

**Name of Work:** - Construction of building for Common Dinning Facility & food courts of 15.00 meter height including internal & external electrification, plumbing, firefighting, fire alarm System, water tanks, road, parking & HVAC at IIT Kanpur (U.P.)

S.No.	Description	Unit	Quantity	Rate	Amount
1.00	Earth Work				
1.01	Disposal of surplus excavated earth within the site, as per directions of the Engineer-in-charge, by mechanical transport including loading and unloading, disposed earth to be leveled and neatly dressed and lead upto 1KM	Cum	2490.00	211.68	527,083.20
1.02	Earth work in surface excavation not exceeding 30 cm in depth but exceeding 1.5m in width as well as 10 sqm on plan including getting out and disposal of excavated earth upto 50 m and lift upto 1.5m , as directed by Engineer-in-Charge:				
1.03	All kinds of soil	Sqm	950.00	126.34	120,023.00
1.04	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge, in all kinds of soil	Cum	6810.00	172.71	1,176,155.10
1.05	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, for all lift, including getting out the excavated soil and disposal of surplus excavated soil as directed, with in a lead of 50 m.				
1.06	All kinds of soil .	Cum	145.00	253.27	36,724.15
1.07	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.	Cum	4520.00	190.71	862,009.20
1.08	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials				
1.09	a) All kinds of soil	Cum	3102.50	123.38	382,786.45
2.00	Cement Concrete Work				

S.No.	Description	Unit	Quantity	Rate	Amount
2.01	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
2.02	1 : 4 : 8 ( 1 Cement : 4 coarse sand (zone- III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)	Cum	831.00	6,628.08	5,507,934.48
2.03	Providing and laying damp-proof course 50mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand(zone-III) : 4 graded stone aggregate 20mm nominal size).	Sqm	155.00	482.36	74,765.80
2.04	Extra for providing and mixing water proofing material in cement concrete per 50 kg work in doses by weight of cement as per manufacturer's specification.	per 50 kg cement	49.60	17.66	875.94
2.05	Providing & applying a coat of residual petroleum bitumen of grade of VG-10 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.	Sqm	155.00	142.20	22,041.00
3.00	Reinforced Cement concrete work				
3.01	Centring and shuttering including strutting, propping etc. and removal of form work for :				
3.02	a) Foundations, footings, bases for columns	Sqm	1372.00	381.56	523,500.32
3.03	b) Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	Sqm	6180.00	819.75	5,066,055.00
3.04	c) Suspended floors, roofs, landings, balconies, access platform and shelves	Sqm	7265.00	902.21	6,554,555.65
3.05	d) Lintels, beams, plinth beams, girders, bressumers and cantilevers	Sqm	6010.00	716.52	4,306,285.20
3.06	e) Columns, Pillars, Piers, Abutments, Posts and Struts	Sqm	150.00	935.34	140,301.00
3.07	f) Stairs, (excluding landings) except spiral-staircases	Sqm	340.00	744.30	253,062.00
3.08	g) Small lintels not exceeding 1.5 m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like	Sqm	50.00	381.56	19,078.00
3.09	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc., including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured).				
3.10	Suspended floors, roofs, landing, beams and balconies, pergola etc. (Plan area to be measured)	Sqm	19720.00	373.92	7,373,702.40

S.No.	Description	Unit	Quantity	Rate	Amount
3.11	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
3.12	a) Mild steel and Medium Tensile steel bars	Kg	670.00	104.21	69,820.70
3.13	b) Hard drawn steel wire fabric	Kg	4100.00	99.44	407,704.00
3.14	c) Thermo-Mechanically Treated bars of grade Fe-550D	Kg	320000.00	104.94	33,580,800.00
3.15	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
3.16	Thermo-Mechanically Treated bars of grade Fe-550D	Kg	425000.00	104.94	44,599,500.00
3.17	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	Metre	100.00	76.28	7,628.00
3.18	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work, using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana/ Ordinary Portland/ Portland slag cement, admixtures in recommended proportions as per IS:9103 to accelerate/ retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centring, shuttering, finishing and reinforcement, as per direction of Engineer-in-charge, for the following grades concrete:				
3.19	(Note :- Extra cement upto 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the Contractor shall have discretion to either re-design the mix or bear the cost of extra cement.				
3.20	All works upto plinth level				
3.21	a) Concrete of M30 grade with minimum cement content of 350 kg /cu m	Cum	1180.00	9,395.00	11,086,100.00
3.22	b) Concrete of M35 grade with minimum cement content of 370 kg /cum	Cum	584.00	9,541.92	5,572,481.28
3.23	All works above plinth level upto floor V level				
3.24	a) Concrete of M25 grade with minimum cement content of 330kg/ cum	Cum	31.00	9,594.17	297,419.27
3.25	b) Concrete of M30 grade with minimum cement content of 350kg/ cum	Cum	55.00	9,741.04	535,757.20

S.No.	Description	Unit	Quantity	Rate	Amount
3.26	c) Concrete of M35 grade with minimum cement content of 370 kg /cum	Cum	2295.00	9,887.97	22,692,891.15
3.27	Add for using extra cement in the items of design mix over and above the specified cement content therein.	quintal	1400.00	713.70	999,180.00
4.00	Masonry Work				
4.01	Brick work with common burnt clay F.P. S. (non modular) bricks of class designation 7.5 in foundation and plinth in:				
4.02	Cement mortar 1 :6 (1 cement : 6 coarse sand)	Cum	79.00	6,939.68	548,234.72
4.03	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :				
4.04	Cement mortar 1 :6 (1 cement : 6 coarse sand)	Cum	1502.00	8,860.09	13,307,855.18
4.05	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundations and plinth in :				
4.06	cement mortar 1 :4 (1 cement : 4 coarse sand)	Sqm	60.00	880.61	52,836.60
4.07	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level.				
4.08	Cement mortar 1 :4 (1 cement :4 coarse sand)	Sqm	1120.00	1,093.46	1,224,675.20
4.09	Extra for providing and placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry.	Sqm	1120.00	101.97	114,206.40
5.00	Clading Work				
5.01	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1 :4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing of edges to give high gloss finish etc. complete at all levels.				
5.02	a) Granite of any colour and shade, area of slab upto 0.50 sqm	Sqm	455.00	5,267.34	2,396,639.70
5.03	b) Granite of any colour and shade, area of slab over 0.50 sqm	Sqm	52.00	4,997.62	259,876.24

S.No.	Description	Unit	Quantity	Rate	Amount
5.04	Providing edge moulding granite/ kotah stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.				
5.05	a) Granite/ kota stone work	RM	415.00	497.15	206,317.25
5.06	Extra for fixing marble /granite stone, over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive, including cleaning etc. complete.	RM	80.00	553.20	44,256.00
5.07	Extra for providing opening of required size & shape for wash basin/ kitchen sink in kitchen platform, vanity counter and similar location in marble/ Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.	Each	90.00	952.28	85,705.20
5.08	Providing and fixing expansion hold fasteners on C.C. /R.C.C./Brick masonry surface backing including drilling necessary holes and the cost of bolt etc complete.				
5.09	Wedge expansion type				
5.10	Fastener with threaded dia 12 mm	Each	10.00	60.03	600.30
5.11	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	Sqm	2880.00	1,233.72	3,553,113.60
6.00	Wood & PVC Work				
6.01	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length ( hold fast lugs or dash fastener shall be paid for separately).				
6.02	Second class teak wood	Cum	2.30	139,090.06	319,907.14
6.03	Extra for providing frosted glass panes instead of ordinary float glass/ toughened glass panes in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	Sqm	20.00	171.64	3,432.80

S.No.	Description	Unit	Quantity	Rate	Amount
6.04	Extra for providing ISI marked Stainless Steel butt hinges instead of M.S. pressed butt hinges bright finished of required size with necessary screws. (Shutter area to be measured).	Sqm	5.00	188.32	941.60
6.05	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:				
6.06	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	Sqm	70.00	2,328.05	162,963.50
6.07	Extra for Providing and fixing flush doors with decorative veneering instead of non decorative ISI marked flush door shutters conforming to IS: 2202 (Part I)	Sqm	70.00	465.09	32,556.30
6.08	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).	Sqm	70.00	449.87	31,490.90
6.09	Providing and fixing wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete :				
6.10	a) 2nd class teak wood				
6.11	50 x 20 mm	Rm	357.00	264.41	94,394.37
6.12	Providing 40x5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diameter bolts, nuts and wooden plugs and embedding in cement concrete block 30x10x15cm 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size).	Each	192.00	222.67	42,752.64
6.13	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	Each	142.00	956.60	135,837.20
6.14	Providing and fixing ISI marked aluminium butt hinges 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:				
6.15	100x63x4 mm	Each	50.00	101.92	5,096.00

S.No.	Description	Unit	Quantity	Rate	Amount
6.16	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 :				
6.17	150x10 mm	Each	140.00	80.32	11,244.80
6.18	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 :				
6.19	125mm	Each	70.00	64.46	4,512.20
6.20	Providing & Fixing decorative high pressure laminated sheet of plain I wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.				
6.21	1.5 mm thick	Sqm	63.00	1,017.71	64,115.73
6.22	Providing and fixing panic bar / latch (Double point) fitted with a single body, Trim Latch & Lock on back side of the Panic Latch of reputed brand and manufacture to be approved by the Engineer- in- charge, all complete.	Each	14.00	8,140.26	113,963.64
7.00	Steel Work				
7.01	Structural steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	Kg	100.00	114.18	11,418.00
7.02	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters				
7.03	80x1 .25 mm M.S. laths with 1.25 mm thick top cover	Sqm	14.00	3,554.56	49,763.84
7.04	Providing and fixing ball bearing for rolling shutters.	Each	6.00	479.06	2,874.36

S.No.	Description	Unit	Quantity	Rate	Amount
7.05	Extra for providing grilled rolling shutters manufactured out of 8 mm dia M.S. bar instead of laths as per design approved by Engineer-in-charge, (area of grill to be measured).	Sqm	3.00	747.51	2,242.53
7.06	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 R.C.C. slabs or beams during laying, including painting the exposed portion of loop, all as per standard design complete	Each	126.00	219.90	27,707.40
7.07	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.	Each	240.00	214.69	51,525.60
7.08	Steel work welded in built up sections/ framed work in M. S. steel 240 MPA, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
7.09	b) In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	Kg	660.00	167.94	110,840.40
7.10	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	Kg	1600.00	751.55	1,202,480.00
8.00	Flooring work				

S.No.	Description	Unit	Quantity	Rate	Amount
8.01	52 mm thick cement concrete flooring with concrete hardener topping, under layer 40 mm thick cement concrete 1 :2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1 :2 (1 cement hardener mix : 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturer's specifications. This includes cost of cement slurry, but excluding the cost of nosing of steps etc. complete.	Sqm	20.00	952.03	19,040.60
8.02	Cement plaster skirting up to 30 cm height, with cement mortar 1 :3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.				
8.03	18 mm thick	Sqm	20.00	644.17	12,883.40
8.04	Extra for marble/ granite/ Kotah stone flooring in treads of steps and risers using single length up to 2.00 metre.	Sqm	160.00	828.80	132,608.00
8.05	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) :				
8.06	25 mm thick	Sqm	1580.00	1,895.65	2,995,127.00
8.07	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	Sqm	76.00	2,291.12	174,125.12
8.08	Providing and laying Ceramic glazed floor tiles of size 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), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	Sqm	175.00	1,066.94	186,714.50

S.No.	Description	Unit	Quantity	Rate	Amount
8.09	Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1 :4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.				
8.10	a) Double charge vitrified tile polished finish of size				
8.11	i) Size of Tile 600 x 600 mm	Sqm	240.00	1,414.40	339,456.00
8.12	b) Glazed Vitrified tiles Matt Antiskid finish of size				
8.13	i) Size of Tile 600 x 600 mm	Sqm	440.00	1,426.27	627,558.80
8.14	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joint with white cement & matching pigments etc. complete				
8.15	a) Size of Tile 600x600 mm	Sqm	730.00	1,579.23	1,152,837.90
8.16	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1 :4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :				
8.17	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalen	Sqm	610.00	3,100.66	1,891,402.60

S.No.	Description	Unit	Quantity	Rate	Amount
8.18	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1 :4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.				
8.19	Polished Granite stone slab of colour Black, Cherry/Ruby Red or equivalent	Sqm	4550.00	4,360.30	19,839,365.00
9.00	Roofing work				
9.01	Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300 mm x 20 mm) with SRI (solar refractive index) > 78, solar reflection > 0.70 and initial emittance > 0.75 on waterproof and sloped surface of terrace, laid on 20 mm thick cement sand mortar in the ratio of 1 :4 (1 cement : 4 coarse sand) and grouting the joints with mix of white cement & marble powder in ratio of 1 :1, including rubbing and polishing of the surface upto 3 cuts complete, including providing skirting upto 150 mm height along the parapet walls in the same manner.	Sqm	2470.00	1,657.94	4,095,111.80

S.No.	Description	Unit	Quantity	Rate	Amount
9.02	Providing & fixing false ceiling at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm c/c, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50 mm long with 6 mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I chanel 45 x15 x 0.90 mm running at the spacing of 1200 mm c/c, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5mm, at 450 mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64 mm dia x 230 mm long G.I wire at every junction, including fixing perimeter channels 0.50 mm thick 27 mm high having flanges of 20 mm and 30 mm long,				
9.03	the perimeter of ceiling fixed to wall/ partitions with the help of Rawl plugs at 450 mm centre, with 25 mm long dry wall screws @ 230 mm interval, including fixing of Calcium Silicate Board to ceiling section and perimeter channels with the help of dry wall screws of size 3.5 x25 mm at 230 mm c/c, including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes,finishing with jointing compounds in three layers covering up to 150 mm on both sides of joints and two coats of primer suitable for boards, all as per manufacture's specification and also including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, all complete as per drawings, specificaton and direction of the Engineer in charge but excluding the cost of painting with:				
9.04	8 mm thick Calcium Silicate Board made with Calcareous & Siliceous materials reinforced withcellulose fiber manufactured through autoclaving process.	Sqm	5300.00	1,529.85	8,108,205.00

