, wall openings under control panels for the purpose of compartmentation.The FPSS consists of 100mm thick mineral wool insulation pad (density 48 kg per cum) coated with FR in tumescent compound encased with 10 mm thick GRG board of approved brand and manufacture, sealed with intumescent Fire Seal Putty SP#711 of VIPER or equivalent make. The system is coated and fixed with openings with the help of M.S. slotted angles of size 40X40X5mm , nutbolts and dash fasteners of approved make and quality, wire net etc. The FPSS system must provide min. 2 hours fire rating as per IS 12458-1989.After insulation of this system it will be painted with Fire Retardant Paint.</p> <p>CERTIFICATION of specialized agency of the system has to be tested at CBRI, Roorkee for 2 hrs. Fire rating as per the following specifications. 1. BS: 476 Part 8. 2. UL: 1479 . ISO:834 4. ASTM E 814 5. AS</p>	10.00	sqm			

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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	2.00	sqm			
5.19	Providing and fixing IS : 3564 marked aluminium extruded section body tubular type universal hydraulic door closer with double speed adjustment with necessary accessories and screws etc. complete.	73.00	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	7.00	each			
b)	250x16 mm	7.00	each			
5.21	Providing and fixing aluminium tower bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade with necessary screws etc. complete:					
a)	250x10 mm	196.00	each			
b)	150x10 mm	588.00	each			

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Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.22	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	391.00	each			
b)	100 mm	20.00	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	196.00	each			
5.24	Providing and fixing bright finished brass 100 mm mortice latch and lock ISI marked with six levers and a pair of anodised (anodic coating not less than grade AC 10 as per IS : 1868) aluminium lever handles with necessary screws etc. complete (Best make of approved quality).	166.00	each			

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1	2	3	4	5	6	7
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	414.00	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.	16.00	each			
5.27	Providing and fixing 100mm brass locks (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.					
		4.00	each			
5.28	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete.					
a)	Powder coated minimum thickness 50 micron aluminium.	373.00	each			

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1	2	3	4	5	6	7
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	9.00	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.	9.00	each			
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 approved brand and manufacturer having 1 year manufacturers warranty.	9.00	each			
5.32	Providing and fixing 300 mm long stainless steel grade 304 D type pull handle with necessary screws etc. complete.	14.00	each			
Total						

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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.	100.00	kg			
6.02	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete:	2200.00	kg			
6.03	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing and staircase railing including applying a priming coat of approved steel primer.					
a)	M.S. tube.	100.00	Kg			

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6.04	Fabrication, supply and installation of SS 304 grade 900mm high staircase railing made of SS 304 grade handrail pipe of 50 mm OD and 1.6 mm thickness polished with automatic round polishing machine to get a uniform hairline finish mounted with the hel of adjustable solid neck support on balustrade of approved design at 1200mm c/c and at every turn, supporting 3 mid rails of 12mm OD and 1.6 mm thickness with the help of solid connectors of 23 mm dia holding the mid rails by M6 grub screws inserted in baluster and screwed through the baluster with M6 counter sunk screws overall mounted on SS 304 grade base plate with the help of dash fasteners to be treated with K2 solution at all welding joints and passivated.					
		101.00	Mtr			

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1	2	3	4	5	6	7
6.05	Fabrication, supply and installation of SS 304 grade 900mm high balcony railing made of SS 304 grade handrail pipe of 50 mm OD and 1.6 mm thickness polished with automatic round polishing machine to get a uniform hairline finish mounted with the help of adjustable solid neck support on balustrade of approved design at ends, supporting 3 mid rails of 12mm OD and 1.6 mm thickness with the help of solid connectors of 23 mm dia holding the mid rails by M6 grub screws inserted in baluster and screwed through the baluster with M6 counter sunk screws overall mounted on SS 304 grade base plate with the help of dash fasteners to be treated with K2 solution at all welding joints and passivated.					
		29.00	Mtr			
6.06	Providing and fixing expansion hold fasteners on C.C. /R.C.C. surface backing including drilling necessary holes and the cost of bolt etc complete					
		50.00	Each			
a)	Fastener with threaded dia 12 mm					
	Total					

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7.00	Flooring					
7.01	Cement concrete flooring 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete.					
a)	40mm thick with 20mm nominal size stone aggregate.	549.00	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.	83.00	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.	1375.00	Metre			
7.04	Marble stone flooring/skirting with 18mm thick marble stone (sample of marble shall be approved by Engineer-in-charge) over 20 mm (average) thick base of cement mortar 1:4 (1 cement: 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing complete with:					
a)	Raj Nagar Plain	454.00	sqm			
b)	Udaipur green marble	502.00	sqm			

Project Name: Proposed construction of NIUM (Phase III), Bangalore

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
c)	Jaisalmer Stone	75.00	sqm			
7.05	18mm thick Prepolished Granite (Base Rate 150/- Sqft) in Risers, skirting and dado/wall cladding over 12mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement including pointing with white cement mixed with pigment matching the shade of granite stone all complete and as directed.	488.00	sqm			
7.06	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :					
a)	25 mm thick.	453.00	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.	57.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.08	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	1340.00	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.	186.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.10	Providing and laying vitrified floor and dado/skirting, tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete					
a)	Size of Tile 60x60 cm	637.00	sqm			
7.11	Providing and fixing 18mm thick gang saw cut mirror polished premoulded and prepolished) machine cut for kitchen platforms, vanity counters, window sills. facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete at all levels					
a)	Granite of any colour and shade					
i	Area of slab upto 0.50 sqm	10.00	sqm			
ii	Area of slab over 0.50 sqm.	56.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.12	Extra for providing edge moulding to 18mm thick Granite stone counters, Vanities etc. including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.					
a)	Granite work.	76.00	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.	76.00	metre			
7.14	Extra for providing opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/Granite/stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc. complete.	54.00	Nos			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.15	Providing & fixing 3.0 mm minimum thickness jointless Acoustic PVC Vinyl flooring and skirting . Total weight of PVC should not be less than 3200g/m ² , polyurethane reinforced (PUR) ,Abrasion group T:≤0.04mm, reduction of noise in room=61dB ,castor wheel test qualified, impact sound reduction approx +17db , good resistance of chemical and fire, slip resistant (R9 μ≥0.30 including the cost of suitable adhesive of approved quality and manufacture.	289.00	sqm			
7.16	Providing and fixing machine tufted pure wool loop pile carpet of approved make and quality having total pile weight of 1500 Gms per sqm, total carpet weight of 2610 Gms per sqm and underlay of 8mm thick PU foam fixed to existing levelled floor with rubber based adhesives of approved brand and manufacture as per specification.	193.00	Sqm			
7.17	Chequered terrazzo tiles 22 mm thick with graded marble chips of size up to 6 mm in floors jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing and polishing complete on 20 mm thick bed of cement mortar 1:4 (1 cement :4 coarse sand) :					
	Medium shade using 50%white cement 50% ordinary cement	54.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.18	P/L 8mm thick (EN13329) laminated Flooring including skirting (class use of 23/31 AC 3 with 0.2mm thick direct pressure laminated on top) plank size 1290 X 194 mm & groove construction with edge impregnate with seal to secure long lasting joints ,secured together with the help of suitable glue, conforming to EN 13329.	52.00	sqm			
7.19	38mm thick wood block (parquet) flooring of first class teak wood laid over 25mm thick leveling layer of cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 10mm nominal size) to be paid separately coated with a thin layer of hot bitumen (blown type) @ 2.45 kg per sqm. including fixing blocks in position after dipping in hot bitumen (blown type) up to half depth, planed, levelled smooth and finished complete.	77.00	Sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.20	Granite stone flooring with 18 mm thick granite (Base Rate Rs. 150/- Sqft) stone, rectangular shape, (minimum size of stone should be 0.45 sqm and one dimension not less than 700 mm) as per drawing or as per the pattern as approved by the client/ architect/ engineer, over 20 mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry mixed with pigment to match the shade of stone including rubbing and polishing complete.	835.00	Sqm			
	Total					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.00	CEILING & ROOFING					
8.01	Providing and fixing 15mm thick Mineral Fibre False Ceiling Tiles or equivalent of size 600x600 mm in true horizontal levelsuspended on inter locking metalgrid of hot dipped galvanized steel sections (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, required, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats fixed to ceiling with 6 mm dia and 50 mm long dahl fasteners, 4 mm GI adjustable rods with galvanized level clips spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T-Sections shall be pre-painted with					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	polyester paint, all complete at all heights as per specificaitons drawings and as directed by Engineer-in-Charge.Only Mineral Fibre false ceiling area will be measured for the purpose of payment.					
a)	With Mineral Fibre Ceiling tiles having NRC value of 0.5 (minimum) CAC 35-39, light reflection 84% (minium), fire rating class A as per ASTM E-84, suitable for 95% relative humidity and also having Thermal Resistance "(R)" =0.33 sqm deg. C/W	223.00	sqm			
b)	With textured square edge tiles of NRC 0.94 base panel with humidity resistance of 90% RH as per ISO-4611,ASTM C-165 ,ASTM C-303 , ASTM C-1104 and light reflectance upto 85% with Leed points Green Performance certified, and Thermal conductivity K=0.082 W/Mk with sag resistance with normal edge profile. 15mm thick Ceiling tile meeting the fire test required having Class 'A' rating for Flame Ignitability test as per ASTM-E-84.	1107.00	sqm			
Note	The job to be carried out by an approved reputed company having sufficient work experience.					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.02	Providing and fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Fibre glass wool conforming to IS : 8183 density 24kg/m ³ 50mm thick, wrapped in 200 G Virgin Polythene bags fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5mm x 24g wire and mesh, for top most ceiling of building.	1384.00	Sq Mtr.			

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

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all screws @ 230mm interval including jointing and fixing to a flush finish of tapered and square edges of the board with recommended filler, jointing tapes, finisher and two coats of primer suitable for board as per manufactures specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer in Charge but excluding the cost of painting with :					
a)	12.5 mm thick tapered edge gypsum board conforming to IS: 2095- Part I.	333.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.04	Providing and fixing 8mm thick clear multi wall polycarbonate sheets of approved quality and shade in desired shape in roofing including the cost of EPDM gaskets , sealing tape , aluminium profile and all necessary accessories complete as per architectural drawings and as directed by Engineer incharge. The item includes designing the complete system and supplying & getting approved from client and / or reputed engineering institue like IIT etc. The detailed shop drawings including supplying structural design calculations based on relevent codal provisions and carrying out water penetration test as per standards followed in India.					
	The whole work is to be done through reputed and approved vendor having experience in polycarbonate work in Commercial/ Govt/ Corporate buildings as per architectural elevation drawings including filling of joints with silicon sealent and also with masonry/ RCC work, at all heights including double heights, straight or curved etc. complete in all respect. (Plan Area shall be measured for the payment) (M.S. Framing to be paid for seprately)	10.00	Sqm			
8.05	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of :					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
i)	v) 1st course of applying cement slurry @ 4.4 Kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface.					
ii)	vi) 2nd course of 20mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface.					
iii)	vii) 3rd course of applying blown or residual bitumen applied hot at 1.7 Kg. per sqm of area.					
iv)	viii) 4th 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.)	340.00	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.06	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75 kg/sqm. of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115mm size with 50% of cement mortar 1:5 (1 cement: 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound to IS : 2645 and approved by Engineer - in - charge to required slope and treating similarly the					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	adjoining walls upto 300 mm height including rounding of junctions of walls and slabs c) After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement: 4 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Charge :					
a)	With average thickness of 120mm and minimum thickness at khurra as 65 mm.	2150.00	sqm			
	Total					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
9.00	Finishing					
9.01	12 mm cement plaster of mix:					
a)	1:6 (1 cement: 6 fine sand)	3979.00	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)	4863.00	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).	5351.00	sqm			
9.04	6 mm cement plaster of mix:					
a)	1:3 (1 cement: 3 fine sand)	2102.00	sqm			
9.05	Neat cement punning	50.00	sqm			
9.06	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	150.00	sqm			
9.07	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete	12601.00	Sqm			
9.08	White washing with lime to give an even shade:					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
a)	New work (three or more coats)	100.00	sqm			
9.09	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade					
a)	New work (two or more coats) over and including priming coat with cement primer.	3389.00	sqm			
9.10	Finishing walls with Acrylic Smooth exterior paint of required shade:					
a)	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including base coat of water proofing cement paint applied @ 2.20 kgl10 sqm).	220.00	sqm			
9.11	Applying one coat of cement primer of approved brand and manufacture on wall surface:					
a)	Cement primer.	6517.00	sqm			
9.12	Finishing walls with textured exterior paint of required shade:					
a)	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including base coat of water proofing cement paint applied @ 2.20kg/1 0 sqm.	5351.00	sqm			
9.13	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade:					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
a)	Two or more coats on new work	6517.00	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.	447.00	sqm			
9.15	Providing and fixing 24 gauge and 18mm mesh size chicken wiremesh at junction of concrete and brick work and other locations at all heights including cutting to required size and side laps of minimum 75mm and fixing in positions with nails/screws etc. as directed and as required at site.	420.00	sqm			
Total						

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.00	Miscellaneous					
10.01	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement :3 coarse sand : 6graded stone aggregate 20mm nominal size) over 75mm bed by dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth	410.00	sqm			
10.02	Providing and fixing Wooden Wall panelling with the following specification:					
a)	Frame work of chemically treated (for termites) seasoned sal wood 50 X 50 mm in horizontal & Vertical frame 600 X 600 mm c/c and along doors, windows etc, fixed rigidly with suitable desh fastners etc all complete as required at site.					
b)	Providing and fitting 50 mm thick glass wool of 24 kg/cum density wrapped in 200G virgin polythene bags					
c)	Providing and fixing 20 mm thick first quality rubber wood (as per approved sample) slats/panels of required width for skirting and panelling fixed over wooden base giving 3 mm gap between the panels, as per drawing including required hardware, beading etc all complete.					
d)	Malamine polishing over wooden panelling (Area of paneling shall be measured for complete item)	240.60	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.03	Providing and fixing wall panelling with the following specification:					
a)	Frame work of chemically treated (for termites) seasoned sal wood 50 X 50 mm in horizonntal & Vertical frame 600 X 600 mm c/c and along doors, windows etc, fixed rigidly with suitable desh fastners etc all complete as required at site.					
b)	Providing and fitting 50 mm thick glass wool of 24 kg/cum density wrapped in 200G virgin polythene bags					
c)	Providing and fixing fabric cladding (Base rate of fabric Rs 400 per sqm) fixed with suitable adhesive over 19 mm thick accousitc board of approved quality fixed over wooden base including all hardware, beading etc complete,	240.60	sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.04	Designing, supplying, fabrication and installation of semi unitised Structural glazing system in the form of fixed panels, using specially designed aluminium extruded sections, mullions and transoms having 25 micron Anodising of approved colour and shade and make with mullions fixed on the RCC beams/columns through adequately designed brackets including providing masking tape on the profiles for safety against external scratches on site complete with approved silicon sealant EPDM gasket etc. to make the structural glazing air tight and water tight as per standards and as per Architect's drawings and specifications. The design to be as per BIS code for required wind pressure IS: 875 part III and use of aluminium section alloy as per IS:8147.					

