

PIMS SOCIETY
GARHA ROAD
JALANDHAR

**Construction of Nursing College & National Level Physiotherapy Workshop at
Government Medical College, Patiala**

VOLUME V

BILL OF QUANTITIES

HSCC/PIMS/PAT/2011

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Consultant

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PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
CIVIL WORKS						
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	1320	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.	10	cum			
1.03	Extra for every additional lift of 1.5 m or part there of in.					
a)	All kinds of soil.					
i)	1.5m to 3.0m	10	cum			
1.04	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.	1200	cum			

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1.05	Supplying and filling in plinth with river sand under floors including, watering, ramming consolidating and dressing complete.	145	cum			
1.06	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.i)	pipes, cables etc, not exceeding 80 mm dia	20	metre			
a.ii)	Pipes, cables etc, exceeding 80 mm dia but not exceeding 300 mm dia	400	metre			
1.07	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	20	100sqm			
	Total					

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1	2	3	4	5	6	7
2.00	Concrete Work					
2.01	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level:					
a)	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	11	cum			
b)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	245	cum			
c)	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	15	cum			
2.02	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).	100	sqm			
2.03	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.	100	sqm			
2.04	Extra for providing and mixing water proofing material in cement concrete work @ 1 kg per 50kg of cement.	26	per 50 kg cement			
2.05	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)	12	cum			

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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 380kg. of cement per cum of concrete. All work up to floor V	1831	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..	254	cum			
3.03	Deduct for using less cement than the quantity as provided in the item of batch mix concrete/RMC as arrived as per mix design.	20	Qtl			
3.04	Centering and shuttering including strutting, propping etc. and removal of form for:					
a)	Foundations, footings, bases of columns, etc. for mass concrete.	500	sqm			
b)	Walls (any thickness) including attached pilasters, buttersesses, plinth and string courses etc.	15	sqm			
c)	Suspended floors, roofs, landings, balconies and access platform.	3600	sqm			
d)	Shelves (Cast in situ)	25	sqm			
e)	lintels, beams, plinth beams. girders. bressumers and cantilevers.	3570	sqm			

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f)	Columns, Pillars, Piers, Abutments, Posts and Struts.	2210	sqm			
g)	staircases (including landing).	65	sqm			
h)	Extra for shuttering in circular work (20% of respective centering and shuttering items).					
i)	Beams	50	sqm			
i)	Column	20	sqm			
i)	Slab	20	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.	220	sqm			
3.05	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc. including cost of decshuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured)					
a)	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured).	3600	sqm			
3.06	Reinforcement for R.C.C. work including straightening. cutting, bending, placing in position and binding all complete.					
a)	Thermo-Mechanically Treated bars	290	tonne			
	Total					

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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)	125	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)	860	cum			
4.03	Half brick masonry with F.P.S. brick of class designation 75 in foundations and plinth in.					
a)	cement mortar 1:4 (1 cement: 4 coarse sand)	10	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)	1080	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).	1080	sqm			
4.06	Extra for forming Cavity in cavity walls with necessary weep and vent holes including use of cores and cost of providing and fixing bitumastic coated M.S. ties 600 mm long of 25mmx3mm section at not less than 3 ties per sqm as per approved design.	20	sqm			
	Total					

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5.00	DOORS & WINDOWS					
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 PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to					
5.01.1	For fixed portion					
a)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	5400	kg			
5.01.2	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required (Fittings shall be paid for separately).					
a)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	1300	kg			

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5.02	Providing and fixing aluminium spacer frames to windows, ventilators with extruded built up standard tubular and other sections of approved make conforming to IS:733 and IS: 1285, fixed with rawl plugs , stainless steel screws or with expansion hold fasteners. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, stainless steel screws, etc all complete as per architectural drawings and as directed.	750	kg			
5.03	Providing and installation of fully insulated wooden fire rated shutter of 120min. fire rating conforming to BS: 476 part 22 and IS:3614 Part II as per the prototype tested and certified by CBRI Roorkee, of 55mm thickness, comprising of 75mm x 49mm hardwood internal timber frame work, with infill of 96 kg/m3, ceramic fiber blankets, coated with VIPER FR or equivalent intumescent coating on both sides for insulation. The coated insulation shall be sandwiched between 12mm thick, Non combustible Boards (Calcium Silicate) on both sides (edge to edge on internal Hardwood frame) and clad with 3mm thick commercial ply of approved quality & 1mm thick laminate of approved brand and manufacture on both sides, with 55mm x 14mm 2nd class teak wood lipping all round the shutter.					

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	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	20	sqm			

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5.04	476 part 22, IS:3614 Part II as per the prototype certified by CBRI Roorkee made out of 2nd class C.P. Teak Wood frame of section 140x65mm for fire resistant doors of 120 minutes fire rating, with heat activated intumescent fire seal strips of size 20 x 4 mm(for smoke sealing) provided in grooves on all three sides of the frame with one coat of approved brand of fire retardant primer including two coats of fire retardant paint FR 881or equivalent un thinned on cleared hard wood surface of door frames (@3.5 sq.m. per litre per coat) including preperation of base surface as per recommendations of manufacturer to make the surface fire retardant, including fixing the frame with 8 nos. 100 mm long, 10 mm dia metal dash fastners complete as per directions of the Engineer in charge NOTE:- cost of fire seal strips, dash fastners are included in the item. Nothing extra shall be paid if size of any component of material exceeds the limit mentioned in the item.	36	Metre			
5.05	Providing and fixing ISI marked flush door shutters conforming to IS: 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 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.	270	sqm			

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5.06	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item) :					
a)	With float glass panes of 5.50 mm thickness	325	sqm			
5.07	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).	65	sqm			
5.08	Providing and fixing IS : 3564 marked Aluminium die cast body tubular type universal hydraulic door closer with necessary accessories and screws etc. complete.	84	each			
5.09	Providing and fixing aluminium sliding door bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with nuts and screws etc. complete:					
a)	250x16 mm	86	each			
5.10	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	104	each			
b)	150x10 mm	396	each			

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5.11	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. c.omplete :					
a)	125 mm	206	each			
b)	100 mm	396	each			
5.12	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	104	each			
5.13	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	1602	each			
5.14	Providing and fixing powder coated aluminium grills made out with special extruded sections fixed with suitable means approved and as directed by Engineer in Charge including all complete.	1320	kg			
5.15	Extra of providing vision panal not exceding 0.1sqm in all type of flush doors. (Cost of glass excluded) over all area of doors shutters to be measured.					
a)	Rectalgular of square	160	sqm			

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1	2	3	4	5	6	7
5.16	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 5 years warrantee.					
a)	Double Leaf	6	Each			
5.17	Providing and fixing of fire rated door closer tested in accordance with BS:476 Part 22 for fire rating) and BS EN 1154 with 10 year warranty.	6	Each			
5.18	Providing and fixing 2 hrs. fire rated mortice lock with lever handle tested in accordance with BS:476 Part 22 with 7 year warranty.	6	Each			
5.19	Providing and fixing stainless steel grade 304 D type pull handle with screws complete.	6	Each			
5.20	Supply and fixing of Fire Retardant board to be fixed at bottom with necessary screws etc. and filling of vermiculite based cementious type fire proof sealing system mixed with concrete of retrofit design for sealing of openings through floors shafts etc. duly tested and certified at CBRI, Roorkee as per IS : 1245 (1988) and other national and international standards. The Joints etc shall also be sealed with similar material.	1	sqm			
5.21	Providing and fixing 6 mm thick piroshield fire rated clear glass of approved make, of 120 minutes fire rating having a minimum 13 mm square electrically welded chemically treated steel wire mesh of dia 0.51 mm sandwiched in the centre during the continuous rolling process to be fixed in vision panel including cost of fire rated gasket channel and moulding/bedding all complete.	1	sqm			

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6.00	Steel Works					
6.01	Steel work welded in built up sections/ framed work including cutting ,hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.					
b)	In gratings, frames, guard bar, ladder, railings, brackets, gates,canopy and similar works.	1620	Kg			
6.02	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.	270	Kg			
6.03	Providing and fixing circular Hexagonal cast iron or M.S sheet box for ceiling fan clamp of internal dia 140mm, 73mm height, top lid of 1.5mm thick M.S. sheet with its top surface hacked for proper bonding , top lid shall be screwed into the cast iron / M.S. sheet box by means of 3.3mm dia. round headed screws, one lock at the corners. Clamp shall be made of 12mm dia M.S. bar.bento shape as per standad drawing	252	Each			
6.04	Supplying, Fabricating, Erecting & installation of M.S steel structure for Polycarbonate sheet / roofing consisting of various M.S structural members such as M.S tubuler sections, spacer frame /gurder /purlins of required size including the cost of gasket screws, nut bolts, rivets, welding ,cutting ,grinding etc. and other accesories as per architectural drawing for supporting Polycarbonate/sheeting all complete and as directed	2300	Kg			

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6.05	Providing & fixing in position SS Railing made out of 304 grade 16 SWG SS handrail -50 mm dia with SS end Cap and fixed into wall at end: Midrail -12mm dia X 3 Row 1st Balustrade 75mm X 2Nos. and other Balustrade -38 mm dia X 5 Steps per side with base plate of 5 mm with SS base cover and complete with all fittings as per design and diagram	20	Metre			
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.	20	sqm			
7.02	Providing and fixing glass strips in joints of <i>terrazo</i> / cement concrete floors.					
a)	40 mm wide and 4 mm thick.	80	Metre			
7.03	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning etc. complete on 20 mm thick bed of cement mortar 1:4 (1 cement : 4 coarse sand).					
a)	Medium shade using 50% white cement 50% Grey cement.	20	Sqm			
7.04	Marble stone flooring with 18mm thick marble stone (sample of marble shall be approved by Engineer-in-charge) over 20 mm (average) thick base of cement mortar 1:4 (1 cement: 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing complete with:					
a)	Raj Nagar White	90	sqm			
b)	Udaipur green marble	60	sqm			

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7.05	Marble stone tile work in skirting, risers of steps and dado (up to 2 m height) over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry @ 3.3 kg/sqm including pointing in white cement mixed with pigment to matching shade complete.					
a)	Marble Tile (polished) Rajnagar					
i)	8mm thick	70	sqm			
ii)	Green Marble	50	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.	1943	sqm			
7.07	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacture) 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 @ 3.3kgper sqm including pointing in white cement mixed with pigment of matching shade complete.	640	sqm			

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7.08	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.	160	sqm			

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7.09	Providing and laying polished vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete					
a)	Size of Tile 60x60 cm	1970	sqm			
7.10	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					
7.10a	Granite of any colour and shade					
i	Area of slab upto 0.50 sqm	25	sqm			
ii	Area of slab over 0.50 sqm.	50	sqm			
7.11	Extra for providing edge moulding to 18mm thick Granite stone counters, Vanities etc. including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.					
a)	Granite work.	50	metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
7.12	Kota stone slabs 25 mm thick in risers of steps, skirting. dado and pillar laid over cement mortar 1 : 3 (1 cement : 3 coarse sand)and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete					
a)	25 mm thick.	70	sqm			
	Total					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES - CIVIL, PHE, FIRE FIGHTING, HVAC, ELECTRICAL WORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.00	CEILING & ROOFING					
8.01	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of :					
i)	1st course of applying cement slurry @ 4.4 Kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface.					
ii)	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)	3rd course of applying blown or residual bitumen applied hot at 1.7 Kg. per sqm of area.					
iv)	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.)	225	sqm			
8.02	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.	70	Cum			

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.03	<p>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 conforming to IS : 2645 and approved by Engineer-in-charge to</p> <p>c) After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Charge :</p>					

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
a)	With average thickness of 120mm and minimum thickness at khurra as 65 mm.	1600	sqm			
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) (Framing to be paid separately)	76	Sqm			
Total						

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (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)	3000	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)	3900	sqm			
9.03	20 mm cement plaster of mix:					
a)	1:4 (1 cement: 4 fine sand)	3100	sqm			
9.04	6 mm cement plaster of mix:					
a)	1:3 (1 cement: 3 fine sand)	4100	sqm			
9.05	Extra for plastering exterior walls of height. more than 10 m from .ground level for every additional height of. 3 m or part thereof.	951	sqm			
9.06	Neat cement punning	105	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	10300	Sqm			
9.08	Distemping with oil bound washable distemper of approved brand and manufacture to give an even shade					
a)	New work (two or more coats) over and including priming coat with cement primer.	4400	sqm			
9.09	Finishing walls with textured exterior paint of required shade:					
a)	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including base coat of water proofing cement paint applied @ 2.20kg/10 sqm.	3050	sqm			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
10.00	MISCELLANEOUS					
10.01	Making plinth protection with 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	250	sqm			
10.02	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 cement and nails as directed.	665	sqm			
10.03	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 stone aggregate 10mm and down gauge) including finishing with cement mortar 1:3 (1 cement: 3 fine sand) as per standard design:					
a)	In 75x75mm deep chase	320	metre			
10.04	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1mx1mx400micron. finished with 12mm cement plaster 1:3 (1 cement: 3 coarse sand) and a coat of neat cement rounding the edge sand making and finishing the outlet complete	10	each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
10.05	Providing precast cement concrete Jali 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6mm nominal size) reinforced with 1.6 mm dia mild steel wire including centring and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3 (1 cement: 3 fine sand) etc. complete excluding plastering of the jambs, sills and soffits.					
a)	40 mm thick	10	Sqm			
10.06	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,					
a)	1:1½:3 (1 cement:1½ coarse sand:3 graded stone aggregate 20 mm nominal size).	5	Cum			
10.07	Stone Work Tile for wall lining upto 10 m height in the perimiter of window/door/ventilator openings including jambs/cills with special adheshive over 12 mm thick bed of cement mortar 1:3(1 cement:3 coarse sand) including pointing with white cement with an admixture pigment to match the stone shade					
	8 mm thick mirror polished and achne cut edge Rajnagar plain white marble	400	sqm			
10.08	Providing & fixing in position entrance door with framelss 12 mm thick toughened glass fixed with stanless steel patch fittings. The cost shall also include all necessary fittings such as floor spring, locking arrangement, SS handle of aprox 900 mm length etc to make the door complete in all respect.	12	sqm			

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1	2	3	4	5	6	7
	Total					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
11.00	ROAD WORK & DOVELOPEMENT					
11.01	Preparation of sub grade by excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and disposal of surplus earth lead upto 50 Metres.	800	SQM			
11.02	Supplying & stacking of graded stone aggregate at site of size range.					
a)	90 mm to 45 mm	130	CuM			
b)	63 mm to 45 mm	120	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 densitv.	160	Cum			
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).	76	Cum			
11.05	Providing and laying in position bitumen hot sealing compound for expansion joints etc					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
a)	Using grade 'A' sealing compound.	5200	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 coarse sand, filling the joints with coarse sand etc. all complete as per the direction of Engineer-in-charge.	315	SqM			
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).	14	Cum			
11.08	Supplying & stacking sludge or manure at site including royalty & carriage upto 1 km (sludge measured in stacks will be reduced by 8% for payment)	105	Cum			
11.09	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).	588	Cum			

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1	2	3	4	5	6	7

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
11.10	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).	600	Cum			
11.11	Rough dressing the trenched ground including breaking colds & uprooting weeds from the trenched are after 10 to 15 days of its flooding with water (including disposal of uprooted vegetation)	1000	Sqm			
11.12	Supply & sprinkling of Neem cake (at the rate of 6 kg per 100 sq. metres) and fine dressing the ground.	1000	Sqm.			
11.13	Supply & grassing with "Calcutta Doob" grass in rows 7.5cms, apart in either direction including fine dressing the ground to be levelled, supply and filling with good earth if needs, watering & maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds & fit for mowing. Anti-termite shall be applied with CHLOROPYRIPHOS (DURSBAN make or equivalent) at the rate of 2ml per litter in the first watering	1000	Sqm.			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (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.	40	Each			
	Sub Total					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
B	PLUMBING WORKS					
1.00	SANITARY FIXTURES					
1.01	Providing&fixing water closet squatting pan(Indian W.C.Pan)with 100 mm sand cast iron P or S strap,10 Litre low level white P.V.C flushing cistern with manually controled device(handle lever) conforming to IS:7231 with all fittings&fixture complete including cutting and making good the walls & floors wherever required.					
	White vitreous china orissa pattern W.C. pan of size 580 x 440 mm with integral type foot rests	6	Each			
1.02	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous flushing cistern and C.P. flush bend with fittings & C.I. brackets, 40mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required:-					
a)	W.C. pan with ISI black solid plastic seat & lid.	12	Each			
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.					

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
a)	One urinal basin with 5 litre white PVC automatic flushing cistern		Each			
a)	Range of three urinal basin with 10 litre white PVC automatic flushing cistern.		Each			
c)	Range of four urinal basin with 10 litre white PVC automatic flushing cistern.	3	Each			
1.04	Providing and fixing wash basin with C.I. brackets, 15mm C.P. brass pillar taps, 32mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required:					
a)	White vitreous china wash basin size 550x 400 mm with a pair of 15mm C.P. brass pillar tap.	27	Each			
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.		Each			
1.05	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required:					
a)	610x510 mm bowl depth 200 mm.(Without Drain Board)	1	Each			
1.06	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug 40 mm C.P. brass waste and 40 mm brass trap with necessary C.P. brass unions complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required:					
a)	Size 600x450x200 mm	10	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.07	Extra for using coloured W.C. pan instead of white W.C pan					
a)	Orissa pattern W.C. pan 580x440 mm	6	Each			
1.08	Extra for using coloured pedestal type W.C. pan (European type) with low level cistern of same colour instead of white vitreous china W.C. pan and cistern	12	Each			
1.09	Providing and fixing superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shape with 6 mm thick hard board backing.					
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.					
c)	Range of four urinal basin with 10 litre white PVC automatic flushing cistern.	3	Each			
1.04	Providing and fixing wash basin with C.I. brackets, 15mm C.P. brass pillar taps, 32mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required:					
a)	White vitreous china wash basin size 550x 400 mm with a pair of 15mm C.P. brass pillar tap.	27	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.05	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required:					
a)	610x510 mm bowl depth 200 mm.(Without Drain Board)	1	Each			
1.06	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug 40 mm C.P. brass waste and 40 mm brass trap with necessary C.P. brass unions complete including painting of fittings and brackets,cutting and making good the walls and floors wherever required:					
a)	Size 600x450x200 mm	10	Each			
1.07	Extra for using coloured W.C. pan instead of white W.C pan					
a)	Orissa pattern W.C. pan 580x440 mm		Each			
1.08	Extra for using coloured pedestal type W.C. pan (European type) with low level cistern of same colour instead of white vitreous china W.C. pan and cistern					
		12	Each			
1.09	Providing and fixing superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shape with 6 mm thick hard board backing.					
a)	Rectangular shape 453x357 mm	27	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.10	Providing and fixing 600x120x5 mm glass shelf with edges round of supported and anodised alominium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	27	Each			
1.11	Providing and fixing toilet paper holder .					
a)	Vitreous china	12	Each			
1.12	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour weighing not less than 105 gms.	27	Each			
1.13	Providing and fixing water Jet Nozzle with hose pipe and haif turn CP brass angle valve to be fitted with seat cover of european water closet complete in all respect of approved quality	12	Each			
1.14	Providing and fixing soap tray with CP brass lid and brackets fixed to wooden cleats with CP brass screws.	2	Each			
1.15	Providing and fixing CP brass towel rail size of 600x20 mm of approved make complete with CP brackets fixed to wooden cleats with CP brass screws	27	Each			
1.16	Providing and fixing brass coat hook of approved quality and make complete with material of fixing	8	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.17	Extra for providing and fixing white vitreous china oval shape wash basin in place of normal wash basin with CI/MS brackets painted white, 15 mm CP brass pillar taps, 32 mm CP brass waste of standard pattern, including painting of fittings and brackets cutting and making good the walls wherever required					
a)	Counter top oval shape wash basin size 550x470 mm with centre tap hole, single 15 mm CP brass swan neck type pillar tap	27	Each			
SUB TOTAL(SANITARY FIXTURES)						
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	250	Metre			
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	28	Each			
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	16	Each			
2.04	Providing and fixing plain bend of required degree.					
a)	100 mm					

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
a ii)	Sand cast iron S&S as per IS:3989	33	Each			
2.05	Providing and fixing heel rest sanitary bend.					
a)	100 mm dia					
a.ii)	sand cast iron S&S as per IS-3989	10	Each			
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	10	Each			
2.07	Providing and fixing single equal plain junction of required degree					
a)	100x100x100mm					
a.ii)	sand cast iron S&S as per IS-3989	20	Each			
2.08	Providing and fixing single unequal plain junction of required degree					
a)	100x100x75 mm					
a.ii)	sand cast iron S&S as per IS-3989	1	Each			
2.09	Providing and fixing door piece, insertion rubber washer 3mm thick, bolts and nuts complete					
a)	100 mm					
a.ii)	sand cast iron S&S as per IS-3989	6	Each			
2.10	Providing and fixing terminal guard.					
a)	100 mm	10	Each			
a.ii)	sand cast iron S&S as per IS-3989					
2.11	Providing and fixing collar					
a)	100 mm					
a.ii)	Sand cast iron S&S as per IS-3989	21	Each			
2.12	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:					
a)	100 mm	178	Each			