S.No.	Description	Unit	Quantity	Rate	Amount
10.00	Finishing work				
10.01	12 mm cement plaster of mix :				
10.02	1:6 (1 cement: 6 coarse sand)	Sqm	4725.00	334.37	1,579,898.25
10.03	15 mm cement plaster on rough side of single or half brick wall of mix:				
10.04	1:4 (1 cement: 4 coarse sand )	Sqm	6040.00	400.63	1,081,701.00
10.05	1:6 (1 cement: 6 coarse sand)	Sqm	2700.00	384.68	1,038,636.00
10.06	Cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement.				
10.07	12 mm cement plaster	Sqm	500.00	437.41	218,705.00
10.08	6 mm cement plaster of mix :				
10.09	1:3 (1 cement : 3 fine sand)	Sqm	2240.00	292.34	654,841.60
10.10	Finishing walls with ready mixed Premium acrylic emulsion paint (Company Depot Tinted) having VOC less than 50 gm/litre and UV resistance as per IS 15489:2004, Alkali & fungal resistance, dirt resistance exterior paint of required shade with silicon additives.				
10.11	New work (Two or more coats applied @ 1.43 litre/ 10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm.	Sqm	1545.00	176.36	272,476.20
10.12	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.				
10.13	On steel work	Sqm	65.00	235.22	15,289.30
10.14	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :				
10.15	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	Sqm	70.00	220.14	15,409.80
10.16	French spirit polishing :				
10.17	Two or more coats on new works including a coat of wood filler	Sqm	100.00	434.20	43,420.00
10.18	Extra for addition of synthetic Polyester triangular fibre of length 6mm, effective diameter 10-40 microns and specific gravity of 1.34 to 1.40 in cement plaster/mortar by using 125 gms. of synthetic Polyester triangular fibre for 50 Kgs. cement used in cement mortar as per directions of Engineer-in-Charge.	Per Bag of 50 Kg of cement	1175.00	76.23	89,570.25
10.19	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	Sqm	9500.00	151.84	1,442,480.00

S.No.	Description	Unit	Quantity	Rate	Amount
10.20	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound ) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.				
10.21	Two coats	Sqm	11780.00	138.94	1,636,713.20
11.00	Road Work				
11.01	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50 metres.	Sqm	2050.00	212.99	436,629.50
11.02	Supplying and stacking at site.				
11.03	90 mm to 45 mm size stone aggregate	Cum	205.00	2,041.74	418,556.70
11.04	Laying, spreading and compacting stone aggregate of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3 wheeled road/vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening / binding material to fill up interstices of coarse aggregate, watering and compacting to the required density .	Cum	205.00	1,018.68	208,829.40
11.05	Providing and fixing pre-moulded joint filler in expansion joints of RCC roads / CC pavements after making the joints dust free with high pressure air jet cleaners, all complete as per direction of the Engineer-in-Charge. (Pre-moulded joint fillers shall be made of bitumen hot sealing compound impregnated fibre board having impregnation more than 35%, conforming to IS:1838 for fibre board and IS: 1834 for hot sealing bitumen compound grade A.)	per cm depth per cm width per metre length	3450.00	5.16	17,802.00
11.06	Providing and filling in position rubberized bitumen hot sealing compound for sealing of expansion joints in roads / pavements all complete as per direction of the Engineer-in-Charge.				
11.07	Providing and filling in position rubberized bitumen hot sealing compound for sealing of expansion joints in roads / pavements all complete as per direction of the Engineer-in-Charge.	per cm depth per cm width per metre length	450.00	8.42	3,789.00

S.No.	Description	Unit	Quantity	Rate	Amount
11.08	Providing and laying 60 mm thick factory made cement concrete interlocking paver block of M - 30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge.	Sqm	700.00	945.76	662,032.00
11.09	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5 mm), including making drainage opening wherever required complete etc. as per direction of Engineering- charge (length of finished kerb edging shall be measured to calculate volume for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	Cum	31.00	9,844.42	305,177.02
11.10	Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately).  (Note:- Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately).	Cum	250.00	9,558.56	2,389,640.00

S.No.	Description	Unit	Quantity	Rate	Amount
11.11	Providing and laying tactile tile (for vision impaired persons as per standards) of size 300x300x9.8 mm having with water absorption less than 0.5% and conforming to IS:15622 of approved make in all colours and shades in for outdoor floors such as footpath, court yard, multi modals location etc., laid on 20 mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge.	Sqm	25.00	1,963.12	49,078.00
11.12	Drainage work				
11.13	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS: 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	Each	88.00	538.75	47,410.00
11.14	Supplying and fixing C.I. cover without frame for manholes :				
11.15	455x610 mm rectangular C.I. cover (light duty) the weight of the cover to be not less than 23 kg	Each	12.00	1,321.33	15,855.96
12.00	Aluminium Work				

S.No.	Description	Unit	Quantity	Rate	Amount
12.01	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket 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, paneling and dash fasteners to be paid for separately) :				
12.02	a) For fixed portion				
12.03	Powder coated aluminium (minimum thickness of powder coating 50 micron)	Kg	4250.00	516.57	2,195,422.50
12.04	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 EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)				
12.05	Powder coated aluminium (minimum thickness of powder coating 50 micron)	Kg	2800.00	617.32	1,728,496.00
12.06	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineerin- charge.				
12.07	With stainless steel cover plate minimum 1.25 mm thickness	Each	12.00	2,747.61	32,971.32

S.No.	Description	Unit	Quantity	Rate	Amount
12.08	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc. with 6 mm thick clear float glass both side, having 12 mm air gap, including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete.	Sqm	240.00	4,862.76	1,167,062.40
12.09	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.				
12.10	205 X 19 mm	Each	200.00	335.00	67,000.00
12.11	Providing and fixing aluminium tubular handle bar 32 mm outer dia, 3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction of Engineer-in-Charge.				
12.12	Powder coated minimum thickness 50 micron aluminium tubular handle bar	Each	105.00	614.50	64,522.50
12.13	Providing and fixing Brass 100 mm mortice latch and lock with 6 levers without pair of handles (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	Each	36.00	514.57	18,524.52
12.14	Filling the gap in between aluminium/ stone/ wood frame and adjacent RCC/Brick/ Stone/ wood/ Ceramic/ Gypsum work by providing weather/ structural non sag elastomeric PU sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete, complying to ASTM C920, DIN 18540-F & ISO 11600				
12.15	Upto 5 mm depth and 5 mm width	metre	1950.00	144.10	280,995.00
13.00	Structural Glazing Work				

S.No.	Description	Unit	Quantity	Rate	Amount
13.01	<p>Providing and supplying aluminium extruded tubular and other aluminium sections as per the architectural drawings and approved shop drawings, the aluminium quality as per grade 6063 T5 or T6 as per BS 1474, including super durable powder coating of 60-80 microns conforming to AAMA 2604 of required colour and shade as approved by the Engineer-in-Charge. (The item includes cost of material such as cleats, sleeves, screws etc. necessary for fabrication of extruded aluminium frame work. Nothing extra shall be paid on this account). The weight of aluminium extruded section shall be taken for purpose of payment.</p>	Kg	3000.00	403.11	1,209,330.00
13.02	<p>Designing, fabricating, testing, protection, installing and fixing in position semi (grid) unitized system of structural glazing (with open joints) for linear as well as curvilinear portions of the building for all heights and all levels, including:</p> <p>(a) Structural analysis &amp; design and preparation of shop drawings for the specified design loads conforming to IS 875 part III (the system must passed the proof test at 1.5 times design wind pressure without any failure), including functional design of the aluminum sections for fixing glazing panels of various thicknesses, aluminium cleats, sleeves and splice plates etc. gaskets, screws, toggles, nuts, bolts, clamps etc., structural and weather silicone sealants, flashings, fire stop (barrier)- cum-smoke seals, microwave cured EPDM gaskets for water tightness, pressure equalisation &amp; drainage and protection against fire hazard including:</p> <p>(b) Fabricating and supplying serrated M.S. hot dip galvanised / Aluminium alloy of 6005 T5 brackets of required sizes, sections and profiles etc. to accommodate 3 Dimensional movement for achieving perfect verticality and fixing structural glazing system rigidly to the RCC/ masonry/ structural steel framework of building structure using stainless steel anchor fasteners/ bolts, nylon seperator to prevent bimetallic contacts with nuts and washers etc. of stainless steel grade 316, of the required capacity and in required numbers.</p>				

S.No.	Description	Unit	Quantity	Rate	Amount
13.03	<p>(c) Providing and filling, two part pump filled, structural silicone sealant and one part weather silicone sealant compatible with the structural silicone sealant of required bite size in a clean and controlled factory/ work shop environment, including double sided spacer tape, setting blocks and backer rod, all of approved grade, brand and manufacture, as per the approved sealant design, within and all around the perimeter for holding glass.</p> <p>(d) Providing and fixing in position flashings of solid aluminium sheet 1 mm thick and of sizes, shapes and profiles, as required as per the site conditions, to seal the gap between the building structure and all its interfaces with curtain glazing to make it watertight.</p> <p>(e) Making provision for drainage of moisture/ water that enters the curtain glazing system to make it watertight, by incorporating principles of pressure equalization, providing suitable gutter profiles at bottom (if required), making necessary holes of required sizes and of required numbers etc. complete. This item includes cost of all inputs of designing, labour for fabricating and installation of aluminium grid, installation of glazed units, T&amp;P, scaffolding and other incidental charges including wastages etc., enabling temporary structures and services, cranes or cradles etc. as described above and as specified.</p>				

S.No.	Description	Unit	Quantity	Rate	Amount
13.04	<p>The item includes the cost of getting all the structural and functional design including shop drawings checked by a structural designer, dully approved by Engineer-in-charge. The item also includes the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working structural glazing as specified, cleaning and protection till the handing over of the building for occupation. In the end, the Contractor shall provide a water tight structural glazing having all the performance characteristics etc. all complete as required, as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer- in-Charge.</p> <p>Note:- 1. The cost of providing extruded aluminium frames, shadow boxes, extruded aluminium section capping for fixing in the grooves of the curtain glazing and vermin proof stainless steel wire mesh shall be paid for separately under relevant items under this sub- head. However, for the purpose of payment, only the actual area of structural glazing (including width of grooves) on the external face shall be measured in sqm. up to two decimal places.</p> <p>Note:-2. The following performance test are to be conducted on structural glazing system if area of structural glazing exceeds 2500 Sqm from the certified laboratories accredited by NABL (National Accreditation Board for Testing and Calibration Laboratories), Department of Science &amp; Technologies, India. Cost of testing is payable separately.</p>				

S.No.	Description	Unit	Quantity	Rate	Amount
13.05	<p>The NIT approving authority will decide the necessity of testing on the basis of cost of the work, cost of the test and importance of the work.</p> <p>Performance Testing of Structural glazing system</p> <p>Tests to be conducted in the NABL accredited lab or any other accreditation body which operates in accordance with ISO/IEC 17011 and accredits labs as per ISO/IEC 17025</p> <p>1. Performance Laboratory Test for Air Leakage Test (-50pa to - 300pa) &amp; (+50pa to +300pa) as per ASTM E-283-04 testing method for a range of testing limit 1 to 200 mVhr</p> <p>2. Static Water Penetration Test. (50pa to 1500pa) as per ASTM E- 331-09 testing method for a range up to 2000 ml.</p> <p>3. Dynamic Water Penetration (50pa to 1500pa) as per AAMA 501.01- 05 testing method for a range upto 2000 ml</p> <p>4. Structural Performance Deflection and deformation by static air pressure test (1.5 times design wind pressure without any failure) as per ASTM E-330-10 testing method for a range upto 50 mm</p> <p>5. Seismic Movement Test (upto 30 mm) as per AAMA 501.4-09 testing method for Qualitative test, Tests to be conducted on site.</p> <p>6. Onsite Test for Water Leakage for a pressure range 50 kpa to 240 kpa (35psi) upto 2000 ml</p>	Sqm	690.00	3,415.72	2,356,846.80
13.06	<p>Providing, assembling and supplying vision glass panels (IGUs) comprising of hermetically-sealed 6-12- 6 mm insulated glass (double glazed) vision panel units of size and shape as required and specified, comprising of an outer heat strengthened float glass 6 mm thick, of approved colour and shade with reflective soft coating on surface # 2 of approved colour and shade, an inner Heat strengthned clear float glass 6 mm thick, spacer tube 12 mm wide, dessicants, including primary seal and secondary seal (structural silicone sealant) etc. all complete for the required performances, as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineerin- Charge. The IGUs shall be assembled in the factory/ workshop of the glass processor.</p>				

