

Name of Work : Construction of Visitor Hostel Extension building (G+7) storied including connecting corridors with existing blocks, comprising internal & external electrification, plumbing, firefighting, fire alarm System, water tanks, road, parking & HVAC (Low side) at IIT Kanpur (U.P.) Subhead: Civil, structure, plumbing & ff					
Section:1 Schedule of Quantities for civil & Structural works					
Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	SECTION - 1.00				
1.0	EARTHWORK.				
1.1	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.				
1.1.1	All kinds of soil	7130	Cum	177.50	1,265,557.25
1.2	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.				
1.2.1	All kinds of soil.	74	Cum	260.30	19,210.14
1.3	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.				
1.3.1	All kinds of soil.	5199	Cum	126.80	659,207.84
1.4	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 and for all lift.	4608	Cum	196.00	903,246.40
1.5	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	172	Cum	2123.75	365,709.75
1.6	Disposal of earth by mechanical transport including loading, unloading for a lead upto 2 Km.	2973	Cum	245.82	730,699.95
1.7	Extra for levelling & neatly dressing of disposed soil completely as directed by Engineer-in-Charge.	2973	Cum	93.05	276,591.13
1.8	Supplying chemical emulsion in sealed containers including delivery as specified.				
1.8.1	Chlorpyriphos/ Lindane emulsifiable concentrate of 20%	984	litre	235	230,994.00
1.9	Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) :				
1.9.1	Along external wall where the apron is not provided using chemical emulsion @ 7.5 litres / sqm of the vertical surface of the substructure to a depth of 300 mm including excavation channel along the wall & rodding etc. complete:				
1.9.1.1	With Chlorpyriphos/ Lindane E.C. 20% with 1% concentration	213	metre	38.9	8,293.48
1.9.2	Along the external wall below concrete or masonry apron using chemical emulsion @ 2.25 litres per linear metre including drilling and plugging holes etc.:				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
1.9.2.1	With Chlorpyriphos/ Lindane E.C. 20% with 1% concentration	213	metre	53.45	11,395.54
1.9.3	Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor:				
1.9.3.1	With Chlorpyriphos/Lindane E.C. 20% with 1% concentration	1558	Sqm	310.05	483,057.90
SUM CARRIED OVER TO SUMMARY PAGE					4,953,963.38
SECTION -2.00					
CONCRETE WORK					
2.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
2.1.1	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)	443	Cum	6812.00	3,016,353.60
2.1.2	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)	5	Cum	7878.50	39,392.50
2.2	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor etc., up to floor five level, excluding the cost of centering,shuttering and finishing:				
2.2.1	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)	15	Cum	9311.40	139,671.00
2.2.2	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)	49	Cum	9895.20	486,843.84
2.3	Providing and laying machine mixed brickbat cement concrete in volumetric proportion 1:3:6 (1 cement : 3 coarse sand : 6 brickbats aggregates 40mm and down) for specified thickness, for sunk floor, terraces at any height above plinth level raft at any depth below floors, pavements roads, plinth protection, etc. including centering and shuttering if required, laying spreading, ramming, consolidating as per requirement and curing etc. complete as directed.	123	Cum	6901.72	848,911.56
2.4	Providing and laying machine mixed Autoclaved aerated cement (AAC) blocks concrete in volumetric proportion 1:4:8 (1 cement : 4 coarse sand :8 AAC block aggregate 40 mm nominal size) for specified thickness, for sunk floor, terraces at any height above plinth level etc. including centering and shuttering if required, laying spreading, ramming, consolidating& laid in slope as per requirement and curing etc. complete as directed.	185	Cum	8642.0	1,594,450.02

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
2.5	Providing and laying damp-proof course 50mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20mm nominal size derived from natural sources).	70	Sqm	495.75	34,553.78
2.6	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.	492	per bag of 50 kg cement used	18.15	8,929.80
2.7	Providing & applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	70	Sqm	146.15	10,186.66
SUM CARRIED OVER TO SUMMARY PAGE					6,179,292.75
SECTION - 3.00					
REINFORCED CEMENT CONCRETE					
3.1	Centering and shuttering including strutting, propping etc. and removal of form for				
3.1.1	Foundations, footings, bases of columns, etc. for mass concrete	246	sqm	392.15	96,468.90
3.1.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	3911	sqm	842.50	3,295,354.50
3.1.3	Suspended floors, roofs, landings, balconies and access platform.	7741	sqm	927.25	7,177,656.80
3.1.4	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	6298	sqm	736.40	4,637,552.64
3.1.5	Columns, Pillars, Piers, Abutments, Posts and Struts.	5531	sqm	961.30	5,316,854.17
3.1.6	Stairs, (excluding landings) except spiral-staircases.	267	sqm	764.95	203,859.18
3.2	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	50	sqm	392.15	19,607.50
3.3	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc., including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured).				
3.3.1	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured).	3916	sqm	384.30	1,504,726.65