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
2.12(i)	Providing Drip seal joint of approved make for the sand cast iron/centrifugally cast iron pipes where the workability of lead joint can be effected due to space constraints.					
a)	100 mm	76	Each			
2.13	Providing and fixing M.S. stays and clamps for sand cast iron / centrifugally cast (spun) iron pipes of diameter :					
a)	100 mm	10	Each			
2.14	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	20	Each			
2.15	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	40	Metre			
2.16	Painting sand cast iron / centrifugally cast (spun) iron soil, waste vent pipes and fittings with paint of any colour such as chocolate, grey, or buff etc. over a coat of primer (of approved quality) for new work:					
a)	100 mm diameter pipe	187	Metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
2.17	Providing and fixing floor drain points formed out of 65x50 mm diacPVC/ GI elbow, including with 75mm dia Stainless Steel grating with frame, embedded in floor, all complete as directed.	6	Each			
2.18	Providing and fixing C.P. brass bottle trap for wash basin including CP waste fittings complete 32 mm dia complete in all respect of approved quality.	27	Each			
2.19	Providing and fixing C.P. brass bottle trap for sinks & urinal basin including CP waste fittings complete 40 mm dia complete in all respect of approved quality.	12	Each			
2.20.	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.					
	100 mm dia	65	Metre			
2.21	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 15 mm dia and 40mm long minimum & shall be capable of taking 6 tonnes load and also include the supporting angles 35x35x5 mm or 10 mm bar steel structures as per drawing.	25	Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
2.22	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 150/100/75 mm dia	6	Each			
2.23	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.	20	Each			
2.24	Providing and fixing G.I./CPVC pipes complete with G.I. /CPVCfittings 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.					
	32 mm dia nominal bore (Wash basin to floor trap/floor drain)	20	Metre			
	40 mm dia nominal bore (Sink,Urinal to floor trap)	22	Metre			
	50 mm dia nominal bore (Floor Drain to Floor Trap)	7	Metre			
SUB TOTAL(SOIL, WASTE AND VENT PIPES)						
3.00	WATER SUPPLY					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.01	Providing and fixing Chlorinated Polyvenyl Chloride(CPVC)pipes having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.0 m spacing.This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in charge.					
	Internal work – Exposed on wall					
a)	15 mm nominal outer dia pipes (SDR-11)	20	Metre			
b)	20 mm nominal outer dia pipes (SDR-11)	80	Metre			
c)	25 mm nominal outer dia pipes (SDR-11)	30	Metre			
d)	32 mm nominal outer dia pipes (SDR-11)	35	Metre			
e)	40 mm nominal outer dia pipes (SDR-11)	40	Metre			
f)	50 mm nominal outer dia pipes (SDR-11)	10	Metre			
g)	62.5 mm nominal outer dia pipes (SDR-11)		Metre			
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)	120	Metre			
b)	20 mm nominal outer dia pipes (SDR-11)	50	Metre			
c)	25 mm nominal outer dia pipes (SDR-11)	20	Metre			
d)	32 mm nominal outer dia pipes (SDR-11)	10	Metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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)	40 mm nominal outer dia pipes (SDR-11)	10	Metre			
b)	50 mm nominal outer dia pipes (SDR-11)	10	Metre			
3.04	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc.					
a)	80 mm dia nominal bore	20	Metre			
b)	100 mm dia nominal bore		Metre			
3.05	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including, cutting and threading the pipe etc. commplete including obtaining approval for connection from DJB/Municipal corporation :					
a)	50 to 80 mm nominal bore (SDR-11)	1	Each			
3.06	providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)					
a)	25 mm nominal bore	4	Each			
b)	32 mm nominal bore	8	Each			
c)	40 mm nominal bore	2	Each			
d)	50 mm nominal bore	2	Each			
e)	65 mm nominal bore		Each			
g)	80 mm nominal bore		Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES - CIVIL, PHE, FIRE FIGHTING, HVAC, ELECTRICAL WORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.07	Providing and fixing ball valve (brass) of approved quality, High or low pressure with plastic floats complete					
a)	20mm	1	Each			
3.08	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main					
a)	25 mm nominal bore	1	Each			
3.09	Providing and fixing unplasticised PVC connection pipe with brass unions:					
a)	45 cm length					
a i)	15 mm nominal bore	70	Each			
3.10	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet					
a)	150 mm diameter	4	Each			
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	1	Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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	2	each			
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	1	each			
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	20	Metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
b)	20 mm nominal outer dia pipes	80	Metre			
c)	25 mm nominal outer dia pipes	30	Metre			
d)	32 mm nominal outer dia pipes	35	Metre			
e)	40 mm nominal outer dia pipes	40	Metre			
f)	50 mm nominal outer dia pipes	10	Metre			
3.15	Painting G.I. /CPVC pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality.					
a)	40 mm diameter pipe	10	Metre			
b)	50 mm diameter pipe	10	Metre			
3.16	Providing and filling sand of grading zone V or coarser grade all-round the G.I./CPVC pipes in external work					
a)	40 mm diameter pipe	10	Metre			
b)	50 mm diameter pipe	10	Metre			
3.17	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI:12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank					
	Treated water Tank and Untreated water tank	10000	per litre			
3.18	Providing and fixing C.P brass bib cock of approved quality.					
a)	15 mm nominal bore	20	Each			
3.19	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms. (Marck, Jaquar, Jainco, Rybo)					
a)	15 mm nominal bore	10	Each			
3.20	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	70	Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.21	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.					
	15mm nominal bore.	8.0	Each			
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, insertions etc. (the tail plases if required will be paid seperatly)					
a)	80mm dia nominal bore	1	Each			
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.					
a)	40 mm nominal bore, 206 mm long weighin not less than 690 gms	1	Each			
b)	50 mm nominal bore, 242 mm long weighin not less than 1240 gms	1	Each			
3.24	Cutting holes upto 30x30 cm in walls including making good the same					
	with F.P.S bricks	20	Each			
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	25	Each			
3.26	Extra for providing wash basin mixer pillar tap in place of normal pillar tap		Each			
3.26	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.					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	15 mm diameter		4 Each			
	20 mm diameter		4 Each			
3.27	Providing and fixing mosquito proof coupling of approved Municipal design for scour and vent pipes for RCC overhead tanks complete in all respects					
	15 mm diameter		1 Each			
	20 mm diameter		2 Each			
	40 mm diameter		1 Each			
	50 mm diameter		1 Each			
	65 mm diameter		1 Each			
3.28	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		50 Each			
b)	32 mm to 50 mm diameter		30 Each			
3.29	Extra for providing and installing INFRA-RED controlled electrically operated (220V, AC mains) automatic flushing system of approved make instead of urinals with flushing cistern. The automatic flushing system shall comprising of :					
	Light sensing device fixed in recessed metallic box with tamper resistant stainless steel outercase Solenoid valve housed in a recessed metallic box with openable cover mounted at high level (at desired height from finished floor level) complete with interconnecting control wiring in recessed PVC conduit between solenoid valve and sensing unit, including cutting and making good the walls & floor complete and all necessary fittings to make it operational as directed		12 Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES - CIVIL, PHE, FIRE FIGHTING, HVAC, ELECTRICAL WORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.30	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	2	Each			
3.31	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	35 Litre Capacity	1	Each			
b)	25 Litre Capacity	4	Each			
3.32	Providing & fixing water storage cooler of approved make and brand with SS body having minimum flow rate of 40 ltrs. Per hour and storage capacity 80 ltrs. Complete in respects.(VOLTAS/ BLUE-STAR/ USHA SHRIRAM)	6	Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.33	Providing and fixing approved make & suitable model of R.O. plant 40ltrs. Per hour flow rate having capacity to treat the raw water having TDS 1200 ppm and not less than 40%. The treated water should have TDS less than 100 ppm and hardness less than 50 ppm. The operating voltage to 230 volt AC +/- 10% alongwith required capacity pump and solenoid valves, dry run protection of pump, automatic tank level control, inbuilt auto flush timer for periodic flushing of membranes, hydro pneumatic tank, over voltage and over current protection with switch mode power supply system complete in all respects including installation and fittings with the following provisions: (IONIEXCHANGE/ KENT/AQUAPROCESS,Pantair/Fontus)					
a)	(online instrumentation & display for TDS ,online antiscaling dosing provision)					
b)	10 micron polypropylene sediment pre filter					
c)	10 micron bacteriostatic activated carbon block on line micron filter with 5 micron rating					
d)	3 Nos. of reverse osmosis memberane with 0.0001 micron pore size energy saving poly amide type					
e)	UV lamp of minimum capacity 25 LPM and minimum lamp wattage 9W	6	Each			
SUB TOTAL(Water Supply)						

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
4.00	SEWARAGE & DRAINAGE					
4.01	Providing laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the pro-portion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete.					
a)	100 mm diameter	10	Metre			
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	20	Metre			
b)	150 mm diameter S.W. pipe/RCC NP2	125	Metre			
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	25	Metre			
b)	250 mm diameter s.W. pipe	100	Metre			
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	8	Each			
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					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
a)	150 mm dia R.C.c. pipe	150	Metre			
b)	250 mm dia R.C.C. pipe	100	Metre			
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	5	Each			
4.07	Extra depth for manholes					
a)	Size 90 x 80 cm					
a i)	With F.P.S. bricks class designation 75	1	Metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
4.08	Constructing brick masonry circular type manhole 0.91m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement :4 coarse sand), in side cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement: 3 coarse sand: 6 graded stone aggregate 40mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement all complete as per standard design:					
a)	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182kg., fixed in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately)					
a i)	With F.P.S. bricks class designation 75	3	Each			
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	1	Metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
4.10	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement: 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 mix (1 cement :3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominalsize) finished with a floating coat of neat cement complete as per standard design					
a)	1.68 m deep with SFRC cover and frame(heavy duty HD-20 grade designation) 560 mm internal diameter conforming to IS: 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominalsize) including centering shuttering all complete. (Excavation, foot rests and 12 mm tick cement plaster at the external surface shall be paid for separately)					
a.i)	With F.P.S. bricks with class designation 75	1	Each			
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	1	Metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
4.12	Providing and fixing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS: 10910 on 12 mm dia steel bar conforming to IS: 1786 having minimum cross section as 23 mm x 25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per specification	70	Each			
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	1	Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
4.14	Providing sand cast iron drop connection externally for 60 cm drop from branch sewer line to main sewer manhole including inspection and cleaning eye with chain and lid sand cast Iron drop pipe and bend encased all-round with cement concrete 1 :5:1 0 (1 cement:5 fine sand: 10 graded stone aggregate 40 mm nominal size) with all centering and shuttering required, cutting holes in walls and making good with brick work in cement mortar 1:4 (1 cement: 4 coarse sand) plastered with cement mortar 1:3 (1 cement: 3 coarse sand) on, inside of the manhole wall lead caulked joints between sand cast iron pipes and fittings, stiff cement mortar 1:1 (1 cement: 1 fine sand) joints between sand cast iron tee and S.W. pipe, making required channels complete as per standard design and specifications:					
a)	150 mm dia. sand cast iron drop connection	1	Each			
	Constructing brick masonry road gully chamber 50x45x60 cm with bricks of class designation 75 in cement mortar 1:4 (1 cement:4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design: With F.P.S. bricks	12	Each			
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	1	Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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	150	Metre			
SUB TOTAL(SEWERAGE AND DRAINAGE)						
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	50	cum			
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, not exceeding 80 mm dia but not exceeding 300 mm dia	250	metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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	15	cum			
SUB TOTAL(EARTH WORK)						
6	RAIN WATER PIPING					
6.01	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams	25	Each			
6.02	Providing and fixing rain water ,soil, waste and vent pipes.					
a)	100 mm dia.					
a i)	Centrifugally cast (spun) iron socketed pipe as per IS:3989	225	Metre			
c)	150 mm dia pipe as per IS:3989	100	Metre			
6.03	Providing and fixing M.S holder-bat clamps of approved design to Sand Cast iron/ cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) including cost of cutting holes and making good the walls etc.					
a)	for 100 mm dia. pipe	115	Each			
c)	for 150 mm dia pipe	50	Each			
6.04	Providing and fixing plain bend of required degree.					
a)	100 mm					
a ii)	Sand cast iron S&S as per IS:3989	25	Each			
c)	150 mm	10	Each			
6.05	Providing and fixing heel rest sanitary bend.					
a)	100 mm dia					
a.ii)	sand cast iron S&S as per IS-3989	25	Each			
c)	150 mm dia	10	Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
6.06	Providing and fixing collar					
a)	100 mm					
a.ii)	Sand cast iron S&S as per IS-3989	25	Each			
c)	150 mm	10	Each			
6.07	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:					
a)	100 mm	130	Each			
c)	150 mm	60	Each			
6.08	Painting sand cast iron / centrifugally cast (spun) iron soil, waste vent pipes and fittings with paint of any colour such as chocolate, grey, or buff etc. over a coat of primer (of approved quality) for new work:					
a)	100 mm diameter pipe	225	Metre			
c)	150 mm diameter pipe	100	Metre			
SUB TOTAL(Rain Water pipe & fitting)						
7.00	RAIN WATER HARVESTING(2 NOS.)					
7.01	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	2	Each			

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
7.02	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.					
	0-50m	40	Metre			
7.03	Extra for drilling in Ordinary Rock	10	Metre			
7.04	Extra for drilling in Hard Rock	10	Metre			
7.05	Providing and lowering of 200 mm dia uPVC blank/ slotted pipe with ribs, special fittings, jointing conforming to IS 12818 - 1992.	60	Metre			
7.06	Constructing bar screen / settling tank, of sizes 4500x2500 with suitable depth up to 2.0 m in 1: 4 Cement Mortar (one cement : 4 coarse sand) height as per site requirement, in brick masonry 350mm thick walls upto water level and 230mm thick walls above water level & upto ground level, including all excavation, 20 cm thick bed concrete in 1:4:8 (one cement 4 fine sand 8 stone aggregate 40 mm), cement plaster 1:3 (one cement :3 coarse sand) with a floating coat of neat cement as inside finish , top slab in RCC 1:2:4, including centring, shuttering and steel work, also providing and fixing D.I. manhole cover & frame of size 605mm x 450mm of weight not less than 38 kg (frame + cover) and cost of 100mm dia C.I. vent pipe with C.I. Ventilating Cowl and suitable wire mesh provision for inlet, 115mm baffle walls extending 2/3 the width spaced@500mm c/c including finishing with 1:3 cement plaster 15mm thick with floating coat of neat cement slurry , all complete in every respect as per drawing and as directed to suit site condition.	2	Each			

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	SUBTOTAL (RAIN WATER HARVESTING)					
8	SOLAR WATER HEATING SYSTEM & RECIRCULATION OF HOT WATER SYSTEM (1 Nos)					
8.01	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.					

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
e)	Electrical control panel, cabling from panel to pumps and electrical heaters shall also be provided					
f)	The solar collector shall be arranged on roof of building in such a way that shadow can be avoided and requisite number of MS support for collector/tanks of minimum 35x35x5 MS angle adequate for 150 Km/Hr wind pressure.					
g)	Solar water heating system based on Flat plat collector system technology with output capacity of as mentioned below with hot water at 60 degree centigrade having required Nos. solar collectors and required nos. of electric heating element of 3 KW each controlled by thermostat. as per complete item as per technical specification of make BHEL/TATA/EMMVEE. The system has to be installed by Manufacturers authorised distributors/approved specialised firms of Solar water heating of approved makeThe shop drawing of the systems shall be provided by the agency as per site condition obtain the proper efficiency The system shall be procured after obtaining the approval of shop drawings from HSCC / Engineer-in-charge.					
i)	Solar System of Capacity 1500 Litre/day (With minimum 12 nos of Collect) of 2.0 Sqm area	2	each			

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.02	Recirculation system (on return line) - Designing, Supply, Installation, Commissioning & Integration with Solar System of Recirculation System consisting of - Insulated Auxiliary Tank SS with epoxy paints (minimum capacity equal to 1.5 times the capacity of hot water piping network) and with Electrical Backup, Pump, of requisite capacity DTC, Sensor PT100, Control Panel wiring, RS 485 mod bus communication port for BMS as per technical specification, MS standard etc. (but does not include the return piping & fitting)	1	each			
8.03	Providing and fixing Polyethelene-Aluminium-Polyethelene (PE-AL-PE) Composite Pressure Pipes conforming to IS-15450 U.V. stabilized with carbon black having thermal stability for hot & cold water supply (KITEC/JINDAL/NEXGEN), capable to withstand temperature up to 80 degree centigrade including all special fittings of composite material (engineering plastic blend and brass inserts wherever required) e.g. elbows, tees, reducers, couplers & connectors etc. with clamps at 1.00 metre spacing. This includes testing of joints complete as per direction of the Engineer in charge. (Internal work Exposed on wall)					
a)	1216(16 mm OD) pipe	60	metre			
b)	1620(20 mm OD) pipe	30	metre			
c)	2025(25 mm OD) pipe	40	metre			
d)	2532(32 mm OD) pipe	15	metre			
e)	3240(40 mm OD) pipe	30	metre			

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.04	Providing and fixing Polyethelene-Aluminium-Polyethelene (PE-AL-PE) Composite Pressure Pipes confirming to IS-15450 U.V. stabilized with carbon black having thermal stability for hot & cold water supply (KITEC/JINDAL/NEXGEN), capable to withstand temperature up to 80 degree centigrade including all special fittings of composite material (engineering plastic blend and brass inserts wherever required) e.g. elbows, tees, reducers, couplers & connectors etc. with clamps at 1.00 metre spacing. This includes testing of joints complete as per direction of the Engineer in charge.(Concealed work including cutting chases and making good the wall etc.)					
a)	1216(16 mm OD) pipe	150	metre			
b)	1620(20 mm OD) pipe	70	metre			
c)	2025(25 mm OD) pipe	20	metre			
8.05	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):					
a)	25 mm nominal bore	4	each			
b)	32 mm nominal bore	3	each			
8.06	Providing & fixing 9 mm thick thermal insulation tubing of elastomeric flexible material having hermetic blistered closed cell structure of expanded synthetic rubber over pipes/ fitting as per manufacturer's specifications etc.complete.					
a)	15 mm dia to 25 mm dia	300	each			
b)	32 mm dia to 50 mm dia	20	each			
8.07	Providing and fixing gun metal ball valve of approved quality					
a)	15 mm nominal bore	5	each			
b)	20 mm nominal bore	3	each			

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.01	Heavy class G.I. pipes conforming to IS with accessories like tees, elbows, flanged joints, rubber insertion, nuts, bolts or welded joints including fixing the pipe with suitable flat iron strip clamps/brackets, structural members, dash fastener , cutting hole and chases in walls, floor, R.C.C. slab etc. and making good the same, including painting pipes and fittings with a primer coat of steel primer and two coats of postal red enamel paint etc. complete as required. (All the fitting i.e. tee /elbow, Valve shall be joint the pumps will flanged joints)					
a)	200 mm dia (with Flanged joints)		Metre			
b)	150 mm dia (with Flanged joints)	50.0	Metre			
e)	50 mm dia	20.0	Metre			
h	25 mm dia	10.0	Metre			
1.02	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.	8.0	Each			
1.03	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.	16.0	Each			
1.04	Providing and fixing Gunmetal branch pipe with 20mm dia nozzle conforming to IS:903. suitable for installation connections to hose coupling etc. as required.	8.0	Each			

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.05	Providing and fixing Fire hose cabinet with glazed door shutter and frame with hold fasts (frame fabricated from 40 x 40 x 5mm and shutter from angle) 2100 mm high x 1200 mm wide x 600mm deep with locking arrangement, 4mm thick glass with M.S. flats including all accessories, painting with one coat of steel primer and two coats of postal red enamel paint complete as per drawing and as directed. The words " hose cabinet" to be painted on the box complete in all respects.	8.0	Each			
1.06	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	12.0	Each			
1.07	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	6.0	Each			
1.08	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.					

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	36 Meter long 20 mm dia water hose Thermoplastic (Textile reinforced) Type - 2 as per IS : 12585					
	20 mm dia gun metal ball valve & nozzle.					
	Drum and brackets for fixing the equipments on wall.					
	Connection from riser with stop valve (gun metal) & M.S. Pipe	8.0	Each			
1.09	Supply, Installation, Testing and Commissioning of 100 mm dia Bourden type, Stainless Steel dial type Pressure Gauge including brass isolation valve and siphon pipe having caliberation of 0 - 16 Kg / cm ² .	8.0	Each			
1.10	Supplying and Fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926	8.0	Each			
1.11	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	2.0	Each			
1.12	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.	10000.0	Ltrs			

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.13	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	10.0	Each			
1.14	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	10.0	Each			
1.15	Providing and fixing 9 liters capacity fire extinguisher water type gas pressure conforming to IS marking, fixed to wall.	10.0	Each			
1.16	Providing and fixing ABC type fire extinguishers complete in all respects.					
a)	Capacity 5.0 Kg.	10.0	Each			
1.17	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	2.0	Each			
1.18	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).					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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 35m so as to ensure a minimum pressure of 3.0 kg/sqm at the highest and farthest out at the specified flow complete with necessary strainer with foot valve in suction side and pressure gauge on the delivery side including bypass arrangement for periodic testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.(Including taking necessary approval of complete fire fighting scheme from local fire authority before and after start of work) {Agency also has to submit characteristic curve of the pumps, model & other technical data for approval before placing the order}					
b	Squirrel cage AC induction motor suitable for operation of 415 V ,+/-10%, 3 phase 50 HZ, AC supply and of minimum 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	Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot mounting as required	2.0	set			
	Sub Total					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
D	AIR CONDITIONERS					
1.1	HI Wall Split Air Conditioner					
	Supply , installation , testing and commisioning of HI wall split air conditioner comprising of the following.					
	a) Outdoor condensing Units					
	b) Indoor Evaporative Units					
	c) Interconnecting Refrigerant and drain piping with insulation wherever required, refrigerant and oil. The unit shall include refrigerant piping, power cabling and drain piping.					
	c) Safety and operational controls					
	e) Hiwall splits shall be suitable for single phase power supply and complete with voltage stablizer.					
	f) Mounting arrangement and structural supports for outdoor unit are included.					
	g) The Units should have atleast 3 star rating from BEE					
1.1.1	Capacity : 1.5 TR	1	Nos.			
1.1.2	Capacity : 2 TR	2	Nos.			
1.2	Window Air Conditioner					
	Supply , installation , testing and commisioning of Window Acs complete with transformer, electrical cabling as required along with mounting arrangement,Voltage stablizer.Complete in all respect as per specifications.The Units should have atleast 3 star rating by BEE.					