S.No.	Description	Unit	Quantity	Rate	Amount
13.07	(Payment for fixing of IGU Panels in the curtain glazing is included in cost of item No.25.2) For payment, only the actual area of glass on face # 1 of the glass panels (excluding the areas of the grooves and weather silicone sealant) provided and fixed in position, shall be measured in sqm. (i) Coloured tinted float glass 6 mm thick substrate with reflective soft coating on face # 2, + 12 mm Airgap + 6 mm Heat Strengthened clear Glass of approved make having properties as visible Light transmittance (VLT) of 25 to 35 %, Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25- 0.28) and U value of 3.0 to 3.3 W/m2 degree K etc. The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	Sqm	690.00	3,618.30	2,496,627.00
14.00	Misscellenous work				
14.01	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured).				
14.02	a) Fly proof stainless steel grade 304 wire gauge with 0.5 mm dia. wire and 1.4 mm wide aperture	Sqm	95.00	1,043.06	99,090.70
14.03	Providing and laying cushioning layer in cement motar 1:4: (1cement: 2 coarse sand)	cum	80.00	5,830.22	466,417.60
14.04	Providing and laying in position cement concrete of 1:5:10 (1 Cement : 5 coarse sand (zone-III) : 10 graded brick aggregate 80 mm nominal size) excluding the cost of centring and shuttering	Cum	335.00	5,883.73	1,971,049.55
14.05	Providing and fixing stainless steel hanging type floor door stopper with necessary screws, etc. complete.	Each	38.00	638.29	24,255.02
14.06	Providing and fixing stainless steel tower bolts (barrel type) with necessary screws etc. complete :				
14.07	a) 200x10 mm	Each	160.00	579.91	92,785.60
14.08	Providing and fixing stainless steel 100 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality with necessary screws etc. complete.	Each	6.00	8,257.85	49,547.10

S.No.	Description	Unit	Quantity	Rate	Amount
14.09	Providing and fixing stainless steel 100 mm mortice latch with one dead bolt and a pair of lever handles of approved quality with necessary screws etc. complete.	Each	26.00	8,257.85	214,704.10
14.10	Providing and fixing 75mm PVC buffers for door with washers and necessary screws etc. complete (best make of approved quality)	Each	30.00	95.35	2,860.50
14.11	Providing and fixing paneling or paneling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick :				
14.12	6.0 mm thick coated Glass (Coating Face 2) toughened glass panes with transmission 54% - 56%, external reflection 13% - 15%, internal reflection 17% - 19%, solar factor (EN) 0.49-0.51 SHGC / SF, shading co-efficient 0.56-0.58 SC, U-value (EN) 5.5-5.7 (W/Sq.m K) and with approved colour	Sqm	235.00	2,414.99	567,522.65
14.13	Extra for leather polished granite stone flooring instead of polished granite flooring	Sqm	500.00	1,107.27	553,635.00
14.14	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for skirting, riser for steps, dado, etc., of required size, approved shade, colour and texture over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels.				
14.15	a) Granite of of ruby or equivalent colour and shade as per Engineer In Charge	Sqm	887.00	7,037.65	6,242,395.55

S.No.	Description	Unit	Quantity	Rate	Amount
14.16	<p>Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying :</p> <p>(a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours.</p> <p>(b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours.</p> <p>The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry</p>	sqm	1790.00	600.39	1,074,698.10
14.17	Providing water proofing in roof area as follows:				
14.18	Surface preparation-Wash the surface and remove all loose concrete, grease, oil using wire brush or by surface grinder. All critical areas such as joints, junctions, movement zones, penetrations drainage points and cracks are to be correctly sealed and detailed prior to waterproofing. All hairline cracks < 1mm should be cut and open up to 5mm width to fill with Polymer modified mortar.				
14.19	Providing and applying angle fillet of 50 mm X 50mm on the right angles of wall junction floor junctions and properly dressed by preparing polymer modified mortar admixer with 10 % by weight of cement in the ratio of 1:3 etc., complete				

S.No.	Description	Unit	Quantity	Rate	Amount
14.20	Waterproof coating on RCC mother slab: Providing & applying 2 components, solvent free, liquid applied elastomeric seamless hybrid Polyurea Polyurethane Membrane, using plural component airless spray equipment, to form a minimum system thickness of 1.5 mm in two alternative coats with a total consumption of 1.5-1.6 kg / m2. The membrane shall have 100% Solids, VOC Free, Tensile strength > 15 Mpa as per ASTM D 412, Elongation > 450% as per ASTM D 412, Static Crack bridging up to 2mm as per ASTM C 836, Shore A Hardness > 85 ASTM D 2240, Puncture Resistance > 1000 N as per ASTM E 154, Water Head Resistance > 7 Bar as per ASTM D 5385. The coating should pass Dynamic Crack Bridging as per EN 1062-7, Method B for 20,000 cycles at -20-degree temperature. Apply primer coat of epoxy primer by roller/ airless spray guideline and coverage @ 5-6 m2/ltr depends on porosity of concrete. Allow to cure for max 5-6 hours. Broadcast anti slip grains of 200-300 micron (dried sand) on wet primer at coverage of 0.8-1 kg/m2 and allow to come to touch dry condition before application of Membrane	Sqm	2590.00	2,734.13	7,081,396.70
14.21	Providing water proofing in water tank area as follows:				
14.22	Surface preparation-Wash the surface and remove all loose concrete, grease, oil using wire brush or by surface grinder. All critical areas such as joints, junctions, movement zones, penetrations drainage points and cracks are to be correctly sealed and detailed prior to waterproofing. All hairline cracks < 1mm should be cut and open up to 5mm width to fill with PMM.				
14.23	Providing and applying angle fillet of 50 mm X 50mm on the right angles of wall junction floor junctions and properly dressed by preparing polymer modified mortar admixer with 10 % by weight of cement in the ratio of 1:3 etc., complete				

S.No.	Description	Unit	Quantity	Rate	Amount
14.24	Sealing of pipe inserts, annular space, bore pack in the floor & walls.-The gaps around the Horizontal pipe inserts through the masonry / concrete wall should be sealed using double sided bituminous adhesive tape Bathseal, wrap around PVC/CI pipes and filling the grout gaps around the pipe and screed with non-shrink free flow grout Pidigrout 10M. All concealed pipe lines grooves should be covered using cement, sand mortar mixed with Pidicrete URP 10 % by weight of cement in the ratio of 1:3.				
14.25	Treating of construction joints:Grouting the porous slab area with non-shrink by Drilling holes and injecting cement slurry admix with shrink compensating plasticizing compound @ 225 gms/50kg bag of cement through the nozzles under mechanical pressure grouting pump, Fixing nozzles of 12mm dia with @ 500 mm c/c at an inclined angle over the surface of RCC/ beam/ etc. and along the construction joint line or where honeycombing is present in concrete structures or cracks are dormant/ as per the requirement.				
14.26	Waterproof Coating: Providing and applying 3 coats of acrylic polymer modified cementitious coating having elongation at break 120%; 5 Bar resistance to positive water pressure, Adhesive Strength ASTM D 7234- 1 N/mm <sup>2</sup> , Water Vapor Transmission as per ASTM E96 of 0.7 Perms and Crack bridging ability as per EN 1062-7 up to 2mm. Apply two coats of Fastflex slurry @ 3 Kg per sqm. prepare the mix by adding pre packed powd content to liquid component in the mix ratio (1 part polymer & 1.4 part powder). Provide and lay 45 gsm glass fibre mesh over the angle fillet when the first coat is still wet. Allow the first coat to dry for 6 to 8 hours. Then, apply the second coat at a direction perpendicular to first coat. Extend coating over the masonry walls up to the complete height of tank & sprinkle the quartz sand / fine sand over the second and final coat when it is still wet on the vertical wall surface for creating a firm key for plastering to ensure complete waterproofing. Allow the coating to air cure for 5 days before conducting water ponding test fir 24 Hrs.				

S.No.	Description	Unit	Quantity	Rate	Amount
14.27	Horizontal protection: Providing and laying Screed M 20 grade minimum 75 mm Thick everywhere. Screed to be mixed with integral compound conforming to IS 2645:2003, @ 200ml per bag of cement. Keeping the surface broomed. Rates to include Cutting Control joints and later filling joints with PU sealant,curing and testing for water tightness for 7 days etc. complete.				
14.28	Vertical Protection:Providing & applying 15 mm THK protective plaster of C: M –1:4 admixed with integral waterproof compound conforming to IS 2645:2003, @ 220ml per bag of cement, over the waterproof coating for vertical protection.	Sqm	545.00	2,122.11	1,156,549.95
14.29	Providing water proofing in below basement raft area as follows:				
14.30	Surface preparation- The PCC must be clean, no standing water, no protrusion or sharp edges and deflection must be less than 12mm , shall be ensured before laying of waterproofing membrane.				
14.31	Providing & installing fully bonded Pre applied Weldable Ultrabase PA HDPE 1.5mm with sand finish of Technicol or equivalent from the positive side waterproofing treatment for "Raft Slab" by using Pre applied, flexible, fully bonded sheet membrane before casting of the base RCC slab. It does not require dry PCC/blinding concrete & can be installed on wet/damp PCC substrate as long it is free from ponded water. The system should be fully bonded to the RCC and consists of highly resilient HDPE film, self-adhesive polymer layer and a trafficable granular layer. Membrane does not require protection screed protection also & steel reinforcement laid directly over the robust membrane allowing faster construction. The size of the membrane should not be less than 1.5 Mtr. x 20 Mtr. to minimize the joints. Fully bonded sheet waterproofing membrane shall have following minimum properties: 1. Tensile strength: - 25±2 Mpa (ASTM D 412 -2016). 2. Elongation: - > 500% (ASTM D 412 -2016). 3. Peel Adhesion to Concrete > 1000(±15%) N/m (per ASTM D 903) 4. Peel Strength of Joint/Lap : 15000(±5%) N/m (as per ASTM D 6392) 5. Resistance to Hydrostatic Head: 70M (as per ASTM D 5385). 6. Puncture Resistance > 1000N (as per ASTM E 154)				

S.No.	Description	Unit	Quantity	Rate	Amount
14.32	The Ultrabase PA sand finish weldable membrane is properly aligned and should have minimum 80mm of overlap and welding with double seam hot air welding machine assuring watertightness and achieving monolithic membrane. The membrane shall be laid by the authorized applicator of the membrane manufacturer. The membrane shall be laid as per the membrane manufacturer through their authorized applicator.	Sqm	300.00	846.51	253,953.00
14.33	Providing waterproofing of basement Retaining wall				
14.34	Surface preparation: Preparing and ensuring that vertical surface shall be totally dry, free from dust and crack, tie rod hole, construction joints etc shall be properly treated before starting of waterproofing				
14.35	Primer:-Over the prepared, clean and dry substrate, applying the EPOXY primer at the rate of 0.20-0.25kg/m <sup>2</sup> to the entire substrate. In general, the primer should be used to promote adherence to the concrete surface, reduce the pinhole appearance, and absorption of moisture in the substrate and leave it for 3-4 hours, while the surface is still tacky. In any case, the waiting time after the application of the primer should not exceed 24 hours				
14.36	Waterproofing on retaining wall: Over the dried and spray I applied 1.5mm DFT@1.5-1.65Kg/sqm two component elastomeric fast setting hybrid polyurea urethane modified coating over the substrate, which forms 100% solid jointless waterproofing membrane. Ultrathane super oe equivalent properties make it an excellent choice for achieving airtightness and perfect waterproofing on a multitude of surfaces and substrates. It is applied by using spray machine equipment like Graco or equivalent. Membrane Key Properties: 1. Density at 1.10± 0,02 kg/m <sup>3</sup> (ISO 1675) 2. Tensile strength: 15±2 Mpa (ASTM D 412) 3. Elongation at break: 450±100%(ASTM D 412) 4. Solid content :100% (ISO 1768) 5. Shore Hardness A: 23°C > 85 (ASTM D2240) 6. Concrete adherence: > 2 Mpa (ASTM D4541) 7. Static crack bridging ability, > 2mm (ASTM D 836) and conforms to EN & ASTM Standard. It has very high solid coating having higher viscosity than conventional pains etc all complete as per the instruction of manufacturer. It does not get embrittle with the exposure of extreme temperature. The work will be executed by the manufacturer authorized applicator.	Sqm	300.00	2,277.79	683,337.00

S.No.	Description	Unit	Quantity	Rate	Amount
14.37	Providing and fixing 24 gauge 8 mm size galvanized chicken wire mesh of approved width at junctions of concrete and brick work and other locations called for including necessary laps and U shape galvanized wire nails, complete as per direction of the Engineer-In-Charge.	Sqm	100.00	335.69	33,569.00
14.38	Providing & fixing Urinal madesty made of heat, bacteria, water, chemical, scratch, impact anti bacterial resistant 12mm thick solid compact laminate panels (HPL) tested by Shriram Test House. Finish of the compact laminate should be Suede / *Raw Silk of size 500mm (w) x 1200mm (h), which includes SS (304 grade) right angle brackets, SS (304 grade) screws & wall plugs finished with approved texture/shade as per the detail drawings & as per IS 2046 (Indian Standard) and as per fire retardant BS-476/97 standard. The product should have Green Guard Certificate.	Each	12.00	6,002.44	72,029.28
14.39	Providing & fixing Toilet Cubicle (of following standard dimension which includes 600mm door size width) made of heat, bacteria, water, chemical, scratch, impact anti bacterial resistant 18mm thick solid compact laminate panels (HPL) tested by Shriram Test House. Finish of the compact laminate should be Suede / *Raw Silk, which includes doors, pilasters & intermediate panels finished with approved texture/shade as per the detail drawings & as per IS 2046 (Indian Standard) and as per fire retardant BS-476/97 standard. The product should have Green Guard Certificate.				
14.40	This also includes providing and fixing in position necessary hardware made out of Stainless steel (Grade 304) as per manufacturer's specifications & Architects instructions like (1) SS Door Knob, (2) SS Spring loaded Hinges with cover, (3) SS privacy Thumb turn lockset indicator, (4) Coat hook, (5) U-Channels, (6) SS "F" channel (7) SS-Shoe Box Plate (316 grade) (8) MS-Base Plate, (8) Rubber lining for door stopper (10) Screws & wall Plugs.				