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
3.4	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 1.10 times of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.				
3.4.1	All works upto plinth level				
3.4.1.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	10	Cum	9504.75	95,047.50
3.4.1.2	Concrete of M30 grade with minimum cement content of 350 kg /cum	2087	Cum	9655.70	20,150,480.33
3.4.1.3	Concrete of M40 grade with minimum cement content of 390 kg /cum	98	Cum	9958	979,832.76
3.4.2	All works above plinth level upto floor V level				
3.4.2.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	37	Cum	9860.40	363,848.76
3.4.2.2	Concrete of M30 grade with minimum cement content of 350 kg /cum	33	Cum	10011.35	328,372.28
3.4.2.3	Concrete of M35 grade with minimum cement content of 370 kg /cum	2124	Cum	10162.35	21,582,798.93
3.4.2.4	Concrete of M40 grade with minimum cement content of 390 kg /cum	1122	Cum	10313.30	11,569,047.41
3.5	extra for RCC/BMC/RMC work above floor V level for each four floors or part thereof.				
3.5.1	extra for rcc (5th- 9th floor level)	1189	Cum	355.65	422,867.85
3.6	Extra for using M-30/M-35 Grade Self-compacting Cement Concrete				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
3.6.1	Extra for using Providing and laying in position ready mixed Self Compacting concrete(M-30/M-35 Grade) work of specified grade of at all level & height, including all leads, lifts, transportation and consumables with cement content as per relevant IS codes. Cost to include all admixtures, additives, bonding agents, accessories, temperature control and other devices required to produce concrete. All work to be performed as per drawings, specifications to the satisfaction and approval of the Engineer-in-Charge.	1283	Cum	691.11	886,901.46
3.7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
3.7.1	hot rolled deformed bar / Thermo-Mechanically Treated bars of grade Fe-500 or more	209100	kg	107.85	22,551,435.00
3.8	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
3.8.1	hot rolled deformed bar / Thermo-Mechanically Treated bars of grade Fe-500 or more	546452	kg	107.85	58,934,848.20
3.9	Providing & Fixing Expansion joint filler Board of Dawn Color,manufactured by The Supreme Industries Limited or approved equivalent make, thickness built up using minimum 10 MM specifically extruded high performance sheet, minimum density 28 kg / Cu. Mt & compression strength of 0.21 Kg / Sq.mtr, when tested as per ASTM D-3575, including using suitable adhesive with low VOC as per griha norms or double sided adhesive tape to the casted surface to form the expansion joint of required width. Expansion joint board will become one side of the shuttering while the expansion joint is being created. This item shall included preparation of surfaces by cleaning of dust , oil, loose aggregate etc., also include the cost and transportation of all material, labour charges, taxes etc. complete at all heights & all levels as per drawing and as directed by Engineer-in-charge.				
3.9.1	Expansion joint 100 mm Thick.	152	sqm	1465.00	222,240.50
3.10	Providing and fixing in position Stainless steel Grade 304 plate-1.0 mm thick as per design for expansion joints.				
3.10.1	200 mm wide	20	metre	859.75	17,195.00
3.10.2	300 mm wide	20	metre	1208.05	24,161.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
3.11	Providing and fixing of heavy duty expansion joint system related with floor location as per drawings and direction of Engineer-In-Charge. The joints system will be of mill finish extruded aluminum base members, self aligning / self centering arrangement and support plates etc. as per ASTM B221-02. The system shall be such that it provides floor to floor /floor to wall expansion control system for various vertical locations in load application areas that accommodates multi directional seismic movement without stress to it's components. System shall consist of metal profiles with a universal aluminum base member designed to accommodate various project conditions and finish floor treatments. The cover plate shall be designed of width and thickness required to satisfy projects movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self-centering arrangement that freely rotates / moves in all directions. The Exp. Joint Cover should have an Articulated Telescope Design so as to accommodate the movements in 3 directions.. Provision of Moisture/water Barrier Membrane in the Joint System to have watertight joint is mandatory requirement all as per the manufacturers design and as approved by Engineer -in-Charge including cost of all materials and fixtures, preparation of surface for receiving the joints and system to be installed by company authorised vendor,including all leads and lifts etc. (Material shall conform to ASTM 6063).				
	Make: Migua FSL 113/35 & Migua FSL 113/35 corner , CS ALS-400 & CS ALSW-400 , Vexcolt Megatec 300-A01-100 & 300-A02-100 or approved equivalent				
3.11.1	Floor Joint of 100 mm gap with Moisture / Water Barrier Membrane	41	metre	8140.00	333,740.00
3.12	Providing and fixing of expansion joint system related with wall / ceiling joint (internal / external) location as per drawings and direction of Engineer-In- Charge. The joints shall be of mill finish extruded aluminum base members, self aligning / centering arrangement and support plates as per ASTM B221- 02. The material shall be such that it provides an Expansion Joints System suitable for vertical wall to wall/ wall to corner application/ Ceiling to Ceiling / ceiling to wall corner, both new and existing construction with no slipping down tendency amongst the components of the Joint System. The Joint System shall utilize light weight aluminum profiles exhibiting minimal exposed aluminum surfaces mechanically snap locking the multicellular to facilitate movement. Preparation of surface for receiving the joints and system to be installed by company authorised vendors as per the manufacturers design and as approved by Engineer -in-Charge all complete including all leads & lifts, cost of all materials and fixtures etc. (Material shall conform to ASTM 6063.)				
	Migua WJC 100 & Migua WJC 100 Corner, CS SM4N & CS SM4NC, Vexcolt Megatec 360-A07-100 & 360-A09-100 or approved equivalent				
3.12.1	Expansion Joint of 100 mm gap (Internal)	97	metre	3725.00	360,431.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
3.13	Providing and fixing of expansion joint system related with wall / ceiling joint (internal / external) location as per drawings and direction of Engineer-In- Charge. The joints shall be of mill finish extruded aluminum base members, self aligning / centering arrangement and support plates as per ASTM B221- 02. The material shall be such that it provides an Expansion Joints System suitable for vertical wall to wall/ wall to corner application/ Ceiling to Ceiling / ceiling to wall corner, both new and existing construction with no slipping down tendency amongst the components of the Joint System. The Joint System shall utilize light weight aluminum profiles exhibiting minimal exposed aluminum surfaces mechanically snap locking the multicellular to facilitate movement. Preparation of surface for receiving the joints and system to be installed by company authorised vendors as per the manufacturers design and as approved by Engineer -in-Charge all complete including all leads & lifts, cost of all materials and fixtures etc. (Material shall conform to ASTM 6063.)				
	Make: Migua WJC 100 & Migua WJC 100 Corner, CS SM4N & CS SM4NC, Vexcolt Megatec 360-A07-100 & 360-A09-100 or approved equivalent				
3.13.1	Expansion Joint of 100 mm gap with Moisture / Water Barrier Membrane (External)	72	metre	4525.00	326,524.00
SUM CARRIED OVER TO SUMMARY PAGE					161,401,852.32
SECTION - 4.00					
MASONRY WORK					
4.1	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:				
4.1.1	With cement mortar 1:6 (1 cement : 6 coarse sand).	79	cum	7132.25	563,447.75
4.2	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 :				
4.2.1	With cement mortar 1:6 (1 cement : 6 coarse sand)	766	cum	9105.95	6,971,515.32
4.3	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundations and plinth in :				
4.3.1	cement mortar 1:4 (1 cement : 4 coarse sand)	183	sqm	905.05	165,352.64
4.4	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.				
4.4.1	cement mortar 1:4 (1 cement : 4 coarse sand)	8765	sqm	1123.80	9,850,387.95
4.5	Extra for providing and placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry.	1631	sqm	104.80	170,955.00
4.6	Brick edging 7cm wide 11.4 cm deep to plinth protection with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 including grouting with cement mortar 1:4 (1 cement : 4 fine sand).	274	metre	59.45	16,292.27
4.7	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.	313	cum	169.45	53,071.74

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
4.8	Extra for half brick masonry in superstructure, above floor V level for every four floors or part thereof by mechanical means.	4098	cum	15.00	61,465.50
4.9	Extra for forming cavity 7 cm wide in cavity walls at all heights & levels including providing necessary weep and vent holes & including cost of providing & fixing precast cement concrete core 1:2:4 block 300 mm long of 110mm x 70mm section at not less than 3 blocks per sqm as per approved design complete as directed. Half brick wall shall be paid under relevant item. Measurement under this item shall only be made for one side elevation of 115 mm thick brick wall.	3567	sqm	310.09	1,106,091.03
4.10	Providing and fixing in position 28 SWG Aluminium sheet profiled to the required shape in cavity walls as indicated on drawing as per the directions of the Architect with 75mm laps at the joints in the sheet. The rate shall include providing and laying cement concrete fillet in mix 1:3:6 (1 cement : 3 coarse sand : 6 coarse aggregate 12.5 mm nominal size) at the bottom of cavity etc complete as directed. The net area of the aluminum sheet shall be considered for payment.(lapse and wastage shall not be paid.)	635	sqm	911.24	578,728.52
4.11	Providing and fixing in 19 mm dia (OD), 150mm long, 2 mm wall thickness PVC conduit pipes of approved make in cavity walls with galvanized mosquito netting over mouth of pipe, pipes placed at the required spacing and aligning the same vertically and horizontally etc. complete as directed. The net length of PVC conduit pipes shall be considered for payment.	318	metre	144.63	45,927.26
4.12	Providing and fixing 50 mm thick extruded polystyrene rigid insulation board of required size between cavity wall, complying with ISO 4898:2008 & ASTM C 578-08b - type VI, having thermal conductivity of 0.0289 W/m K as per ASTM C 578 (measured as per IS 3346), compressive strength of > 350 kPa listed as per ASTM D 1621, density of 34-36 kg/cum as per ASTM D 1622, water absorption < 1% by volume as per ASTM D 2842, oxygen index of 24.1 to 28.1 listed as per ASTM D 2863, cell size 0.4 mm of dia (max) as per ASTM D 3576. Fire retardant property as per DIN 4102, Part 1 of class B2 and as per ASTM E84 class A, fixed with suitable water based adhesive and fastener, complete in all respect as per the directions of Engineer-in-Charge.	1500	sqm	1004.55	1,506,423.18
SUM CARRIED OVER TO SUMMARY PAGE					21,089,658.16
SECTION - 5.00					
MARBLE WORK					
5.1	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 to edges to give high gloss finish etc. complete at all levels.				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	Granite stone slab colour black, Cherry/Ruby red or south indian granite stone as approved				
5.1.1	Area of slab over 0.50 sqm	196	sqm	5136.30	1,005,430.73
5.2	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.				
5.2.1	Granite work	278	metre	510.95	142,248.48
5.3	Extra for fixing marble /granite stone over and above coresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based (Araldite or equivalent) adhesive including cleaning etc. complete.	278	metre	568.55	158,284.32
5.4	Extra for providing opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc. complete.	131	each	978.70	127,720.35
5.5	Providing and fixing 6 mm thick beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick WPC (wood plastic composite) board backing with C.P. brass screws and washers complete as per drawing.	318	sqm	4086.94	1,297,806.49
	SUM CARRIED OVER TO SUMMARY PAGE				2,731,490.36
	SECTION - 6.00				
	WOOD AND P.V.C. WORK				
6.1	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:				
6.1.1	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	509	sqm	2392.65	1,216,901.79
6.2	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.				
6.2.1	1.0 mm thick	1066	sqm	897.30	956,297.48
6.3	Extra for providing lipping with 2nd class teak wood battens 25mm minimum depth on all edges of shutters (over all area of door shutter to be measured)	479	sqm	462.35	221,410.17
6.4	Providing and fixing satin stainless steel grade 304 pull handle of approved quality including the cost of necessary stainless steel screws and other incidental charges complete as per detailed Architectural Drawings and as directed by Engineer-in-charge : Manufacturer's warranty/guarantee card needs to be submitted.				
6.4.1	19 mm dia x 200 mm long (DormaKaba : TGDI-D 200 , Kich PRDH1908S & Hafele or approved equivalent).	5	Pair	1009.29	5,046.45