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.2.1	Capacity : 1.5 TR	3	Nos.			
1.2.2	Capacity : 2 TR	1	Nos.			
3.0	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:					
3.1	225 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	2	Nos			
3.2	300 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	6	Nos			
3.3	450 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	2	Nos			
4.0	Axial Flow fans					
	Supply, installation, testing and commissioning of tube axial flow fans as shown in drawings, Each fan shall be direct driven.. Fan motor shall be suitable for 3 Phase, 415 +/- 10% V, 50Hz AC supply					
4.1	Duty: Lift well pressurisation					
4.1.1	Air Quantity : 2250 CFM Static Pressure : 20 mm wg	1	Nos.			
	Total for HVAC works					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
SUMMARY SHEET FOR HVAC Works BOQ OF NURSING COLLEGE						
S.No	Description of work			Amount in Figures(Rs)	Amount in Words (Rs)	
1	HVAC Works					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES - CIVIL, PHE, FIRE FIGHTING, HVAC, ELECTRICAL WORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	ELECTRICAL WORKS					
1.00	SUB HEAD 1 : MV PANELS					
1.01	MV PANELS					
	Supply, installation, testing and commissioning of LT Panel, cubicle type, totally enclosed, free standing type/ wall mounted, dust, damp and vermin proof panel made up of 14 SWG CRCA sheet, complete with aluminium busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, necessary interlocking, powder coat painted and having incoming and outgoing switchgears as mentioned below and complete as required.					
i	MV panel - Ground Floor :					
a)	INCOMER:					
	1 no. 400 Amps , 415 volts, 35KA (Isc), four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings (0.8 to 1.0 In)					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V digital voltmeter with selector switch.					
	1 No. 0 to 400 Amp digital ammeter with selector switch with 400/5A C.T.'s.					
	1 no. digital energy metre.					
b)	BUSBARS:					
	630 Amp TPN Aluminium busbars					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
c)	OUTGOING:					
i)	3 Nos . MCCB as per following details/ specification: 125 Amps,415 volts, TPN, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings (0.8 to 1.0 In) "ON" LED indicating lamp and 2A control SP MCB Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. Ampere Metre of suitable range with suitable set of CT's and ASS. 1 set of digital energy metre.					
ii)	4 Nos . MCCB as per following details/ specification: 63Amps,415 volts, TPN, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings (0.8 to 1.0 In) "ON" LED indicating lamp and 2A control SP MCB Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. Ampere Metre of suitable range with suitable set of CT's and ASS.					
iii)	3 No. 63 Amp 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker.					
iv)	3 No. 40 Amp 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker.					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	MV - Panel Ground Floor as mentioned above	1	Set			
ii	MV Panel- (First Floor & Second Floor)					
a)	INCOMER:					
	1 no. 125 Amps , 415 volts, 25KA (Isc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings (0.8 to 1.0 In)					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V digital voltmeter with selector switch.					
	1 No. 0 to 120 Amp digital ammeter with selector switch with 120/5A C.T.'s.					
	1 set of digital energy metre.					
b)	BUSBARS:					
	250 Amp TPN Aluminium busbars					
c)	OUTGOING:					
	3 nos 40 Amp 415 volts, 9 KA, Four Pole, Miniature circuit Breaker.					
	3 nos 63 Amp 415 volts, 9 KA, Four Pole, Miniature circuit Breaker.					
	MV Panel-First Floor & Second Floor as mentioned above	2	Set			
	TOTAL SUBHEAD: 1- MV PANEL					
	SUB HEAD-2: MCB DISTRIBUTION BOARDS.					
2.00	MCB DISTRIBUTION BOARD					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
2.01	Supplying, installation, testing and comissioning of following way, three phase and neutral, pre wired, double door MCB distribution board with incomers(RCCB + MCB) and out goings (MCB) as per drawings, 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 (Inclusive of RCCB & MCB).					
i	6 Way (8+18)	6	Each			
ii	8 Way (8+24)	6	Each			
	TOTAL SUBHEAD: 2- MCB DISTRIBUTION BOARD.					
3.00	SUB HEAD: 3 - WIRING					
3.01	WIRING					
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 ISI marked 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					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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.					
	ii) Two or more circuit can be drawn in the same conduit, however, all the circuits in the same conduit shall be on the same phase.					
	Point wiring as mentioned above	477	Point			
3.02						
i	Wiring for twin control light points with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable in ISI marked MS conduit (including supplying and recess laying of ISI marked 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 :					
	Two or more circuit can be drawn in the same conduit, however, all the circuits in the same conduit shall be on the same phase.					
	Wiring for twin control light points as mentioned above	16	Point			
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.	9	Point			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES - CIVIL, PHE, FIRE FIGHTING, HVAC, ELECTRICAL WORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.04	Wiring for 16 amp power plug with 2X4 sqmm PVC insulated, FRLS 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 2.5 sqmm PVC insulated, copper conductor, single core cable for loop earthing etc per technical specifications & as required. Directly from MCB-Distribution Board to the Socket Outlets	64	Point			
3.05	Wiring for 20 amp power plug with 2X6 sq.mm. PVC insulated, FRLS 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 2.5 sqmm PVC insulated, copper conductor, single core cable for loop earthing, as per technical specifications & as required.	15	Point			
3.06	Wiring for computer points (Three sockets & one switch) with 2.5 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.	57	Point			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES - CIVIL, PHE, FIRE FIGHTING, HVAC, ELECTRICAL WORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.07	Wiring for submain/ circuit wiring with following sizes of PVC insulated, FRLS copper conductor single core cable in surface/recessed ISI marked MS conduit(including and recess laying of ISI marked MS conduit) as required.					
i	2X2.5 Sqmm with 1 No. 2.5 sqmm PVC insulated, copper conductor for earthing for circuit wiring.	740	Metre			
ii	4X10 Sqmm with 2 nos 10 sq mm PVC insulated, FRLS copper conductor for earthing	480	Metre			
iii	4X16 Sqmm with 2 nos 16 sq mm PVC insulated, FRLS copper conductor for earthing.	480	Metre			
3.08	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing 3 pin 5/6 amps. modular socket outlet with shutters and 5/6 amps. modular type switch, base plate, modular cover plate, connections etc. and all civil works complete as required.	9	Each			
3.09	Supplying and fixing suitable module modular metal box on surface or in recess including providing and fixing 6 pin 15/16 A modular socket outlet with shutters and 15/16 A modular switch, base plate, modular cover plate, connections, etc. and all civil works complete as required.	64	Each			

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.10	Supply and fixing following 20 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with plugs) in a metal box with 20 SP MCB in a sheet steel cover on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	15	Each			
3.11	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing three nos 6 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)	50	Each			
3.12	Supplying, providing & fixing cordless musical bell, batteries etc of approved make complete as required.	10	Each			
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 high efficiency electronic ballast, starter, capacitor, tubes/lamps, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
i	1X28 watt box type flourescent light fixture (Philips TMS 122/128 HF or approved equivalent)	113	Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES - CIVIL, PHE, FIRE FIGHTING, HVAC, ELECTRICAL WORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
ii	1X36watt surface mounted flourescent light fixture with opal acrylic cover (Philips TCS 19/136 HPF or approved equivalent)	22	Each			
iii	1X 36 watt surface mounted mirror optics flourscent light fixture (Philips TCS605 1XTLD36W EBE M1or approved equivalent). (136SMO1)	15	Each			
iv	2X 36 watt surface mounted mirror optics (Philips TCS 605 2XTLD 36W EBE MI or approved equivalent).236smo1	75	Each			
v	2X 28 watt surface mounted mirror optics (Philips TCS 306 2XTL5 28W EBP or approved equivalent).236smo2	140	Each			
vi	2X 28 watt surface mounted mirror optics (Philips TCS 350 2XTL5 28W EBE C5 or approved equivalent).236smo3	102	Each			
4.02	Supply of following compact flourescent light fixture with electronic ballast, starter, capacitor, lamps, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
i	Surface mounted Batten holder (Plastic) with 13 watt CFL	5	Each			
ii	1x9 watt Bulk Head light fixture (Philips FXC 101 HPF or approved equivalent)	9	Each			
iii	2 x 18 watt CFL surface mounted fixture Down light fixture type 2 (GE: GE CFL C 2X18 DN FG S(Lento) or approved equivalent) DL1	22	Each			

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BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
iv	2X18 watt indoor surfaed mounted downlight luminaire with CFL & horizontal lamp position (GE GECFL C2X18 DN FG S HF with CFL DBX Lamp or approved equivalent)DL2	20	Each			
v	2X10 watt Mirror top (Decon 05UB or approved equivalent) Wtoilet	22	Each			
4.03	Supply of following ceiling fans complete with double ball bearing, motor, blades, downrod, canopies, capacitor, modular type electronic fan regulator, MS Fan Box with MS Hook etc. suitable for operation on 230 volts, 50 Hz., 1 phase, AC supply complete as required					
i	1200 mm sweep	192	Each			
ii	900 mm sweep	2	Each			
4.04	Supply of 1400 RPM, 225 mm heavy duty exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	14	Each			
4.05	Supply of 225 mm sweep, 1400 RPM, heavy duty 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.	5	Each			
4.06	Installation, testing and commissioning of prewired, flourescent fittings of all types, complete with all accessories and tube etc. directly on ceiling/wall, including connections with 1.5 sq.mm. PVC insulated, FRLS copper conductor, single core/ multi strand cable etc. as required.	467	Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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.	78	Each			
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 PVC insulated, copper conductor single core cable as required.	194	Each			
4.09	Installation, testing and commissioning of exhaust fan up to 300 mm sweep in the opening, including making the hole to suit the size of the above fan including , fixing of louvers/ shutters with frame making good the damages etc. as required.	14	Each			
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.	5	Each			
	TOTAL SUBHEAD 4: LIGHT FIXTURE & FANS					
	SUB HEAD 5: TELEPHONE SYSTEM					
5.00	TELEPHONE SYSTEM					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
5.01	Supply & laying two pair 0.5 Sq. mm solid, annealed bare copper conductor insulated with high density polythlene. The insulated cores twisted to from pairs, helically wrapped with polyester tape, over all insulation of FR PVC, unarmoured telephone cable in ISI marked MS conduit including providing & fixing of two module modular metal box on surface or 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)	20	Each			
ii	2 pair cord outlet (Jack Type)	12	Each			
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	50 Pair	1	Each			
iii	10 Pair	2	Each			
5.03	Providing & laying multi pair telephone cable jelly filled, PVC insulated & sheath 0.61mm dia annealed tinned copper conductor on surface including clamping & fixing , including connection in Tag blocks at both ends.					
i	10 Pair	65	Metre			
TOTAL SUBHEAD 5 : TELEPHONE SYSTEM						
SUB HEAD 7: LT CABLES						

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES - CIVIL, PHE, FIRE FIGHTING, HVAC, ELECTRICAL WORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
7.00	LT CABLES					
7.01	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.	200	Metre			
ii	3.5 Core 70 Sqmm.	50	Metre			
iii	3.5 Core 185 Sqmm.	500	Metre			
iv	2 Core 4 Sqmm.	110	Metre			
v	2 Core 6 Sqmm.	90	Metre			
vi	4 Core 10 Sqmm.	100	Metre			
7.02	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	200	Metre			
ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	50	Metre			
iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	500	Metre			
7.03	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	30	Metre			
ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	30	Metre			
iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	30	Metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
7.04	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	100	Metre			
ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	100	Metre			
iii	Size exceeding 120 sq.mm but not exceeding 240 sq.mm	100	Metre			
iv	Size exceeding 240 sq.mm but not exceeding 400 sq.mm	100	Metre			
7.05	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.	6	Each			
ii	3.5 Core 70 Sqmm.	4	Each			
iii	3.5 Core 185 Sqmm.	2	Each			
iv	2 Core 4 Sqmm.	10	Each			
v	2 Core 6 Sqmm.	15	Each			
vi	4 Core 10 Sqmm.	12	Each			
7.06	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	50	Metre			
ii	300 mm. width x 62.5 mm. depth x 2.0 mm. thickness	50	Metre			
iii	450 mm. width x 62.6 mm. depth x 2.0 mm. thickness	50	Metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	TOTAL SUB HEAD 7: LT CABLES					
	SUB HEAD 8: EARTHING SAFETY EQUIPMENT AND MISC. ITEMS					
8.00	EARTHING, SAFETY EQUIPMENTS AND MISC. ITEMS					
8.01	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	4	Set			
8.02	Extra for using charcoal and salt for GI or copper plate earth electrode as required.	4	Set			
8.03	Supplying and laying 25mmX5mm GI strip at 0.5 m below ground level as strip earth electrode, including soldering etc. as required.	200	Metre			
8.04	Providing and fixing 25mmX5mm GI strip on surface/on existing cable trench/RCC pipe or in recess for earth electrode as required.	100	Metre			
8.05	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	100 mm dia	20	Metre			
ii	150mm dia	20	Metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.06	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.	2	Each			
8.07	Supplying and laying of 1.1kV grade 1 metre wide anti skid chequered type rubber mat.	15	Metre			
8.08	Design, manufacture, supply and installation of Fire Buckets 13 litre capacity 4 Nos. duly filled with sand and GI pipe support stand for these buckets including painting etc. complete as required.	2	Set			
8.09	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.	2	Set			
8.10	Supplying and fixing CO2 type 9 ltrs capacity fire extinguishers as approved by ISI complete as required.	1	Set			
8.11	Supplying and fixing CO2 type 4.5 ltrs capacity fire extinguishers as approved by ISI complete as required.	2	Set			
8.12	Supplying and fixing DCP type 5 KG capacity fire extinguishers as approved by ISI complete as required.	3	Set			
8.13	Supplying, storing, handling and fixing in position First Aid Medical Box and an 'Artificial Respirator' complete as per tech. specifications as required.	1	Each			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.14	Providing & laying of 100 mm dia class B G.I. pipe underground/ surface as per site requirement including all accessories & excavation & back filling etc. complete as required	100	Metre			
	TOTAL SUB HEAD 8: EARTHING, SAFETY EQUIPMENT AND MISC. ITEMS					
9.00	SUB HEAD 9:CONDUITING FOR COMPUTER NETWORKING					
9.01	Supply and fixing of following sizes of steel conduit alongwith the accessories in recess (including supply & fixing of conduit with all accessories) 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	150	Metre			
ii)	25 mm dia	200	Metre			
9.02	Supplying and fixing 2 module modular metal box in recess with modular cover plate, blanking plates and all accessories complete as required	57	Each			
	TOTAL FOR SUBHEAD 9.00 CONDUITING FOR COMPUTER NETWORKING.					
	SUB HEAD 10: OUT DOOR LIGHTING					
10.00	OUTDOOR LIGHTING					
10.01	Supply, erection, testing and commissioning of external swaged steel tubular pole with following specifications & items :					
i)						

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
ii	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)					
iii	1X250 watts street light fixture with 250watts high pressure sodium vapour (HPSV) lamp complete with control gear, acrylic 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. (Phillips SRP 051 1xSON250W Acrylic cover or approved equivalent)					
iv	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					
v	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					
vi	Providing foundation including excavation, shuttering, alingment of poles, casting etc. including lean concrete at the bottom as per CPWD/ BIS specifications.					
vii	The above installations shall be completed including earthing as per CPWD specifications and as required	10	Set			
10.02	Supply, installation, testing and commissioning of external post top lantern with following accessories and complete as required :					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
i)	4m high (3.3m above ground) 50mm dia GI pole as approved, adopting socket at top for fixture mentioned below, base plate 300 x 300 x 6mm and provision for mounting junction box etc. - 1 set.					
ii)	Supply, installation, testing and commissioning of Post top lantern with 70W HPSV lamp (Philips SPC 106/70(l) HPF or equivalent) and its wiring with 2 x 2.5 sq.mm PVC insulated copper wire and 1.5 sqmm PVC insulated copper earth wire from control box - 1 set.					
iii)	Suitable size 20A DP MS Control box with 2 no. incoming and outgoings 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	5			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA						
BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS						
Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
10.03	Supply, installation, testing and commissioning of Post top lantern with 70W SON lamp (Philips HPS370 1XSON 70(E) 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	2	Each			
10.04	Supply, installation, testing and commissioning of bollard lamps 1X18 watts CFL (Philips HCS360 1XPL-C 18W Sonara bollard in gree color or equivalent) control box - 1 set.	10	Each			
10.05	Road Lighting Panel Supply, installation, testing and commissioning of following outdoor type with canopy, IP-54 protected M.V. cubicle type totally enclosed, free standing type, dust, damp and vermin proof, MV Panel, busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switchgears complete as required. INCOMER: 1 No. 63 Amp 415 volts, TPN Switch Disconnecter Fuse Unit with HRC Fuses 1 Set of phase indicating lamp with HRC fuses 1Set of timer and 100A TP contactor with nueutral link (for street lights control) BUSBARS: 100 Amp TPN Aluminium busbars OUTGOING:					

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	18 Nos. 16 Amp 415 volts, DP MCB					
	Road Lighting panel as mentioned above	1	Set			

PROJECT NAME: CONSTRUCTION OF PROPOSED NURSING COLLEGE, PATIALA

BILL OF QUANTITIES -CIVIL,PHE,FIRE FIGHTING,HVAC,ELECTRICALWORKS

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
10.06	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	15			
	TOTAL SUB HEAD -10.00 OUTDOOR LIGHTING					
	GRAND TOTAL FOR ALL ELECTRICAL WORKS					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (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	1200.00	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.	20.00	cum			
1.03	Extra for every additional lift of 1.5 m or part there of in.					
a)	All kinds of soil.					
i)	1.5m to 3.0m	10.00	cum			
1.04	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.	1075.00	cum			
1.05	Supplying and filling in plinth with river sand under floors including, watering. ramming consolidating and dressing complete.	140.00	cum			
1.06	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	20.00	100sqm			
Total						

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (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)	10.00	cum			
b)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	250.00	cum			
c)	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	40.00	cum			
2.02	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).	95.00	sqm			
2.03	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.	95.00	sqm			
2.04	Extra for providing and mixing water proofing material in cement concrete work @ 1 kg per 50kg of cement.	25.00	per 50 kg cement			
2.05	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)	30.00	cum			
	Total					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (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.	2000.00	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..	230.00	cum			
3.03	Deduct for using less cement than the quantity as provided in the item of batch mix concrete/RMC as arrived as per mix design.	20.00	Qtl			
3.04	Centering and shuttering including strutting, propping etc. and removal of form for:					
a)	Foundations, footings, bases of columns, etc. for mass concrete.	500.00	sqm			
b)	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	10.00	sqm			
c)	Suspended floors, roofs, landings, balconies and access platform.	3950.00	sqm			
d)	Shelves (Cast in situ)	50.00	sqm			
e)	lintels, beams, plinth beams. girders. bressumers and cantilevers.	3400.00	sqm			
f)	Columns, Pillars, Piers, Abutments, Posts and Struts.	2200.00	sqm			
g)	staircases (including landing).	180.00	sqm			
h)	Extra for shuttering in circular work					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
i)	Beams	10.00	sqm			
ii)	Column	10.00	sqm			
iii)	Slab	10.00	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.	220.00	sqm			
3.05	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc. including cost of decshuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured)					
a)	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured).	3950.00	sqm			
3.06	Reinforcement for R.C.C. work including straightening. cutting, bending, placing in position and binding all complete.					
a)	Thermo-Mechanically Treated bars	290.00	tonne			
Total						

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
4.00	BRICK WORK					
4.01	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in:					
a)	Cement mortar 1:6 (1 cement: 6 coarse sand)	90.00	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)	900.00	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)	20.00	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)	2500.00	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).	2500.00	sqm			
4.06	Extra for forming Cavity in cavity walls with necessary weep and vent holes including use of cores and cost of providing and fixing bitumastic coated M.S. ties 600 mm long of 25mmx3mm section at not less than 3 ties per sqm as per approved design.	10.00	sqm			
	Total					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
5.00	DOORS & WINDOWS					
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 PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to be paid for separately) :					
5.01.1	For fixed portion					
a)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	5000.00	kg			
5.01.2	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required (Fittings shall be paid for separately).					
a)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	800.00	kg			
5.02	Providing and fixing aluminium spacer frames to windows, ventilators with extruded built up standard tubular and other sections of approved make confirming to IS:733 and IS: 1285, fixed with rawl plugs , stainless steel screws or with expansion hold fasteners. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, stainless steel screws, etc all complete as per architectural drawings and as directed.	500.00	kg			