S.No.	Description	Unit	Quantity	Rate	Amount
14.41	All screws will of 304 Grade in stainless steel with satin finish. All pilasters are supported by MS-Base steel Bottom Cladding with Stainless Steel Shoe Box Plate. The base of the stainless steel shoe box will be anchored to the floor with a clearance height upto 110mm. Fixing of intermediate panels to the wall shall be stainless steel 'L' – Bracket or stainless U-Channel section are fixed into wall with screw inserts.				
14.42	a) Toilet Cubicle L shape with standard dimension of 2100mm Height x 1000mm Width x 1500mm to 1900mm Depth, which includes 600mm door size width).	Each	30.00	68,115.84	2,043,475.20
14.43	b) Toilet Cubicle I-Shape (Front Partition) with standard dimension of 2100mm Height x 1000mm to 1900mm Width which includes 600mm door size width).	Each	12.00	68,115.84	817,390.08
14.44	<p>Providing and fixing Fire-rated double leaf Door comprising - 1st class teakwood door frame of section 150 mm x 100 mm with heat-activated fire &amp; smoke intumescent seal made of imported steel strips of size 10mm x 4mm and Twingo seal for acoustical properties- 77mm thick acoustic-cum-fire door/s of 120 minutes fire rating conforming to BS: 476 part 20 &amp; 22, IS: 3614 part II &amp; ISO: 834 with acoustic property of 38 dB having infill of 47mm thick resin-bonded glass wool of 24 kg/cu.m density, sandwiched between two 9mm thick Strapan 100% without-asbestos brucite &amp; Meerschaum board alongwith 6mm thick commercial ply facing &amp; 3mm sheet rubber interlayer, complete with teakwood lipping and one coat of anti-termite fire retardant primer &amp; finished with 1.5mm thick laminate of approved colour as per specifications.</p> <p>Each door shutter would have minimum 4 nos. of stainless steel hinges of size 100x75x3mm on each leaf, stainless steel latch fitted with knob set (Ingersoll Rand ME 60 fire rated lock), overhead door closer (Ingersoll Rand Briton 121), Raven seal in door rebates and drop-dead seal at the bottom of the door, complete with door closer, door coordinator, Panic Bar with outside key and handle, all as per specifications, design and directions of the Engineer- in-charge</p>				
14.45	The rate also includes the following hardwares in each double leaf door:				
14.46	5 Knuckle, 2 Ball bearing butt hinges.Size: 4"x 3" x 3mm, Finish -SSS = 8 nos				
14.47	Mortice Deadlock for Acoustic Door = 1 set				
14.48	D Pull Handle SS 300mm = 1 pairs				
14.49	Surface Mounted Door Closer = 2 nos				

S.No.	Description	Unit	Quantity	Rate	Amount
14.50	ACOUSTIC SEAL GASKET PACKAGE (Acoustic seals , Batwing Gasket , Bulb Type Gasket) = 1 package				
14.51	Drop Down Gasket Concealed , RAVEN MAKE = 2 nos.	Sqm	53.00	32,515.71	1,723,332.63
14.52	Providing and laying full body heavy duty Vitrified tiles (Restile Tiles) in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1 :4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.	Sq.m.	310.00	2,432.50	754,075.00
14.53	Providing and laying full body heavy duty Vitrified tiles (Restile Tiles) in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joint with white cement & matching pigments etc. complete	Sq.m.	185.00	2,432.50	450,012.50

S.No.	Description	Unit	Quantity	Rate	Amount
14.54	Providing & fixing of Aluminium Metal Ceiling Lay in non perforated Tegular edge global white color tiles of size 595x595 mm and 0.8 mm thick with 8 mm drop; made of GI sheet having galvaniz-ing of 100 gms/sqm (both sides inclusive) and 20% perforation area with 1.8 mm dia holes and having NRC (Noise Reduction Co-efficient ) of 0.5, electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted af-ter bending and perforation, and backed with a black Glass fiber acoustical fleece.Tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections ( galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cut-ting/making,				
14.55	opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc.Main "T" runners to be sus-pended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.	Sq.m.	700.00	2,529.80	1,770,860.00

S.No.	Description	Unit	Quantity	Rate	Amount
14.56	Providing and applying external surface SKK Stone texture coating ceramic stone finish approved shade consisting of water based Natural fine ceramic stone material which is highly abrasion & scratch resistant with 6 coat system & PU Based clear top coat which shall be highly water repellent, Anti-algae & anti-fungal in nature. The coating shall also cover hairline cracks with application method which includes Surface Preparation, 2 coats of two component silicate based primer(A two-component silicate-based inorganic polymer undercoat), Making groove, 2 coats of Fine Ceramic Stone finish (wet on wet) finish & 2 coats of PU based clear top coat(Turpen-based, mild solvent, super-dirt resistant NAD type two pack polyurethane clear topcoat) complete as per direction of the Engineer-In-Charge.	Sq.m.	4550.00	3,405.50	15,495,025.00
14.57	Providing and fixing powder coated 3d hinges for aluminium doors and windows made by aluminium alloy with typical adjustment (vertical +/- 2mm to 3mm, horizontal +/- 1.5mm to 5mm and depth +/- 1.5mm to 2.5mm). The load capacity upto 130 kg per 2-3 hinges, opening angle upto 180 degree for full access. the hinges should be concealed design and often pass over 200000 opening cycles.	Each	525.00	778.40	408,660.00
14.58	Providing and fixing powder coated multi-point turn handle for aluminium window shutters made by aluminium, allowing for installation on either left or right-side opening windows, 180 degree handle travel is common for secure locking. The handle cycle test to at least 10000 operations (tilt-and turn standards)	Each	108.00	681.10	73,558.80
14.59	Rough 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, with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :	Sqm	320.00	1,137.08	363,865.60
14.60	Providing and laying 50 micron thick polythene film	Sqm	2150.00	9.73	20,919.50
14.61	Providing 32mm dia PVC pipe of approved make and pressure 6 kg/ sq.cm. in sheathing for dowel / tie bars in concrete pavements as per drawings / details as directed.	RM	90.00	426.76	38,408.40
<b>Total - A (Civil works)</b>					<b>285,508,149.87</b>

S.No.	Description	Unit	Quantity	Rate	Amount
	<b>PLUMBING WORK</b>				
15.00	SANITARY INSTALLATION				
15.01	Providing and fixing floor mounted, white vitreous china single piece, double traps syphonic water closet of approved brand/make, shape, size and pattern including integrated white vitreous china cistern of capacity 10 litres with dual flushing system, including all fittings and fixtures with seat cover, cistern fittings, nuts, bolts and gasket etc including making connection with the existing P/S trap, complete in all respect as per directions of Engineer-in-Charge.	Each	48.00	17,721.15	850,615.20
15.02	Providing and fixing white vitreous china battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge.	Each	18.00	7,763.76	139,747.68
15.03	Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm 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 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.				
15.04	Granite Stone of approved shade	Sqm	6.00	3,942.45	23,654.70
15.05	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:				
15.06	White Vitreous China Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	Each	96.00	2,577.33	247,423.68
15.07	Providing & fixing chrome plated brass battery based infrared sensor operated pillar cock, having foam flow technology.				
15.08	15 mm nominal bore	Each	42.00	8,566.00	359,772.00

S.No.	Description	Unit	Quantity	Rate	Amount
15.09	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	Each	96.00	1,564.54	150,195.84
15.10	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS: 13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required :				
15.11	Kitchen sink with drain board				
15.12	510x1040 mm bowl depth 250 mm	Each	1.00	6,758.07	6,758.07
15.13	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
15.14	Flexible pipe				
15.15	40 mm dia	Each	1.00	116.32	116.32
15.16	Providing and fixing toilet paper holder :				
15.17	C.P. brass	Each	48.00	782.00	37,536.00
15.18	Providing and fixing CP Brass liquid soap container of standard shape with bracket of the same materials with snap fittings of approved quality and colour.	Each	35.00	1,481.88	51,865.80
15.19	Providing and fixing CP Brass 32mm size bottle trap of approved quality & make and as per the direction of engineer in charge.	Each	96.00	1,006.86	96,658.56
15.20	Providing and fixing CP Brass towel ring with concealed fittings arrangement of approved quality and colour.	Each	37.00	2,089.03	77,294.11
15.21	Providing and fixing CP Brass Coat Hook of approved quality and colour	Each	48.00	664.56	31,898.88
15.22	Providing ,Fixing of straight / offset type flexible single body push fit type WC pan connector of with integral single mould sealing fins made of flexible EVA body to be fixed with manufacture supplied grease, including rubber bush / adaptor for use with C.I pipe as supplied with the pan connector.	Each	48.00	990.51	47,544.48
15.23	Providing and fixing C.P. brass Two way bib cock of approved quality conforming to IS:8931.	Each	48.00	1,608.37	77,201.76
15.24	Providing and fixing CP Health faucet to european type W.C. of approved quality and make as approved by engineer in charge.	Each	48.00	1,306.74	62,723.52
15.25	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
15.26	15 mm nominal bore	Each	20.00	777.38	15,547.60

S.No.	Description	Unit	Quantity	Rate	Amount
15.27	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 15mm nominal bore	Each	210.00	558.79	117,345.90
15.28	Providing and fixing C.P. Brass extension nipple (size 15mmx50mm) of approved make and quality as per direction of Engineer-in-charge.	Each	210.00	72.78	15,283.80
15.29	Providing and fixing uplasticised PVC connection pipe with brass unions : 45 cm length , 15 mm nominal bore	Each	210.00	95.11	19,973.10
15.30	Providing and fixing CP Brass soap Dish Holder with concealed fitting arrangements, of approved quality and colour	Each	12.00	1,208.47	14,501.64
15.31	Providing and fixing CP Brass towel rail complete with brackets with CP brass screws with concealed fittings arrangement of approved quality and colour.	Each	8.00	3,323.77	26,590.16
15.32	Supply,Installation, testing and commissioning of Water Heater complete with heavy gauge hot and cold water flexible pipe connections, Nano polymer coated tank, 8 bar pressure ,of approved make complete with all necessary material as directed by Engineer - in - Charge.				
15.33	50-Litre Storage capacity	Each	6.00	24,249.11	145,494.66
15.34	Providing & Fixing of Grab bar 600 mm of non slipping grip as per standard specification of use in disabled toilet complete with brackets suitable for wall installation as per approved sample complete in all respect.	Each	12.00	1,498.42	17,981.04
15.35	Supply installation, testing and commissioning of water cooler with .Cooling capacity shall be 60 liter & 80 liter shall be storage capacity.Its should have 7 stages purification process,fully automatic,rectangular tank with Forced fin and tube condenser,Non-corrosive SS-304 outer body,Food-grade SS-304 stainless steel inner tank (18/8 or 18/10),PUF insulation,Reciprocating compressor with R22 Refrigerant.Water outlet temp is approx 17 deg c ,Operating power supply 230 + 10% V AC,50 Hz,1 PH,No of Cold water Faucet-2.	Each	6.00	77,625.94	465,755.64
15.36	Providing and fixing CP Brass Single lever for sink faucet of quality & make as approved by Engineer in charge.	Each	1.00	4,107.03	4,107.03
16.00	WATER SUPPLY				

S.No.	Description	Unit	Quantity	Rate	Amount
16.01	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.				
16.02	Concealed work, including cutting chases and making good the walls etc.				
16.03	15 mm nominal dia Pipes	Mtr.	128.00	484.36	61,998.08
16.04	20 mm nominal dia Pipes	Mtr.	110.00	523.08	57,538.80
16.05	25 mm nominal dia Pipes	Mtr.	82.00	610.31	50,045.42
16.06	32 mm nominal dia Pipes	Mtr.	80.00	719.34	57,547.20
16.07	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.				
16.08	Internal work - Exposed on wall				
16.09	15 mm nominal dia Pipes	Mtr.	52.00	279.06	14,511.12
16.10	20 mm nominal dia Pipes	Mtr.	52.00	325.96	16,949.92
16.11	25 mm nominal dia Pipes	Mtr.	117.00	390.71	45,713.07
16.12	32 mm nominal dia Pipes	Mtr.	135.00	504.74	68,139.90
16.13	40 mm nominal dia Pipes	Mtr.	115.00	683.97	78,656.55
16.14	50 mm nominal dia Pipes	Mtr.	118.00	908.93	107,253.74
16.15	65 mm nominal dia Pipes	Mtr.	12.00	1,859.40	22,312.80
16.16	80 mm nominal dia Pipes	Mtr.	24.00	2,306.98	55,367.52
16.17	100 mm nominal dia Pipes	Mtr.	80.00	3,307.23	264,578.40
16.18	Providing and fixing forged brass operated ball valve of full flow of superior quality having minimum working pressure of 16 kg/cm <sup>2</sup> .				
16.19	15 mm nominal bore	Each	12.00	1,212.36	14,548.32
16.20	20 mm nominal bore	Each	20.00	1,467.28	29,345.60
16.21	25 mm nominal bore	Each	15.00	2,007.30	30,109.50
16.22	32 mm nominal bore	Each	6.00	2,989.06	17,934.36
16.23	40 mm nominal bore	Each	13.00	4,104.11	53,353.43
16.24	Supplying, fixing, testing and commissioning of butterfly valve of PN 1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required :				

