

Bill of Quantities

NAME OF WORK :- Vertical expansion of (C/o Upper Floors) IWAI office cum R & D complex at A-13,Sec-1,NOIDA

(SH: Civil ,Sanitary installations, Internal Electrical and fire fighting work etc)

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
Part -1	Civil Work					
	SUB HEAD-1 : EARTH WORK					
1.1	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 sum on plan) including dressing of sides and ramming of bottoms, lift upto 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	13 cum	cum			
1.2	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 upto 1.5 m	10 cum	cum			
1.3	Extra for every additional lift of 1.5 m or part thereof in					
a)	All kinds of soil	4 cum	cum			
1.4	Carriage and disposal of surplus excavated earth by mechanical transport excluding loading, unloading and stacking upto all leads and lift beyond initial lead of 50m lead etc complete as per direction of Engineer-In-Charge. (Initial lead of 50 m and loading, unloading and stacking included in the excavation basic items.)	3 cum	cum			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
1.5	Deduct for disposal soil not levelled and neatly dressed against earth excavation item	3 cum	cum			
SUB TOTAL OF EARTH WORK					Rs.	
SUB HEAD-2 : CEMENT CONCRETE						
2.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.					
a)	1:5:10 (1 Cement : 5 coarse sand :10 graded stone aggregate 40 mm nominal size)	1.52 cum	cum			
2.2	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. upto floor five level, excluding the cost of centring, shuttering and finishing :					
a)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).	3 cum	cum			
2.3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work above plinth level.					
a)	Lean / light weight concrete -1:5:10 (1 Cement : 5 coarse sand :10 graded stone aggregate 40 mm nominal size)	32 cum	cum			
2.4	Extra for concrete work in superstructure above floor V level for each four floors or part thereof.					
(ii)	Above V level up to floor X level.	6 cum	cum			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	SUB TOTAL OF CONCRETE WORK				Rs.	
	SUB HEAD-3 : REINFORCEMENT CEMENT CONCRETE					
3.1	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 centring, 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.					
i)	M-25 grade reinforced cement concrete by using 380kg.of cement per cum of concrete.					
a)	All work upto Plinth V level.	6	cum			
b)	All works above plinth level upto floor V level.	2,002	cum			
3.2	Extra for R.C.C / B.M.C / R.M.C work above floor V level for each four floors or part thereof.	764	cum			
3.3	Add or deduct for using less cement than the quantity as provided in the item of batch mix concrete / RMC as arrived as per mix design.	5	quintal			
3.4	Add for providing richer mixes respectively at all floor levels.					

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
(a)	Providing M-30 grade concrete by using 400kg of cement per cum of concrete instead of M-25 grade R.M.C.	232 cum	cum			
3.5	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.					
	i) Thermo-Mechanically Treated bars					
	a) Upto plinth level	988 Kg	Kg			
	b) Above plinth level	253,812 Kg	Kg			
3.6	Centring and shuttering including strutting, propping etc. and removal of form for:					
	a) Foundations, footings, bases of columns, etc. for mass concrete.	21 sqm	sqm			
	b) Suspended floors, roofs, landings, balconies and access platform.	3,532 sqm	sqm			
	c) Lintels, beams, plinth beams, girders, bressumers and cantilever	9,390 sqm	sqm			
	d) Columns, Pillars, Piers, Abutments, Posts and Struts	1,684 sqm	sqm			
	e) Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	80 sqm	sqm			
	f) Stairs (excluding landings) except spiral-staircases.	429 sqm	sqm			
	g) Edges of slabs and breaks in floors and walls.					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
i)	Under 20 cm wide	1,000 metre	metre			
SUB TOTAL OR R.C.C WORKS					Rs.	
SUB HEAD-4 : BRICK WORK						
4.1	Brick work with FPS bricks of class designation 75 in foundation and upto plinth level in all shapes and sizes in.					
a)	Cement mortar 1:6 (1 cement : 6 coarse sand)	3 cum	cum			
4.2	Brick work with FPS bricks of class designation 75 in superstructure above plinth level upto floor V level in all shapes and sizes in.					
a)	Cement mortar 1:6 (1 cement : 6 coarse sand)	559 cum	cum			
4.3	Extra for brick work in superstructure above floor V level for each four floors or part thereof by mechanical means by lifting material using mobile crane .	113 cum	cum			
4.4	Half brick masonry with FPS bricks of class designation 75 in superstructure above plinth level upto floor V level in :					
a)	Cement mortar 1:4 (1 cement : 4 coarse sand)	413 sqm	sqm			
4.5	Extra for providing and placing in position 2 Nos. 6 mm dia. M.S. bars at every third course of half brick masonry (with FPS bricks).	413 sqm	sqm			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
4.6	Extra for half brick masonry in superstructure, above floor V level for every four floors or part thereof by mechanical means by lifting material using mobile crane.	69 sqm	sqm			
SUB TOTAL OF BRICK WORK OF CIVIL WORKS					Rs.	
SUB HEAD-5 : GRANITE WORK						
5.1	Granite stone 18mm thick machine cut mirror polished granite (Sample of granite of required size , shall be approved by Engineer in Charge) in flooring, treads laid on 12 mm thick (average) cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with white cement matched with pigment to match the shade of stone.					
a	Black granite (Basic rate Rs 220-225 per sqft)	29 sqm	sqm			
TOTAL OF FLOORING WORK					Rs.	
SUB HEAD-6 : WOOD WORK						
6.1	Providing and fixing ISI marked flush door shutters conforming to IS 2202 (Part -1) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters :					
a)	35 mm thick excluding butt hinges but including necessary screws	143 sqm	sqm			
6.2	Extra for cutting rebate in flush door shutters (Total area of the shutter to be measured.)	29 sqm	sqm			

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
6.3	Providing and fixing aluminium sliding door bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade with nuts and screws etc. complete :					
	a 300x16 mm	11 Nos	each			
	b 250x16 mm	52 Nos	each			
6.4	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	74 Nos	each			
	b 200x10 mm	74 Nos	each			
6.5	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. Twin rubber stopper					
		69 Nos	each			
6.6	Providing and fixing aluminium handles ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade with necessary screws etc. complete :					
	a 125 mm	134 Nos	each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
6.7	Providing and fixing handrail for staircase in 2nd class teakwood of size 65mmx50 mm railing of approved design, shape including fixing in position with necessary screws etc. complete as per architectural drawings and as per directions of Engineer-in-Charge.	242 metre	metre			
6.8	Providing and fixing 120 minute fire rated proprietary make door with 120x70 mm Ghana teak wood door frame fixed over 18 mm thick Ghana teak wood rough ground, with anchors plugged to masonry / R.C.C. with approved make bolts (Hilti / Fisher) or hold fast, to receive 50 mm shutters made of 20 mm mineral wool core coated with Intumescent material fill covered with 12 mm thick gypsum board with 3 mm commercial ply decorative veneering on both sides coated with Intumescent material fill, 10 mm thick second class teak wood lipping around the shutter and Intumescent seal around except the bottom, including SS ball bearing butt hinges, Mortice lock with lever handle and Panic Bar. All wooden surfaces shall be primed with antitermite fire resistant paint and primer of approved make as shown and specified.	26 sqm	sqm			
6.9	Providing and fixing Ingersoll Rand make ME 60 or equivalent CBRI tested 2hrs. fire rated mortice lock with lever handle with 7 years mechanical warranty to all fire doors.	9 Nos	each			
	SUB TOTAL OF WOOD WORK				Rs.	
	SUB HEAD-7 : STEEL WORK					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
7.1	Providing and fixing T-iron frames for doors, windows and ventilators of mild steel Tee-sections, joints mitred and welded with 15 X 3 mm lugs 10 cm long embedded in cement concrete blocks 15 X 10 X 10 cm of 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as require including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer.	1,337 kg	kg			
7.2	Providing and fixing pressed steel door frames conforming to IS: 4351 manufactured from commercial mild steel sheet of 1.25 mm thickness including hinges jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25mm, or base ties of 1.25mm pressed mild steel welded or rigidly fixed together by mechanical means, adjustable lugs with split end tail to each jamb including steel butt hinges 2.5mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge:					
	a Profile B	64 metre	kg			
7.3	Providing and fixing M.S. fan clamp type I or II of 16 mm dia M.S. bar bent to shape with hooked ends in RCC slabs, beams during laying including painting the exposed portion of loop, all as per standard design complete.	34 Nos	each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
7.4	Providing and fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp of internal dia 140mm, 73mm height, top lid of 1.5mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3mm dia. round headed screws, one lock at the corners. Clamp shall be made of 12mm dia M.S. bar bent to shape as per standard drawing.	136 Nos	each			
7.5	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, ladders, railings, brackets, gates & similar works	3,264 kg	kg			
7.6	Welding by gas or electric plant including transportation of plant at site etc. complete.	1,000 cm	cm			
SUB TOTAL OF STEEL WORK					Rs.	
<i>SUB HEAD-8 : FLOORING WORK</i>						
8.1	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	462 sqm	sqm			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
8.2	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	1,186	sqm			
8.3	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 plain.	419	sqm			
8.4	Marble stone with 18mm thick marble stone (sample of marble shall be approved by Engineer-in-charge) in risers of steps, skirting, dado and pillars laid on 12mm (average) thick cement mortar 1:3 (1 cement:3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.					
(a)	Raj Nagar plain.	19	sqm			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
8.5	<p>Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by manufacturer) of approved make in 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 @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete.</p> <p>(Basic rate 1st quality ceramic glazed wall tiles Rs 30-35 per sqft.)</p>	611 sqm	sqm			
8.6	<p>Providing and laying Ceramic glazed floor tiles 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as 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 pigment etc</p> <p>(Basic rate 1st quality ceramic glazed wall tiles Rs 30-35 per sqft.)</p>	54 sqm	sqm			
8.7	<p>Providing and laying tactile tile of approved shade and make in required sizes (thickness to be specified by the manufacturer) of yellow Ocher pigment in top layer (straight line grooves/Circulars Studs) with reinforcement or of approved colour and pattern over 20mm (average) thick base of cement mortar 1:4 (1 cement:4 coarse sand) laid over jointed with grey cement slurry mixed with pigment to match the shade of the slab including cleaning of floor complete. and as directed by Engineer-in-charge.</p>	27 sqm	sqm			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
8.8	Providing and fixing 18mm thick gang saw cut mirror polished (premoulded and prepolished) machine cut for kitchen platforms, vanity counters ,window sills , facia 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.					
(i)	Udaipur green marble (Basic rate Rs 60-75 per sqft.)					
a)	area of slab upto 0.50 sqm	3 sqm	sqm			
b)	area of slab over 0.50 sqm	15 sqm	sqm			
8.9	Extra for providing edge moulding to 16 mm thick granite / marble stone counters, vanities etc including machine polishing to edge to give high gloss finish etc complete as per design and directions of Engineer-in-charge .					
(i)	Udaipur green marble	28 metre	metre			
8.10	Extra for providing opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/Granite/stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc complete.	23 Nos	each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
8.11	Providing and fixing stone slab table rubbed edges rounded and polished of size 75x50 cm deep and 18 mm thick fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement:2 coarse sand : 4 graded stone aggregate 6mm nominal size) as per direction of engineer in charge and finished smooth.					
(i)	Udaipur green marble	12 sqm	sqm			
SUB TOTAL OF FLOORING WORK					Rs.	
9.1	SUB HEAD-9 : ROOFING WORK 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	235 metre	metre			
9.2	Making khurras 45x45cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate of 20mm nominal size) over P.V.C. sheet 1m x 1m x 400 micron, 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 Nos	each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
9.3	<p>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 dia x 40mm long with 6mm dia bolts to the angle hangers of 25 x 25 x 0.55mm of required length and other end of angle hanger being fixed with nut and bolts to G.I. channels 45 x 15 x 0.9 mm running at the rate of 1200mm centre to centre to which the ceiling section 0.5mm thick button wedge of 80 mm with tapered flanges of 26 mm each having clips of 10.5 mm at 450 mm centre to centre shall be fixed in a direction perpendicular to G.I. channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction including fixing the gypsum board with ceiling section and perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall / partition with the help of rawl plugs at 450 mm centre to centre with 25 mm long drive-all screws @ 230 mm 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, cut-outs 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 :</p>					
a)	12.5 mm thick tapered edge gypsum board conforming to IS: 2095 - Part I.	292	sqm			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
b)	600x600 mm Grid Gypsum tile false ceiling.	1,169 sqm	sqm			
SUB TOTAL OF ROOFING WORK					Rs.	
SUB HEAD-10 : FINISHING WORK						
10.1	12 mm cement plaster of mix (a) 1:6 (1 cement : 6 fine sand)	2,740 sqm	sqm			
10.2	15 mm cement plaster on the rough side of single or half brick wall of mix : (a) 1:6 (1 cement : 6 fine sand)	2,192 sqm	sqm			
10.3	6mm cement plaster to ceiling of mix (a) 1:3 (1 cement :3 fine sand)	10,358 sqm	sqm			
10.4	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	2,192 sqm	sqm			
10.5	White washing with lime to give an even shade: (a) New work (three or more coats)	8,253 sqm	sqm			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
10.6	Distemping with 1st quality acrylic washable distemper (ready mixed) of approved manufacturer and of required shade and colour complete. as per manufacturer's specification.					
(a)	Two or more coats on new work.	1032 sqm	sqm			
10.7	Wall painting with low VOC plastic emulsion paint of specified grade and of approved brand and manufacture to give an even shade:					
(a)	Two or more coats on new work	570 sqm	sqm			
10.8	Finishing walls with textured exterior paint of required shade :					
(a)	New work (Two or more coats applied @ 3.28 ltr/10 sum) over and including base coat of water proofing cement paint applied @ 2.20kg/10 sum.	3,240 sqm	sqm			
10.9	Applying priming coat :					
(a)	With ready mixed pink or grey primer of approved brand and manufacture on wood work (hard and soft wood)	343 sqm	sqm			
10.10	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade:					
(a)	Two or more coats on new work.	552 sqm	sqm			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
SUB TOTAL OF FINISHING WORK					Rs.	
SUB HEAD 11 : DISMANTLING AND DEMOLISHING						
11.1	Demolishing cement concrete manually/ by mechanical means and disposal of material within 50 metres lead as per direction of Engineer-in-charge					
a)	1:3:6 or richer mix	12	cum			
11.2	Demolishing brick work manually/ by mechanically means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of engineer in charge					
a)	In cement mortar	28	cum			
11.3	Removing mortar from bricks and cleaning bricks including stacking within a lead of 50 m. (stacks of cleaned bricks shall be measured) :					
a)	From brick work in cement mortar	6,916	nos.	1000	nos.	
11.4	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead.					
a)	Of area beyond 3 sq. metres	1	nos		each	

