

<b>N/W:-</b>	<b>Construction of Type-II Apartments (G+10, 80 Nos) including Water supply, Sanitary installation, Internal Electrical installations, Fire Fighting, Fire Alarm system, Lifts and development works at IIT Kanpur.(SH: Civil Work)</b>				
<b>SLNo</b>	<b>Description</b>	<b>Qty</b>	<b>Unit</b>	<b>Rate without GST</b>	<b>Amount</b>
1	Carriage of Materials				
1.1	By Mechanical Transport including loading,unloading and stacking ( Earth )				
1.1.1	Earth Lead - 2	3858.00	cum	202.70	782034.77
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	3858.00	cum	146.37	564686.24
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.	300.00	cum	214.65	64393.50
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.	139.00	metre	177.79	24712.13
2.3.1.2	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	525.00	metre	290.39	152452.17
2.3.1.3	Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm	110.00	metre	453.33	49866.00
2.4	Open timbering over areas including strutting, shoring etc. complete. (Measurements to be taken of the face area timbered):				
2.4.1	Depth exceeding 1.5 m but not exceeding 3 m	334.00	sqm	45.31	15134.25

2.5	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 lift.	2085.00	cum	161.62	336983.59
2.6	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.				
2.6.1	All kinds of soil	1000.00	cum	104.56	104560.07
2.7	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	150.00	cum	1751.26	262688.63
2.8	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.				
2.8.1	All kinds of soil	320.00	sqm	28.16	9011.30
2.9	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.	2290.00	sqm	14.51	33234.93
2.1	Supplying chemical emulsion in sealed containers including delivery as specified.				
2.10.1	Chlorpyriphos/ Lindane emulsifiable concentrate of 20%	400.00	litre	193.58	77430.53
2.11	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.	1050.00	Sqm	40.41	42425.99
3	CEMENT CONCRETE (CAST IN SITU)				
3.1	Providing and laying in position excluding cement concrete of level: specified grade the cost of centering and shuttering - All work up to plinth				
3.1.1	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)	156.00	cum	6496.66	1013479.01

3.1.2	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)	260.00	cum	5617.22	1460476.62
3.1.3	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)	270.00	cum	5375.28	1451325.14
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)	125.00	cum	8159.64	1019955.47
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)	50.00	sqm	338.79	16939.47
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.	41.00	per bag of 50kg cement used	14.97	613.63
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.	50.00	sqm	120.52	6025.81
3.6	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.	10.00	sqm	617.88	6178.77

3.7	Providing and laying PCC 5:10 ( 5 coarse sand : 10 graded brick aggregate or broken AAC block 40 mm nominal size ) for filling in sunken areas at all floor levels i.e up to G+10 floor building).	310.00	Cum	2569.47	796536.65
4	REINFORCED CEMENT CONCRETE				
4.1	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. above plinth level up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement:				
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)	130.00	cum	8949.41	1163423.35
4.2	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15 degree landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement with 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).	256.00	cum	9487.51	2428801.85
4.3	Centering and shuttering including strutting, propping etc. and removal of form for				
4.3.1	Foundations, footings, bases of columns, etc. for mass concrete	285.00	sqm	323.37	92160.26
4.3.2	Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	2350.00	sqm	694.73	1632617.30
4.3.3	Suspended floors, roofs, landings, balconies and access platform	8850.00	sqm	764.62	6766852.89
4.3.4	Shelves (Cast in situ)	700.00	sqm	764.62	535231.30
4.3.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers	9050.00	sqm	607.24	5495522.39
4.3.6	Columns, Pillars, Piers, Abutments, Posts and Struts	6970.00	sqm	792.69	5525077.10
4.3.7	Stairs, (excluding landings) except spiral-staircases	480.00	sqm	630.78	302775.62
4.3.8	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	425.00	sqm	323.37	137431.97
4.3.9	Edges of slabs and breaks in floors and walls				

4.3.9.1	Under 20 cm wide	800.00	metre	171.97	137577.31
4.3.10	Small surfaces such as cantilever ends, brackets and ends of steps, caps and bases to pilasters and columns and the like	40.00	sqm	795.62	31824.85
4.3.11	Weather shed, Chajjas, corbels etc., including edges	250.00	sqm	784.28	196070.75
4.4	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).				
4.4.1	Suspended floors, roofs, landings, beams and balconies (Plan area to be measured)	7500.00	sqm	316.90	2376721.37
4.5	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
4.5.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	187250.00	kg	88.93	16652851.08
4.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
4.6.1	Thermo-Mechanically Treated bars of grade Fe-500D	360363.00	kg	88.93	32048445.25
4.7	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	1400.00	metre	64.65	90508.78
4.8	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.				
4.8.1	All works upto plinth level				
4.8.1.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	50.00	cum	7837.68	391883.81

4.8.1.2	Concrete of M30 grade with minimum cement content of 350 kg /cum	1430.00	cum	7962.15	11385875.32
4.8.2	All works above plinth level upto floor V level				
4.8.2.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	2675.00	cum	8130.95	21750284.49
4.8.2.2	Concrete of M30 grade with minimum cement content of 350 kg /cum	250.00	cum	8255.42	2063855.45
4.9	Add for using extra cement in the items of design mix over and above the specified cement content therein.	1320.00	quintal	604.85	798400.26
4.1	Extra for R.C.C./ B.M.C/ R.M.C. work above floor V level for each four floors or part thereof.	1860.00	cum	293.27	545484.46
4.11	"Centering and shuttering i/c strutting, propping etc. and removal of form work for mullions upto 11th floor levels etc. complete.	1000.00	Sqm	987.88	987878.29
4.12	Extra for Providing and laying RMC/BMC/RCC Work at below 3.00 meter from plinth level or part thereof.	30.00	Cum	136.40	4091.94
4.13	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.	23.00	Each	618.45	14224.46
4.14	Extra for Providing & laying Cement concrete above Plinth level to terrace level or at all floor level.	367.00	Cum	462.79	169842.29
4.15	Extra for using removable tie bolt and pvc pipe in walls/columns shuttering due to larger size.	50.00	Each	41.23	2061.52
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 1:4(1 cement :4 coarse sand)	2.05	cum	6077.88	12459.66
5.1.2	Cement mortar 1:6(1 cement :6 coarse sand)	70.00	cum	5881.30	411690.86
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 1:4(1 cement :4 coarse sand)	2.00	cum	7705.41	15410.82
5.2.2	Cement mortar 1:6(1 cement : 6 coarse sand)	560.00	cum	7508.82	4204941.04
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.	2160.00	cum	139.73	301815.78

5.4	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.				
5.4.1	Cement mortar 1:4(1 cement :4 coarse sand)	3250.00	sqm	926.69	3011750.64
5.5	Extra for half brick masonry in superstructure, above floor V level for every four floors or part thereof by mechanical means.	1750.00	sqm	12.37	21645.91
5.6	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).	1329.00	cum	6871.98	9132861.26
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 sqm	290.00	sqm	4464.01	1294561.72
6.1.1.2	Area of slab over 0.50 sqm	675.00	sqm	4235.43	2858911.93
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	200.00	metre	246.23	49245.49
6.2.2	Granite work/Full body vitrified tiles	430.00	metre	421.33	181173.00
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.	80.00	each	807.04	64563.37

