

Original Estimate

N/W **Construction of Kotak School of Sustainability at IIT Kanpur (SH: Civil Work)**

SLNo	Description	Qty	Unit	Rate without GST	Amount
1	Carriage of Materials				
1.1	By Mechanical Transport including loading,unloading and stacking				
1.1.1	Earth Lead - 2	2805	cum	202.7	568574
2	EARTH WORK				
2.1	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 for all lift, as directed by Engineer-in-charge.				
2.1.1	All kinds of soil	13383	cum	146.36	1958736
2.2	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, for all lift, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.				
2.2.1	All kinds of soil.	1399	cum	214.64	300281
2.3	Excavating trenches by mechanical / manual means of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, for all depth, 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:				
2.3.1	All kinds of soil				
2.3.1.1	Pipes, cables etc, not exceeding 80 mm dia.	1140	metre	177.78	202669
2.3.1.2	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	840	metre	290.38	243919
2.4	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 and for all lif.	11440	cum	161.62	1848933
2.5	Extra for every additional lif of 1.5 m or part thereof in excavation / banking excavated or stacked materials.				
2.5.1	All kinds of soil	13100	cum	104.56	1369736
2.6	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	264	cum	1751.25	462330
2.7	Surface dressing of the ground including removing vegetation and in- equalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m.				
2.7.1	All kinds of soil	3498	sqm	28.16	98504
2.8	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	900	sqm	14.51	13059
2.9	Supplying chemical emulsion in sealed containers including delivery as specified.				
2.9.1	Chlorpyriphos/ Lindane emulsifiable concentrate of 20%	2207	litre	193.57	427209
2.1	Diluting and injecting chemical emulsion for pre-constructional anti termite treatment and creating a continuous chemical barrier under and around the column pits, wall, trenches, basement excavation, top surface of plinth filling, junction of wall and floor ,along external perimeter of building , expansion joints , over the top surface of consolidated earth on which apron is to be laid surroundings of pipes and conduits etc. complete as per specifications (plinth area of building at ground floor only shall be measured for payment.) With Chlorpyriphos/Lindane E.C. 20% with 1% concentration.	3700.59	Sqm	40.4	149504
2.11	Extra for Excavation trenches for pipes, cables etc. in all kind of soil for depth exceeding 1.5m but not exceding 3m (Rate is over corresponding basic item for depth up to 1.5m)	200	Metre	368.78	73756
3	CEMENT CONCRETE (CAST IN SITU)				
3.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
3.1.1	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)	173	cum	6877.91	1189878

3.1.2	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)	120	cum	5919.64	710357
3.1.3	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)	680	cum	5617.21	3819703
3.1.4	1:5:10 (1 cement : 5 coarse sand (zone-III) derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources)	170	cum	5375.27	913796
3.2	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor etc., up to floor five level, excluding the cost of centering, shuttering and finishing:				
3.2.1	1:2:4 (1 Cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	14	cum	8159.64	114235
3.3	Providing and laying damp-proof course 40 mm thick with cement concrete 1:2:4 (1 cement: 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 12.5 mm nominal size derived from natural sources)	396	sqm	338.78	134157
3.4	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.	103	per bag of 50kg cement used	14.96	1541
3.5	Providing & applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7 kg 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.	396	sqm	120.51	47722
3.6	Extra for concrete work in superstructure above floor V level for each four floors or part thereof by mechanical means.	10	cum	139.72	1397
3.7	Extra for laying concrete in or under water and/or liquid mud including cost of pumping or bailing out water and removing slush etc. complete. Note for item No. 4.15 :- The quantity will be calculated by multiplying the depth measured from the sub-soil water level up to centre of gravity of concrete under sub-soil water level with quantity of concrete in cum executed under sub-soil water. The depth of centre of gravity shall be reckoned correct to 0.1m. (0.05m or more shall be taken as 0.1m and less than 0.05m ignored).	300	cum per metre depth	906.07	271821
3.8	Making plinth protection 50 mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources) over 75 mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	300	sqm	617.87	185361
4	REINFORCED CEMENT CONCRETE				
4.1	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 :				
4.1.1	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)	23	cum	7459.18	171561
4.2	Centering and shuttering including strutting, propping etc. and removal of form for				
4.2.1	Foundations, footings, bases of columns, etc. for mass concrete	1009	sqm	323.36	326270
4.2.2	Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	2100	sqm	694.73	1458933
4.2.3	Suspended floors, roofs, landings, balconies and access platform	5952	sqm	764.61	4550959
4.2.4	Shelves (Cast in situ)	55	sqm	764.61	42054
4.2.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers	23589	sqm	607.24	14324184
4.2.6	Columns, Pillars, Piers, Abutments, Posts and Struts	13489	sqm	792.69	10692595
4.2.7	Stairs, (excluding landings) except spiral-staircases	388	sqm	630.78	244743
4.2.8	Extra for shuttering in circular work (20% of respective centering and shuttering items)	1811	sqm	121.44	219928
4.2.9	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	104	sqm	323.36	33629
4.2.10	Edges of slabs and breaks in floors and walls				
4.2.10.1	Under 20 cm wide	3560	metre	171.97	612213
4.2.11	Weather shed, Chajjas, corbels etc., including edges	800	sqm	784.28	627424
4.2.12	Suspended floors, roofs, landings, balconies and access platform with water proof ply 12 mm thick	10	sqm	848.02	8480
4.2.13	Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12 mm thick	10	sqm	694.27	6943

4.3	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).				
4.3.1	Suspended floors, roofs, landings, beams and balconies (Plan area to be measured)	12740	sqm	316.89	4037179
4.4	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
4.4.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	601050	kg	88.93	53451377
4.5	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
4.5.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	772622	kg	88.93	68709274
4.6	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	1046	metre	64.64	67613
4.7	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 centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge, for the following grades of concrete.: Note: Extra cement up to 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.				
4.7.1	All works upto plinth level				
4.7.1.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	123	cum	7837.67	964033
4.7.1.2	Concrete of M30 grade with minimum cement content of 350 kg /cum	4562	cum	7962.15	36323328
4.7.2	All works above plinth level upto floor V level				
4.7.2.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	112	cum	8130.94	910665
4.7.2.2	Concrete of M30 grade with minimum cement content of 350 kg /cum	6160	cum	8255.42	50853387
4.8	Add for using extra cement in the items of design mix over and above the specified cement content therein.	2427	quintal	604.84	1467947
4.9	Extra for R.C.C./ B.M.C/ R.M.C. work above floor V level for each four floors or part thereof.	1347	cum	293.27	395035
4.1	Providing and fixing in position Stainless steel Grade 304 plate-1.0 mm thick as per design for expansion joints.				
4.10.1	200 mm wide.	286	metre	708.95	202760
4.11	Providing and fixing of expansion joint system related with floor location as per drawings and direction of Engineer-In-Charge. The joints system will be of extruded aluminum base members, self aligning / self centering arrangement and support plates etc. as per ASTM B221-02. The system shall be such that it provides floor to floor /floor to wall expansion control system for various vertical location in load application areas that accommodates multi directional seismic movement without stress to it's components. System shall consist of metal profiles with an universal aluminum base member designed to accommodate various project conditions and finish floor treatments. The cover plate shall be designed of width and thickness required to satisfy projects movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self- centering arrangement that freely rotates / moves in all directions. The Self - centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. Provision of Moisture Barrier Membrane in the Joint System to have watertight joint is mandatory requirement all as per the manufactures design and as approved by Engineer -in- Charge. (Material shall conform to ASTM 6063).				
4.11.1	Floor Joint of 200 mm gap	60	metre	8166.61	489997

4.12	Providing and fixing of expansion joint system related with wall joint (internal/external) location as per drawings and direction of Engineer-In- Charge. The joints shall be of extruded aluminum base members, self aligning / centering arrangement and support plates as per ASTM B221- 02. The material shall be such that it provides an Expansion Joints System suitable for vertical wall to wall/ wall to corner application, both new and existing construction in office Buildings & complexes with no slipping down tendency amongst the components of the Joint System. The Joint System shall utilize light weight aluminum profiles exhibiting minimal exposed aluminum surfaces mechanically snap locking the multicellular to facilitate movement. (Material shall conform to ASTM 6063).				
4.12.1	Wall Joint of 200 mm gap	216	metre	5680.75	1227042
4.13	Providing and fixing of expansion joint system of approved make and manufactures for various roof locations as per approved drawings and direction of Engineer-In-Charge. The joints shall be of extruded aluminum base members with, self aligning and self centering arrangement support plates as per ASTM B221-02. The system shall be such that it provides watertight roof to roof/roof to corner joint cover expansion control system that is capable of accommodating multidirectional seismic movement without stress to its components. System shall consist of metal profile that incorporates an universal aluminum base member designed to accommodate various project conditions and roof treatments. The cover plate shall be designed of width and thickness required to satisfy movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self-centering arrangement that freely rotates / moves in all directions. The Self centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. The Joint System shall resists damage or deterioration from the impact of falling ice, exposure to UV, airborne contaminants and occasional foot traffic from maintenance personnel. Provision of Moisture Barrier Membrane in the Joint System to have water tight joint is mandatory requirement. (Material shall conform to ASTM 6063).				
4.13.1	Roof Joint of 200 mm gap	10	metre	6537.14	65371
4.14	"Centering and shuttering i/c strutting, propping etc. and removal of form work for mullions upto 11th floor levels etc. complete. "	800	Sqm	987.87	790296
4.15	Extra for Providing and laying RMC/BMC/RCC Work at below 3.00 meter from plinth level or part thereof.	2840	Cum	136.39	387348
4.16	Providing, making & fixing of MS/GI Pipe sleeve with flange (Dia 40mm to 160mm) in R.C.C. Walls of tanks at desired level as per the directions of Engineer-in-charge.	10	Each	618.45	6185
4.17	Extra for Providing & laying Cement concrete above Plinth level to terrace level or at all floor level.	20	Cum	462.78	9256
5	MASONRY WORK				
5.1	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:				
5.1.1	Cement mortar 1:6(1 cement :6 coarse sand)	590	cum	5881.29	3469961
5.2	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 :				
5.2.1	Cement mortar 1:6(1 cement : 6 coarse sand)	1217	cum	7508.82	9138234
5.3	Extra for brick work / AAC block masonry / Tile brick masonry in superstructure above floor V level, for each four floors or part thereof by mechanical means.	680	cum	139.72	95010
5.4	Extra for forming cavity 5 cm to 11.5 cm wide in cavity walls with necessary weep and vent holes including use of cores and cost of providing and fixing bitumastic coated M .S. ties 300-400 mm long of 25x3 mm section at not less than 3 ties per sqm as per approved design.	3000	sqm	193.12	579360
5.5	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundations and plinth in :				
5.5.1	cement mortar 1:4(1 cement :4 coarse sand)	2	sqm	746.3	1493
5.6	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.				
5.6.1	Cement mortar 1:4(1 cement :4 coarse sand)	5511	sqm	926.69	5106989

5.7	Extra for half brick masonry in superstructure, above floor V level for every four floors or part thereof by mechanical means.	298	sqm	12.36	3683
5.8	Extra for providing and placing in position 2 Nos 6 mm dia. M.S. bars at every third course of half brick masonry.	2429	sqm	86.41	209890
5.9	Brick work with common burnt clay selected F.P.S. (non modular) bricks of class designation 7.5 in exposed brick work including making horizontal and vertical grooves 10 mm wide 12 mm deep complete in cement mortar 1:6 (1 cement: 6 coarse sand)				
5.9.1	Above plinth level upto floor V level	2887	cum	7784.07	22472610
5.1	Providing and laying Autoclaved Aerated concrete(AAC) blocks masonry 100 mm/ 125 mm thick with Grade-1 AAC blocks of density 551 to 650 kg/cum conforming to IS:2185 (Part 3) in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work.	700	cum	8407.23	5885061
5.11	Brick edging 7cm wide 11.4 cm deep to plinth protection with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 including grouting with cement mortar 1:4 (1 cement : 4 fine sand).	500	metre	50.17	25085
5.12	Providing and laying Autoclaved Aerated concrete(AAC) blocks masonry with 150 mm to 300 mm thick with Grade-1 AAC blocks of density 551 to 650 kg/cum conforming to IS:2185 (Part 3) in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	500	cum	6871.97	3435985
5.13	Providing and filling AAC blocks including proper watering and compaction in sunken areas all complete as per drawings and as directed by the Engineer-in-chargein-Charge.	53	Cum	4922.89	260913
6	CLADDING WORK				
6.1	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.				
6.1.1	Granite stone slab of colour black, Cherry/Ruby red				
6.1.1.1	Area of slab upto 0.50 sqnn	273	sqm	4464	1218672
6.1.1.2	Area of slab over 0.50 sqm	46	sqm	4235.42	194829
6.2	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.				
6.2.1	Marble work	45	metre	246.22	11080
6.2.2	Granite work	75	metre	421.33	31600
6.3	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.	68	each	807.04	54879
6.4	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.	10454	sqm	417.82	4367890
6.5	Providing and fixing cramps of required size & shape in RCC/ CC/ Brick masonry backing with cement mortar 1:2 (1 cement :2 coarse sand), including drilling necessary hole in stones and embedding the cramp in the hole (fastener to be paid separately).				
6.5.1	Gunmetal cramps	5	kg	596.56	2983
6.5.2	Stainless steel cramps	72	kg	589.09	42414
6.6	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.				
6.6.1	Granite Stone of approved shade	38	sqm	3341.18	126965