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
a)	System design to strictly consider for thermal movements, air infiltration, water penetration, seismic movement and structural movement. Contractor to furnish shop drawings along with sequence of work for approval of Engineer-in-charge.The minimum section shall be 131x66x2mm and per sqmt weight shall be 10kg approx., the item shall be measured and paid for actual surface area of structural glazing/aluminium composite panel supported on the frame. The work shall be carried out by the specialised agency approved by Engineer in Charge.	447.00	SqM			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.05	Extra for providing & fixing 24mm made up thickness insulated glass over above corresponding item hermetically sealed with 6mm heat strengthend toughened solar control off line coated high performance temperable glass of approved colour having reflective soft coating and 6mm clear toughned float glass inside with 12mm dry air cavity between two glass panes separated by a hollow aluminium spacer bar with twin lines of micro holes as approved filled with molecular desiccant of approved make and using primary hot meld duly and secondary polysulphide or silicon sealant of approved make all complete over above item. (U value less than 2.85w/sqm k, shadding cofficent less than 0.55, solar factor less than 0.25, light transmission minimum 25%)	447.00	Sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.06	Providing, cutting, bending and fixing 4mm thick aluminium composite cladding on external façade with water tight system either curved or straight or circular in plan. Skin material 0.5mm thick aluminium sheet (3005 H6) core material natural polyethylene, aluminium cladding panel to be of approved colour/shade fixed with extruded aluminium basic frame, angle cleats, weather sealants, rivets, GI brackets all as approved, using suitable chemical/anchor bolts on structural steel work including necessary accessories complete in all respects (frame work to be paid separately).					
	(Rate should be quoted considering enclosed particular specifications and provision of openable access panels for services wherever required) visible surface area shall be measured for payment. With weather silicon sealant of approved make, non-streaking/ staining weather sealant of approved make.					
	On curved or straight surfaces including cill and jambs.	176.00	Sqm			

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.07	Providing and fixing Push back type Auditorium chairs 21" width total height of 38"-40" with powder coated M.S. frame work, PU seat and back and upholstered with inherent fire retardant fabric complete with recline arrangement and fixing over floor with necessary nuts bolts fasteners etc complete as per approved design and sample. Basic rate of fabric shall be Rs.350-400/- per metre	380.00	Each			
10.08	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material outside the site premises with all lead and lift to municipal dumping grounds as per direction of Engineer-in-charge.					
a)	In cement mortar	80.00	Cum			
10.09	Dismantling manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material outside the site premises with all lead and lift to municipal dumping grounds or as per direction of Engineer-in-charge :					
a)	Water bound macadam road	250.00	Sqm			
b)	bituminous road	250.00	Sqm			
Total						

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BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.00 ROAD WORK AND DEVELOPEMENT						
11.01	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm. depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth lead upto 50 metres.	1100.00	SQM			
11.02	Supplying and stacking at site.					
a)	90 mm to 45 mm	90.00	CuM			
b)	63 mm to 45 mm	79.80	CuM			
11.03	Laying spreading and compacting stone aggregate of specified sizes to WBM specifications including spreading in uniform thickness, hand picking, rolling with 3 wheeled road/ vibratory roller 8-10 tonne in stages to proper grade and camber, applying and brooming requisite type of screening/ binding material to fill up interstices of coarse aggregate watering and compacting to the required density.	120.00	Cum			

Project Name: Proposed construction of NIUM (Phase III), Banglore

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.04	Providing and laying C.C. pavement of mix M25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator, vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately).	60.00	Cum			
11.05	Providing and laying in position bitumen hot sealing compound for expansion joints etc					
a)	Using grade 'A' sealing compound.	1500.00	Per cm depth per cm width per m length			
11.06	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction and of approved size and design/ shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	500.00	sqm			

Project Name: Proposed construction of NIUM (Phase III), Bangalore

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.07	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement: 3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	27.00	Cum			
11.08	Trenching in ordinary soil upto a depth of 60cm including removal and stacking of serviceable materials and then disposing of by spreading and neatly levelling with in a lead of 50m and making up the trenched area to proper levels by filling with earth or earth mixed with sludge or/and manure before and after flooding trench with water (excluding cost of imported earth, sludge or manure).	1200.00	Cum			
11.09	Supplying and stacking sludge at site including royalty and carriage up to 1 km (sludge measured in stacks will be reduced by 8% for payment).	100.00	Cum			

Project Name: Proposed construction of NIUM (Phase III), Bangalore

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.10	Spreading of sludge, dump manure or/and good earth in required thickness (Cost of sludge, dump manure or/ and good earth to be paid separately).	100.00	Cum			
11.11	Rough dressing the trenched ground including breaking clods & Uprooting weeds from the trenched area after 10 to 15 days of its flooding with water including disposal of uprooted vegetation.	2000.00	Sqm			
11.12	Supply & sprinkling of Neem cake (at the rate of 6 kg per 100 sq. metres) and fine dressing the ground.	2000.00	Sqm.			
11.13	Supply & grassing with "Calcutta Doob" grass in rows 7.5cms, apart in either direction including fine dressing the ground to be levelled, supply and filling with good earth if needs, watering & maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds & fit for mowing. Antitermite shall be applied with CHLOROPYRIPHOS (DURSBAN make or equivalent) at the rate of 2ml per litter in the first watering.	2000.00	Sqm.			

Project Name: Proposed construction of NIUM (Phase III), Bangalore

BOQ for Civil Work						
Item No	Description Of Item	Total Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.14	Digging holes in ordinary soil and refilling the same with the exca-vated earth mixed with manure or sludge in the ratio of 2:1 by volume (2 parts of stacked volume of earth after reduction by 20% : 1part of stacked volume of manure after reduction by 8%) flooding with water, dressing including removal of rubbish and surplus earth, if any with all leads and lifts (cost of manure, sludge or extra good earth if needed to be paid for separately):					
a)	Holes 1.2 m dia and 1.2 m deep.	10.00	Each			
b)	Holes 60 cm dia, and 60 cm deep.	10.00	Each			
	Sub Total					

Project Name: Proposed construction of NIUM (Phase III), Bangalore

ABSTRACT OF COST(Civil Work)

S.No	DESCRIPTION OF WORK	Amount
1	EARTHWORK	
2	CONCRTE WORK	
3	RCC WORK	
4	BRICK WORK	
5	DOORS & WINDOWS	
6	STEEL WORK	
7	FLOORING	
8	CEILING & ROOFING	
9	FINISHING	
10	MISCELLANEOUS	
11	Road Work and Development	
	TOTAL	

Design & Engineering Department

Name of Work:BOQ of Plumbing work of NIUM,Bangalore

**The quantities are of Regimen Therapy,Auditorium, Pharmacy & Drying block
& Hamam**

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
	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 and work shall be executed by specialised approved agency.						
1.00	SANITARY FIXTURES						
1.01	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required :						
a)	White Vitreous china Orissa pattern W.C. pan of size 580x440mm with integral type foot rests.	17.1.1	Each	5.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
1.02	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous flushing cistern and C.P. flush bend with fittings & C.I. brackets, 40mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required:	17.3.1	Each	41.00			
a)	W.C. pan with ISI black solid plastic seat & lid.						
1.03	Providing and fixing white vitreous China flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I. clamps complete, including painting or fittings and brackets, cutting and making good the walls and floors wherever required.	17.4					
a)	One urinal basin with 5 litre white PVC automatic flushing cistern	17.4.1	Each	1.00			
b)	Range of two urinal basin with 5 litre white PVC automatic flushing cistern.	17.4.2	Each	2.00			
c)	Range of three urinal basin with 10 litre white PVC automatic flushing cistern.	17.4.3	Each	2.00			
1.03	Providing and fixing wash basin with C.I. brackets, 15mm C.P. brass pillar taps, 32mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required:						
a)	White vitreous china wash basin size 550x 400 mm with a pair of 15mm C.P. brass pillar tap.	17.7.3	Each	48.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
b)	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.	17.7.9	Each	10.00			
1.04	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)	510x1040 mm bowl depth 225 mm with drain board.	17.10.1.2	Each	2.00			
1.05	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:	17.11					
	Size 600x450x200 mm	17.11.2	Each	1.00			
1.06	Extra for using coloured W.C. pan instead of white W.C pan	17.14					
	Orissa pattern W.C. pan 580x440 mm	17.14.1	Each	5.00			
1.07	Extra for using coloured pedestal type W.C. pan (European type) with low level cistern of same colour instead of white vitreous china W.C. pan and cistern	17.16	Each	41.00			
1.08	Providing and fixing superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shape with 6 mm thick hard board backing.						
a)	Rectangular shape 453x357 mm	17.32.2	Each	59.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
1.09	Providing and fixing 600x120x5 mm glass shelf with edges round of supported and anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	17.33	Each	58.00			
1.10	Providing and fixing toilet paper holder .						
a)	Vitreous china	17.34.2	Each	41.00			
1.11	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour weighing not less than 105 gms.	17.71	Each	58.00			
1.12	Providing and fixing Health forced water Jet Nozzle with hose pipe and half turn CP brass angle valve to be fitted with seat cover of european water closet complete in all respect of approved quality	NS	Each	41.00			
1.13	Providing and fixing soap tray with CP brass lid and brackets fixed to wooden cleats with CP brass screws.	NS	Each	26.00			
1.14	Providing and fixing CP brass towel rail size of 600x20 mm of approved make complete with CP brackets fixed to wooden cleats with CP brass screws	NS	Each	56.00			
1.15	Providing and fixing brass coat hook of approved quality and make complete with material of fixing	NS	Each	79.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
1.16	Extra for providing and fixing white vitreous china oval shape wash basin in place of normal wash basin with CI/MS brackets painted white, 15 mm CP brass pillar taps, 32 mm CP brass waste of standard pattern, including painting of fittings and brackets cutting and making good the walls wherever required						
a)	Counter top oval shape wash basin size 550x470 mm with centre tap hole, single 15 mm CP brass swan neck type pillar tap	NS	Each	48.00			
1.17	Providing and fixing stainless steel grab bar 20mm dia of required length minimum 600 mm with PVC cleats, C.P. brass screws etc. complete.	NS	Each	13.00			
1.18	Extra for providing and fixing white vitreous china wall hung type water closet (European type) in place of normal pedestal type water closet with white solid plastic seat and lid concealed flushing cystem 9 ltrs capacity(min) approximate size(400x300x100)comprising of SS actuating panel with dual flush with fittings ,specials of standard make(Viega,ACO,Kohler,Jaquar) and complete including painting , cutting and making good the walls and floors wherever required:	NS	Each	21.00			
1.19	Providing and fixing vitreous china division plate of size 960x165x325 mm of approved make and design including brass cleats, C.P. brass screws all fittings etc. complete in all respect	NS	Each	32.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
1.20	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.	NS	Each	1.00			
SUB TOTAL(SANITARY FIXTURES)							

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
2.00	SOIL, WASTE AND VENT PIPES						
2.01	Providing and fixing soil, waste and vent pipes.						
a)	100 mm dia.						
a i)	Centrifugally cast (spun) iron socketed pipe as per IS:3989	17.35.1.2	Metre	1250.00			
b)	75 mm dia						
b ii)	Centrifugally cast (spun) iron socketed pipe as per IS:3989	17.35.2.2	Metre	10.00			
2.02	Providing and fixing M.S holder-bat clamps of approved design to Sand Cast iron/ cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) including cost of cutting holes and making good the walls etc.						
a)	for 100 mm dia. pipe	17.37.1	Each	115.00			
b)	for 75 mm dia. pipe	17.37.2	Each	2.00			
2.03	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.						
a)	100 mm						
a ii)	Sand cast iron S&S as per IS-3989	17.38.1.2	Each	98.00			
	75 mm						
b)	Sand cast iron S&S as per IS-3989	17.38.2.2	Each	2.00			
2.04	Providing and fixing plain bend of required degree.						
a)	100 mm						
a ii)	Sand cast iron S&S as per IS:3989	17.39.1.2	Each	143.00			
b)	75 mm						
b i)	Sand cast iron S&S as per IS:3989	17.39.2.2	Each	2.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
2.05	Providing and fixing heel rest sanitary bend.	17.40					
a)	100 mm dia						
a.ii)	sand cast iron S&S as per IS-3989	17.40.1.2	Each	39.00			
b)	75 mm						
	sand cast iron S&S as per IS-3989	17.40.2.2	Each	1.00			
2.06	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3mm thick, bolts and nuts complete.						
a)	100x100x100mm						
a.ii)	sand cast iron S&S as per IS-3989	17.43.1.2	Each	42.00			
b)	75x75x75mm Centrifugally cast (spun) iron S&S						
b.ii)	sand cast iron S&S as per IS-3989	17.43.2.2	Each	1.00			
2.07	Providing and fixing single equal plain junction of required degree	17.44					
	100x100x100mm	17.44.1					
	sand cast iron S&S as per IS-3989	17.44.1.2	Each	4.00			
2.08	Providing and fixing door piece, insertion rubber washer 3mm thick, bolts and nuts complete						
a)	100 mm						
a.ii)	sand cast iron S&S as per IS-3989	17.55.1.2	Each	15.00			
2.09	Providing and fixing terminal guard.						
a)	100 mm						
a.ii)	sand cast iron S&S as per IS-3989	17.56.1.2	Each	39.00			
b)	75 mm						
b.ii)	sand cast iron S&S as per IS-3989	17.56.2.2	Each	1.00			
2.10	Providing and fixing collar						
a)	100 mm						
a.ii)	Sand cast iron S&S as per IS-3989	17.57.1.2	Each	80.00			
b)	75 mm						

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
b.ii)	Sand cast iron S&S as per IS-3989	17.57.2.2	Each	1.00			
2.11	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:						
a)	100 mm	17.58.1	Each	750.00			
b)	75 mm	17.58.2	Each	5.00			
2.12	Providing and fixing M.S. stays and clamps for sand cast iron / centrifugally cast (spun) iron pipes of diameter :						
a)	100 mm	17.59.1	Each	39.00			
b)	75 mm	17.59.2	Each	1.00			
2.13	Providing and fixing trap of self cleansing with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors:						
a)	100 mm inlet and 100 mm outlet						
a i)	Sand cast iron S&S as per IS-3989	17.60.1.1	Each	58.00			
2.14	Cutting chases in brick masonry walls for following diameter sand cast iron/centrifugally cast (spun) iron pipes and making good the same with cement concrete 1:3:6 (1 cement:3 coarse sand:6 graded stone aggregate 12.5 mm nominal size) including necessary plaster and pointing in cement mortar 1:4 (1 cement: 4 coarse sand):						
a)	100 mm diameter pipe	17.61.1	Metre	63.00			
b)	75 mm diameter pipe	17.61.2	Metre	1.00			
2.15	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:						

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
a)	100 mm diameter pipe	17.65.1	Metre	894.00			
b)	75 mm diameter pipe	17.65.2	Metre	3.00			
2.16	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.	NS	Each	27.00			
2.17	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.	NS	Each	59.00			
2.18	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.	NS	Each	9.00			
2.19	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	NS	Metre	352.51			
b)	75 mm dia	NS	Metre	7.00			
2.20	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.	NS	Each	55.00			
2.21	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.	NS	Each	353.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
	100 mm/75mm						
2.22	Providing and fixing dash fastner made of rust proof plated steel for holding the soil/waste supply pipes complete in all respect						
	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 0.5 tonnes load and also include the supporting angles 35x35x5 mm/ of required size or MS bars steel structures as per drawing.	NS	Each	31.00			
2.23	Providing and fixing floor clean out plug consist of CI bend & GI socket heavy class with Brass cap & key for opening male threaded cap etc. including lead caulked to CI pipescomplete in all respects as per drawing/ sample approved by Engineer -in -ChargeFCO (floor clean out plug shall be flushed with floor finish						
	100 mm dia	NS	Each	2.00			
2.24	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.	NS					
	32 mm dia nominal bore (Wash basin to floor trap/floor drain)		Meter	81.00			
	40 mm dia nominal bore (Sink,Urinal to floor trap)		Meter	8.00			
	50 mm dia nominal bore (Floor Drain to Floor Trap)		Meter	73.00			
2.25	Providing & fixing SS floor trap grating 143x143x5mm thick screwablewith SS fixed frame of 150x150 mm size as per approved make & model	NS	Each	56.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
2.26	Providing and fixing clean out plug consist of GI socket/nipple heavy class with threaded pludge for opening male threaded cap etc. including lead caulked to CI pipescomplete in all respects as per drawing/ sample approved by Engineer -in -Charge						
	100 mm dia	NS	Each	3.00			
	SUB TOTAL(SOIL, WASTE AND VENT PIPES)						