S.No.	Description	Unit	Quantity	Rate	Amount
16.25	50 mm nominal bore	Each	19.00	3,913.79	74,362.01
16.26	65 mm nominal bore	Each	10.00	4,449.55	44,495.50
16.27	80 mm nominal bore	Each	2.00	5,152.88	10,305.76
16.28	100 mm nominal bore	Each	4.00	6,895.67	27,582.68
16.29	Providing & fixing Auto Air vent for cold water supply risers, suitable for pressure not less than 15 Kg/Sq.cm.				
16.30	15 mm dia	Each	2.00	889.32	1,778.64
16.31	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	per litre	15000.00	10.70	160,500.00
16.32	Providing & fixing insulation cover of 5000 ltr on polythylene water storage tank, IS : 12701 marked. With cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes.	Each	3.00	9,870.11	29,610.33
16.33	Providing and fixing PTMT Ball cock of approved quality, colour and make complete with Epoxy coated aluminium rod with L.P./H.P.H.D. plastic ball.				
16.34	50 mm nominal bore, 242mm long, weighing not less than 1240 gms	Each	2.00	1,338.80	2,677.60
17.00	INTERNAL DRAINAGE SYSTEM				
17.01	Providing, fixing & testing uPVC SWR pipes conforming to IS 13592 (Type B) alongwith all required fittings like tees, bends, crosses with or without access doors jointed with approved solvent cement as per manufacturer's recommendations, fixed to walls and ceilings with clamps complete including cutting and making good the floors and walls where required complete of outer diameter.				
17.02	160 mm OD	Metre	588.00	1,695.94	997,212.72
17.03	110 mm OD	Metre	530.00	1,085.87	575,511.10
17.04	75 mm OD	Metre	73.00	853.32	62,292.36
17.05	Providing, fixing, jointing and testing in position the following uPVC pipes conforming to IS 4985 of 6 kg/sqcm pressure rating including all fittings, solvent weld joints, testing complete for drainage system cut to required length to be laid under floor including covering all around with cement concrete and making good the same complete as required.				
17.06	For waste pipes				
17.07	40mm OD (6 kg pressure)	Metre	195.00	604.23	117,824.85

S.No.	Description	Unit	Quantity	Rate	Amount
17.08	50mm OD (6 kg pressure)	Metre	135.00	747.26	100,880.10
17.09	63mm OD (6 kg pressure)	Metre	108.00	1,092.68	118,009.44
17.10	Providing and Fixing 110x110 mm uPVC 'P' trap with Height riser/Saddle as required size fitting with seal 50 mm of self cleansing design floor/urinal trap without vent suspended with supporting clamp or in sunken portion including cutting and making good the walls and floors wherever required complete in all respects.				
17.11	110 mm inlet & 110 mm outlet Long ht	Each	120.00	1,993.68	239,241.60
17.12	Providing and fixing floor drain (FD) with 63mm outlet and 100 mm inlet having 19mm seal for indirect floor drain (FD).				
17.13	110 x63mm outlet	Each	36.00	865.00	31,140.00
17.14	Cutting holes up to 15x15 cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including finishing complete so as to make it leak proof.	Each	156.00	439.80	68,608.80
17.15	Providing, fixing, testing and commissioning of pipe inlet fittings by fixing Tee 110 x50/110 x75 mm (as required) fixed on 'P' traps for connecting fixture drains/ extension pipes in uPVC including fixing and sealing inlet joint with drip seal / Pipe seal joint as required complete.	Each	120.00	862.08	103,449.60
17.16	Providing and fixing 1 mm thick stainless steel grating with frame for floor traps or drains of required pattern including cutting and making good the floors complete.				
17.17	125mm dia.	Each	156.00	632.45	98,662.20
17.18	Providing and fixing clean out pipe (door piece) for cleaning as required complete complete with all fitting, clamps, accessories and civil works.				
17.19	110mm dia.	Each	36.00	720.02	25,920.72
17.20	160mm dia.	Each	20.00	1,124.79	22,495.80

S.No.	Description	Unit	Quantity	Rate	Amount
17.21	Providing and fixing M.S. holder bat clamp of approved design to sand cast iron/ cast iron (spun) pipes comprising of M.S. flat brackets made of 50x5 mm flat of specified shape, projecting 75 mm outside the wall surface and fixed on wall with 4nos, 6mm dia expansion hold fasteners, including drilling necessary holes in brick wall/ CC/ RCC surface and the cost of bolts etc. The pipes shall be fixed to the already fixed brackets with the help of 30 mm x1.6 mm galvanised M.S. flats of specified shape and of total length 420 mm and shall be fixed with M.S. nuts, bolts, & washers of size 25x6 mm, one bolts on each side of the pipe.				
17.22	Total bracket length 1040 mm of approved shape and design (for three 100 mm dia pipes)	Each	101.00	439.70	44,409.70
18.00	RAIN WATER WORK				
18.01	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, (i) Single socketed pipes.				
18.02	160 mm diameter	Mtr	210.00	1,306.74	274,415.40
18.03	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	Each	10.00	290.20	2,902.00
19.00	EXTERNAL WATER SUPPLY				
19.01	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.				
19.02	External Work				
19.03	100 mm nominal dia Pipes	Metre	190.00	3,183.36	604,838.40
19.04	Providing and filling sand of grading zone V or coarser grade around the GI pipes in external work.				
19.05	100mm diametre pipe	Metre	190.00	290.44	55,183.60

S.No.	Description	Unit	Quantity	Rate	Amount
19.06	Supplying, fixing, testing and commissioning of butterfly valve of PN 1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required :				
19.07	100 mm dia	Each	2.00	7,074.68	14,149.36
19.08	Providing and fixing enclosed type water meter (bulk type) conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. (The tail pieces if required will be paid separately) :				
19.09	100 mm dia nominal bore	Each	2.00	5,320.70	10,641.40
19.10	Constructing masonry Chamber 90x90x100 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size ), i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size ) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :				
19.11	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Each	2.00	18,386.49	36,772.98
19.12	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 :				
19.13	50 to 80 mm nominal bore	Each	1.00	1,737.15	1,737.15
20.00	GARDEN IRRIGATION				
20.01	Providing and fixing HDPE PE-100 PN-8 conforming to IS 4984 & cold water supply including all fittings This includes jointing of pipes & fittings with one step HDPE Hot joint, trenching, refilling & testing of joints complete as per direction of Engineer in Charge.				
20.02	External Work				
20.03	25 mm nominal dia Pipes	Metre	12.00	242.08	2,904.96
20.04	50 mm nominal dia Pipes	Metre	290.00	408.85	118,566.50

S.No.	Description	Unit	Quantity	Rate	Amount
20.05	Supplying, fixing, testing and commissioning of butterfly valve of PN 1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required :				
20.06	50 mm nominal bore	Each	1.00	4,002.92	4,002.92
20.07	Constructing masonry Chamber 30x30x50 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for water meter complete with C.I. double flap surface box 400x200x200 mm (inside) with locking arrangement and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 ( 1 cement : 5 fine sand:10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :				
20.08	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Each	8.00	1,938.80	15,510.40
20.09	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for water meter complete with C.I. double flap surface box 400x200x200 mm (inside) with locking arrangement and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 ( 1 cement : 5 fine sand:10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :				
20.10	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Each	1.00	10,569.12	10,569.12
20.11	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 :				
20.12	50 to 80 mm nominal bore	Each	1.00	1,737.15	1,737.15
20.13	Providing & fixing in position 25 mm dia lawn hydrants consisting of 25 mm dia Ball valve, GI nipple and threaded hose receiver complete as required.	Each	8.00	4,052.55	32,420.40
21.00	EXTERNAL SEWAGE WORK				

S.No.	Description	Unit	Quantity	Rate	Amount
21.01	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, addressing 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 :				
21.02	All kinds of soil				
21.03	Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia	metre	285.00	342.64	97,652.40
21.04	Extra for Excavation trenches for pipes, cables etc. in all kind of soil for depth exceeding 1.5m but not exceeding 3m (Rate is over corresponding basic item for depth up to 1.5m)	Metre	100.00	435.16	43,516.00
21.05	Earth work in excavation by mechanical means (Hydraulic excavator) /manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 Sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.				
21.06	All kind of Soil	cum	80.90	253.27	20,489.54
21.07	Supplying and laying of following size DWC SN8 pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 16098, Part II complete with fitting and cutting, jointing etc. direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc., complete as required.				
21.08	200 mm dia Pipe	Metre	285.00	1,895.40	540,189.00
21.09	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round of S.W. pipes including bed concrete as per standard design :				
21.10	200 mm diameter S.W. pipe	metre	285.00	1,338.31	381,418.35

S.No.	Description	Unit	Quantity	Rate	Amount
21.11	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design: 100x100 mm size P type. With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	10.00	2,638.48	26,384.80
21.12	Constructing brick masonry manhole in cement mortar 1:4 ( 1 cement : 4 coarse sand ) with 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 40 mm nominal size), inside plastering 12 mm 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 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :				
21.13	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions,total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :				
21.14	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	Each	8.00	12,425.75	99,406.00
21.15	Extra for depth for manholes:				
21.16	Size 90x80x90 cm				
21.17	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	Mtr	2.00	8,587.11	17,174.22

S.No.	Description	Unit	Quantity	Rate	Amount
21.18	Constructing Brick Masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top with FPS bricks class designation 75 in cement mortar 1:4 (1 cement : 4 Coarse sand), inside cement plaster 12mm thick with cement mortar 1:3 ( 1 cement : 3 coarse sand) finished with a floating coat of of neat cement, foundation concrete 1:3:6 mix ( 1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in Cement Concrete 1:2:4 ( 1 Cement : 2 Coarse Sand : 4 Graded Stone Aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.				
21.19	0.91m deep with SFRC cover and frame (heavy duty HD-20 grade designation) 560mm internal diameter conforming to I.S:12592, total weight of cover and frame to be not less than 182Kg. fixed in cement concrete 1:2:4 mix (1cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) including centering, shuttering all complete.(Excavation foot rests and 12mm thick cement plaster at the external surface shall be paid for separately)				
21.20	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Each	10.00	12,381.43	123,814.30
21.21	Extra depth for circular type manholes 0.91 m internal dia ( at bottom ) beyond 0.91m to 1.67 m .				
21.22	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Meter	2.00	7,386.82	14,773.64
21.23	Constructing Brick Masonry circular type manhole 1.22 m internal dia at bottom and 0.56m dia at top with FPS bricks class designation 75 in cement mortar 1:4 (1 cement : 4 Coarse sand), inside cement plaster 12mm thick with cement mortar 1:3 ( 1 cement : 3 coarse sand) finished with a floating coat of of neat cement, foundation concrete 1:3:6 mix ( 1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in Cement Concrete 1:2:4 ( 1 Cement : 2 Coarse Sand : 4 Graded Stone Aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.				

S.No.	Description	Unit	Quantity	Rate	Amount
21.24	1.68m deep with SFRC cover and frame (heavy duty HD-20 grade designation) 560mm internal diameter conforming to I.S:12592, total weight of cover and frame to be not less than 182Kg. fixed in cement concrete 1:2:4 mix (1cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) including centering, shuttering all complete.(Excavation foot rests and 12mm thick cement plaster at the external surface shall be paid for separately)				
21.25	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Each	5.00	24,035.78	120,178.90
21.26	Extra depth for circular type manholes 1.22 m internal dia ( at bottom ) beyond 1.68m to 2.29 m .				
21.27	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Meter	1.25	9,595.19	11,993.99
21.28	Constructing Brick Masonry circular type manhole 1.52 m internal dia at bottom and 0.56m dia at top with FPS bricks class designation 75 in cement mortar 1:4 (1 cement : 4 Coarse sand), inside cement plaster 12mm thick with cement mortar 1:3 ( 1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix ( 1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in Cement Concrete 1:2:4 ( 1 Cement : 2 Coarse Sand : 4 Graded Stone Aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.				
21.29	2.30m deep with SFRC cover and frame (heavy duty HD-20 grade designation) 560mm internal diameter conforming to I.S:12592, total weight of cover and frame to be not less than 182Kg. fixed in cement concrete 1:2:4 mix (1cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) including centering, shuttering all complete.(Excavation foot rests and 12mm thick cement plaster at the external surface shall be paid for separately)				
21.30	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Each	2.00	51,538.93	103,077.86
21.31	Extra depth for circular type manholes 1.52 m internal dia ( at bottom ) beyond 2.30m .				
21.32	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Meter	0.60	22,157.01	13,294.21

S.No.	Description	Unit	Quantity	Rate	Amount
21.33	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS: 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	Each	112.00	538.75	60,340.00
21.34	12 mm cement plaster finished with a floating coat of neat cement of mix :				
21.35	1:3 (1 cement: 3 fine sand)	Sqm	68.40	427.39	29,233.48
21.36	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement and making necessary channels for the drain etc. complete :				
21.37	For pipes 100 to 250 mm diameter	Each	2.00	788.57	1,577.14
21.38	Providing and Installing KESSEL euro "D" Direct Disposal Grease Separator NS 4 based on Euro-Norm EN 1825-1. Manufactured from Polyethylene. For free standing installation in frost free areas, with integrated sludge trap, polyethylene quick release odor tight covers, with direct disposal hook up pipe on right side for sludge and grease trap disposal, with disposal flange DN 65, PN 10 (DIN 2501), Storz-B-coupling 2.5 inch for disposal truck connection, inlet/outlet fits SML pipe (DIN 19522) and plastic pipe (DIN 19560). Sludge trap capacity: 200 liter Total separator capacity: 212 liter Weight: 54 kg Certification Z-54.6-327 Delivered: Completely assembled.	Each	3.00	648,018.00	1,944,054.00

S.No.	Description	Unit	Quantity	Rate	Amount
22.00	EXTERNAL STORM WATER DRAINAGE WORK				
22.01	Excavating trenches of required width for pipes, cables etc. Including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5M including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cms 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 Hard/dense soil.				
22.02	All kind of soil				
22.03	Pipes, cables etc, exceeding 80mm dia but not exceeding 300 mm dia	Metre	310.00	342.64	106,218.40
22.04	Extra for Excavation trenches for pipes, cables etc. in all kind of soil for depth exceeding 1.5m but not exceeding 3m (Rate is over corresponding basic item for depth up to 1.5m)				
22.05	Pipes, cables etc, exceeding 80mm dia but not exceeding 300 mm dia	Metre	93.00	435.16	40,469.88
22.06	Earthwork in excavation by mechanical means ( Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, with in a lead of 50m.				
22.07	All kind of soil	cum	59.40	253.27	15,044.24
22.08	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 :				
22.09	250 mm dia RCC Pipe	Metre	130.00	875.51	113,816.30
22.10	300 mm dia RCC Pipe	Metre	180.00	967.45	174,141.00
22.11	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 :				
22.12	250mm diameter S.W. Pipe	Metre	130.00	989.44	128,627.20
22.13	300mm diameter S.W. Pipe	Metre	180.00	1,141.67	205,500.60

S.No.	Description	Unit	Quantity	Rate	Amount
22.14	Constructing Brick Masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top with FPS bricks class designation 75 in cement mortar 1:4 (1 cement : 4 Coarse sand), inside cement plaster 12mm thick with cement mortar 1:3 ( 1 cement : 3 coarse sand) finished with a floating coat of of neat cement, foundation concrete 1:3:6 mix ( 1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in Cement Concrete 1:2:4 ( 1 Cement : 2 Coarse Sand : 4 Graded Stone Aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.				
22.15	0.91m deep with SFRC cover and frame (heavy duty HD-20 grade designation) 560mm internal diameter conforming to I.S:12592, total weight of cover and frame to be not less than 182Kg. fixed in cement concrete 1:2:4 mix (1cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) including centering, shuttering all complete.(Excavation foot rests and 12mm thick cement plaster at the external surface shall be paid for separately)				
22.16	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Each	6.00	12,381.43	74,288.58
22.17	Extra depth for circular type manholes 0.91 m internal dia ( at bottom ) beyond 0.91m to 1.67 m .				
22.18	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Meter	1.20	7,386.82	8,864.18
22.19	Constructing Brick Masonry circular type manhole 1.22 m internal dia at bottom and 0.56m dia at top with FPS bricks class designation 75 in cement mortar 1:4 (1 cement : 4 Coarse sand), inside cement plaster 12mm thick with cement mortar 1:3 ( 1 cement : 3 coarse sand) finished with a floating coat of of neat cement, foundation concrete 1:3:6 mix ( 1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in Cement Concrete 1:2:4 ( 1 Cement : 2 Coarse Sand : 4 Graded Stone Aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.				