6.7	Providing and fixing machine cut, mirror/ eggshell polished, Marble stone work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture, on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/swirl including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Engineer-in-Charge.				
6.7.1	18 mm thick Italian Marble stone slab, Perlatto, Rosso verona, Fire Red or Dark Emperadore etc.	1	sqm	8588.1	8588
6.8	Providing and fixing stainless steel cramps of required size and shape for anchoring stone wall lining to the backing or securing adjacent stones in stone wall lining in cement mortar 1:2 (1 cement: 2 coarse sand), including making the necessary chases in stone and holes in walls wherever required.	72	kg	589.09	42414
6.9	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.	3259	sqm	1045.55	3407447
7	WOOD AND P. V. C. WORK				
7.1	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).				
7.1.1	Second class teak wood	1	cum	117877.21	117877
7.2	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:				
7.2.1	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	1400	sqm	1972.99	2762186
7.2.2	25 mm thick (for cupboard) including ISI marked nickel plated bright finished M.S. piano hinges with necessary screws	25	sqm	1726.47	43162
7.3	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).	1400	sqm	381.25	533750
7.4	Extra for providing vision panel not exceeding 0.1 sqm in all type of flush doors (cost of glass excluded) (overall area of door shutter to be measured):				
7.4.1	Rectangular or square	567	sqm	164.22	93113
7.4.2	Circular	317	sqm	170.11	53925
7.5	Extra for cutting rebate in flush door shutters (Total area of the shutter to be measured).	450	sqm	87.98	39591
7.6	Providing 40x5 mm flat iron hold fast 400 mm long including fixing to frame with 10 mm diameter bolts, nuts and wooden plugs and embedding in cement concrete block 300x100x150 mm 1:3:6 mix (1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size).	15	each	188.71	2831
7.7	Providing and fixing aluminium die cast body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 35 kg and door width upto 700 mm), with necessary accessories and screws etc. complete.	700	each	927.55	649285
7.8	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS: 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete :				
7.8.1	250x16 mm	358	each	214.89	76931
7.9	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 :				
7.9.1	250x10 mm	17	each	94.95	1614
7.9.2	150x10 mm	5	each	68.07	340
7.1	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 :				
7.10.1	125 mm	358	each	54.63	19558
7.10.2	100 mm	10	each	49.1	491

7.11	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete.				
7.11.1	Twin rubber stopper	352	each	59.66	21000
7.12	Providing and fixing bright finished 100 mm mortice lock with 6 levers without pair of handles of approved quality for aluminium door, with necessary screws etc complete as per direction of Engineer- in-charge.	456	each	700.95	319633
7.13	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.				
7.13.1	1.5 mm thick	2793	sqm	862.49	2408935
7.14	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.	26	each	6898.77	179368
7.15	Providing and fixing factory made uPVC glazed/wire mesh windows/ doors comprising of lead free uPVC multi-chambered frame, sash and mullion/coupler (where ever required) extruded profiles having minimum wall thickness of 1.70 mm for Series R1 and R2 profiles and 2.10 mm for Series R3 and R4 profiles conforming to EN: 12608 in any shape, colour and design duly reinforced with galvanized mild steel section made of required shape & size as per CPWD Specification, uPVC extruded glazing beads, interlocks and Inline sash adaptor (where ever required) of appropriate dimension, EPDM gasket, hardware, SS 304 grade fasteners of minimum 8 mm dia with countersunk head, comprising of matching polyamide PA6 grade sleeve for fixing frame to finished wall as per IS 1367 : Part 1 to 14, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame, sash & mullion (if required) shall be mitred cut and fusion welded/mechanically jointed duly sealed at all corners, including drilling of holes for fixing hardware and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of approved size and quality, all complete as per approved drawing conforming to CPWD specification & direction of Engineer-in-Charge. Section of steel reinforcement and cross sections of uPVC profiles to be as per design approved by Engineer-in-Charge. Wire mesh / Glazing of plain/ toughened/ laminated/ double glass unit with / without high performance coatings as per design requirements and conforming to IS: 3548 & IS: 16231 shall be paid separately. Note:- Structural design proof checked from a Government Engineering Institute, to be provided by the manufacturer for (i) Sites with basic wind speed > 45 m/sec as per IS 875 — Part 3 (ii) Sites with structure height more than 20m for all wind speeds				
7.15.1	Fixed window/ ventilator with mullion /transom.				
7.15.1.1	Using R2 series with frame (39 mm & above) x (39 mm & above) & mullion (39 mm & above) x (60 mm & above). (Height upto 1.2 metre)	11	sqm	7228	79508
7.16	Providing and fixing fire resistant door frame of section 50 x 60 mm on horizontal side & 35 x 60 mm on vertical sides having built in rebate made out of 1.6 mm thick GI sheet (Zinc coating not less than 120 gm/sqm) suitable for mounting 120 minutes Fire Rated Glazed Door Shutters. The frame shall be filled with mineral wool Insulation having density minimum 96Kg/sqnn. The frame will have a provision of G.I. anchor fastners 14 nos (5 each on vertical style & 4 on horizontal style of size M10 x 80) suitable for fixing in the opening along with factory made template for SS ball bearing hinges of size 100x89x3 mm for fixing of fire rated glazed shutter. The frame shall be finished with an approved fire resistant primer or powder coating of not less than 30 micron in desired shade as per the directions of Engineer - in- Charge. (Cost of SS ball bearing hinges is excluded).	108	metre	1816.52	196184
7.17	Providing and fixing 60 mm thick glazed fire resistant door shutters of 120 minutes Fire rating conforming to IS:3614 (Part II) or EN1634-1:1999, tested and certified as per laboratory approved by Engineer-in-Charge, with suitable mounting on door frame, consisting of vertical styles, top rail & side rail 60 mm x 60 mm wide and bottom rail of 110 mm x 60 mm made out of 1.6 mm thick G.I. sheet (zinc coating not less than 120 gm/ sqm) duly filled mineral wool insulation having density minimum 96 kg/ cum and fixing with necessary stainless steel ball bearing hinges of size 100x89x3 mm of approved make, including applying a coat of approved fire resistant primer or powder coating not less than 30 micron etc all complete as per direction of Engineer-in-Charge (panelling to be paid for seperately).	62	sqm	9910.03	614422

7.18	Providing and fixing glazing in fire resistant door shutters, fixed panels & partitions etc., with G.I. beading made out of 1.6 mm thick G.I. sheet (zinc coating not less than 120 gm/sqm) of size 20 x 33 mm screwed with M4 x 38 mm SS screws at distance 75 mm from the edges and 150 mm c/c , including applying a coat of approved fire resistant primer/ powder coating of not less than 30 micron on G.I. beading, & special ceramic tape of 5 x 20 mm size etc complete in all respect as per NBC 2016, IS 16231 (Part 3):2016 and as per direction of Engineer-in-Charge with glass of required thickness having 120 minutes of fire resistance both integrity & radiation control (EW120) and minimum 20 minutes of insulation (EI20). The manufacturer have to give test report/certification of fire glass and the glass should have the stamp showing the value of E, EW & EI. The glass shall be tested in approved NABL accredited lab or by any other accreditation body which operates in accordance with ISO/IEC 17011 and accredited labs as per ISO/IEC 17025 for testing and calibration scopes shall be eligible. The maximum glazing size shall not be more than 1100x2200 mm (w x h) or 2.42 sqm.	15	sqm	36016.86	540253
7.19	Providing and fixing stainless steel fancy handle of approved make fixed with SS screws etc. complete as per direction of Engineer-in-charge.				
7.19.1	200 mm	350	each	153.91	53869
7.2	Providing and fixing Door Silencer 75 mm long with neccessary screws.	699	Each	244.9	171185
7.21	Providing and fixing Single point locking handles ""PULSE"" (aluminium & zamak) (PL205H / Model) of LGF Sysmac (I) Pvt. Ltd. or equivalent make as approved powder coated to required colour or shade including the cost of screw and other incidental charges complete as per manufacturers specification.	450	Each	226.76	102042
7.22	Providing and fixing SS-304 deadlock backset 50mm	5	Each	1048.89	5244
7.23	Providing and fixing SS mortise lock body/ backset 50mm/ centre to centre: 85mm/ strike plate with	5	Each	1403.47	7017
7.24	Providing and fixing SS-304 cylinder lock one side key and one side knob 60 mm	5	Each	1136.3	5682
7.25	Providing and fixing SS-304 cylinder lock both side key 60mm- for flush door 35-38mm thickness	5	Each	1037.35	5187
7.26	Providing and fixing SS-304 Shaft lock	42	Each	596.19	25040
7.27	Providing and fixing SS tower bolts Kich/Golden make or equivalent ISI marked with necessary screws etc. complete: 300x10 mm	639	Each	961.49	614392
7.28	Providing and fixing SS 304 handle ISI marked with necessary screws etc. 'D' type pull handle dia. 22mm 200 mm	67	One Pair	2094.49	140331
7.29	Providing and fixing SS 304 handle ISI marked with necessary screws etc. 'D' type pull handle dia. 22mm 300 mm	567	One Pair	2192.62	1243216
7.3	Providing and fixing SS 304 H-type pull handle ISI marked with necessary screws etc. dia. 22mm 300 mm	10	One Pair	3220.91	32209
7.31	Providing and fixing SS 304 Concealed Flush handle ISI marked with necessary screws etc. 125mm	72	Each	781.72	56284
7.32	"Providing & fixing SS 'D' TYPE Lever Handle 22MM Dia SS- 304 Grade-FIRE RATED (Pair)"	131	Each	2192.62	287233
7.33	Dead lock attachment for double door for locking	366	Each	909.54	332892
7.34	Providing and fixing SS Door closer/ capacity 80 kg (door maximum width 1100mm)	408	Each	3587.03	1463508

7.35	Providing and fixing Satin stainless steel grade 316 Door stopper (Article No. DSTRS) of approved make including the cost of screws and other incidental charge as per approved sample complete.	120	Each	439.51	52741
7.36	Providing and fixing Satin stainless steel grade 304 sliding door bolt satin SS finish of SUZU or approved equivalent make including the cost of screws and other incidental charge as per approved sample complete. 250x16mm	350	Each	933.45	326708
8	STEEL WORK				
8.1	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	901	kg	110.24	99326
8.2	Providing and fixing 1 mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer.				
8.2.1	Using M.S. angels 40x40x6 mm for diagonal braces	5	sqm	4786.3	23932
8.3	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.				
8.3.1	Hot finished welded type tubes	100	kg	160.3	16030
8.3.2	Hot finished seamless type tubes	25000	kg	170.15	4253750
8.4	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
8.4.1	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	3285	kg	142.32	467521
8.5	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer.				
8.5.1	M.S. tube	50	kg	162.28	8114
8.5.2	E.R.W. tubes	50	kg	169.66	8483
8.5.3	G.I. pipes	50	kg	167.43	8372
8.6	Providing and fixing carbon steel galvanised (minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm2), counter sunk head, comprising of 10 mm dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in-charge.				
8.6.1	10 x 80 mm	4898	each	113.5	555923
8.6.2	10 x 140 mm	4188	each	150.24	629205
8.7	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, bufig, 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.).	5488	kg	636.92	3495417
8.8	"Providing and fixing factory made stainless steel (Grade 304) Safety Grill of size as indicated in drawings made of Square SS Rods, flats, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete. The quoted rates shall include providing and fixing the grill with frame at all levels with necessary accessories, stainless steel dash fasteners, stainless steel bolts, etc., as per approval of Engineer-incharge, (for payment purpose only area of grill shall be measured). Weight of Grill shall not be less than 12.5 kg and not more than 15kg per Sqm"	10	Sqm	9553.88	95539
9	FLOORING				
9.1	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete.				
9.1.1	40 mm thick with 20 mm nominal size stone aggregate	625	sqm	506.47	316544