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
5.03	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 cladded 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.					
	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	33.00	sqm			

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
5.04	Providing and fixing door frames as per BS: 476 part 22, IS:3614 Part II as per the prototype certified by CBRI Roorkee made out of 2nd class C.P. Teak Wood frame of section 140x65mm for fire resistant doors of 120 minutes fire rating, with heat activated intumescent fire seal strips of size 20 x 4 mm(for smoke sealing) provided in grooves on all three sides of the frame with one coat of approved brand of fire retardant primer including two coats of fire retardant paint FR 881or equivalent un thinned on cleared hard wood surface of door frames (@3.5 sq.m. per litre per coat) including preperation of base surface as per recommendations of manufacturer to make the surface fire retardant, including fixing the frame with 8 nos. 100 mm long, 10 mm dia metal dash fastners complete as per directions of the Engineer in charge NOTE:- cost of fire seal strips, dash fastners are included in the item. Nothing extra shall be paid if size of any component of material exceeds the limit mentioned in the item.	60.00	Metre			
5.05	Providing and fixing ISI marked flush door shutters conforming to IS: 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 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.	400.00	sqm			
5.06	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item) :					
a)	With float glass panes of 5.50 mm thickness	185.00	sqm			

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
5.07	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).	37.00	sqm			
5.08	Providing and fixing IS : 3564 marked Aluminium die cast body tubular type universal hydraulic door closer with necessary accessories and screws etc. complete.	163.00	each			
5.09	Providing and fixing aluminium sliding door bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with nuts and screws etc. complete:					
a)	250x16 mm	163.00	each			
5.10	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	232.00	each			
b)	150x10 mm	270.00	each			
5.11	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. c.complete :					
a)	125 mm	464.00	each			
b)	100 mm	270.00	each			
5.12	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	232.00	each			

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
5.13	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	300.00	each			
5.14	Providing and fixing powder coated aluminium grills made out with special extruded sections fixed with suitable means approved and as directed by Engineer in Charge including all complete.	680.00	kg			
5.15	Extra of providing vision panel not exceeding 0.1sqm in all type of flush doors. (Cost of glass excluded) over all area of doors shutters to be measured.					
a)	Rectalgaluar of square	150.00	sqm			
5.16	Providing glass panes, with wooden fillets wherever necessary.					
a)	4mm thick Glass panes weighing 10 kg./sqm.	5.00	Sqm			
5.17	Providing, Fixing, Supply, Installation, and Commissioning of Fully Automatic Hermetically Seal Sliding Doors of size(1500mm x 2100mm) and doorframe of high quality anodised aluminium consisting of reinforced plasterboard panels faced with same laminate as the doors and the door panel of compact laminate vision panels (300x300mm) to be provided in the doors .The door moves on nylon wheels within a single piece aluminium extruded track for smooth sliding . Microprocessor based electronic automation unit (CE Marked) for controlling door movement with low noise level level motor.The acceleration and speed of the door can be adjusted .The controller will be capable of either being operated by elbow switches/foot switches,radar switch (touch less sensor).All doors will be able to be operated manually in the event of failure of the power supply or the automation unit	2.00	each			

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
5.18	Radarswitch - Touchless Sensor for opening and closing of Hermetically Sealed Sliding Door	4.00	each			
5.19	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 5 years warrantee.					
a)	Single Leaf	10.00	Each			
5.20	Providing and fixing of fire rated door closer tested in accordance with BS:476 Part 22 for fire rating) and BS EN 1154 with 10 year warranty.	10.00	Each			
5.21	Providing and fixing 2 hrs, fire rated mortice lock with lever handle tested in accordance with BS:476 Part 22.with 7 year warranty.	10.00	Each			
5.22	Providing and fixing stainless steel grade 304 D type pull handle with screws complete.	20.00	Each			
5.23	Supply and fixing of Fire Retardant board to be fixed at bottom with necessary screws etc. and filling of vermiculite based cementious type fire proof sealing system mixed with concrete of retrofit design for sealing of openings through floors shafts etc. duly tested and certified at CBRI, Roorkee as per IS : 1245 (1988) and other national and international standards. The Joints etc shall also be sealed with similar material.	1.00	sqm			
5.24	Providing and fixing 6 mm thick piroshield fire rated clear glass of approved make, of 120 minutes fire rating having a minimum 13 mm square electrically welded chemically treated steel wire mesh of dia 0.51 mm sandwiched in the centre during the continuous rolling process to be fixed in vision panel including cost of fire rated gasket channel and moulding/beading all complete	1.00	sqm			
Total						

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
6.00	Steel Works					
6.01	Steel work welded in built up sections/ framed work including cutting ,hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.					
a)	In gratings, frames, guard bar, ladder, railings, brackets, gates,canopy and similar works.	1550.00	Kg			
6.02	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railng and staircase railing including applying a priming coat of approved steel primer.					
a)	M.S. tube.	800.00	Kg			
6.03	Providing and fixing circular Hexagonal cast iron or M.S sheet box for ceiling fan clamp of internal dia 140mm, 73mm height, top lid of 1.5mm thick M.S. sheet with its top surface hacked for proper bonding , top lid shall be screwed into the cast iron / M.S. sheet box by means of 3.3mm dia. round headed screws, one lock at the corners. Clamp shall be made of 12mm dia M.S. bar.bento shape as per standad drawing.	233.00	Each			
6.04	Supplying, Fabricating, Erecting & installation of M.S steel structure for Polycarbonate sheet / roofing consisting of various M.S structural members such as M.S tubuler sections, spacer frame /gurder /purlins of required size including the cost of gasket screws, nut bolts, rivets, welding ,cutting ,grinding etc. and other accesories as per architectural drawing for supporting Polycarbonate/ sheeting all complete and as directed	5000.00	Kg			

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
6.05	Providing & fixing in position SS Railing at staircase made out of 304 grade 16 SWG SS handrail -50 mm dia with SS end Cap and fixed into wall at end: Midrail -12mm dia X 3 Row 1st Balustrade 75mm X 2Nos. and other Balustrade -38 mm dia X 5 Steps per side with base plate of 5 mm with SS base cover and complete with all fittings as per design and diagram	5.00	Metre			
Total						

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
7.00	Flooring					
7.01	Cement concrete flooring 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate) finised with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete.					
a)	40mm thick with 20mm nominal size stone aggregate.	10	sqm			
7.02	Providing and fixing glass strips in joints of <i>terrazo</i> / cement concrete floors.					
a)	40 mm wide and 4 mm thick.	25	Metre			
7.03	Cement Plaster in 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	180	metre			
7.04	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning etc. complete on 20 mm thick bed of cement mortar 1:4 (1 cement : 4 coarse sand).					
a)	Medium shade using 50% white cement 50% Grey cement.	350.00	Sqm			
7.05	Marble stone flooring with 18mm thick marble stone (sample of marble shall be approved by Engineer-in-charge) over 20 mm (average) thick base of cement mortar 1:4 (1 cement: 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing complete with:					
a)	Raj Nagar White	130.00	sqm			
b)	Udaipur green marble	90.00	sqm			
7.06	Marble stone tile work in skirting, risers of steps and dado (up to 2 m height) over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry @ 3.3 kg/sqm including pointing in white cement mixed with pigment to matching shade complete.					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
a)	8mm thick					
i)	Marble Tile (polished) Rajnagar	50.00	sqm			
ii)	Green Marble	50.00	sqm			
7.07	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.	2700.00	sqm			
7.08	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacture) 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 @ 3.3kgper sqm including pointing in white cement mixed with pigment of matching shade complete.	200.00	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.	335.00	sqm			
7.10	Providing and laying polished vitrified floor tiles in flooring and skirting different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete					
a)	Size of Tile 60x60 cm	690.00	sqm			

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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	50.00	sqm			
ii	Area of slab over 0.50 sqm.	50.00	sqm			
7.12	Extra for providing edge moulding to 18mm thick Granite stone counters, Vanities etc. including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.					
a)	Granite work.	80.00	metre			
7.13	Providing and laying 3mm thick epoxy resin based jointless anti static floor coating in three coats (primer coat, base, top coat (2mm thick)) preparation of cement concrete flooring including cutting of grooves, providing copper wiring, connections etc. for elimination of static charge between the equipment base and floor surface to ensure leakage resistance of 10^4 to 10^8 ohms in static decay test of 0.02sec., all complete as specified and as per the direction of Engineer-in-Charge.The work shall be carried out through specialised agency.	100.00	Sqm			
7.14	Kota stone slabs 25 mm thick in risers of steps, skirting. dado and pillar laid over cement mortar 1 : 3 (1 cement : 3 coarse sand)and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete					
a)	25 mm thick.	170.00	sqm			
Total						

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.00	CEILING & ROOFING					
8.01	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed pprtions of W.C., kitchen and the like consisting of :					
i)	1st course of applying cement slurry @ 4.4 Kg/sqm mixed with water proofing compound conforming to 18 2645 in recommended proportions including rounding off junction of vertical and horizontal surface.					
ii)	lInd 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)	llrd course of applying blown or residual bitumen applied hot at 1.7 Kg. per sqm of area.					
iv)	IVth course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet Should be 100 mm wide and pasted to each other with bitumen @ 1:7 Kg/sqm.)	450.00	sqm			
8.02	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.	150.00	Cum			

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.03	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 conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs					
	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.	1350.00	Sqm			

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.04	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					
	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.	150.00	sqm			

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.05	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 masonary/RCC work, at all heights including double heights, straight or curved etc. complete in all respect. (Plan Area shall be measured for the payment) (Framing to be paid seprately)	175.00	Sqm			
	Total					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (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)	3000.00	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)	4000.00	sqm			
9.03	20 mm cement plaster of mix:					
a)	1:4 (1 cement: 4 fine sand)	4800.00	sqm			
9.04	6 mm cement plaster of mix:					
a)	1:3 (1 cement: 3 fine sand)	4000.00	sqm			
9.05	Extra for plastering exterior walls of height. more than 10 m from .ground level for every additional height of. 3 m or part thereof.	700.00	sqm			
9.06	Neat cement punning	100.00	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	10000.00	Sqm			
9.08	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.	700.00	sqm			
9.09	Finishing walls with textured exterior paint of required shade:					
a)	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including base coat of water proofing cement paint applied @ 2.20kg/1 0 sqm.	3300.00	sqm			
9.10	Finishing walls with Acrylic Smooth exterior paint of required shade:					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
a)	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including base coat of water proofing cement paint applied @ 2.20 kg/10 sqm).	500.00	Sqm			
9.11	Painting with synthetic enamel paint of approved brand and manufacture of required color to give an even shade:					
a)	Two or more coats on new work with ready mixed alluminium primer of approved brand and manufacture on resious wood and plywood.	950.00	sqm			
9.12	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade:					
a)	Two or more coats on new work	10000.00	sqm			
9.13	Applying one coat of cement primer of approved brand and manufacture on wall surface:					
a)	Cement primer.	10000.00	sqm			
9.14	Pianting with epoxy paint 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.	300.00	sqm			
	Total					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
10.00	MISCELLANEOUS					
10.01	Making plinth protection with 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	170.00	sqm			
10.02	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 cement and nails as directed.	640.00	sqm			
10.03	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 stone aggregate 10mm and down gauge) including finishing with cement mortar 1:3 (1 cement: 3 fine sand) as per standard design:					
a)	In 75x75mm deep chase	700.00	metre			
10.04	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1mx1mx400micron. finished with 12mm cement plaster 1:3 (1 cement: 3 coarse sand) and a coat of neat cement rounding the edge sand making and finishing the outlet complete.	6.00	each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
10.05	Stone Work Tile for wall lining upto 10 m height in the perimeter of window/door/ventilator openings including jambs/cills with special adheshive over 12 mm thick bed of cement mortar 1:3(1 cement:3 coarse sand) including pointing with white cement with an admixture pigment to match the stone shade					
a)	8 mm thick mirror polished and achne cut edge Rajnagar plain white marble	500	sqm			
	Total					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
Name of Work:Detail Civil Bill of Quantity of Physiotherapy Workshop-- SUMMARY SHEET						
S.No.	Item	Amount in Figure(Rs)		Amount in Words(Rs)		
1	Earth Work					
2	Concrete Work					
3	Reinforced Cement Concrete					
4	Brick Work					
5	Doors & Windows					
6	Steel Works					
7	Flooring					
8.00	Ceiling & roofing					
9.00	Finishing					
10.00	Miscellaneous					
	TOTAL					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
B	Plumbing Works					
1.00	SANITARY FIXTURES					
1.01	Providing&fixing water closet squatting pan(Indian W.C.Pan)with 100 mm sand cast iron P or S strap,10 Litre low level white P.V.C flushing cistern with manually controled device(handle lever) conforming to IS:7231 with all fittings&fixture complete including cutting and making good the walls & floors wherever required.					
	White vitreous china orissa pattern W.C. pan of size 580 x 440 mm with integral type foot rests	12	Each			
1.02	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous flushing cistern and C.P. flush bend with fittings & C.I. brackets, 40mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required:					
a)	W.C. pan with ISI black solid plastic seat & lid.	30	Each			
1.03	Providing and fixing white vitreous China flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I. clamps complete, including painting or fittings and brackets, cutting and making good the walls and floors wherever required.					
a)	Range of three urinal basin with10 litre white PVC automatic flushing cistern.	3	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.04	Providing and fixing wash basin with C.I. brackets, 15mm C.P. brass pillar taps, 32mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required:					
a)	White vitreous china wash basin size 550x 400 mm with a pair of 15mm C.P. brass pillar tap.	48	Each			
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.	10	Each			
1.05	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required:					
a)	610x510 mm bowl depth 200 mm.(Without Drain Board)	3	Each			
1.06	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug 40 mm C.P. brass waste and 40 mm brass trap with necessary C.P. brass unions complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required:					
a)	Size 600x450x200 mm	10	Each			
1.07	Extra for using coloured W.C. pan instead of white W.C pan					
a)	Orissa pattern W.C. pan 580x440 mm	10	Each			
1.08	Extra for using coloured pedestal type W.C. pan (European type) with low level cistern of same colour instead of white vitreous china W.C. pan and cistern	12	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.09	Providing and fixing superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shape with 6 mm thick hard board backing.					
a)	Rectangular shape 453x357 mm	58	Each			
1.10	Providing and fixing 600x120x5 mm glass shelf with edges round of supported and anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	58	Each			
1.11	Providing and fixing toilet paper holder .					
a)	Vitreous china	30	Each			
1.12	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour weighing not less than 105 gms.	58	Each			
1.13	Providing and fixing water Jet Nozzle with hose pipe and haif turn CP brass angle valve to be fitted with seat cover of european water closet complete in all respect of approved quality	30	Each			
1.14	Providing and fixing soap tray with CP brass lid and brackets fixed to wooden cleats with CP brass screws.	27	Each			
1.15	Providing and fixing CP brass towel rail size of 600x20 mm of approved make complete with CP brackets fixed to wooden cleats with CP brass screws	58	Each			
1.16	Providing and fixing brass coat hook of approved quality and make complete with material of fixing	30	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.17	Extra for providing and fixing white vitreous china oval shape wash basin in place of normal wash basin with CI/MS brackets painted white, 15 mm CP brass pillar taps, 32 mm CP brass waste of standard pattern, including painting of fittings and brackets cutting and making good the walls wherever required					
a)	Counter top oval shape wash basin size 550x470 mm with centre tap hole, single 15 mm CP brass swan neck type pillar tap	48	Each			
1.18	Supply , installation, testing and commissioning of compact floor mounted pedestal base surgical scrub sink tailor made to suit the site available compatible with all the regular and standard plumbing system, with inbuilt geyser designed for use in operation theatre fabricated from 16 gauge 304 type stainless steel seamless welded, polished to satain finish including connecting to drainage and water points and making good cutting of walls and floor surface all complete and as directed					
	Tailor made surgical scrub sink (2 bay) Approximate size 1.4 mX0.54mX0.84m with 1 user elbow operated mixture tap, soap dispensers, drain outlet ,thermostatic control of water temperature	1	Each			
1.19	Providing and fixing stainless steel grab bar 20mm dia of required length with PVC cleats, C.P. brass screws etc. complete.	42	Each			
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.	3	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
2.00	SOIL, WASTE AND VENT PIPES					
2.01	Providing and fixing soil, waste and vent pipes.					
a)	100 mm dia.					
a i)	Centrifugally cast (spun) iron socketed pipe as per IS:3989	450	Metre			
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	56	Each			
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	27	Each			
2.04	Providing and fixing plain bend of required degree.					
a)	100 mm					
a ii)	Sand cast iron S&S as per IS:3989	68	Each			
2.05	Providing and fixing heel rest sanitary bend.					
a)	100 mm dia					
a.ii)	sand cast iron S&S as per IS-3989	15	Each			
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	30	Each			
2.07	Providing and fixing single equal plain junction of required degree					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
a)	100x100x100mm					
a.ii)	sand cast iron S&S as per IS-3989	50	Each			
2.08	Providing and fixing single unequal plain junction of required degree					
a)	100x100x75 mm					
a.ii)	sand cast iron S&S as per IS-3989	1	Each			
2.09	Providing and fixing door piece, insertion rubber washer 3mm thick, bolts and nuts complete					
a)	100 mm					
a.ii)	sand cast iron S&S as per IS-3989	18	Each			
2.10	Providing and fixing terminal guard.					
a)	100 mm	15	Each			
a.ii)	sand cast iron S&S as per IS-3989					
2.11	Providing and fixing collar					
a)	100 mm					
a.ii)	Sand cast iron S&S as per IS-3989	42	Each			
2.12	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:					
a)	100 mm	424	Each			
2.12(i)	Providing Drip seal joint of approved make for the sand cast iron/centrifugally cast iron pipes where the workability of lead joint can be effected due to space constraints.					
a)	100 mm	182	Each			
2.13	Providing and fixing M.S. stays and clamps for sand cast iron / centrifugally cast (spun) iron pipes of diameter :					
a)	100 mm	15	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
2.14	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	50	Each			
2.15	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	60	Metre			
2.16	Painting sand cast iron / centrifugally cast (spun) iron soil, waste vent pipes and fittings with paint of any colour such as chocolate, grey, or buff etc. over a coat of primer (of approved quality) for new work:					
a)	100 mm diameter pipe	313	Metre			
2.17	Providing and fixing floor drain points formed out of 65x50 mm diaPVC/ GI elbow, including with 75mm dia Stainless Steel grating with frame, embedded in floor, all complete as directed.	24	Each			
2.18	Providing and fixing C.P. brass bottle trap for wash basin including CP waste fittings complete 32 mm dia complete in all respect of approved quality.	58	Each			
2.19	Providing and fixing C.P. brass bottle trap for sinks & urinal basin including CP waste fittings complete 40 mm dia complete in all respect of approved quality.	9	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
2.20.	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. 100 mm dia	142	Metre			
2.21	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 15 mm dia and 40mm long minimum & shall be capable of taking 6 tonnes load and also include the supporting angles 35x35x5 mm or 10 mm bar steel structures as per drawing.	25	Each			
2.22	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 150/100/75 mm dia	18	Each			
2.23	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.	50	Each			
2.24	Providing and fixing G.I./CPVC pipes complete with G.I. /CPVCfittings 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.					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	32 mm dia nominal bore (Wash basin to floor trap/floor drain)	40	Metre			
	40 mm dia nominal bore (Sink,Urinal to floor trap)	16	Metre			
	50 mm dia nominal bore (Floor Drain to Floor Trap)	32	Metre			
SUB TOTAL(SOIL, WASTE AND VENT PIPES)						
3.00	WATER SUPPLY					
3.01	Providing and fixing Chlorinated Polyvenyl Chloride(CPVC)pipes having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.0 m spacing.This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in charge.					
	Internal work – Exposed on wall					
a)	15 mm nominal outer dia pipes (SDR-11)	30	Metre			
b)	20 mm nominal outer dia pipes (SDR-11)	120	Metre			
c)	25 mm nominal outer dia pipes (SDR-11)	70	Metre			
d)	32 mm nominal outer dia pipes (SDR-11)	90	Metre			
e)	40 mm nominal outer dia pipes (SDR-11)	60	Metre			
f)	50 mm nominal outer dia pipes (SDR-11)	20	Metre			
g)	62.5 mm nominal outer dia pipes (SDR-11)	20	Metre			
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)	180	Metre			
b)	20 mm nominal outer dia pipes (SDR-11)	70	Metre			

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
c)	25 mm nominal outer dia pipes (SDR-11)	30	Metre			
d)	32 mm nominal outer dia pipes (SDR-11)	40	Metre			
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)	40 mm nominal outer dia pipes (SDR-11)	10	Metre			
b)	50 mm nominal outer dia pipes (SDR-11)	10	Metre			
3.04	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc.					
a)	80 mm dia nominal bore	80	Metre			
b)	100 mm dia nominal bore	20	Metre			
3.05	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including, cutting and threading the pipe etc. commplete including obtaining approval for connection from DJB/Municipal corporation :					
a)	50 to 80 mm nominal bore (SDR-11)	1	Each			
3.06	providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)					
a)	25 mm nominal bore	6	Each			
b)	32 mm nominal bore	12	Each			
c)	40 mm nominal bore	3	Each			
d)	50 mm nominal bore	2	Each			
e)	65 mm nominal bore	2	Each			
g)	80 mm nominal bore	2	Each			