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
3.00	WATER SUPPLY						
3.01	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.						
	Internal work- Exposed on wall						
a)	15 mm nominal outer dia pipes (SDR-11)	18.7.1	Metre	55.00			
b)	20 mm nominal outer dia pipes (SDR-11)	18.7.2	Metre	162.00			
c)	25 mm nominal outer dia pipes (SDR-11)	18.7.3	Metre	95.00			
d)	32 mm nominal outer dia pipes (SDR-11)	18.7.4	Metre	100.00			
e)	40 mm nominal outer dia pipes (SDR-11)	18.7.5	Metre	83.00			
f)	50 mm nominal outer dia pipes (SDR-11)	18.7.6	Metre	250.00			
g)	62.5 mm nominal outer dia pipes (SDR-11)	NS	Metre	150.00			
3.02	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.						
	Concealed work including cutting chases and making good the walls etc.						
a)	15 mm nominal outer dia pipes (SDR-11)	18.8.1	Metre	510.00			
b)	20 mm nominal outer dia pipes (SDR-11)	18.8.2	Metre	170.00			
c)	25 mm nominal outer dia pipes (SDR-11)	18.8.3	Metre	55.00			
d)	32 mm nominal outer dia pipes (SDR-11)	18.8.4	Metre	5.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
e)	40 mm nominal outer dia pipes (SDR-11)	NS	Metre	10.00			
f)	50 mm nominal outer dia pipes (SDR-11)	NS	Metre	10.00			
3.03	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.						
	External Work						
a)	20 mm nominal outer dia pipes (SDR-11)	18.9.2	Metre	20.00			
b)	25 mm nominal outer dia pipes (SDR-11)	18.9.3	Metre	13.00			
c)	40 mm nominal outer dia pipes (SDR-11)	18.9.5	Metre	20.00			
d)	50 mm nominal outer dia pipes (SDR-11)	18.9.6	Metre	70.00			
e)	62.5 mm nominal outer dia pipes (SDR-11)	18.9.7	Metre	50.00			
3.04	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc.	18.10					
	Internal Work- Exposed on walls						
a)	80 mm dia nominal bore	NS	Metre	35.00			
b)	100 mm dia nominal bore	NS	Metre	20.00			
c)	65 mm dia nominal bore	NS	Metre	50.00			
3.05	Making connection of G.I. /C.P.V.C.distribution branch with G.I./C.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)	25 to 40 mm nominal bore	18.13.1	Each	3.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
b)	50 to 80 mm nominal bore	18.13.2	Each	2.00			
3.06	providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)						
a)	25 mm nominal bore	18.17.1	Each	18.00			
b)	32 mm nominal bore	18.17.2	Each	9.00			
c)	40 mm nominal bore	18.17.3	Each	2.00			
d)	50 mm nominal bore	18.17.4	Each	14.00			
e)	65 mm nominal bore	18.17.5	Each	12.00			
f)	80 mm nominal bore	18.17.6	Each	4.00			
3.07	Providing and fixing ball valve (brass) of approved quality, High or low pressure with plastic floats complete						
a)	15 mm nominal bore	18.18.1	Each	3.00			
b)	20 mm nominal bore	18.18.2	Each	9.00			
3.08	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main	18.2					
	25 mm nominal bore	18.20.3	Each	5.00			
	40 mm nominal bore		Each	1.00			
3.09	Providing and fixing unplasticised PVC connection pipe with brass unions:						
a)	45 cm length						
a i)	15 mm nominal bore	18.21.2.1	Each	215.00			
3.10	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet	18.22					
	150 mm diameter	18.22.2	Each	20.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
3.11	Constructing masonry chamber 30x30x50 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement: 4 coarse sand) for stop cock, with C.I. surface box 100x100x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement:5 fine sand: 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement :3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design						
a)	With F.P.s bricks	18.32.1	Each	6.00			
3.12	Constructing masonry chamber 60x60x75 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement: 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement:5 fine sand: 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement :3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design						
a)	With F.P.s bricks	18.33.1	each	5.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
3.13	Constructing masonry chamber 60x45x50 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement: 4 coarse sand) for water meter complete with C.I. double flap surface box 400x200x200 mm (inside) with locking arrangement and RCC top slab 1:2:4 mix (1 cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement:5 fine sand: 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement :3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design						
a)	With F.P.s bricks	18.37.1	each	2.00			
3.14	Painting CPVC/G.I. pipes and fittings with synthetic enamel white paint over a ready mixed priming coat, both of approved quality for new work						
a)	15 mm nominal outer dia pipes	18.38.1	Metre	55.00			
b)	20 mm nominal outer dia pipes	18.38.2	Metre	162.00			
c)	25 mm nominal outer dia pipes	18.38.3	Metre	95.00			
d)	32 mm nominal outer dia pipes	18.38.4	Metre	100.00			
e)	40 mm nominal outer dia pipes	18.38.5	Metre	83.00			
f)	50 mm nominal outer dia pipes	18.38.6	Metre	250.00			
g)	65 mm nominal outer dia pipes	18.38.6	Metre	150.00			
3.15	Painting G.I. /CPVC pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality.						
a)	20 mm diameter pipe	18.40.2	Metre	20.00			
a)	25 mm diameter pipe	18.40.3	Metre	13.00			
c)	40 mm diameter pipe	18.40.5	Metre	20.00			
b)	50 mm diameter pipe	18.40.6	Metre	70.00			
e)	65 mm diameter pipe	18.40.7	Metre	50.00			
3.16	Providing and filling sand of grading zone V or coarser grade all-round the G.I./CPVC pipes in external work						

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
a)	20 mm diameter pipe	18.41.2	Metre	20.00			
b)	25 mm diameter pipe	18.41.3	Metre	13.00			
c)	40 mm diameter pipe	18.41.5	Metre	20.00			
d)	50 mm diameter pipe	18.41.6	Metre	70.00			
e)	65 mm diameter pipe	18.41.7	Metre	50.00			
3.17	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI:12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank						
a)	Treated water Tank and Untreated water tank	18.48.1	per litre	22500.00			
3.18	Providing and fixing C.P brass bib cock of approved quality.						
a)	15 mm nominal bore	18.49.1	Each	44.00			
3.19	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.						
a)	15 mm nominal bore	18.50.1	Each	47.00			
3.20	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931						
a)	15 mm nominal bore	18.52.1	Each	46.00			
3.21	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931.						
a)	15 mm nominal bore	18.53.1	Each	215.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
3.22	Providing and fixing enclosed type water meter (bulk type) conforming to IS : 2373 and tested by municipal board complete with bolts,nuts rubber, insersions etc. (the tail plases if required will be paid seperatly)						
a)	80mm dia nominal bore	18.60.1	Each	3.00			
3.23	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.	18.62					
a)	40 mm nominal bore, 206 mm long weighin not less than 690 gms	18.62.4	Each	5.00			
b)	50 mm nominal bore, 242 mm long weighin not less than 1240 gms	18.62.5	Each	4.00			
3.24	Cutting holes up to 30x30 cm in walls including making good the same						
a)	With F.P.S. bricks	18.76.1	Each	64.00			
3.25	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	18.77	Each	24.00			
3.26	Providing and fixing C.P. brass Overhead (Rain Fall) shower (100mm) with arm and wall flange complete including cutting and making good the walls wherever required.	NS	Each	23.00			
3.27	Extra for providing wash basin mixer pillar tap in place of normal pillar tap	NS	Each	22.00			
3.28	Extra for providing shower mixer in place of ordinary concealed stop cock	NS	Each	23.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
3.29	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	NS	Each	15.00			
b)	20 mm diameter	NS	Each	44.00			
3.30	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	NS	Each	4.00			
b)	20 mm diameter	NS	Each	10.00			
c)	25 mm diameter	NS	Each	3.00			
d)	32 mm diameter	NS	Each	2.00			
e)	40 mm diameter	NS	Each	3.00			
f)	50 mm diameter	NS	Each	3.00			
3.31	Providing & fixing 9 mm thick thermal insulation tubing of elastomeric flexible material on hot water supply/return pipes having hermetic blistered closed cell structure of expanded synthetic rubber over pipes/ fitting as per manufacturer's specifications etc.complete.						
a)	15 mm to 25 mm diameter	NS	Each	97.00			
b)	32 mm to 50 mm diameter	NS	Each	10.00			
3.32	Supplying, fixing, testing and commissioning of storage type water heater (Geyser) etc. with Stainless steel body , copper container , automatic thermostatic control electric element, pressure release valve, M.S. nuts and bolts etc. conforming to IS: 2082						
a)	25 Litre Capacity	NS	Each	2.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
b)	35 Litre Capacity	NS	Each	21.00			
3.33	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 :	NS					
	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	10.00			
3.34	Extra for in place of pillar tap 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 :						
	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	NS	Each	1.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
3.36	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.	NS	Each	11.00			
3.37	Providing & fixing water storage cooler of approved make and brand with SS body Complete in respects.(VOLTAS/ BLUE-STAR/ USHA SHRIRAM)						
a)	minimum flow rate of 20 ltrs. Per hour and storage capacity 40 ltrs.	NS	Each	1.00			
b)	minimum flow rate of 40 ltrs. Per hour and storage capacity 80 ltrs.	NS	Each	6.00			
3.38	Providing and fixing approved make & suitable model of R.O. plant 25 ltrs. Per hour flow rate having capacity to treat the raw water having TDS 1200 ppm and not less than 40%. The treated water should have TDS less than 100 ppm and hardness less than 50 ppm. The operating voltage to 230 volt AC +/- 10% alongwith required capacity pump and solenoid valves, dry run protection of pump, automatic tank level control, inbuilt auto flush timer for periodic flushing of membranes, hydro pneumatic tank, over voltage and over current protection with switch mode power supply system antiscaling dosing system complete in all respects including installation and fittings with the following provisions: (IONIEXCHANGE/ KENT/AQUAPROCESS/Pantair)						

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
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	NS	Each	7.00			
SUB TOTAL(water Supply)							

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
4.00	SEWARAGE & DRAINAGE						
4.01	Providing laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete.						
a)	100 mm diameter	19.1.1	Metre	52.00			
4.02	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design:						
a)	100 mm diameter S.W. pipe/RCC NP2	19.2.1	Metre	52.00			
b)	150 mm diameter S.W. pipe/RCC NP2	19.2.2	Metre	345.00			
c)	250 mm diameter S.W. pipe/RCC NP2	19.2.5	Metre	175.00			
4.03	Providing and laying cement concrete 1:5:10 (1 cement:5 coarse sand:10 graded stone aggregate 40 mm nominal size) up to haunches of S.W. pipes including bed concrete as per standard design:						
a)	150 mm diameter S.W. pipe	19.3.1	Metre	100.00			
b)	250 mm diameter s.W. pipe	19.3.2	Metre	75.00			
4.04	Providing and fixing square-mouth S.W. gully trap grade 'A' complete with C.I. grating, brick masonry chamber with water tight C.I. cover with frame of 300x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:.						
a)	150x100mm size P type						
a.i)	F.P.S. Bricks class designation 75	19.4.2.1	Each	32.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
4.05	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement:2 fine sand) including testing of joints etc. complete						
a)	150 mm dia R.C.c. pipe	19.6.2	Metre	395.00			
b)	250 mm dia R.C.C. pipe	19.6.3	Metre	250.00			
4.06	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand), R.C.C. top slab with 1:2:4 mix (1cement : 2 coarse sand : 4graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 (1cement : 4 coarse sand : 8graded stone aggregate 40 mm nominal size), inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, and making necessary channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement all complete as per standard design.						
a)	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg):						
a i)	With F.P.S. bricks with class designation 75	19.7.1.1	Each	31.00			
4.07	Extra depth for manholes						
a)	Size 90 x 80 cm						
a i)	With F.P.S. bricks class designation 75	19.8.1.1	Metre	3.50			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
4.08	Constructing brick masonry circular type manhole 0.91m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement :4 coarse sand), in side cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement: 3 coarse sand: 6 graded stone aggregate 40mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement all complete as per standard design:						
a)	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182kg., fixed in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :						
a i)	With F.P.S. bricks class designation 75	19.9.1.1	Each	8.00			
4.09	Extra depth for circular type manhole 0.91m dia (at bottom) with beyond 0.91m to 1.67 m						
a)	With F.P.S. bricks class designation 75	19.10.1	Metre	2.50			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
4.10	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement: 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 mix (1 cement :3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominalsize) fineished with a floating coat of neat cement complete as per standard design.						
a)	1.68 m deep with SFRC cover and frame(heavy duty HD-20 grade designation) 560 mm internal diameter conforming to IS: 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominalsize) including centering shuttering all complete. (Excavation, foot rests and 12 mm tick cement plaster at the external surface shall be paid for separately)						
a.i)	With F.P.S. bricks with class designation 75	19.11.1.1	Each	2.00			
4.11	Extra depth for circular type manhole 1.22 m internal dia (at bottom) with beyond 1.68 m to 2.29 m						
a)	With F.P.S. bricks with class designation 75	19.12.1	Metre	0.50			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
4.12	Providing and fixing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS: 10910 on 12 mm dia steel bar conforming to IS: 1786 having minimum cross section as 23 mm x 25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	19.16	Each	128.00			
4.13	Making connection of drain or sewer line with existing manhole including breking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement:2 coarse sand:4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cemnet mortar 1:3 (1 cement:3 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete (including obtaining approval from DJB/Municipal corporation						
a)	For pipes 100 to 230 mm dia	19.21.1	Each	4.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
4.14	Providing sand cast iron drop connection externally for 60 cm drop from branch sewer line to main sewer manhole including inspection and cleaning eye with chain and lid sand cast Iron drop pipe and bend encased all-round with cement concrete 1 :5:1 0 (1 cement:5 fine sand: 10 graded stone aggregate 40 mm nominal size) with all centering and shuttering required, cutting holes in walls and making good with brick work in cement mortar 1:4 (1 cement: 4 coarse sand) plastered with cement mortar 1:3 (1 cement: 3 coarse sand) on, inside of the manhole wall lead caulked joints between sand cast iron pipes and fittings, stiff cement mortar 1:1 (1 cement: 1 fine sand) joints between sand cast iron tee and S.W. pipe, making required channels complete as per standard design and specifications:						
a)	150 mm dia. sand cast iron drop connection	19.22.1	Each	3.00			
4.15	Constructing brick masonry road gully chamber 50x45x60 cm with bricks of class designation 75 in cement mortar 1:4 (1 cement:4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design:						
a)	With F.P.S. bricks	19.27.1	Each	29.00			
4.16	Providing and fixing S.W.intercepting trap in manholes with stiff mixture of cement mortar 1:1 (1 cement:1 fine sand) including testing of joints etc. complete						
a)	150 mm dia	19.34.2	Each	4.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
4.17	Constructing brick masonry open surface drain with bricks of class designation 75 in cement mortar 1:4 (1 cement : 4 fine sand) including earth excavation, 10cm thick bed concrete 1:5:10 (1 cement: 5 fine sand :10 graded stone aggregate 40mm nominal size) and 25mm thick cement concrete 1:2:4 (1 cement:2 coarse sand:4 graded stone aggregate 12.5 mm nominal size) for filling hunches including 12mm cement plaster 1:4 (1 cement:4 coarse sand) with a floating coat of neat cement inside the drain, its top and exposed side including disposal of surplus earth complete as per standard design.						
	25cm drain 30cm average depth						
	With F.P.S bricks	NS	Metre	210.00			
	45cm drain 75cm average depth						
	With F.P.S bricks	NS	Metre	120.00			
SUB TOTAL(SEWERAGE AND DRAINAGE)							

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
5.00	EARTH WORK						
5.01	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth,1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50 m and lift up to 1.5 m , disposed earth to be levelled and neatly dressed.						
a)	All kinds of soil	2.6.1	cum	72.00			
5.02	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m:						
a)	All kinds of soil						
a.ii)	Pipes, cables etc, exceeding 80 mm dia but not exceeding 300 mm dia	2.10.1.2	metre	687.00			
5.03	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m	2.25	cum	29.00			
SUB TOTAL(EARTH WORK)							