9.2	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.				
9.2.1	18 mm thick	68	sqm	545.93	37123
9.3	Providing and fixing glass strips in joints of terrazo/ cement concrete floors.				
9.3.1	40 mm wide and 4 mm thick	1207	metre	75.65	91310
9.4	Extra for pre finished nosing to treads of steps of marble stone.	1019	metre	593.63	604909
9.5	Extra for marble stone flooring in treads of steps and risers using single length up to 2.00 metre.	10	sqm	702.39	7024
9.6	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) :				
9.6.1	25 mm thick	12771	sqm	1606.53	20516995
9.7	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.	1289	sqm	1941.7	2502851
9.8	40 mm thick fine dressed stone flooring over 20 mm (average) thick base of cement mortar 1:5 (1 cement : 5 coarse sand), including pointing with cement mortar 1:2 (1 cement : 2 stone dust) with an admixture of pigment to match the shade of stone.				
9.8.1	Red sand stone	660	sqm	1258.39	830537
9.9	Extra for pre finished nosing in treads of steps of Kota stone/ sand stone slab.	1019	metre	157.82	160819
9.1	Extra for Kota stone/ sand stone in treads of steps and risers using single length above normal size up to 2.00 metre.	306	sqm	36.4	11138
9.11	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.	306	sqm	904.22	276691
9.12	Providing and laying vitrified floor tiles in diferent sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, 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., complete.				
9.12.1	Size of Tile 600x600 mm	50	sqm	1280.98	64049
9.12.2	Size of Tile 800x800 mm	50	sqm	1554.79	77740
9.13	Providing and laying Vitrified tiles in floor in diferent 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.				
9.13.1	Double charge vitrified tile polished finish of size				
9.13.1.1	Size of Tile 600 x 1200 mm	50	sqm	1300.52	65026
9.13.2	Glazed vitrified floor tiles polished finish of size				
9.13.2.1	Size of Tile 600 x 600 mm	50	sqm	1239.17	61959
9.13.2.2	Size of Tile 600 x 1200 mm	50	sqm	1483.3	74165
9.13.3	Glazed Vitrified tiles Matt/Antiskid finish of size				
9.13.3.1	Size of Tile 600 x 600 mm	369	sqm	1207.92	445722
9.13.3.2	Size of Tile 600 x 1200 mm	50	sqm	1482.06	74103
9.14	Providing and laying 500x500x40 mm thick Turf paver (Turf pave XD) on 150 mm thick sub grade of compacted bed of 20 mm thick nominal size stone aggregate and base course and filling with 150 mm thick Jamuna sand, including spreading, well ramming, consolidating and finishing smooth etc. all complete as per direction of Engineer-in-charge.	1200	sqm	1408.5	1690200

9.15	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 @ 3.3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete.				
9.15.1	Size of Tile 600x600 mm	55	sqm	1338.37	73610
9.15.2	Size of Tile 800x800 mm	18	sqm	1614.95	29069
9.16	Providing and laying machine cut, mirror polished, Italian Marble stone flooring laid in required pattern in linear portion of the building all complete as per architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement: 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.				
9.16.1	18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	10	sqm	5445.16	54452
9.17	Providing and fixing Glass mosaic tiles on finished plain wall surface of size 20 mm x 20 mm x 4 mm in all colour, design, fixing in customize design as per direction of Engineer-in-Charge. The glass mosaic tiles to be fixed on the wall surface with the help of approved adhesive applied at the rate of 2.5 kg per sqm and grouting of the same. The rate is inclusive of all operation, material and required pattern approved by Engineer-in-Charge:	920	sqm	3208.66	2951967
9.18	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 :				
9.18.1	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	832	sqm	2627.77	2186305
9.19	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.				
9.19.1	Polished Granite stone slab of colour Black, Cherry/Ruby Red or equivalent	363	sqm	3695.3	1341394
9.2	Polished Granite stone slab 18 mm thick in risers of steps, skirting, and Cladding 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 slab, including rubbing and polishing complete.	37	Sqm	7125.42	263641
9.21	Flamed finish Granite stone slab 18 mm thick in risers of steps, skirting, and Cladding 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 slab, including rubbing and polishing complete. Sqm	55	Sqm	5784.61	318154
10	ROOFING				
10.1	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement: 3 fine sand) as per standard design :				
10.1.1	In 75x75 mm deep chase	74	metre	251.62	18620
10.2	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 x 1 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.	81	each	245.93	19920
10.3	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.				
10.3.1	110 mm diameter	752	metre	311.2	234022

10.4	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS :5382, leaving 10 mm gap for thermal expansion.				
10.4.1	Single pushfit Coupler				
10.4.1.1	110 mm	96	each	105.21	10100
10.4.2	Single tee with door				
10.4.2.1	110x110x110 mm	96	each	193.08	18536
10.4.3	Bend 87.5°				
10.4.3.1	110 mm bend	96	each	123.97	11901
10.4.4	Shoe (Plain)				
10.4.4.1	110 mm Shoe	96	each	108.72	10437
10.5	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.				
10.5.1	110 mm	284	each	306.17	86952
10.6	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams.	96	each	45.1	4330
10.7	Providing and fixing false ceiling at all heights including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, 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 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25 mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, difusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :				
10.7.1	12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- (Part I) :2011 (Board with BIS certification marks)	475	sqm	1118	531050
10.8	Providing & fixing UV stabilised fiberglass reinforced plastic sheet roofing up to any pitch, including fixing with polymer coated 'S or 'L' hooks, bolts & nuts 8 mm dia. G.I plain/bitumen washers complete but excluding the cost of purlins, rafters, trusses etc. The sheets shall be manufactured out of 2400 TEX panel rofigs incorporating minimum 0.3% ultra-violet stabiliser in resin system under approximately 2400 psi and hot cured. They shall be of uniform pigmentation and thickness without air pockets and shall conform to IS 10192 and IS 12866.The sheets shall be opaque or translucent, clear or pigmented, textured or smooth as specified.				
10.8.1	2 mm thick corrugated (2.5" Or4.2" or 6") or step-down (2" or 3" or 6") as specified	75	sqm	1155.56	86667

10.9	Providing and fixing 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 cutting/making, opening for services like difusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended 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.				
10.9.1	12.5 mm thick fully Perforated Gypsum Board tile made from plasterboard having glass fibre conforming to IS: 2095 part I, of size 595x595 mm, having perforation of 9.7x9.7 mm at 19.4 mm c/c with center borders of 48 mm and the side borders of 30 mm, backed with non woven tissue on the back side, having an NRC (Noise Reduction Coefficient) of 0.79	855	sqm	1259.99	1077291
10.1	Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300 mm x 20 mm) with SRI (solar refractive index) > 82, 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.	3141	sqm	1405.08	4413356
10.11	Providing and fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Rockwool conforming to IS: 8183,density 48 kg/ m3, 50 mm thick, wrapped in 200 G Virgin Polythene bags fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5 mm x 24 gauge wire mesh, for top most ceiling of building.	1140	sqm	550.05	627057
11	FINISHING				
11.1	12 mm cement plaster of mix:				
11.1.1	1:6 (1 cement: 6 coarse sand)	26320	sqm	283.37	7458298
11.2	15 mm cement plaster on rough side of single or half brick wall of mix:				
11.2.1	1:6(1 cement: 6 coarse sand)	6445	sqm	326	2101070
11.3	12 mm cement plaster finished with a floating coat of neat cement of mix:				
11.3.1	1:3(1 cement: 3 fine sand)	710	sqm	362.2	257162
11.4	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement: 5 coarse sand) finished with a top layer 6 mm thick cement plaster 1:6 (1 cement: 6 fine sand).	9330	sqm	427.59	3989415
11.5	6 mm cement plaster of mix:				
11.5.1	1:3(1 cement :3 fine sand)	12723	sqm	247.75	3152123
11.6	Neat cement punning.	50	sqm	65.92	3296
11.7	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	2148	sqm	71.82	154269
11.8	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	41200	sqm	216.62	8924744
11.9	White washing with lime to give an even shade:				
11.9.1	New work (three or more coats)	5	sqm	32.2	161
11.1	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gram/litre, of approved manufacturer and of required shade and colour all complete to achieve even shade and colour:				
11.10.1	New work (two or more coats) over and including water thinnable priming coat with cement primer having VOC content less than 50 gram/litre	13705	sqm	153.08	2097961
11.11	Finishing walls with textured exterior paint of required shade:				
11.11.1	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm	10300	sqm	184.38	1899114
11.12	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade:				

11.12.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	1518	sqm	186.56	283198
11.13	Floor polishing on masonry or concrete floors with wax polish of approved brand and manufacture.	50	sqm	79.24	3962
11.14	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.	2400	sqm	128.67	308808
11.15	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.				
11.15.1	Two coats	28872	sqm	117.75	3399678
11.16	Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content.				
11.16.1	With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre	28803	sqm	60.97	1756119
11.17	Melamine polishing on wood work (one or more coat).	7	sqm	113.87	797
11.18	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gms/litre, of approved manufacturer, of required shade and colour complete, as per manufacturer's specification. Two or more coats on new work	150	Sqm	92.31	13847
11.19	Providing & Fixing Chicken Wire Mesh on Joints of RCC & Brick Work Before Plastering Work.	4001	Sqm	72.56	290313
11.2	Providing and fixing brick jali hand made with necessary arrangement all complete.	5	Sqm	2061.51	10308
11.21	Providing and fixing of Integrated Technical Suspended ceiling system or equivalent with mineral fibre tiles 19mm thick with 15mm exposed grid system. The Logix / Techzone ceiling module of 1200x1350 and the on centre spacing between two adjacent technical zones is 1350 mm. The ceiling orientation is such that the main runners run parallel to the technical zone and hence making this layout compatible with continuous lighting fixtures or Air diffusers. Mineral Fibre field panel is of size 600x1200x19mm. The 150mm wide technical zone formed is where the technical elements like lighting fixtures & air diffusers would be installed. Where there are no technical elements the technical zone would be covered by using Technical Panels of size 1200mm x150mm in conjunction with a special 150mm long cross tee. Then 19mm thick ceiling panel having fine line bevel edge of size 595x1195 shall be placed into the above grid of size 600x1200mm. This ceiling panel confirms to ASTM E84 surface burning characteristics. (Class A, Flame Spread: 25 & Smoke developed: 50) The Ceiling panel provides NRC 0.70, CAC minimum: 33, Light Reflectance: 0.88, Thermal Resistance: R-1.7, Thermal Conductivity(W/mK):0.052-0.057, Recycle content of minimum 61% & can withstand Relative Humidity up to RH 99% (limiting conditions –Max 49 Degree C/99%RH). The front & back side of the tile has anti-Microbial ZOE coating	170	Sqm	4744.78	806613
11.22	"Providing & Fixing of Armstrong Wooden finished Suspended Ceiling System with Woodworks Vector edge tiles with Armstrong 15mm Prelude 43 exposed grid. The Tile in RG3003 (RG3) perforations having hole diameter as 3mm and open area as 3% with approved laminate (Portland Maple, Sea Beech, Siam Wood & Mystique Walnut) finish. Back side of the tile will have Soundtex fleece hot pressed to achieve NRC of 0.4, Humidity Resistance (RH) of 70% in module size of 600mm x 600mm x 18mm and density of 725 Kgs/M3. The tile edges should feature the vector edges or the engaging edges and the reverse tegular non engaging edge to hide the grid, creating a 6mm shadow reveal along with 0.7mm edge banding on exposed edges. The tile to provide downward mountability without any tools. The tile shall be laid on Armstrong Prelude 43 with 24 mm wide T - section flanges colour white having rotary stitching on all T sections i.e. the Main Runner, 1200 mm & 600 mm Cross Tees with a web height of 43mm and a load carrying capacity of 17.8 Kgs/M2 (as per standard installation layout mentioned below) & pull out strength of 100Kgs. The T Sections have a Galvanizing of 90 grams per M2 and need to be installed with Suspension system of Armstrong make."	45	Sqm	10145.95	456568