6.4	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.	1850.00	sqm	417.83	772981.78
6.5	Providing and fixing 1st quality ceramic glazed wall tiles (300X450mm) conforming to IS: 15622 or equivalent (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.	4250.00	sqm	1045.56	4443627.86
6.6	Providing and fixing of full bodied vitrified tiles Stepping stone ( Full body anti - skid,for Tread or Riser single piece length 1200mm, up to 15 mm thick, full bull nosed, with upper top or bottom rib ) in Tread, skirting, risers of steps and dados,landing area etc over 12 mm to 20mm 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 all complete.	540.00	Sqm	2988.33	1613699.18
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	3.90	cum	117877.22	459721.14
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	1150.00	sqm	1972.99	2268943.27
7.2.2	25 mm thick (for cupboard) including ISI marked nickel plated bright finished M.S. piano hinges with necessary screws	390.00	sqm	1726.48	673326.46
7.3	Extra for cutting rebate in flush door shutters (Total area of the shutter to be measured).	430.00	sqm	87.99	37833.76



7.4	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.				
7.4.1	Fixed to steel windows by welding	1300.00	kg	180.67	234872.60
7.5	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	24.00	each	810.71	19457.08
7.6	Providing and fixing bright finished brass hasp and staple (safety type) with necessary screws etc. complete :				
7.6.1	150 mm	160.00	each	114.70	18352.44
7.7	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 :				
7.7.1	250x16 mm	1.00	each	214.89	214.89
7.8	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 :				
7.8.1	250x10 mm	160.00	each	94.95	15192.55
7.8.2	150x10 mm	160.00	each	68.07	10891.40
7.9	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 :				
7.9.1	125 mm	800.00	each	54.63	43704.13
7.1	Providing and fixing magnetic catcher of approved quality in cupboard/ ward robe shutters, including fixing with necessary screws etc. complete.				
7.10.1	Triple strip vertical type	480.00	each	43.29	20780.08

7.11	Providing and fixing factory made P.V.C. door frame of size 50x47 mm with a wall thickness of 5 mm, made out of extruded 5 mm rigid PVC foam sheet, mitred at corners and joined with 2 Nos of 150 mm long brackets of 15x15 mm M.S. square tube, the vertical door frame profiles to be reinforced with 19x19 mm M.S. square tube of 19 gauge, EPDM rubber gasket weather seal to be provided through out the frame. The door frame to be fixed to the wall using M.S. screws of 65/100 mm size, complete as per manufacturer's specification and direction of Engineer- in-Charge.	1200.00	metre	406.28	487540.20
7.12	Providing and fixing factory made panel PVC door shutter consisting of frame made out of M.S. tubes of 19 gauge thickness and size of 19 mm x 19 mm for styles and 15x15 mm for top & bottom rails. M.S. frame shall have a coat of steel primers of approved make and manufacture. M.S. frame covered with 5 mm thick heat moulded PVC 'C' channel of size 30 mm thickness, 70 mm width out of which 50 mm shall be flat and 20 mm shall be tapered in 45 degree angle on both side forming styles and 5 mm thick, 95 mm wide PVC sheet out of which 75 mm shall be flat and 20 mm shall be tapered in 45 degree on the inner side to form top and bottom rail and 115 mm wide PVC sheet out of which 75 mm shall be flat and 20 mm shall be tapered on both sides to form lock rail. Top, bottom and lock rails shall be provided both side of the panel. 10 mm (5 mm x 2 ) thick, 20 mm wide cross PVC sheet be provided as gap insert for top rail & bottom rail, paneling of 5 mm thick both side PVC sheet to be fitted in the M.S. frame welded/ sealed to the styles & rails with 7 mm (5 mm+2 mm) thick x 15 mm wide PVC sheet beading on inner side, and joined together with solvent cement adhesive. An additional 5 mm thick PVC strip of 20 mm width is to be stuck on the interior side of the 'C' Channel using PVC solvent adhesive etc. complete as per direction of Engineer-in-charge, manufacturer's specification & drawing.				
7.12.1	30 mm thick plain PVC door shutters	380.00	sqm	2624.68	997378.58
7.13	Providing and fixing fly proof stainless steel grade 304 wire gauge, to windows and clerestory windows using wire gauge with average width of aperture 1.4 mm in both directions with wire of dia. 0.50 mm all complete.				
7.13.1	With 12 mm mild steel U beading	1150.00	sqm	1012.62	1164508.95
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.	23.00	each	6898.78	158671.93

7.15	<p>Providing and fixing fire resistant door frame of section 50 x 60 mm on horizontal side &amp; 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 &amp; 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).</p>	140.00	metre	1816.53	254313.52
7.16	<p>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 &amp; 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).</p>	50.00	sqm	9910.04	495501.77

7.17	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 (E120). 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.	40.00	sqm	36016.86	1440674.53
7.18	Providing and fixing ISI marked S.S.Sliding door bolt size 16mmx250mm finish SS Matt fixed with necessary bolts screws etc. complete as directed by Engineer-in-charge.	808.00	Each	812.24	656287.62
7.19	Providing of SS finish (304/202 grade) Tower Bolt with necessary screws etc. complete as per design & approved by Engineer in Charge. 300mm Long.	748.00	Each	541.77	405241.20
7.2	Providing of SS finish (304/202 grade) Tower Bolt with necessary screws etc. complete as per design & approved by Engineer in Charge. 200mm Long.	668.00	Each	372.72	248978.31
7.21	Providing of SS finish (304/202 grade) Handles with necessary screws etc. complete as per design & approved by Engineer in Charge. 150mm Long.	1336.00	Each	493.11	658801.02
7.22	Providing & fixing S.S.Door Stopper size 65x2.5MM finish SS Matt with necessary Screws etc., complete.	670.00	Each	389.21	260773.48
7.23	Providing and fixing of Babay latch for bath room door of approved make.	480.00	Each	178.11	85495.18

7.24	Providing and fixing aluminum door seal in door i/c necessary screw etc complete.	400.00	Metre	173.99	69596.77
7.25	Providing and fixing Factory made 100% soile WPC lead free Door Frame of Size 100mm X 60mm (SINGLE REBATE) made from single extruded process material with density not less than 0.78Kg/Cum and manufactured by an ISO 9001-2008 certified company. Water absorption not more than 0.01% Cum the door frame shall be shall be fixed to the wall using appropriate dash fastners through the frame by using PVC Fasteners. A minimum of 3 Nos. of fastners to be provided for each vertical member etc. complete as per manufacturer specificaion and direction of Engineer-in-Charge.	4700.00	Metre	923.56	4340727.30
7.26	Providing and fixing Door Silencer 75 mm long with neccessory screws.	640.00	Each	244.91	156741.16
7.27	P/F Door viewer(magic eye) with flap ( Best make of approved quality).	80.00	Each	296.86	23748.66
7.28	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.	3187.00	Each	226.77	722705.53
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.	1800.00	kg	110.25	198449.74
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	7.50	sqm	4786.30	35897.27
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	23250.00	kg	160.30	3727055.33