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
6.5	Providing and fixing of stainless steel grade 304 sliding door bolt satin S.S. finish of Haffle , Kich or equivalent make , including the cost of nut & screws and other incidental charges complete.	10	each	930.7	9,307.30
6.5.1	300 x 16 mm. Hafele 911.81.881, Kich PRAD12612C or approved equivalent				
6.6	Providing and fixing stainless steel brush/satin finish lever action flush bolt with 19mm projectng bolt including the necessary Stainless steel screws and other incidental charges complete as per detailed Architectural Drawings and as directed by Engineer-in-charge : , Manufacturer's warranty/guarantee card needs to be submitted.				
6.6.1	172 mm long for wood door (DormaKaba 3100-0 / Hafele / Kich or approved equivalent.)	10	each	1218.89	12,188.90
6.6.2	300 mm long for wood door (DormaKaba 3100-1 / Hafele / Kich or approved equivalent.)	10	each	1439.69	14,396.90
6.6.3	300 mm long for metal door (DormaKaba 3101-1 / Hafele / Kich or approved equivalent.)	40	each	1768.32	70,732.80
6.7	Providing and fixing satin stainless steel grade 304 pull handle of approved quality including the cost of necessary stainless steel screws and other incidental charges complete as per detailed Architectural Drawings and as directed by Engineer-in-charge : Manufacturer's warranty/guarantee card needs to be submitted.				
6.7.1	22 mm dia x 300 mm long (DormaKaba : TGDI-D 300 / Hafele / Kich or approved equivalent.)	5	Pair	2078.48	10,392.40
6.8	Providing and fixing satin stainless steel grade 304 recessed oval flush pull handle of approved quality including the cost of necessary stainless steel screws and other incidental charges complete as per detailed Architectural Drawings and as directed by Engineer-in-charge : Manufacturer's warranty/guarantee card needs to be submitted.				
6.8.1	Make : DormaKaba : 1207 , Hafele , Kich or approved equivalent).	171	Each	1122.47	191,403.58
6.9	Providing and fixing Satin stainless steel finish half dome with 45 mm dia door Stopper of approved quality with necessary SS screws etc. all complete as per detailed Architectural Drawings and as directed by Engineer-in-charge : Manufacturer's warranty/guarantee card needs to be submitted. (DormaKaba : 9401 / Hafele / Kich or approved equivalent.)	144	each	226.30	32,485.37
6.10	Providing and fixing Satin stainless steel wall mounted Door Stopper with rubber buffer of approved quality with necessary SS screws etc. all complete as per detailed Architectural Drawings and as directed by Engineer-in-charge : Manufacturer's warranty/guarantee card needs to be submitted. Make: (DormaKaba : 9402 / Hafele / Kich or approved equivalent.)	124	each	274.67	33,932.73

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
6.11	Providing and fixing rack and pinion door closer Size 2/3/4, with std. arm and with two independent closing valves and latching speed adjustable by arm. Non-handed. UL Listed. Durability - 500,000 Cycles, Fire Rated - 2 Hours, Corrosive resistance - Moderate, Finish:Silver, with necessary accessories and screws all complete as per detailed Architectural Drawings and as directed by Engineer-in-charge : Manufacturer's warranty/guarantee card needs to be submitted, installation has to be certified by the Manufacturer in writing. (DormaKaba : TS Kompakt, size 2/3/4, std arm / Hafele / Kich or approved equivalent).)	20	each	3003.09	60,061.80
6.12	Providing and fixing Satin Stainless Steel grade 304 5 Knuckle, 2 Ball bearing butt hinges size 4" x 3" x 3mm with stainless steel screws all complete as per detailed Architectural Drawings and as directed by Engineer-in-charge, Suitable for wooden door weighs upto 120kgs. Template Drilled Approved to EN 1935. Make - dormakaba 3043F WD ,Hafele, Kich or approved equivalent)	820	each	333.39	273,226.44
6.13	Providing and fixing Satin Stainless Steel grade 304 5 Knuckle, 2 Ball bearing butt hinges size 4" x 3" x 3mm with stainless steel screws all complete as per detailed Architectural Drawings and as directed by Engineer-in-charge, Suitable for metal door weighs upto 120kgs, grade 13. Template Drilled Approved to EN 1935. Make - dormakaba 3043F MT ,Hafele, Kich or approved equivalent)	512	each	346.84	177,429.47
6.14	Providing & fixing mortice sash lock comprising of satin stainless steel lever handle pairs with round rose & escutcheons prepared for Euro profile cylinder and spindle 114 in satin stainless steel finish complete set including the fixing accessories for upto 50mm thick door. Material:SS 304. Approved to EN 1906. Mortice sash lock with 55mm backset, 20mm square forend with 72 mm centers and prepared for euro profile cylinder including strike plate in satin stainless steel as per EN 12209. And 6 pin Euro profile knob cylinder with internal thumb turn and external key operation standard length 60mm in satin nickel plated finish with 3 keys. Approved Make : Dormakaba Pure 8100 Lever Handle + Mortice sash lock 271a + 3016 / Hafele / Kich or approved equivalent	124	each	5940.58	739,067.56
6.15	Providing and fixing SSS finish Morice Shaft dead bolt / Shaft door lock with key , escutcheons with complete accessories in Satin stainless steel finish with necessary SS screws etc. all complete as per detailed Architectural Drawings and as directed by Engineer-in-charge : Manufacturer's warranty/guarantee card needs to be submitted. (Dorma : 8681 , Hafele , Kich or approved equivalent)	151	each	1149.03	172,940.51

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
6.16	Providing & fixing 55 mm Backset mortice dead lock, 20 mm square forend with 6 pin Euro Profile Cylinder with both side Key operation including strike plate & escutcheons, of approved quality with necessary accessories and screws etc. all complete as per detailed Architectural Drawings and as directed by Engineer-in-charge : Manufacturer's warranty/guarantee card needs to be submitted, installation has to be certified by the Manufacturer in writing. Approved Make : Dormakaba Mortice dead lock 706 dead lock / Hafele / Kich or approved equivalent	4	each	2984.37	11,937.48
6.17	Providing & fixing mortice sash lock comprising of satin stainless steel lever handle pairs with round rose & escutcheons prepared for Euro profile cylinder and spindle 114 in satin stainless steel finish complete set including the fixing accessories for upto 50mm thick door. Material:SS 304. Approved to EN 1906. Mortice sash lock with 55mm backset, 20mm square forend with 72 mm centers and prepared for euro profile cylinder including strike plate in satin stainless steel as per EN 12209. And 6 pin Euro profile knob cylinder with both side key operation standard length 60mm in satin nickel plated finish with 3 keys. Approved Make : Dormakaba Pure 8100 Lever Handle + Mortice sash lock 271a + 3026 / Hafele / Kich or approved equivalent	23	each	5404.24	121,595.40
6.18	Providing and fixing Satin crome finish dust excluding socket 3124 with 16mm dia hole, fully morticed on the floor. including fixing with necessary screws etc. complete. (3124 of Dormakaba Hafele , Kich or approved equivalent)	27	each	572.44	15,455.88
6.19	Providing and fixing Saffire LX RFID Electronic Door Lock with RFID Mifare Classic reader, ANSI Tracking Mortise, Standard Levers: Von or Troy, Audit Trail with 4000 last openings in satin crome finish including fixing with necessary screws etc. complete. This item include providing & fixing Guest RFID card. Approved Make : dormakaba Saffire LX RFID Electronic Door Lock / Hafele / GEZE or approved equivalent)	126	each	24474.69	3,083,810.65
6.20	Providing and fixing Energy Saving Switch , can read / detect any RF Mifare Card. (It do not detect any other card); Made of fire proof material; Red and Green color LEDs to indicate authorized card in place or not. Dimensions :- L x B x H : 86 x 86 x 37 mm; Input Voltage :- 220VAC, 50 Hz; Load Current :- 30 Amps at 220VAC; Operating Temperature: -15 °C to +60 °C. Approved Make : dormakaba DESS RFM 843-C Energy Saving Switch / Hafele / GEZE	126	each	4926.59	620,750.34
6.21	Providing Access Management Software * Customized Hotel Software * Handheld for Interogation and Programming - 1 No * Encoder - 1 No Approved Make : dormakaba / Hafele / GEZE	1	Set	316013.00	316,013.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
6.22	Extra for providing vision panel not exceeding 0.1 sqm in all type of flush doors (cost of glass excluded) (overall area of door shutter to be measured):				
6.22.1	Rectangular or square	70	sqm	199.15	13,940.50
6.23	OAK / CEDAR WOOD SLAT PANELLING WITHOUT INSULATION				
6.23.1	Providing and fixing Oak / Cedar wood slat panelling without insulation as per detail given below. Entire work to be done in pattern as per drawing, specifications and direction of Engineer-in-charge.	20	sqm	5650.43	113,008.60
	Installation: - MS angle 50x50x5 supports / cleats of suitable size fixed to wall surface with dash fasteners of 8 mm dia, 75 mm long bolt as shown in drawing. Tubular frame work shall comprise of 50x50x1.6mm hollow MS tube, fixed away from the wall surface by MS angle supports/cleats of suitable size. The hollow MS tubes to be mounted in a grid pattern with spacing @ 400mm / 1000mm centre to centre (horizontally & vertically) or at required spacing near opening, with necessary fixing / welding at junctions and fixing the frame to wall with steel dash fasteners of 8 mm dia, 75 mm long bolt, including providing with two coats of approved steel primer etc. The tubular framework to have welded connections, minimum 20mm fillet weld on each side.				
	In order to minimize visibility of screws panel of size as per drawing supported on MS flats 20 x 6 mm at top & bottom are to be made with 80 x 12 mm & 32.5 x 12 mm thick timber slats with a groove of 15mm between slats in pattern as per drawing with stainless steel screws from the rear. MS flats shall be painted with two coats of enamel paint over two coats of approved steel primer. Timber panels shall be preferably made of timber of large width; the minimum width and thickness of the panel shall be same as specified in the drawings. The grains of timber panels shall be sawn in the directions of grains & shall run along the longer dimensions of the panels. All panels shall be of the same species of timber unless otherwise specified. Sawing shall be truly straight and square. The timber shall be planed smooth and accurate to the required dimensions.				
	These timber slat panels shall be fixed to the tubular frame as per pattern shown in drawing with self tapping stainless screws. The slats to be backed with black dyed jute upholstery (not hessian) fix over 6 mm thick marine ply. Finally the slats shall be wax polished after wood filler and sand papering to a smooth finish in its natural colour complete as per drawing, specifications and direction of Engineer-in-Charge.				
6.24	OAK / CEDAR WOOD SLAT PANELLING WITH INSULATION				
6.24.1	Providing and fixing Oak / Cedar wood slat panelling with insulation as per detail given below. Entire work to be done in pattern as per drawing, specifications and direction of Engineer-in-charge.	128	sqm	5279.96	673,194.90