11.23	<p>Providing and Fixing Armstrong Channeled Woodworks perforated panels of width 192mm, thickness of 15mm and length 2400 mm or as required by the Architect/ approving engineer, made of Moisture Resistant fibre board with minimum 595 Kg/M3 density substrate with a laminated facing as per the approved shade & finish and a melamine balancing layer on the reverse side. The boards shall have a special perforation pattern where the visible surface has a "Helmholtz" fluted perforation of 3mm width and 21mm of visible panel each. The edges of the panels shall be "tongue-and-grooved" to receive special clips for installation. The back of the perforated panel shall have sound absorbing non-woven acoustical fleece having NRC of 0.52. The panels shall be mounted on special aluminium splines using clips provided by Armstrong and approved by the Architect/ Engineer-in-Charge.</p>	70	Sqm	8937.9	625653
11.24	<p>Supply & installation of Anutone Misto Slats Surco Lite,made of mixedwood E1 grade fiberboard, melamine finish, of approved color Acacia Robinia, groove perforated slats L32-2 - (2mm grooves @ 32mm centers with 3.7% open area) , backlined with non-woven black textile fleece ,tongue-groove edge for a seamless look, 1-test FR grade, size 192 x2440x16mm, volume density of base board 700Kg/m3, weight 10.5Kg/m2 (L32), installed by using Anutone Strut framework system.</p> <p>"Framework includes Floor/ Head (FC50) GI channels having thickness 0.55mm, length 3600mm, equal flanges of 32mm and web of 50mm fixed to floor and ceiling with suitable fasteners at 300mm centers staggered. Noise and fire rated silicon sealant to be caulked along the perimeter of the partition frame before fixing channels. Then Stud channel (SC48) having thickness 0.45mm, length 3600mm, unequal flanges of 34/36mm and web of 48mm should be placed into the floor/head channel positioned vertically at 600mm centers. .</p> <p>Anutone Strut CC18,aluminium core cross channel, thickness 0.5mm, length 2400mm, web 15mm & 27mm, depth 18mm and flanges of 7mm with suitable edge & center brackets is then fixed perpendicular to the Strut CC50 with the help of fasteners at every 400mm centers</p> <p>Anutone Slats Surco Lite of size 192x 2440x16mm in then fixed perpendicular to Strut CC18 with suitable edge & ccentre brackets.</p> <p>Contractor to provide expansion joints of 3mm at every 4.88m length wise and 4.992m width wise."</p> <p>The system is backlined with Anutone SynthPF 10x50 held in position with dab spots of Anutone stick S7/wire mesh (not by Anutone).</p>	116	Sqm	7428.05	861654
11.25	<p>Supply and installation of Anutone Stretch Hush system consisting of FR Grade with high-performance acoustically-transparent face covering of choice colour, size 1.4mx75m, stretched by using combination of Anutone Strand2 primer 600x1200x15mm,Anutone Strut FS15 Tracks, Anutone SynthPF 10x25 infill with Anutone strut framework.</p> <p>"Framework includes Floor/ Head (FC50) GI channels having thickness 0.55mm, length 3600mm, equal flanges of 32mm and web of 50mm fixed to floor and ceiling with suitable fasteners at 300mm centers staggered. Noise and fire rated silicon sealant to be caulked along the perimeter of the partition frame before fixing channels. Then Stud channel (SC48) having thickness 0.45mm, length 3600mm, unequal flanges of 34/36mm and web of 48mm should be placed into the floor/head channel positioned vertically at 600mm centers. Anutone Strand2 primer panels of size 600x1200x15mm, density 400kg/m3, weight 6kg/m2 are then fastened perpendicular to strut CC50 behind using suitable fasteners. Wooden/ply base 10mm are then installed on Strand2 primer on marked lines with metal fasteners at 300mm centers embedded in plastic sleeves.</p> <p>Fix Anutone Strut FS15 half wrap , Midseam and Outer corner, rigid FR-PVC high strength tracks square / bevel edge on the wooden surface by using heavy-duty fasteners at 150mm centers on one/both sides of Anutone Strut Tracks.</p> <p>Anutone SynthPF 10x25mm is then adhered on Strand2 primer,inbetween tracks, using Stick 7 adhesive.</p> <p>This completes the substrate to receive the Stretch Hush acoustical membrane."</p> <p>"The Anutone Stretch Hush acoustical fabric of width 1.4m is stretched and tucked into the Anutone Strut Tracks and secured to the locking jaws with purpose-specific tucking tools to obtain smooth, taut, wrinkle-free finish.</p> <p>Ensure the weft and weave of the fabric along with the surface all oriented in one direction to achieve uniform shade. Note: Minimum 100mm additional fabric is required for tucking hence maximum module wall fabric width would be 1300mm."</p>	103	Sqm	7079.24	729162

11.26	Providing and fixing 10mm thick laminate flooring of Pergo / Floor Pan /WOOD BREW make ; with Wear Resistance of Class 32 .The laminate flooring should have a Water Tight Joints Plank size for Straight Planks should be 1200mm x 190 or 1380mm x156mm or 1380mm x 190mm or 1205mm x 197mm . Plank Sizefor Herring Bone pattern should be 470mm x 95mm x 10mm On an undulation free surface, the flooring planks shall be laid on top of 2.0mm thick Combi- underlay fr and the perimeter should be secured with Expansion Joint Foam Strip and Hydro Sealant (if recommended by the Engineer in charge). the cost is including Readymade Skirting and Reducer / Transition profile from manufacturer . The wall base should be secured with Readymade skirting and the floor to floor joints should be secured with Reducer / Transition profile. All the accessories should be supplied by the manufacturer .	274	Sqm	4163.43	1140780
11.27	"Providing & Installation of Raised Access Flooring System using USF 800 MEDG Grade Panel / Tile with top performance finish of High Pressure Antistatic Laminate (HPL) with Edge Support Rigid Grid (ESRG) System able to take Concentrated Loads: 363 Kgs (800 lbf), Uniformly Distributed Load (UDL): 1650kg/m2 and Pedestal Axial Load: 22Kn. Tiles(165) with Requisite number of Pedestals(192) and Stringers(310) to achieve a FFH of 300 mm for an area of 54.40 sqmt."	55	Sqm	5018.55	276020
11.28	Providing & Fixing in granite stone, bands of 3 no. stainless steel strips grade 304 of size 6mm (width)x2mm thick for making steps f stair antriskid with epoxy resin based (araldite or equivalent) adhesive in grooves along the length of stone by stone cutting machine complete including grinding polishing buffing etc. (Length of band to measured for the payment in running meter) Granite stone	1080	Metre	550.01	594011
11.29	Extra for making steps of stair antiskid by making band of 3 nos. grooves, 3mm wide along the length of stone by stone cutting machine including grinding and polishing etc. complete(length of band to measured for payment in running meter) Kota Stone/Marble Stone	200	Metre	230.88	46176
11.3	"Mud BRICKS 230x115x75 by Hand Compression hydraulic Machine with capacity to mould 4 bricks at one time. compressed with 6mm chamfered edges 9% volume cement 18%volume Badarpur/stone dust Cured for 14days and sun dried. Water,Electricity and vacant land minimum 2000sq.m to be provided anywhere in the campus preferably closest to the construction site (for maximum LEED credit)"	5	Sqm	1408.95	7045
11.31	Providing and Installing Terracotta Jallis of 210 x 320 x 74 MM of approved design / pattern. Installed using external tile adhesive, for tile to tile joints. MS Flats should be provided as stiffeners where ever required. MS Stiffeners or Frames must be joined with adhesives specifically for that (Eg: Drywall from Weber)	1420	Sqm	4383.6	6224712
11.32	Providing and fixing 10mm thick frosted toughened glass in Doors, windows and Ventilators including sealing with EPDM / Neoprene gasket all complete as per the architectural drawings and the directions of engineer-in-charge	71.12	Sqm	3060.93	217693
12	Dismantling and Demolishing				
12.1	Dismantling C.I. pipes including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means breaking lead caulked joints, melting of lead and making into blocks including stacking of pipes & lead at site within 50 metre lead as per direction of Engineer-in-charge:				
12.1.1	Above 150 mm dia up to 300 mm dia	50	metre	376.55	18828
13	ROAD WORK				
13.1	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 earthwith lead upto 50 metres.	1271	sqm	180.5	229416
13.2	Providing and applying tack coat using bitumen emulsion conforming to IS:8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom.				

13.2.1	With rapid setting bitumen emulsion				
13.2.1.1	On bituminous surface @ 0.25kg/sqm	26	sqm	7.58	197
13.2.2	With medium setting bitumen emulsion				
13.2.2.1	On W.B.M / W.M.M. @ 0.4kg/sqm	26	sqm	17.48	454
13.3	Providing and laying bituminous macadam using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifcatons and directions of Engineer-in-Charge.				
13.3.1	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	2	cum	7013.81	14028
13.4	Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.				
13.4.1	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	2	cum	9999.34	19999
13.5	Providing and laying 60 mm thick faciory 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.	20	sqm	801.51	16030
13.6	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 Engineer- in-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).	54	cum	8343.03	450524
13.7	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).	60	cum	8100.76	486046
13.8	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer- in-Charge.				
13.8.1	With material conforming to Grade-III (size range 26.5 mm to 0.075 mm) having CBR Value-20	70	cum	2315.94	162116
13.9	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achievethe desired density, complete as per specifications and directions of Engineer-in-Charge.	7	cum	2403.14	16822

13.1	Providing and erecting 2.00 metre high temporary barricading at site; each panel of size 2.50 m x2.00 m made of 40x40x6 mm angle iron or 50x50x3 mm hollow MS tube posts/horizontal members/bracings covered with 1.63 mm thick MS sheet. The sheet shall be fixed with 30x5 mm MS flat by suitable welding/riveting. The panels shall be made so that gap of 50cm above the ground is available making overall height as 2.5 m. MS channel ISLC 75 @ 5.70 kg/m, 50 cm long shall be provided at the bottom having oval shaped holes of size 50x25 mm at both ends with 50 cm long MS angle 40x40x6 mm bracing. Suitable arrangement shall be made to fix the barricading to avoid from overturning by providing 250 mm long expansion fasteners at both ends. The work shall be executed as per drawing/direction of Engineer-in-Charge which includes writing and painting, arrangement for traffic diversion such as traffic signals during construction at site for day and night, glow lamps, reflective signs, marking, flags, caution tape as directed by the Engineer-in-Charge. The barricading provided shall be retained in position at site continuously including shifting of barricading from one location to another location as many times as required during the execution of the entire work till its completion. Rate include its maintenance for damages, painting, all incidentals, labour materials, equipments and works required to execute the job. The barricading shall not be removed without prior approval of Engineer-in-Charge. (Note : One time payment shall be made for providing barricading from start of work till completion of work including shifting. The barricading provided shall remain to be the property of the contractor on completion of the work).	500	metre	2836.23	1418115
14	SANITARY INSTALLATIONS				
14.1	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:				
14.1.1	White Vitreous China Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	61	each	2184.25	133239
14.2	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 :				
14.2.1	Kitchen sink with drain board				
14.2.1.1	510x1040 mm bowl depth 250 mm	6	each	5727.38	34364
14.3	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P brass waste and 40 mm C.P. brass trap with necessary C.P. brass unions complete, including painting of fittings and brackets, cutting and making good the wall wherever required :				
14.3.1	Size 450x300x150 mm	132	each	4140.22	546509
14.4	Providing and fixing CP Brass 32 mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	73	each	853.3	62291
14.5	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
14.5.1	Flexible pipe				
14.5.1.1	40 mm dia	138	each	98.58	13604
14.6	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.	73	each	1325.92	96792
14.7	Providing and fixing toilet paper holder :				
14.7.1	C.P. brass	73	each	662.73	48379
14.8	Providing and fixing soil, waste and vent pipes :				
14.8.1	100 mm dia				
14.8.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	550	metre	964.21	530316
14.8.2	75 mm diameter :				
14.8.2.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	100	metre	795.12	79512
14.9	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.				
14.9.1	100 mm dia				
14.9.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	18	each	467.71	8419
14.9.2	75 mm dia				
14.9.2.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	5	each	345.46	1727
14.1	Providing and fixing plain bend of required degree.				