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	7500.00	kg	142.33	1067452.79
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	5600.00	kg	162.28	908782.06
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/mm <sup>2</sup> ), 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	3520.00	each	113.51	399544.82
8.6.2	10 x 120 mm	2076.00	each	140.97	292646.33
8.7	Providing and fixing stainless steel ( Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, bufing, 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.).	4300.00	kg	636.93	2738781.23

8.8	Providing & Installation of 16 mm thick Microcell Polycarbonate panels & will be 16mm thick (min.) single panel. Panel Width shall not be less than 1040 mm to ensure best performance for wind uplift, vibration, oil canning and visual appearance. The panels shall be uniform in color with an integral Microcell/Multicell. Panels shall be manufactured with Vertical Standing Seam with maximum height 15mm at both sides of the panel. Snap-on connector to interlock the panels shall have a double tooth grip-lock locking mechanism to ensure maximum uplift capability. Panel shall be with additional End- cap/Aluminum U-Profile (mill finish) for ends. Panels shall be co-extruded UV protected. Panel shall be fixed over structural steel / MS purlin (will be paid as extra) conforming to the detail technical specifications enclosed and as per approved shade / colour .Design, Preparing shop drawings, obtaining consultants approval, supplying, fabricating , delivering at site, erection, including all temporary staging and supporting work and making all structural steel work in accordance with the design drawings using TATA Tubular sections or equivalent . The rate of steel work shall include cutting, grinding, machining, assembly, welding, jointing, cost of fasteners (nuts, bolts etc), The rate shall also include one coat of primer after properly cleaning the steel surface and final coat with polyester powder coating and directions of Engineer-In-Charge.	188.00	Sqm	6478.11	1217884.06
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	140.00	sqm	506.47	70906.24
9.2	Providing and fixing glass strips in joints of terrazo/ cement concrete floors.			0.00	0.00
9.2.1	40 mm wide and 4 mm thick	120.00	metre	75.66	9078.91
9.3	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) :				
9.3.1	25 mm thick	1500.00	sqm	1606.54	2409808.69

9.4	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.	275.00	sqm	1941.70	533967.59
9.5	Extra for pre finished nosing in treads of steps of Kota stone/ sand stone slab.	50.00	metre	157.83	7891.48
9.6	Providing and fixing 1st quality ceramic glazed floor 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.	780.00	sqm	917.54	715680.71
9.7	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.				
9.7.1	Double charge vitrified tile polished finish of size				
9.7.1.1	Size of Tile 600 x 600 mm	4600.00	sqm	1198.69	5513968.83
9.7.2	Glazed Vitrified tiles Matt/Antiskid finish of size				
9.7.2.1	Size of Tile 600 x 600 mm	2050.00	sqm	1207.92	2476245.16
9.8	Providing and laying Vitrified tiles in diferent 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.				
9.8.1	Size of Tile 600x600 mm	480.00	sqm	1338.38	642421.04



9.9	Providing and laying full body vitrified tile in floor or kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shad of minimum thickness 15 mm with water absorption less than 0.06% and conforming to IS:15622, of approved make, brand and manufacturer, laid on 20 mm thick base cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.30 kg / sqm including grouting the joints with white cement and matching pigments etc. The slab must be cut with the zero chipping diamond cutter only. Laying of slab will be done with the help of notch trowel, wedge, clips of required thickness, vacuum cups for lifting, leveling system and rubber mallet for placing the slab gently and easily. Size of tile 800x2400 mm of all colours and shades.	300.00	sqm	2988.33	896499.55
9.1	Unpolished Kota stone paving and other finishing work to the pattern called for using 30 mm to 40 mm (nominal) thick split stone slabs with machine cut edges (straight or raked as called for) of sizes 600x600mm laid over a 20mm thick bed of cement mortar 1:4 ( 1cement :4 coarse sand) with fine joints filled with cement mortar 1:2 (1cement :2 coarse sand) pigmented to match the stone and finished neat as directed and cured complete.	250.00	Sqm	854.29	213573.02
9.11	Providing and Fixing Antiskid Vitrified pavement Wall/Floor tiles 300x300mm thick and 9-12mm laid on 20mm thick cement mortar 1:4 1 cement: 4 coarse sand] with Tile Adhesive [3-4mm thickness] and jointing with Tile Grout as per approved colour & Shade by Engineer in-Charge.	910.00	Sqm	1593.96	1450507.13
9.12	Extra for Tile work for on walls of height more than 2.10 mtr from floor level for every additional height of 3.00 mtr or part thereof .	75.00	Sqm	73.22	5491.26
9.13	Extra for making steps of stair antiskid by making band of 3 nos. grooves, 3 mm wide along kota stone (Clear Tread length will be measured).	10.00	Metre	225.93	2259.26

9.14	"Extra for Providing & fixing machine-cut & machined polished Stone in sill, copings, parapet top, window sill, planter top and such other locations, laid on 20 mm (average) thick cement mortar 1:4 (1cement:4coarse sand) and jointed with grey cement slurry mixed with pigment to match the shades of the slabs, including rubbing and polishing complete instead of 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	100.00	Sqm	352.09	35209.04
9.15	Extra for Granite/full body vitrified tile clading on wall with Araldite Adhesive including necessary Support and Scaffolding etc all complete.	140.00	Sqm	785.85	110018.97
9.16	"0.8mm Parking Area (Nitoprime 25+ Antislip Grain No.3+ 0.5mm thick Nitoflor FC150) Surface Preparation- Surface Preparation shall be done by using electric hand grinding machine to remove all cement latiance, friable concrete & to acheive CSP3 type profile for better mechanical bonding . If any part of the substrate is contaminated by grease, oil, the contamination shall be removed before preparation is undertaken. Application of Antiskid Epoxy system: Providing & applying average 0.8mm thk high build solvent free textured finish abrasion and chemical resistant epoxy resin floor coating system first by applying an epoxy based adhesive primer on well cleaned and dry surface at a approved coverage of 4.5- 6.5 Sqm/ltr (subjected to substrate) followed by manually sprinkle of antislip grain no 3 as per manufacturer methodology, followed by application of two coats of high build solvent free epoxy coating to achieve overall minimun builtup thickness of 0.8-1mm. "	650.00	Sqm	884.80	575121.63
9.17	"CHEMICAL ANCHOR FASTENER: Providing and fixing Chemical Anchor Fastener RE. 500, including drilling necessary holes. Make ISI, Each Size : 16mm dia and 250mm long"	500.00	Each	103.08	51537.89
10	ROOFING				