S.No.	Description	Unit	Quantity	Rate	Amount
22.20	1.68m deep with SFRC cover and frame (heavy duty HD-20 grade designation) 560mm internal diameter conforming to I.S:12592, total weight of cover and frame to be not less than 182Kg. fixed in cement concrete 1:2:4 mix (1cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) including centering, shuttering all complete.(Excavation foot rests and 12mm thick cement plaster at the external surface shall be paid for separately)				
22.21	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Each	2.00	24,035.78	48,071.56
22.22	Extra depth for circular type manholes 1.22 m internal dia ( at bottom ) beyond 1.68m to 2.29 m .				
22.23	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Meter	0.50	9,595.19	4,797.60
22.24	Constructing brick masonry road gully chamber 50x45x60 cm with bricks 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 :				
22.25	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Each	9.00	5,797.04	52,173.36
22.26	Constructing brick masonry road gully chamber 45x45x77.5 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand ) with precast R.C.C. vertical grating complete as per standard design :				
22.27	with common burnt clay F.P.S.(non module) brick of class designation 7.5	Each	9.00	6,703.78	60,334.02
22.28	12 mm cement plaster finished with a floating coat of neat cement of mix :				
22.29	1:3 (1 cement: 3 fine sand)	Sqm	56.60	427.39	24,190.27

S.No.	Description	Unit	Quantity	Rate	Amount
22.30	Providing orange colour safety foot rest of minimum 6mm thick plastic encapsulated as per IS : 10910 on 12 mm dia steel bar conforming to IS :1786 having minimum cross section as 23mm x 25mm and over all minimum length 263mm and width as 165mm with minimum 112mm space between protrude legs having 2mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138mm as per standard drawing and suitable to with dtand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification make to be visible even after fixing, including fixing in manholes with 30x20x15cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) complete as per design.	Each	72.00	538.75	38,790.00
22.31	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement and making necessary channels for the drain etc. complete :				
22.32	For pipes 250 to 300 mm diameter	Each	1.00	897.50	897.50
23.00	RAIN WATER HARVESTING PIT				
23.01	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed.				
23.02	All kind of soil	Cum	109.43	172.71	18,899.66
23.03	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials				
23.04	All kinds of soil				
23.05	Qty for 1.5-3.0 M depth RWH & Desilt Chamber	Cum	82.93	123.38	10,231.90

S.No.	Description	Unit	Quantity	Rate	Amount
23.06	Providing orange color safety foot rest of minimum 6mm thick plastic encapsulated as per IS : 10910 on 12mm dia steel bar conforming to IS :1786 having minimum cross section as 23mm x 25mm and over all minimum length 263mm and width as 165mm with minimum 112mm space between protrude legs having 2mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) complete as per design.	Nos	42.00	538.75	22,627.50
23.07	12 mm cement plaster finished with a floating coat of neat cement of mix :				
23.08	1:3 (1 cement: 3 fine sand)	Sqm	270.18	427.39	115,472.23
23.09	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
23.10	1:3:6 (1 Cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 40 mm nominal size derived from natural sources)	Cum	7.95	6,984.92	55,530.11
23.11	Brick work with common burnt clay F.P.S. (non moduDSR) bricks of class designation 7.5 in foundation and plinth in:				
23.12	Cement mortar 1:6 (1 cement : 6 coarse sand)	Cum	57.62	7,171.64	413,229.90
23.13	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level.				
23.14	All types of soil				
23.15	300 mm dia	Metre	180.00	688.64	123,955.20

S.No.	Description	Unit	Quantity	Rate	Amount
23.16	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.				
23.17	200 mm nominal size dia	Metre	90.00	1,083.29	97,496.10
23.18	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
23.19	200 mm nominal size dia	Metre	90.00	1,221.80	109,962.00
23.20	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	Cum	5.40	1,469.04	7,932.82
23.21	Supplying, filling, spreading & leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	Cum	5.40	1,496.72	8,082.29
23.22	Supplying, filling, spreading & leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads & lifts, all complete as per direction of Engineer -in-charge.	Cum	5.40	1,496.72	8,082.29
23.23	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge	Cum	1.35	1,969.84	2,659.28
23.24	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 50 mm x 1.6 mm complete, all as per direction of Engineerin- charge.	Cum	4.00	1,362.15	5,448.60

S.No.	Description	Unit	Quantity	Rate	Amount
23.25	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of:				
23.26	100 mm dia	Each	4.00	218.05	872.20
23.27	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.				
23.28	100 mm dia	Each	4.00	1,859.79	7,439.16
23.29	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).				
23.30	100 mm dia	Each	4.00	257.94	1,031.76
23.31	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :				
23.32	1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	Cum	7.28	8,801.51	64,074.99
23.33	Centering and shuttering including strutting, propping etc. and removal of form for				
23.34	Suspended floors, roofs, landings, balconies and access platform	Sqm	69.00	902.21	62,252.49
23.35	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
23.36	Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	873.20	104.94	91,633.61
24.00	MISCELLANEOUS ITEM				
24.01	Providing and fixing M.S fabricated hot dipped galvanized coating puddle flange comprising of 600 mm dia long M.S class 'B' pipe (screwed end up to 50 mm & flange for more than 50 mm dia) with 6 mm thick M.S plates of required size including cutting holes in centre of plate, inserting pipe & making welded (Arc) joint complete. Same shall be installed with TEC welded joint in position with reinforcement bars of RCC tank wall/slab including making cutout in shuttering during concrete casting of tank of following diameter. (Location: Underground / Overhead Tanks.)				
24.02	25mm dia pipe, 600mm long with size of 250x250x6 mm MS plate	Each	12.00	1,578.21	18,938.52

S.No.	Description	Unit	Quantity	Rate	Amount
24.03	50mm dia pipe, 600mm long with size of 350x350x6 mm MS plate	Each	8.00	2,206.76	17,654.08
24.04	65mm dia pipe, 600mm long with size of 350x350x6 mm MS plate	Each	8.00	2,319.63	18,557.04
24.05	80mm dia pipe, 600mm long with size of 400x400x6 mm MS plate	Each	10.00	2,744.83	27,448.30
24.06	100mm dia pipe, 600mm long with size of 400x400x6 mm MS plate	Each	10.00	3,037.71	30,377.10
24.07	150mm dia pipe, 600mm long with size of 400x400x6 mm MS plate	Each	12.00	3,252.74	39,032.88
24.08	200mm dia pipe, 600mm long with size of 400x400x6 mm MS plate	Each	2.00	3,396.74	6,793.48
24.09	Providing and laying S&S centrifugally cast (spun) iron pipes (Class LA) conforming to IS - 1536 : vent pipes of Under ground tank complete.				
24.10	100mm dia	Metre	12.00	1,384.68	16,616.16
24.11	Supplying and fixing C.I. cover for Under ground Water Tank				
24.12	455x610 mm rectangular C.I. cover (light duty) the weight of the cover to be not less than 23 kg	Each	12.00	1,321.33	15,855.96
24.13	Providing orange colour safety foot rest of minimum 6mm thick plastic encapsulated as per IS : 10910 on 12mm dia steel bar conforming to IS : 1786 having minimum cross section as 23mm x 25mm and over all minimum length 263mm and width as 165mm with minimum 112mm space between protrude legs having 2mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification make to be visible even after fixing, including fixing in manholes with 30x20x15cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) complete as per design. (For UGT & OHT)	Each	64.00	538.75	34,480.00
	<b>Total - B (Internal &amp; External Plumbing Work)</b>				<b>14,490,274.27</b>
25.00	<b>Internal &amp; External Firefighting Work</b>				
25.01	(A) Supplying, installation, testing and commissioning of Electric driven Main Fire Pump suitable for automatic operation and consisting of following, complete in all respects, as required :				

S.No.	Description	Unit	Quantity	Rate	Amount
25.02	(B) Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520.				
25.03	(C) Suitable HP Squirrel cage induction motor, TEFC, synchronous speed 1500 RPM, suitable for operation on 415 volts, 3 phase 50 Hz, AC supply with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.				
25.04	(D) M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required.				
25.05	(E ) Suitable cement concrete foundation duly plastered with anti vibration pads.				
25.06	(F) Pumps shall be paint with Post office red color as per the direction of Engineer -in-charge				
25.07	2280 lpm at 70 m Head (For Main Electric Pump) (Note: *The head of the pump is selected in a manner so as to give a minimum 3.5kgf/cm <sup>2</sup> pressure at the highest/farthest point.)	Set	1.00	388,181.00	388,181.00
25.08	(A) Supplying, installation, testing and commissioning of diesel engine driven main fire pump suitable for automatic operation and consisting of following, complete in all respects, as required : (Diesel Driven Pump)				
25.09	(B) Horizontal type, multistage, centrifugal pump of cast of iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520.				
25.10	(C) Suitable HP, 1500 RPM water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12 /24 volts electric starting equipment, diesel tank for 6 hr operation, exhaust pipe extended upto 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications, painted with post office red colour etc. as required.				

S.No.	Description	Unit	Quantity	Rate	Amount
25.11	(D) M.S fabricated, common base plate, coupling, coupling guard, foundation bolts etc. as required.				
25.12	(E ) Suitable cement concrete foundation duly plastered and with anti vibration pads.				
25.13	(F) Pumps shall be paint with Post office red color as per the direction of Engineer -in-charge				
25.14	2280 lpm at 70 m Head (Note: *The head of the pump is selected in a manner so as to give a minimum 3.5kgf/cm <sup>2</sup> pressure at the highest/farthest point.)	Set	1.00	642,112.00	642,112.00
25.15	(A) Supplying, installation, testing and commissioning of electric driven pressurisation pump suitable for automatic operation and consisting of following, complete in all respects, as required : (Jockey Pump)				
25.16	(B) Horizontal type, multistage, centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS : 1520.				
25.17	(C) Suitable HP squirell cage induction motor TEFC type suitable for operation on 415 volts, 3 phase 50 Hz AC supply with IP 55 class of protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS : 325.				
25.18	(D) M.S.fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required.				
25.19	(E )Suitable cement concrete foundation duly plastered and with anti vibration pads.				
25.20	(F) Pumps shall be paint with Post office red color as per the direction of Engineer -in-charge				
25.21	180 lpm at 70 m Head	Set	1.00	109,254.00	109,254.00
26.00	ELECTRICAL SYSTEM				
26.01	CONTROL PANELS				

S.No.	Description	Unit	Quantity	Rate	Amount
26.02	Fabrication, supply, Insallation testing & commissioning of Electrical control panel of cubical construction, floor mounted type, fabricated out of 2mm thick CRCA sheet, compartmentalised with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, inter-connection with suitable size copper conductor cable/solid copper strip, having switchgears and accessories, mountings and internal wiring, earth terminals, numbering etc. complete in all respect, suitable for main fire pump, pressurisation pump & diesel pump set complete as per CPWD specification with following in coming and Outgoings, suitable for operation on 415V, 3 phase, 50Hz Ac Supply with enclosure protection class IP 42 as required :				
26.03	Incomings				
26.04	630A, 50kA 4 Pole MCCB, Ics=100% Icu Rating				
26.05	Digital Voltmeter 0-500V with selector switch				
26.06	Ammeter (0-630 A) with selector swtich & CTs etc.				
26.07	LED type RYB phase indicating lamps, ON, OFF, trip indicating lamps				
26.08	Set of Copper Bus Bar 1000Amps				
26.09	Outgoings				
26.10	( Note : All outgoing feeders for pumps should have digital Ammeter with selector switches, and LED type ON, OFF, trip indicating lamps)				
26.11	Main Fire Pump				
26.12	250 Amp, 50kA TPN MCCB, Ics=100% Icu, with fully automatic Star/Delta starter suitable for 100 hp pump with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation.				
26.13	Jockey Pump				