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
11.5	Dismantling steel work manually/ by mechanical means in built up sections without dismembering and stacking within 50 metres lead as per direction of Engineer-in-charge.	413 Kg	Kg			
11.6	Dismantling roofing including ridges, hips valleys and gutters etc., and stacking the material within 50 m lead of:					
	a G.S. Sheet	62 sqm	sqm			
	b Fibre Sheet	6 sqm	sqm			
11.7	Demolishing brick tile covering in terracing including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	1,197 sqm	sqm			
11.8	Demolishing mud phaska in terracing and disposal of material within 50 metres lead	120 cum	cum			
11.9	Dismantling G.I. pipes (external work) including excavation and refilling trenches after taking out the pipes manually / by mechanical means including stacking of pipes within 50 metres lead as per direction of Engineer-in-charge :					
	a 15 mm to 40 mm nominal bore	60 metre	metre			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
11.10	Carriage and disposal of Dismantling surplus building rubbish/building material by mechanical transport excluding loading, unloading and stacking upto all leads and lift beyond initial lead of 50m lead etc complete as per direction of Engineer-In-Charge .	194 cum	cum			
SUB TOTAL OF DISMANTLING WORK					Rs.	
SUB HEAD-12 : S S WORK						
12.1	Providing and fixing Grab bar supports etc for disable friendly toilets using Brush finished Stainless steel members (Stainless Steel Grade 316 and finish no-4) including hold fasts, cutting, drilling, hoisting, fixing and argon welding etc. in position as per approved drawing and direction of Engineer-in-charge. (work shall be executed through department approved specialised agency only.)					
	a) Wash basin Grab bar (2.5kgs) as per drawings	2 Nos	each			
	b) W.C. back rest (3.5kgs) as per drawings	2 Nos	each			
	c) L-Shape Grab bar (3.5kgs) as per drawings	4 Nos	each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
d)	Swing-Up Grab bar (4.7kgs) as per drawings	2 Nos	each			
12.2	Providing and fixing Stainless Steel Grade 304 in required sections ,sizes, finishes for railing, gates etc comprising of frame, hand rails, balusters ,balusters knobs runners, base plates and hold fasts etc including cutting, bending, drilling, hoisting, fixing and argon welding, finishing etc complete placing in position as per approved drawings and direction of Engineer-in-charge.	240 kg	kg			
12.3	Providing and fixing Stainless Steel (Grade 304) Fastener sleeve and bolts of required sizes and length to hold the SS elements including drilling by mechanical device or any suitable means adhesives etc in stone, RCC and C.C. surface etc complete as per approved drawings and as per direction of Engineer- in-charge.					
a)	Size 10 mm dia 50 mm long	15 Nos	each			
b)	Size 10 mm dia 100 mm long	15 Nos	each			
	SUB TOTAL OF S S WORK				Rs.	
	SUB HEAD-13 : Miscelaneous Work					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
13.1	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing : a) Rectangular shape	10 Sqm	sqm			
13.2	Cutting holes upto 30x30cm in walls including making good the same. a) With F.P.S bricks	50 Nos	each			
13.4	Providing & fixing CP Soap Dish Holder of approved shape and design as per manufacturer' specifications as per direction of Engineer-in-Charge.	12 Nos	each			
	SUB TOTAL OF MISCELANEOUS WORK				Rs.	
	SUB HEAD 14: ALUMINIUM WORK					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
14.1	<p>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.)</p> <p>a For fixed portion.</p> <p>(i) Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)</p> <p>b For shutters of doors, windows & ventilators including providing and fixing hinges / pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required. (Fittings shall be paid for separately.)</p> <p>(i) Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)</p>	<p>3,951 kg</p> <p>632 kg</p>	<p>kg</p> <p>kg</p>			
14.2	<p>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.)</p>					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	a With float glass panes of 4.0 mm thickness	79 sqm	sqm			
	b With tinted toughened glass panes of 10 mm thickness	395 sqm	sqm			
14.3	Extra for applying additional anodic coating AC 25 instead of AC 15 to aluminium extruded sections.					
	a For fixed portion	3,951 kg	kg			
	b For shutters of doors, windows & ventilators.	632 kg	kg			
14.4	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 205 X 19 mm	20 nos	each			
14.5	Providing fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc complete.					
	a Anodized (AC 15) aluminium	20 nos	each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
14.6	Providing and fixing 10 mm thick frameless acid etched toughened glass door shutter with Dorma, Saffle all necessary patch fittings, SS handle, lock, floor springs and other accessories etc complete as per architectural drawings & the directions of Engineer-in-charge.	20 sqm	sqm			
14.7	Providing and fixing structural Glazing with 10 mm thick toughened glass with all required patch fittings as per sample approved and as per instructions at all level as per the architectural drawings and the directions of Engineer-in-charge.	44 sqm	sqm			
SUB TOTAL OF ALUMIUM WORKS					Rs.	
15.1	<p>SUB HEAD- 15 : WATERPROOFING WORK</p> <p>Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer 3mm thick water proofing membrane, black finished reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 ltr /sum. by the same membrane manufacture of density at 25°C, 0.87-0.89 kg /ltr and viscosity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under :</p> <p>Joint strength in longitudinal and transverse direction at 23°C as 650/450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147. The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane :</p> <p>a 3 mm thick</p>	1,953 sqm	sqm			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
15.2	Providing and laying Geotextile, 120gsm non woven, 100% polyester of thickness 1 to 1.25mm bonded to the membrane with intermittent touch by heating the membrane by Butane Torch as per manufactures recommendation on existing Water proofing layers per direction of Engineer in charge.	1,953 sqm	sqm			
15.3	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.	1,953 sqm	sqm			
15.4	Providing and laying 40 mm thick PU of approved brand and manufacture on top of existing RCC roof as per manufacturers recommendation and direction of Engineer-in-charge.	817 sqm	sqm			
15.5	Providing and fixing broken ceramic glazed tiles (thickness to be specified by manufacturer) of approved make in colours, shades of any size as approved by Engineer-in-Charge on top of roof over 12 mm thick bed of Cement Mortar 1:3 (1 Cement : 3 Coarse sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade and Water proofing material in approved ratio, etc complete.	817 sqm	sqm			
SUB TOTAL OF ROOFING AND WATERPROOFING WORK					Rs.	
Part -2	Water Supply, Sanitary and Plumbing Work					
	Schedule Items					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
1.0	SANITARY FIXTURES AND TOILET REQUISITES					
1.01	Providing and fixing water closet squatting pan (Indian type W.C. pan with 100mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required					
a)	White Vitreous china Orissa pattern W.C. pan of size 580x440mm with integral type foot rests.	10 Nos	Each			
1.02	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with Cl. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required					
a)	Kitchen sink with drain board					
i)	510x1040 mm bowl depth 250mm.	3	Each			
1.03	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.					
a)	15 mm nominal bore	3 Nos	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
1.04	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 a) 15 mm nominal bore.	22 Nos	Each			
SUB TOTAL for Schedule Items for "Sanitary Fixtures and Toilet Requisites"					Rs.	
Non-Schedule Items						
1.06	Providing and fixing vitreous wall hung china water closet (European type W.C.pan) with dual flushing cistern complete with proprietary seat and cover, pan connector, mounting brackets / chair including cutting and making good the walls and floors wherever required, of the following make and type or equivalent as approved. Make : PARRYWARE Model : Cascade Cat. No. : 0219 Colour : Off White	12 Nos	Each			
1.07	Providing and fixing vitreous china wash basin including including C.P. brass waste of standard pattern, 32 mm C.P. cast brass bottle trap with unions, complete including cutting and making good the walls and floors of following make and type or or equivalent as approved. a) Make : PARRYWARE Model : Oval below Counter Basin size: 550x450 mm Cat. No. : 0418					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	Colour : Off White	27 Nos	Each			
1.08	<p>Providing and fixing vitreous china large flat back Urinal Basin with spreader of size 590 mm x 400 mm x 380 mm deep, 32 mm dia C.P. brass domical waste complete, 32 mm C.P. cast brass bottle trap with unions, cast iron hangers for support, including cutting and making good the walls wherever required, of the following make and type or equivalent as approved :</p> <p>a) Flat Back Urinal Basin: Make : PARRYWARE Model : New Magnum Cat. No.: 0575 Colour : White</p>	20 Nos	Each			
1.09	<p>Providing, installing and commissioning INFRA-RED controlled battery operated automatic urinal flushing system, including cutting and making good the walls complete with all necessary fittings to make it operational as required, of the following make and type or equivalent as approved.</p> <p>Make : Utec Cat. No. : UT-11 B Finish : Chrome</p>	20 Nos	Each			
1.11	<p>Providing and fixing of 15 mm dia brass angle valve (inlet fitting ball valve type) having strainer screen complete with wall flange of following make and model or equivalent as approved.</p>					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	Make : ARCO, Spain Colour/Finish : Chrome	69 Nos	Each			
1.12	Providing and fixing of 15 mm dia, 450 mm long flexible connection pipe having EPDM rubber internal core and stainless steel braided outer sheath complete with C.P brass end nuts, of approved make.	69 Nos	Each			
1.13	Providing and fixing of spring loaded self closing type 15 mm dia C.P brass pillar cock with wall flange, of following make or equivalent as approved. Make : Tower Stop , Italy (Marketed by Deepak Exim Company, New Delhi) Model : 215/4	27 Nos	Each			
	SUB TOTAL for Non-Schedule Items for "Sanitary Fixtures and Toilet Requisites"				Rs.	
2.0	SOIL, WASTE & VENT AND RAIN WATER PIPEWORK Schedule Items (DSR 2007)					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
2.01	<p>Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion.</p> <p>a) Single socketed pipes. i) 110 mm diameter</p>	684 metre	metre			
2.02	<p>Providing and fixing on wall face unplasticised - PVC moulded fittings / accessories for unplasticised Rigid PVC rain water pipes conforming to IS :13592 Type A including jointing with seal ring conforming to IS 5382 leaving 10 mm gap for thermal expansion.</p> <p>a) Coupler i) 110 mm</p> <p>b) Single tee with door i) 110x110x110 mm</p> <p>c) Shoe (Plain) i) 110mm Shoe</p>	288 Nos	Each			
		36 Nos	Each			
		36 Nos	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
2.03	<p>Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50 x 50 x 50 mm hard wood plugs, screwed with M.S. screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.</p> <p>a) 110 mm</p>	220 Nos	Each			
2.04	<p>Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams.</p>	36 Nos	Each			
Sub Total for Schedule Items for 'Soil, Waste and Vent Pipework'					Rs.	
2.05	<p>Non-Schedule Items</p> <p>Providing, jointing and fixing UPVC Soil, Waste and Vent System</p> <p>The work shall be done as per technical specifications and in general shall include:</p> <p>Material: UPVC pipes and fittings (moulded as well as fabricated) conforming to IS : 13592 - Type B</p> <p>Fittings shall include all standard moulded as well as fabricated fittings like bends, tees, Y-tees, crosses, boss connections, access pieces, saddle pieces, cleanouts, adaptors for connections to other materials, plugs, reducers, cowls, offsets and other specials</p> <p>Jointing: Pushfit rubber ring jointing technique in general. Solvent cement joints may be provided for fittings and specials which are not manufactured with pushfit rubber joints</p>					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	<p>Installation, Testing and Commissioning: The installation shall be complete in all respects including cutting chases / holes in walls, slabs, excavation, refilling and disposal of surplus earth where required and making good, etc</p> <p>M.S Supports: All vertical and suspended horizontal pipework shall be fixed on MS brackets and hangers with U-clamps made from 10 mm dia galvanised steel rod complete with nuts and washers. Cost for MS structural work for supports shall be included in the rates</p> <p>Concrete Encasing (In case of Sunken Floor/ buried pipes): The pipes and fittings shall be encased with 75 mm thick cement concrete (1:2:4) all around</p>					
a)	<p>Making Good the Structure Crossings: For all horizontal and vertical crossings of building structure (slabs, walls, beams, column etc) the space between pipe and the structure shall be made good and water tight with concrete. The annular space between the pipe and the sleeves shall be sealed (upto a minimum depth 25 mm) with fire resistant acrylic based sealant of approved make and quality.</p> <p>110 mm OD</p>	369	metre			
b)	90 mm OD	85	metre			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
2.06	Providing & fixing UPVC soil, waste, vent pipework comprising UPVC pipe conforming to IS :4985-1983 and of required class as specified below and fittings (moulded as well as fabricated) like elbows, bends, reducers, threaded tail pieces, caps and and other specials. jointing with cement solvent, chasing, cutting and making good the walls, complete in all respects including testing of complete installation.					
	a) 40 mm dia 6 kg/cm ² (Class III)	105 metre	metre			
	b) 50 mm dia 6 kg/cm ² (Class III)	10 metre	metre			
	c) 63 mm dia 6 kg/cm ² (Class III)	20 metre	metre			
2.07	Providing and fixing of UPVC Floor Traps formed out of bore 'P' trap with 50 mm water seal, setting in 1:2:4 mix cement concrete block or clamping to the wall or suspending with the ceiling including cutting and making good the walls and floors wherever required.					
	a) 110mm OD inlet and 110mm OD outlet	45 Nos	Each			
2.08	Providing and fixing PVC floor trap EXTENTION PIECE formed out of 110 mm pipe with multiple side inlets formed with saddle pieces, suitable for 40, 50 and 63 mm dia side connections as per standard detail.	45 Nos.	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
2.09	Providing and fixing 120 mm dia round stainless steel rotate lock type grating with frame and ABS Plastic cockroach trap , embedded in floor, all complete of following make or equivalent as approved Make : ATGT, China Model: DD 3128	45 Nos	Each			
2.10	Providing and fixing floor drain points formed out of 50 mm dia elbow with suitable extension piece, fitted with 75 mm dia nickel bronze grating and frame, embedded in floor all complete.	10 Nos	Each			
2.11	Providing and fixing cleanout with opening arrangements by providing 300 mm long G.I. nipple welded to 6 mm thick flange sealed with 6 mm thick blank flange including nuts and bolts, rubber insertions etc. all complete as per standard detail.					
a)	for 100 mm dia pipe	35 Nos	Each			
2.12	Providing 150 mm dia (nominal) cut-out in RCC slabs at indicated locations and as directed by Engineer-In-- Charge for facilitating drainage outlets for suspended drainage work.	67 Nos	Each			
2.13	Filling, sealing and water proofing of annular space between 100 mm dia (nominal) pipe and 150 mm dia (nominal) cut-out in RCC slab by filling and compacting rich cement concrete (" Jeera Aggregate) and sealing with poly sulphide based sealant.	67 Nos	Each			
SUB TOTAL for Non-Schedule Items for "Soil, Waste & Vent and Rain Water Pipework"					Rs.	
3.0	WATER SUPPLY Schedule Items					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
3.01	<p>Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge.</p> <p>Internal work — Exposed on wall</p> <p>a) 15mm nominal outer dia. Pipes.</p> <p>b) 20 mm nominal outer dia. Pipes.</p> <p>c) 25 mm nominal outer dia. Pipes.</p> <p>d) 32 mm nominal outer dia. Pipes.</p> <p>e) 40 mm nominal outer dia. Pipes.</p> <p>f) 50mm nominal outer dia. Pipes.</p>	<p>5 metre</p> <p>5 metre</p> <p>4 metre</p> <p>7 metre</p> <p>14 metre</p> <p>14 metre</p>	<p>metre</p> <p>metre</p> <p>metre</p> <p>metre</p> <p>metre</p> <p>metre</p>			
3.02	<p>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.</p>					