10.1	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	32.00	each	245.94	7870.04
10.2	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.				
10.2.1	75 mm diameter	1280.00	metre	205.16	262607.40
10.2.2	110 mm diameter	30.00	metre	311.21	9336.19
10.3	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.				
10.3.1	Single tee with door				
10.3.1.1	110x110x110 mm	2.00	each	193.08	386.16
10.3.2	Single tee without door				
10.3.2.1	75x75x75 mm	320.00	each	118.99	38077.02
10.3.2.2	110x110x110 mm	2.00	each	182.53	365.05
10.3.3	Bend 87.5°				
10.3.3.1	75 mm bend	32.00	each	87.33	2794.43
10.3.3.2	110 mm bend	5.00	each	123.98	619.90
10.3.4	Shoe (Plain)				
10.3.4.1	75 mm Shoe	32.00	each	76.77	2456.67
10.3.4.2	110 mm Shoe	5.00	each	108.72	543.62
10.4	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.				
10.4.1	75 mm	320.00	each	304.98	97593.80
10.4.2	110 mm	10.00	each	306.18	3061.76
10.5	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams.	26.00	each	45.11	1172.76

10.6	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-Charge) of total coated thickness 0.50 mm (base metal of minimum 0.45 mm thickness with total coating thickness of 0.05mm) with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	776.00	sqm	609.10	472658.04
10.7	Providing and fixing G.I/Profile sheet barricading of 24 gauge, all round the construction area with vertical MS tube 2.80m intervals and one no. horizontal MS tube 50 X 50mm on top , height upto 3.00 m i/c bracing of MS tube at every 10.00 m, removal of above material after due dismatling and taking back the material from the work site after complition of work. (Note: One time payment shall be made for providing barricading from start of work till completion of work as per requirement and direction of Engineer -In - Charge)	300.00	Metre	1559.66	467898.08
11	FINISHING				
11.1	12 mm cement plaster of mix:				
11.1.1	1:6 (1 cement: 6 coarse sand)	22400.00	sqm	283.38	6347621.01
11.2	15 mm cement plaster on rough side of single or half brick wall of mix:				
11.2.1	1:4(1 cement: 4 coarse sand)	1030.00	sqm	339.53	349717.57
11.2.2	1:6(1 cement: 6 coarse sand)	12870.00	sqm	326.01	4195724.00
11.3	15 mm cement plaster on rough side of single or half brick wall finished with a floating coat of neat cement of mix:				
11.3.1	1:4(1 cement: 4 fine sand)	3500.00	sqm	394.08	1379277.64
11.4	6 mm cement plaster of mix:				
11.4.1	1:3(1 cement :3 fine sand)	13700.00	sqm	247.75	3394215.39
11.5	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	24500.00	sqm	71.82	1759668.51
11.6	Extra for plastering:				
11.6.1	Flewing soffits	260.00	sqm	97.01	25223.88

11.7	White washing with lime to give an even shade:				
11.7.1	New work (three or more coats)	1500.00	sqm	32.20	48301.31
11.8	Finishing walls with textured exterior paint of required shade:				
11.8.1	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	11785.00	sqm	184.38	2172941.37
11.9	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:				
11.9.1	New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm)	2700.00	sqm	141.09	380943.35
11.1	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.				
11.10.1	On steel work	160.00	sqm	199.35	31895.77
11.11	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
11.11.1	Two or more coats on new work	950.00	sqm	128.56	122128.31
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	5300.00	sqm	186.57	988805.97
11.13	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.	33400.00	sqm	128.68	4297905.50
11.14	Re-lettering with black Japan paint of approved brand and manufacture.	10000.00	per letter per cm height	3.17	31747.34
11.15	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	33400.00	Sqm	92.31	3083309.97
11.16	Providing & Fixing Chicken Wire Mesh on Joints of RCC & Brick Work Before Plastering Work.	400.00	Sqm	72.57	29026.14
11.17	Extra for additional height in ceiling plaster at all level over a height of 5.00 mtr for every additional height 5.00 mtr or part thereof for ceiling, soffit etc.	1500.00	Sqm	151.18	226762.60

11.18	Extra for plaster internal wall of height more than 5.00 mtr for every additional height 5.00 mtr or part thereof.	400.00	Sqm	33.79	13516.95
12	ROAD WORK				
12.1	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 earth with lead upto 50 metres.	2200.00	sqm	180.51	397113.88
12.2	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).	25.00	cum	8343.04	208575.91
12.3	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).	330.00	cum	8100.77	2673253.07
12.4	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				
12.4.1	With material conforming to Grade-II (size range 53 mm to 0.075 mm ) having CBR Value-25	330.00	cum	2411.85	795910.37

12.5	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 achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	220.00	cum	2403.15	528693.00
12.6	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50 mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge.				
12.6.1	80 mm thick C.C. paver block of M-35 grade with approved colour design and pattern.	240.00	sqm	900.06	216013.85
12.7	Supplying and application and filling of groove in dummy joints of RCC floor size of 10 X 22 mm by polysulphide make of Dr fixit pidiseal P5 42P complete.	500.00	Metre	138.86	69431.85
12.8	Providing and fixing Block Name Signage's made of SS 304 (brush finish) 1mm thk. sheet for letters with raising(letter depth of 25-30mm). Including all fittings, accessories, fixtures, fabrication. The signage will be hollow illuminated back of the signage to be made of 3.5 mm thick acrylic. OSRAM make LEDS and IP 67 Grade OSRAM powersupply with 5 years warrenty fixed on the wall with necessary fixtures.	1.00	Each	34138.70	34138.70
12.9	Signage to be made of stainless steel sheet of 1 mm thick 304 grade brush finish including engraving/etching of letters of required size filled with colour as desired by engineer, fixing with ss screws on walls signages to be bilingual/trilingual language.	78.00	Each	2089.55	162985.07

13	SANITARY INSTALLATIONS				
13.1	Providing and fixing water closet squatting pan (Indian type W.C. pan ) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:				
13.1.1	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	1.00	each	5580.44	5580.44
13.2	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :				
13.2.1	W.C. pan with ISI marked white solid plastic seat and lid	160.00	each	5372.76	859642.12
13.3	Providing and fixing wash basin with C.I. brackets, 15 mm dia CP Brass single hole basin mixer of approved quality and make, including painting of fittings and brackets, cutting and making good the walls wherever required:- (a) White Vitreous China Wash basin size 550x400 mm with a 15 mm CP Brass single hole basin mixer	161.00	each	3265.89	525808.98
13.4	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 :				
13.4.1	Kitchen sink with drain board				
13.4.1.1	510x1040 mm bowl depth 225 mm	80.00	each	6196.63	495730.19
13.5	Providing and fixing CP Brass 32 mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	161.00	each	853.30	137381.71
13.6	Providing and fixing CP Brass Single lever telephonic wall mixer of quality & make as approved by Engineer in charge. (a) 15 mm nominal dia	160.00	each	5723.39	915741.73
13.7	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.	161.00	each	1325.93	213474.02