S.No.	Description	Unit	Quantity	Rate	Amount
26.14	125 Amp, 50kA TPN MCCB, Ics=100% Icu, with Suitable HP fully automatic Star/Delta starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation.				
26.15	DIESEL ENGINE CONTROL				
26.16	Control for diesel engine comprising -				
26.17	Automatic/Manual selector switch & 3 attempts starting device, timers and relays as required, push buttons, start/stop in manual mode				
26.18	Indicating lamp for high/ Low Lub. Oil pressure, High Water Temp and Engine on indication				
26.19	Battery charger suitable for 12V/24 V DC with boost and trickle selector switch, 0-30 V DC volt meter, and 0-20 A DC Ammeter				
26.20	All standard relays and accessories for automatic operation of diesel engine				
26.21	System Controller				
26.22	Designing, Supply, Installation, Testing and commissioning of system controller to control operation of main electric fire pump, diesel pump, Pressurization pump, Terrace pump in sequence as per specification consisting of relays, timers. Sensors, annunciation window for fault indication, complete as per specification	Set	1.00	337,486.00	337,486.00
26.23	Supplying and fixing of fire brigade connection of cast iron body with gun metal male instantaneous inlet couplings complete with cap and chain as reqd. for suitable dia MS pipe connection conforming to IS 904 as required :				
26.24	2 way - 100 mm dia M.S. Pipe	Each	1.00	7,262.00	7,262.00
26.25	4 way-150 mm dia M.S. Pipe	Each	1.00	14,820.00	14,820.00
26.26	Providing and fixing fire brigade suction hose coupling (draw out connection) with nut for female coupling as per IS-902 complete with 150mm dia. Suction pipe and foot valve (to be connected to static tank) complete as required and as per enclosed specification.	Each	1.00	8,193.00	8,193.00
26.27	Providing & fixing of pressure switch in M.S. pipe line including connection etc. as required.	Each	3.00	1,670.00	5,010.00

S.No.	Description	Unit	Quantity	Rate	Amount
26.28	Constructing masonry Chamber 90x90x100 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size ), i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size ) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	Each	1.00	18,896.70	18,896.70
26.29	Supplying and fixing single headed internal hydrant valve with instantaneous Gunmetal/Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked conforming to IS 5290 (Type -A) with blank Gunmetal/Stainless Steel cap and chain as required :				
26.30	Single headed Stainless steel	Each	8.00	6,632.00	53,056.00
26.31	Supplying and fixing Single headed external yard hydrant valve with 1 No. 63 mm dia instantaneous FM Gunmetal/Stainless Steel coupling and cast iron wheel, ISI marked, conforming to IS 5290 (type A) with blank Gunmetal/Stainless Steel cap and chain as required :				
26.32	Single headed Stainless steel	Each	6.00	6,632.00	39,792.00
26.33	Supplying & fixing 63 mm dia gun metal short branch pipe with 20 mm nominal internal diameter size nozzle conforming to IS 903 suitable for instantaneous connection to interconnect hose pipe coupling as required :				
26.34	Stainless Steel (Grade 304)	Each	14.00	3,402.00	47,628.00
26.35	Supplying and fixing orifice plate made out of 6 mm thick stainless steel (Grade 304) with orifice of required size to be fitted between flange & landing valve of external and internal hydrants to reduce pressure at the outlet to the level of 3.5 kg/cm2 complete as required.	Each	6.00	1,436.00	8,616.00

S.No.	Description	Unit	Quantity	Rate	Amount
26.36	Supplying and fixing 63 mm dia, 15 m long RRL hose pipe with 63 mm dia male and female couplings duly bound with GI wire, rivets etc. conforming to IS 636 (type-A) as required :				
26.37	Stainless Steel (Grade 304) - 2 nos. for Each Internal & External Hydrant	Each	28.00	4,667.00	130,676.00
26.38	Supplying and fixing first-aid Hose Reel with MS construction spray painted in post office red, conforming to IS 884 complete with the following as required.				
26.39	20 mm nominal internal dia water hose thermoplastic (Textile reinforced) type -2 as per IS: 12585				
26.40	20 mm nominal internal dia gun metal globe valve & nozzle.				
26.41	Drum and brackets for fixing the equipments on wall.				
26.42	Connections from riser with 25 mm dia stop gun metal valve & M.S. Pipe and socket.				
26.43	30 m	Each	8.00	9,440.00	75,520.00
26.44	Providing and fixing angle iron (40mmx40mmx5mm) door frame and MS sheet (6mm thick) cum glass shutter of size 2.1mtrx0.9mtr(N.S.) with 25mmx25mmx3mm angle frame all around and stiffened in between i/c hinges, handle, locking arrangement, painting with approved synthetic enamel paint i/c sign writing on glass at internal hydrant including providing & fixing S.S. sheet 2mm thick on remaining portion above door to close opening i/c painting etc. as required. Glass shall be 6 mm thick. It shall be paint with Post office red color as per the direction of Engineer in-charge of PMC and employer	Each	8.00	10,870.00	86,960.00
26.45	Providing & fixing of MS fire Hose cabinet outdoor type of size 0.90 Mx 0.60 Mx 0.50 M made of 6mm thick MS sheet with 6mm thick glazed glass doors i/c necessary locking arrangement suitable to accomodate 2nos 15m long hoses, one no branch pipe, etc. and mounted on 400 mm height agle . The cabinet shall be painted with red colour shade No. 536 of IS: 5 externally & white internally complete in all respects for internal hydrant and as per enclosed specification. It shall be paint with Post office red color as per the direction of Engineer -in-charge of PMC and employer	Each	6.00	8,448.00	50,688.00

S.No.	Description	Unit	Quantity	Rate	Amount
26.46	Providing and fixing stainless steel standard fireman's axe with heavy insulated rubber handle tested to 20000 volts as per IS : 926 complete.	Each	8.00	1,143.00	9,144.00
27.00	PIPES & VALVES				
27.01	Providing laying, testing & commissioning of 'C' class heavy duty MS Pipe conforming to IS 1239/3589 i/c fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. in ground including welding, excavation & providing cement concrete blocks as supports, anticorrosive treatment with coaltar/asphalt tape as per IS 10221, refilling the trench etc. of following sizes complete as required.				
27.02	150 mm. Dia	Mt	480.00	5,104.00	2,449,920.00
27.03	Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 3589/IS 1239 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required : It shall be paint with Post office red color as per the direction of Engineer -in-charge of PMC and employeer				
27.04	200 mm dia. (Wall thickness 6.3mm)	Mt	10.00	6,620.00	66,200.00
27.05	150 mm dia.	Mt	361.00	4,299.00	1,551,939.00
27.06	100 mm dia.	Mt	289.00	3,077.00	889,253.00
27.07	80 mm dia.	Mt	143.00	2,277.00	325,611.00
27.08	65 mm dia.	Mt	363.00	1,955.00	709,665.00
27.09	50mm dia.	Mt	403.00	1,557.00	627,471.00
27.10	40 mm dia.	Mt	594.00	1,259.00	747,846.00
27.11	32 mm dia.	Mt	20.00	1,039.00	20,780.00
27.12	25 mm dia.	Mt	1782.00	920.00	1,639,440.00
27.13	Supplying, fixing, testing and commissioning of butterfly valve of PN 1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required :				
27.14	150mm dia.	Each	8.00	9,737.00	77,896.00
27.15	100mm dia.	Each	3.00	7,271.00	21,813.00
27.16	80mm dia.	Each	14.00	5,406.00	75,684.00
27.17	65mm dia.	Each	2.00	4,712.00	9,424.00
27.18	50mm dia.	Each	6.00	4,114.00	24,684.00

S.No.	Description	Unit	Quantity	Rate	Amount
27.19	Providing, installation, testing and commissioning of non-return valve of following sizes confirming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc.as required :				
27.20	150 mm dia.	Each	6.00	18,884.00	113,304.00
27.21	100 mm dia.	Each	3.00	11,853.00	35,559.00
27.22	80 mm dia.	Each	1.00	8,255.00	8,255.00
27.23	Supplying, fixing, testing & commissioning of double flanged sluice valve of rating PN 1.6 with non rising spindle, bronze/gun metal seat, ISI marked complete with nuts, bolts, washers, gaskets and conforming to IS 780 of following sizes as required :				
27.24	150mm dia.	Each	7.00	23,968.00	167,776.00
27.25	100mm dia.	Each	1.00	15,483.00	15,483.00
27.26	80mm dia.	Each	2.00	11,314.00	22,628.00
27.27	50mm dia.	Each	2.00	7,639.00	15,278.00
27.28	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
27.29	25 mm nominal bore	Each	11.00	622.40	6,846.40
27.30	Providing, installation, testing and commissioning of stainless steel Y-strainer fabricated out of 1.6 mm thick stainless steel, Grade 304, sheet with 3 mm dia holes with stainless steel flange.				
27.31	150 mm dia.	Each	2.00	11,682.00	23,364.00
27.32	80 mm dia.	Each	1.00	5,117.00	5,117.00
27.33	Providing & fixing of 25mm dia. gunmetal air release valve with all fittings and forged ball valve on header complete as required and as per enclosed specification.	Each	2.00	1,881.00	3,762.00
27.34	Providing and fixing in position the industrial type pressure gauges with gun metal / brass valves complete as required	Each	18.00	1,491.00	26,838.00

S.No.	Description	Unit	Quantity	Rate	Amount
27.35	Providing, fixing, testing & commissioning of installation control valve of cast iron body, brass/bronze working parts comprising of water motor alarm, bronze seat clapper, clapper arm and hydraulically driven mechanical gong bell to sound continuous alarm when the wet riser/sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc of following sizes as required :				
27.36	150 mm dia.	Set	1.00	50,805.00	50,805.00
27.37	Supplying and fixing air vessel made of 250 mm dia, 8 mm thick MS sheet, 1200 mm in height with air release valve on top and flanged connection to riser, drain arrangement with 25 mm dia gun metal wheel valve with required accessories, pressure gauge and painting with synthetic enamel paint of approved shade as required. It shall be paint with Post office red color as per the direction of Engineer -in-charge of PMC and employeeer	Set	2.00	19,402.00	38,804.00
27.38	Providing and fixing reinforced neoprene rubber vibration eliminators / expansion joints (to provide relief from stresses at pipe flanges) suitable for upto 20 kg/cm <sup>2</sup> pressure, complete as per specification.				
27.39	150mm dia.	Each	4.00	6,489.00	25,956.00
27.40	80mm dia.	Each	2.00	4,080.00	8,160.00
27.41	Providing, fixing, testing & commissioning of MS air vessel tank in Pump room fabricated from 6mm thick MS plate, 450 mm in diameter and 2 m in height with dished ends fabricated from 8mm thick MS plate with Air release valve with stop cock, flanged inlet connection and drain arrangement with 25mm dia valve, pressure gauge with gun metal stop cock complete with all accessories as required and conforming to IS 4736-1968. It shall be paint with Post office red color as per the direction of Engineer -in-charge of PMC and employeeer				
27.42	Recommended dia. : 450 mm				
27.43	Height of shell : 2000mm				
27.44	Working pressure : 7 Kg/Sq.cm				
27.45	Test Pressure : 10 Kg/Sq.cm	Each	1.00	97,065.00	97,065.00

S.No.	Description	Unit	Quantity	Rate	Amount
27.46	Providing & fixing flow switch in following sizes M.S. pipe including connection etc as required.				
27.47	150 mm dia	Each	6.00	9,644.00	57,864.00
27.48	Providing and fixing inspectors test assembly complete with test valve, sight glass sectional drain valve, union with corrosion resistant orifice all complete strictly as per drawing.				
27.49	50NB	Each	6.00	15,729.00	94,374.00
27.50	Providing and fixing heavy duty Aluminium armored cables 1.1 KVA grade including necessary support clamps at ceiling level and connection legs complete in all respects.				
27.51	Power cable 3 core 16 Sq.mm	Metre	30.00	491.00	14,730.00
27.52	Power cable 3 core 70 Sq.mm	Metre	30.00	1,383.00	41,490.00
27.53	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Metre	120.00	84.00	10,080.00
27.54	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
27.55	150mm width x 50mm depth x 1.6 mm thickness.	Metre	40.00	686.00	27,440.00
27.56	300mm width x 50mm depth x 1.6 mm thickness.	Metre	40.00	866.00	34,640.00
27.57	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	Metre	80.00	160.00	12,800.00
28.00	AUTOMATIC SPRINKLER SYSTEM				
28.01	Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories :				
28.02	Pendent Sprinkler	Each	572.00	599.00	342,628.00
28.03	Upright Sprinkler	Each	701.00	599.00	419,899.00
28.04	Horizontal side wall sprinkler	Each	66.00	699.00	46,134.00

S.No.	Description	Unit	Quantity	Rate	Amount
28.05	Supplying, installation, testing & commissioning of sprinkler flexible pipe (UL Listed) of stainless steel complete with 15 NPT on reducer thread with maximum working pressure of 175 PSI test pressure of 875 PSI (Burst) with branch line (Inlet) 25mm NPT male thread to sprinkler head (Outlet) 15mm NPT female thread with reducer, nipple, 2 side brackets, center bracket, stockbar of following sizes complete as required.				
28.06	700mm	Each	170.00	1,495.00	254,150.00
28.07	1000mm	Each	170.00	1,703.00	289,510.00
28.08	1200mm	Each	170.00	1,800.00	306,000.00
28.09	1500mm	Each	170.00	1,969.00	334,730.00
28.10	Providing, installation, testing & commissioning of adjustable rosette plate for 15mm dia in white finish UL Listed or FM approved complete as required.	Each	680.00	264.00	179,520.00
28.11	Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 93 degree centigrade with required accessories :				
28.12	Pendent Sprinkler	Each	108.00	599.00	64,692.00
29.00	FIRE EXTINGUISHER				
29.01	Supply, installation, testing and commissioning ISI marked (IS:15683) Fire Extinguisher, Carbon-di-oxide type capacity 4.5 Kg. Flat base including valve, discharge hose of not less than 10 mm dia, 1M long and complete in all respects including initial fill with CO2 gas conforming to IS:307-1966 and wall suspension bracket as required as per specifications.	Each	21.00	6,373.00	133,833.00
29.02	Supply, installation, testing and commissioning of 6kg ABC (Powder Type) Fire Extinguisher. Mild Steel Cylinders ISI marked fitted with pressure indicating gauge, internal tube, squeeze lever type valve fully charged with ABC 90 powder (Mono Ammonium Phosphate) pressured by Nitrogen complete in all respects including wall suspension bracket and conforming to IS:15683 as required as per specifications.	Each	20.00	2,774.00	55,480.00