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	Installation: - MS angle 50x50x5 supports / cleats of suitable size fixed to wall surface with dash fasteners of 8 mm dia, 75 mm long bolt as shown in drawing. Tubular frame work shall comprise of 50x50x1.6mm hollow MS tube, fixed away from the wall surface by MS angle supports/cleats of suitable size. The hollow MS tubes to be mounted in a grid pattern with spacing @ 400mm / 1000mm centre to centre (horizontally & vertically) or at required spacing near opening, with necessary fixing / welding at junctions and fixing the frame to wall with steel dash fasteners of 8 mm dia, 75 mm long bolt, including providing with two coats of approved steel primer etc. The tubular framework to have welded connections, minimum 20mm fillet weld on each side.				
	In order to minimize visibility of screws panels of size as per drawing supported on MS flats 20 x 6 mm at top & bottom are to be made with 80 x 12 mm & 32.5 x 12 mm thick timber slats with a groove of 15mm between slats in pattern as per drawing with stainless steel screws from the rear. MS flats shall be painted with two coats of enamel paint over two coats of approved steel primer. Timber panels shall be preferably made of timber of large width; the minimum width and thickness of the panel shall be same as specified in the drawings. The grains of timber panels shall be sawn in the directions of grains & shall run along the longer dimensions of the panels. All panels shall be of the same species of timber unless otherwise specified. Sawing shall be truly straight and square. The timber shall be planed smooth and accurate to the required dimensions.				
	These timber slat panels shall be fixed to the tubular frame as per pattern shown in drawing with self tapping stainless screws. The slats to be backed with black dyed jute upholstery fabric (not hessian) held on 24G x 10mm wire mesh and 50mm thick resin bonded glass wool (24 kg/m3) cut to size and inserted in GI framework held on 24Gx12 GI wire netting. Finally, the slats shall be wax polished after wood filler and sand papering to a smooth finish in its natural colour complete as per drawing, specifications and direction of Engineer-in-Charge.				
6.25	OAK / CEDAR VENEERED PLY PANELLING				
6.25.1	Providing and fixing 4mm thick Oak / Cedar veneered ply (Greenlam, Greenply, Century or equivalent) on 6mm thick water proof marine ply, phenolic bonded (Kitply, Greenply, Century or equivalent) and the surface finished with moulded Oak / Cedar beading of 15 x 25mm in pattern as per drawing with 38mm long self tapping and self drilling steel screws on framework . Entire work to be done as per drawing, specifications and direction of Engineer-in-charge. Entire assembly shall be wax polished in natural colour.	10	sqm	5279.96	52,799.60