13.8	Providing and fixing toilet paper holder :				
13.8.1	C.P. brass	160.00	each	662.74	106037.77
13.9	Providing and fixing soil, waste and vent pipes :				
13.9.1	100 mm dia				
13.9.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	1600.00	metre	964.21	1542739.34
13.9.2	75 mm diameter :				
13.9.2.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	520.00	metre	795.13	413465.82
13.1	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.				
13.10.1	100 mm dia				
13.10.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	2.00	each	467.72	935.43
13.10.2	75 mm dia				
13.10.2.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	1.00	each	345.47	345.47
13.11	Providing and fixing plain bend of required degree.				
13.11.1	100 mm dia				
13.11.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	240.00	each	303.46	72829.22
13.11.2	75 mm dia				
13.11.2.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	80.00	each	208.21	16657.05
13.12	Providing and fixing double equal plain junction of required degree.				
13.12.1	100x100x100 mm				
13.12.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	1.00	each	627.28	627.28
13.12.2	75x75x75x75 mm				
13.12.2.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	1.00	each	345.47	345.47
13.13	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.				
13.13.1	100x100x100 mm				
13.13.1.1	Sand cast iron S&S as per IS - 3989	400.00	each	763.34	305335.20
13.14	Providing and fixing single equal plain junction of required degree :				
13.14.1	100x100x100 mm				
13.14.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	160.00	each	479.47	76714.77
13.14.2	75x75x75 mm				
13.14.2.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	160.00	each	278.59	44574.92
13.15	Providing and fixing single unequal plain junction of required degree :				

13.15.1	100x100x75 mm				
13.15.1.	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	160.00	each	454.81	72769.85
13.16	Providing and fixing Hubless centrifugally cast iron offsets epoxy coated inside & outside as per IS:15905				
13.16.1	130 mm offsets				
13.16.1.	With 100 mm dia	168.00	each	521.69	87643.44
13.16.1.2	With 75 mm dia	80.00	each	384.18	30734.72
13.17	Providing and fixing terminal guard :				
13.17.1	100 mm				
13.17.1.	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	40.00	each	352.77	14110.66
13.18	Providing and fixing shielded coupling for Hubless centrifugally cast iron pipe				
13.18.1	100 mm dia				
13.18.1.	SS 304 grade coupling with EPDM rubber gasket	2600.00	each	356.27	926304.94
13.18.2	75 mm dia				
13.18.2.	SS 304 grade coupling with EPDM rubber gasket	1680.00	each	320.81	538965.94
13.19	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings of diameter :				
13.19.1	100 mm	10.00	each	513.32	5133.17
13.19.2	75 mm	5.00	each	433.95	2169.75
13.2	Providing and fixing M.S. stays and clamps for sand cast iron/ centrifugally cast (spun) iron pipes of diameter :				
13.20.1	100 mm	400.00	each	115.20	46079.00
13.20.2	75 mm	10.00	each	74.46	744.62
13.21	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 :				
13.21.1	100 mm inlet and 100 mm outlet				
13.21.1.	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	241.00	each	704.67	169824.81
13.21.2	100 mm inlet and 75 mm outlet				
13.21.2.	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	322.00	each	487.67	157030.43
13.22	"Providing and fixing single unequal Y Tee 100x100x75 mm Sand cast iron S&S as per IS -	240.00	Each	651.77	156424.51
14	WATER SUPPLY				

14.1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply and all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
14.1.1	20 mm nominal dia Pipes	100.00	metre	276.24	27624.31
14.1.2	25 mm nominal dia Pipes	210.00	metre	331.12	69535.33
14.1.3	32 mm nominal dia Pipes	640.00	metre	427.76	273769.28
14.1.4	40 mm nominal dia Pipes	1280.00	metre	579.66	741960.91
14.1.5	50 mm nominal dia Pipes	320.00	metre	770.31	246497.90
14.2	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.				
14.2.1	20 mm nominal dia Pipes	2820.00	metre	443.31	1250129.46
14.2.2	25 mm nominal dia Pipes	1265.00	metre	517.23	654301.35
14.3	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge. External work				
14.3.1	65 mm nominal dia Pipes	250.00	metre	1380.72	345180.18
14.3.2	80 mm nominal dia Pipes	60.00	metre	1786.39	107183.15
14.3.3	100 mm nominal dia Pipes	30.00	metre	2697.86	80935.93
14.4	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc. Internal work - Exposed on wall				
14.4.1	20 mm dia nominal bore	250.00	metre	360.60	90150.08
14.4.2	25 mm dia nominal bore	5.00	metre	454.94	2274.68
14.4.3	32 mm dia nominal bore	5.00	metre	550.01	2750.06
14.4.4	40 mm dia nominal bore	5.00	metre	669.50	3347.49
14.4.5	50 mm dia nominal bore	5.00	metre	864.48	4322.38
14.5	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				

14.5.1	25 mm nominal bore	4.00	each	513.23	2052.94
14.5.2	20 mm nominal bore	4.00	each	445.25	1780.98
14.5.3	32 mm nominal bore.	32.00	each	568.65	18196.75
14.5.4	40 mm nominal bore	32.00	each	681.21	21798.63
14.5.5	50 mm nominal bore	20.00	each	846.58	16931.64
14.5.6	65 mm nominal bore	12.00	each	1436.59	17239.05
14.5.7	80 mm nominal bore	8.00	each	2147.73	17181.83
14.6	Providing and fixing gun metal non- return valve of approved quality (screwed end) :				
14.6.1	50 mm nominal bore				
14.6.1.1	Horizontal	1.00	each	1130.70	1130.70
14.6.2	65 mm nominal bore				
14.6.2.1	Horizontal	2.00	each	2018.68	4037.35
14.6.2.2	Vertical	2.00	each	1889.63	3779.25
14.7	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main :				
14.7.1	25 mm nominal bore	16.00	each	401.42	6422.69
14.8	Providing and fixing uplasticised PVC connection pipe with brass unions :				
14.8.1	45 cm length				
14.8.1.1	15 mm nominal bore	324.00	each	80.61	26116.10
14.9	Providing and laying S&S C.I. standard specials such as tees, bends, collars, tapers, caps etc. (Heavy class):				
14.9.1	Up to 300 mm dia	0.20	quintal	5238.23	1047.65
14.1	Providing and laying flanged C.I. standard specials such as tees, bends, collars, tapers, caps etc., suitable for flanged jointing as per IS : 1538 :				
14.10.1	Up to 300 mm dia	0.20	quintal	7349.84	1469.97
14.11	Providing and laying S&S centrifugally cast (spun) iron pipes (Class LA) conforming to IS :1536 :				
14.11.1	100 mm dia pipe	4.00	metre	1173.50	4693.99
14.12	Providing lead caulked joints to spun iron or C.I. pipes and specials, including testing of joints but excluding the cost of pig lead :				
14.12.1	100 mm diameter pipe	10.00	each	409.33	4093.35
14.13	Supplying pig lead at site of work.	0.10	quintal	24635.44	2463.54
14.14	Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) :				
14.14.1	100 mm diameter				
14.14.1.1	Class I	6.00	each	3950.85	23705.12

14.15	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 :				
14.15.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	2.00	each	1643.11	3286.22
14.16	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 :				
14.16.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	2.00	each	8957.20	17914.41
14.17	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 :				
14.17.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	2.00	each	15582.34	31164.67