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
6.00	RAIN WATER PIPING						
6.01	Providing and fixing rain water ,soil, waste and vent pipes. 100 mm dia.	17.35					
6.02	Centrifugally cast (spun) iron socketed pipe as per IS:3989 150 mm dia pipe as per IS:3989	17.35.1.2 NS	metre metre	163.00 144.00			
6.03	Providing and fixing M.S holder-bat clamps of approved design to Sand Cast iron/ cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) including cost of cutting holes and making good the walls etc. for 100 mm dia. pipe for 150 mm dia pipe	17. 37 17.37.1 NS	 Each Each	 47.00 47.00			
6.04	Providing and fixing plain bend of required degree. 100 mm Sand cast iron S&S as per IS:3989 150 mm	17.39 17.39.1.2 NS	 Each Each	 16.00 18.00			
6.05	Providing and fixing heel rest sanitary bend. 100 mm dia sand cast iron S&S as per IS-3989 150 mm dia	17.40 17.40.1 17.40.1.2 NS	 Each Each	 16.00 18.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
6.06	Providing and fixing on wall face/Concealed unplasticised rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring confirming to IS:5382 leaving 10 mm gap for thermal expansion. (i) Single socketed pipes						
a)	110 mm diameter (6 kg/sq. cm)	12.40.2	Metre	8.00			
b)	160 mm diameter (6 kg/sq. cm)	NS	Metre	24.00			
6.07	Providing and fixing on wall face/Concealed unplasticised PVC moulded fittings/accessories for unplasticised rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring confirming to IS:5382 leaving 10 mm gap for thermal expansion.						
a)	Single tee without door						
a ii)	110x110x110mm	12.42.4.2	Each	1.00			
	160x160x160 mm	NS	Each	3.00			
b)	Bend 87.5 degree						
b ii)	110 mm bend	12.42.5.2	Each	1.00			
	160 mm bend	NS	Each	3.00			
c)	Shoe (Plain)						
c ii)	110 mm shoe	12.42.6.2	Each	1.00			
	160 mm shoe	NS	Each	3.00			
6.08	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams	12. 44	Each	38.00			
6.09	Providing and fixing collar	17.57					
	100 mm	17.57.1	Each	29.00			
	Sand cast iron S&S as per IS-3989	17.57.1.2					
	150 mm	NS	Each	32.00			
6.10	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:	17.58					

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
	100 mm	17.58.1	Each	87.00			
	150 mm	NS	Each	103.00			
6.11	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:	17.7					
a)	100 mm diameter pipe	17.65.1	Metre	163.00			
b)	150 mm diameter pipe	NS	Metre	144.00			
SUB TOTAL(Rain Water pipe & fitting)							

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
7.00	BOREWELL(1 No)						
7.01	Drilling by suitable rig as per IS : 2800-1979 (percussion or combination rig) or Reverse Rotary to suit site condition from ground level in all kind of soils and weathered rock including boulders (excluding rock) diameter of bore 450mm including carry out hydrological survey report before boring & getting the approval based on Hydrogeological survey before start of the work.Also getting approval from local authority if any required	NS					
a)	0-30m		metre	30.00			
b)	30-60m		metre	30.00			
c)	60-90m		metre	30.00			
d)	90-120 m		metre	30.00			
7.02	Extra additional for drilling in Ordinary Rock if any found	NS	metre	25.00			
7.03	Extra additional for drilling in Hard Rock if any found	NS	metre	25.00			
7.04	Providing and lowering uPVC casing/housing pipe 200mm dia. with wall thickness 10 mm conforming to IS :12818 including sockets of standard design.	NS	metre	70.00			
7.05	Providing & fixing uPVC screen/slotted pipe with 1.5 mm to 3mm (slots as per strata condition) including sockets of standard design as per IS: 12818/1992.	NS					
	200 mm dia uPVC socketed pipe with wall thickness 10.0 mm		metre	80.00			
7.06	Providing and fixing in position threaded iron cap with locking arrangement of approved design to prevent foreign matters getting into the bore-hole as required.	NS	Each	1.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
7.07	Providing and laying rounded pea gravel washed & served 3 to 6 mm nominal boreas per relevant ISI code.	NS	Cum	16.00			
7.08	Providing and laying cement concrete 1:2:4 mix for sanitary sealing of well at top.	NS	Cum	1.00			
7.09	Supplying, lowering and fixing in position reducer ,PVC bail plug with "U" hooks as per IS:2800-1964.	NS	Each	1.00			
7.10	Development of Tubewell including testing of yield depression & quality of water (for all parameters of potable water), contractor to obtain certificate for quality for water from Competent Authority approved by client or Engineer- In -Charge.	NS					
a)	Development of Tube well by high capacity air compressor till the clear water discharge but not more than 100 hours.	NS	per hour	80.00			
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	NS	per hour	50.00			
7.11	Tranportation, mobilisation and demobilisation or drilling equipment and ancillary equipment to site including clearing and cleaning the site after completion of work.	NS	set	1.00			
7.12	Providing and fixing brass full way valve with C.I. wheel of approved make, tested to a pressure of 21 kg/sqcm.	NS					
a)	100 mm dia		Each	1.00			
7.13	Providing and fixing gunmetal non return valve of approved make tested to a pressure of 21kg/sqcm.	NS					
a)	100 mm dia		Each	1.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
7.14	Providing & fixing G.I. pipes (heavy class)confirming to IS with special fittings in external works including earthwork ,excavationin all kinds of soil including ordinary rock,refilling, painting pipes & fitting complete in all respects.	NS					
a)	100 mm dia		Metre	100.00			
7.15	Providing & filling sand of grading zone V or coarser grade all around GI pipe in external work	NS					
a)	100 mm dia		Metre	100.00			
7.16	Submersible pumps						
	Providing and installing submersible pump and electrical panel suitable for 8" dia casing of bore with SS impeller, high tensile SS shaft, copper wound squirrel cage wet type induction motor 2880 rpm, 415 V, 50 Hz,3 phase A.C. supply, conforming to ISS: 8034-1976, capacity 500 litre per minute at 70-120 m head/ or suitable as per the hydrological survey report along with a directly coupled submersible type squirrel cage electric induction 5 H.P.(minimum) . motor suitable for operation on 400 V, 3 phase, 50 c.p.s. A.C. supply, water lubricated bearings and provided with pivoted segment type thrust bearings to withstand non-vertical lead with minimum wear and tear and duly fitted with device to take up the expansion of water with heating of motor, including supply, testing and commissioning of 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 submit actual bore strata chart.	NS					
	1 No, DOL starter of 10 HP with thermal overload relay, Push Buttons, Single Phase Preventer and Switches etc complete as required.						

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
	including supplying laying and fixing water proof PVC insulated flat submersible cable 3x10 sqmm with end termination with its accessories. complete in all respect as required.		set	1.00			
7.17	Carrying out Electrical logging of Borewell before lowering of pipe for analysiing of water quality including Electrical logging report, calculation etc.		Job	1.00			
	SUBTOTAL (BOREWELL)						

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
8.00	RAIN WATER HARVESTING(1 NO.)						
8.01	Designing and Constructing of percolation pit cum perforated well 3000mm. dia upto 4000mm deep, 230 mm thick brick masonry work around upto 1.5 m deep with 75 class brick in cement mortar 1:4, 200 mm foundation concrete in 1:4:8 mix below brick work only, 150 mm thick precast removable RCC top slab with required steel reinforcement in cement concrete 1:2:4 mix, filled with coarse aggregate, SFRC covers, river pebbles of requisite size stone as shown in the drawing including centering and shuttering, as shown complete as per detailed drawings complete.	NS	Each	1.00			
8.02	Drilling as per IS : 2800-1964 (with percussion or combination rig) from ground level in all kind of soils including boulders (excluding rock) diameter of bore 450mm.	NS					
a)	0-50m		Metre	30.00			
b)	Extra for drilling in Ordinary Rock	NS	Metre	5.00			
c)	Extra for drilling in Hard Rock	NS	Metre	5.00			
8.03	Providing and lowering of 200 mm dia uPVC blank/ slotted pipe with ribs, special fittings, jointing conforming to IS 12818 - 1992.	NS	Metre	30.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
8.04	Constructing bar screen / settling tank, of sizes 4500x2500 with suitable depth up to 2.0 m in 1: 4 Cement Mortar (one cement : 4 coarse sand) height as per site requirement, in brick masonry 350mm thick walls upto water level and 230mm thick walls above water level & upto ground level, including all excavation, 20 cm thick bed concrete in 1:4:8 (one cement 4 fine sand 8 stone aggregate 40 mm), cement plaster 1:3 (one cement :3 coarse sand) with a floating coat of neat cement as inside finish , top slab in RCC 1:2:4, including centring, shuttering and steel work, also providing and fixing D.I. manhole cover & frame of size 605mm x 450mm of weight not less than 38 kg (frame + cover) and cost of 100mm dia C.I. vent pipe with C.I. Ventilating Cowl and suitable wire mesh provision for inlet, 115mm baffle walls extending 2/3 the width spaced@500mm c/c including finishing with 1:3 cement plaster 15mm thick with floating coat of neat cement slurry , all complete in every respect as per drawing and as directed to suit site condition.	NS	Each	1.00			
SUBTOTAL (RAIN WATER HARVESTING)							

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
9.00	SOLAR WATER HEATING SYSTEM & RECIRCULATION OF HOT WATER SYSTEM						
9.01	Supply, installation, testing and commissioning of solar water heating system, Thermosyphon type, all complete based on Flat plat collector system (Cu-Cu Type only) comprising of but not limited to the following:						
a)	Requisite number of Flat plate collectors of 2 sq. mtr. collector area. Collector absorber plate to be made of copper tubes & copper fins only						
b)	Hot water storage tank made of stainless steel 304- food grade quality with 100 mm Glass wool insulation and cladding with 24 SWG Aluminum sheet. One temperature measuring device and suitable inlet, outlet and drain connections on the storage tank to be provided. Suitable Electrical Heater backup to be provided inside the tank along with thermostat						
c)	Heat Exchanger - Cage type Internal Heat Exchanger made of SS pipes shall be provided inside the Solar Tank. Heat exchangers shall have min. heat transfer area of 0.24 sq. mtrs. for every 100 LPD calacity. Suitable make up tank for the Heat Exchanger circuit shall also be provided						
d)	Interconnecting system piping shall consist of B Class insulated GI pipes covered with 50mm thick glasswool & clad with 26 SWG Aluminium Sheet. All Gate/Ball valves shall be of ISI make.						
e)	Electrical control panel, cabling from panel to pumps and electrical heaters shall also be provided						

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
f)	The solar collector shall be arranged on roof of building in such a way that shadow can be avoided and requisite number of MS support for collector/tanks of minimum 35x35x5 MS angle adequate for 150 Km/Hr wind speed.						
g)	Solar water heating system based on Flat plat collector system technology with output capacity of as mentioned below with hot water at 60 degree centigrade having required Nos. solar collectors as per complete item as per technical specification of make BHEL/TATA/EMMVEE. The system has to be installed by Manufacturers authorised distributors/approved specialised firms of Solar water heating of approved makeThe shop drawing of the systems shall be provided by the agency as per site condition obtain the proper efficiency The system shall be procured after obtaining the approval of shop drawings from HSCC / Engineer-in-charge.(Electric heating element shall not be provided in the system as the solar hot water system will supply the hot water to the individual geyser).	NS					
i)	Solar System of Capacity 1500 Litre/day (With minimum 12 nos of Collector of 2.0 Sqm area each)	NS	each	2.00			
9.02	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.						
	Internal work- Exposed on wall						
a)	15 mm nominal outer dia pipes (SDR-11)	18.7.1	metre	40.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
b)	20 mm nominal outer dia pipes (SDR-11)	18.7.2	metre	30.00			
c)	25 mm nominal outer dia pipes (SDR-11)	18.7.3	metre	25.00			
d)	32 mm nominal outer dia pipes (SDR-11)	18.7.4	metre	155.00			
e)	40 mm nominal outer dia pipes (SDR-11)	18.7.5	metre	50.00			
9.03	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.	18.8					
	Concealed work including cutting chases and making good the walls etc.						
a)	15 mm nominal outer dia pipes (SDR-11)	18.8.1	metre	95.00			
b)	20 mm nominal outer dia pipes (SDR-11)	18.8.2	metre	15.00			
9.04	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):	18.17					
a)	25 mm nominal bore	18.17.1	each	11.00			
b)	32 mm nominal bore	18.17.2	each	6.00			
9.05	Providing & fixing 9 mm thick thermal insulation tubing of elastomeric flexible material having hermetic blistered closed cell structure of expanded synthetic rubber over pipes/ fitting as per manufacturer's specifications etc.complete.	NS					
a)	15 mm dia to 25 mm dia		each	205.00			
b)	32 mm dia to 50 mm dia		each	215.00			
9.06	Providing and fixing gun metal ball valve of approved quality	NS					
a)	15 mm nominal bore		each	6.00			

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
b)	20 mm nominal bore		each	6.00			
	SUBTOTAL(SOLAR WATER HEATING SYSTEM & RECIRCULATING SYSTEM)						

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
10.00	WATER TREATMENT PLANT (for A/C use)						
	Supplying, installing, testing & commissioning of indoor package type soft water treatment plant of capacity 5 cum per hr. with 16 hours operation time, comprising of the following including all necessary piping, control valves, other accessories etc. complete as per drawing and as per drawing and as directed.						
a)	FILTER						
	Supply, installation & testing and commissioning of MULTI GRADE Filter vertical floor mounted fabricated with Fibre reinforced Plastic (FRP) with frontal piping & valves, back wash system & filter media etc. with single lever operated multiport valve system with standard fittings like manhole cover, pressure gauge at inlet & outlet, sampling cock, rinse drain valve, air vent valve with piping, bolts, nuts & rubber gaskets.						
	Flow rate = 3.0 cub. m/hour						
	Working pressure = 3.5 kg/Sq. cm.						
b)	Softener						

Item No	Description Of Item	DSR No.	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures(in Rs.)	Amount in figures(in Rs.)
1	2	3	4	11	17	18	19
	Supply, installation & testing and commissioning of upflow cation Ion exchange resin water Softener fabricated with Fibre reinforced Plastic (FRP) with frontal piping & valves, back wash system & strongly acidic cation resin with regeneration assembly comprising of power valve ejector,brine suction valve,tankl etc. with single lever operated multiport valve system with standard fittings like pressure gauge at inlet & outlet, sampling cock, rinse drain valve, air vent valve with piping, bolts, nuts & rubber gaskets, pump and Panel complete in all respect.						
	Flow rate = 3.0 cub. m/hour- 0.3 cub.m/hour						
	Working pressure = 3.5 kg/Sq. cm.						
	Raw Hardness-700-1500 mg/l						
	Soft water quality-Commercial zero hardness(less than 5ppm)						
	Output per Regeneration-10 cum.(min.)	NS	Each	1.00			
	Subtotal (Water treatment Plant,Pump and Equipment)						

Note: Water supply and sewer line will be connected tiexisting system.