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.07	Providing and fixing ball valve (brass) of approved quality, High or low pressure with plastic floats complete					
a)	20mm	1	Each			
3.08	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main					
a)	25 mm nominal bore	1	Each			
3.09	Providing and fixing unplasticised PVC connection pipe with brass unions:					
a)	45 cm length					
a i)	15 mm nominal bore	140	Each			
3.10	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet					
a)	150 mm diameter	16	Each			
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	1	Each			

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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	2	each			
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	1	each			
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	30	Metre			
b)	20 mm nominal outer dia pipes	120	Metre			
c)	25 mm nominal outer dia pipes	70	Metre			
d)	32 mm nominal outer dia pipes	90	Metre			
e)	40 mm nominal outer dia pipes	60	Metre			
f)	50 mm nominal outer dia pipes	20	Metre			

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
g)	65 mm nominal outer dia pipes	20	Metre			
3.15	Painting G.I. /CPVC pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality.					
a)	40 mm diameter pipe	10	Metre			
b)	50 mm diameter pipe	10	Metre			
3.16	Providing and filling sand of grading zone V or coarser grade all-round the G.I./CPVC pipes in external work					
a)	40 mm diameter pipe	10	Metre			
b)	50 mm diameter pipe	10	Metre			
3.17	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI:12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank					
	Treated water Tank and Untreated water tank	15000	per litre			
3.18	Providing and fixing C.P brass bib cock of approved quality.					
a)	15 mm nominal bore	40	Each			
3.19	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms. (Marck, Jaquar, Jainco, Rybo)					
a)	15 mm nominal bore	40	Each			
3.20	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	140	Each			
3.21	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.					
	15mm nominal bore.	32.0	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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	1	Each			
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.					
a)	40 mm nominal bore, 206 mm long weighin not less than 690 gms	1	Each			
b)	50 mm nominal bore, 242 mm long weighin not less than 1240 gms	1	Each			
3.24	Cutting holes upto 30x30 cm in walls including making good the same					
	with F.P.S bricks	30	Each			
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	35	Each			
3.26	Extra for providing wash basin mixer pillar tap in place of normal pillar tap	10	Each			
3.26	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.					
	15 mm diameter	6	Each			
	20 mm diameter	6	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.27	Providing and fixing mosquito proof coupling of approved Municipal design for scour and vent pipes for RCC overhead tanks complete in all respects					
	15 mm diameter	1	Each			
	20 mm diameter	2	Each			
	40 mm diameter	1	Each			
	50 mm diameter	1	Each			
	65 mm diameter	1	Each			
3.28	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	100	Each			
b)	32 mm to 50 mm diameter	70	Each			
3.29	Extra for providing and installing INFRA-RED controlled electrically operated (220V, AC mains) automatic flushing system of approved make instead of urinals with flushing cistern. The automatic flushing system shall comprising of :					
	Light sensing device fixed in recessed metallic box with tamper resistant stainless steel outercase Solenoid valve housed in a recessed metallic box with openable cover mounted at high level (at desired height from finished floor level) complete with interconnecting control wiring in recessed PVC conduit between solenoid valve and sensing unit, including cutting and making good the walls & floor complete and all necessary fittings to make it operational as directed	9	Each			
3.31	Extra for in place of pillar trap in wash basin/scrub sink providing and installing INFRA-RED controlled electrically operated (220V, AC mains) automatic tap of approved make instead of pillar tap, comprising of :					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	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	10	Each			
3.32	Providing and fixing C.P. brass lab sink pillar tap with long elbow operating lever handle of approved model and make complete in all respect (EURO brass, Jaquar, Marc)	10	Each			
3.31	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.	8	Each			
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)	35 Litre Capacity	1	Each			
b)	25 Litre Capacity	16	Each			
3.33	Providing & fixing water storage cooler of approved make and brand with SS body having minimum flow rate of 40 ltrs. Per hour and storage capacity 80 ltrs. Complete in respects.(VOLTAS/ BLUE-STAR/ USHA SHRIRAM)	6	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.34	Providing and fixing approved make & suitable model of R.O. plant 40ltrs. Per hour flow rate having capacity to treat the raw water having TDS 1200 ppm and not less than 40%. The treated water should have TDS less than 100 ppm and hardness less than 50 ppm. The operating voltage to 230 volt AC +/- 10% alongwith required capacity pump and solenoid valves, dry run protection of pump, automatic tank level control, inbuilt auto flush timer for periodic flushing of membranes, hydro pneumatic tank, over voltage and over current protection with switch mode power supply system complete in all respects including installation and fittings with the following provisions: (IONIEXCHANGE/ KENT/AQUAPROCESS,Pantair/Fontus)					
a)	(online instrumentation & display for TDS ,online antiscaling dosing provision)					
b)	10 micron polypropylene sediment pre filter					
c)	10 micron bacteriostatic activated carbon block on line micron filter with 5 micron rating					
d)	3 Nos. of reverse osmosis memberane with 0.0001 micron pore size energy saving poly amide type					
e)	UV lamp of minimum capacity 25 LPM and minimum lamp wattage 9W	6	Each			
SUB TOTAL(Water Supply)						
4.00	SEWARAGE & DRAINAGE					
4.01	Providing laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the pro-portion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete.					
a)	100 mm diameter	20	Metre			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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	30	Metre			
b)	150 mm diameter S.W. pipe/RCC NP2	125	Metre			
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	50	Metre			
b)	250 mm diameter s.W. pipe	150	Metre			
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	12	Each			
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	175	Metre			
b)	250 mm dia R.C.C. pipe	150	Metre			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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	5	Each			
4.07	Extra depth for manholes					
a)	Size 90 x 80 cm					
a i)	With F.P.S. bricks class designation 75	1	Metre			
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:					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
a)	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182kg., fixed in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :					
a i)	With F.P.S. bricks class designation 75	3	Each			
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	1	Metre			
4.10	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement: 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 mix (1 cement :3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominalsize) finished with a floating coat of neat cement complete as per standard design.					
a)	1.68 m deep with SFRC cover and frame(heavy duty HD-20 grade designation) 560 mm internal diameter conforming to IS: 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominalsize) including centering shuttering all complete. (Excavation, foot rests and 12 mm tick cement plaster at the external surface shall be paid for separately)					
a.i)	With F.P.S. bricks with class designation 75	1	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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	1	Metre			
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.	80	Each			
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	1	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
4.14	Providing sand cast iron drop connection externally for 60 cm drop from branch sewer line to main sewer manhole including inspection and cleaning eye with chain and lid sand cast Iron drop pipe and bend encased all-round with cement concrete 1 :5:1 0 (1 cement:5 fine sand: 10 graded stone aggregate 40 mm nominal size) with all centering and shuttering required, cutting holes in walls and making good with brick work in cement mortar 1:4 (1 cement: 4 coarse sand) plastered with cement mortar 1:3 (1 cement: 3 coarse sand) on, inside of the manhole wall lead caulked joints between sand cast iron pipes and fittings, stiff cement mortar 1:1 (1 cement: 1 fine sand) joints between sand cast iron tee and S.W. pipe, making required channels complete as per standard design and specifications:					
a)	150 mm dia. sand cast iron drop connection	2	Each			
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:					
	With F.P.S. bricks	15	Each			
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	1	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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					
		175	Metre			
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	60	cum			
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, not exceeding 80 mm dia but not exceeding 300 mm dia	325	metre			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
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	20	cum			
6	RAIN WATER PIPING					
6.01	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams	35	Each			
6.02	Providing and fixing rain water ,soil, waste and vent pipes.					
a)	100 mm dia.					
a i)	Centrifugally cast (spun) iron socketed pipe as per IS:3989	275	Metre			
c)	150 mm dia pipe as per IS:3989	100	Metre			
6.03	Providing and fixing M.S holder-bat clamps of approved design to Sand Cast iron/ cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) including cost of cutting holes and making good the walls etc.					
a)	for 100 mm dia. pipe	160	Each			
c)	for 150 mm dia pipe	50	Each			
6.04	Providing and fixing plain bend of required degree.					
a)	100 mm					
a ii)	Sand cast iron S&S as per IS:3989	35	Each			
c)	150 mm	10	Each			
6.05	Providing and fixing heel rest sanitary bend.					
a)	100 mm dia					
a.ii)	sand cast iron S&S as per IS-3989	35	Each			
c)	150 mm dia	10	Each			
6.06	Providing and fixing collar					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
a)	100 mm					
a.ii)	Sand cast iron S&S as per IS-3989	35	Each			
c)	150 mm	10	Each			
6.07	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:					
a)	100 mm	170	Each			
c)	150 mm	60	Each			
6.08	Painting sand cast iron / centrifugally cast (spun) iron soil, waste vent pipes and fittings with paint of any colour such as chocolate, grey, or buff etc. over a coat of primer (of approved quality) for new work:					
a)	100 mm diameter pipe	275	Metre			
c)	150 mm diameter pipe	100	Metre			
7.00	RAIN WATER HARVESTING(2 NOS.)					
7.01	Designing and Constructing of percolation pit cum perforated well 3000mm. dia upto 4000mm deep, 230 mm thick brick masonry work alround 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	2	Each			
7.02	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.					
	0-50m	40	Metre			
7.03	Extra for drilling in Ordinary Rock	10	Metre			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
7.04	Extra for drilling in Hard Rock	10	Metre			
7.05	Providing and lowering of 200 mm dia uPVC blank/ slotted pipe with ribs, special fittings, jointing conforming to IS 12818 - 1992.	60	Metre			
7.06	Constructing bar screen / settling tank, of sizes 4500x2500 with suitable depth up to 2.0 m in 1: 4 Cement Mortar (one cement : 4 coarse sand) height as per site requirement, in brick masonry 350mm thick walls upto water level and 230mm thick walls above water level & upto ground level, including all excavation, 20 cm thick bed concrete in 1:4:8 (one cement 4 fine sand 8 stone aggregate 40 mm), cement plaster 1:3 (one cement :3 coarse sand) with a floating coat of neat cement as inside finish , top slab in RCC 1:2:4, including centring, shuttering and steel work, also providing and fixing D.I. manhole cover & frame of size 605mm x 450mm of weight not less than 38 kg (frame + cover) and cost of 100mm dia C.I. vent pipe with C.I. Ventilating Cowl and suitable wire mesh provision for inlet, 115mm baffle walls extending 2/3 the width spaced@500mm c/c including finishing with 1:3 cement plaster 15mm thick with floating coat of neat cement slurry , all complete in every respect as per drawing and as directed to suit site condition.	2	Each			
8	SOLAR WATER HEATING SYSTEM & RECIRCULATION OF HOT WATER SYSTEM (1 Nos)					
8.01	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					

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1	2	3	4	5	6	7
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					
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 pressure.					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
g)	Solar water heating system based on Flat plat collector system technology with output capacity of as mentioned below with hot water at 60 degree centigrade having required Nos. solar collectors and required nos. of electric heating element of 3 KW each controlled by thermostat. as per complete item as per technical specification of make BHEL/TATA/EMMVEE. The system has to be installed by Manufacturers authorised distributors/approved specialised firms of Solar water heating of approved makeThe shop drawing of the systems shall be provided by the agency as per site condition obtain the proper efficiency The system shall be procured after obtaining the approval of shop drawings from HSCC / Engineer-in-charge.					
i)	Solar System of Capacity 1500 Litre/day (With minimum 12 nos of Collect) of 2.0 Sqm area	4	each			
8.02	Recirculation system (on return line) -Designing, Supply, Installation, Commissioning & Integration with Solar System of Recirculation System consisting of - Insulated Auxiliary Tank SS with epoxy paints (minimum capacity equal to1.5 times the capacity of hot water piping network) and with Electrical Backup, Pump, of requisite capacity DTC, Sensor PT100, Control Panel wiring,RS 485 mod bus communication port for BMS as per technical specification, MS standand etc. (but does not include the return piping & fitting)	1	each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.03	Providing and fixing Polyethelene-Aluminium-Polyethelene (PE-AL-PE) Composite Pressure Pipes confirming to IS-15450 U.V. stabilized with carbon black having thermal stability for hot & cold water supply (KITEC/JINDAL/NEXGEN), capable to withstand temperature up to 80 degree centigrade including all special fittings of composite material (engineering plastic blend and brass inserts wherever required) e.g. elbows, tees, reducers, couplers & connectors etc. with clamps at 1.00 metre spacing. This includes testing of joints complete as per direction of the Engineer in charge. (Internal work-Exposed on wall)					
a)	1216(16 mm OD) pipe	80	metre			
b)	1620(20 mm OD) pipe	70	metre			
c)	2025(25 mm OD) pipe	80	metre			
d)	2532(32 mm OD) pipe	25	metre			
e)	3240(40 mm OD) pipe	70	metre			
8.04	Providing and fixing Polyethelene-Aluminium-Polyethelene (PE-AL-PE) Composite Pressure Pipes confirming to IS-15450 U.V. stabilized with carbon black having thermal stability for hot & cold water supply (KITEC/JINDAL/NEXGEN), capable to withstand temperature up to 80 degree centigrade including all special fittings of composite material (engineering plastic blend and brass inserts wherever required) e.g. elbows, tees, reducers, couplers & connectors etc. with clamps at 1.00 metre spacing. This includes testing of joints complete as per direction of the Engineer in charge.(Concealed work including cutting chases and making good the wall etc.)					
a)	1216(16 mm OD) pipe	250	metre			
b)	1620(20 mm OD) pipe	80	metre			
c)	2025(25 mm OD) pipe	40	metre			
8.05	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
a)	25 mm nominal bore	6	each			
b)	32 mm nominal bore	5	each			
8.06	Providing & fixing 9 mm thick thermal insulation tubing of elastomeric flexible material having hermetic blistered closed cell structure of expanded synthetic rubber over pipes/ fitting as per manufacturer's specifications etc.complete.					
a)	15 mm dia to 25 mm dia	600	each			
b)	32 mm dia to 50 mm dia	40	each			
8.07	Providing and fixing gun metal ball valve of approved quality					
a)	15 mm nominal bore	5	each			
b)	20 mm nominal bore	5	each			
	Total (B) PLUMBING WORKS					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
Name of work - Detail Plumbing Bill of Quantity ofPhysiotheraphy workshop,Patiala-SUMMARY SHEET						
S.No				Amount in Figures(Rs)	Amount in Words(Rs)	
A	INTERNAL PLUMBING					
1.00	SANITARY FIXTURES					
2.00	SOIL, WASTE AND VENTURES					
3.00	WATER SUPPLY					
4.00	SEWARAGE AND DRAINAGE					
5.00	EARTH WORK					
B	EXTERNAL PLUMBING					
6.00	EXTERNAL WATER SUPPLY					
7.00	RAIN WATER PIPING					
8.00	SOLAR WATER HEATING SYSTEM AND REGULATION OF HOT WATER SYSTEM					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
C	FIRE FIGHTING SYSTEM					
1.01	Providing and laying Double flanged (Screwed/Welded) centrifugally (spun) Ductile iron pipes of class K-9 conforming to IS: 8329					
1.01.1	150 mm dia Ductile Iron Double Flanged	300.0	Metre			
1.02	Providing & Laying D.I. Specials of class K-12 suitable for double flanged jointing/ mechanical jointing as per IS:9523					
1.02.1	Upto 600 mm dia	10.0	quintal			
1.03	Providing flangrd joints to double flanged C.I./D.I. pipes and specials including testing of joints .					
1.03.1	150 mm dia pipes	100.0	joints			
1.04	Excavating trenches of required width for pipes, cables etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5m includong getting out the excavated soil, and then returning the soil as required, inlayers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed within a lead of 50 m					
1.04.1	Pipes, cables etc exceeding 80 mm dia but not excedding 300 mm dia	300.0	Metre			
1.05	Providing, fixing jointing and testing of Heavy (class -C) G.I. pipes as per relevant IS :1239/4736 with special accessories like tees, elbow, gesket, flanges, flanged joints, rubber insertion nuts and bolts including earth work excavatin and trenching, wrapping pipekot 4mm thick 500mm width tar based plymaric corrosion protection tape or equivalent suitable to GI/ MS pipe line including applying uniform coat of cold pipekot primer complete 1 m below the ground level, refilling in layers not exeeding 20 cm in depth consolidated each deposited layer by ramming & watering complete in all respect as pe IS : 1022 (Under ground)					
a)	150 mm dia G.I. Pipe with flange joints (5.4 mm wall thickness)	60.0	Metre			

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1	2	3	4	5	6	7
b)	80 mm dia G.I. Pipe with flange joints	10.0	Metre			
1.06	Heavy class G.I. pipes conforming to IS with accessories like tees, elbows, flanged joints, rubber insertion, nuts, bolts or welded joints including fixing the pipe with suitable flat iron strip clamps/brackets, structural members, dash fastener , cutting hole and chases in walls, floor, R.C.C. slab etc. and making good the same, including painting pipes and fittings with a primer coat of steel primer and two coats of postal red enamel paint etc. complete as required. (All the fitting i.e. tee /elbow, Valve shall be joint the pumps will flanged joints)					
a)	200 mm dia (with Flanged joints)	10.0	Metre			
b)	150 mm dia (with Flanged joints)	100.0	Metre			
e)	50 mm dia	30.0	Metre			
h)	25 mm dia	20.0	Metre			
1.07	Providing and fixing Single headed hydrants flanged inlet with 63 mm female instantaneous outlet of gunmetal complete with male blank caps, chains conforming to IS:5290 type A with stainless steel orifice plate (if required) to keep the pressure not more than 3.5 kg/sq.cm at any point.	14.0	Each			
1.08	Providing 63mm dia 15 m long reinforced rubber lined hose pipe conforming to IS: 636-1992 Part-II with gunmetal male & female coupling wire wound with pipe as required.	16.0	Each			
1.09	Providing and fixing 63mm dia 15 m long canvas hose pipe complete with gunmetal male & female coupling wire wound with the pipe The pipe shall confirm to IS: 4927.	6.0	Each			
1. 10	Providing and fixing Gunmetal branch pipe with 20mm dia nozzle conforming to IS:903. suitable for installation connections to hose coupling etc. as required.	14.0	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.11	Providing and fixing Four way fire brigade connection housed in steel cabinet of size 900mm x 750mm x 400mm fabricated from 1.5mm thick M.S. sheet having lockable arrangement, openable glazed door with 4mm thick glass, including painting a coat of steel primer and two coats of postal red enamel paint, with necessary supports for the cabinet etc. with 150 mm dia. non return and butterfly valves complete in all respects.					
a)	4 Way - 150mm dia	1.0	Each			
1.12	Providing and fixing Set of "Siamese" quadraplet instantaneous fire brigade connections comprising of two gunmetal instantaneous male inlet coupling 63mm dia with plug and cap, chain bends, tees etc for inlet to the static tank.	1.0	Each			
1.13	Providing & Fixing 150 mm dia, 4 way suction coupling for firebrigade withdrawal of water from the fire tank	1.0	Each			
1.14	Providing and fixing Fire hose cabinet with glazed door shutter and frame with hold fasts (frame fabricated from 40 x 40 x 5mm and shutter from angle) 100 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.	8.0	Each			
1.15	Providing and fixing Weather proof standard stand post type hose cabinet (900mm x 750 mm x 400 mm) out door type made of 1.5mm thick M.S. sheet having central opening glazed door with 4mm thick glass suitable for accommodating hydrants, 2 Nos. canvas hose pipe and branch pipe including necessary locking arrangements, painting one coat of primer and two coats of postal red enamel paint.. The shutters are to be lockable type. The words " hose cabinet" to be painted on the box.	6.0	Each			

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1	2	3	4	5	6	7
1.16	Providing and fixing cast iron body IS: 10 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	10.0	Each			
b)	80 mm dia	2.0	Each			
1.17	Supplying, testing, installation & commissioning of pressure switches for pumps including necessary wiring upto the control panel.	4.0	Each			
1.18	Constructing masonry chamber 90x90x100 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement: 4 fine sand) for sluice valve, with C.I. surface box 100mm top diameter, 160mm bottom diameter and 180mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design.					
	with F.P.S. bricks	3.0	Each			
1.19	Supplying and Fixing First Aid Hose Reel , wall mounting swinging type complete with drum & bracket of MS construction, spray painted in Post office Red, conforming to IS 884/1995 with upto date amendments, complete with the following as required.					
	36 Meter long 20 mm dia water hose Thermoplastic (Textile reinforced) Type - 2 as per IS : 12585					
	20 mm dia gun metal ball valve & nozzle.					
	Drum and brackets for fixing the equipments on wall.					
	Connection from riser with stop valve (gun metal) & M.S. Pipe	8.0	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.20	Providing and fixing C.I. sluice valves (With cap) of approved quality complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) Class II					
a)	200 mm dia	2.0	Each			
b)	150 mm dia	4.0	Each			
1.21	Supply, Installation, Testing and Commissioning of 100 mm dia Bourden type, Stainless Steel dial type Pressure Gauge including brass isolation valve and siphon pipe having calibration of 0 - 16 Kg / cm ² .	10.0	Each			
1.22	Supplying and Fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926	8.0	Each			
1.23	Supplying and Fixing vane type waterflow switch with contacts suitable for installation on 50 mm to 150 mm dia pipeline for a service pressure upto 20 Kg/sq.cm.	8.0	Each			
1.24	Fabricating, Supplying, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header on the top of each riser fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve complete with suitable drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes					
a)	1.2 Metre high and 250 mm dia	2.0	Each			
1.25	Supply, Installation, Testing and Commissioning External Yard Hydrant Stand Post comprising of GI pipe 80 mm dia (heavy duty C class) from existing ringmain to about 1 meter above ground level and Single Headed Yard Hydrant Valve with 80 mm dia flanged inlet, instantaneous gunmetal coupling of 63 mm dia with cast iron wheel ISI marked, conforming to IS : 5290 (Type A), with ABS cap and chain etc.complete with all accessroies as required.	6.0	Each			