14.18	Painting G.I. pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality :				
14.18.1	32 mm diameter pipe	5.00	metre	18.31	91.53
14.18.2	40 mm diameter pipe	5.00	metre	20.82	104.11
14.18.3	50 mm diameter pipe	5.00	metre	25.15	125.75
14.18.4	65 mm diameter pipe	5.00	metre	31.21	156.06
14.19	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) :				
14.19.1	20 mm nominal bore	1.00	each	285.97	285.97
14.19.2	32 mm nominal bore	1.00	each	403.27	403.27
14.19.3	40 mm nominal bore	1.00	each	520.57	520.57
14.19.4	50 mm nominal bore	1.00	each	679.31	679.31
14.19.5	65 mm nominal bore	1.00	each	937.41	937.41
14.2	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 :				
14.20.1	15 mm nominal bore	170.00	each	417.91	71044.78
14.21	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.				
14.21.1	15 mm nominal bore	80.00	each	676.75	54140.35
14.22	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
14.22.1	15 mm nominal bore	2.00	each	658.82	1317.64
14.23	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.				
14.23.1	15 mm nominal bore	322.00	each	552.86	178020.04
14.24	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931				
14.24.1	15 mm nominal bore	1126.00	each	473.57	533241.36
14.25	Providing and laying D.I. specials of class K-12 suitable for push-on jointing as per IS : 9523 :				
14.25.1	Up to 600 mm dia	1.60	quintal	16500.12	26400.20
14.26	Providing and laying D.I. Specials of Class K - 12 suitable for mechanical jointing as per IS : 9523 :				
14.26.1	Up to 600 mm dia	1.10	quintal	17555.95	19311.54
14.27	Providing push-on-joints to Centrifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes including testing of joints and the cost of rubber gasket :				
14.27.1	100 mm dia pipes	75.00	joint	98.50	7387.44
14.28	Providing, laying, jointing and testing S&S Centrifugally Cast Ductile Iron double chamber Class K-9 pressure pipes conforming to IS : 8329:2000 with restrained joints (bolt less), all complete.				

14.28.1	100 mm nominal dia pipe	300.00	metre	1542.63	462789.64
14.29	Providing and laying Double Flanged (Screwed/Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 :				
14.29.1	100 mm dia Ductile Iron Double Flanged	20.00	metre	1502.06	30041.23
14.3	Labour for cutting C.I. pipe with steel saw.			0.00	0.00
14.30.1	80 mm diameter C.I. pipe	1.00	each cut	119.77	119.77
14.30.2	100 mm diameter C.I. pipe	2.00	each cut	160.55	321.10
14.30.3	150 mm diameter C.I. pipe	2.00	each cut	301.56	603.12
14.31	Providing and fixing 15 mm inlet C.P. brass adjustable shower with long shower arm (heavy duty) complete.	161.00	Each	621.75	100102.25
14.32	Providing and Fixing C.P. hand spray (health faucet) with push button control and flexible hose connection with C.P. hook of approved make complete in all respects.	161.00	Each	898.00	144577.39
14.33	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.	800.00	Each	37.93	30345.51
14.34	Providing and fixing C.P. brass towel rail 24"" complete with brackets of approved equivalent make, fixed to wall with wooden cleats or pvc dash fasteners including C.P. brass screws etc. complete.	161.00	Each	768.53	123733.82
14.35	Providing and fixing floor drain or balcony drain made of 100 x 75 dia PVC trap as applicable connected with 75 dia PVC pipe Joint sealing with Silicon ,wrapping 1 mm thick PVC tape at joint complete in all complete including required bed block, cutting and making good the walls and floor wherever required.	160.00	Each	371.07	59371.65
14.36	Providing and fixing sound insulated PP piping system as per ON EN 1451-Part 1-6 & EN 12056 Part 1-5 with 3 layer pipe made of PP-C + PP-MV + PP-C in Blue Ral 5014 (halogen and calcium	210.00	Metre	604.44	126931.64
14.37	Providing, fixing, testing and commissioning of UPVC waste pipe conforming to IS : 4985-2000 class IV (6 Kg/Sq.cm) including all moulding fittings conforming to IS : 7834 (Part I to Part-7) 1987 such as tees, bends, reducers, coupling, adaptor etc. solvent welded joints as per manufacturer recommendation including cutting and making good the walls, floors, R.C.C. work etc. (For Rain water). 110 mm OD uPVC Pipe.	850.00	Metre	706.69	600684.42

14.38	Providing and fixing insulation with Armaflex elastomeric nitrile rubber sheets complete with plastering. 20 mm thick insulation with Arm flex elastomeric nitrile rubber sheets for hot water & cold water pipes exposed to sun complete with plastering 32 to 100 mm dia, nominal.	200.00	Metre	300.98	60196.26
14.39	Providing and fixing water metre of approved quality ann make i/c necessary arrangement etc complete. 20MM dia.	160.00	Each	2284.98	365597.43
14.4	Providing and fixing chrome plated copper pipe with brass union of approved make : 45 cm length 15 mm nominal bore.	320.00	Each	234.19	74940.22
14.41	"Providing and Fixing of C.P. brass nozzle cock of L&K or approved make and design 15 mm nominal bore."	80.00	Each	513.73	41098.38
14.42	Providing and fixing CPVC Gate Valve 20 mm dia with all complete.	165.00	Each	824.19	135990.64
14.43	Providing and fixing CP brass flange and extension piece as per requirement.	1360.00	Each	107.20	145790.39
14.44	Providing and fixing C.P. cast brass twin coat hooks fixed to PVC rawl plug with SS screws all complete.	160.00	Each	299.41	47906.32
14.45	Providing, fixing, testing and commissioning of CP brass swan neck wall mounted sink mixer with wall flange and swinging casted spout complete as required and making good the walls wherever required.	80.00	Each	3412.96	273037.02
14.46	Providing and fixing C.P. cast brass towel ring fixed with C.P. brass screws complete in all respects.	160.00	Each	482.81	77249.11
14.47	Providing and fixing of C.P. brass Soap Dish fixed with C.P. brass screws complete in all respects.	160.00	Each	415.27	66443.47
14.48	"P/F gun metal ball valve of Zoloto, Leader or approved equivalent make & quality with necessary arrangements etc. complete. " 50 mm nominal bore	4.00	Each	3359.45	13437.78