14.10.1	100 mm dia				
14.10.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	48	each	303.45	14566
14.10.2	75 mm dia				
14.10.2.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	10	each	208.21	2082
14.11	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.				
14.11.1	100x100x100 mm				
14.11.1.1	Sand cast iron S&S as per IS - 3989	72	each	763.33	54960
14.11.2	75x75x75 mm				
14.11.2.1	Sand cast iron S&S as per IS - 3989	4	each	548.4	2194
14.12	Providing and fixing single equal plain junction of required degree :				
14.12.1	100x100x100 mm				
14.12.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	72	each	479.46	34521
14.12.2	75x75x75 mm				
14.12.2.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	1	each	278.59	279
14.13	Providing and fixing single equal plain invert branch of required degree :				
14.13.1	100x100x100 mm				
14.13.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	12	each	532.24	6387
14.13.2	75x75x75 mm				
14.13.2.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	12	each	331.4	3977
14.14	Providing and fixing terminal guard :				
14.14.1	100 mm				
14.14.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	12	each	352.76	4233
14.15	Providing and fixing shielded coupling for Hubless centrifugally cast iron pipe				
14.15.1	100 mm dia				
14.15.1.1	SS 304 grade coupling with EPDM rubber gasket	240	each	356.27	85505
14.15.2	75 mm dia				
14.15.2.1	SS 304 grade coupling with EPDM rubber gasket	80	each	320.81	25665
14.16	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors :				
14.16.1	100 mm inlet and 100 mm outlet				
14.16.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	72	each	704.66	50736
14.16.2	100 mm inlet and 75 mm outlet				
14.16.2.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	36	each	487.67	17556
14.17	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, 6 mm 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.				
14.17.1	Total bracket length 1040 mm of approved shape and design (for three 100 mm dia pipes)	355	each	372.63	132284
14.18	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.	36	each	6579.69	236869

14.19	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 litre 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.	61	each	15018.47	916127
14.2	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.	174	Each	1064.56	185233
14.21	Providing and fixing CP Brass towel ring with concealed fittings arrangement of approved quality and colour.	42	Each	1500.78	63033
14.22	Providing and fixing CP Brass Coat Hook of approved quality and colour	73	Each	464.25	33890
14.23	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.	73	Each	692.66	50564
14.24	Providing and fixing C.P. brass Two way bib cock of approved quality conforming to IS:8931.	73	Each	1155.27	84335
14.25	Providing and fixing CP Health faucet to european type W.C. of approved quality and make as approved by engineer in charge.	73	Each	938.4	68503
14.26	"Providing and fixing Copper connection pipe with brass unions : 30 cm length , 20 mm nominal bore "	100	Each	527.91	52791
14.27	Providing and fixing CP Brass soap Dish Holder with concealed fitting arrangements, of approved quality and colour	11	Each	868.31	9551
14.28	Providing and fixing CP Brass towel rail complete with brackets with CP brass screws with concealed fittings arrangement of approved quality and colour.	11	Each	2397.13	26368
14.29	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-Litre Storage capacity	6	Each	8791.12	52747
14.3	Providing and fixing a complete set of fittings for Handicapped toilet with white vitreous china wash basin of size 650mm x 350mm with one pair of mounting brackets with 15 mm C.P. brass long handle pillar taps, 32 mm C.P. brass waste of standard pattern and One No. white vitreous china European WC of Height – 450 mm to 480 mm and Cistern complete with necessary fittings and WC seat cover, One hinged rail of 760mm having 35-40mm outer dia. made of Stainless Steel of 304 grade with anti-slip coating and 2 Nos. of grab rails of size 600mm having 35-40mm outer dia. made of Stainless Steel of 304 grade with anti-slip coating all complete as per manufacture's specifications and direction of Engineer-In-Charge.	12	Each	8328.52	99942
14.31	Supply installation, testing and commissioning of water cooler with Inbuilt Aquagaurd RO purification + UV(50LPH) .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.	12	Each	54248.37	650980
14.32	Providing and fixing CP Brass Single lever for sink faucet of quality & make as approved by Engineer in charge.	138	Each	2949.61	407046

14.33	Providing and fixing uPVC (SCH 40) confirming to IS 4985 pipes for & cold water supply, including all uPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step uPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall 15 mm nominal dia Pipes	20	Metre	236.66	4733
14.34	Providing and fixing uPVC (SCH 40) confirming to IS 4985 pipes for & cold water supply, including all uPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step uPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall 20 mm nominal dia Pipes	36	Metre	273.76	9855
14.35	Providing and fixing uPVC (SCH 40) confirming to IS 4985 pipes for & cold water supply, including all uPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step uPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall 25 mm nominal dia Pipes	66	Metre	330.66	21824
14.36	Providing and fixing uPVC (SCH 40) confirming to IS 4985 pipes for & cold water supply, including all uPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step uPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall 32 mm nominal dia Pipes	176	Metre	408.18	71840
14.37	Providing and fixing uPVC (SCH 40) confirming to IS 4985 pipes for & cold water supply, including all uPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step uPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall 40 mm nominal dia Pipes	83	Metre	504.65	41886
14.38	Providing and fixing uPVC (SCH 40) confirming to IS 4985 pipes for & cold water supply, including all uPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step uPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall 50 mm nominal dia Pipes	202	Metre	592.06	119596
14.39	Providing and fixing uPVC (SCH 40) confirming to IS 4985 pipes for & cold water supply, including all uPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step uPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall 65 mm nominal dia Pipes	149	Metre	883.15	131589

14.4	Providing and fixing uPVC (SCH 40) confirming to IS 4985 pipes for & cold water supply, including all uPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step uPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall 80 mm nominal dia Pipes	167	Metre	1031.58	172274
14.41	Providing and fixing uPVC (SCH 40) confirming to IS 4985 pipes for & cold water supply, including all uPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step uPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall 100 mm nominal dia Pipes	9	Metre	1340.8	12067
14.42	Providing and fixing forged brass operated ball valve of full flow of superior quality having minimum working pressure of 16 kg/cm2. 15 mm nominal bore	31	Each	847.69	26278
14.43	Providing and fixing forged brass operated ball valve of full flow of superior quality having minimum working pressure of 16 kg/cm2. 20 mm nominal bore	5	Each	1025.81	5129
14.44	Providing and fixing forged brass operated ball valve of full flow of superior quality having minimum working pressure of 16 kg/cm2. 25 mm nominal bore	5	Each	1402.65	7013
14.45	Providing and fixing forged brass operated ball valve of full flow of superior quality having minimum working pressure of 16 kg/cm2. 32 mm nominal bore	5	Each	2088.72	10444
14.46	Providing and fixing forged brass operated ball valve of full flow of superior quality having minimum working pressure of 16 kg/cm2. 40 mm nominal bore	5	Each	2867.98	14340
14.47	Providing & fixing Auto Air vent for cold water supply risers, suitable for pressure not less than 15 Kg/Sq.cm. 15 mm dia	2	Each	1243.5	2487
14.48	Providing and fixing enclosed Digital type water flow meter conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. : Application Media- Water, Size-4 - 6 Inch, Operating Temperature 10 TO 50, Standards-CGWA, Display-Digital, Accuracy-0.1, Display Type-DIGITAL, Usage/Application-WATER, Material-Brass 50 mm dia nominal bore	3	Each	21350.7	64052
14.49	Providing and fixing enclosed Digital type water flow meter conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. : Application Media- Water, Size-4 - 6 Inch, Operating Temperature 10 TO 50, Standards-CGWA, Display-Digital, Accuracy-0.1, Display Type-DIGITAL, Usage/Application-WATER, Material-Brass 40 mm dia nominal bore	7	Each	20480.74	143365

14.5	Providing and fixing enclosed Digital type water flow meter conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. : Application Media- Water, Size-4 - 6 Inch, Operating Temperature 10 TO 50, Standards-CGWA, Display-Digital, Accuracy-0.1, Display Type-DIGITAL, Usage/Application-WATER, Material-Brass 32 mm dia nominal bore	4	Each	19609.96	78440
14.51	Providing and fixing enclosed Digital type water flow meter conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. : Application Media- Water, Size-4 - 6 Inch, Operating Temperature 10 TO 50, Standards-CGWA, Display-Digital, Accuracy-0.1, Display Type-DIGITAL, Usage/Application-WATER, Material-Brass 25 mm dia nominal bore	1	Each	17868.39	17868
14.52	Providing and fixing enclosed Digital type water flow meter conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. : Application Media- Water, Size-4 - 6 Inch, Operating Temperature 10 TO 50, Standards-CGWA, Display-Digital, Accuracy-0.1, Display Type-DIGITAL, Usage/Application-WATER, Material-Brass 20 mm dia nominal bore	2	Each	16997.6	33995
14.53	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. 110 mm OD	1059	Metre	758.63	803389
14.54	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. 75 mm OD	114	Metre	596.19	67966
14.55	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. For waste pipes 40mm OD (6 kg pressure)	190	Metre	422.19	80216
14.56	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. For waste pipes 50mm OD (6 kg pressure)	90	Metre	521.97	46977
14.57	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. For waste pipes 63mm OD (6 kg pressure)	61	Metre	763.58	46578

14.58	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. 110 mm inlet & 110 mm outlet Long ht	237	Each	1392.75	330082
14.59	Providing and fixing floor drain (FD) with 63mm outlet and 100 mm inlet having 19mm seal for indirect floor drain (FD). 110 x63mm outlet	50	Each	604.43	30222
14.6	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 pices in uPVC including fixing and sealing inlet joint with drip seal / Pipe seal joint as required complete.	237	Each	601.96	142665
14.61	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. 125mm dia.	287	Each	437.04	125430
14.62	Providing and fixing clean out pipe (door piece) for cleaning as required complete complete with all fitting, clamps, accessories and civil works. 110mm dia.	72	Each	503	36216
14.63	Providing and Fixing 100x100 mm CI Funnel type floor drain with supporting clamp or in sunken portion including cutting and making good the walls and floors wherever required complete in all respects. (In AHU room)	42	Each	5359.11	225083
14.64	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 : "50 mm nominal bore "	3	Each	3316.88	9951
14.65	Providing and fixing enclosed Digital type water flow meter conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. : Application Media- Water, Size-4 - 6 Inch, Operating Temperature 10 TO 50, Standards-CGWA, Display-Digital, Accuracy-0.1, Display Type-DIGITAL, Usage/Application-WATER, Material-Brass 50 mm dia nominal bore	3	Each	21350.7	64052
14.66	Providing and fixing HDPE PE-100 PN-8 confitming 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. External Work 25 mm nominal dia Pipes	90	Metre	169.2	15228
14.67	Providing and fixing HDPE PE-100 PN-8 confitming 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. External Work 32 mm nominal dia Pipes	110	Metre	193.86	21325
14.68	Providing and fixing HDPE PE-100 PN-8 confitming 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. External Work 40 mm nominal dia Pipes	75	Metre	235.42	17657