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	Concealed work including cutting chases and making good the walls etc.					
	a) 15 mm nominal outer dia. Pipes.	425 metre	metre			
	b) 20 mm nominal outer dia .Pipes.	65 metre	metre			
	c) 25 mm nominal outer dia. Pipes.	58 metre	metre			
	d) 32mm nominal outer dia. Pipes.	35 metre	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 This includes jointing of pipes & fittings with one step CPVC solvent cement trenching ,refilling & testing of joints complete as per direction of Engineer-in-Charge.					
	a) External work					
	i) 50 mm nominal outer dia Pipes.	20 metre	metre			
3.04	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete: 50 to 80 mm nominal bore	1 No	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
SUB TOTAL for Schedule Items for "Water Supply"					Rs.	
	<p>Non-Schedule Items</p> <p>3.05 Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge.</p> <p>Internal work — Exposed on wall/Terrace</p> <p>a) 65 mm nominal outer dia. Pipes. (Schedule 40)</p> <p>b) 80 mm nominal outer dia. Pipes. (Schedule 40)</p> <p>c) 100 mm nominal outer dia. Pipes (Schedule 40)</p>	<p>20 metre</p> <p>20 metre</p> <p>10 metre</p>	<p>metre</p> <p>metre</p> <p>metre</p>			
3.06	<p>Providing, fixing, testing and commissioning of Full Bore Ball Valves of approved makes.</p> <p>Body : Nickel plated brass</p> <p>Ball : Chrome plated brass</p> <p>Washers : PTFE</p>					

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	<p>Operating Handle : Aluminium Painted</p> <p>Pressure Rating : Minimum 20 Bar</p> <p>Temperature Withstanding : 900 C Min.</p> <p>a) 15 mm dia</p> <p>b) 20 mm dia</p> <p>c) 25 mm dia</p> <p>d) 32 mm dia</p> <p>e) 40 mm dia</p> <p>f) 50 mm dia</p>	<p>2 Nos</p> <p>10 Nos</p> <p>5 Nos</p> <p>3 Nos</p> <p>3 Nos</p> <p>1 No</p>	<p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p> <p>Each</p>			
3.07	Providing and fixing Cast Iron butterfly valve as per IS: 13095 of Class PN 16 , having epoxy coated disc, carbon steel shaft, EPDM rubber body liner and of approved make including a set of MS flanges, required nos. of nut & bolts all complete.					