S.No.	Description	Unit	Quantity	Rate	Amount
29.03	Providing and fixing Mechanical Foam Based Trolley Mounted Fire Extinguisher, Inside CO2 Cartridge Operated Gas Cartridge Confirming to 'IS 4947' Discharge Hose & Nozzle, Epoxy Polyester Powder Coated As per 'IS16018 : 2012' ISI marked Fire Extinguishers Suitable 'A' 'B' Class of FIRE (for FOAM confirming to IS 4989). The extinguisher body finished externally with red enamel with trolley mounted complete with internal charge.(Capacity 60 Ltr)	Each	2.00	23,330.00	46,660.00
29.04	Supply, installation, testing and commissioning of 4 kg Kitchen type Fire Extinguisher (Stored Pressure) in SS (304L) body With Special Wet Chemical Based Fire Extinguishers specially for Kitchen Fire (Class F Fire) with Controlling Discharge Mechanism, Discharge nozzle. complete in all respects including wall suspension bracket and conforming to IS:15683 as required as per specifications.	Each	8.00	10,456.00	83,648.00
29.05	Providing, fixing, testing and commissioning of Tamper switch for pump room valve complete with nuts, bolts, washers, gaskets of following sizes as required :	Each	12.00	4,685.00	56,220.00
	<b>Total - C (Internal &amp; External Firefighting Work)</b>				<b>14,842,443.10</b>
30.00	<b>Pumps</b>				
30.01	Supplying, laying/ fixing, testing and commissioning of following thickness resin bonded fiber glass pipe section insulation having density 80 kg/cum or mineral wool (non combustible) having density of 144 Kg/ cu m duly covered with a layer of 120 gm/sqm polythene sheet (vapour barrier) on existing pipe and finally applying 0.63mm aluminium sheet cladding complete with type3 , grade 1 roofing feltstrip(as per IS:1322 as amended up to date ) at joints etc. as per specifications and as required.				
30.02	75mm	Sqm	24.50	3,240.00	79,380.00
30.03	65mm	Sqm	2.83	2,669.00	7,553.27
30.04	50mm	Sqm	9.42	2,866.00	26,997.72
30.05	40mm	Sqm	9.42	2,640.00	24,868.80
30.06	25mm	Sqm	20.73	2,137.00	44,300.01
30.07	Providing and fixing in position the industrial type pressure gauges with gun metal / brass valves complete as required	Each	4.00	1,491.00	5,964.00
30.08	<b>RO Plant for Drinking &amp; Kitchen Water</b>				

S.No.	Description	Unit	Quantity	Rate	Amount
30.09	Supplying, assembly, erection, testing and commissioning of RO Water treatment system and all its components of required size as per water test analysis to make the water suitable for drinking, complete including the following as mentioned below. The cost will include testing of permeate water sample from a CPCB approved test laboratory, generating and providing membrane analysis data form the licensed manufacturer's software etc.				
30.10	Permeate water quantity = <b>2500 lit/hr.</b>				
30.11	Minimum Recovery = 55%				
30.12	Raw Water Characteristics - As per Water Test Analysis Report of Test Laboratory to be got done by the supplied				
30.13	Treated Water Quality				
30.14	Turbidity : <1NTU				
30.15	pH : 6.5-7.0				
30.16	Chlorides : < 10 ppm				
30.17	Sulphates : < 5 ppm				
30.18	TDS : < 100 ppm				
30.19	FRP Dual Media Filter				
30.20	Filetr feed with Sand filter and multigrade filter				
30.21	Antiscalant Dosing System including pump chemical dosing pump, tanks etc.				
30.22	Polypropylene Micron/cartridge Filter and SS housing				
30.23	Stainless steel vertical multistage inline high pressure pump ( <b>1 Working + 1 Standby</b> ) including dry running protection. Motor shall be of energy efficient type meeting the latest BIS / ECBC guide lines.				
30.24	Spirally wounded RO Membranes				
30.25	Composite FRP RO pressure tube/vessel				
30.26	Automatic RO Module Cleaning System including chemical pump, cartridge filter, tanks etc. CIP syyem with pumps				
30.27	pH correction system incl. chemical dosing pump, tanks etc.				
30.28	Instrumentation including flow meters, digital TDS meter, digital pH meter, pressure gauges, low pressure switch, high pressure switch etc. complete.				
30.29	uPVC (8 kg/cm <sup>2</sup> ) piping and ABS valves for low pressure and SS-316, schedule 10 piping and SS-316 valves for high pressure piping in the plant.				

S.No.	Description	Unit	Quantity	Rate	Amount
30.30	Electrical panel including all starters, overload relays, single phase preventers, voltmeters, ammeters, MCB's, indicating lights, push buttons, rocker switches, incomers, auto-manual switches etc. complete.				
30.31	All interconnections / terminations required for proper working of the plant as per standard specified by OEM	Set	1.00	553,710.00	553,710.00
30.32	Supplying, installing, testing and commissioning of SS vertical centrifugal pump. Each pump shall have TEFC 2900 RPM three phase electric motor. The pump shall have cast iron head, base plate CI Shaft / Impeller / Intermediate chamber along with motor, pressure gauge with isolation cock, Isolation valve, NRV on delivery line. Isolation valve, strainer (with by-pass) at suction, inlet and outlet header. Pump shall be provided with mechanical seal, suitable vibration elimination pads of approved design, drain pipe with valve (25 dia). The pump shall be suitable for auto / manual operation. The installation shall be complete with all necessary ancillaries, accessories including base plate complete as required.				
30.33	<b>FOR FILTER FEED PUMP</b>				
30.34	(1 working + 1 stand by)				
30.35	Capacity - 360 lpm (Each)				
30.36	Head - 30 m	Set	1.00	304,541.00	304,541.00
30.37	<b>Hydropneumatic Pumping System With Variable Frequency Drive</b> Supply, Installation, Testing and Commissioning of compact packaged type skid mounted, self-contained variable frequency drive (wherever specified) hydropneumatic system complete as per following technical specification complete as required:-				
30.38	(i) In- line vertical Single / Multistage centrifugal clear water pump set with SS-304 casing, SS-304 impeller with SS-304 shaft ,CI base with CED coating complete directly coupled with TEFC induction motor of class "F" insulation & efficiency class IE-3, 2900rpm, suitable for operation on 415 Volts ±10%, 3 phase, 50 Hz A.C. supply complete.				

S.No.	Description	Unit	Quantity	Rate	Amount
30.39	(ii) The entire system shall be mounted on a common base frame i/c common suction and common delivery of G.I heavy class pipe headers with flanges, interconnecting piping with all required Control Valves, Rubber expansion below on suction & delivery line, Non-return valves, pressure gauge with isolation cock etc. and all required accessories.				
30.40	(iii) Pressure vessel capacity 200 & qty 2 of non corrosive FRP composite construction lined with NSF/ FDA listed material, like high density polyethylene with fully replaceable polyurethane. Air cell burst pressure of minimum of (3 / 5) times the vessel operating pressure and prototype cycle tested for(80,000 / 2,50,000) cycles with charging connections to discharge pipe line with necessary flanges, gaskets, isolating valve, nuts / bolts etc. with suitable foundation bolts & other accessories, complete as required.				
30.41	(iv) Panel mounted microprocessor multi pump controller with large graphical display and variable frequency drive (VFD) mounted inside a panel complete with pressure sensor transmitter. The graphical display capable to show number of pumps running & also communicate with other controllers following with open protocol through RS485 port. System should be capable to compensate for frictional losses at lower flows. All alarms should be displayed in the controller. The panel should also have provision for manual / automatic alternate (cyclic) operation of pumps, ON / OFF switch				
30.42	(v) Necessary foundationing bolts, vibration elimination pads and other accessories complete as required.				
30.43	(vi) The entire system alongwith pumps & control panel must be sourced from single manufacturer only for unit responsibility.				
30.44	Flow Req : 360 LPM				
30.45	Head : 40 Mtr				
30.46	Pressure Vessel : 200 lits-5 Bar - 2 NOS.				
30.47	System : 1 Set ( 2 Working + 1 Standby)	Set	1.00	941,307.00	941,307.00

S.No.	Description	Unit	Quantity	Rate	Amount
30.48	Supply, Installation, testing and commissioning of Submersible single stage single entry pumps with C.I.body and C.I. two vane enclosed type impeller connected to TEFC submersible motor for 415 volts, 3 phase, 50 cycles including MCC panel with level controllers, auto control, sequential change over facility with one proper working at low level & two proper working at high level with an audible alarm including all interconnectivity cables, with both pumps connected to common outlet header including valves, non return valves, lifting chains etc. complete in all respect				
30.49	(one working + one standby/both working in high flow conditions)				
30.50	<b>PUMP ROOM SUMP PUMP</b>				
30.51	(Solid handling capacity 10-12mm)				
30.52	Capacity- 200 lpm (Each)				
30.53	Head - 15 m	Set	1.00	249,170.00	249,170.00
30.54	To switch on the pumps ( <b>including Raw Water Pump, Domestic water supply pump etc.</b> ) when the level of water in the supply water tank is low and to cut off the pump when the level in the receiving water tank is high and switch off the pumps when the level of water in the supply water tank is low.				
30.55	To indicate 5 levels of water in all tanks through a control panel with LEDs				
30.56	To start the pumps in a cyclic order.				
30.57	The system shall be complete to ensure automatic quotation of pump in accordance to water level in respective tanks.				
30.58	The Contractor will include all the under ground and over head tanks and all the pumps as required for level control in this item	Set	2.00	22,148.00	44,296.00
30.59	Providing, fixing, testing and commissioning of Vertical Downflow Filter in FRP made.The filter shall have :				
30.60	a) One no. pressure tight manholes and at least one no. pressure tight side hole for maintenance purposes.				
30.61	b) Initial charge of Filter Media.				
30.62	c) Complete underdrain system and raw water distributor as per manufacturer's design.				

S.No.	Description	Unit	Quantity	Rate	Amount
30.63	(d)Complete uPVC frontal face piping (10 kg/cm <sup>2</sup> rating conforming to IS:4985) and valves battery with CI Butterfly valves, pressure gauges and sampling points at inlet and outlet. etc. covering all functions of service, backwash, rinse, air release etc.				
30.64	e) Pressure gauges (100 mm dia bourdon type pressure gauge)/ sampling points as per manufacturer design.				
30.65	f) All internal parts of the filtration plant shall be coated with two coats of epoxy paint after thorough sand blasting. All external surfaces of the plant including piping shall be coated with two coats of red iron oxide/zinc chromate primer followed by two coats of high gloss enamel paint .				
30.66	g) The filter shall be complete with all gaskets/fasteners of standard quality as required.				
30.67	h) The filter shall be designed to give rated output at given raw water quality and flow rate without any operational problem and should not get any loss of performance as long as the operating pressure remains within the given range. Any additional provision is required to make the item complete, the same should be included herein.				
30.68	Dual Media Filter				
30.69	Capacity - 21600 lph				
30.70	Filtration rate - 22,500 lph/m <sup>2</sup>				
30.71	Filter dia approx. 1200 mm				
30.72	Working pressure: 3.0 kg/cm <sup>2</sup>				
30.73	Test pressure : 4.5 kg/cm <sup>2</sup>	Set	1.00	221,484.00	221,484.00
30.74	Electrical panel for WTP system including all starters, overload relays, single phase preventers, voltmeters, ammeters, MCB's, indicating lights, push buttons, rocker switches, incomers, auto-manual switches etc. complete.	Set	1.00	166,113.00	166,113.00
30.75	Providing, laying, testing & commissioning of 'B' class heavy duty G.I. pipe conforming to IS 1239 including welding, fittings like elbows, tees, flanges, tapers, nuts, bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required :				
30.76	80 mm dia	Metre	27.00	1,514.00	40,878.00
30.77	100 mm dia	Metre	15.00	1,925.00	28,875.00

S.No.	Description	Unit	Quantity	Rate	Amount
30.78	Supplying, fixing, testing and commissioning of butterfly valve of PN 1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required :				
30.79	80mm dia	Each	8.00	5,406.00	43,248.00
30.80	100mm dia	Each	4.00	7,271.00	29,084.00
30.81	Providing, installation, testing and commissioning of non-return valve of following sizes confirming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc.as required :				
30.82	80mm dia	Each	2.00	8,255.00	16,510.00
30.83	100mm dia	Each	2.00	11,853.00	23,706.00
30.84	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.				
30.85	2 x 1.5 sq. mm	Metre	60.00	77.00	4,620.00
30.86	3 x 4 sq. mm	Metre	30.00	222.00	6,660.00
30.87	3 x 6 sq. mm	Metre	30.00	326.00	9,780.00
30.88	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Metre	240.00	84.00	20,160.00
30.89	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
30.90	150mm width x 50mm depth x 1.6 mm thickness.	Metre	30.00	686.00	20,580.00
30.91	300mm width x 50mm depth x 1.6 mm thickness.	Metre	30.00	866.00	25,980.00
	<b>Total - D (Pumps &amp; Equipments)</b>				<b>2,939,765.80</b>

**Grand Total**

**317,780,633.04**