14.69	Providing and fixing HDPE PE-100 PN-8 confitming 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. External Work 50 mm nominal dia Pipes	170	Metre	285.72	48572
14.7	Providing and fixing HDPE PE-100 PN-8 confitming 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. External Work 65 mm nominal dia Pipes	80	Metre	398.94	31915
14.71	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 : "40 mm nominal bore "	1	Each	3147.71	3148
14.72	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 : "65 mm nominal bore "	1	Each	3770.94	3771
14.73	Providing and fixing enclosed Digital type water flow meter conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. : Application Media- Water, Size-4 - 6 Inch, Operating Temperature 10 TO 50, Standards-CGWA, Display-Digital, Accuracy-0.1, Display Type-DIGITAL, Usage/Application-WATER, Material-Brass 65 mm dia nominal bore	1	Each	45728.53	45729
14.74	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.	10	Each	2831.69	28317
14.75	Design, Supply, installation, testing and commissioning of Drip Irrigation system for Garden park with HDPE Pipe PE-80 Pipe, drip emmitters, drip fittings, Rain Guns including stand, foundation, fittings, air release valve, filtration unit, Pressure & water supply pump including control panel ,cable, Pressure Release Valve, Pressure Sustaining Valve, 3-Way Controls with Manual Selector complete as required.	0.32	Per acre	1153571.36	369143
14.76	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. 200 mm dia Pipe	450	Metre	1324.31	595940
14.77	Construction of brick masonry Neutralization Chamber of Effective depth for Lab drainage with precast concrete block in cement mortar 1:4 (1 cement : 4 coarse sand) , foundation concrete 1:4:8 mix (1 cement : 4 coarse sand; 8 graded stone aggregate 40mm nominal size), inside and outside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement inside and rough plaster on outside, including fixing of grating , neatly finished with 1 nos. manhole cover complete in all respects including necessary excavation, refilling and disposal of surplus earth, complete as per attached Sketch . Neutralization Chamber 1000x1000x1000 MM	4	Each	23569.72	94279
14.78	Providing and laying non-pressure NP3 class 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 : 150 mm dia RCC Pipe	30	Metre	439.18	13175

14.79	Providing and laying non-pressure NP3 class 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 : 250 mm dia RCC Pipe	30	Metre	772.24	23167
15	WATER SUPPLY				
15.1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings and fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc.				
15.1.1	15 mm nominal dia Pipes	25	metre	410.48	10262
15.1.2	20 mm nominal dia Pipes	1127	metre	443.3	499599
15.1.3	25 mm nominal dia Pipes	896	metre	517.23	463438
15.1.4	32 mm nominal dia Pipes	150	metre	609.63	91445
15.2	Providing and fixing G.I. Pipes complete with G.I. fittings and clamps, including making good the walls etc. concealed pipe, including painting with anti corrosive bitumastic paint, cutting chases and making good the wall :				
15.2.1	15 mm dia nominal bore	9	metre	478.64	4308
15.2.2	20 mm dia nominal bore	18	metre	523.78	9428
15.3	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc. External work				
15.3.1	25 mm dia nominal bore	210	metre	385.7	80997
15.3.2	50 mm dia nominal bore	300	metre	628.47	188541
15.4	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 :				
15.4.1	50 to 80 mm nominal bore	3	each	1472.21	4417
15.5	Providing and fixing brass stop cock of approved quality :				
15.5.1	15 mm nominal bore	6	each	291.29	1748
15.6	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
15.6.1	25 mm nominal bore	62	each	513.23	31820
15.6.2	20 mm nominal bore	13	each	445.24	5788
15.6.3	32 mm nominal bore.	4	each	568.64	2275
15.6.4	40 mm nominal bore	7	each	681.2	4768
15.7	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main :				
15.7.1	20 mm nominal bore	1	each	313.35	313
15.7.2	25 mm nominal bore	2	each	401.41	803
15.8	Providing and fixing uplasticised PVC connection pipe with brass unions :				
15.8.1	45 cm length				
15.8.1.1	15 mm nominal bore	10	each	80.6	806
15.9	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet :				
15.9.1	100 mm diameter	6	each	159.93	960
15.1	Providing and laying S&S centrifugally cast (spun) iron pipes (Class LA) conforming to IS :1536 :				
15.10.1	100 mm dia pipe	6	metre	1173.49	7041
15.11	Constructing masonry Chamber 30x30x50 cm inside, in brick work in cement mortar 1:4 (1 cement :4 coarse sand) for stop cock, with C. I. surface box 100x100 x75 mm (inside) with hinged cover fixed in reinforced cement concrete slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), including 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 :				
15.11.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	10	each	1643.11	16431

15.12	Constructing masonry Chamber 60x60x75 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 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), including 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 :				
15.12.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	4	each	8957.2	35829
15.13	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 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), including 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 :				
15.13.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	6	each	15582.33	93494
15.14	Constructing masonry Chamber 120x120x100 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 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), including 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 :				
15.14.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	2	each	21574.5	43149
15.15	Painting G.I. pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality :				
15.15.1	25 mm diameter pipe	210	metre	15.13	3177
15.15.2	50 mm diameter pipe	300	metre	25.15	7545
15.16	Providing and filling sand of grading zone V or coarser grade, allround the G.I. pipes in external work :				
15.16.1	25 mm diameter pipe	210	metre	132.51	27827
15.16.2	50 mm diameter pipe	300	metre	142.86	42858
15.17	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) :				
15.17.1	20 mm nominal bore	6	each	285.97	1716
15.17.2	25 mm nominal bore	4	each	362.2	1449
15.17.3	32 mm nominal bore	4	each	403.27	1613
15.17.4	40 mm nominal bore	4	each	520.57	2082
15.17.5	50 mm nominal bore	2	each	679.31	1359
15.18	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.	2500	per litre	9.07	22675
15.19	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 :				
15.19.1	15 mm nominal bore	50	each	417.91	20896
15.2	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.				
15.20.1	15 mm nominal bore	12	each	676.75	8121
15.21	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
15.21.1	15 mm nominal bore	50	each	658.81	32941
15.22	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.				
15.22.1	15 mm nominal bore	24	each	552.85	13268
15.23	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931				
15.23.1	15 mm nominal bore	231	each	473.57	109395

15.24	Providing and fixing C.P. Brass extension nipple (size 15 mm x 50 mm) of approved make and quality as per direction of Engineer-in-charge.	231	each	61.68	14248
15.25	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) :				
15.25.1	80 mm dia nominal bore	3	each	2991.38	8974
15.26	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.				
15.26.1	25 mm nominal bore, 152 mm long, weighing not less than 440 gms	1	each	431.92	432
15.26.2	50 mm nominal bore, 242 mm long, weighing not less than 1240 gms	2	each	1134.61	2269
15.27	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS : 8329 :				
15.27.1	100 mm dia Ductile Iron Class K-9 pipes	30	metre	1108.76	33263
15.28	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.	287	each	372.72	106971
15.29	Providing & fixing stainless steel grating with or without hole of an approved make & design for waste pipe including setting in floor with cement mortar. 125 mm dia weight not less than 100 gms.	75	Each	37.93	2845
15.3	Providing and fixing chrome plated copper pipe with brass union of approved make : 45 cm length 15 mm nominal bore.	131	Each	234.18	30678
15.31	Providing and fixing CP brass flange and extension piece as per requirement.	150	Each	107.19	16079
16	DRAINAGE				
16.1	Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete :				
16.1.1	100 mm diameter	50	metre	365.79	18290
16.1.2	150 mm diameter	50	metre	573.76	28688
16.1.3	200 mm diameter	150	metre	800.15	120023
16.1.4	250 mm diameter	150	metre	1241.52	186228
16.2	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design :				
16.2.1	100 mm diameter S.W. pipe	50	metre	795.53	39777
16.2.2	150 mm diameter S.W. pipe	50	metre	972.91	48646
16.2.3	200 mm diameter S.W. pipe	150	metre	1134.2	170130
16.2.4	250 mm diameter S.W. pipe	150	metre	1311.57	196736
16.3	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) up to haunches of S.W. pipes including bed concrete as per standard design :				
16.3.1	150 mm diameter S.W. pipe	150	metre	612.76	91914
16.3.2	250 mm diameter S.W. pipe	50	metre	838.54	41927
16.4	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 300 x 300 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:				
16.4.1	150 x 100 mm size P type				
16.4.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	25	each	2254.63	56366
16.4.2	180x150 mm size P type				
16.4.2.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	5	each	2310.67	11553
16.5	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 :				
16.5.1	150 mm dia. R.C.C. pipe	90	metre	458.85	41297
16.5.2	250 mm dia. R.C.C. pipe	140	metre	741.98	103877
16.5.3	300 mm dia. R.C.C. pipe	75	metre	819.9	61493

16.6	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (zone-III) : 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 :				
16.6.1	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :				
16.6.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	40	each	10530.67	421227
16.6.2	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg) :				
16.6.2.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	10	each	21774.14	217741
16.7	Extra for depth for manholes :				
16.7.1	Size 90x80 cm				
16.7.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	25	metre	7277.48	181937
16.7.2	Size 120x90 cm				
16.7.2.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	10	metre	8728.86	87289
16.8	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand), inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel 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, all complete as per standard design :				
16.8.1	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :				
16.8.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	16	each	10493.11	167890
16.9	Extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91 m to 1.67 m				
16.9.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	3.2	metre	6260.24	20033
16.1	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel 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, all complete as per standard design :				
16.10.1	1.68 m deep with SFRC Cover and frame (heavy duty HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :				
16.10.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	9	each	20370.04	183330
16.11	Extra depth for circular type manhole 1.22 m internal dia (at bottom) beyond 1.68 m to 2.29 m :				
16.11.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	2.25	metre	8131.81	18297
16.12	Constructing brick masonry circular manhole 1.52 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel 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, all complete as per standard design :				

16.12.1	2.30 m deep with SFRC Cover and frame (heavy duty HD- 20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :				
16.12.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	6	each	43678.65	262072
16.13	Extra depth for circular type manhole 1.52 m internal dia (at bottom) beyond 2.30 m :				
16.13.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	1.8	metre	18777.8	33800
16.14	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.	391	each	456.58	178523
16.15	Supplying and fixing C.I. cover without frame for manholes :				
16.15.1	455x610 mm rectangular C.I. cover (light duty) the weight of the cover to be not less than 23 kg	8	each	1119.81	8958
16.16	Supplying and fixing C.I. cover 300x300 mm without frame for gully trap (standard pattern) the weight of cover to be not less than 4.5 kg	4	each	648.96	2596
16.17	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 :				
16.17.1	For pipes 100 to 250 mm diameter	2	each	668.3	1337
16.17.2	For pipes 250 to 300 mm diameter	4	each	760.61	3042
16.18	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 :				
16.18.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	2	each	4912.92	9826
16.19	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 :				
16.19.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	6	each	5681.37	34088
16.2	Constructing brick masonry road gully chamber 110x50x77.5 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm precast R.C.C. horizontal grating with frame and vertical grating complete as per standard design :				
16.20.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	30	each	9499.91	284997
16.21	Extra for depth beyond 45 cm of brick masonry chamber :				
16.21.1	For 455x610 mm size				
16.21.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	1	metre	5044.11	5044
16.22	Extra for providing polycrete cover with frame of size rectangular or Circular size in the place of C.I cover with frame .	60	Each	1236.9	74214
17	ALUMINIUM WORK				
17.1	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) :				
17.1.1	For fixed portion				

17.1.1.1	Powder coated aluminium (minimum thickness of powder coating 50 micron)	19358	kg	437.78	8474545
17.1.2	For shutters of doors, windows & ventilators including providing and fixing hinges/pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)				
17.1.2.1	Powder coated aluminium (minimum thickness of powder coating 50 micron)	26240	kg	523.17	13727981
17.2	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):				
17.2.1	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm)	18.5	sqm	1241.23	22963
17.2.2	With float glass panes of 8 mm thickness (weight not less than 20 kg/sqm)	682	sqm	1389.79	947837
17.3	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete.				
17.3.1	Upto 5 mm depth and 5 mm width	8589	metre	79.78	685230
17.4	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.	1303	sqm	4121.13	5369832
17.5	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.				
17.5.1	205 X 19 mm	150	each	283.91	42587
17.5.2	255 X 19 mm	350	each	319.12	111692
17.5.3	355 X 19 mm	400	each	268.65	107460
17.5.4	510 X 19 mm	200	each	661.66	132332
17.5.5	710 X 19 mm	50	each	1218.89	60945
17.6	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.				
17.6.1	Powder coated minimum thickness 50 micron aluminium tubular handle bar	24	each	520.78	12499
17.7	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete.				
17.7.1	Anodized (AC 15) aluminium	2	each	73.71	147
17.8	Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-in-charge				
17.8.1	Anodized (AC 15) aluminium	2	each	88.97	178
17.9	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & double acting hydraulic floor spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc.to be paid separately).	16	sqm	4391.77	70268