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
a)	65 mm dia with lever	2 Nos	Each			
b)	80 mm dia with lever	2 Nos	Each			
c)	100 mm dia with lever	3 Nos	Each			
3.08	Providing and fixing G.I. vent pipe with antimosquito grating of the following sizes (for under ground/over head water tanks only) :					
a)	80 mm dia	8 Nos	Each			
3.09	Providing and fixing in position following sizes pipe inserts with puddle flanges, fabricated with M. S (Heavy Class) pipe pieces confirming to IS:1239 upto 150 mm dia and IS:3589-1991 for pipes (of 6 mm minimum thickness) above 150 mm dia and puddle flange made of 6 mm thick MS plate welded to the pipe piece, entire piece shall be done hot galvanised after fabrication, all complete as per Standard Detail, including fixing at desired position in the form work for RCC walls / slabs before pouring of concrete.					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
a)	25 mm dia	4 Nos	Each			
b)	50 mm dia	4 Nos	Each			
c)	65 mm dia	4 Nos	Each			
d)	80 mm dia	12 Nos	Each			
e)	100 mm dia	2 Nos	Each			
f)	150 mm dia	4 Nos	Each			
SUB TOTAL for Non- Schedule Items for "Water Supply"					Rs.	
4.0	SEWERAGE AND STORM WATER DRAINAGE Schedule Items					
4.01	Providing, laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the proportion of 1:1 (1 cement: 1 fine sand) including testing of joints etc. complete:					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
a)	100mm diameter	15	Metre			
b)	150 mm diameter	4	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	15	Metre			
b)	150 mm diameter S.W. pipe	4	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)	250 mm diameter RCC pipe	20	Metre			
b)	300 mm diameter RCC. pipe	20	Metre			
4.04	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:					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
a)	250 mm dia. R.C.C. pipe	20 Metre	Metre			
b)	300 mm dia. R.C.C. pipe	20 Metre	Metre			
4.05	Constructing brick masonry manhole in cement mortar 1:4 (1 cement 4 coarse sand) R.C.C. top slab with 1:2:4 mix (1 cement: 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size) inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making 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 complete as per standard design:					
a)	Inside size 90 x 80 cm and 45cm deep including Cl. cover with frame (light duty) 455 x 610 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):					
i)	With F.P.S. bricks with class designation 75	2 No	Each			
4.06	Extra for depth for manholes					
a)	Size 90 x 80 cm					
i)	With F.P.S. bricks class designation 75	0.5 Metre	Metre			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
4.07	Providing and fixing square-mouth SW. gully trap grade 'A' complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 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)	100 x 100 mm size P type					
i)	With F.P.S. Bricks class designation 75	3 Nos	Each			
4.08	Constructing brick masonry road gully chamber 50x45x60 cm with bricks of class designation 75 in cement mortar 1:4 (1 cement 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design					
a)	With F.P.S. bricks	10 Nos	Each			
4.09	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 kind of soil					
i)	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia.	59 Metre	Metre			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
SUB TOTAL for Schedule Items for "Sewerage and Storm Water Drainage"					Rs.	
5.0	<p>PUMPING MACHINERY Non- Schedule Items</p> <p>1) The pump shall be capable of developing the required total head at rated capacity for continuous operation. The pumps shall operate satisfactorily at any point on the Head-Discharge (H-Q) characteristic curve over a range of 50% to 130% capacity</p> <p>2) The total head capacity curve shall be continuously rising towards the shut off. The pump should deliver at least 125% of its rated capacity at 75% of the specified total head</p> <p>3) All associated piping, valves & other appurtenances shall be paid separately as per relevant items</p> <p>4) Wherever mechanical seal has been asked for, it must be 'factory fitted' at pump manufacturer's works.</p> <p>5) The Tenderer must submit along with his offer, the make and the model of the pump unit proposed by him. The tenderer must mention clearly wherever he is offering alternative material of construction for various types of pumps.</p>					
5.1	<p>Supply, installing, testing and commissioning of domestic water transfer pumps as per following details:</p> <p>The pump unit shall be complete with :</p> <p>Pumps: Horizontal Self Priming monoblock booster pump set with mechanical seal</p> <p>Material of Construction (M.O.C): Corrosion Resistant : Casing — Corrosion Resistant Material Impeller — Stainless Steel/ Bronze Shaft — Stainless Steel/ C.S</p>	2 Nos	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	<p>Motor: 2900 RPM; 3Ph 415V 50Hz Insulation Class - B Min Protection - IP44 Min.</p> <p>PUMP: Discharge : 7.5 M3/hr. Working Head : 50 M HP/KW: 5 HP (Min.)</p>					
5.2	<p>Supply, installation, testing and commissioning of electric pump control panel metal clad cubicle type suitable for 415 V AC three phase 4 wire 50Hz supply system. The panel shall be completely compartmentalised and complete with relays, contactors, starters, sequence controller, Copper Bus Bars, designation labels as per requirement, continuous earth bar, panel separators, protective screens, cable clamping support system, top/bottom cable gland plates for incoming and outgoing cable entries as per details given below:</p> <p>Sequential pump controller is to keep both the pumps operational but with one remaining standby at any particular moment.</p> <p>Note: The start stops operation of the pumps shall be controlled with magnetic float type level sensors in the overhead tank. The cost of level controller to be mounted in the pump panel and level sensors in under ground and overhead tanks is to be included in this item. However, control cabling between sensors and the panel will be paid separately as per the actual measurement under a separate item.</p> <p>There shall be an audio visual alarm in case any pump fails to start.</p> <p>INCOMING 32A FP MCB - 1 No.</p> <p>BUSBARS A set of 100A 415V 50Hz 3 Ph. 4 wire Copper bus bars.</p> <p>INSTRUMENTS FOR INCOMER</p>	1 Set	Set			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	<p>— Ammeter 0-40A with Selector Switch (including a set of CTs 40/5A)</p> <p>— Voltmeter 0-500V with selector switch.</p> <p>— A set of phase indicating light with HRC fuses.</p> <p>INSTRUMENTS ON OUTGOINGS</p> <p>— Ammeter with selector switch for each pump.</p> <p>— Indication lights for ON-OFF indication for each pump</p>					
	<p>Selector switch for auto/manual mode selection for the pumping system</p> <p>OUTGOING FEEDERS</p> <p>For Pumps</p> <p>16A 10KA TP MCB, 2.0HP DOL starter, overload relay, single phase preventer, timer etc. - 2Nos.</p> <p>Notes: 1) Switchgear and starter ratings are indicative. The Tenderer shall quote for the actual rating required as per the pump model proposed by him.</p> <p>5.3 Providing and fixing of flanged end 'Y' type strainer in cast iron body with stainless steel perforated sheet screen basket, complete with drain plug.</p> <p>a) 50mm dia</p> <p>5.40 Providing and fixing screwed end Wafer type check valve (non return valve) of Class PN 10, having stainless steel body and disc, trim and spring of approved make all complete.</p> <p>a) 50 mm dia</p> <p>5.50 Providing, fixing, testing and commissioning of Full Bore Ball Valves of approved makes. Body : Nickel plated brass</p>	<p>2 Nos</p> <p>2 Nos</p>	<p>Each</p> <p>Each</p>			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	<p>ii) Electric control panel for automatic operation of pumps as per the water level in the sump.The pump operation shall be controlled with magnetic float type level controller.The Panel shall comprise of incoming MCB, digital voltmeter & ammeter, On-Off lamps, starters with circuit breakers for each pump, rotating start sequence, both the pumps to work simultaneously to meet peak flow There shall be an audio-visual alarm, if any pump fails to start.</p> <p>iii) Power cabling between panel and pumps.</p> <p>iv) Pump suspension system with Stainless Steel Sling wire with `U` clamp. HP/KW : 3 HP (Min)</p>					
	SUB TOTAL for Non- Schedule Items for "Pumping Machinery"					Rs.
TOTAL FOR WATER SUPPLY, SANITARY AND PLUMBING WORKS						Rs.
Part -3	Internal Electrical Work					
1.0	<p>Non- Schedule Items</p> <p>POINT WIRING Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.</p>					
a)	GROUP -C	1,004	Point			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
2.0	Wiring for light/ power plug with 2 X 4 sq. mm FR PVC insulated copper conductor single core cable in surface/ recessed PVC conduit alongwith 1 No 4 sq. mm FR PVC insulated copper conductor single core cable for loop earthing as required.	1,035 metre	metre			
3.0	Wiring for light / power plug with 4 X 4 sq. mm FR PVC insulated copper conductor single core cable in surface / recessed PVC conduit alongwith 2 Nos 4 sq. mm FR PVC insulated copper conductor single core cable for loop earthing as required.	920 metre	metre			
4.0	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of PVC insulated copper conductor, single core cable in surface/ recessed PVC conduit as required					
a)	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	2,750 metre	metre			
b)	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	575 metre	metre			
c)	2 X 10 sq. mm + 1 X 10 sq. mm earth wire	20 metre	metre			
d)	4 X 2.5 sq. mm + 2 X 2.5 sq. mm earth wire	575 metre	metre			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
e)	4 X 6 sq. mm + 2 X 6 sq. mm earth wire	550 metre	metre			
f)	4 X 10 sq. mm + 2 X 10 sq. mm earth wire	250 metre	metre			
5.0	Supplying and drawing following pair, 0.5 mm dia FR PVC insulated copper conductor, unarmoured telephone cable in the existing surface/ recessed steel/ PVC conduit as required.					
a)	2 pair	1,800 metre	metre			
b)	4 pair	2,000 metre	metre			
6.0	Supplying and fixing of following sizes of PVC conduit / button along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.					
a)	20 mm	400 metre	metre			
b)	25 mm	1,500 metre	metre			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
c)	32 mm	20 metre	metre			
d)	40 mm	20 metre	metre			
7.0	Supplying and fixing of following sizes of Steel conduit / button along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required (for fire alarm)					
a)	20 mm	1,500 metre	metre			
b)	25 mm	50 metre	metre			
8.0	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.					
a)	Telephone socket outlet	190 nos	Each			
9.0	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	160 nos	Each			

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
10.0	Supplying and fixing following size/ modules, GI box along with modular base & cover plate for modular switches in recess etc as required.					
a)	1 or 2 Module (75mmX75mm)	380 nos	Each			
11.0	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection, painting etc. as required. (For light plugs to be used in non residential buildings).	195 nos	Each			
12.0	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 15/16 & 5/6 amps modular socket outlet and 15/16 amps modular switch, connection, painting etc. as required.	181 nos	Each			
13.0	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube etc. directly on ceiling/ wall, including connection with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required.	866 nos	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
14.0	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable, including providing and fixing phenolic laminated sheet cover on the fan box etc. as required.	160 nos	Each			
15.0	Providing and fixing circular / Hexagonal cast iron or M.S Sheet Box for ceiling fan clamp of internal dia 140 mm , 73 mm height top lid of 1.5 mm 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 3.3 mm dia round headed screws , one lock at the corners clamp shall be made of 12 mm dia M.S bar bent to shape as per standard drawing	160 nos	Each			
16.0	Installation of exhaust fan upto 450 mm sweep in the existing opening, including making the hole to suit the size of the above fan, making good the damage, connection, testing, commissioning etc. as required.	29 nos	Each			
17.0	Extra for fixing the louvers/ shutters complete with frame for a exhaust fan of all sizes.	29 nos	Each			
18.0	Supplying and fixing following way, three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete with tinned copper busbar, neutral busbar, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)					
a)	4 way (4 + 12), Double door ,Horizontal type	25 nos	Each			