ABSTRACT

Name of Work:BOQ of Plumbing work of Regimen Therapy,Pharmacy & Drying hall,Auditorium, Hamam & External development at NIUM,Bangalore

S.No.	DESCRIPTION	Amount in figures(in Rs.)
A	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	
6.00	RAIN WATER PIPING	
8.00	BOREWELL	
9.00	SOLAR WATER HEATING SYSTEM & RECIRCULATING SYSTEM	
10.00	WATER TREATMENT PLANT ,PUMP & EQUIPMENT	
	TOTAL	

PROJECT NAME: Proposed Buildings(Regimen Therapy,Pharmacy & Drying Hall,Hamam) at NIUM, Bangalore

Name of Works: BOQ of Fire Fighting Works

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
1.00	FIRE FIGHTING SYSTEM					
1.01	Providing, fixing jointing and testing of Heavy (class - C) G.I. pipes as per relevant IS :1239/4736 with special accessories like tees, elbow, gasket, flanges, flanged joints, rubber insertion nuts and bolts including earth work excavating and trenching, wrapping pipecoat 4mm thick 500mm width tar based polymeric corrosion protection tape or equivalent suitable to GI/ MS pipe line including applying uniform coat of cold pipecoat primer complete 1 m below the ground level, refilling in layers not exceeding 20 cm in depth consolidated each deposited layer by ramming & watering complete in all respects as per IS : 1022 (Under ground)					
a)	150 mm dia G.I. Pipe with flange joints (5.4 mm wall thickness)	Metre	30.0			
b)	80 mm dia G.I. Pipe with flange joints	Metre	15.0			

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
1.02	Heavy class G.I. pipes conforming to IS with accessories like tees, elbows, flanged joints, rubber insertion, nuts, bolts or welded joints including fixing the pipe with suitable flat iron strip clamps/brackets, structural members, dash fastener , cutting hole and chases in walls, floor, R.C.C. slab etc. and making good the same, including painting pipes and fittings with a primer coat of steel primer and two coats of postal red enamel paint etc. complete as required. (All the fitting i.e. tee /elbow, Valve shall be joint the pumps will flanged joints)					
a)	150 mm dia (with Flanged joints)	Metre	85.0			
b)	100 mm dia (with Flanged joints)	Metre	70.0			
c)	80 mm dia	Metre	60.0			
d)	50 mm dia	Metre	410.0			
e)	40 mm dia	Metre	415.0			
f)	32 mm dia	Metre	175.0			
g)	25 mm dia	Metre	210.0			
1.03	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	24.0			

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
1.04	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	28.0			
1.05	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	20.0			
1.06	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	24.0			
1.07	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	2.0			

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
1.08	Providing and fixing Set of "Siamese" quadraplet instantaneous fire brigade connections comprising of two gunmetal instantaneous male inlet coupling 63mm dia with plug and cap, chain bends, tees etc for inlet to the static tank.	Each	1.0			
1.09	Providing & Fixing 150 mm dia, 4 way suction coupling for firebrigade withdrawal of water from the fire tank	Each	1.0			
1.10	Providing and fixing glazed door shutter and frame for Fire hose cabinet with hold fasts (frame fabricated from 40 x 40 x 5mm and shutter from angle) 2100 mm high x 1200 mm wide x 600mm deep with locking arrangement, 4mm thick glass with M.S. flats including all accessories, painting with one coat of steel primer and two coats of postal red enamel paint complete as per drawing and as directed. The words " hose cabinet" to be painted on the box complete in all respects.	Each	14.0			

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
1.11	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	10.0			
1.12	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	7.0			
b)	80 mm dia	Each	2.0			
1.13	Supplying, testing, installation & commissioning of pressure switches for pumps including necessary wiring upto the control panel.	Each	4.0			

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
1.14	Constructing masonry chamber 90x90x100 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement: 4 fine sand) for sluice valve, with C.I. surface box 100mm top diameter, 160mm bottom diameter and 180mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design.					
	with F.P.S. bricks	Each	2.0			
1.15	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.					

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
	Connection from riser with stop valve (gun metal) & M.S. Pipe	Each	14.0			
1.16	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					
b)	150 mm dia	Each	5.0			
1.17	Supply, Installation, Testing and Commissioning of 100 mm dia Bourden type, Stainless Steel dial type Pressure Gauge including brass isolation valve and siphon pipe having calibration of 0 - 16 Kg / cm ² .	Each	15.0			
1.18	Supplying and Fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926	Each	14.0			
1.19	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	3.0			

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
1.20	Providing, Fixing, Testing and Commissioning of Sprinkler Installation Control Valve of Cast iron body and brass / bronze working parts comprising of water motor, alarm, bronze seat clapper and clapper arm, hydraulically driven mechanical gong bell to sound continuous alarm when the Sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc. of size 200/150 mm dia, as required.	Each	1.0			
1.21	Supplying, Installation, Testing & Commissioning modular construction master control annunciation panel for sprinkler with provision for requirer No. of Zone (30% additional spares),eachsprinkler hydrant will have atleast 2 zone on each floor as approved by engineer.The panel shall have but not limited to the following arrangement.					
a)	Indication of Zone sprinkler					
b)	Indication of zone fault					
c)	Fire/fault hooter					
d)	Alarm cancel for fire/fault					
e)	Battery for emergency back up of 4 Hrs.	Set	1.0			
1.22	Providing and Fixing 15 mm dia gunmetal / brass quartzoid type Sprinkler Head with quartz bulb and set to operate at specified temperature.					

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
a)	Pendent / Upright type, 68 C, Chrome plated	Each	400.0			
b)	Side wall extended throw 20 mm dia 68 C, Chrome plated	Each	30.0			
1.23	Fabricating, Supplying, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header on the top of each riser fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve complete with suitable drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes					
a)	1.2 Metre high and 250 mm dia	Each	3.0			
1.24	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	10.0			

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
1.25	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	30000.0			
1.26	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	15.0			
1.27	Providing and fixing fire extinguisher of carbon dioxide type consisting of brand new high pressure steel cylinder bearing IS: 7285 mark and having the approval of controller of explosives Nagpur, wheel type valve bearing IS:3224 mark internal discharge tube, 1 meter long high pressure discharge hose, non conducting horn, suspension bracket, fully charged bearing IS: making fixed to wall as directed.					
a)	4.5kg capacity cylinder	Each	14.0			
1.28	Providing and fixing 9 liters capacity fire extinguisher water type gas pressure conforming to IS marking, fixed to wall.	Each	14.0			

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
1.29	Providing and fixing ABC type fire extinguishers complete in all respects.					
a)	Capacity 5.0 Kg.	Each	14.0			
1.30	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	4.0			
1.31	Providing & fixing puddle flanged including 40 cm long GI pipe piece welded / threaded with MS plates 450x450x6mm thick with both end screwed / flanged					
a)	for 150 mm dia pipe	Each	4.0			
1.32	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).					

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
a	Fire pump with stainless steel impeller CI casing, SS shaft shall be horizontal end suction centrifugally type having a capacity of 900 LPM against a total head of 25m so as to ensure a minimum pressure of 3.0 kg/sqm at the highest and farthest out at the specified flow complete with necessary strainer with foot valve in suction side and pressure gauge on the delivery side including bypass arrangement for periodic testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.(Including taking necessary approval of complete fire fighting scheme from local fire authority before and after start of work) {Agency also has to submit characterstic 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 7.5 HP,1500 RPM for the above pump with flexible coupling as per specification and conforming to IS 325-1978 and shall be TEFC type only					
c	Common base plate fabricated from mild steel channel of castiron type					
d	Star delta suitable starter complete in all respect for automatic/manual operation of pump,start and stop push button contactor with required overload protection and single phase preventor					

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
e	Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot mounting as required and having provision of suitable weather protection cover.	set	2.0			
1.33	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 amendments).					
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}					

Item No	Description Of Item	Unit	Total Qty.	Rate in words (in Rupees)	Rate in figures (in Rs.)	Amount in figures (in Rs.)
1	3	4	7=5+6			
b	Squirrel cage AC induction motor suitable for operation of 415 V ,+/-10%, 3 phase 50 HZ, AC supply and of minimum 7.5 HP,1500 RPM for the above pump with flexible coupling as per specification and conforming to IS 325-1978 and shall be TEFC type only					
c	Common base plate fabricated from mild steel channel or cast iron type					
d	Star delta suitable starter complete in all respect for automatic/manual operation of pump, start and stop push button contactor with required overload protection and single phase preventor					
e	Suitable cement concrete pump foundation with vibration damping arrangement with cushiony foot mounting as required and having provision of suitable weather protection cover.	set	2.0			
Sub Total						

**PROJECT NAME: Proposed Buildings(Regimen Therapy,Pharmacy & Drying
Hall,Hamam) at NIUM, Bangalore**

ABSTRACT OF COST

S.No	DESCRIPTION OF WORK		Amount in figures(in Rs.)
1	FIRE FIGHTING		
	Sub Total(Fire Fighting work)		
	GRAND TOTAL		

BOQ FOR ELECTRICAL WORKS OF PHARMACY, REGIMENT THERAPY, AUDI BLOCK & HAMAM OF NIUM - BANGLORE.

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
	SUB HEAD 1: MV PANELS :					
1.00	MV PANELS :					
1.01	Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, free standing type/ wall mounted type, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, powder coated and having following incoming and outgoing switchgears complete as required.					
A1	REGIMENT OPD :					
	MV PANEL IN ELEC ROOM AT GRND FLOOR.					
	a) INCOMER:					
	320 Amp 415 volts, 35 KA (Ics) FP MCCB with variable current settings of 0.4 to 1.0 In 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 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	ii	3 no. 25 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	iii	3 no. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	iv	5 no. 100 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	v	2 no. 25 Amps , 415 volts, 9 KA ,DP, Miniature Circuit Breaker, with ON/ OFF indication.					
	vi	2 no. 16 Amps , 415 volts, 9 KA ,DP, Miniature Circuit Breaker, with ON/ OFF indication.					
		MV PANEL IN ELEC ROOM AT GRND FLOOR as mentioned above (Regiment OPD)	Set	1			
A2		AUDITORIUM BLOCK :					
		MV PANEL AT AUDITORIUM BLOCK ELEC ROOM AT 1ST FLOOR.					
	a)	INCOMER:					
		1 no.125Amps , 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 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. 32 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
ii)	2 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
iii)	4 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	MV PANEL AT AUDITORIUM BLOCK ELEC ROOM AT 1ST FLOOR. as mentioned above	Set	1			
	TOTAL SUB HEAD 1 :MV PANELS :					
	SUB HEAD- 2: MCB DISTRIBUTION BOARDS.					
2.00	MCB DISTRIBUTION BOARD					
2.01	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 coated 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	3			

	ii	6 way (8+18), Double door	Each	5			
	iii	8 way (8+24), Double door	Each	2			
	iv	12 way (8+36), Double door	Each	5			
2.02		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 coated including earthing etc.Before procurement of DB the contractor has to take approval of DB schedule/ drawing of each DB from the Electrical Engineer, HSCC, as per technical specifications and as required.(but without MCB & RCCB),					
	i	8 way (4+8), Double door	Each	1			
	ii	12 way (4+12), Double door	Each	2			
2.03		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	290			
	ii	Single pole & neutral (DP)	Each	3			
	iii	Triple pole & neutral (FP)	Each	6			
2.04		Supplying & fixing following rating, four pole, 415 volts, Miniature Circuit Breaker (MCB),in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
	i	63 A mps	Each	3			
	ii	100 A mps	Each	6			

2.05		Supplying & fixing following rating, four pole, 415 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
	i	25 Amps	Each	2			
	ii	32 Amps	Each	4			
	iii	63 Amps	Each	3			
	iv	100 Amps	Each	6			
2.06		Supplying and fixing Single pole Blanking plate in the existing MCB DB complete as required.	Each	89			
		TOTAL SUB HEAD-2: MCB DISTRIBUTION BOARDS.					
		SUB HEAD 3: WIRING					
3.00		WIRING					
3.01	i	Wiring for light point/fanpoint/ exhaust fan point/call bell point with 1.5 sq.mm. PVC insulated, fire retardant low smoke (FRLS) copper conductor cable, single core/ multi strand, in steel conduit (Including supplying & recess laying of MS conduit and accessories) including the following and complete as required.					
	ii	Supplying and Fixing Modular type switches (modular Bell push in case of call bell points) in suitable size modular metal boxes, base plate & modular cover plates, space for fixing electronic fan regulator in case of fan point wiring & space for fixing 5A socket on the board etc.					
	iii	Supplying and fixing Hexagonal fan Boxes with 3 mm thick hylem sheet covers in case of Fan Points					

	iv	Supplying & Fixing Ceiling Rose in case of Exhaust Fan Points etc.					
		Note :					
		i) Unless otherwise specified all the conduiting work to be done in recess					
		Point wiring as mentioned above	Point	784			
3.02	i	Wiring for twin control light points with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable in MS conduit (including supplying and recess laying of MS conduit) including the following and complete as required.					
	ii	Supplying and Fixing Modular type two numbers 2 Way switches in suitable size modular metal boxes, base plate & modular cover plates etc.					
		Note :					
		i) Unless otherwise specified all the conduiting work to be done in recess					
		Wiring for twin control light points as mentioned above	Point	42			
3.03		Wiring for 5A light plugs with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable including one number 1.5 sq.mm. PVC insulated, copper conductor cable for earthing in surface/recessed ISI marked MS conduit (including supply and recess laying of ISI marked MS conduit) as per technical specifications and as required.	Point	59			
3.04		5 A light plug wiring same as above but plug point is in the switch board itself.	Point	20			

3.05		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	26			
3.06		Wiring for 16 amp power plug with 2X4 sqmm PVC insulated, FRLS copper conductor, single core/multi strand cable in surface/recessed MS conduit (including supply and recess laying of MS conduit with all accessories) along with 4 sqmm PVC insulated, copper conductor, single core/multi strand cable for loop earthing etc per technical specifications & as required.					
		Directly from MCB-Distribution Board to the Socket Outlets	Point	92			
3.07		Wiring for 20 amp power plug with 2X4 sq.mm. PVC insulated, copper conductor, single core cable in surface/recessed ISI marked MS conduit (including supply and recess laying of ISI marked MS conduit with all accessories) along with 1X4 sqmm PVC insulated, copper conductor, single core cable for loop earthing, as per technical specifications & as required.	Point	34			
3.08		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	1549			
	iii)	2X4 Sqmm with 1 No. 4 sqmm PVC insulated, copper conductor for earthing	Metre	82			
	iv)	4X4 Sqmm with 2 No. 4 sqmm PVC insulated, copper conductor for earthing	Metre	64			

	v)	4X6 Sqmm with 2 No. 6 sqmm PVC insulated, copper conductor for earthing	Metre	92			
	vi)	4X16 Sqmm with 2 nos 16 sq mm PVC insulated, copper conductor for earthing.	Metre	70			
	vii)	4X25 Sqmm with 2 nos 16 sq mm PVC insulated, copper conductor for earthing.	Metre	108			
3.09		Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing 3 pin 5/6 amps. modular socket outlet with shutters and 5/6 amps. modular type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required.	Each	59			
3.10		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	80			
3.11		Supply, installation, testing and commissioning of 16 Amp. IP 66/56 power switch and socket in suitable enclosure consisting of the following as per technical specifications and as required.					
		Switch:					
		Single pole, 250 V, 16 amp without enclosure similar to Schneider Electric-Clipsal model no. 56SW116LE-GY or approved equivalent.					
		Socket					
		16 amp, 3 round pin socket out let, Indian standard, without enclosure similar to Schneider Electric-Clipsal model no. 56SO116RP-LE-GY-EX or approved equivalent.					
		Angle Plug					

	16 amp, 3 pin, 250 V, Indian Standard similar to Schneider Electric-Clipsal model no. 56PA316RP-GY-EX or approved equivalent.					
	Mounting Enclosure					
	Mounting enclosure for the above mentioned switch and sockets as supplied by Schneider Electric- Clipsal model no. 56E2 GY or approved equivalent					
	Supply , installation, testing and commissioning of above mentioned power switch and socket.	Point	12			
3.12	Supply and fixing following 20 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with plugs) in a metal box with 20 SP MCB in a sheet steel cover on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	Each	34			
3.13	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	26			
3.14	Supplying, providing & fixing cordless musical bell, batteries etc of approved make complete as required.	Each	19			
	TOTAL SUBHEAD: 3- WIRING					
	SUB HEAD: 4 - LIGHT FIXTURE AND FANS					
4.00	LIGHT FIXTURES AND FANS					