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	<p>Installation: - MS angle 50x50x5 supports / cleats of suitable size fixed to wall surface with dash fasteners of 8 mm dia, 75 mm long bolt as shown in drawing. Tubular frame work shall comprise of 50x50x1.6mm hollow MS tube, fixed away from the wall surface by MS angle supports/cleats of suitable size. The hollow MS tubes to be mounted in a grid pattern with spacing @ 400mm / 1000mm centre to centre (horizontally & vertically) or at required spacing near opening, with necessary fixing / welding at junctions and fixing the frame to wall with steel dash fasteners of 8 mm dia, 75 mm long bolt, including providing with two coats of approved steel primer etc. The tubular framework to have welded connections, minimum 20mm fillet weld on each side</p>				
	ACOUSTICS DOOR				
6.26	<p>Providing and fixing of minimum 77 mm thick Fully Insulated Non Metallic Fire cum Acoustic Wooden fire doors (single or double leaf) as per IS 3614:2021, for 120 min integrity & insulation. The door is manufactured made out of thoroughly seasoned hard wood. The moisture content of wood material used at the time of construction of wooden composite fire door sets comprises of both frame and shutter shall not be more than 15% approx. in accordance with IS 287. The fire door must carry a successful test evidence fire door design from CBRI , Roorkee / IPIRTI / NABL accredited lab which operates in accordance with ISO/IEC 17025 for its fire rating. The offered door must carry acoustic properties certification test evidence. To achieve Acoustic prooperties, the shutter thickness should be minimum 77mm.</p> <p>Door and frame should be factory finished with fire retardent primer FR880.</p> <p>All accressesories like hardware, vision panel, fire seal etc to be supplied by Fire door manufacturer only as per the guidelines laid down in IS 3614:2021.</p> <p>Every door must carry a label confirming to type of door & its fire rating.</p>	12	sqm	42785.79	513,429.53
	This item consist of :				
	<p>Door frame shall be Single rebate profile of section 140 x 90 mm made out of 1st Class Ivory Cost (SUDAN TEAK) having density of 550-600 kg/m3 with factory made groove of suitable size so as to accomodate Fire seal of size 20x4mm of SEALz MAKE. An EPDM seal also to be provided in the frame to check spread of smoke.The frame must be primed with Fire retardant primer FR880 .</p> <p>The frame to be fixed to fire exit opening with minimum 10 nos. 10 mm dia and minimum 120 mm long HDG (hot dip galvanized) CSK Philips headed screws with polyamide sleeves.</p>				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	<p>Wooden shutter must be of minimum 77mm of thickness finished with 6mm thick commercial ply on both faces. The Shutter should be provided with 6mm thick commercial ply along with 4mm thick matching wood veneered ply facing on both faces of door in approved make, colour & shade .The composite thickness of the core insulation will be 57 mm consists of minimum 10mm thick Calcium Silicate boards of Hilux / Pamtech make and treated wool Insulation material . The calcium silicate board must have Density not more than 900kg/m3 , having thermal conductivity 0.15W/mK . The shutter should be provided with heat activated intumescent fire seal strip of size 20mm x 4 mm mounted in the suitable grooves all three sides except bottom provided on Exposed OR concealed wooden lipping .</p> <p>To achieve apporx. 32-38 db properties necessary Acoustic seal set needs to be provided both in frame and shutter such as Perimeter seal in rebate of the main frame , Automatic drop down seal in bottom of the shutter and for double leaf application Artragal seal needs to be provided .</p> <p>The shutters shall be mounted to the frame with SS 304 grade ball bearing type hinges of size 100x 89x3 mm alongwith all suitable hardware (Cost of all the below mention seals alongwith all hardwares are included in item).</p>				
	List of hardwares & seals included in the items :				
	Supply & fixing of fire rated SS 304 grade Ball Bearing Hinges of size 100 x 89 x 3mm complete with SS Screws of Geze/Dorma/Hafele or approved Make (minimum 4Nos per panel)				
	Supply & fixing of anchor fastners of HILTI / Equivalent of M10X160mm length.				
	Supply & fixing of heavy duty door closers of TS 2000 of Geze/Dorma/Hafele or approved equivalent				
	Supply & fixing of Mortise Dead Lock DL 7260K + BSK of Geze/ Dorma / Hafele or approved equivalent Make with 100mm long Euro Profile Cylinder with Both Side key Operation				
	Supply & fixing of SS grade 304 pull handle of size 600mm of Geze /Dorma / Hafele or approved equivalent Make.				
	Supply & fixing of SS grade 304 CONCEALED FLUSH BOLT of size 300 mm of Geze /Dorma / Hafele or approved equivalent Make.				
	Delta Seal (Perimeter Seal) / Geze or approved equivalent				
	FIRE SEAL of standard quality as per approved sample				
	Automatic Door Bottom Seal 1220MM / RP 8Si of RAVEN				
	ASTRAGAL SEAL (2500mm) / RP 16Si of RAVEN /LORIENT /BECKER FS				
	The door shall be fixed with Acoustics seals (RAVEN /LORIENT /BECKER FS) for sound reduction properties.				
	UPVC Window				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
6.27	<p>Providing and fixing factory made uPVC glazed/wire mesh windows/doors comprising of lead free uPVC multi-chambered frame, sash and mullion/coupler (where ever required) extruded profiles having minimum wall thickness of 1.70 mm for Series R1 and R2 profiles and 2.10 mm for Series R3 and R4 profiles conforming to EN: 12608 in any shape, colour and design duly reinforced with galvanized mild steel section made of required shape & size as per CPWD specification, uPVC extruded glazing beads, interlocks and Inline sash adaptor (where ever required) of appropriate dimension, EPDM gasket, hardware, SS 304 grade fasteners of minimum 8 mm dia with countersunk head, comprising of matching polyamide PA6 grade sleeve for fixing frame to finished wall as per IS 1367 : Part 1 to 14, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame, sash & mullion (if required) shall be mitred cut and fusion welded/mechanically jointed duly sealed at all corners, including drilling of holes for fixing hardware and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of approved size and quality, all complete as per approved drawing conforming to CPWD specification & direction of Engineer-in-Charge. Section of steel reinforcement and cross sections of uPVC profiles to be as per design approved by Engineer-in-Charge.</p> <p>Wire mesh / Glazing of plain/ toughened/ laminated/ double glass unit with / without high performance coatings as per design requirements and conforming to IS: 3548 & IS: 16231 shall be paid separately.</p> <p>Note:- Structural design proof checked from a Government Engineering Institute, to be provided by the manufacturer for :</p> <p>(i) Sites with basic wind speed > 45 m/sec as per IS 875 – Part 3 (ii) Sites with structure height more than 20m for all wind speeds.</p>				
6.27.1	Combination of casement window with fly mesh and fixed window including suitable coupling comprising of				
6.27.1.1	Fixed window / ventilator with mullion / transom. Using R3 series with frame (55 mm & above) x (45 mm & above) & mullion (55 mm & above) x (65 mm & above). (Height upto 2.5 metre)	541	Sqm	7827.75	4,235,908.64
6.27.1.2	Casement Window with Double Rebate Frame with one Side Hung Glazed Panel and one Side Hung wire mesh Panel with S.S. 304 friction hinges as per size and weight of sash, multi-point locking system, zinc alloy (zamak) powder coated handles on both glazed and fly screen panel. Using R3 series with frame (110 mm & above) x (45 mm & above) & glazed sash (55 mm & above) x (65 mm & above) & fly screen sash (30 mm & above) x (55 mm & above) & metal grill (if required to be paid separately). (Height upto 1.8 metre)	252	Sqm	22785.35	5,748,743.81
6.28	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.				
6.28.1	Fixed to openings /wooden frames with rawl plugs screws etc.	1200	kg	238.35	286,020.00
	SUM CARRIED OVER TO SUMMARY PAGE				20,003,829.96
	SECTION - 7.00				
7.0	STRUCTURAL STEEL WORK				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
7.1	Providing, fabricating and fixing in position MS inserts such as nosing, corner angles of columns, plates, flats, tees, provision for pipe hangers, supports, brackets and monorails, hooks, frame around cut-out, MS pipe sleeves etc. as per drawings and specifications, in true line and level including embedding the same into the permanent works at the time of casting of RCC works or fixing the same into the existing work by using anchor / desh fastener of size as mentioned in drawing or as directed by Engineering in charge, with necessary welding, grinding, bolting and painting with two coat of first quality synthetic enamel paint of approved make over a coat of primer etc. complete as directed.	200	Kg.	172.60	34,520.00
7.2	Steel work welded in built up sections/framed work including cutting, hoisting, fixing in position using structural steel as required or as shown in drawings including painting with two coat of first quality synthetic enamel paint of approved make over a coat of steel primer etc. complete as directed.				
7.2.1	In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete	100	Kg.	123.60	12,360.00
7.2.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	860	Kg.	172.60	148,436.00
7.3	Providing, cutting to shape and fixing in position M.S. chequered plates in cover for trenches, stair steps, landing, platforms etc. as per drawings including painting with one coat of red oxide paint and two coats of approved shade and make synthetic enamel paint etc., complete as directed.	100	Kg.	123.60	12,360.00
7.4	Providing and fixing mild steel round holding down bolts with nuts and washer plates complete.	100	Kg.	97.20	9,720.00
7.5	Fabricating supplying and installing in position all types of railing to spiral stairs, other stairs, terrace and all other locations as called for with Stainless Steel of SS Grade-304 consisting of tubes of various sizes like 50mm, 40mm, 25mm, 18mm dia etc., S.S. flats, S.S. perforated sheet, S.S. plate, solid square and circular bars etc. arranged in verticals and horizontal with spacing as required and anchored to sides/tops of steps/slab as shown, hand rail and all other stainless steel pipes (wall thickness, minimum 1.5 mm), S.S. plate, S.S. Flat, S.S. perforated sheet etc., fixed to stainless steel verticals through shaped custom fabricated SS flanges, S.S. caps and nuts, plates etc., as shown including approved brackets and fittings, anchoring arrangement such as fastener (Fisher or Hilti or approved equivalent), all fixing accessories, all cutting, bending, welding, grinding, drilling, tapping, weep hole and all other incidentals, and approved buffing to stainless steel members as directed by the Engineer-in-charge. complete. The railing is 1000 mm to 1500 mm high (approx.) from top of finishing tread. The hand railing and other horizontal members shall be bend to the correct radius, profiles, shapes required by the Architect, by the appropriate means without losing the profile of the pipe.	100	Kg.	772.40	77,240.00
	The entire fixing shall be completed as per manufacturer's specification & as per architectural drawing and approval of Engineer-in-charge.				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
7.6	Stainless steel railings : All work to be done as per GFC Drawing. Sample including complete modular system & shop drawings shall be submitted by the contractor for approval by the Engineer-in-charge prior to the execution of work.				
	Providing & fixing modular passivated Satin stainless steel finish "weld free" railing system at suitable locations at all levels of approved size and shape conforming to grade AISI 316 shall be within scope of work. Top Handrail Shall be SS Tube of minimum dia 50.8 mm (+/- 1mm) X 1.5 mm minimum thickness , Single vertical balustrade shall be of SS Flat 50 X 10 mm minimum thickness & fixed as per spacing / center to center distance given in GFC drawings & at turning with 5 nos. mid rail of SS tube 16 mm X 1.5mm minimum thickness fix with connectors to all balusters to support infill as per manufacturers specification, GFC drawings and as directed by the Engineer-in-charge. The balustrade will be fixed on the vertical surface (side mount) with SS 304 grade wall bracket by SS 304 M10x100 Hilti or equivalent fasteners & Anchor (M10X70 mm) or as per manufacturers specification. Baluster to hold handrail using flexible bends & modular system or expansion & ball socket system for all joints, turns etc. shall be provided. The Entire fixing shall be completed as per manufacturer's specification & as per architectural drawing and approval of engineer -in-charge. Load calculations & Material test reports for SS 316 grade to be submitted by contractor for approval by the Engineer-in-charge. Railing height will be as mentioned in GFC drawings.	140	metre	18842.39	2,641,703.08
7.7	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters.				
7.7.1	80x1.25 mm M.S. laths with 1.25 mm thick top cover	10	sqm	3653.20	36,532.00
7.8	Providing and fixing ball bearing for rolling shutters.	2	each	492.35	984.70
7.9	Extra for providing mechanical device chain and crank operation for operating rolling shutters.				
7.9.1	Exceeding 10.00 sqm and upto 16.80 sqm in the area	10	sqm	1281.35	12,813.50
7.10	Extra for providing grilled rolling shutters manufactured out of 8 mm dia M.S. bar instead of laths as per design approved by Engineer-in- charge, (area of grill to be measured).	3	sqm	768.25	2,304.75
	SUM CARRIED OVER TO SUMMARY PAGE				2,988,974.03
	SECTION 8.00				
	FLOORING AND PAVING				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
8.1	52 mm thick cement concrete flooring with concrete hardener topping, under layer 40 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturer's specifications. This includes cost of cement slurry, but excluding the cost of nosing of steps etc. complete.	100	Sqm	978.45	97,845.00
8.2	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.				
8.2.1	18 mm thick.	20	Sqm	662.05	13,241.00
8.3	Providing and fixing glass strips in joints of terrazo/ cement concrete floors. 40 mm wide and 4 mm thick	150	Metre	91.75	13,762.50
8.4	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :				
8.4.1	25 mm thick.	1275	sqm	1948.25	2,483,142.04
8.5	Providing & fixing prepolished & calibrated 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) to the pattern called for , keeping the joints 4 mm wide & 6 mm deep around for epoxy grouting. The joint should be filled with approved quality anti-fungal epoxy grout of M/s Laticrete or epoxy grout of Ardex Endura or approved equivalent, as per manufacturer specifications or as directed by Engineer-in-Charge (cost of epoxy grout filled in joints are paid under their respective item) This item include cutting of stone slabs, all wastage and rubbing and polishing complete . Allow for protection of stone using approved method.				
8.5.1	25 mm thick.	3567	sqm	2277.18	8,122,701.06
8.6	Extra for using prepolished & calibrated Kota stone slab flooring instead of kota stone slab flooring				
8.6.1	25 mm thick.	150	sqm	459.23	68,884.50
8.7	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	509	Sqm	2354.70	1,198,424.57