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1	2	3	4	5	6	7
1.26	Providing and placing on terrace polyethylene water storage tank ISI : 12701 MARKED indicating the BIS license No with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10000.0	Ltrs			
1.27	Supply, erection, testing & commissioning of exit glow sign board of size 200mm x 350 mm wall mounting signage consisting of photo luminescent coating on acrylic cover	10.0	Each			
1.28	Providing and fixing fire extinguisher of carbon dioxide type consisting of brand new high pressure steel cylinder bearing IS: 7285 mark and having the approval of controller of explosives Nagpur, wheel type valve bearing IS:3224 mark internal discharge tube, 1 meter long high pressure discharge hose, non conducting horn, suspension bracket, fully charged bearing IS: making fixed to wall as directed.					
a)	4.5kg capacity cylinder	10.0	Each			
1.29	Providing and fixing 9 liters capacity fire extinguisher water type gas pressure conforming to IS marking, fixed to wall.	10.0	Each			
1.30	Providing and fixing ABC type fire extinguishers complete in all respects.					
a)	Capacity 5.0 Kg.	10.0	Each			
1.31	Fabricating, Supplying, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header in pump house fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve, complete with drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes					
a)	2 Metre high and 450 mm dia suitable to operate Jockey Pump, Main Fire Pump & Diesel Engine Driven Fire Pump	1.0	Each			

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1	2	3	4	5	6	7
1.32	Providing and fixing C.I. non-return valve complete with gunmetal seat, bolts, nuts washer & rubber insertions as required conforming to IS:5312.					
a)	150 mm dia	4.0	Each			
b)	80 mm dia	2.0	Each			
1.33	Supplying, installing, testing and commissioning of electric driven fire pump suitable for automatic operation consisting of the following (as per CPWD specification Part V-1985 for Fire Fighting and its amendments) (For Hydrant system & Sprinkler system).					
a)	Fire pump with stainless steel impeller, CI casing, SS shaft & mechanical seal shall be horizontal split casing centrifugal suction type multistage having following capacity and head so as to ensure a minimum pressure of 3.0 kg per square cm. at the highest and farthest out let at the specified flow complete with necessary strainer / foot valve suction side and pressure gauge on the delivery side including by pass arrangement for periodical testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.					
b)	Squirrel cage type TEFC motor suitable for operation on 415V, 10%, 3 phases 50 Hz. system of suitable HP for the above pump with synchronous speed of 1500 RPM and flexible coupling. The pump motor should conform to IS: 325-1978.					
c)	Common bed plate fabricated from mild steel channel or cast iron type.					
d)	Suitable cement concrete pump foundation & vibration damping arrangement with cushy foot mounting as required.					
l)	Capacity 1620 LPM and Head 50 Metres	1.0	Set			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.34	Supplying, installing, testing and commissioning of diesel engine driven fire pump suitable for automatic operation consisting of the following (as per CPWD specifications PartV 1985.) (For Hydrant system & Sprinkler system).					
a)	Horizontal centrifugal type multi-stage, fire pump with stainless steel impeller CI casing, SS shaft & mechanical seal complete of following capacity and Head so as to ensure a minimum pressure of 3.0 kg per sq.cm. at the highest & farthest outlet at the specified flow, complete with necessary strainer pressure gauge on the delivery side etc. including by pass arrangement for periodical testing of the working of the pump set as required. The pump shall be provided with mechanical seals.					
b)	Water cooled cold starting type multi cylinder 4 stroke diesel engine, developing suitable BHP at 1500 RPM for the above pump set with automatic starting mechanism, cooling system shall be with radial cool engine, maintenance free batteries, battery charge unit, flexible coupling with the pump, common bed plate for mounting diesel engine fuel day tank fuel piping and pump and vibration damping arrangement by cushy foot mounting as required complete in all respects.					
c)	The engine shall be capable to drive the pump at 150% rated discharge at 65% head and shall be suitable for 10% overload capacity for one hour in any period of 12 hrs. continuous run.					
d)	Common bed plate fabricated from mild steel channel or cast iron type.					
e)	Isolation Valve					
f)	Suitable cement concrete pump foundation & vibration damping arrangement with cushy foot mounting as required.					
l)	Capacity 1620 LPM and Head 50 Metres	1.0	Set			