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
b)	6 way (4 + 18), Double door ,Horizontal type	10 nos	Each			
19.0	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/recess, complete with tinned copper busbar, neutral busbar, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)					
a)	8 way, Double door	1 no	Each			
20.0	Supplying and fixing 5 amps to 32 amps rating, 240 volts, 'B' series, miniature circuit breaker suitable for lighting and other loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
a)	Single pole	486 nos	Each			
21.0	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
a)	40 amps	25 nos	Each			

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
b)	63 amps	10 nos	Each			
22.0	Supplying and fixing following rating, double pole, (single phase and neutral), 240 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 100 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
a)	40 amps	1 nos	Each			
23.0	Supplying and fixing 20amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 amps 'C' series, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	5 nos	Each			
24.0	Supplying and fixing 30amps, 415 volts, TPN industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top along with 30 amps 'C' series, TP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	10 nos	Each			
25.0	Laying & fixing of one number PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade of size not exceeding 25 Sq. mm on surface as required (for 4 core 4 sq.mm).	300 RM	RM			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
26.0	Laying & fixing of one number PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade of size exceeding 25 Sq. mm but not exceeding 120 Sq.mm on surface as required.(for 3.5 core 95 sq.mm).	230 metre	metre			
27.0	Laying & fixing of one number PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade of size exceeding 120 Sq. mm but not exceeding 400 Sq.mm on surface as required (for 3.5 core 150 sq.mm).	325 metre	metre			
28.0	Earthing with G.I. earth pipe 4.5 mtr long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal and salt as required.	4 Set	Set			
29.0	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) as required.	10 set	set			
30.0	Extra for using salt and charcoal for G.I. or copper plate earth electrode as required.	10 set	set			
31.0	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode, as required.	50 metre	metre			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
32.0	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	200 metre	metre			
33.0	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 with powder coating etc as required.					
a)	150 mm width x 50mm depth x 1.6mm thickness	75 metre	metre			
b)	600 mm width x 50mm depth x 2mm thickness	68 metre	metre			
SUB TOTAL (DSR ITEMS)					Rs.	
1.0	<p>Note :- All the wiring will be FRLS PVC & Conduit will be FRLS PVC also.</p> <p>Schedule Items</p> <p>POINT WIRING</p> <p>Wiring for light point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed PVC conduit, with 10A SP MCB control and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.</p>	51 Point	Point			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
2.0	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 2Nos, 3 pin 5/6 amps modular socket outlet controlled by 1No, 5/6 amps modular switch, connection, painting etc. as required.	190 nos	Each			
3.0	FIXTURES & FANS					
3.1	Supply of the following luminaires comprising of basic channel, holder, electronic ballast / Low loss copper ballast starter, condenser, control gear box complete with decorative attachments, lamps etc. as per specification and as per catalogue number given below					
a)	Surface mounted down light fixture FCS 518 2 x PLS/ 2P 11W 1 240V with 2 x PLS 11W CFL lamp.	15 nos	Each			
b)	Recessed light fixture TBS 869 4 x TL5 14W EBP D8 with 4 x TL5 14W fluorescent lamp.	212 nos	Each			
c)	Decorative recessed down light fixture Philips Cat No. FBH 145 M2 x PLC /4P 13W HFM 240V with 2 x PLC / 4P13W CFL lamp.	168 nos	Each			
d)	Decorative Wall / Ceiling mounted light fixture Philips Cat No. MIROLATA Slim T5 TMS 540 1x TL5 28W HF with 1 x TL5 28W fluorescent lamp.	65 nos	Each			
e)	Bulk head light fixture Philips Cat No. FXC 101 1 x PL-S / 2P 9W AC GR with 1 x PL-S 9W CFL lamp.	16 nos	Each			
f)	Aviation Obstructing light fixture Philips Cat No.XGP 400 1 x LED- K2/ RD 240V	2 nos	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
3.2	SUPPLY OF CEILING/ PROPELLER TYPE EXHAUST FANS (WITH GRAVITY LOUVERS & BIRD SCREEN) / WALL BRACKET FAN					
a)	1200 mm sweep Ceiling Fan	160 nos	Each			
b)	380 mm dia 900 rpm exhaust fan.	10 nos	Each			
c)	450 mm dia 900 rpm exhaust fan.	14 nos	Each			
4.0	Supply and fixing following Data /Lan modular socket on the existing modular plate, switch box including connections but excluding modular plate etc. as required.					
a)	RJ - 45 Socket.	190 nos	Each			
5.0	Supply and drawing of UTP Cat 6 Data / Lan wiring cable for computer communication (Data / Lan wiring) system in the existing surface / recessed steel / PVC conduit / raceway as required.	3,800 metre	metre			
6.0	TELEPHONE TAG BLOCKS/JUNCTION BOXES					
6.1	Supplying and fixing of the following Telephone TAG Blocks made out of M.S. Sheets of 18 SWG thickness properly welded complete with all accessories such as tag block, connector (KRONE make), mounting strips, tapped holes, fixing bolts, approved shad of paint after primer as per specifications .					
a)	20 Pair	10 nos	Each			
7.0	TELEPHONE CABLES					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
7.1	Supplying, wiring and connecting following pairs 0.60 mm dia twin core tinned copper conductor PVC insulated and sheathed Unarmoured telephone cables in existing pipes.					
a)	20 pair cable	535 metre	metre			
8.0	Same as 7.1but 10 pair telephone cable of jelly filled Armoured cable. in existing pipe.	50 metre	metre			
9.0	MS PAINTED RACEWAY FOR DATA & TELEPHONE					
9.1	Providing & fixing following sizes of MS fabricated raceway to be fabricated out of 1.6 mm thick CRCA sheet duly Cleaned and painted complete with 2.0mm thick MS cover as per the specification and approved sample including cutting the floor / wall and recessing the same and making good the damage etc.as required.					
a)	100 mm wide x 30 mm deep	720 metre	metre			
10.0	UNDER FLOOR BOX					
10.1	Providing & fixing following sizes of MS fabricated Under floor box to be fabricated out of 1.6 mm thick CRCA sheet duly Cleaned and painted complete with 2.0mm thick MS cover as per the specification and approved sample including cutting the floor and recessing the same and making good the damage etc.as required.					
a)	150 mm x 150mm x 50mm	100 nos	Each			
11.0	L.T. CABLES (SUPPLY)					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
11.1	Supply of the following 1100 Volts Alu/ Cu. Conductor, PVC insulated PVC sheathed, steel armoured/ unarmoured or XLPE cables as per IS-1554/ 7098 Part- I and as per standard specification A) ALUMINIUM CABLE (ARMOURED) a) 3.5 core 150 sq. mm .Alu. XLPE b) 3.5 core 95 sq. mm .Alu. XLPE B) COPPER CABLE (ARMOURED) a) 4 core 4 sq. mm. PVC.	325 metre	metre			
		230 metre	metre			
		300 metre	metre			
12.0	CABLE END TERMINATIONS					
12.1	Supply & making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE Aluminium conductor cable of 1.1 k V grade as required .					
	A) ALUMINIUM CABLE (ARMOURED) a) 3.5 core 150 sq. mm .Alu. XLPE	10 nos	Each			
	b) 3.5 core 95 sq. mm .Alu. XLPE	10 nos	Each			
	B) COPPER CABLE (ARMOURED) a) 4 core 4 sq. mm. PVC.	20 nos	Each			
13.0	L.T. PANELS (SUPPLY & INSTALLATION)					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	<p>Supply ,receiving, storing, loading , unloading, handling, hoisting, erecting, including checking of all inter connections, small wiring, testing & commissioning of following cubical type panels made of 14 gauge CRCA structure, base channel, complete with moulded case circuit breakers, meters, indicating lamps, current transformer etc. Complete in all respects, insulated bus bars with heat shrinkable PVC sleeve in suitable bus chambers, inter connection, small wiring, name plate, danger plate, earth bus etc. & comprising of compartments with hinged door for each feeder & its accessories, cable alley with hinged doors, bus chamber with bolted door etc. The panel being of dust & vermin proof construction with rubber gasket attractively powder coating etc. The panel shall be free standing type/ wall mounted type as per relevant drawing and comprising with the following.</p>					
	<p>Note:-</p> <ol style="list-style-type: none"> 1) All MCCBS shall be with Extended type Front door operating handle, Phase Spreaders & Phase Barriers. 2) Metering CTs burden shall be 15VA & accuracy class 1.0. 3) CTs shall be "CAST RESIN" type . 4) MCCB's upto 250A shall be with Adjustable thermal-magnetic and above 250A Microprocessor based release. 5) All indication lights shall be LED type. 6) All meter shall be "DIGITAL" type. 7) Breaking Capacity of all MCCB's are Ics Service Breaking Capacity 8) Degree of Protection for panels shall be IP:52 9) Panel Manufacturer should have Type Test Certificates for Short Time withstand current test of 50KA for 1.0 Sec from CPRI. Bhopal / Bangalore. 10) Control SP MCB's of 2A Rating shall be provided for each metering circuit. 					

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
A)	TYPICAL FLOOR PANEL	5 Set	Set			
	<ul style="list-style-type: none"> a) INCOMING : i) 1 No. 250A, TP MCCB (35 kA) b) BUS BAR : i) One set of 300 A TPN Alu. Bus Bar with PVC Sleeve in sealed M.S. Painted Bus Chamber. c) METERING & INDICATION i) 1 set of R/Y/B phase indication lamp with control MCB's ii) 1 No. (0 - 250A) Digital Ammeter with built-in selector switch and CT's. iii) 1 No. (0 - 500 V) Digital Voltmeter with built-in Selector switch & control MCB's. d) OUTGOING : i) 1No. 160A, TP MCCB (35 kA) 					
	<ul style="list-style-type: none"> ii) 1 No. 100A, TP MCCB (25 kA) iii) 6 Nos. 63A, 4P MCB (10 kA) iv) 2 Nos. 40A, 4P MCB (10 kA) v) 2 Nos.32A, 4P MCB (10 kA) e) 1 No. 40 x 5 mm. G.I. Earth Bus across the width of the panel. 					
B)	63 / 40A 4P MCB IN SHEET STEEL ENCLOSURE	10 Set	Set			