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
8.8	Providing & fixing machine-cut & machined polished Stone in treads of steps, 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) including a base coat of neat cement slurry @ 4.4 kg/sqm and jointed with grey cement slurry mixed with pigment to match the shades of the slabs, including rubbing and polishing complete.The Stone used should be in one single long piece up to 2000 mm as per drawing,or as directed by Engineer-in-charge.The exposed projected edges shall be of uniform thickness and of uniform projection.				
8.8.1	Kota Stone 25mm thick	1283	Sqm	2433.07	3,122,237.08
8.9	Extra for pre finished nosing in treads of steps of Kota stone/ Mandana stone slab.	283	Metre	191.40	54,118.35
8.10	Extra for providing edge moulding to Kota stone/ Mandana Stone /Red sand stone (up to 40 mm thick) counters, vanities, coping, window sill, parapet tops and such other locations including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-charge.	3515	Metre	298.60	1,049,519.28
8.11	Providing & laying 25 to 30 mm thick Acid and alkaline proof Red Mandana stone of approved size for flooring or similar location etc., over 25mm (average) thick base in cement mortar 1:4 (1 cement : 4 coarse sand to the pattern called for .This item include cutting of stone slabs, all wastage and rubbing and polishing complete . Allow for protection of stone using approved method. The Stone used for steps should be in one single long piece up to 1500 mm as per drawing,or as directed by Engineer-in-charge.The exposed projected edges shall be of uniform thickness and of uniform projection.	30	Sqm	2160.74	64,822.12
8.12	Providing & laying 25 to 30 mm thick Acid and alkaline proof Red Mandana stone of approved size for flooring or similar location etc., over 25mm (average) thick base in cement mortar 1:4 (1 cement : 4 coarse sand to the pattern called for , keeping the joints 4 mm wide & 6 mm deep alround for epoxy grouting. The joint should be filled with approved quality anti-fungal epoxy grout of M/s Laticrete or epoxy grout of Ardex Endura or approved equivalent, as per manufacturer specifications or as directed by Engineer-in-Charge (cost of epoxy grout filled in joints are paid under their respective item) This item include cutting of stone slabs, all wastage and rubbing and polishing complete . Allow for protection of stone using approved method. The Stone used for steps should be in one single long piece up to 1500 mm as per drawing,or as directed by Engineer-in-charge.The exposed projected edges shall be of uniform thickness and of uniform projection.	392	Sqm	2160.74	845,928.69

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
8.13	- Do – as per item no. 8.11 & 8.12 but for providing and laying Mandana stone skirting, risers etc as per technical specification over 12 mm thick cement mortar CM 1:3 (1 part cement with acid and alkali proof powder: 3 parts coarse sand) bedding over two coats of acid and alkali proof primer including filling the joints with epoxy, polishing etc complete. The risers of steps should be in one single long piece up to 1500mm length as per the drawing.	10	Sqm	2799.38	27,993.80
8.14	Extra for providing Sand blasted Leather finish to flooring / skirting / Treads / Riser / Dado etc., as per architectural drawing and direction of Engineer in charge.				
8.14.1	Kota stone / Mandana stone	818	sqm	459.23	375,558.29
8.15	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.	848	Sqm	506.70	429,808.28
8.16	Providing & Grouting of Stone Joints (4 mm width & 6 mm deep) in flooring with Polymer based Cement Grout of desired shade, including filling / grouting and finishing complete as per direction of Engineer-in-charge.				
8.16.1	Size of stone 450 mm x 450 mm	435	sqm	325.12	141,427.20
8.16.2	Size of stone 600 mm x 600mm	4118	sqm	286.32	1,178,995.18
8.17	Providing and laying Gang-saw-cut, prepolished to mirror finish machine cut approved quality Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) with cement paste @ 4.4 Kg/SqM , laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rounding off & polishing the exposed edges as per the drawing or as directed, necessary curing, rubbing, polishing, protection of finished surface, cleaning the same finally etc., all complete as specified and as directed by the Engineer-in-Charge. (Only finished granite work shall be measured & considered for payment. (Basic rate of Granite Rs. 2300/- per sqm (F.O.R at site including GST)).	1675	sqm	4,799.38	8,037,754.68

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
8.18	Providing and laying Gang-saw-cut, 18 mm thick pre-polished to mirror finish machine cut approved quality Granite stone of required size & shape (length and width of the stone slab), colour in approved pattern, single piece in skirting, risers of uniform colour, texture and pattern over 12 mm thick cement mortar 1:3 (1 part cement : 3 part coarse sand) with cement paste @ 4.4 Kg/SqM filling of joints with white cement / cement mixed with colour pigments to match the shade, applying epoxy based damp proof coating on the base concrete/wall surface, polishing the exposed edges as per the drawing, necessary curing, polishing, protection of finished surface, cleaning the same finally etc. complete as directed. The stone used should be in one single long piece up to 2000mm length as per the drawing. (Only finished granite work shall be measured & considered for payment. (Basic rate of Granite Rs. 2300/- per sqm. (F.O.R at site including GST))	122	Sqm	4,224.98	514,602.56
8.19	Providing & fixing prepolished Gang saw cut, 18 mm Granite Stone in treads of steps, sill, copings, parapet top, window sill, planter top and such other locations, laid on 20 mm (average) thick cement mortar 1:4 (1 cement:4 coarse sand) including a base coat of neat cement slurry @ 4.4 kg/sqm and jointed with white cement slurry mixed with pigment to match the shades of the slabs, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all level. The Stone used should be in one single long piece up to 2000 mm as per drawing, or as directed by Engineer-in-charge. The exposed projected edges shall be of uniform thickness and of uniform projection. (Only finished granite work shall be measured & considered for payment. (Basic rate of Granite Rs. 2300/- per sqm. (F.O.R at site including GST))	83	Sqm	4813	397,811.30
8.20	Providing edge moulding to 18 mm thick Granite stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.				
8.20.1	Granite work	50	metre	510.95	25,547.50
8.21	Extra for pre finished nosing in treads of steps of Granite stone slab	278	metre	720	200,420.16
8.22	Extra for providing Sand blasted Leather finish to flooring / skirting / Treads / Riser / Dado etc., as per architectural drawing and direction of Engineer in charge.				
8.22.1	Granite stone	183	sqm	535.76	97,883.35
8.23	Extra for providing flamed finish to flooring / skirting / Treads / Riser / Dado etc., as per architectural drawing and direction of Engineer in charge.				
8.23.1	Granite stone	592	sqm	535.76	316,955.62