14.49	<p>""Providing, installing, testing and commissioning of fixed speed automated water supply system for filling overhead tanks comprising of two Nos. clear water open well submersible pumping sets suitable for 400/440 volts, 3 phase, 50 cycles AC supply, dry running Protection, motor control centre, necessary power and control cabling from MCC to pumps including required rating of MCB, one No. 450 litres capacity M.S diaphragm tank with interchangeable butyl rubber membrane, complete in all respects. The system includes delivery pipes and delivery header of Schedule 80 CPVC pipes of suitable diameter connecting to the main line of 100 mm dia (CI pipe Class LA) outside pump room with suitable valves, NRVs, pressure switches, pressure gauge etc. complete as per requirement, power box, equipped with fuses/ isolators/circuit breakers as required.</p> <p>For Domestic Water Supply. Set of two pumps (1 Working + 1 Standby) Capacity - 6.25 LPS (Each) at 45 M head, Max. Head &amp; Flow - 52 M &amp; 4 LPS H.P. - 7.50 HP. Suction &amp; Delivery: 65x50 mm, Diaphragm tank 1nos, Control panels- 2 Nos.""</p> <p>"</p>	1.00	One Set of Two pumps	236663.00	236663.00
14.5	"Providing and installation of multi grade sand filter MGF 800 of Ion Exchange (I) Ltd. or approved equivalent make of 800 mm dia in MS construction with flow rate of 12000 LPH i/c interconnecting piping & valves etc. complete in all respect as per direction of Engineer- In Charge.	2.00	One set	217281.27	434562.55
14.51	P/F Motorized valve in tank filling line near the tanks i/c required fittings and making by pass arrangement but excluding the cost of ball valves etc. complete in all respect of Honey wall, Belimo or approved equivalent make, 50 mm dia	2.00	Each	20294.00	40587.99
14.52	P/F level controllers/ float switch with low voltage relays, float type with PVC shroud, with 10 meter minimum cable/wiring from tank top to probes of required length. To open solenoid/Motorized valve on low water level and close when high water level in the OH/UG water tank, Nolta or approved equivalent make.	2.00	Each	3754.00	7508.01
15	DRAINAGE				

15.1	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 :				
15.1.1	100 mm diameter	5.00	metre	365.80	1828.98
15.1.2	150 mm diameter	32.00	metre	573.76	18360.35
15.1.3	200 mm diameter	48.00	metre	800.16	38407.52
15.1.4	250 mm diameter	200.00	metre	1241.53	248305.43
15.2	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 :				
15.2.1	100 mm diameter S.W. pipe	5.00	metre	795.54	3977.69
15.2.2	150 mm diameter S.W. pipe	32.00	metre	972.91	31133.17
15.2.3	200 mm diameter S.W. pipe	48.00	metre	1134.20	54441.82
15.2.4	250 mm diameter S.W. pipe	200.00	metre	1311.58	262315.49
15.3	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 :				
15.3.1	150 mm diameter S.W. pipe	10.00	metre	612.76	6127.65
15.3.2	250 mm diameter S.W. pipe	50.00	metre	838.54	41927.10
15.3.3	300 mm diameter S.W. pipe	20.00	metre	967.55	19351.03
15.4	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:				
15.4.1	100x100 mm size P type				
15.4.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	2.00	each	2232.75	4465.49
15.4.2	150 x 100 mm size P type				
15.4.2.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	8.00	each	2254.64	18037.11
15.4.3	180x150 mm size P type				
15.4.3.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	27.00	each	2310.67	62388.10
15.5	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 :				
15.5.1	150 mm dia. R.C.C. pipe	75.00	metre	458.85	34413.91
15.5.2	250 mm dia. R.C.C. pipe	175.00	metre	741.98	129846.62
15.5.3	300 mm dia. R.C.C. pipe	110.00	metre	819.91	90189.66

15.6	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 :				
15.6.1	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) :				
15.6.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	34.00	each	10530.68	358042.96
15.6.2	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (heavy duty) 560 mm internal diameter, total weight of cover and frame to be not less than 208 kg (weight of cover 108 kg and weight of frame 100 kg) :				
15.6.2.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	10.00	each	27094.79	270947.88
15.7	Extra for depth for manholes :				
15.7.1	Size 90x80 cm				
15.7.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	30.00	metre	7277.48	218324.40
15.7.2	Size 120x90 cm				
15.7.2.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	10.00	metre	8728.87	87288.69

15.8	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.	150.00	each	456.58	68487.67
15.9	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 :				
15.9.1	For pipes 250 to 300 mm diameter	3.00	each	760.62	2281.85
15.1	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 :				
15.10.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	40.00	each	9499.92	379996.70
15.11	Extra for providing polycrrete cover with frame of size rectangular or Circular size in the place of C.I cover with frame .	42.00	Each	1236.91	51950.19
16	ALUMINIUM WORK				

16.1	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) :				
16.1.1	For fixed portion				
16.1.1.1	Powder coated aluminium (minimum thickness of powder coating 50 micron)	15000.00	kg	437.78	6566751.88
16.1.2	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)				
16.1.2.1	Powder coated aluminium (minimum thickness of powder coating 50 micron)	19500.00	kg	523.17	10201842.99
16.2	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):				
16.2.1	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm)	1100.00	sqm	1241.24	1365362.41
16.3	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.				
16.3.1	255 X 19 mm	320.00	each	319.12	102119.24
16.3.2	355 X 19 mm	2214.00	each	268.66	594805.97

16.4	<p>""Providing and fixing anodized aluminium work for doors, windows, ventilators and partitions with extruded built-up standard tubular sections / appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold-fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/Neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitered and jointed mechanically wherever required including cleat angle, aluminium snap beading for glazing/paneling, CP Brass/stainless steel screws, all complete as per architectural drawings and the direction of the Engineer-in-charge, (Glazing and paneling to be paid for separately).</p> <p>For Aluminium Louvered fixed in door / windows / ventilator including fixing arrangement. Anodised aluminium ( anodised transparent or dyed to required shade according to IS:1868, Minimum anodic coating of Grade AC 15), "" For payment G-plate and Louvered plate should be measured."</p>	3000.00	Kg	630.25	1890739.67
16.5	<p>Extra for providing and fixing of Aluminum System window over basic item 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.For fixed portion or For shutters of doors, windows &amp; ventilators Powder coated aluminium (minimum thickness of powder coating 50 micron) i/c all corner cleat complete.</p>	29600.00	Kg	35.46	1049558.84
17	WATER PROOFING				

17.1	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.	3500.00	sqm	508.82	1780881.50
17.2	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":				
17.2.1	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	1050.00	sqm	1389.13	1458588.27
17.3	Grading roof for water proofing treatment with				
17.3.1	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	1.00	cum	6631.73	6631.73

17.4	Extra for finishing the surface by providing and laying China mosaic finish with approved broken ceramic tile piece (assorted colour 30% and white tile 70% pieces of size not less than 20 mm in either direction), as specified and selected by the Engineer, set evenly over vaults, domes, terrace and similar surfaces to required profiles and pattern etc. laid over green brick bat coba , grouted with mortar as per pattern and instructions of the Engineer in charge including pointing neatly with white cement cleaning the finished surfaces and necessary scaffolding, curing etc. complete.	1050.00	Sqm	340.56	357590.50
18	RAIN WATER HARVESTING & TUBEWELLS				
18.1	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.				
18.1.1	All types of soil				
18.1.1.1	400 mm dia	60.00	metre	817.02	49021.19
18.2	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.				
18.2.1	200 mm nominal size dia	30.00	metre	918.08	27542.26
18.3	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.				
18.3.1	200 mm nominal size dia	30.00	metre	1035.46	31063.74
18.4	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.	4.00	cum	1244.99	4979.96