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
14.0	<p>i) One No. 63/ 40A 4P MCB (10KA) in sheet steel enclosure, power painted, suitable for wall mounting, having incoming & outgoing copper links for copper cable termination.</p> <p>TAPES/WIRES Supplying, receiving, laying, fixing, jointing, and terminating of the following tapes/wires in masonry treches/on walls/on cable tray/ along the cable with suitable G.I./Copper Clamps, screws etc. The wire shall be terminated with proper sockets, washers, bolts & nuts. All joints shall be regid using double rivites :</p> <p>a) 40 x 5 mm GI Tape</p> <p>b) 8 SWG GI Earth Wire.</p> <p>c) 10 sq.mm. Cu. Flex. Cable wiring (PVC Insulted)</p>	136 metre	metre			
		600 metre	metre			
		150 metre	metre			
15.0	<p>d) 6 sq.mm. Cu. Flex. Cable wiring (PVC Insulted)</p> <p>ADDRESSABLE AUTOMATIC FIRE ALARM AND DETECTION SYSTEM</p> <p>15.1 Supply, Installation, testing and commissioning of Analogue Addressable multicriteria detector with in built fault isolator(either in detector or in base) complete with base as required having UL/EN54 certification</p>	150 metre	metre			
		307 nos	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
15.2	Supply, Installation, testing and commissioning of Analogue Addressable Heat Detector with fixed & rate of rise temperature function with in built fault isolator(either in detector or in base) complete with base as required having UL/EN 54 certification	5 nos	Each			
15.3	Supply, Installation, testing and commissioning of Analogue Addressable Duct Detector having UL/EN 54 certification	10 nos	Each			
15.4	Supply, Installation, testing and commissioning of Addressable Manual Call Point to initiate audio alarm Complete as required. Having UL/EN54 certification	24 nos	Each			
15.5	Supply, Installation, testing and commissioning of Analogue Addressable loop powered sounder and flasher as required having UL/EN54 certification	24 nos	Each			
15.6	Supply, Installation, testing and commissioning of Addressable Control Modules for Tripping AHU's/Lifts etc complete as required having UL/EN54 certification	12 nos	Each			
15.7	Supply, Installation, testing and commissioning of Addressable monitor Modules for monitoring flow switches / fire exit doors etc. Complete as required having UL/EN54 certification	8 nos	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
16.0	Fire Alarm Panel					
16.1	Supply, Installation, testing and commissioning of Microprocessor based 4 loop fire alarm control panel expandable upto 6 loops fully networkable with each loop capable of taking 120 detectors/devices, with minimum 160 character LCD display . The panel shall be able to give pin point location of all fire/fault conditions. Further, the panel must be able to automatically switch off respective control switches when ever any alarm is triggered. The panel shall have in built rectifier, Loop cards, provision for suitable Port to connect the printer to log on fire or fault event L C D unit to indicate Fire/Fault Signal with address and analogy output, complete in all respects, integral SMF lead acid batteries with sealed cells of 24 V capable of running for a minimum of 30 minutes with integral battery charger complete as required and as per specification. Panel to have UL/EN54 certification	1	Set			
17.0	Supply, Installation, Testing & Commissioning of response indicator with plastic cover and twin transparent LED which shall glow red in case of fire with MS box on wall / Ceiling including connections etc.as required.	133	No.			
18.0	Supply & Wiring for fire alarm system with following PVC insulated copper conductor 1100 volts grade stranded shielded "FRLS" (Halogen free) wires in existing conduits .					
a)	2 x 1.5 sq. mm	1,600	RM			
b)	4 x 1.5 sq. mm	50	RM			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
19.0	Photo luminescent exit sign board	16 nos	Each			
20.0	Supply, drawing, testing & commissioning of PVC insulated PVC sheathed FRLS 2 core 1.5 sq.mm. Cu. Armoured cable including all fixing arrangement & termination.	850 metre	metre			
21.0	Supplying, fixing and terminating of 6 core 2.5 sq. mm Cu. conductor PVC insulated, PVC sheathed arm. control cable in existing PVC pipe.	50 metre	metre			
22.0	<p>Lightning Arrestor :</p> <p>Supplying, Erection, Testing & commissioning of External Lightning Wide Area Protection System based on pro-active Early Streamer Emission (ESE) Technology. No external power source required. Break down time not more than 245.5 Micro second. Wind Resistance up to 120miles/hours. Produces a leader of not less than 2x10E8 V/m/s in the lightning generated electromagnetic field. Device conforming to NFC17-102 & UNE 21186 standards & CPRI Tested. be installed at the roof top & centre of the building with the protection radius of 79 meter Appropriate mounting arrangement (FRP-Special TRIPODE Mast). The device shall be mounted 4 meter Mast & Adapter clear to the highest point on the rooftop.</p>	1 Set	Set			
23.0	<p>Down Conductor</p> <p>Supply, Installation, Testing & Commissioning of 70 Sqm twisted PVC insulated Cu.cable in suitable size of FRP pipe</p>	50 metre	metre			
24.0	Lightning Counter - Part No. ASC					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
25.0	For counting the number of lightning strikes without any power Supply,	1 no.	Each			
	MAINTENANCE FREE EARTHING Supply, Installation, Testing & Commissioning of long life, Maintenance Free Electrolytic Earthing System with 30 year service warranty with 10 feet Vertical K Type Copper Not less than 2" (50.8mm) ID and not less than 0.08" (2.03mm) wall thickness, which does not require manual addition of water. The system should be Corrosion resistant pre-filled with hygroscopic powder and provided with suitable Breathing & Leaching Ports at the ends.. Rated for high fault currents - 50mmx5mm bus bar rated for 10kA fault current. Bus Bar connection type as "Trawled" to with hold temperatures not less than 700° C. Designed and supplied with carbon based backfill as having not more than 0.15 Ohm/cm resistance, eco friendly, non degradable and non soluble. The earthing pit shall be designed and supplied with Poly-plastic Pit Cover 10"(TD)x10"(H)x13"(BD) as low resistance backfill materials for mesh non conductive, environment friendly and lockable.	1 no.	Each			
	SUB TOTAL OF SECTION- 2					Rs.
TOTAL FOR INTERNAL ELECTRICAL WORKS :						Rs.
Part -4	Fire Fighting Work					
1.0	HYDRANT SYSTEM					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
1.1	<p>Providing, laying, jointing, testing and commissioning pipework for External Hydrant System including coating and wrapping, earthwork in excavation in all kinds of soil and refilling, thrust blocks in cement concrete 1:2:4 on all bends, tees and junctions etc. as required, complete in all respects.</p> <p>Material: M.S pipe conforming to IS:1239 and as per class specified below.</p> <p>Fittings: Heavy Class MS fittings suitable for butt welding and flanged joints.</p> <p>Protection: Protection of buried pipework shall be with polymeric corrosion protection tape (minimum 4 mm thick) conforming to IS: 10221, coating and wrapping as per manufacturer's recommendations</p> <p>Painting : Exposed pipework shall be painted with two coats of enamel paint of fire red shade over a coat of primer.</p> <p>a) 150 mm dia (Heavy Class)</p> <p>b) 80 mm dia (Heavy Class)</p>	<p>280 Metre</p> <p>30 Metre</p>	<p>Metre</p> <p>Metre</p>			
1.2	<p>Providing, laying, jointing, testing and commissioning pipework for Internal Hydrant System including fixing of pipework on walls, beams, slabs, columns etc. with M. S. supports (duly painted), adjustable hangers, complete in all respects.</p> <p>Material: M.S pipe conforming to IS:1239 and as per class specified below for pipes upto 150 mm dia and IS:3589-1991 for pipes above 150 mm dia and as per thickness specified below</p>					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	<p>Fittings: M.S Forged Fittings Upto 50 mm dia pipes suitable for threaded / weld able socketed joints ; Heavy Class MS fittings for pipes above 50 mm dia suitable for butt welding and flanged joints.</p> <p>Painting: Pipework shall be painting with two coats of enamel paint of fire red shade over a coat of primer.</p> <p>a) 250 mm dia pipe (in pump room) - 6 mm thickness minimum.</p> <p>b) 200 mm dia pipe (in pump room) - 6 mm thickness minimum.</p> <p>c) 150 mm dia pipe (Heavy Class)</p> <p>d) 100 mm dia pipe (Heavy Class)</p> <p>e) 80 mm dia pipe (Heavy Class)</p> <p>f) 25 mm dia pipe (Heavy Class)</p>	<p>25 Metre</p> <p>15 Metre</p> <p>110 Metre</p> <p>10 Metre</p> <p>20 Metre</p> <p>15 Metre</p>	<p>Metre</p> <p>Metre</p> <p>Metre</p> <p>Metre</p> <p>Metre</p> <p>Metre</p>			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
1.3	Providing and fixing Cast Iron sluice valve with hand wheel, having rising stem (OS & Y Type) complete with bolts, nuts, rubber insertions etc. all complete (as per IS:14846)					
a)	250 mm dia	2 nos	Each			
b)	200 mm dia	2 nos	Each			
c)	150 mm dia	2 nos	Each			
d)	100 mm dia	1 no	Each			
e)	80 mm dia	1 no	Each			
1.4	Providing and fixing Cast Iron butterfly valve as per IS: 13095 of Class PN 16, having epoxy coated disc, carbon steel shaft, EPDM rubber body liner and of approved make. including a set of MS flanges, required nos. of nut & bolts all complete.					
a)	150 mm dia with lever	4 nos	Each			
b)	100 mm dia with lever	1 no	Each			