4.01		Supply of following light fixture with lamps, high efficiency electronic ballast, starter, capacitor, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
	i	1X28 watt box type flourescent light fixture (Philips TMS 122M 1XTL5 28 W EBT or approved equivalent) (136b/136bw)	Each	47			
	ii	2X28 watt box type flourescent light fixture with reflector (Philips TMS 122M2XTL528 W EBT or approved equivalent) (236b)	Each	9			
	iii	1X 36 watt surface mounted luminare suitable for 36 watt TLD lamps with clear acrylic diffuser (GE : GETC1X36 AC S HF or approved equivalent). 136CAC	Each	6			
	iv	1X36watt surface mounted flourescent light fixture (Philips TCS 306 1XTLD 36W EBE or approved equivalent) 136smo1	Each	18			
	v	2 X36watt surface mounted flourescent light fixture (Philips TCS 306 2XTL5 28W EBP or approved equivalent) 236SMO1/236SMO2	Each	95			
	vi	2X TL5 28 watt surface mounted flourescent light fixture (Philips TCS 350 2XTL5 28W EBE C5 or approved equivalent) (236SMO3) .	Each	35			
	vii	2X TL5 28 watt surface mounted flourescent , dust & jet proof (IP66) light fixture with polycarbonate housing (Philips TCW097 2X TL5 28 W HF or approved equivalent) (236SMO4) .	Each	45			

4.02		Supply of following compact flourescent light fixture with lamps, electronic ballast, starter, capacitor, yellow light lamps, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
	i	1x9 watt Bulk Head light fixture (Philips FXC 101 1XPL-S/2P11 W ACO or approved equivalent) BH	Each	23			
	ii	2X18 watt recessed downlight fixture with CFL lamp (Philips FBH 145 M 2XPLC/4P 18W EBW 240 V or approved equivalent) DL1	Each	120			
	iii	2X26 watt recessed downlight fixture with CFL lamp (Philips FBH 145 M 2XP1T/4P 26W EBW 240 V or approved equivalent) DL3 in audi.	Each	132			
	iv	2X13 watt surfac mounted downlight fixture with CFL lamp (GE CFL C2X13 DN FGS (Lento)or approved equivalent) DL5	Each	18			
	v	2 X 11 watt surface mounted mirror optics (Philips FCS 031 2XPLS/2P11W I 240 VOR EQUIVALENT) (211CFLRECT)	Each	53			
	vi	2X10 watt Mirror top (Decon 05UB or approved equivalent) (w toilet)	Each	50			
	vii	Surface mounted Batten holder (Plastic) with 13 watt CFL	Each	14			
	viii	1x15 watt GLS lamp in wall recessed fixture (Decon 54VW, in die cast aluminium or approved equivalent) used as a night lamp NLWM	Each	13			

	ix	1x11 W bedside fixture with 11 W CFL (Decon 05 GF or approved equivalent)	Each	15			
	x	Exit light of pendant mounted maintained type 'EXIT' LED light with inbuilt battery pack for one hour duration.(Crompton greaves EXL/S/1/SE/H/DD or aproved equivalent)	Each	5			
	xi	2x13 watt non louvered path light with frosted glass of green colour. (Decon 54 OP 08 or approved equivalent)	Each	34			
4.03		Supply of following ceiling fans (Crompton Greaves "High Breeze" or approved equivalent) complete with double ball bearing, motor, blades, downrod, canopies, capacitor, modular type electronic fan regulator, suitable for operation on 230 volts, 50 Hz., 1 phase, AC supply complete as required					
	i	900 mm sweep	Each	10			
	ii	1200 mm sweep	Each	90			
4.04		Supply of 900 RPM, 300 mm heavy duty exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	Each	41			
4.05		Supply of 450 mm sweep, crompton greaves model "high flow" 18" wall mounted fan complete with double ball bearing, motor, blades, capacitor etc suitable for single phase 230 volts, 50 Hz., AC supply, complete as required.	Each	14			

4.06	Installation, testing and commissioning of prewired, fluorescent 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	210			
4.07	Installation, testing and commissioning of prewired, compact fluorescent lamp fixture (CFL fixtures) 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	462			
4.08	Installation, testing and commissioning of ceiling fan and modular type electronic fan regulator (Electronic regulator to be fixed in switch board) including wiring the down rod and connection with 1.5 sqmm FR PVC insulated, copper conductor single core/multi strand cable including providing & fixing phenolic laminated sheet cover on the fan box, etc. as required.	Each	100			
4.09	Installation, testing and commissioning of exhaust fan up to 450 mm sweep in the opening, including making the hole to suit the size of the above fan including, fixing of louvers/shutters with frame making good the damages etc. as required.	Each	41			
4.10	Installation, testing and commissioning of wall mounted fan up to 450 mm sweep including supply and fixing wall bracket arrangement complete as required.	Each	14			

		TOTAL SUBHEAD 4 : LIGHT FIXTURE & FANS					
		SUB HEAD 5 : TELEPHONE SYSTEM					
5.00		TELEPHONE SYSTEM					
5.01		Wiring for telephone point with Supply & laying two pair 0.5 Sq. mm solid, annealed copper conductor insulated with high density polythlene. The insulated cores twisted to form pairs, helically wrapped with 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	33			
	ii	2 pair cord outlet (Jack Type)	point	6			
5.02		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	30 Pair	Each	1			
	ii	20 Pair	Each	0			
	iii	10 Pair	Each	3			
5.03		Supplying and drawing of following pairs .5 mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured telephone cable on surface/tray with saddels etc. complete as required.					
	i	20 Pair	Metre	15			

	ii	10 Pair	Metre	20			
5.04		Supplying and drawing of following pairs .5 mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured jelly filled telephone cable in the existing trench/ hume pipe/ GI pipe etc with saddels etc. complete as required.					
	i	20 Pair	Metre	250			
	ii	10 Pair	Metre	140			
		TOTAL : SUB HEAD 5:TELEPHONE SYSTEM					
		SUB HEAD 6:CONDUITING FOR COMPUTER SYSTEM					
6.00		CONDUITING FOR COMPUTER SYSTEM .					
6.01		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	540			
	ii	25 mm dia	Metre	135			
6.02		Supplying and fixing two module modular plate (suitable for RJ-45 computer socket) with GI box complete as	Each	27			
		TOTAL SUB HEAD: 6 CONDUITING FOR COMPUTER SYSTEM					
		SUB HEAD 7: CONDUITING FOR TV OUTLETS					
7.00		CONDUITING FOR TV OUTLETS					

7.01		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	150			
	ii	25 mm dia	Metre	30			
7.02		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	15			
7.03		Supply and drawing Coaxial TV Cable RG - 6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and potected with PVC sheath in the existing surface/ recessed steel/ PVC coduit as required.	Metre	22			
		TOTAL SUB HEAD 7: CONDUTING FOR TV OUTLETS					
		SUB HEAD 8 : NURSES CALL BELL SYSTEM					
8.00		NURSES CALL BELL SYSTEM					
8.01		Supplying, fixing testing and commissioning of nurses station terminal monitor with in built display & alarm, suitable for following way complete with back up, batteries, battery charger etc. as per technical specifications and as required.					
	i)	16 Way	Each	1			
	ii)	10 Way	Each	1			
8.02		Supplying, fixing testing and commissioning of call push button (with cord), call reset, call indication station for each bed complete as required.	Each	21			

8.03		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)	25 mm dia	Meters	315			
		TOTAL SUB HEAD 8: NURSES CALL BELL SYSTEM					
9.00		SUB HEAD 9 : STAGE LIGHTING					
		STAGE LIGHTING					
9.01		Supply, Installation, Testing and commissioning of 1000W 150mm double plano-convex lens profile spot light complete with T-11 or equiv. lamps, barn door, filter frame, C-clamp, 1.5M 3x2.5 sq.mm. copper cable, plug top etc. complete.	Each	6.00			
9.02		Supply, Installation, Testing and commissioning of 1000W Solar Fresnel spot light complete with all accessories and T-11 lamp or equiv. lamps with imported glass, side/bottom sliding knob, 1.5M 3x2.5 sq.mm. copper cable, plug top etc. as required.	Each	6.00			
9.03		Supply, Installation, Testing and commissioning of 1000W Flood light complete with 1000W 189mm halogen tube and other accessories and 1.5 m. 3x2.5 sq.mm. copper cable, plug top, etc. weather proof complete.	Each	4.00			
9.04		Providing and fixing 3 Section telescopic stands made of steel tube for stage lighting mentioned above.	Each	4.00			

9.05	Supply, installation, testing and commissioning of Electronic Type Dimmer Panel with Suitable Number of circuits for controlling Compact Flourscent Lights in Auditorium duly wired with terminal strip etc with centralised knob for complete control, and five station seperate control with suitable MCB at incomer, fuse, complete with incoming cable For controlling Auditorium Hall Lights . This includes connection between control consloe and dimmer through suitable PVC copper conductor as required & its connection, connecting the existing light circuits in outgoings of the panel complete as required.	Set	1.00			
9.06	Supplying, installation, connection & commissioning of Electronic type dimmer console panel with 12 dimmers of 2.5KW each in wall mounting, sheet steel housing with 12 nos. patch panel. There shall be two plug sockets for each dimmer for controlling stage light and eight plug socket for each dimmer controlling 1000 watts spot lights . This will include connection between control console and dimmer through suitable PVC copper conductor as required including light control desk suitable for controlling the intensity of 12 channels with 2-scene preset arrangement, group & master faders, Cross Fade, flasher, chaser Music on selected channels complete as per specifications and as directed for proper functioning of the system .	Set	1.00			
	TOTAL SUB HEAD - 9.00 STAGE LIGHTING					
10.00	SUB HEAD : 10 STAGE CURTAIN					
	Stage Curtain					

10.01	Main curtain made out of velvet curtain cloth with horizontal sliding arrangement complete with fixing rails, brackets, sliding arrangement and motorised operation complete with runners, master runners, pullies, 3mm steel wire rope, motor of required capacity with 2 Nos. air breaker contactors, 2 nos. micro switches for auto stop, 3 nos. push buttons for forward, reverse and stop positions. The curtain should be draped to half area when in closed position. Min. overlap at centre should be 900mm and should be stitched in double gathering.	Set	1.00			
10.02	Providing and fixing cloth wings made out of black glazed cotton cloth fixed on 6mm thick commercial plywood fixed on one side of MS 50x25x16G pipe welded frame work. The pipe framework shall be made out of 25x50mm pipe fixed at 900mm c/c with overhead pivot track complete with duly painted framework.	Set	1.00			
10.02	Providing and fixing average frills made out of double gathering glazed cotton fabric to be installed above stage with 25mm dia. GI pipe.	Set	2.00			
	TOTAL SUB HEAD : 10 STAGE CURTAIN					
11.00	SUB HEAD : 11 VIDEO PROJECTION AND PUBLIC ADDRESS SYSTEM OF AUDITORIUM					
	Video Projection System					

11.01	Design, supply, installation, testing & commissioning of video projection system complete with LCD technology projector system , long throw projection lens motorised screen, DVD player, RGV video data switcher with matrix and scaler including wiring for the entire system in PVC steel conduits.	Lot	1.00				
	PA SYSTEM OF AUDITORIUM :						
11.02	Supplying, Installation testing and commissioning of the complete PA system for auditorium. This should include the supply, installation, testing and commissioning of the following items and any other item required for complete functioning of the system including wiring of the same.						
	a. Floor podium Mic phone with stand.						
	b. Suspended Mic						
	c. Collar Mic						
	d. Supplying, installation, testing and commissioning of dual channel power Amplifier according to the capacity of the auditorium.						
	e. PA audio mixer.						
	f. Audio Cassette Player required for smooth operation.						
	g. 5 CD Changer required for smooth operation etc. or any other item.	Lot	1.00				
	TOTAL SUBHEAD 11: VIDEO PROJECTION AND PUBLIC ADDRESS SYSTEM OF AUDITORIUM as mentioned above.						
	SUB HEAD 12 : FIRE DETECTION AND ALARM						
12.00	FIRE DETECTION AND ALARM SYSTEM						

12.01		Supply and drawing of following sizes of PVC insulated FRLS copper conductor single core cable in surface/recessed MS conduit (including Supplying and fixing of MS Conduit) complete as required.					
	i	2X1.5 sqmm	Metre	1971			
12.02		Supply, installation, testing and commissioning of the following addressable type automatic fire detection and alarm accessories as per technical specification & complete with connections etc. as required.					
	i	Optical type Smoke Detector	Each	49			
	ii	Heat Detector	Each	2			
	iii	Manual Break call point.	Each	4			
	iv	Fire Alarm Hooter cum speaker of suitable range to cover the complete floor, in MS enclosure.	Each	4			
	v	Response indicator	Each	10			
12.03		Supply, Installation, testing and commissioning of 1 loop microprocessor based addressable type networkable Fire Detection & Alarm Panel complete with inbuilt power supply, battery charger with SMF batteries for minimum 24 hours back-up. The panel shall have a communication module and HI 485 network card. The panel should have rectifier, loop card, minimum 80 character LCD unit to indicate fire/ fault signals with address including external/internal printer to print the details complete as per technical specifications and requirement of Local Fire Authority and as required.					
			Set	1			
12.04		Supply testing and commissioning of isolator module as per specifications.					
			Set	3			

12.05		Supply, Installation, testing and commissioning of addressable monitor modules.	Each	2			
12.06		Supply, Installation, testing and commissioning of flow switch	Each	1			
12.07		Supply, installation, testing and commissioning of 4 zone microprocessor based talkback master control panel with LCD display , inbuilt battery charger and battery space .The panel should have LCD and LED display for zone wise calling , & fabricated with 16 SWG sheet metal housing with red paint .	Each	1			
12.08		Supply, installation, testing and commissioning talkback unit with telephone handset in 16 SWG red body housing with locking protection.	Each	4			
12.09		Supplying, drawing, connecting, testing & commissioning of 4 core, 1.5 sq. mm ,1100 volts FRLS copper conductor with PVC armoured cable with steel brading for mechanical protection and over all shielded with aluminium myler tape complete as required.	Metre	200			
		TOTAL SUB HEAD 12 : FIRE DETECTION AND ALARM					
		SUB HEAD 13: LT CABLES					
13.00		LT CABLES					
13.01		Supply of following sizes of 1.1 kV grade multicore aluminium conductor PVC sheathed armoured AYFY cable as per IS 1554.					
	i	3.5 Core 25 Sqmm.	Metre	10			
	ii	3.5 Core 35 Sqmm.	Metre	148			
	iii	3.5 Core 50 Sqmm.	Metre	600			

	iv	3.5 Core 95 Sqmm.	Metre	120			
	v	3.5 Core 185 Sqmm.	Metre	96			
	vi	3.5 Core 300 Sqmm.	Metre	1951			
	vii	3 Core 4 Sq mm	Metre	70			
	viii	4 Core 16 Sq mm	Metre	30			
	ix	2 Core 10 Sq mm	Metre	225			
	x	2 Core 16 Sq mm	Metre	225			
13.02		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	275			
	ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	Metre	670			
	iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	Metre	1592			
13.03		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	70			
	ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	Metre	105			
	iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	Metre	25			
13.04		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	30			
	ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	Metre	40			
	iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	Metre	55			
13.05		Supplying and making end termination with suitable size Copper lugs including double compression glands of following sizes of 1.1. kv grade multicore aluminium conductor PVC insulated and PVC sheathed					

	i	3.5 Core 25 Sqmm.	Each	6			
	ii	3.5 Core 35 Sqmm.	Each	4			
	iii	3.5 Core 50 Sqmm.	Each	2			
	iv	3.5 Core 95 Sqmm.	Each	2			
	v	3.5 Core 185 Sqmm.	Each	4			
	vi	3.5 Core 300 Sqmm.	Each	14			
	vii	3 Core 4 Sq mm	Each	18			
	viii	4 Core 16 Sq mm	Each	8			
	ix	2 Core 10 Sq mm	Each	12			
	x	2 Core 16 Sq mm	Each	18			
13.06		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	25			
	ii	300 mm. width x 62.5 mm. depth x 2.0 mm. thickness	Metre	10			
	iii	450 mm. width x 62.6 mm. depth x 2.0 mm. thickness	Metre	15			
	iv	600 mm. width x 62.6 mm. depth x 2.0 mm. thickness	Metre	15			
		TOTAL SUB HEAD 13 : LT CABLES					
		SUB HEAD 14: EARTHING SAFETY EQUIPMENT AND MISC. ITEMS					
14.00		EARTHING, SAFETY EQUIPMENTS AND MISC. ITEMS					
14.01		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	2			