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1	2	3	4	5	6	7
1.35	Supplying, installation, testing and periodic commissioning of electric motor driven automatic pressurization pump set consisting of the following (as per specification) (For Hydrant system & Sprinkler system).					
a)	Centrifugal pump of 180 LPM capacity capable of building up pressure lost in any leakage in the system against atotal head (mentioned as under) complete with C.I. casing stainless steel impellor ; mechanical seal & S.S. shaft necessary strainer, pressure gauge on delivery side etc. including by-pass arrangement for testing of the working of the pumping set as required .					
b)	Squirrel cage A.C. induction motor suitable for operation on 415 V, 10% 3 phase 50 Hz. A.C. supply and of minimum 7.5 HP,1500 RPM, for the above pump with flexible coupling as per specification and conforming to IS: 325/ 1978 and shall be TEFC type only.					
c)	Common bed plate fabricated from mild steel channel or cast iron type.					
d)	Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot or similar mounting as per required.					
l)	Head - 50 Metres	1.0	set			
1. 36	Providing & fixing puddle flanged including 40 cm long GI pipe piece welded / threaded with MS plates 450x450x6mm thick with both end screwed / flanged					
a)	For 80 mm dia pipe	2.0	Each			
b)	for 150 mm dia pipe	6.0	Each			
c)	for 200 mm dia pipe	2.0	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
1.37	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).					
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 35m 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 fot 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 spwcification and conforming to IS 325-1978 and shall be TEFC type only with suitable DOL starter of required capacity & cable etc complete in all respect.					
c	Common base plate fabricated from mild steel channel ot castiron type					
d	Suitable cement concrete pump foundation with vibration damping arrangememnt with cushy foot mounting as required	2.0	set			
	FIRE PUMP PANEL					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	Supply, installation, testing and commissioning of M.V. cubicle type, front access, totally enclosed free standing type, Compartmentalised, dust, damp and vermin proof Motor Control Centre complete with busbars, M.V. danger notice plate, ammeter, voltmeter, selector switch, Relays, Starters, Single Phase Preventer, Pressure Sensor, indicating lamps, CT's, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, including interconnections of control cables from pressure Sensor to contactor of Jockey pump, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switchgears complete including RS 485 mod bus communication Port for BMS as per technical specification, as required.					
	INCOMER :					
	400 Amp 415 volts, 35 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 Set of phase indicating lamp with 2A SP control MCBs					
	1 No 0-400 A ampere meter with ASS & CT					
	1 No. 0-500 V volt meter with VSS & HRC fuse.					
	1 set of 400/5A CTs					
	BUSBARS :					
	600 Amp TPN busbars of aluminium					
	OUTGOINGS :					
1	1 Sets of following (For main Fire Pump)					
a)	1 No. 200 Amp. 415/500 volts,35 KA, three Pole, Moulded Case Circuit Breaker with variable current setting of 0.8 to 1.0					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
b)	1 No. 3 Phase, fully automatic star-delta starter of 90 HP with thermal overload relay, Timer, Push Buttons and Auto-manual selector switch etc complete as required.					
c)	Single Phase preventer					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
d)	1 No. 0-200 Amp. Ammeter with selector switch and CT's.					
e)	1 Set of phase indicating lamp with 2A SP control MCBs					
f)	Neon indicating Lamps for "ON" and "OFF" and "TRIP" indication with 2A SP control MCBs.					
2	2 Sets of following (For Teerace Pump)					
a)	1 No. 40 Amp. 415/500 volts,35 KA, three Pole, Moulded Case Circuit Breaker with variable current setting of 0.8 to 1.0					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
b)	1 No. 3 Phase, DOL starter of 7.5 HP with thermal overload relay, Push Buttons and Switches etc complete as required.					
c)	Single Phase preventer					
d)	1 No. 0-40 Amp. Ammeter with selector switch and set of CTs.					
e)	1 Set of phase indicating lamp with 2A SP control MCBs					
f)	Neon indicating Lamps for "ON" and "OFF" and "TRIP" indication with 2A SP control MCBs.					
3	2 Sets of following (For Jocky Pump)					
a)	1 No. 40 Amp. 415/500 volts,35 KA, three Pole, Moulded Case Circuit Breaker with variable current setting of 0.8 to 1.0					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
b)	1 No. 3 Phase, DOL starter of 7.5 HP with thermal overload relay, Push Buttons and Switches etc complete as required.					
c)	Single Phase preventer					
d)	1 No. 0-40 Amp. Ammeter with selector switch and set of CTs.					
e)	1 Set of phase indicating lamp with 2A SP control MCBs					
f)	Neon indicating Lamps for "ON" and "OFF" and "TRIP" indication with 2A SP control MCBs.					
4	2Set of following (in a separate cubicle)					
	Two no. Diesel engine auto starting kit with all necessary relay, controls, wiring etc to start 80 HP diesel engine when electrical driven fire pump fail to start.					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	Two no rectifier circuit, battery charger, batteries, DC Voltmeter, DC Ammeter etc.					
	ESDB-FIRE PUMP Panel as mentioned above	1.0	set			
	Sub Total (C) for Fire Fighting					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
SUMMARY SHEET FOR FIRE FIGHTING BOQ OFPhysiotherapy Workshop ,Patiala--Summary sheet						
S.No	Description of work			Amount in Figures(Rs)	Amount in Words (Rs)	
1	Fire Fighting					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
D	HVAC Works					
	Sub Head - A. Equipments					
1.0	AIR COOLED CHILLING UNITS.					
	Supply, installation, testing & commissioning of 27 TR (actual) capacity air cooled chilling units as specified and shown in equipment schedule complete as per specifications with.					
	a. Scroll Compressors with motor.					
	b. Drive package.					
	c. Mounting frames for all components					
	d. Aircooled condenser(s) with accessories.					
	e. Chiller(s) 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 , starter panel complete with all necessary switchgears and control complete as required					
	m. Necessary water drain & air purge valves wherever required					
	n. Necessary lubrication device as per specifications complete.					
	o. Microprocessor based control panel complete with accessories as per specifications. (1 Working +1 Stand by)	2	Nos			
2.0	WATER CIRCULATION PUMPS					
	Supply, installation, testing and commissioning of monobloc type chilled water recirculation pumps with bronze impeller and mechanical seal each capable of delivering specified flow rate complete with following as per specifications & schedule of equipments.					
	a. Pump with TEFC induction motor					
	b. Channel base with vibration isolators, coupling, coupling guard etc.					
	c. Pump insulation of chilled water pump, etc					
	d. 2 Nos.- 150 mm dia dial type pressure gauge					
	e. Pumps shall be suitable for 415V/3ph/ 50 Hz/AC power supply.					
	Rated capacity of each pump 69 USGPM at 16 m head chilled water pump. (1 Working+1 Stand by)	2	Nos			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
3.0	AIR HANDLING UNITS					
3.1	Supply, installation, testing and commissioning of Air Handling Units (double skin type) of horizontal type as specified & shown in schedule of equipment complete with the following :-					
	a. Fan Section and canvas connection with mixing box and thermal break profile as required. (double skin type)					
	b. Centrifugal blower					
	c. Coil section with cooling/heating 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. Drive motor, drive arrangement, guard etc.					
	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.					
3.1.1	AHU-1- 2700 cfm/6 RD Cooling Coil/125 mm static (with fine & hepa filters)	1	No.			
3.1.2	AHU-2- 2600 cfm/6 RD Cooling Coil/125 mm static (with fine & hepa filters)	1	No.			
3.1.3	AHU-3- 2200 cfm/4 RD Cooling Coil/80 mm static (with fine filters)	1	No.			
3.1.4	AHU-4- 4500 cfm/4 RD Cooling Coil/50 mm static	1	No.			
4.0	Hot Water Generator					
	Supply, installation, testing & commissioning of Hot Water Generator as per specifications.					
4.1	Capacity : 30 KW					
	Status : 1W					
	USGPM: 51					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	Temp IN/OUT : 46.6/ 48.8 Deg C	1	Nos.			
5.0	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 :					
5.1	65 mm dia	50	RM			
5.2	50 mm dia	25	RM			
5.3	40 mm dia	30	RM			
5.4	32 mm dia	40	RM			
5.5	25 mm dia	30	RM			
6.0	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:					
6.1	Butterfly valves :					
6.1.1	65 mm dia	8	Nos			
6.1.2	50 mm dia	3	Nos			
6.1.3	40 mm dia	4	Nos			
6.1.4	32 mm dia	2	Nos			
6.1.5	25 mm dia	2	Nos			
6.2	Balancing valves :					
6.2.1	65 mm dia	2	Nos			
6.2.2	50 mm dia	2	Nos			
6.2.3	40 mm dia	2	Nos			
6.2.4	32 mm dia	1	Nos			
6.2.5	25 mm dia	1	Nos			
6.3	Non return/Check valves :					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
6.3.1	65 mm dia	2	Nos			
6.4	Y- strainers with drain valve					
6.4.1	65 mm dia	2	Nos			
6.4.2	50 mm dia	2	Nos			
6.4.3	40 mm dia	2	Nos			
6.4.4	32 mm dia	1	Nos			
6.4.5	25 mm dia	1	Nos			
6.5	Supply, installation, testing and commissioning cooling thermostats for various Air Handling Units					
6.5.1	Proportional thermostats for Air Handling Units	4	Nos.			
7.0	DRAIN PIPING					
	Supply, laying/fixing, testing and commissioning of G.I. medium class ERW piping conforming 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.					
7.1.1	32 mm dia	10	RM			
7.1.2	25 mm dia	10	RM			
7.1.3	20 mm dia	10	RM			
8.0	MONSOON REHEATING ARRANGEMENT FOR AHUs					
	Supply, installation, testing & commissioning of monsoon reheating arrangements fixed in ducts/ plenums complete with strip heaters, fixing frame work, insulators, fire protection insulation in duct, controls such as heating thermostats, humidistats etc. The heaters banks shall be controlled by independent thermostats/ humidistats through electro magnetic type contactors and safety thermostats/ geyserstats as specified complete with wiring for interconnections with 1.5 sq.mm copper conductor multi core armoured cable. The heater capacity shall be as per schedule of equipment and specifications, drawing etc.					
8.1	3 KWx 2 banks	3	Nos.			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.2	Supplying, installation, testing and commissioning of Pan Type Humidifier made from minimum 2mm thick stainless steel sheet top closed and insulated with 50mm thick expanded polysterene (T.F. Quality) complete with incommining MCB, humidstate and control wiring. For OT's, ICU.					
8.2.1	Capacity 6 KW	3	Nos.			
9.0	AIR CONDITIONERS					
9.1	HI Wall Split Air Conditioner					
	Supply , installation , testing and commisioning of HI wall split air conditioner comprising of the following.					
	a) Outdoor condensing Units					
	b) Indoor Evaporative Units					
	c) Interconnecting Refrigerant and drain piping with insulation wherever required, refrigerant and oil. The unit shall include refrigerant piping, power cabling and drain piping.					
	c) Safety and operational controls					
	e) Hiwall splits shall be suitable for single phase power supply and complete with voltage stablizer.					
	f) Mounting arrangement and structural supports for outdoor unit are included.					
	g) The Units should have atleast 3 star rating from BEE					
9.1.1	Capacity : 1.5 TR	1	Nos.			
9.1.2	Capacity : 2 TR	2	Nos.			
9.2	Window Air Conditioner					
	Supply , installation , testing and commisioning of Window Acs complete with transformer, electrical cabling as required along with mounting arrangement,Voltage stablizer.Complete in all respect as per specifications.The Units should have atleast 3 star rating from BEE					
9.2.1	Capacity : 1.5 TR	3	Nos.			
9.2.2	Capacity : 2 TR	1	Nos.			
10.0	Propeller Fans					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	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:					
10.1	225 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	6	Nos			
10.2	300 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	6	Nos			
11.0	Axial Flow fans					
	Supply, installation, testing and commissioning of tube axial flow fans as shown in drawings, Each fan shall be direct driven.. Fan motor shall be suitable for 3 Phase, 415+/- 10% V, 50Hz AC supply					
11.1	Duty: Lift well pressurisation					
11.1.1	Air Quantity : 2250 CFM Static Pressure : 20 mm wg	1	Nos.			
11.1.2	Inline fan 400 cfm for OT exhaust	2	Nos			
11.1.3	Inline fan 300 cfm for scrub exhaust	1	Nos			
12.0	Expansion Tank					
	Supply, installation, testing and commissioning of PVC., expansion tank of capacity 500 litres made of PVC 2 layer sheet complete with 50 mm thick fire retardant type 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.	1	No.			
	Sub Head- B, Air Distribution					
13.0	DUCTING					
13.1	GSS DUCTING					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	Supply, installation, testing and balancing of G.S.S ducting of following thickness including necessary supports, hangers, nut bolts, gaskets, splitter dampers, vanes canvass connections etc. complete as per specifications & drawings:					
13.1.1	1.0 mm (20 G) GSS	20	Sqm			
13.1.2	0.80 mm (22 G) GSS	40	Sqm			
13.1.3	0.63 mm (24 G) GSS	80	Sqm			
13.2	ALUMINIUM DUCTING					
	Supply, fabrication, installation and testing of aluminium ducts in accordance with the approved shop floor drawing and specifications. Material should confirm to IS 737 latest edition.					
13.2.1	22 gauge	75	Sqm.			
13.2.2	20 gauge	20	Sqm.			
13.2.3	18 gauge	15	Sqm			
14.0	FIRE DAMPERS					
14.1	Supply, installation, testing and commissioning of fire dampers made out of GI sheet of at least 90 minutes fire rating complete with GI damper of required size, links, fusible links etc as per specifications and shop drawings.	3	Sqm			
15.0	CEILING DIFFUSERS					
15.1	Supply, Installation, testing and balancing of square/circular supply air diffusers of powder coated extruded aluminium construction with attached volume control dampers as per specs. and drawings.	2	Sqm			
15.2	Supply, installation, testing and balancing of square/circular return air diffusers of powder coated extruded aluminium construction without volume control dampers.	2	Sqm			
16.0	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.	3	Sqm			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
17.0	LAMINAR FLOW DIFFUSERS					
17.1	Providing & fixing of stainless steel plenum duly reinforced and made 100% air tight complete with 55% free perforated grilles(18 Gauge SS) at bottom for laminar flow in OTs. The plenum shall be insulated with 15 mm closed cell polyethylene insulation & shall be manufactured & installed by specialised agency as per designed to be approved by customer/Consultant Size: 900 x 600	24	Nos			
17.2	Providing & fixing of aluminium powder coated grilles with 60% face area. The grill shall be complete with damper & complete 25 mm thick aluminium filters	2	Sqm			
18.0	GRILLES					
	Supply, installation, testing and balancing of supply/return air grilles with/without volume control dampers of powder coated extruded aluminium construction suitable for installation in walls, false ceiling boxing etc as per specifications and drawings.					
18.1	Supply air grilles in single louvers with volume control dampers.	1	Sqm			
18.2	Return air grilles in single louvers without volume control dampers.	1	Sqm			
19.0	DUCTING INSULATION					
	Supply and fixing resin bonded fibre glass insulation on supply/return air ducts covered with polythene and finished as specified.					
19.1	25 mm thick insulation (for duct in AC area)	80	Sqm			
19.2	50 mm thick insulation (For duct in non AC area)	60	Sqm			
20.0	DUCT LINING					
	Supply and fixing resin bonded fibre glass hard board acoustic insulation in supply air ducting covered with tissue paper and perforated aluminium sheet as specified.	30	Sqm			
	SUB HEAD C. ELECTRICAL					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
21.0	MAIN AIR- CONDITIONING PANEL					
	Supply, installation, testing and commissioning of A/C panels 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 painting shall be done as per relevant IS codes as specified in the specifications. Adequate size cable alley shall be provided all round the panel and in the back for each cable bending and termination. The outgoing feeders inside the panel shall be connected through solid bus bar. Flexible cable links are not acceptable. Bus bars shall be provided with sleeves or heat resistant insulated paint. The panel shall be suitable for cable entry from top. The panel shall be fabricated after the approval of fabrication drawings. All the panels shall have minimum 20% spare capacity.					
	i) All doors to have pad locking and shrouding arrangement.					
	ii) All switches to be heavy duty type base mounted having operating handle.					
	INCOMER					
	1 No. 200A, 415/500V, 35 KA rupturing capacity, FP, Moulded Case Circuit Breaker with thermal magnetic release having variable current setting 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. 1 Set of Phase indicating lamps with HRC fuses 1 No. 0-315 Amps ammeter with selector switch and CT's .1 set of Volt meter with VSS and HRC fuse.					
	BUSBARS :					
	250 Amps TPN busbars of aluminium					
	OUTGOING					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	4set -125 A, 415 V , TP+NL MCCB, 25 KA ammeter with selector switch and CTs of suitable rating and ON OFF indication lamps for Water chilling machine and Hot water generator.(4 W)					
	2 sets-16 A 415 V TP+NL MCCB 10 KA, ammeter with selector switch and CTs of suitable rating ON OFF indication lamps and push buttons, SPP with 3 HP DOL starter for chilled water pumps .(2 W)					
	3 sets-32A FP MCCB 10 KA outgoing with ON/OFF indiacting lamps and push buttons complete for AHUs. (3W)					
	2 sets-16A FP MCCB 10 KA outgoing with ON/OFF indiacting lamps and push buttons complete for AHUs. (2W)					
	Complete as above	1	No			
22.0	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					
22.1	OUTGOING :					
	1 No. 16 Amps MCCB 10 KA for 3 HP Motor with suitable Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, ammeter with ASS and CTs for AHU motor as required.	2	Nos			
22.2	AHU STARTER PANEL for OTs					
	INCOMER					
	1 no. 63 A, FP MCCB 10 KA with					
	1 set phase indication lamps with control fuses.					
	1 no. voltmeter with VSS.					
	1 no. ammeter with ASS and CTs.					
	100 A TPN Aluminium conductor bus bar dully sleeved.					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	OUTGOINGS :					
	1 set - 32 A, 415 V TPN MCCB 10KA, single phase preventor, suitable starter for 5.0 HP motor with thermal overload protection and spare NO-NC contacts for interlocking, ON-OFF indication lamps with push button for AHU motor as required.					
	2 sets - 32 A, 415 V TPN MCCB 10 KA, contactors of suitable rating for each bank , ON-OFF indication lamps for winter humidifier and monsoon reheater.					
	1 set-16 A TPN MCCB 10 KA outgoing with ON/OFF indicating lamps and push buttons complete					
	Complete panel as above	2	Nos			
23.0	CABLE					
	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- 1laid underground/cable tray/on surface of wall/hume pipe etc. & termination with brass compression glands as required.					
23.1	3.5C x 95 sq.mm cable	100	Metre			
23.2	3.5Cx 25 sq.mm cable	50	Metre			
23.3	3 C X 10 sq. mm. Cable	60	Metre			
23.4	3 C X 6 sq. mm. Cable	50	Metre			
23.5	3 C X 4 sq. mm. Cable	60	Metre			
24.0	CABLE TRAYS					
	Supply & installation of following sizes of perforated MS cable trays including horizontal & vertical bends, reducers, tees, cross members and other accessories as required and duly supported from the ceiling/wall/floor with MS suspenders/supports and including painting etc. as required					
24.1	300 mm widthx50 mm deep x 2 mmthickness	20	Metre			
24.2	150 mm widthx50 mm deep x1.6 mmthickness	25	Metre			
25.0	EARTHING					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
25.1	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 locking arrangement and watering pipe etc. with charcoal or coke and salt complete as required	1	Set			
25.2	Providing & fixing GI earth strip 50mm x 6mm on surface or in recess for earth connections etc. as required	25	Metre			
25.3	Providing and fixing GI earth strip on walls/ trenches complete as per specifications and as required.					
25.3.1	25mm x 6mm	40	Metre			
26.0	Providing and fixing earth wire of complete as per specifications as required.					
26.1	6 SWG wire	25	Metre			
26.2	8 SWG wire	30	Metre			
27.0	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					
27.1	14 core cable	10	Metre			
27.2	10 core cable	25	Metre			
27.3	8 core cable	20	Metre			
27.4	6 core cable	50	Metre			
27.5	3 core cable	60	Metre			
28.0	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.					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	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 wiring with copper conductor PVC insulated multicore 2.5 sq.mm stranded cable (including supply of cable, tray, clamps etc) from various equipments in the A.C. plant room, AHU's to the control console panel as required.					
	COMPLETE PANEL AS ABOVE	1	Panel			
	Total for HVAC works					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
BOQ FOR THE ELECTRICAL WORKS OF PHYSIOTHERAPY WORKSHOP , PATIALA.						
ELECTRICAL WORKS						
1.00	SUB HEAD 1: MAIN LT PANEL					
1.01	MAIN LT PANEL (NORMAL)					
	Supply, installation, testing and commissioning of LT Panel, cubicle type, totally enclosed, free standing type, dust, damp and vermin proof Panel made up of 14 SWG CRCA sheet, complete with aluminium busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, necessary interlocking, powder coat painted and having incoming and outgoing switchgears as mentioned below and complete as required.					
	Note :					
	1. All relays to operate at 240Volts, Single phase, 50Hz., AC supply .					
A.	INCOMERS :					
	1 no. 630 Amps , 415 volts, 50KA (Isc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings (0.8 to 1.0 In)					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	1 No. 0 to 500 V digital voltmeter with selector switch.					
	1 No. 0 to 630 Amp digital ammeter with selector switch with 630/5A C.T.'s.					
	1 No. Digital Energy Metre					
B.	BUSBARS :					
	800 Amps Phase TPN busbars of aluminium.					
D.	OUTGOING.					
i)	1 Nos. MCCB as per following details / specifications:					
	400 Amp 415 volts, 35 KA (1cs) TPN 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 lamp with 2A control SP MCB to indicate OPEN, CLOSE, TRIP for MCCB.					
	1 set of 400/5-5 set of CT .					
	1 Set of digital Ameter with ASS.					
	1 set of digital energy metre.					
ii)	2 Nos. MCCB as per following details / specifications:					
	160 Amp 415 volts, 35 KA (1cs) TPN 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 lamp with 2A control SP MCB to indicate OPEN, CLOSE, TRIP for MCCB.					
	1 set of 160/5-5 set of CT.					
	1 Set of digital Ameter with ASS.					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	1 set of digital energy metre.					
iii)	1 Nos. MCCB as per following details / specifications:					
	125 Amp 415 volts, 50 KA (lcs) TPN 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 lamp with 2A control SP MCB to indicate OPEN, CLOSE, TRIP for MCCB.					
	1 set of 125/5-5 set of CT .					
	1 Set of digital Ameter with ASS.					
	1 set of digital energy metre.					
iv)	4 Nos. MCCB as per following details / specifications:					
	100 Amp 415 volts, 50 KA (lcs) TPN 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 lamp with 2A control SP MCB to indicate OPEN, CLOSE, TRIP for MCCB.					
	1 set of 100/5-5 set of CT.					
	1 Set of digital Ameter with ASS.					
	1 set of digital energy metre.					
v)	2 Nos. MCCB as per following details / specifications:					
	63 Amp 415 volts, 50 KA (lcs) TPN MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In.					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamp with 2A control SP MCB to indicate OPEN, CLOSE, TRIP for MCCB.					
	1 set of 60/5-5 set of CT.					
	1 Set of Ameter with ASS.					
	1 set of digital energy metre.					
vi)	ENCLOSURE :					
	Fabrication, PVC Sleeving, Control/Power Wiring and hardware					
	Interlocking between incoming breakers and buscouplers as per interlocking scheme with cabling, necessary hardware and auxiliary contacts					
	Main LT Panel (Normal) as mentioned above	1	Set			
1.02	MAIN LT PANEL (EMERGENCY)					
	Supply, installation, testing and commissioning of LT Panel, cubicle type, totally enclosed, free standing type, dust, damp and vermin proof Panel made up of 14 SWG CRCA sheet, complete with aluminium busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, necessary interlocking, powder coat painted and having incoming and outgoing switchgears as mentioned below and complete as required.					
	Note :					
	1. All relays to operate at 240Volts, Single phase, 50Hz., AC supply .					
A.	INCOMERS :					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	1 no. 320 Amps , 415 volts, 50KA (Isc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings (0.8 to 1.0 In)					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door 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 320/5A C.T.'s.					
	1 set of digital energy metre.					
B.	BUSBARS :					
	400 Amps Phase TPN busbars of aluminium.					
D.	OUTGOING.					
i)	1 Nos. MCCB as per following details / specifications:					
	200 Amp 415 volts, 35 KA (Ics) TPN 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 lamp with 2A control SP MCB to indicate OPEN, CLOSE, TRIP for MCCB.					
	1 set of 200/5-5 set of CT .					
	1 Set of digital Ameter with ASS.					
	1 set of digital energy metre.					
ii)	2 Nos. MCCB as per following details / specifications:					
	125 Amp 415 volts, 35 KA (Ics) TPN MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In.					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamp with 2A control SP MCB to indicate OPEN, CLOSE, TRIP for MCCB.					
	1 set of 125/5-5 set of CT .					
	1 Set of digital Ameter with ASS.					
	1 set of digital energy metre.					
iii)	7 Nos. MCCB as per following details / specifications:					
	63 Amp 415 volts, 50 KA (lcs) TPN 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 lamp with 2A control SP MCB to indicate OPEN, CLOSE, TRIP for MCCB.					
	1 set of 63/5-5 set of CT.					
	1 Set of digital Ameter with ASS.					
	1 set of digital energy metre.					
iv)	3 Nos. MCCB as per following details / specifications:					
	32 Amp 415 volts, 50 KA (lcs) TPN 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 lamp with 2A control SP MCB to indicate OPEN, CLOSE, TRIP for MCCB.					
	1 set of 32/5-5 set of CT .					
	1 Set of digital Ameter with ASS.					
	1 set of digital energy metre.					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
v)	ENCLOSURE :					
	Fabrication, PVC Sleeving, Control/Power Wiring and hardware					
	Interlocking between incoming breakers and buscouplers as per interlocking scheme with cabling, necessary hardware and auxiliary contacts					
	Main LT Panel (Emergency) as mentioned above	1	Set			
	TOTAL SUBHEAD 1: MAIN LT PANEL					
	SUB HEAD 2 : DG SETS					
2.00	DG Set and Accessories					
2.01	SOUND PROOF DG SETS OF 125 KVA					
	Supply, installation, testing and commissioning of sound proof (silent type) Diesel Generating set having 125 KVA Prime Power Ratings , 415 volt at 1500 RPM, 0.8 power factor at 415 V suitable for 50 Hz, 3 phase system & for 0.85 load factor , suitable bhp, water cooled type diesel engine- alternator set mounted on common base frame, return fuel cooler, battery & battery charger, Anti Vibration mounting pads, Engine alternator safeties, electronic governor including all accessories & their wiring as per technical specification. This includes the following:					
	Supplying and fixing of suitable sizes High class MS pipe for DG exhaust complete with bends, elbow, flanges etc including silencer and catalytic convertor exhaust pipe length above the building top as per pollution control board norms and as required.					
	Supply and fixing of 50mm thick compressed mineral wool insulation (Rock wool) for D.G. exhaust pipe with 22 gauge aluminium sheet cladding etc. as required for the under mentioned dia pipe.					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	Supply, installation, testing and commissioning of suitable size fuel pipe for connecting diesel engine to individual day service tank including supply and fixing of required valves & filters etc. as required.					
	Fabrication of supports for exhaust pipe, fuel pipe or for any other purpose out of suitable M.S. structural steel including supplying and applying of enamel paint of approved shade after one coat of steel primer of reputed company.					
	Supplying and fixing of suitable capacity cable adapter box for alternator.					
	Providing and fixing oil tank of 990 litres capacity complete with suitable M.S. fabricated MS stand oil level indicator gauge tank and stand duly painted, complete with float switches etc. as required.					
	Factory assembled Sound proof Canopy as per pollution control board requirement to achieve noise level desired during night condition, with base frame, doors, inspection window, fresh air supply fans, light fixtures for illumination with switch, two no. 15A power sockets, wiring for light fixtures and power sockets, etc.					
	Any other item required for completion of system above (D.G. set)					
	DG Set (125 KVA) as mentioned above.					
	DG AMF PANEL					
	Supply, installation, testing and commissioning of DG , cubicle type, totally enclosed, free standing type, dust, damp and vermin proof Panel made up of 14 SWG CRCA sheet, complete with aluminium busbars, M.V. danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, powder coat painted and having incoming and outgoing switchgears as mentioned below and complete as required.					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	Note :					
	1. All relays to operate at 240Volts, Single phase, 50Hz., AC supply .					
	2. Panel shall be suitable for manual and automatic operation (AMF) and shall be complete as required.					
	One no. 320 A auto change over switch for changeover between State Electricity Board power & DG set power including by pass facility as approved by the Engineer In charge.					
	1 No.MCCB as per following details/ specification:					
	320 Amp 415 volts, 35 KA (Ics) FP MCCB with microprocessor based over load earth fault short circuit release with advance					
	neutral protection having variable current settings.					
	"ON" LED indicating lamp and 2A control SP MCB					
	Extended rotary operating mechanism					
	Digital energy meter with one set of suitable CTs, CT shorting links.					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	Digital Volt meter with VSS & HRC fuse					
	Digital multifunction meter to show, KWH, KVAH, P.F.and					
	frequency meter one set of suitable CTs, CT shorting links.					
	PROTECTION AND AMF COMPONENTS for above mentioned DG set.					
	Over Voltage relay					
	Under Voltage relay					
	Battery charger (with trickle and boost charging).					
	Digital voltmeter and ammeter.					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	Digital ammeter.					
	8 window Alarm annunciator with separate hooter, accept, reset and rest push button.					
	Hooter.					
	Engine Cranking Relay.					
	Main supply voltage monitor, alternator voltmeter monitor and Engine Starting Relays.					
	Auxillary relays, timer, push button and control fuses.					
	Phase sequence relay					
	ENCLOSURE :					
	Fabrication, PVC Sleeving, Control/Power Wiring and necessary electrical/ mechanical interlocking etc any other item required for proper functioning of the system complete as required.					
	DG SET WITH AMF PANEL as mentioned above	1	Set			
	TOTAL SUBHEAD 2: DG SETS					
3.00	SUB HEAD 3 : MV PANELS					
3.01	MV PANELS					
	Supply, installation, testing and commissioning of following: M.V. cubicle type totally enclosed, wall mounted type, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, powder coat painted and having following incoming and outgoing switchgears complete as required. Panel shall have IP-42 protection.					
i	MV panel - First Floor(Normal) :					
a)	INCOMER:					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	1 no. 125 Amps , 415 volts, 35KA (Isc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings (0.8 to 1.0 In)					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V voltmeter with selector switch.					
	1 No. 0 to 125 Amp ammeter with selector switch with 125/5A C.T.'s.					
b)	BUSBARS:					
	160 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i	4 No. 63 Amp 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker.					
	MV - Panel First Floor (Normal) as mentioned above	1	Set			
ii	MV - Panel First Floor (Emergency)					
a)	INCOMER:					
	1 no. 63 Amps , 415 volts, 35KA (Isc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings (0.8 to 1.0 In)					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V voltmeter with selector switch.					
	1 No. 0 to 63 Amp ammeter with selector switch with 63/5A C.T.'s.					
b)	BUSBARS:					
	100 Amp TPN Aluminium busbars					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
c)	OUTGOING:					
i	4 No. 32 Amp 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker.					
	MV - Panel First Floor(Emergency) as mentioned above	1	Set			
iii	MV Panel- Second Floor (Normal)					
a)	INCOMER:					
	1 no. 160 Amps , 415 volts, 35KA (Isc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings (0.8 to 1.0 In)					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V voltmeter with selector switch.					
	1 No. 0 to 160 Amp ammeter with selector switch with 160/5A C.T.'s.					
b)	BUSBARS:					
	250 Amp TPN Aluminium busbars					
c)	OUTGOING:					
i)	8 nos 63 Amp 415 volts, 9 KA, Four Pole, Miniature circuit Breaker.					
	MV Panel-Second Floor (Normal) as mentioned above	1	Set			
iv	MV Panel-Second Floor (Emergency)					
a)	INCOMER:					
	1 no. 125 Amps , 415 volts, 25KA (Isc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings (0.8 to 1.0 In)					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	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 voltmeter with selector switch.					
	1 No. 0 to 125 Amp ammeter with selector switch with 125/5A C.T.'s.					
b)	BUSBARS: 150 Amp TPN Aluminium busbars					
c)	OUTGOING: 6 No.63 Amp,9 KA, Four Pole, Miniature circuit Breaker. 4 No.32 Amp,9 KA, Four Pole, Miniature circuit Breaker.					
	MV Panel-Second Floor(Emergency) as mentioned above	1	Set			
v	UPS Panel					
a)	INCOMER: 1 no. 100 Amps , 10 KA, DP, Miniature circuit breaker (MCB)					
	1 No. 0 to 250 V voltmeter with selector switch.					
	1 No. 0 to 100 Amp ammeter with selector switch with 100/5A C.T.'s.					
b)	BUSBARS: 125 Amp DP Aluminium busbars					
c)	OUTGOING: 03 No 63 Amp, 9 KA, Four pole, Miniature circuit Breaker.					
	UPS Panel as mentioned above	1	Set			
	TOTAL SUB HEAD 3 : MV PANELS					
	SUB HEAD 4 : UPS SYSTEM					
4.00	UPS OF 15 KVA.					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
4.01	Supply of 15 KVA True Online double conversion and fully Microprocessor Controlled UPS system with IGBT based Rectifier with minimum input pf 0.95 with minimum 94% overall efficiency at 50% load condition and THDI less than 5% on non-linear loads including RS 485 Modbus Communication port with accessories and suitable Power Management software in each UPS including IGBT/PWM technology based inverter, automatic bi - directional static switch, manual bypass switch, galvanic isolation transformer, input phase reversal protection, provision for separate input for rectifier and for bypass.					
i)						
ii)	Rack mounted external battery bank of 12 V Sealed Maintenance Free batteries for 30 mins backup.					
iii)	Installation & commissioning of 15 KVA UPS with battery and accessories.					
	Supply, installation , testing and commissioning of 15 KVA UPS as mentioned above.	1	Set			
	TOTAL SUBHEAD 4 : UPS SYSTEM					
	SUB HEAD-5: MCB DISTRIBUTION BOARDS.					
5.00	MCB DISTRIBUTION BOARD					
5.01	Supplying, installation, testing and commissioning of following way, three phase and neutral, pre wired, double door MCB distribution board with incomers(RCCB + MCB) and out goings (MCB) as per drawings, 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 (Inclusive of RCCB & MCB).					