18.5	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.	4.00	cum	1268.45	5073.80
18.6	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.	8.00	cum	1268.45	10147.60
18.7	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.	2.00	each	1154.41	2308.82
18.8	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:				
18.8.1	200 mm dia	1.00	each	264.82	264.82
18.9	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.				
18.9.1	200 mm clamp	1.00	each	1891.36	1891.36
18.1	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).				
18.10.1	200 mm dia	1.00	each	294.88	294.88
19	<b>FIRE FIGHTING WORK</b>				
19.1	Providing & fixing standard carbon steel fireman axe with rubber insulated handle tested to 20000 Volts. (MAKE : Newage / Safeguard / Padmini / Getech).	23.00	Each	543.32	12496.47
19.2	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)	1.00	One Set	83993.57	83993.57
19.3	Providing & fixing of pressure switch in M.S. pipe line including connection etc. as required. Providing & fixing of pressure switch in M.S. pipe line including connection etc. as required.	1.00	Each	1274.84	1274.84

19.4	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.	1.00	Each	15044.12	15044.12
19.5	Supply, installation, testing, trial run and commissioning of hydrants all complete as required and as approved. Fire Hose Cabinet "Supplying and fixing single headed internal	23.00	Each	5062.26	116431.93
19.6	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.	22.00	Each	7153.46	157376.10
19.7	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).	46.00	Each	3667.85	168721.04
19.8	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 :	23.00	Each	1370.50	31521.40
19.9	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/cm <sup>2</sup> complete as required. 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/cm <sup>2</sup> complete as required.	23.00	Each	1089.30	25054.01
19.1	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 :	1.00	One Set	11523.05	11523.05

19.11	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 oaltar/asphalt tape as per IS 10221, refilling the trench etc. of following sizes complete as required. 150 nominal bore (class C)	25.00	Metre	3136.80	78420.05
19.12	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 : (Above Ground) Welded joint above 50mm diameter pipe. 150 mm nominal bore (class C)	35.00	Metre	2947.14	103150.00
19.13	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 : (Above Ground) Welded joint above 50mm diameter pipe. 100 mm nominal bore (class C)	175.00	Metre	2106.87	368702.07
19.14	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 : (Above Ground)  Welded joint above 50mm diameter pipe.  80 mm nominal bore (class C)	10.00	Metre	1554.38	15543.83

19.15	<p>Providing, laying, testing &amp; 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 : (Above Ground)</p> <p>Threaded joint upto 50mm diameter pipe.</p> <p>50 mm nominal bore (class C)</p>	8.00	Metre	1056.32	8450.56
19.16	<p>Providing, laying, testing &amp; 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 : (Above Ground)</p> <p>Threaded joint upto 50mm diameter pipe.</p> <p>25 mm nominal bore (class C)</p>	10.00	Metre	613.51	6135.07
19.17	<p>Providing and fixing carbon-di-oxide type fire extinguishers consisting of welded M.S. cylindrical body, internal discharge tube, discharge nozzle, suspension bracket, conforming to IS 2878, finished externally with red enamel paint and fixed to wall with brackets complete with internal charges.</p> <p>Capacity 4.5 kg</p>	23.00	Each	7118.00	163714.03

19.18	Providing & Fixing of stored pressure Fire Extinguisher ABC powder type (Mono Ammonium Phosphate Powder) Magnetic Pressure Gauge having the facility to check at site, Discharge Time less than 9 Secs, Controllable discharge mechanism, Range minimum 4 Meters, applicable on Class A,B,C and electrically started Fire, A Rating- 21A, B Rating 55B as per BS EN-3 BIS 15683 marked, Can Construction : Deep drawn & CO2 Mig welded, Valve Construction : Forging & Machining, Internal Coating of Can : Epoxy Powder coating, External Coating of Can : Epoxy Polyester Powder coating, Sheet metal thickness : 1.60MM, Helium LeakDetection Tested, Warranty. Capacity 6 Kg.	23.00	Each	2930.96	67411.98
19.19	Providing and fixing angle iron (40 mm x 40 mm x 5 mm) MS door frame 900x2100 door capable of accommodating fire hose reel, landing valve, hose pipes, fittings & accessories. The door shall have a front glass with lock and key arrangement & shall be painted with post office red colour (approval shall be taken on the basis of submitted sample before ordering) Cost of fire extinguishers not included in item rate. (Liasioing with civil contractor for making 900x600x2100 Recessed type mansoary box (by civil contractor).	23.00	Each	9236.51	212439.62
19.2	Providing and fixing of TAC approved 1.6mm thick M.S. fire hose cabinet (750x600x250mm) made out of 16 gauge M.S. sheet capable of accommodating landing valve, hose pipes, fittings & accessories. The box shall have a front glass door with lock and key arrangement & shall be painted with post office red colour (approval shall be taken on the basis of submitted sample before ordering) - for external and roof hydrant.	2.00	Each	4889.92	9779.83

19.21	<p>Supply, installation, testing and commissioning of following integrated, cubicle type, dead front, extensible, sheet steel control panel. The panel shall be suitable for 440 volts, 50 cycles, 4 wire supply</p> <p>The following components and accessories shall be mounted with in each control panel.</p> <p>One no 100 amps TP incoming MCCB with the following:</p> <p>0-500 volts 96 x96 square mm voltmeter with selector switch and control fuses- 1 SET</p> <p>0-100 amps 96 x96 square mm ammeter with CT's and selector switch- 1 SET</p> <p>Phase indicating lamp with toggle switches.</p> <p>Indication lamps for ON/OFF/TRIP status</p> <p>Outgoing Feeders / Starters as below:</p> <p>100 ATP MCCB with star / delta as starter suitable for 30 HP motor for Downcomer Pump - 1 Set</p> <p>Provision in control panel to connect flow switch for automatic operation of roof fire pumps.</p>	1.00	One job	47104.67	47104.67
19.22	<p>Providing, installation, testing and commissioning of non-return valve of following sizes conforming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc.as required :</p> <p>80 mm dia</p>	1.00	Each	6342.05	6342.05
19.23	<p>Providing, installation, testing and commissioning of non-return valve of following sizes conforming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc.as required :</p> <p>100 mm dia</p>	1.00	Each	9111.90	9111.90
19.24	<p>Providing, installation, testing and commissioning of non-return valve of following sizes conforming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc.as required :</p>	2.00	Each	13121.13	26242.27
19.25	<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>80 mm dia</p>	23.00	Each	4108.19	94488.33

19.26	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 : 100 mm dia	1.00	Each	5497.65	5497.65
19.27	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 : 150 mm dia	1.00	Each	7388.47	7388.47
19.28	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 : 150 mm dia.pipe	1.00	Each	18769.69	18769.69
19.29	Providing and fixing C.I. double acting air valves of approved quality with bolts, nuts, rubber insertions etc. complete ( The tail pieces, tapers etc. if reqd. will be paid separately) 50 mm dia.	3.00	Each	4264.66	12793.97
	<b>Total</b>				<b>275038596.48</b>