17.1	<p>Dormakaba automatic Sliding door operator ES 250 PRO Easy 6150 mm with low-noise drive motor without gearbox, TÜV design tested for 1.5 Million Cycle of operation in accordance with low voltage guidelines of IEC /EN 60335-2-103 and fulfils EN 16005 and DIN 18650-1 / DIN 18650-2 standards.</p> <p>With the clear passage width up to 3000 mm. The Profile Finish should be Silver Anodized E6/C0, with operator dimensions (H x D) : 100 x 180 mm. Drive with acoustically decoupled and exchangeable running rail and wear-resistant special surface. Rollers made of special plastic, Counter rollers as derailment protection. Mounting plate with prefabricated fixing holes and threaded holes.</p> <p>Microprocessor-controlled control unit, Self-learning, with adjustable parameters for opening and closing speed, hold-open time 0- 180 Sec, with smps, Class of protection IP 20. 5 Pos Program Switch with Key, ES 250 PRO Easy, Maximum Panel Weight Carrying Capacity of 2X 125 Kgs & 1X 125 kgs each leaf. The Max. opening and closing force by the operator should not exceed 150N and maximum power consumption should not exceed 130W during operation mode. The operator should be equipped with EM fail safe, Nemo Combi sensor with 2x Microwave for activation and double rows of 24 spots fail safe Safety infrared curtains without the need of Photocell. The system shall have constant power supply 230V+ 5%, 50Hz, AC .</p>	2	One Job	213167.31	426335
18	WATER PROOFING				
18.1	<p>Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of : (i) 1st layer of 22 mm to 25 mm thick approved and specified rough stone slab over a 25 mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) including applying of twice (at base and top of mortar) cement slurry @ 2.2kg/m2 (each time) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. (ii) 2nd layer of 25 mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. (iii) Finishing top with stone aggregate of 10 mm to 12 mm nominal size spreading @ 8 cu dm/sqm thoroughly embedded in the 2nd layer.</p>				
18.1.1	Using rough kota stone.	980	sqm	1249.77	1224775
18.2	<p>Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25 mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions with a gap of 20 mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with cement mortar 1:3 (1 cement : 3 coarse sand) 20 mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge :</p>				
18.2.1	Using rough Kota stone	1071	sqm	1669.58	1788120
18.3	<p>Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of: (i) 1st course of applying cement slurry @ 4.4 kg/sqm mixed with water proofing compound conforming to IS : 2645 in recommended proportions including rounding off junction of vertical and horizontal surface. (ii) 2nd course of 20 mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface. (iii) 3rd course of applying blown or residual bitumen applied hot at 1.7 kg. per sqm of area. (iv) 4th course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/sqm).</p>	1415	sqm	634.61	897973

18.4	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 : (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. (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. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	809	sqm	508.82	411635
18.5	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: (a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment. (b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs. (c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. (d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep. (e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. "All above operations to be done in order and as directed and specified by the Engineer-in-Charge":				
18.5.1	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	3041	sqm	1389.13	4224344
18.6	Providing and applying of swellable type water stop tape, 19 mm x 25 mm thick in linear metre (expansive nature) for construction joints treatment of RCC structure such as raft slab, retaining walls, water storage tank and at the junctions of raft slab with the retaining walls etc.. After cleaning the surface, one coat of required primer for swellable water stop tape shall be applied throughout the length of the joint @3.78 litre per 240 running metre. Over the primed surface swellable type water stop tape shall be placed. The work shall be carried out all complete as per specification and the direction of the Engineer-In-Charge. The product performance shall carry guarantee for 10 years against any leakage.	410	metre	472.87	193877
19	RAIN WATER HARVESTING & TUBEWELLS				
19.1	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.				
19.1.1	All types of soil				
19.1.1.1	300 mm dia	240	metre	583.61	140066
19.2	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.				
19.2.1	200 mm nominal size dia	120	metre	918.07	110168
19.3	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.				
19.3.1	200 mm nominal size dia	120	metre	1035.45	124254
19.4	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.	24	cum	1244.99	29880

19.5	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.	24	cum	1268.45	30443
19.6	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.	24	cum	1268.45	30443
19.7	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.	6	cum	1669.41	10016
19.8	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 Engineer-in-charge.	4	each	1154.4	4618
19.9	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:				
19.9.1	100 mm dia	4	each	184.79	739
19.1	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.				
19.10.1	100 mm clamp	4	each	1576.15	6305
19.11	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).				
19.11.1	100 mm dia	4	each	218.6	874
19.12	Providing, fixing testing and commissioning of Vertical/horizontal monoblock centrifugal transfer pumping set with SS body and CI impeller, CI shaft mechanical seal, connected to a TEFC induction motor suitable for 415 volts \pm 3% phase 50 cycles AC supply with mounted on a common base plate of MS 80x40mm I section bolted to RCC foundation complete in all respects. Including suction & deliver header in GI Pipe, butterfly valve, NRV, Pressure gauge etc. FOR DOMESTIC WATER TRANSFER PUMP No. of Pumps: 2 (1 Working + 1 Stand by) Capacity : 150 LPM Head : 50m	1	One set	160968.08	160968
19.13	Providing, fixing testing and commissioning of Vertical/horizontal monoblock centrifugal transfer pumping set with SS body and CI impeller, CI shaft mechanical seal, connected to a TEFC induction motor suitable for 415 volts \pm 3% phase 50 cycles AC supply with mounted on a common base plate of MS 80x40mm I section bolted to RCC foundation complete in all respects. Including suction & deliver header in GI Pipe, butterfly valve, NRV, Pressure gauge etc. FOR FLUSHING WATER TRANSFER PUMP No. of Pumps: 2 (1 Working + 1 Stand by) Capacity : 120 LPM Head : 50m	1	One Set	150907.89	150908
19.14	Providing, fixing 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 (one working + one standby/both working in high flow conditions) PUMP ROOM SUMP PUMP (Solid handling capacity 10-12mm) Capacity- 200 lpm (Each) Head - 15 m	1	One Set	150907.89	150908

19.15	<p>To switch on the pumps (, Domestic water supply pump etc.) 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.</p> <p>To indicate 5 levels of water in all tanks through a control panel with LEDs</p> <p>To start the pumps in a cyclic order.</p> <p>The system shall be complete to ensure automatic quotation of pump in accordance to water level in respective tanks.</p> <p>The Contractor will include all the under ground and over head tanks and all the pumps as required for level control in this item</p>	1	One Set	15091.11	15091
19.16	<p>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 :</p> <p>40 mm dia</p>	70	Metre	728.41	50989
19.17	<p>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 :</p> <p>50 mm dia</p>	50	Metre	812.56	40628
19.18	<p>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 :</p> <p>80 mm dia</p>	40	Metre	1170.2	46808
19.19	<p>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 :</p> <p>40mm dia</p>	8	Each	3770.94	30168
19.2	<p>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 :</p> <p>50mm dia</p>	8	Each	3316.88	26535
19.21	<p>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 :</p> <p>80mm dia</p>	2	Each	4367	8734
19.22	<p>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 :</p> <p>40mm dia</p>	4	Each	5075.26	20301
19.23	<p>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 :</p> <p>50mm dia</p>	4	Each	5075.26	20301
19.24	<p>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 :</p> <p>80mm dia</p>	2	Each	6741.59	13483

19.25	Design, fabrication, assembling, wiring, supply, installation, testing and commissioning of motor control centre shall be fabricated out of 14 gauge CRCA sheet steel in form in 3b formation with reinforcement of suitable size angle iron, channel 'T' sections irons and /or flats wherever necessary. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before painting as per specifications with 2 coats of red oxide primer and final approved shade of powder coated paint. 2 Nos. earthing terminals shall be provided for 3 phase, 4 wire, 50 Hz supply system. Lifting hooks shall also be provided in case of large panels. Approval shall be taken for each panel before fabrication. Cadmium Plated hardware shall be used in fabrication of panels. Quoted rates shall inclusive of cables, cable trays, earthing (in accordance to specification) with earthing from panel to each motor / equipment.	1	Each	120392.51	120393
19.26	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.) 25mm dia pipe, 600mm long with size of 250x250x6 mm MS plate	12	Each	1173.41	14081
19.27	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.) 50mm dia pipe, 600mm long with size of 350x350x6 mm MS plate	8	Each	1654.16	13233
19.28	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.) 65mm dia pipe, 600mm long with size of 350x350x6 mm MS plate	8	Each	1733.32	13867
19.29	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.) 80mm dia pipe, 600mm long with size of 400x400x6 mm MS plate	8	Each	2030.18	16241
19.3	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.) 100mm dia pipe, 600mm long with size of 400x400x6 mm MS plate	8	Each	2234.68	17877

19.31	<p>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.)</p> <p>150mm dia pipe, 600mm long with size of 450x450x6 mm MS plate</p>	8	Each	3062.58	24501
19.32	<p>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.)</p> <p>25mm dia pipe, 600mm long with size of 250x250x6 mm MS plate 50mm dia pipe, 600mm long with size of 350x350x6 mm MS plate 65mm dia pipe, 600mm long with size of 350x350x6 mm MS plate 80mm dia pipe, 600mm long with size of 400x400x6 mm MS plate 100mm dia pipe, 600mm long with size of 400x400x6 mm MS plate 150mm dia pipe, 600mm long with size of 450x450x6 mm MS plate 200mm dia pipe, 600mm long with 6 mm MS plate of size 600mm dia</p>	1	Each	3827.82	3828
19.33	<p>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.)</p> <p>200mm dia pipe, 600mm long with 6 mm MS plate of size 600mm dia</p>	1	Each	3827.82	3828
19.34	<p>Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.</p> <p>2 x 1.5 sq. mm</p>	40	Metre	35.93	1437
19.35	<p>Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.</p> <p>3 x 4 sq. mm</p>	120	Metre	102.55	12306
19.36	<p>Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.</p>	180	Metre	49.96	8993
19.37	<p>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.</p> <p>150mm width x 50mm depth x 1.6 mm thickness.</p>	80	Metre	465.44	37235
20	NEW TECHNOLOGIES AND MATERIALS			0	0

20.1	Providing and fixing 50 mm thick extruded polystyrene rigid insulation board of required size between cavity wall, complying with ISO 4898:2008 & ASTM C 578-08b - type VI, having thermal conductivity of 0.0289 W/m K as per ASTM C 578 (measured as per IS 3346), compressive strength of > 350 kPa listed as per ASTM D 1621, density of 34-36 kg/m³ as per ASTM D 1622, water absorptions ≤ 1% by volume as per ASTM D 2842, oxygen index of 24.1 to 28.1 listed as per ASTM D 2863, cell size 0.4 mm of dia (max) as per ASTM D 3576. Fire retardent property as per DIN 4102, Part 1 of class B2 and as per ASTM E84 class A, fixed with suitable water based adhesive and fastener, complete in all respect as per the direction of Engineer-in-Charge.	3000	sqm	828.35	2485050
20.2	Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595 mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance ≥ 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 & 7) in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32 mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised@80gsm) 50 mm long 8 mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size 24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portion of all T-sections used in false ceiling support system shall be pre-painted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-in-charge.			0	0
20.2.1	With 16 mm thick beveled tegular mineral fibre false ceiling tile (NRC 0.55 to 0.60)	320	sqm	1924.3	615776
21	ENERGY EFFICIENT BUILDINGS AND TECHNIQUES				
21.1	Supply and fixing of Filtration equipments. Sand Filter. Supply of 1200mm dia bobbinwound fibreglass and polyester resin anti corrosive sand filter with 2" connections. The filter shall be fitted with easy access top lid with manual air purge, flat clamp for cover tightening, FRP Foot base and necessary accessories such as glycerine filled pressure gauge, combination of manual sand and water drain etc., Filtration Velocity 30 -40m³/hr/m², Flow rate = 46 m³/hr, Maximum working pressure : 2.5 Bar - 2 Nos. MULTIPOINT VALVE. Supply of 6 way side mount multiport valve of 2" dia connection with Body in ABS & fibre glass, handle in ABS, distributor with EPDM gaskets, metallic elements in Stainless Steel and watertight shaft system with low head loss. Maximum working Pressure 3.5 kg/cm². - 2 nos. FILTER MEDIA. Supply of Grade 1 Eco Glass Media 20kg in bags -1750Kg. Supply of Grade 3 Eco Glass Media 20kg in bags - 600Kg.				
21.1.1	Recirculation Pump(2 Duty +1 Stand by) Supply of centrifugal self priming pump with high hydraulic efficiency, chemical resistant and ultra quiet operation. Each pump integrated along with IP-55 protection-class F continuous rating. Pump shall be of one piece body made in fibreglass and reinforced polypropylene, integrated prefilter with strainer basket, fast opening translucent transparent polypropylene lid, easy opening knob system, 316 SS Shaft and mechanical seal. Self priming at 1m, Impeller : Plastic impeller, 90mm suction & 90mm return union connections, Horse power : 4.0 HP, 3Kw, Phase : III phase 415V, Flowrate = 46 m³/hr at 25 mtr water head.	2	One Job	1137221.48	2274443
22	Fire Fighting work.				
22.1	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. 150 mm width X 50 mm depth X 1.6 mm thickness	40	Metre	529.43	21177