14.02	Earthing with GI plate 600mmX600mmX6mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) complete as required	Set	18			
14.03	Extra for using charcoal and salt for GI or copper plate earth electrode as required.	Set	20			
14.04	Earthing with GI earth pipe 4.5 mtr long, 40 mm dia including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) as required.	Set	1			
14.05	Earthing with GI earth pipe 4.5 mtr long, 40 mm dia including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal and salt as required.	Set	1			
14.06	Supplying and laying 25mmX5mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	130			
14.07	Providing and fixing 25mmX5mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	30			
14.08	Providing and fixing 25mmx5mm G.I. strip in 40mm dia G.I. pipe from earth electrode as required.	Metre	20			
14.09	Providing and fixing 25mmX5mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	120			

14.10		Supplying and laying 25mmX5mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	40			
14.11		Providing and fixing 25mmx5mm copper strip in 40mm dia G.I. pipe from earth electrode as required.	Metre	35			
14.12		Providing and laying of following sizes non pressure NP2 class (light duty) RCC pipe with collar joint with stiff mixture of cement (1 cement : 2 fine sand) including testing the joints etc. as required.					
	i	150mm dia	Metre	85			
	ii	300mm dia	Metre	160			
14.13		Providing and fixing M.V. danger notice plate of 200mmX150mm made of mild steel, atleast 2mm thick and vitreous enamelled white on both sides and with inscription in signal red colour on front side as required.	Each	10			
14.14		Supplying and laying of 1.1kV grade 1 metre wide anti skid chequered type rubber mat.	Metre	50			
14.15		Supplying and laying of 12kV grade 1 metre wide anti skid chequered type rubber mat.	Metre	10			
14.16		Supply and fixing shock treatment chart in English, Hindi and local language mounted on 5mm thick Plywood and 3mm thick plain glass front complete as required.	Set	7			
14.17		Supplying and fixing CO2 type 4.5 Kg capacity fire extinguishers as approved by ISI complete as required.	Set	9			

14.18	Supplying and fixing CO2 type 9 Kg capacity trolley mounted fire extinguishers as approved by ISI complete as required.	Set	2			
14.19	Supplying and fixing Foam type 9 ltrs capacity fire extinguishers as approved by ISI complete as required.	Set	2			
14.20	Supplying, storing, handling and fixing in position First Aid Medical Box complete as per technical specifications as required.	Each	4			
14.21	Supply and testing of 11kV ISI marked hand gloves	Set	3			
14.22	Providing & fixing rigid PVC pipe complete with fittings, clamps including trenching & refilling/ wall cutting & plastering, etc. (for cable entry) with all minor civil & mech. Works complete as required.					
	50 mm dia nominal bore	Metre	130			
	TOTAL SUB HEAD 14: EARTHING, SAFETY EQUIPMENT AND MISC. ITEMS					
	SUB HEAD 15: OUT DOOR LIGHTING					
15.00	OUT DOOR LIGHTING					
15.01	Supply, erection, testing and commissioning of external swaged steel tubular pole with following specifications & items :					

	i	9.0 Mtrs. high swaged steel tubular pole (Single arm of suitable length each around 1.5 Metre), the construction of the pole shall be as per IS 410 SP-33 with base plate 450mmX450mmX6mm complete as per requirement with two coats of spray paints (shade as approved)					
	ii	1X150 watts street light fixture with 150watts high pressure sodium vapour (HPSV) lamp complete with control gear, acrylic cover cover etc. and its wiring with 2X4 sq.mm. PVC insulated, FRLS copper conductor and 1,5 sqmm PVC insulated, FRLS copper earth wire from control box complete as required - 1 No. (Philips SRP051 1XSON150W 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.					
	vi	The above installations shall be completed as CPWD specifications and as required					
	A.	Steet Tubular Poles(9M) Single Arm as mention above	Set	20			
15.02		Supply, installation, testing and commissioning of external post top lantern with following accessories and complete as required :					

	i)	4m high (3.3m above ground) 50mm dia GI pole as approved, adopting socket at top for fixture mentioned below, base plate 300 x 300 x 6mm and provision for mounting junction box etc. - 1 set.					
	ii)	Supply, installation, testing and commissioning of Post top lantern with 70W HPSV lamp (Philips HPS 360 1XSON 70W W GR or equivalent) and its wiring with 2 x 2.5 sq.mm PVC insulated copper wire and 1.5 sqmm PVC insulated copper earth wire from control box - 1 set.					
	iii)	Suitable size 20A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 1 nos. 5A HRC fuses complete 1 set.					
	iv)	Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry					
	v)	Providing 400x400x1000mm deep 1:3:6 ratio cement concrete including excavation shuttering alignment of poles casting etc. including 100mm thick lean concrete shall be provided at the bottom					
		Supply, installation, testing and commissioning of external post top lantern as mentioned above	Set	10			
15.03		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	15			
15.04		Supply, installation, testing and commissioning of bollard lamps 1X18 watts CFL (Philips HCS 370 1XPL-L 18W GR Lumos bollard in green color or equivalent) control box - 1 set.	Each	10			
15.05		Road Lighting Panel					

	Supply, installation, testing and commissioning of following outdoor type with canopy, IP-54 protected M.V. cubicle type totally enclosed, free standing type, dust, damp and vermin proof, MV Panel, busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switchgears complete as required.					
	INCOMER:					
	1 No. 63 Amp 415 volts, TPN Switch Disconnecter Fuse Unit with HRC Fuses					
	<i>1 Set of phase indicating lamp with HRC fuses</i>					
	1 Set of photo sensor & 100A TP contactor with neutral link (for street lights control) with wiring, cabling from photo sensor to panel etc. complete as required..					
	BUSBARS:					
	100 Amp TPN Aluminium busbars					
	OUTGOING:					
	10 Nos. 32 Amp 415 volts, DP MCB					
	Feeder Pillar as mention above	Set	2			
15.06	Spiral earthing made out of 6 SWG GI wire , 50mm Dia, 115 turns closely wound ,1.5 mtr below ground, earth pit of 350 Dia., 1.5 mtr depth including providing charcoal and salt for earthing at alternate layers of 300 mm depth (total 3 layers),connections etc. complete as required.	Set	20			
	TOTAL SUB HEAD 15: OUTDOOR LIGHTING					
	GRAND TOTAL FOR ALL ELECTRICAL WORKS					

SUMMARY OF COST ESTIMATE - ELECTRICAL WORKS

S.No.	DESCRIPTION	Amount Figure (In Rs.)	In	Amount in Words (Rs.)
1	SUB HEAD 1: MV PANELS :			
2	SUB HEAD- 2: MCB DISTRIBUTION BOARDS.			
3	SUB HEAD 3: WIRING			
4	SUB HEAD: 4 - LIGHT FIXTURE AND FANS			
5	SUB HEAD 5 : TELEPHONE SYSTEM			
6	SUB HEAD 6: CONDUITING FOR COMPUTER SYSTEM.			
7	SUB HEAD 7: CONDUITING FOR TV OUTLETS			
8	SUB HEAD 8 : NURSES CALL BELL SYSTEM			
9	SUB HEAD 9 : STAGE LIGHTING			
10	SUB HEAD : 10 STAGE CURTAIN			
11	SUB HEAD : 11 VIDEO PROJECTION AND PUBLIC ADDRESS SYSTEM OF AUDITORIUM			
12	SUB HEAD 12 : FIRE DETECTION AND ALARM			
13	SUB HEAD 13: LT CABLES			
14	SUB HEAD 14: EARTHING SAFETY EQUIPMENT AND MISC. ITEMS			
15	SUB HEAD 15: OUT DOOR LIGHTING			
	GRAND TOTAL FOR ALL ELECTRICAL WORKS			