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
8.24	Providing and laying standard quality antiskid vitrified floor tiles of size 60 X 30 cm / 60 X 60 cm Desert Crema (eternity series) of Kajaria world or approved equivalent with minimum thickness of 9 mm (+/- 1mm) as per manufacturers specification, shade, colour and pattern as per drawings in flooring, skirting & dados including keeping the joints 3 mm wide & minimum 4 mm deep around & filled with approved quality epoxy grout, curing etc., complete as per detail specification below : (1) Cleaning the surface thoroughly with wire brush. (2) Applying bonding coat with neat cement slurry on concrete surface. (3) Laying 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand) admixed with Laticrete 3642 or equivalent admixture in proportion (50 kg cement+200 kg sand+3 litre Laticrete 3642 + requisite water). (4) Fixing tiles with neat cement by using slurry bond coat admixed with Laticrete 3642 or equivalent admixture in proportion (50 kg cement+5 litre Laticrete 3642 + water).The joint should be filled with approved quality epoxy grout (Payment for grouting of joints with epoxy grout to be made separately under their respective items) etc., complete as per manufacturer's specification & direction of engineer incharge. (Basic rate of vitrified tile shall be Rs 765 /- per sq mtr (F.O.R at site including GST))	740	Sqm	1654.74	1,223,682.24
8.25	Grouting the joints of flooring tiles having joints of 3 mm width & 4mm deep, using epoxy grout mix of 0.70 kg of organic coated filler of desired shade (0.10 kg of hardener and 0.20 kg of resin per kg), including filling / grouting and finishing complete as per direction of Engineer-in-charge.				
8.25.1	Size of Tile 300 mm x 300 mm	50	sqm	286.32	14,316.00
8.25.2	Size of Tile 600 mm x 600mm	696	sqm	226.11	157,372.56
8.26	Fixing glazed/ Ceramic/ Vitrified Wall tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 6 mm thickness.	100	sqm	753	75,325.00
8.27	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-incharge. (The panel shuttering work shall be paid for separately).	15	cum	9823.80	147,357.00
	(Note:- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately).				
8.28	Extra for providing and mixing hardening compound of approved quality as per manufacturer's specification in cement concrete.	350	kg	55.50	19,425.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
8.29	Rough dressed Kota stone paving and other finishing work to the pattern called for using 30 mm (nominal) thick Kota 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) including a base coat of neat cement slurry @ 4.4 kg/sqm 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.	170	sqm	1437	243,832.86
SUM CARRIED OVER TO SUMMARY PAGE					30,760,694.75
SECTION 9					
ROOFING WORKS					
9.1	Providing and fixing 65 mm dia GI spout 400 mm long at all levels and locations including cutting & making good the walls and painting the spout and all incidentals complete.	50	Each	420	21,024.50
9.2	Making Khurras 45 x 45 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 PVC sheet 1m x 1m 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.	20	Each	298.25	5,965.00
9.3	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long,				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound, jointing tapes, finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :				
9.3.1	12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- (Part I) :2011 (Board with BIS certification marks)	85	Sqm	1355.80	115,243.00
9.4	Aluminium False Ceiling				
9.4.1	Supply & Fixing of Aluminium metal ceiling consisting of 600 mm X 600 mm / 600 mm x 1200 mm Aluminium Lay-in plain tiles in 0.7 mm thickness. The tile shall be Powder coated minimum 60 microns in the manufacturer's standard colour shades, with Microlook edges and flanges, produced on advanced equipment, which includes several levelling stages in the manufacturing process. The tiles should have Fire Performance of Class 0/Class 1 as per BS476 Part 6 & 7 standard in module size of 600x600 mmss.	604	Sqm	3047.86	1,839,383.51
	Frame work & Installation for aluminium false ceiling				
	All tiles to be installed on a standard 600mm x 600mm module 15mm table exposed metal grid. Grid system to be designed to satisfy ASTM C635 loading and deflection criteria. The main and cross runners to be provided with bayonet coupling for quick installation and shall have a height of 38mm.				
	The tile false ceiling suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 15 x38mm made from 0.30 mm thick (minimum) sheet, spaced at 1200mm center to center and cross "T" of size 15 x 38 mm made of 0.30mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 15 x 38 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 19x19x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using M6 Anchor Fasteners with hanger hole, pre Straightened Hanger wire of dia. 2.5 mm of 1.80 m length having a tensile strength of 344-413 MPa and a minimum pull strength of 110 kgs. Adjustable hook clips of 0.7mm thick, galvanized spring steel can also be used for installation purpose as an additional accessory. The adjustable clip also consists of a 4 mm aquiline wire to be used with the main runner.				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	The first/last suspension system at the end of each main runner should not be greater than 450mm from the adjacent wall. Bottom exposed width of 15 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge				
	Finally the tiles shall be laid in place from below into the standard grid. In case of end tiles lesser than 600mm, use lay-in end cap / edge profile for installation to have a Microlook effect on perimeters. This system also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channel suitably fixed all complete as per drawing and specification and direction of the Engineer-in-charge.				
9.5	Providing & fixing false ceiling at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25mm wide x 1.6mm thick with flanges of 27mm and 37mm, at 1200mm c/c, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I channels 45 x15 x 0.90mm running at the spacing of 1200 mm c/c, to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm, at 450mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64mm dia x 230mm long G.I wire at every junction, including fixing perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/ partitions with the help of Rawl plugs at 450mm centre, with 25mm long dry wall screws @ 230mm interval, including fixing of Calcium Silicate Board to ceiling section and perimeter channels with the help of dry wall screws of size 3.5 x25mm at 230mm c/c, including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes, finishing with jointing compounds in three layers covering up to 150mm on both sides of joints and two coats of primer suitable for boards, all as per manufacture's specification and also including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in charge but excluding the cost of painting with:				
9.5.1	a. 8 mm thick Calcium Silicate Board made with Calcareous & Siliceous materials reinforced with cellulose fiber manufactured through autoclaving process.	70	Sqm	1572.30	109,432.08
9.5.2	b. Extra for providing 12 mm thick Calcium Silicate Board instead of 8 mm thick Calcium Silicate Board made with Calcareous & Siliceous materials reinforced with cellulose fiber manufactured through autoclaving process.	70	Sqm	312.24	21,731.90
	SUM CARRIED OVER TO SUMMARY PAGE				2,112,779.99
	SECTION 10				
	FINISHING WORK				
10.1	6 mm cement plaster of mix :				
10.1.1	1:3 (1 cement : 3 fine sand)	9339	Sqm	300.45	2,806,037.75
10.2	12 mm cement plaster of mix :				
10.2.1	1:6 (1 cement : 6 coarse sand)	12311	sqm	343.65	4,230,503.33
10.2.2	1:4 (1 cement: 4 coarse sand)	135	sqm	357.35	48,242.25
10.3	15 mm cement plaster on rough side of single or half brick wall of mix :				
10.3.1	1:6 (1 cement: 6 coarse sand)	4837	sqm	395.35	1,912,387.02

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
10.4	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers.	200	per bag of 50kg ceme	22.10	4,420.00
10.5	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	1500	Sqm	87.10	130,650.00
10.6	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) and a top layer 6 mm thick cement plaster 1:3 (1 cement : 3 coarse sand) finished rough with sponge.	6068	sqm	537.46	3,261,441.65
10.7	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade::				
10.7.1	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)	6960	Sqm	171.10	1,190,856.00
10.8	Finishing walls with textured exterior paint of required shade :				
10.8.1	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sgm	900	Sqm	223.60	201,340.62
10.9	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gram/litre, of approved manufacturer and of required shade and colour all complete to achieve even shade and colour :				
10.9.1	New work (two or more coats) having VOC content less than 50 gram/litre	11841	Sqm	111.85	1,324,382.30
10.1	Providing and fixing approved galvanized chicken wire mesh (24 gauge 12 mm size) to junction of concrete and masonry work and other locations where called for at all the heights with necessary scaffolding etc. including cutting to required sizes, side laps of minimum 75 mm and fixing in position with galvanized wire nails as approved complete.	1168	Sqm	172.74	201,682.16
10.11	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete. Basick rate of glazed Ceramic tile is Rs. 350/- per sqm (F.O.R at site including GST).	291	Sqm	1267.95	369,544.03