22.2	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. 300 mm width X 50 mm depth X 1.6 mm thickness	40	Metre	681.08	27243
22.3	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)	80	Metre	126.22	10098
22.4	Providing and fixing 6 SWG dia GI. wire on surface or in recess for loop earthing as required.	120	Metre	61.35	7362
22.5	Providing and fixing in position the industrial type pressure gauges with gun metal / brass valves complete as required	42	Each	986.22	41421
22.6	(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: (B) Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520. (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. (D) M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required. (E) Suitable cement concrete foundation duly plastered with anti vibration pads. 2850 lpm at 70 m Head	1	One Set	354956.49	354956
22.7	(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) (b) Horizontal type, multistage, centrifugal pump of cast of iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520. (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, 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. (d) M.S fabricated, common base plate, coupling, coupling guard, foundation bolts etc. as required. (e) Suitable cement concrete foundation duly plastered and with anti vibration pads. 2850 lpm at 70 m Head	1	One Set	540958.15	540958
22.8	(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) (B) Horizontal type, multistage, centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS : 1520. (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. (D) M.S.fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required. (E) Suitable cement concrete foundation duly plastered and with anti vibration pads. 180 lpm at 70 m Head	1	One Set	90551.78	90552

22.9	(A) Supplying, installation, testing and commissioning of electric driven terrace pump suitable for automatic operation and consisting of following, complete in all respects, as required: (Terrace Pump) (B) Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical confirming to IS: 1520 (C) Suitable HP squirrel cage induction motor TEFC type suitable for operation on 415 volts, 3 phase, 50 Hz, AC supply with IP55 class of protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325. (D) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required. (E) Suitable cement concrete foundation duly plastered and with anti vibration pads. 900 lpm at 35 m Head	1	One Set	89285.16	89285
22.1	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. 150 mm. Dia	80	Metre	3334.41	266753
22.11	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 : 25 mm dia	264	Metre	652.15	172168
22.12	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 : 32 mm dia	265	Metre	745.94	197674
22.13	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 : 40 mm dia	264	Metre	906.35	239276
22.14	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 : 50 mm dia	264	Metre	1122.86	296435
22.15	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 : 65 mm dia	265	Metre	1414.76	374911
22.16	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 : 80 mm dia	265	Metre	1652.31	437862

22.17	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 : 100 mm dia	265	Metre	2239.6	593494
22.18	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 : 150 mm dia	660	Metre	3132.81	2067655
22.19	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 : 200 mm dia (wall thickness 6.3 mm)	13	Metre	4788.62	62252
22.2	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 : Single headed Stainless steel	29	One Set	5381.18	156054
22.21	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 : Single headed Stainless steel	11	One Set	5381.18	59193
22.22	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 : 50mm dia	1	One Set	3316.88	3317
22.23	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 : 65 mm dia	1	One Set	3770.94	3771
22.24	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 : 80 mm dia	42	One Set	4367	183414
22.25	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 : 100 mm dia	6	One Set	5844	35064
22.26	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 : 150mm dia	7	One Set	7853.94	54978
22.27	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 : 50 mm dia	2	One Set	6317.34	12635

22.28	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 : 80mm dia	2	One Set	9375.64	18751
22.29	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 : 100mm dia	1	One Set	12833.66	12834
22.3	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 : 150mm dia	8	One Set	19952.18	159617
22.31	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 : 200mm dia	6	One Set	34476.72	206860
22.32	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.	20	Each	1157.92	23158
22.33	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 : 80mm dia	2	One Set	6741.59	13483
22.34	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 : 100mm dia	7	One Set	9685.94	67802
22.35	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 : 150mm dia	7	One Set	15590.43	109133
22.36	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. 80 mm dia	1	Each	4128.58	4129
22.37	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. 200mm dia	2	Each	19524.77	39050
22.38	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 : Stainless Steel (Grade 304)	80	One Set	3898.91	311913
22.39	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. 20 mm nominal internal dia water hose thermoplastic (Textile reinforced) type -2 as per IS: 12585 20 mm nominal internal dia gun metal globe valve & nozzle. Drum and brackets for fixing the equipments on wall. Connections from riser with 25 mm dia stop gun metal valve & M.S. Pipe and socket. 30m	29	One Set	7604.13	220520

22.4	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: Stainless Steel (Grade 304)	40	Each	1456.84	58274
22.41	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: 2 way-100 mm dia M.S. Pipe	4	One Set	5909.74	23639
22.42	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: 4 way - 150 mm dia M.S. Pipe	1	One Set	12248.99	12249
22.43	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.	3	One Set	15991.89	47976
22.44	Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories: Pendent Sprinkler	1618	Each	457.56	740332
22.45	Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories: Upright Sprinkler	114	Each	457.56	52162
22.46	Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories: Horizontal side wall sprinkler	2	Each	540.83	1082
22.47	Providing & fixing of pressure switch in M.S. pipe line including connection etc. as required.	4	Each	1355.15	5421
22.48	Providing & fixing flow switch in following sizes M.S. pipe including connection etc as required. 150mm dia	6	Each	7907.41	47444
22.49	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 150mm dia	1	One Set	42251.77	42252
22.5	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. 700mm	29	One Set	1208.77	35054
22.51	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. 1000mm	29	One Set	1383.2	40113

22.52	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. 1200mm	29	One Set	1463.84	42451
22.53	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. 1500mm	29	One Set	1606.72	46595
22.54	Providing, installation, testing & commissioning of adjustable rosette plate for 15mm dia in white finish UL Listed or FM approved complete as required.	116	Each	197.22	22878
22.55	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.	1	Each	5668.34	5668
22.56	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	1	Each	15582.33	15582
22.57	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 employeeer	29	Each	7183.96	208335
22.58	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 employeeer	11	Each	5854.7	64402
22.59	Providing and fixing stainless steel standard fireman's axe with heavy insulated rubber handle tested to 20000 volts as per IS : 926 complete.	29	Each	790.79	22933
22.6	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.	4	Each	1301.22	5205
22.61	Providing and fixing reinforced neoprene rubber vibration eliminators / expansion joints (to provide relief from stresses at pipe flanges) suitable for upto 20 kg/cm2 pressure, complete as per specification. 200mm dia.	2	Each	6462.43	12925

22.62	Providing and fixing reinforced neoprene rubber vibration eliminators / expansion joints (to provide relief from stresses at pipe flanges) suitable for upto 20 kg/cm ² pressure, complete as per specification. 150mm dia.	2	Each	4489.98	8980
22.63	Providing and fixing reinforced neoprene rubber vibration eliminators / expansion joints (to provide relief from stresses at pipe flanges) suitable for upto 20 kg/cm ² pressure, complete as per specification. 80mm dia.	2	Each	2823.45	5647
22.64	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 employee Recommended dia. : 450 mm Height of shell : 2000mm Working pressure : 7 Kg/Sq.cm Test Pressure : 10 Kg/Sq.cm	1	One Set	80040.4	80040
22.65	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. 50NB	6	Each	10882.32	65294
22.66	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. Power cable 3 core 16 Sq.mm	30	Metre	339.73	10192
22.67	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. Power cable 3 core 70 Sq.mm	30	Metre	956.54	28696
22.68	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 CO ₂ gas conforming to IS:307-1966 and wall suspension bracket as required as per specifications.	157	Each	4409.16	692238
22.69	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.	114	Each	1918.85	218749
22.7	Providing and fixing Mechanical Foam Based Trolley Mounted Fire Extinguisher, Inside CO ₂ 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)	2	Each	16142.49	32285
22.71	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.	6	Each	7235.09	43411

22.72	Supply, installation, testing and commissioning of 2 KG e Clean Agent (Stored Pressure Type) Fire Extinguishers filled with Clean Agent Gas', Nitrogen Pressurised, Controllable Discharge Mechanism, Pressure Gauge, Discharge Hose (for 4 & 6kg) & Nozzle Epoxy Polyester Powder Coated As per 'IS 15683 : 2018' ISI marked Fire Extinguisher Operating Temperature:- (-)20°C to (+)55°C Suitable for 'A' 'B' 'C' Class of FIRE suspension bracket and conforming to IS:15683 as required as per specifications. (Electrical Panel room & Server room)	8	Each	6372.55	50980
22.73	"Providing, fixing, testing and commissioning of control panel for Terrace Booster pumps . Incoming: MCCB 125A 1 set of Phase indicating lamps, 1 set of 125A AI bus bars, 3No Ammeter, 3No Voltmeter with phase selector switch Feeder for Booster Pumps - 2 No. 2 No. 50A TP MCCB without releases. DOL starter with over load relay, single phase preventor and indicating lamps with ON/OFF push buttons. 2 No. Automanual selector switch. Suitable for 2 nos. of booster pumps"	1	Each	49582.74	49583
22.74	Providing, fixing, testing and commissioning of Tamper switch for pump room valve complete with nuts, bolts, washers, gaskets of following sizes as required :	19	Each	3241.52	61589
22.75	Design, Supply, installation, testing and commissioning of PESO approved seamless Cylinder (IS 7285) with PESO approved Valve assembly. FM approved & UL-Listed Clean Agent Fire Suppression System FK-5112 for following room at 25 bar pressure with pressure gauge, safety burst filled with FK-5112 at 4.5% concentration as per flow calculation report. Discharge time should be less than 10 seconds. Seamless pipe Sch 40 Gr 'B" , cylinder heads, valves, Safety burst disc, nozzles all necessary accessories, Electrical actuator, Manual actuator, Discharge Hose, cylinder clamp and fittings including all theaccessories as approved by PMC and Engineer-In-Charge. Server Room (8.8 x 6.45 x 3.5)	1	One Set	739656.13	739656
22.76	Design, Supply, installation, testing and commissioning of PESO approved seamless Cylinder (IS 7285) with PESO approved Valve assembly. FM approved & UL-Listed Clean Agent Fire Suppression System FK-5112 for following room at 25 bar pressure with pressure gauge, safety burst filled with FK-5112 at 4.5% concentration as per flow calculation report. Discharge time should be less than 10 seconds. Seamless pipe Sch 40 Gr 'B" , cylinder heads, valves, Safety burst disc, nozzles all necessary accessories, Electrical actuator, Manual actuator, Discharge Hose, cylinder clamp and fittings including all theaccessories as approved by PMC and Engineer-In-Charge. Server Room (6 x 4.4 x 3.5)	6	One Set	497111.4	2982668
22.77	Supply, installation, testing and commissioning Direct Low Pressure Pre-Engineered Automatic FK-5-1-12 (equivalent to Novec-1230) (UL Listed) Fire Detection & Suppression System with UL approved tube, UL & PESO approved Filling Plant, CE certified system, Cylinder, Pressure Gauge ,other accessories as & if required Valve, Pressure Switch, Push-in tube connector. 04 kg- 01 Nos Supply, installation, testing and commissioning UL approved Linear Pneumatic Heat Detection Tube (Rated at 195 Degree Centigrade, Colour Code- Red) Detection temp. Approx. 110 Degree C to 138 Degree C)(FM approved & UL-Listed)-25 Metre Supply, installation, testing and commissioning of End of Line Adapter With Pressure Gauge -01 Each Supply, installation, testing and commissioning of Low Pressure switch -01 Each Supply, installation, testing and commissioning of Tee-connection-02 Each Supply, installation, testing and commissioning of End Plug-01 Each Supply, installation, testing and commissioning of Audio Visual system (220 V)-01 Each Supply of Master Control Unit with LED flashner, Electronic Hooter, LED indidicator, silent Switch . Have Provision for Intergration with Fire Alarm Control Panel / SCADA/ BMS to make entire System Functional.-01 Each	6	One Set	96978.64	581872

22.78	"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	1	One Set	283092.66	283093
	Total (Without GST)				521176908