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
c)	80 mm dia with lever	6 nos	Each			
1.5	Providing and fixing flanged end reflux type check valve (non return valve) as per IS: 5312 of of Class PN 16, having cast iron body, cover, door with stainless steel hinge pin, gun metal body face ring, natural rubber door face including a set of MS flanges, required nos. of nut & bolts all complete.					
a)	200 mm dia	1 no	Each			
b)	150 mm dia	2 nos	Each			
c)	100 mm dia	1 no	Each			
d)	80 mm dia	1 no	Each			
1.6	Providing and fixing Dual plate check valve (non return valve) of Class PN 16, having cast iron body, stainless steel disc (AISI 316), trim and spring, of approved make. including a set of MS flanges, required nos. of nut & bolts all complete.					
a)	150 mm dia	1 no	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
1.7	Providing and fixing of nickel plated brass/ nonferrous alloy fully way ball valve (minimum working pressure of 20 bar) with operating handle of approved make.					
a)	25 mm dia.	9 nos	Each			
1.8	Providing and fixing single headed landing valve (hydrant) Gun metal conforming to IS : 5290 - 1993 with 63 mm female instantaneous outlet connection with blank caps and chains conforming to IS: 903 all complete with suitable orifice plate assembly	15 nos	Each			
1.9	Providing and fixing dial type pressure gauge with isolation cock at hydrant station.					
a)	Dial diameter 150 mm and calibration 0-10 kg./sq.cm.	2 nos	Each			
1.10	Providing and fixing impact, abrasion and weathering resistant rubberised fabric lined (RRL) hose pipe conforming to IS : 636-1979 (Type -A) of 63 mm dia and 15 m length with gun metal instantaneous male and female couplings conforming to IS: 903-1975.	30 nos	Each			
1.11	Providing and fixing swinging type first aid fire hose reel comprising 20 mm dia 36 m long reinforced rubber tubing conforming to IS :444 Type II / thermoplastic reinforced hose reel tubing conforming to IS :12585 Type II, MS drum with fixing bracket conforming to IS:884 and with 5 mm dia gun metal shut off nozzle conforming to IS:8090, all complete	9 nos	Each			
1.12	Providing and fixing gunmetal branch pipe nozzle conforming to IS : 903, suitable for instantaneous connections to hose coupling etc. as required:	15 nos	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
1.13	Providing and fixing standard Fireman's Axe with heavy insulated rubber handle.	9 nos	Each			
1.14	Providing and fixing weather proof outdoor type hose cabinet made of not less than 1.5 mm CRCA MS sheet having glazed door, locking arrangement, painted with two coats of enamel paint over a coat of primer and of size suitable to accommodate yard hydrant, two nos. 15 m lengths of 63 mm dia RRL hose pipe and branch pipe.	6 nos	Each			
1.15	Providing, fabricating and fixing single leaf door with frame only for all indoor fire hydrant cabinets , fabricated from MS sections, welded construction, having glazed panels with reinforced glass, integral locking arrangement, stove enamelled fire red finish with "FIRE HOSE" written on front, suitable to house two nos.15m lengths of canvas hose with couplings, 1 no. branch pipe and 1 no. first aid fire hose reel along with the landing valve all complete.					
a)	Size 1300x950 mm (approximate)	9 nos	Each			
1.16	Providing, fixing and testing forged brass 25 mm dia screwed inlet single acting air release valve with 25 mm dia ball valve on inlet side and pressure gauge with isolating cock.	1 no	Each			
1.17	Providing and fixing gunmetal delivering/ dividing/collecting 63 mm dia breachings of instantaneous pattern complete with blank cap and chain, 150 mm dia flanged inlet conforming to IS:904/IS:905, as the case may be.					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
a)	Four way breaching inlet with built in check valve.	1 no	Each			
b)	Two way delivery head.	2 nos	Each			
SUB TOTAL FOR "Hydrant System"					Rs.	
2.0	AUTOMATIC SPRINKLER SYSTEM					
2.1	Providing and fixing of brass body quartzoide bulb type automatic sprinkler heads set to operate at specified temperature of following types. Sprinkler heads shall be complete with deflector.(UL Listed and FM Approved)					
a)	Type : Pendent type Size : 15 mm dia Finish: Chrome					
i)	Operating Temp. : 68 deg.C.	576 nos	Each			
b)	Type : Upright type Size : 15 mm dia Finish: Brass					
i)	Operating Temp. : 68 deg.C.	106 nos	Each			
c)	Type : Side wall type Extended coverage Size : 20 mm dia Finish: Chrome Operating Temp. : 68 deg.C.	20 No. set	Each set			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
2.2	Providing and fixing of concealed pendent sprinkler with white painted cover plate. Sprinkler head set to operate at specified temperature. Sprinkler heads shall be complete with deflector. (UL Listed and FM Approved)					
a)	Type : Pendent Concealed type Size : 15 mm dia Operating Temp. : 68 deg.C. Operating Temp. of plate. : 57 deg.C.	30 nos	Each			
2.3	Providing and fixing following type of surface rosette for sprinklers, of approved make. (UL Listed and FM Approved)					
a)	Captive rosette					
i)	for 15 mm dia	576 nos	Each			
2.4	Providing, laying, jointing, testing and commissioning pipework for Sprinkler System including fixing of pipework on walls, beams, slabs, columns etc. with M. S. supports (duly painted), adjustable hangers, complete in all respects. Material: M.S pipe conforming to IS:1239 and as per class specified below for pipes upto 150 mm dia and IS:3589-1991 for pipes above 150 mm dia and as per thickness specified below Fittings: M.S Forged Fittings Upto 50 mm dia pipes suitable for threaded / weld able socketed joints ; Heavy Class MS fittings for pipes above 50 mm dia suitable for butt welding and flanged joints. Painting: Pipework shall be painting with two coats of enamel paint of fire red shade over a coat of primer.					
a)	150 mm dia pipe (Heavy Class)	146 Metre	Metre			

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
b)	100 mm dia pipe (Heavy Class)	29 Metre	Metre			
c)	80 mm dia pipe (Heavy Class)	494 Metre	Metre			
d)	65 mm dia pipe (Heavy Class)	77 Metre	Metre			
e)	50 mm dia pipe (Heavy Class)	93 Metre	Metre			
f)	40 mm dia pipe (Heavy Class)	250 Metre	Metre			
g)	32 mm dia pipe (Heavy Class)	44 Metre	Metre			
h)	25 mm dia pipe (Heavy Class)	1,438 Metre	Metre			
2.5	Providing and fixing Dual plate check valve (non return valve) of Class PN 16 , having cast iron body, stainless steel disc (AISI 316), trim and spring of approved make. including a set of MS flanges, required nos. of nut & bolts all complete.					
a)	150 mm dia	1 no	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
2.6	Providing and fixing lever operated butterfly valve with tamper switch, UL Listed and FM Approved of nominal pressure rating 16 bar having nickel and chrome plated disc, stainless steel shaft, EPDM body lining and of approved make. including a set of MS flanges, required nos. of nut & bolts all complete. a) 150 mm dia(with lever)	8 nos	Each			
2.7	Providing and fixing dial type pressure gauge with isolation cock at hydrant station. a) Dial diameter 150 mm and calibration 0-10 kg./sq.cm.	2 nos	Each			
2.8	Providing and fixing 25 mm dia gunmetal sight glass assembly including making connection with drain line (inlet, outlet and by-pass valves to be paid separately).	8 no. set	Each set			
2.9	Providing and fixing electric flow switch, capable of sensing a minimum of flow of one sprinkler, including making electrical cable termination.	8 nos	Each			
2.10	Providing and fixing of nickel plated brass/ nonferrous alloy fully way ball valve (minimum working pressure of 20 bar) with operating handle as per specification and of approved make. a) 25 mm dia. b) 40 mm dia.	16 No. 8 No.	Each Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
2.11	Providing and fixing of installation valve assembly of approved make complete with turbine type automatic alarm valve, control valve, test and drain valve and hydraulic alarm with motor and gong including interconnecting piping all complete as per specification and of approved make. (UL Listed and FM Approved)					
a)	150 mm dia	1 No.	Each			
2.12	Providing, fixing and testing forged brass 25 mm dia screwed inlet single acting air release valve with 25 mm dia ball valve on inlet side and pressure gauge with isolating cock.	1 No.	Each			
2.13	Supplying and fixing following lockable cabinets for storing spare sprinklers, fabricated from 1.5 mm thick CRCA MS sheet, stove enamelled in fire red shade with full front glass door, complete with required no. of 68 degree centigrade operating temperature sprinklers and 1 no. sprinkler spanner.					
a)	with 12 Nos. Pendent type Sprinklers	1 No. set	Each set			
b)	with 12 Nos. Upright type Sprinklers	1 No. set	Each set			
SUB TOTAL for "Automatic Sprinkler System"					Rs.	
3.0	FIRE PUMPS & CONTROL PANELS NOTES : 1) Pumps shall be capable of furnishing not less than 150% of rated capacity at a head of not less than 65% of the rated head. The shut off head shall not exceed 120% of rated head.					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
3.1	<p>2) Valves on suction and delivery sides shall be paid separately as per relevant items in other subheads.</p> <p>Supplying, installing, testing and commissioning of following electric motor driven pumping sets for fire fighting purposes including, making piping and electrical connections and suitable for automatic operation. The pump set shall consist of / complete with :</p> <p>i) Horizontally mounted single / multistage end suction type pump of cast iron body and having bronze impellers</p> <p>ii) Squirrel cage TEFC induction motor suitable for 415V 3 phase 50 Hz AC supply of HP rating suitable for the specified duty of pump with synchronous speed of 2900 RPM</p> <p>iii) Common robust bed plate fabricated out of mild steel channel of appropriate size with vibration damping arrangement fixed over suitably designed cement concrete foundation block.</p> <p>iv) Spacer type suitable coupling between pump and prime mover including sheet metal coupling guard.</p> <p>v) Mechanical seal for the pump</p> <p>vi) One no. pressure gauge on delivery side with isolation cock.</p> <p>vii) One no pressure switch and power cabling between panel and pressure switch.</p>					
a)	<p>viii) Drain outlet with valve.</p> <p>Hydrant System Pump 2280 LPM against 88 M</p> <p>HP/KW: 75 HP (Min.)</p>	1 no.	Each			
b)	<p>Sprinkler System Pump 2280 LPM against 88 M</p> <p>HP/KW: 75 HP (Min.)</p>	1 no.	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
c)	<p>Jockey Pump 180 LPM against 88 M HP/KW: 15 HP (Min.)</p> <p>3.2 Supplying, installing, testing and commissioning of following diesel engine driven pumping sets for fire fighting purposes including, making piping and electrical connections and suitable for automatic operation. The pump set shall consist of / complete with :</p> <p>i) Horizontally mounted single / multistage split casing suction type pump of cast iron body and having bronze impellers</p> <p>ii) Water cooled diesel engine capable of developing BHP suitable for the specified duty of pump synchronous speed of 1800 RPM</p> <p>iii) Common robust bed plate fabricated out of mild steel channel of appropriate size with vibration damping arrangement fixed over suitably designed cement concrete foundation block.</p> <p>iv) Suitable coupling between pump and engine including sheet metal coupling guard.</p> <p>v) Mechanical seal for the pump</p> <p>vi) One no. pressure gauge on delivery side with isolation cock.</p> <p>vii) Drain outlet with valve.</p>	1 no.	Each			
a)	<p>viii) Automatic engine starting system including 24 volts, minimum 160 AH battery, boost / trickle charger including battery mounting arrangement, battery leads and other control cabling.</p> <p>Standby diesel engine operated Fire Pump</p>					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	<p>2280 LPM against 88 M</p> <p>HP/KW: 75 HP (Min.)</p>	1 no.	Each			
3.3	<p>Supply, installation, testing and commissioning of suitably designed exhaust piping system with residential type silencer to discharge engine gases to outside open air as per site conditions. The exhaust pipeing shall be shall duly painted with two coats of heat resistant aluminium paint and insulated with 50mm thick loose mineral wool, covered with 3/4" chicken wire mesh and cladded with 24G aluminium sheet.</p>	45 Metre	Metre			
3.4	<p>Supply, installation, testing and commissioning of welded steel (minimum 2 mm thick sheet) constructed fuel tank conforming to relevant I.S. standard having storage capacity sufficient to allow the engine to run on full load for 6 hrs. but not less than 200 litres_ including interconnecting fuel pipework valves and indicator system showing the level of the fuel in the tank. The tank shall be mounted above the engine to provide a gravity feed. A hand operated pump connected to the fuel tank shall also be provided for transferring the fuel from the drum at floor level to the elevated storage tank.</p>	1 no.	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
3.5	<p>Supply, installation, testing and commissioning of fire control panel metal clad type suitable for 415 V AC three phase 4 wire 50Hz supply system. The panel shall be suitable for automatic operation of the fire pumps as per the specified parameters. The panel shall be completely compartmentalised and complete with relays, contactors, starters, Aluminium Bus Bars, designation labels as per requirement, continuous earth bar, panel separators, protective screens, cable clamping support system, top/bottom cable gland plates for incoming and out going cable entries as per details given below:</p> <p>INCOMING</p> <p>630A 35KA TPN MCCB with rotary handles - 1 No.</p> <p>BUSBARS</p> <p>A set of 600A 415V 50Hz 3 Ph 4 wire aluminium busbars.</p> <p>INSTRUMENTS FOR INCOMER</p> <p>A set of instrumentation with a set of Current transformer 600/5A with Ammeter 0-600A, Selector Switch, Voltmeter 0-500V with selector switch and a set of phase-RYB indicating lights with MCB and energy meter</p> <p>Provision for BMS connectivity. The panel should have sufficient no. of potential free contacts for connectivity with Building Management System for monitoring purposes</p> <p>INSTRUMENTS ON OUTGOINGS</p> <p>A set of instrumentation with ammeter with selector switch and current transformer each pump.</p> <p>Indication lights for ON-OFF indication for each fire pump</p> <p>OUTGOING FEEDERS</p> <p>For Hydrant Pump</p>					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	400A TP 35KA MCCB with rotary handle, 100HP star-delta starter, overload relay, single phase preventer, timer etc. - 1No.					
3.6	<p>For Sprinkler Pump</p> <p>400A TP 35KA MCCB with rotary handle, 100HP star-delta starter, overload relay, single phase preventer, timer etc. - 1No.</p> <p>For Jockey Pump</p> <p>25A TP 25KA MCCB with rotary handle, 15 HP DOL starter, overload relay, single phase preventer, timer etc. - 1 No.</p> <p>For Diesel engine operated pump</p> <p>AMF logic control for auto starting of the diesel engine operated pump when the electric driven pumps fail to start. The control cubicle shall consist of MCBs, 12/24V battery charger, DC ammeter and voltmeters , indicating lights , push buttons, hooter, lockout timers, interlocking relay, fuel level indicators etc. as required.</p> <p>Control wiring, auxiliary switches and timer for automatic starting and stopping of Jockey and electric driven pump with externally mounted pressure switches. The control wiring shall be done in such a way that the Jockey pump shall start when the pressure falls to 7.8Kg/sq.cm and stops at 8.8Kg/sq.cm pressure and Main fire pump shall start when the pressure drops below 7.3Kg/sq.cm. and stops when the pressure builds above 8.8Kg/sq.cm. Jockey pump shall stop when the main pump is working. Suitable timers shall be used for starting and stopping of the pumps operation.</p> <p>Note: Externally mounted pressure switches and interconnecting control cabling to be paid separately.</p> <p>Providing and fixing resilient rubber neoprene lined single arch vibration eliminators suitable for raw water up to 70 deg.C temperature working pressure 8 Kg per square centimetre.</p>	1 no. set	each Set			