BILL OF QUANTITIES

HVAC WORKS

BILL OF QUANTITIES FOR NATIONAL INSTITUTE OF UNANI MEDICINE (NIUM), BANGALORE - HVAC WORKS						
Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 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						
A)	EQUIPMENTS					
1.0	AIR COOLED CHILLING UNITS.					
1.1	Supply, installation, testing & commissioning of 60 TR (actual) capacity Air cooled water chilling units as specified and shown in equipment schedule complete as per specifications with.					
	a. Scroll Compressor with motor.					
	b. Drive package.					
	c. Mounting frames for all components					
	d. Air cooled condenser with accessories.					
	e. Chiller with accessories.					
	f. Refrigerant piping, fittings, accessories and valves etc.					
	g. Insulation of chiller and suction line.					
	h. First charge of refrigerant and oil.					
	i. Base frame with Vibration isolators					
	j. Automatic capacity control arrangement.					
	k. Lot Safety controls, flow switches, pressure gauge, thermometer etc. as per specifications.					
	l. Suitable capacity motor with necessary insulation , soft starter panel complete with all necessary switchgears and control complete as required					
	m. Necessary water drain & air purge valves wherever required					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	n. Necessary lubrication device as per specifications complete.					
	o. Microprocessor based control panel complete with accessories as per specifications.					
	Chilled Water Leaving temp. 44 deg. F					
	Chilled Water Entering temp. 54 deg. F					
	Chiller fouling factor = 0.0005 (FPS units)					
	Complete Air Cooled water chilling machine as above (2W+1S)	3	Nos			
2.0	WATER CIRCULATION PUMPS					
2.1	Chilled Water Pumps					
	Supply, installation, testing and commissioning of vertical split casing end suction type centrifugal chilled water pump sets factory assembled and tested for rated efficiency mounted on a common base frame etc each capable of delivering specified flow rate complete with following as per specifications & schedule of equipments.					
	a. Pump with IP 55 TEFC induction motor with class F insulation					
	b. Channel base with vibration isolators, coupling, coupling guard etc.					
	c. Cladded insulation and anti corrosive coating/cathodic electro deposit (CED) type coating inside and outside casing of chilled water pump, etc.					
	d. 2 Nos.- 150 mm dia dial type pressure gauge					
	e. Pumps shall be suitable for operation on 415+/- 10% Volts/ 3ph / 50 Hz/AC power supply.					
	The pump characteristic shall be as follows:					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	Water flow rate=144 USGPM Head = 24 Metre WC					
	Chilled water pumps as described above. (2W+1S)	3	Nos			
2.2	Hot water Pumps					
	Supply, installation, testing and commissioning of vertical split casing type centrifugal hot water recirculation pump sets factory assembled and tested for rated efficiency mounted on a common base etc each capable of delivering specified flow rate complete with following as per specifications & schedule of equipments.					
	a. Pump with IP 55 TEFC induction motor with class F insulation					
	b. Channel base with vibration isolators, coupling, coupling guard etc.					
	c. Cladded insulation and anti corrosive coating/cathodic electro deposit (CED) type coating inside and outside casing of chilled water pump, etc.					
	d. 2 Nos.- 150 mm dia dial type pressure gauge					
	e. Pumps shall be suitable for operation on 415+/- 10% Volts/ 3ph / 50 Hz/AC power supply.					
	The pump characteristic shall be as follows:					
	Water flow rate=25 USGPM Head = 25 Metre WC					
	Hot water pumps as described above. (1W+1S)	2	Nos			
3.0	Hot Water Generator					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	Supply, installation, testing & commissioning of Electric Hot Water Generator for winter heating/monsoon reheating system.Hot water shall be with IP 55 protection and compatible with controls, sensors,controll cabling,piping and fittings,thermal insulation, as per specifications. Capacity : 30 KW Status : 1 (W) USGPM: 25					
	Temp IN/OUT : 45/50 Deg C	1	Nos.			
4.0	AIR HANDLING UNITS					
	Supply, installation, testing and commissioning of draw through type Air Handling Units (double skin type) of horizontal /vertical type as specified & shown in schedule of equipment complete with the following :-					
	a. Fan Section and canvas connection,Mixing Box, Thermal break profile. (double skin type)					
	b. Centrifugal blower					
	c. Coil section with cooling coil/s as per specifications.					
	d. Pre filters with filter section as required in all AHUs.					
	e. Fine and hepa filters with filter section wherever specifically specified as per AHU schedule .Wherever fine/hepa filters are specified, item shall include factory fabricated double skin plenum of same specifications as AHU panels and complete with filter frameworks.Fine/hepa filter section along with discharge plenum shall be part of AHU in upper tier.					
	f. Drain pan, drain connection.					
	g. Squirrel cage induction IP 55 TEFC drive motor, drive arrangement, guard etc.All AHU motors shall be compatible for working with VFD.					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	h. Necessary vibration isolators & supporting arrangement.					
	i. Fresh air intake arrangement,necessary water drain & air purge valves wherever required etc.					
	j. Canvass connections,necessary foundations, 2 nos pressure gauge, 2 nos thermometer etc					
	k Controls for AHUs comprising of a set of 3 way modulating proportional linear type motorised diverting/ mixing valve of required size having manual override facility alongwith proportional thermostat & wiring for interconnection with 1.5 sq. mm Cu Conductor multicore armoured complete as required.					
4.1	AH-GF-1 - 8500cfm/ 4RD Cooling Coil/2RD Heating Coil/50 mm static	1	Nos.			
4.2	AH-GF-2 - 6500cfm/ 4RD Cooling Coil/2RD Heating Coil/50 mm static	1	Nos.			
4.3	AH-GF-3 - 5500cfm/ 4RD Cooling Coil/2RD Heating Coil/50 mm static	1	Nos.			
4.4	AH-FF-1 - 4500cfm/ 4RD Cooling Coil/2RD Heating Coil/50 mm static	1	Nos.			
4.5	AH-FF-02- 8000cfm/ 4RD Cooling Coil/2RD Heating Coil/50 mm static	1	Nos.			
5.0	Inline Fans					
	Supply, installation, testing and commissioning of Inline Fans as shown in drawings and as per equipment schedule .Each fan shall be complete with centrifugal blowers, totally enclosed fan cooled motor. Fan motor shall be suitable for single phase, 220 +/- 6% V, 50 Hz AC supply. Item shall be complete with starter & cabling.					
	Inline Fans					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
5.1	Air Quantity :700 CFM Static Pressure :20 mm wg	1	Nos.			
5.2	Air Quantity :350 CFM Static Pressure :20 mm wg	3	Nos.			
6.0	Propeller fans Supplying, installing, testing and commissioning of direct driven Propeller fan for exhaust air as shown in drawings. Each fan shall be complete with permanent split capacitor or shaded pole motor, mounting plate, accessories like wire guard, bird screen and fixed louvers for weather protection as required. Fan selection arrangement and Electrical characteristics shall be as follows:					
6.1	300 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	2	Nos			
6.2	225 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	2	Nos			
6.3	150 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	20	Nos			
7.0	Tube Axial Fans Supply, installation, testing and commissioning of tube axial flow fans as shown in drawings, Each fan shall be direct driven.. Fan motor shall be suitable for 3 Phase, 415 +/- 10% V, 50Hz AC supply . Fan shall be complete with gravity louvers. Fan shall be 250 deg C, 2hrs fire rated.					
7.1	Duty: Auditorium Exhaust					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	Air Quantity : 5500 CFM, 20 mm st. pr.	4	Nos.			
7.2	Duty: Auditorium Lobby & Entrance Foyer Exhaust Air Quantity : 2250 CFM, 20 mm st. pr.	8	Nos.			
8.0	EXPANSION TANK Supply, installation, testing and commissioning of pressurised PVC., expansion tank of following capacities made of PVC 2 layer sheet complete with 50 mm thick fire retardant type 32 kg/mt cu density TF quality expanded polystyrene insulation finished with two layers of sand cement plaster and painted complete with vent, drain connections , float valve, quick fill connection, manhole cover etc as specified. (Of double layered Sintex or equivalent make).					
8.1	1000 ltrs. (for chilled water circuit)	1	No.			
8.2	500 ltrs. (for hot water circuit)	1	No.			
B)	PIPING					
9.0	CHILLED WATER PIPING Supply, laying/fixing, testing and commissioning of M.S. heavy class ERW piping confirming to IS : 3589/IS:1239 with necessary clamps, supports, anti vibration mountings, hangers and fittings such as bends, tees, reducers etc. duly insulated and painted as per specifications :					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
9.1	125 mm dia	140	RM			
9.2	100 mm dia	20	RM			
9.3	80 mm dia	100	RM			
9.4	65 mm dia	80	RM			
9.5	50 mm dia	150	RM			
9.6	40 mm dia	60	RM			
9.7	32 mm dia	40	RM			
9.8	25 mm dia	40	RM			
9.9	20 mm dia	45	RM			
10.0	VALVES & STRAINERS					
	Supply, fixing and testing of following valves, strainers, in the chilled water piping complete with companion flanges, nut bolts, gaskets, supports etc. duly insulated and painted as per specifications:					
10.1	Butterfly valves :					
10.1.1	125 mm dia.	2	Nos			
10.1.2	80 mm dia.	17	Nos			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
10.1.3	65 mm dia	5	Nos			
10.1.4	50 mm dia.	15	Nos			
10.1.5	32 mm dia	4	Nos			
10.1.6	20 mm dia	6	Nos			
10.2	Balancing valves :					
10.2.1	125 mm dia.	1	Nos			
10.2.2	80 mm dia.	7	Nos			
10.2.3	65 mm dia	1	Nos			
10.2.4	50 mm dia.	3	Nos			
10.2.5	32 mm dia	2	Nos			
10.2.6	20 mm dia	3	Nos			
10.3	Non return/Check valves :					
10.3.1	80 mm dia	3	Nos			
10.3.2	50 mm dia.	2	Nos			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
10.4	Y- strainers with drain valve					
10.4.1	80 mm dia.	4	Nos			
10.4.2	65 mm dia	1	Nos			
10.4.3	50 mm dia.	3	Nos			
10.4.4	32 mm dia	2	Nos			
10.4.5	20 mm dia	3	Nos			
10.5	Providing and fixing in position the following Gate Valves duly insulated as per specifications:					
10.5.1	50 mm dia Valves	2	Nos.			
10.5.2	40 mm dia Valves	2	Nos.			
10.5.3	32 mm dia Valves	2	Nos.			
10.6	Supply, installation, testing and commissioning cooling Thermostats :-					
10.6.1	For AHUs	5	Nos.			
11.0	DRAIN PIPING					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	Supply, laying/fixing, testing and commissioning of G.I. medium class ERW piping confirming to IS:1239 with necessary clamps, supports, anti vibration mountings, hangers and fittings such as bends, tees, reducers etc. duly insulated and painted as per specifications for condensate drain from air handling units and chillers etc.					
11.1	50 mm dia	40	RM			
11.2	40 mm dia	25	RM			
11.3	32 mm dia	20	RM			
11.4	25 mm dia	25	RM			
C)	<u>AIR DISTRIBUTION</u>					
12.0	GSS DUCTING					
	Supply, installation, testing, commissioning 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:					
12.1	1.25 mm(18 G) GSS	80	Sqm.			
12.2	1.0 mm (20 G) GSS	150	Sqm.			
12.3	0.80 mm (22 G) GSS	760	Sqm.			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
12.4	0.63 mm (24 G) GSS	970	Sqm.			
13.0	Duct Silencer					
	Supply, installation, testing, commissioning and balancing of duct silencer in both supply & return air ducting with heavy gauge GI sheet with acoustic insulation material, inside GI perforated sheet all complete as per specifications & shop drawings etc.	15	Sqm.			
14.0	FIRE DAMPERS					
	Supply, installation, testing and commissioning of motorized combined smoke & 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.					
14.1	Fire/smoke Damper	8	Sqm			
14.2	Actuator & control panel	10	sets			
15.0	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.	14	Sqm.			
16.0	CEILING DIFFUSERS					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
16.1	Supply, Installation, testing and balancing of square/circular supply air diffusers of powder coated aluminium construction with attached volume control dampers as per specs. and drawings.	14	Sqm.			
16.2	Supply, installation, testing and balancing of square/circular return air diffusers of powder coated aluminium construction without volume control dampers as per specifications and drawings	14	Sqm.			
17.0	GRILLES					
	Supply, installation, testing and balancing of supply/return air grilles with/without volume control dampers of powder coated aluminium construction suitable for installation in walls, false ceiling boxing etc as per specifications and drawings.					
17.1	Supply air grilles in single louvers with volume control dampers.	5	Sqm.			
17.2	Return air grilles in single louvers without volume control dampers.	15	Sqm.			
18.0	LINEAR GRILLES					
	Supply, installation, testing and balancing of air linear grilles of powder coated aluminium construction suitable for installation in walls/false ceiling, boxing etc as per specifications and drawings.	5	Sqm.			
19.0	GRILLE DAMPERS					
	Supply, installation and balancing of aluminium construction volume control dampers for linear grills.	5	Sqm.			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
20.0	FRESH AIR GRILLES with bird screen					
20.1	Supply, installation, testing and balancing of extruded aluminium fresh air grilles with louvers and bird screen as per specification and drawings.	4	Sqm.			
21.0	DUCT INSULATION					
21.1	Supply and fixing resin bonded fibre glass insulation on supply/return air ducts covered with polythene and finished as specified.					
21.1.1	50 mm thick insulation (For duct in Non AC area)	250	Sqm.			
21.1.2	25 mm thick insulation (For duct in AC area)	900	Sqm.			
21.2	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.	250	Sqm.			
22.0	DUCT ACOUSTIC LINING					
22.1	Supply, application and fixing of resin bonded fibre glass hard board acoustic insulation in supply air ducting/plenum covered with tissue paper and perforated aluminium sheet as specified.	750	Sqm.			
23.0	PLANT ROOMS ACOUSTIC INSULATION					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
23.1	Supply and fixing of acoustic insulation on walls and ceiling of Air handling units rooms with 50mm thick resin bonded fibre glass slabs fixed in frame work and finished with vapour barrier and perforated aluminium sheet complete as per specifications and drawings.	400	Sqm.			
E)	<u>ELECTRICAL</u>					
24.0	AIR- CONDITIONING PANELS					
	Supply, installation, testing and commissioning of HVAC 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 multitier arrangement. The powder coating shall be done as per relevant IS codes as specified in the specifications. Adequate size cable alley shall be provided. The outgoing feeders inside the panel shall be connected through solid bus bar. 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.					
	i)All doors to have pad locking and shrouding arrangement.					
	ii)All switches to be heavy duty type base mounted having operating handle.					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
24.1	Main/ Emergency Air-conditioning MCC in plant room in basement					
	INCOMER 2 No. 800A, 415/500V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based; overload, short circuit, Instantaneous & earth Fault trip; including under voltage release and lockable trip push button. The ACB should have Icw =Ics= 50KA for 1 sec.R, Y & B; Phase indicating lamps (LED type) with 2A control SP; MCBs.Digital multi function meter with one set of suitable; CTs, CT shorting links, R/Y/B LED indicating lamps and 2A; cobntrol SP MCBs.					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP.					
	Push button to CLOSE the ACB.					
	1 Set of Digital Amp meter with ASS and CTs.					
	BUSBARS :1000 A TPN					
	OUTGOING					
i)	5 nos 250 Amp 415 volts, 35 KA (Isc), FP MCCB with thermal; magnetic release having variable current settings.Extended; rotary operating mechanism with door interlock with defeat; feature and padlock facility. MCCB should be with spreader; link and phase barriers.Indicating lamps with 2A protection; MCBs to indicate ON, OFF, TRIP for MCCB.Digital Ampere; Metre of suitable range with suitable set of CT's and ASS.For; water chilling machine,AHU Distribution Panel.(4W+1S)					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
ii)	4 nos 125 Amp 415 volts, 35 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In.Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCBs to indicate ON, OFF, TRIP for MCCB.Digital Ampere Metre of suitable range with suitable set of CT's and ASS.For hot water genetator,Spare for electrical.(1W)					
iii)	3 Nos. 63 Amp 415 volts, 35 KA (Isc), FP MCCB with thermal magnetic release having variable current settings.Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCBs to indicate ON, OFF, TRIP for MCCB.Digital Ampere Metre of suitable range with suitable set of CT's and ASS with fully automatic star delta starter (type II) suitable for 7.5 HP Chilled water pumps 03 nos.(3W)					
iv)	4 Nos. 32 Amp 415 volts, 35 KA (Isc), FP MCCB with thermal magnetic release having variable current settings.Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCBs to indicate ON, OFF, TRIP for MCCB.Digital Ampere Metre of suitable range with suitable set of CT's and ASS with fully automatic star delta starter(type II) suitable for 5 HP Hot water pumps 02 nos.(2W+2S)					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	Complete panel as above	1	Panel			
24.2	AHU MAIN DISTRIBUTION PANEL (in Auditorium) 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 multitier arrangement. The powder coating shall be done as per relevant is codes as specified in the specifications. Adequate size cable alley shall be provided. 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.					
	i)All doors to have pad locking and shrouding arrangement.					
	ii)All switches to be heavy duty type base mounted having operating handle.					
24.2.1	AHU PANEL AHP I					
	INCOMER					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	01 nos. 250 Amp 415 volts, 35 KA (Isc), FP MCCB with thermal magnetic release having variable current settings.Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCBs to indicate ON,OFF, TRIP for MCCB.					
	1 set phase indication lamps with control fuses.					
	1 no. voltmeter with VSS.					
	1 no. digital ammeter with ASS and CTs.					
	300 A TPN Aluminium conductor bus bar dully sleeved.					
	OUTGOING					
	1 nos 125 Amp 415 volts, 25 KA (Isc), FP MCCB with thermal magnetic release having variable current settings.Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCBs to indicate ON, OFF for MCCB.Digital Ampere Metre of suitable range with suitable set of CT's and ASS.For Electrical Loads.(1W)					
	3nos 63 Amp 415 volts, 10 KA (Isc), FP MCCB with thermal magnetic release having variable current settings. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCBs to indicate ON, OFF for MCCB.Digital Ampere Metre of suitable range with suitable set of CT's and ASS.(1W)					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	4 nos 32 Amp 415 volts, 10 KA (Isc), FP MCCB with thermal magnetic release having variable current settings. .Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection: MCCBs to indicate ON, OFF for MCCB.Digital Ampere Metre of suitable range with suitable set of CT's and ASS.(1W)					
	Complete panel as above	1	Panel			
24.2.2	PANEL AHP 2 (For terrace floor)					
	INCOMER					
	01 nos. 63 Amp 415 volts, 35 KA (Isc), FP MCCB with thermal magnetic release having variable current settings.Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCCBs to indicate ON,OFF, TRIP for MCCB.					
	1 set phase indication lamps with control fuses.					
	1 no. voltmeter with VSS.					
	1 no.digital ammeter with ASS and CTs.					
	125 A TPN Aluminium conductor bus bar dully sleeved.					
	OUTGOING					
	14 set-16A FP MCB 10 KA outgoing with ON/OFF indiacting lamps and push buttons complete					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	Complete panel as above	1	panel			
24.2.3	AHU STARTER PANELS (AHSP)					
	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					
24.2.4	AHU STARTER PANEL (AHSP -1)					
	OUTGOING :					
	1 No. 63 Amps MCCB 10 KA for 7.5 HP Motor with suitable Starter (type II) 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 AHU motor as required.	2	Nos.			
24.2.5	AHU STARTER PANEL (AHSP-2)					
	OUTGOING :					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	1 No. 32 Amps FP MCB 10 KA for 5 HP Motor with suitable Starter (type II) 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 AHU motor as required.	3	Nos.			
24.2.6	FAN STARTER PANEL (AHSP-3)					
	OUTGOING :					
	1 No. 16 Amps FP MCB 10 KA for 3 HP Motor with suitable Starter (type II) 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 AHU motor as required.	2	Nos.			
24.2.7	FAN STARTER PANEL (AHSP-4)					
	OUTGOING :					
	1 No. 16 Amps FP MCB 10 KA for 1/ 0.75 HP Motor with suitable Starter (type II) 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 AHU motor as required.	8	Nos.			
25.0	CABLING					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	Supplying, laying, effecting proper connections, testing & commissioning of following size of 1.1 kv PVC insulated aluminium conducting armoured cables as per IS 1554 Part-1 laid underground/cable tray/on surface of wall/hume pipe etc. & termination with brass compression glands as required.					
25.1	3.5C x 185 sq.mm cable	100	Mtr			
25.2	3.5C x 150 sq.mm cable	80	Mtr			
25.3	3.5C x 95 sq.mm cable	40	Mtr			
25.4	3.5C x 70 sq.mm cable	90	Mtr			
25.5	3.5C x 35 sq.mm cable	120	Mtr			
25.6	3.5C x 25 sq.mm Cable	20	Mtr			
25.7	4 C X 16 sq. mm. Cable	20	Mtr			
25.8	4 C X10 sq. mm. Cable	25	Mtr			
25.9	4 C X 6 sq. mm. Cable	400	Mtr			
25.10	3 C X 4 sq. mm. Cable	200	Mtr			
25.11	4C X 2.5 sq. mm. Cable	600	Mtr			
26.0	CABLE TRAYS					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	Supply & installation 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					
26.1	300 mm widthx50 mm deep x1.6 mmthickness	50	Mtr			
26.2	200 mm widthx50 mm deep x1.6 mmthickness	50	Mtr			
26.3	150 mm widthx50 mm deep x1.6 mmthickness	50	Mtr			
26.4	100 mm widthx50 mm deep x1.6 mmthickness	200	Mtr			
27.0	EARTHING					
27.1	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	2	Set			
27.2	Providing & fixing GI earth strip 40mm x 6mm on surface or in recess for earth connections etc. as required	10	Mtr			
27.3	Providing and fixing GI earth strip on walls/ trenches complete as per specifications and as required.					
27.3.1	38mmx 6mm	25	Mtr			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
27.3.2	25mm x 3mm	30	Mtr			
27.4	Providing and fixing earth wire of complete as per specifications as required.					
27.4.1	6 SWG wire	80	Mtr			
27.4.2	8 SWG wire	100	Mtr			
28.0	CONTROL CABLING					
	Supply, laying, effecting proper connections, testing & commissioning of 1.5 sq.mm. PVC insulated copper multicore cables from AHU's and AC equipments to central control console.					
28.1	19 core cable	50				
28.2	14 core cable	250				
28.3	10 core cable	150				
28.4	8 core cable	100				
28.5	6 core cable	50				
28.6	5 core cable	150				
28.7	3 core cable	100				

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
28.8	2 core cable	50				
29.0	CONTROL CONSOLE /DESK					
	Supplying, installation, testing & commissioning of floor mounted desk type control console cum indicating panel in the A.C. plant room containing various indications and controls for the complete air-conditioning system comprising chilling units, chilled/ Hot/ condenser water pumps, cooling towers and AHUs/ Ex. blower/ Fans etc , Hot water boiler with test push button facility. The panel shall be fabricated from minimum 1.6mm thick M.S. powder coated sheet of approved design. The air-conditioning module of the central control cum indicating panel shall contain the following accessories.					
	Status indication (ON, OFF & fault) of each compressor for each chilling machine, hot water boiler etc.					
	Push buttons and indicating lamps for remote start & stop and status indication for every nos of the water circulating pumps, Air Handling Units, Ex blower, Fans etc.					
	Hooter and flashing lamp to indicate operation of any safety/ shut down with necessary contactors, accept, reset and test push buttons.					
	Complete internal wiring with copper conductor PVC insulated multicore 2.5 sq.mm stranded cable from various equipments in the A.C. plant room etc to the control console panel as required.					
	COMPLETE PANEL AS ABOVE	1	Panel			
	Total For HVAC Works					

	SUMMARY SHEET OF HVAC WORKS AT NIUM BANGALORE	
SECTION	DESCRIPTION OF WORK	AMOUNT(Rs.)
A	EQUIPMENTS	
B	PIPING	
C	AIR DISTRIBUTION	
E	ELECTRICAL	
	GRAND TOTAL	

Construction of Regimental Therapy Block , Auditorium & Pharmacy building under Phase-III works for National Institute of Unani Medicine (NIUM), Bangalore

SUMMARY

AMOUNT QUOTED in Rupees

CIVIL WORKS

PLUMBING

FIREFIGHTING

ELECTRICAL WORKS

HVAC WORKS

Total Cost :-

(Signature of the Bidder)