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
i	6 Way (8+18)	9	Each			
ii	8 Way (8+24)	8	Each			
iii	12 Way (8+36)	3	Each			
	TOTAL SUBHEAD: 5- MCB DISTRIBUTION BOARD.					
6.00	SUB HEAD: 6 - WIRING					
6.01	WIRING					
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 ISI marked 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					
	ii) Two or more circuit can be drawn in the same conduit, however, all the circuits in the same conduit shall be on the same phase.					
	Point wiring as mentioned above	900	Point			

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Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
6.02	Wiring for twin control light points with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable in ISI marked MS conduit (including supplying and recess laying of ISI marked MS conduit) including the following and complete as required.					
	i) 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 : Two or more circuit can be drawn in the same conduit, however, all the circuits in the same conduit shall be on the same phase.					
	Wiring for twin control light points as mentioned above	30	Point			
6.03	Wiring for 5A light plugs with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable including one number 1.5 sq.mm. PVC insulated, copper conductor cable for earthing in surface/recessed ISI marked MS conduit (including supply and recess laying of ISI marked MS conduit) as per technical specifications and as required.	180	Point			
6.04	Wiring for 16 amp power plug with 2X4 sqmm PVC insulated, FRLS 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 2.5 sqmm PVC insulated, copper conductor, single core cable for loop earthing etc per technical specifications & as required.					
	Directly from MCB-Distribution Board to the Socket Outlets	200	Point			

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
6.05	Wiring for 20 amp power plug with 2X6 sq.mm. PVC insulated, FRLS 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 2.5 sqmm PVC insulated, copper conductor, single core cable for loop earthing, as per technical specifications & as required.	12	Point			
6.06	Wiring for computer points (Three sockets & one switch) with 2.5 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.	25	Point			
6.07	Wiring for 32 amp TPN SDFU with 3X6 sq.mm. PVC insulated, FRLS 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 6 sqmm PVC insulated, copper conductor, single core cable for loop earthing, as per technical specifications & as required.	6	Point			
6.08	Wiring for submain/ circuit wiring with following sizes of PVC insulated, FRLS copper conductor single core cable in surface/recessed ISI marked MS conduit(including and recess laying of ISI marked MS conduit) as required.					
i	2X2.5 Sqmm with 1 No. 2.5 sqmm PVC insulated, copper conductor for earthing for circuit wiring.	1395	Metre			
ii	4X6 Sqmm with 2 No. 6 sqmm PVC insulated, FRLS copper conductor for earthing	315	Metre			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
iii	4X16 Sqmm with 2 nos 16 sq mm PVC insulated, FRLS copper conductor for earthing	280	Metre			
iv	4X25 Sqmm with 2 nos 25 sq mm PVC insulated, FRLS copper conductor for earthing.	105	Metre			
6.09	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.	180	Each			
6.10	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.	200	Each			
6.11	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.	12	Each			
6.12	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing three nos 6 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)	25	Each			
6.13	Supply and fixing 32 Amps, TPN SDFU in a sheet steel enclosure on surface or recess complete with all accessories including fuse, connections, testing and commissioning etc. as required.	6	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
6.14	Supply and fixing 63 Amps, TPN SDFU in a sheet steel enclosure complete with all accessories including fuse, connections, testing and commissioning etc. as required.	3	Each			
6.15	Supplying, providing & fixing cordless musical bell, batteries etc of approved make complete as required.	10	Each			
TOTAL SUBHEAD: 6- WIRING						
SUB HEAD: 7 - LIGHT FIXTURE AND FANS						
7.00	LIGHT FIXTURES AND FANS					
7.01	Supply of following light fixture with high efficiency electronic ballast, starter, capacitor, tubes/lamps, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
i	1X28 watt box type flourescent light fixture (Philips TMS 122/128 HF or approved equivalent)	291	Each			
ii	1X36watt surface mounted flourescent light fixture with opal acrylic cover (Philips TCS 19/136 HPF or approved equivalent)	30	Each			
iii	1X36watt recess mounted flourescent light fixture (Philips TBS 50/136 HPF or approved equivalent) ^{136RMO1}	5	Each			
iv	1X 36 watt surface mounted mirror optics type 1 (Philips TCS 605 1XTLD 36 W EBE M1 or approved equivalent) ^{136RMO1}	65	Each			
v	2X 36 watt surface mounted mirror optics (Philips TCS 605 2XTLD 36W EBE MI or approved equivalent). ^{236smo1}	53	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
vi	2X 36 watt surface mounted mirror optics (Philips TCS 3062XTL5 28W EBP or approved equivalent).236smo2	50	Each			
vii	2X 36 watt recessed mounted clean room flourescent light fixture (Philips TBS 670 2X36W TL-D EB BO GT or approved equivalent).236CRF	35	Each			
7.02	Supply of following compact flourescent light fixture with electronic ballast, starter, capacitor, lamps, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
i	Surface mounted Batten holder (Plastic) with 13 watt CFL	5	Each			
ii	1x9 watt Bulk Head light fixture (Philips FXC 101 HPF or approved equivalent)	10	Each			
iii	2 x 13 watt CFL recessed light fixture Down Light fixture Type-1 (GE CFLC 2X13 DN PA R (H) OVOLO or approved equivalent) DL1	60	Each			
iv	2 x 18 watt CFL surface mounted fixture Down light fixture type 2 (GE: GE CFL C 2X18 DN FG S(Lento) or approved equivalent) DL2	25	Each			
v	2X10 watt Mirror top (Decon 05UB or approved equivalent) Wtoilet	50	Each			
vi	2X11 watt surface mounted mirror optics (Philips FCS 31/211 or equivalent)211CFLRECT	10	Each			
vii	1x11 watt CFL Bedside light fixture (Decon 05 GF or approved equivalent) TL	25	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
7.03	Supply of following ceiling fans complete with double ball bearing, motor, blades, downrod, canopies, capacitor, modular type electronic fan regulator, MS Fan Box with MS Hook etc. suitable for operation on 230 volts, 50 Hz., 1 phase, AC supply complete as required					
i	1200 mm sweep	200	Each			
ii	900 mm sweep	10	Each			
7.04	Supply of 1400 RPM, 225 mm heavy duty exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	25	Each			
7.05	Supply of 225 mm sweep, 1400 RPM, heavy duty 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			
7.06	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.	529	Each			
7.07	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.	185	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
7.08	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 PVC insulated, copper conductor single core cable as required.	210	Each			
7.09	Installation, testing and commissioning of exhaust fan up to 300 mm sweep in the opening, including making the hole to suit the size of the above fan including , fixing of louvers/ shutters with frame making good the damages etc. as required.	25	Each			
7.10	Installation, testing and commissioning of wall mounted fan up to 450 mm sweep including supply and fixing wall bracket arrangement complete as required.		Each			
TOTAL SUBHEAD 7: LIGHT FIXTURE & FANS						
SUB HEAD 8: TELEPHONE SYSTEM						
8.00	TELEPHONE SYSTEM					
8.01	Supply & laying two pair 0.5 Sq. mm solid, annealed bare 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 ISI marked MS conduit including providing & fixing of two modular metal box on surface or 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)	20	Each			
ii	2 pair cord outlet (Jack Type)	5	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
8.02	Supplying, Installation, testing and commissioning of following sizes of telephone distribution board in M.S. hinged type lockable box duly painted complete with Krone type tag block etc. including terminations of cable as required.					
i	30 Pair	1	Each			
ii	10 Pair	2	Each			
8.03	Providing & laying multi pair telephone cable jelly filled, PVC insulated & sheath 0.61mm dia annealed tinned copper conductor on surface including clamping & fixing , including connection in Tag blocks at both ends.					
i	10 Pair	120	Metre			
TOTAL SUBHEAD 8: TELEPHONE SYSTEM						
SUB HEAD 9 : FIRE DETECTION AND ALARM						
9.00 FIRE DETECTION AND ALARM SYSTEM						
9.01	Supply and drawing of following sizes of PVC insulated FRLS copper conductor single core cable in surface/recessed ISI marked MS conduit (including Supplying and fixing of ISI marked MS Conduit) complete as required.					
i	2X1.5 sqmm	2100	Metre			
9.02	Supply, installation, testing and commissioning of the following intelligent, analog, addressable type fire detection and alarm accessories as per technical specification & complete with connections etc. as required.					
i	Optical type Smoke Detector	130	Each			
ii	Heat Detector	3	Each			
iii	Manual Break Glass Unit in MS enclosure	6	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
iv	Fire Alarm Bell / Hooter of suitable range to cover the complete floor, in MS enclosure.	6	Each			
v	Response indicator	30	Each			
9.03	Supply, Installation, testing and commissioning of suitable loop microprocessor based addressable type networkable Fire Detection & Alarm control Panel complete with inbuilt power supply, battery charger with SMF batteries for minnum 24Hrs backup. The panel shall have communication module & HI-485 network card. The panel should have rectifier, loop card, 80 character LCD unit to indicate fire/ fault signals with addresses including external/ internal printer to print the details complete system as per technical specifications and requirement of Local Fire Authority and as required. RS 485 modbus communication port should be provided for BMS.	1	Set			
9.04	Supply testing and commissioning of isolator module as per specifications.	15	Set			
9.05	Supply, Installation, testing and commissioning of intelligent , addressable control modules.	4	Each			
9.06	Supply, Installation, testing and commissioning of intelligent , addressable type monitor modules.	1	Each			
9.07	Supply, Installation, testing and commissioning of flow switch	1	Each			
	TOTAL SUB HEAD 9 : FIRE DETECTION AND ALARM					
10.00	SUBHEAD 10 :CONDUITING FOR TV OUTLETS					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
10.01	Supply and fixing of following sizes of ISI marked 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	150	Metre			
ii	25 mm dia	38	Metre			
10.02	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	10	Each			
10.03	Supply and drawing Coaxial TV Cable RG - 6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and potected with PVC sheath in the existing surface/ recessed steel/ PVC coduit as required.	250	Metre			
	TOTAL SUB HEAD 10: CONDUTING FOR TV OUTLETS					
	SUB HEAD 11: NURSE CALL BELL SYSTEM.					
11.00	NURSES CALL BELL SYSTEM					
11.01	Supplying, fixing testing and commissioning of nurses station terminal monitor with in built LED display & alarm, suitable for following way complete with back up, batteries, battery charger etc. as per technical specifications and as required.					
i)	30 Way	3	Each			
ii)	10 Way	3	Each			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
11.02	Supplying, fixing testing and commissioning of call push button (with cord), call reset, call indication station for each bed complete as required.	114	Each			
11.03	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	1710	Metre			
11.04	Supply & laying three pair 0.5 Sq. mm solid, annealed bare copper conductor insulated with high density polythlene. The insulated cores twisted to form pairs, helically wrapped with polyster tape with over all insulation of FR PVC insulated unarmoured telephone cable in existing MS conduit complete as required.	2856	Metre			
11.05	Supplying, fixing testing and commissioning of LED's Indicators outside each ward	20	Each			
	TOTAL SUB HEAD 11: NURSE CALL BELL SYSTEM.					
	SUB HEAD 12: PUBLIC ADDRESS SYSTEM.					
12.00	PUBLIC ADDRESS SYSTEM					
A.	PUBLIC ADDRESS SYSTEM FOR HOSPITAL.					
12.01	Supply, installation, testing and commissioning of master announcement along with Amplifier console minimum of suitable wattage duly wired with terminal strip etc complete with housing, including the following main components and as required. (Contractor has to design and submit the details of PA equipment as per the requirement of this block for approval)					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
i)	1 Mic & 1 Aux Inputs, with individual volume control & Aux inputs jacks for each floor (Ground + two floors) at two different locations on each floor.					
ii)	CD Player with 3 CD changer, with auto/ manual programming					
iv)	Terminals & patch cables					
v)	Any other item required for proper working of PA system.					
	Public Address System for Hospital as mentioned above	1	Set			
12.02	Supply and installation of system junction box complete as required .	1	Each			
12.03	Supplying and fixing of suitable module modular metal box on surface or in recess with modular cover plate and all accessories complete as required	10	Each			
12.04	Supply and fixing of following sizes of steel conduit alongwith the accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of conduit as recessed required					
i)	20 mm dia	120	Metre			
12.05	Supply and drawing twin twisted 32/0.2mm PVC insulated copper conductor speaker wire in existing conduit including earth wire complete as required (for speakers).	500	Metre			
12.06	Supply and installation of metal enclosed suitable wattage speaker with adjustable volume to cover all areas of floor, to be mouted in corridors complete as required .	12	Each			
	TOTAL SUB HEAD - 12.00 PUBLIC ADDRESS SYSTEM					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	SUB HEAD 13 : LIFTS					
13.00	LIFT					
13.01	Design, manufacture, supply, installation, testing and commissioning of 26 passenger (1768 kg) lift with travel speed 0.5 MPS serving different floors in the lift shaft including lift well pressurization as per detailed specification/ drawing enclosed and as under: Speed 0.5 MPS Floors G+2 (Total three floors) Travel: As per architectural drawing. Stops & opening: 3 stops & 3 openings Controller: A.C. variable voltage & variable frequency Automatic rescue device complete with dry maintenance free batteries as required. Operation:Microprocessor based single automatic push button/ simplex selective collective/duplex collective selective with / without attendant. 415 V, 3 phase, 50 Hz, 4 wire system Type of doors: a) Car : Power operated, centre opening for passenger lift and telescopic opening for hospital lift, horizontal sliding stainless steel scratch proof. (b) Landing doors: Stainless steel scratch proof. Lift car door and landing doors shall have a fire resistance of one hour. A hand rail guide not less than 600 mm long at 900 mm above floor level or stretcher guide as the case may be to be fixed adjacent to control panel in the lift car. Mirror of suitable size to be fixed inside the lift car. Voice announcement system in the car to announce the position of the elevator in the hoistway as the car passes or stops at a floor served by the elevator.					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	Toe guard, PA speaker, IR curtain on full height, two phase fireman's drive control/ switch and potential free contacts etc to be provided in the lift.					
	Bed cum Passenger Lift as mentioned above.	1	Each			
	TOTAL SUB HEAD 13: LIFTS					
	SUB HEAD 14: LT CABLES					
14.00	LT CABLES					
14.01	Supply of following sizes of 1.1 kV grade multicore aluminium conductor PVC sheathed armoured AYYF cable as per IS 1554.					
i	3.5 Core 25 Sqmm.	360	Metre			
ii	3.5 Core 70 Sqmm.	240	Metre			
iii	3.5 Core 95 Sqmm.	50	Metre			
v	3.5 Core 150 Sqmm.	50	Metre			
vi	3.5 Core 185 Sqmm.	200	Metre			
vii	3.5 Core 300 Sqmm.	500	Metre			
ix	2 Core 4 Sqmm.	100	Metre			
x	2 Core 6 Sqmm.	100	Metre			
xii	4 Core 10 Sqmm.	100	Metre			
14.02	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	360	Metre			
ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	290	Metre			
iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	550	Metre			
14.03	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					

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
i	Size not exceeding 25 sq.mm	30	Metre			
ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	30	Metre			
iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	30	Metre			
14.04	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	100	Metre			
ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	100	Metre			
iii	Size exceeding 120 sq.mm but not exceeding 240 sq.mm	100	Metre			
iv	Size exceeding 240 sq.mm but not exceeding 400 sq.mm	100	Metre			
14.05	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.	10	Each			
ii	3.5 Core 70 Sqmm.	12	Each			
iii	3.5 Core 95 Sqmm.	10	Each			
iv	3.5 Core 150 Sqmm.	10	Each			
v	3.5 Core 185 Sqmm.	6	Each			
vi	3.5 Core 300 Sqmm.	6	Each			
vii	2 Core 4 Sqmm.	12	Each			
viii	2 Core 6 Sqmm.	10	Each			
ix	4 Core 10 Sqmm.	4	Each			
14.06	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	50	Metre			
ii	300 mm. width x 62.5 mm. depth x 2.0 mm. thickness	50	Metre			
iii	450 mm. width x 62.6 mm. depth x 2.0 mm. thickness	50	Metre			

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1	2	3	4	5	6	7
iv	600 mm. width x 62.6 mm. depth x 2.0 mm. thickness	50	Metre			
	TOTAL SUB HEAD 14: LT CABLES					
	SUB HEAD 15: EARTHING SAFETY EQUIPMENT AND MISC. ITEMS					
15.00	EARTHING, SAFETY EQUIPMENTS AND MISC. ITEMS					
15.01	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	4	Set			
15.02	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	2	Set			
15.03	Extra for using charcoal and salt for GI or copper plate earth electrode as required.	6	Set			
15.04	Supplying and laying 25mmX5mm Copper strip at 0.5 m below ground level as strip earth electrode, including soldering etc. as required.	100	Metre			
15.05	Supplying and laying 25mmX5mm GI strip at 0.5 m below ground level as strip earth electrode, including soldering etc. as required.	400	Metre			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
15.06	Providing and fixing 40mmX6mm GI strip on surface/on existing cable trench/RCC pipe or in recess for earth electrode as required.	50	Metre			
15.07	Providing and fixing 25mmX5mm GI strip on surface/on existing cable trench/RCC pipe or in recess for earth electrode as required.	100	Metre			
15.08	Supplying and laying 50mmX6mm copper strip at 0.5mm below ground level as strip earth electrode as required as required.	50	Metre			
15.09	Providing and fixing 50mmX6mm copper strip in 65 mm dia class B GI Pipe on surface/existing cable trench/RCC pipe for connections etc. as required.	20	Metre			
15.10	Providing and laying of following sizes non pressure NP2 class (light duty) RCC pipe with colar joint with stiff mixture of cement (1 cement : 2 fine sand) including testing the joints etc. as required.					
i	100 mm dia	20	Metre			
ii	150mm dia	20	Metre			
iii	200mm dia	20	Metre			
15.11	Providing and fixing M.V. danger notice plate of 200mmX150mm made of mild steel, atleast 2mm thick and vitreous enamelled white on both sides and with inscription in signal red colour on front side as required.	20	Each			
15.12	Supplying and laying of 1.1kV grade 1 metre wide anti skid chequered type rubber mat.	25	Metre			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
15.13	Design, manufacture, supply and installation of Fire Buckets 13 litre capacity 4 Nos. duly filled with sand and GI pipe support stand for these buckets including painting etc. complete as required.	5	Set			
15.14	Supply and fixing shock treatment chart in English, Hindi and local language mounted on 5mm thick Plywood and 3mm thick plain glass front complete as required.	4	Set			
15.15	Supplying and fixing Foam type 9 ltrs capacity fire extinguishers as approved by ISI complete as required.	2	Set			
15.16	Supplying and fixing CO2 type 9 ltrs capacity fire extinguishers as approved by ISI complete as required.	4	Set			
15.17	Supplying and fixing CO2 type 4.5 ltrs capacity fire extinguishers as approved by ISI complete as required.	6	Set			
15.18	Supplying and fixing DCP type 5 KG capacity fire extinguishers as approved by ISI complete as required.	6	Set			
15.09	Supplying and fixing DCP type 10 KG capacity fire extinguishers as approved by ISI complete as required.	4	Set			
15.20	Supplying, storing, handling and fixing in position First Aid Medical Box and an 'Artificial Respirator' complete as per tech. specifications as required.	2	Each			
15.21	Providing & laying of 100 mm dia class B G.I. pipe underground/ surface as per site requirement including all accessories & excavation & back filling etc. complete as required	100	Metre			

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Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	TOTAL SUB HEAD 15: EARTHING, SAFETY EQUIPMENT AND MISC. ITEMS					
16.00	SUB HEAD 16: CONDUITING FOR COMPUTER NETWORKING					
16.01	Supply and fixing of following sizes of steel conduit alongwith the accessories in recess (including supply & fixing of conduit with all accessories) 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	300	Metre			
ii)	25 mm dia	200	Metre			
16.02	Supplying and fixing 2 module modular metal box in recess with modular cover plate, blanking plates and all accessories complete as required	25	Each			
	TOTAL FOR SUBHEAD 16.00 CONDUITING FOR COMPUTER NETWORKING.					
17.00	SUB HEAD 17: OUTDOOR LIGHTING					
17.01	Supply, erection, testing and commissioning of external swaged					
i	steel tubular pole with following specifications & items :					
ii	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)					
iii	1X250 watts street light fixture with 250watts 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 SRP 051 1xSON250W Acrylic cover or approved equivalent)					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
iv	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					
v	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					
vi	Providing foundation including excavation, shuttering, alignment of poles, casting etc. including lean concrete at the bottom as per CPWD/ BIS specifications.					
vii	The above installations shall be completed including earthing as per CPWD specifications and as required	20	Set			
17.02	Supply, installation, testing and commissioning of external post top lantern with following accessories and complete as required :					
i)	4m high (3.3m above ground) 50mm dia GI pole as approved, adopting socket at top for fixture mentioned below, base plate 300 x 300 x 6mm and provision for mounting junction box etc. - 1 set.					
ii)	Supply, installation, testing and commissioning of Post top lantern with 70W HPSV lamp (Philips SPC 106/70(l) HPF or equivalent) and its wiring with 2 x 2.5 sq.mm PVC insulated copper wire and 1.5 sqmm PVC insulated copper earth wire from control box - 1 set.					
iii)	Suitable size 20A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 1 nos. 5A HRC fuses complete 1 set.					
iv)	Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry					
v)	Providing 400x400x1000mm deep 1:3:6 ratio cement concrete including excavation shuttering alignment of poles casting etc. including 100mm thick lean concrete shall be provided at the bottom					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
	Supply, installation, testing and commissioning of external post top lantern as mentioned above	Set	5			
17.03	Supply, installation, testing and commissioning of Post top lantern with 70W SON lamp (Phillips HPS370 1XSON 70(E) 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	2	Each			
17.04	Supply, installation, testing and commissioning of bollard lamps 1X18 watts CFL (Phillips HCS360 1XPL-C 18W Sonara bollard in gree color or equivalent) control box - 1 set.	10	Each			
17.05	Road Lighting Panel					
	Supply, installation, testing and commissioning of following outdoor type with canopy, IP-54 protected M.V. cubicle type totally enclosed, free standing type, dust, damp and vermin proof, MV Panel, busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switchgears complete as required.					
	INCOMER:					
	1 No. 63 Amp 415 volts, TPN Switch Disconnecter Fuse Unit with HRC Fuses					
	1 Set of phase indicating lamp with HRC fuses					
	1Set of timer and 100A TP contactor with nuetral link (for street lights control)					
	BUSBARS:					
	100 Amp TPN Aluminium busbars					
	OUTGOING:					
	18 Nos. 16 Amp 415 volts, DP MCB					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
SUMMARY OF BOQ - ELECTRICAL WORKS						
S.No.	Description	Amount In Figure (In Rs.)		Amount in Words (Rs.)		
1	Sub Head 1: MAIN LT Panels					
2	Sub Head 2: DG SETS					
3	Sub Head 3: MV PANELS					
4	Sub Head 4: UPS SYSTEM					
5	Sub Head 5: MCB DISTRIBUTION BOARDS					
6	Sub Head 6: WIRING					
7	Sub Head 7: LIGHT FIXTURES AND FANS					
8	Sub Head 8: TELEPHONE SYSTEM					
9	Sub Head 9: FIRE DETECTION AND ALARM					
10	Sub Head 10 : CONDUITING FOR TV OUTLETS					
11	Sub Head 11 : NURSE CALL BELL SYSTEM.					
12	Sub Head 12:PUBLIC ADDRESS SYSTEM.					
13	Sub Head 13:LIFTS					
14	Sub Head 14:LT CABLES					

PROJECT NAME: CONSTRUCTION OF PROPOSED PHYSIOTHERAPIC WORKSHOP AT PATIALA

Bill of Quantities (Civil, PHE, FireFightings works HVAC and Electrical works)

Item No	Description Of Item	Total Qty	Unit	Rate in figures (Rs)	Rate in words (Rs)	Amount (Rs)
1	2	3	4	5	6	7
Name of work : Detail BOQ of Physiotherapy Work shop, Patiala -- Summary sheet						
S.No.	Item	Amount in Figure(Rs)	Justified Amount	Balance item Amount	Amount in Words(Rs)	
1	Civil					
2	Plumbing					
3	Fire fighting					
4	Electrical					
5	HVAC					
	TOTAL					