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
a)	200 mm dia	3 no.	Each			
b)	150 mm dia	3 no.	Each			
c)	100 mm dia	1 no.	Each			
d)	80 mm dia	1 no.	Each			
3.7	<p>Providing, installing, testing and commissioning hydropneumatic vessel. The vessel shall comprise of MS shell, suitable for a working pressure of minimum 10.0 kg/sq.cm. , complete with mounting pedestals, 100 mm dia flanged inlet connection 25 mm dia drain connection, flanged openable cover, all complete. The vessel shall be suitably treated with anticorrosive pain inside and epoxy paint of approved shade externally</p> <p>The vessel as described above having following parameters</p> <p>Dia - 450MM Height on Straight - 2000MM Shell Thickness - 12MM Dishend Thickness - 10MM Test Pressure - 20Kg/cm²</p>	1 no.	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
3.8	Providing and fixing of flanged end `Y' type strainer in cast iron body with stainless steel perforated sheet screen basket, complete with drain plug. a) 150mm dia	3 no.	Each			
	b) 100mm dia	1 no.	Each			
3.9	Supplying and fixing of following types and sizes of 1.1 KV grade PVC insulated aluminium conductor FRLS armoured cable conforming to IS : 1554. a) 3C 10 sq.mm.	20 Metre	Metre			
	b) 3C 120 sq.mm.	80 Metre	Metre			
3.10	Supplying, laying and connecting of following size 1.1 kV grade copper conductor armoured control cable on wall or on existing cable tray with clamping, dressing or drawn in existing ducts all as required. i) 4C 1.5 sq.mm.	100 Metre	Metre			
3.11	Providing and fixing following size G.I. strip / wire on surface or in recess for body earthing of motors as required. a) 20x3 mm G.I. strip	80 Metre	Metre			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
3.12	b) 8 SWG dia. 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	40 Metre	Metre			
3.13	a) 100 mm. width x 40 mm. depth x 1.6 mm. thickness	25 Metre	Metre			
	b) 200 mm. width x 50 mm. depth x 1.6 mm. thickness	50 Metre	Metre			
	Supplying, installation, setting, testing and commissioning of differential type pressure switches with one NO+ 1 NC contact 220 volts 5 amp and pressure rating 10 Kg//sq.cm for operation of fire pumps. Make: Danfoss or equivalent as approved	4 no.	Each			
SUB TOTAL for "Fire Pumps and Control Panels"					Rs.	
4.0	FIRE EXTINGUISHERS Note : All fire extinguishers shall be ISI marked					
4.1	Providing and fixing fully charged ABC powder type portable fire extinguishers conforming to IS:13849, fixed to wall with brackets complete with initial charge.					
	a) Capacity 5 Kg.	22 no.	Each			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
4.2	Providing and fixing fully charged BC powder type portable fire extinguishers with gas cartridge all complete conforming to IS:2171, fixed to wall with brackets complete with initial charge. a) Capacity 5 Kg.	9 no.	Each			
4.3	Providing and fixing fully charged DCP type portable fire extinguishers with cartridge all complete conforming to IS:10685, trolley mounted fire extinguisher complete with initial charge. a) Capacity 25 Kg.	4 no.	Each			
4.4	Providing and fixing 50 litre capacity, ISI marked, foam type trolley mounted fire extinguisher complete with initial charge.	4 no.	Each			
	SUB TOTAL for "Fire Extinguishers					Rs.
	SUB TOTAL FOR FIRE FIGHTING WORKS					Rs.
Part -5	RETROFITTING WORK					

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
1.1	<p>Providing, fabricating, assembling, hoisting / erecting and fixing in position at all heights and with all leads, structural steel works of MS plated section, all as per structural drawings and as per detailed specifications (for materials & workmanship) in the situations described hereinafter including:</p> <p>i) Cutting of components to required lengths/ widths and shapes/profiles, ii) Smooth grinding / machining of edges / faces / all welding joints. iii) Preparing the surface to ensure complete removal of mill scale by grit & sand blasting to achieve finish to grade SA 2.5.</p> <p>iv) Necessary welding (electric arc welding) for required weld lengths and sizes v) Allow for surface preparation, derusting primer coat, two or more coats of synthetic enamel paint etc. complete all as directed by the Project Manager.</p> <p>Note: 1. The contractor shall submit fabrication drawings for work involved based on construction drawings (that may be issued during construction period) for approval by the Project Manager including testing of welding.</p> <p>2.The fabrication work shall start only after approval of the fabrication drawings. Any change required in the fabrication drawings shall be carried out at no extra cost.</p> <p>3.Fabrication shall be in a perfect Architectural workmanship manner and as provided in Section V & VI of IS 800 & IS 7215. Welding shall be carried out by qualified welders.</p> <p>4.Electrodes for welding, the procedure, selection, test and inspection shall confirm to provisions in IS 816, IS 818, IS 822, & IS 833.</p> <p>Erection/ hoisting shall commence only after approval of fabricated parts by the Project Manager.</p>	2,000	kg			

SI. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
1.2	Item same as above but with M.S. rolled section of angles channels, pipes or I sections.	2,500 kg	kg			
1.3	<p>Supplying and fixing chemical rebar fastening as per manufacturer's specification. (Embedment length of the bar shall be measured for payment, steel bars shall be paid as per relevant reinforcement item)</p> <p>(i) Using Hilti-RE - 500 or equivalent etc complete</p> <p>a. 10 mm dia bar</p> <p>b. 12 mm dia bar</p> <p>c. 16 mm dia bar</p> <p>d. 20 mm dia bar</p> <p>e. 25 mm dia bar</p> <p>f. 32 mm dia bar</p> <p>(ii) Using HY-150 or equivalent etc complete</p>	<p>150 metre</p> <p>150 metre</p> <p>25 metre</p> <p>20 metre</p> <p>10 metre</p> <p>10 metre</p>	<p>metre</p> <p>metre</p> <p>metre</p> <p>metre</p> <p>metre</p> <p>metre</p>			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
a.	10 mm dia bar	2 metre	metre			
b.	12 mm dia bar	2 metre	metre			
c.	16 mm dia bar	2 metre	metre			
d.	20 mm dia bar	2 metre	metre			
e.	25 mm dia bar	2 metre	metre			
f.	32 mm dia bar	2 metre	metre			
1.5	Preparation of concrete surface for jacketing/extra concreting - Surfaces shall be prepared by mechanical abrasion using chiselling, sand blasting, stiff wire brushing or as instructed by engineer.	90 sqm m	sqm m			
1.6	Applying epoxy adhesives (Like nitoband of fosroc or equivalent) on concrete surface for jacketing	90 sqm m	sqm m			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
	TOTAL OF RETROFITTING WORKS				Rs.	
Part -6	Facade Work					
1.1	Providing and fixing hand made ceramic glazed tiles (thickness to be specified by manufacturer) of approved make in colours, shades, of required size as approved by Engieer-in-Charge in wall, dado, 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 @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete. (Basic rate of hand made ceramic glazed tiles Rs 250 per sqft)	86.40	sqm			
1.2	Providing and fixing hand made ceramic jali (thickness to be specified by manufacturer) of approved make in colours, shades, of required size as approved by Engieer-in-Charge jointing with grey cement slurry @ 3.3 kg per sq.m. including pointing in white cement mixed with pigment of matching shade complete. (Basic rate of hand made ceramic glazed tiles Rs 250 per sq.ft.)	64.80	sqm			
1.3	Providing and fixing RCC jali (thickness to be specified by manufacturer) of approved make in colours, shades, of required size as approved by Engieer-in-Charge jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	108	sqm			

Sl. No.	Description of item /Sub Heads	Qty	Unit	Rate in figures (Rs.)	Rate in words (Rupees)	Amount (Rs.)
1.4	Providing and fixing poly carbonate sheet 2 mm thick of approved colour, shade, design and pattern of approved brand and manufacture in required design and pattern including required nuts, bolts, washers etc on aluminium frame work as per approved design etc complete as per direction of Engineer-In-charge. (Exposed area of sheet will be measured for the purpose of payment.)	105 Sqm	Sqm			
1.5	Providing and fixing Aluminium coated panelling of alucabond or approved brand and manufacture of 5 mm thick with all required material including back up frame with groove including silicon filling as per sample approved and as per instructions at all level and as per the architectural drawings and the directions of Engineer-in-charge. (Basic rate of Aluminium coated panelling Rs 350 per sqft)	100 sqm	sqm			
SUB TOTAL OF FAÇADE WORK					Rs.	