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
10.12	Providing & fixing 18 mm thick Granite stone in uniform colour, texture and pattern gang saw cut (pre mirror polished and machine cut) of any colour and shade for wall lining (veneer work), dado work as per design and in required pattern over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and slurry @ 3.3 Kg/SqM including pointing with white cement mortar 1:2 (1 white cement : 2 marble dust) with an admixture of pigment to match the shade of the stone : (If required wall lining/ cladding to be secured to the backing by means of cramps, which shall be paid for separately). (Basic rate of Granite Rs. 2300/- per sqm (F.O.R at site including GST)). etc complete as directed. Only finished granite work shall be measured and considered for payment.	196	sqm	4547.64	890,201.06
10.13	Finishing walls with water proofing cement paint of required shade:				
10.13.1	New work (Two or more coats applied @ 3.84 kg/ 10 sqm)	2240	sqm	116.90	261,885.23
10.14	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	16000	Sqm	156.05	2,496,800.00
10.15	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.				
10.15.1	Two coats	10575	sqm	142.80	1,510,088.58
10.16	Providing and fixing 1st quality 9 mm (+/- 1 mm) thick glazed Vitrified / Mat finish Vitrified wall tiles of size 300 mm x 600mm / 600 mm x 600 mm or as called by Engineer-in- charge with water absorption's less than 0.08% and conforming to IS: 15622, of approved make in all colours and shades 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) admixed with Laticrete 3642 or equivalent admixture in proportion (50 kg cement+150 kg sand+3 litre Laticrete 3642 + requisite water)and jointing with grey cement slurry @ 3.3kg per sqm admixed with Laticrete 3642 or equivalent admixture in proportion (50 kg cement+5 litre Laticrete 3642 + water), including grouting of joints, keeping the joints 3 mm wide & minimum 4 mm deep around & filled with approved quality epoxy grout (Payment for grouting of joints with epoxy grout to be made separately). complete. (Basic rate of vitrified tile shall be Rs 675 /- per sq mtr (F.O.R at site including GST))	3015	Sqm	1635.03	4,928,878.41
	Make: -Kajaria - The Trend Eternity series , Johnson - Porcelano series, Somany : Duragress				
10.17	Grouting the joints of Wall / flooring tiles having joints of 3 mm width & 4mm deep, using epoxy grout mix of 0.70 kg of organic coated filler of desired shade (0.10 kg of hardener and 0.20 kg of resin per kg), including filling / grouting and finishing complete as per direction of Engineer-in-charge.				
10.17.1	Size of Tile 300 mm x 600 mm	3015	sqm	273.15	823,424.33

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
10.18	Fixing glazed/ Ceramic/ Vitrified Wall tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 6 mm thickness.	100	sqm	753	75,325.00
10.19	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :				
10.19.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	395	sqm	226.25	89,368.75
10.20	Providing & applying on new work three coats (first two coats are with brush and final coat is with roller) of Glossy or Matt/luster enamel paint of desired shade, of approved make, shade, brand and manufacture, on any surfaces, at all heights, to give an even shade, including thoroughly brushing the surface free from mortar droppings and other foreign matter and sand papering smooth. The paint shall be applied after applying a coat of primer of approved brand and preparation of base surface using plaster of paris putty / white cement putty / metal putty / wooden primer & putty etc. as applicable.	152	Sqm	226.25	34,446.56
SUM CARRIED OVER TO SUMMARY PAGE					26,791,905.01
SECTION 11.00					
MISCELLANEOUS WORKS					
11.1	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS: 10910 on 12mm dia steel bar conforming to IS :1786 having minimum cross section as 23 mm x 25 mm and over all minimum length 263mm and width as 165mm with minimum 112mm space between protruded legs having 2mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture"s permanent identification mark to be visible even after fixing " including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6: (1 cement :3 coarse sand :6 graded stone aggregate 20mm nominal size)complete as per design.	90	each	553.70	49,833.00
11.2	Supplying and fixing C.I. Cover with frame for Overhead tank, manhole etc.				
11.2.1	455 X 610 mm rectangular C.I. Cover with frame (light duty) the total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg.)	12	each	3306.30	39,675.60
SUM CARRIED OVER TO SUMMARY PAGE					89,508.60
SECTION - 12					
12.0 ALUMINIUM WORKS					

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
12.1	Providing and fixing anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868. Minimum anodic coating of grade AC 15) sub frame work for windows and ventilators with extruded built up standard tubular sections of approved make conforming to IS: 733 and IS: 1285, fixed with dash fastener of required dia and size (Dash fastener to be paid for separately).	4376	Kg	402.80	1,762,693.08
12.2	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 / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :				
12.2.1	For fixed portion				
12.2.1.1	Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	8678	Kg	539.85	4,684,953.26
12.2.2	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)				
12.2.2.1	Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	4280	Kg	643.45	2,754,223.38
12.2.3	- Do - as per item no. 12.2.2.1 above but for polyester Powder coated aluminium (minimum thickness of polyester powder coating 50 micron) Louvers including fixing arrangement	4946	Kg	643.45	3,182,471.53
12.3	Providing and fixing Single point locking handles without Key of approved make & approved powder coated to required colour or shade including the cost of screw and other incidental charges complete as per manufacturers specification. (PL 205H of PULSE (LGF Sysmac (I) Pvt Ltd / HD 03 of PEGO)	305	each	269.50	82,062.75
12.4	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. with 12 mm aluminium U beading .	157	sqm	1228.00	192,304.80
12.5	Providing and fixing Stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineer-in-charge complete.				
12.5.1	510 X 19 mm	47	Each	802.40	37,696.75
12.5.2	355 X 19 mm	261	Each	325.80	85,033.80
12.5.3	255 X 19 mm	345	Each	387.00	133,335.97

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
12.6	Providing assembling supplying and fixing Double glazed dual sealed insulating glass of size & shape as required & specified to aluminium door, window & structural glazing with norton tape, silicon structural sealant and weather proofing using weather proofing sealant (Dow-corning/Wacker or equivalent) silicon joint visible from outside.The insulated glass comprising of an outer toughened (Heat strengthened) float glass 6 mm thick of approved colour & shade with reflective soft coating on face 2 of approved colour & shade, an inner 6 mm thick clear float glass toughened (Heat strengthened) separated by spacers to create 12 mm dehydrated air space and thermatically sealed by using double sealed organic sealant (priming sealant of thermoplastic), solvent free polyisobutylene which is applied on both sides of spacer, secondary sealant comprising of two component polysulphide in the right proportion for final outer seal including perforated channel for air spaces and complete processed with expertise of manufacturing insulated glass (Gurind/ Art N glass /Gold Plus), all complete for the minimum required performances given below, as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineer-in-Charge. The IGUs shall be assembled in the factory/ workshop of the glass processor.	866	sqm	4408.43	3,816,153.28
	Luminous Factors : (1)Light Transmission - 75% (2) outdoor Reflection (RLe %) - 12% (3) Indore (RLi %) - 12% (4) Solar Factor -0.57 (4) Thermal Transmission / U value -1.8 W/Sqm K. (The aluminium frame shall be paid separately in relevant item). The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.				
	Make : 6mm PLTT toughened+12mm airgap+6 mm clear toughened of saint Gobain / AIS / Sisecam flat glass india or approved equivalent				
12.7	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item)				
12.7.1	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/ sqm)	10	sqm	1505.25	15,052.50
12.7.2	With 6 mm thick toughened glass in stead of 5 mm thick glass	35	sqm	1923.73	67,330.72
12.8	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item)				
12.8.1	With 6 mm thick High performance toughened glass of approved make (meeting the minimum glass specification mentioned below) with coating on face 2. (Luminous factors (1) Light Transmission - 67% (2) Reflection (Ext.) - 19% (3) Reflection (Int.) - 19% (4) Solar Factor - 0.68 (5) U value - 5.6 W/Sqm K). The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	344	sqm	2701.92	928,514.71

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	Make : ST 167 toughened of saint Gobain / AIS / Sisecam flat glass india or approved equivalent				
12.9	<p>Providing and fixing fixed glazing into skylights // doors etc., with Laminated glass of approved quality of 13.52mm overall thickness with 1.52mm thick polyvinyl butyl sandwiched between heat strengthened glass of thickness 6 mm on both sides (one glass shall be 6 mm clear HS glass & one glass shall be 6 mm high performance HS glass) shall be within the scope of work. Colour of the PVB Interlayer shall be as per sample approved by the Engineer-in-charge. The glass shall be fixed with necessary EPDM rubber//neoprene gasket of approved colour, make, size and shape, with Norton tape, silicone structural / weather sealants of neutral grade. The Laminated glass shall be assembled in the factory/ workshop of the glass processor.</p> <p>13.52 mm thick laminated glass shall be fixed over the MS frame work with the help of aluminium sections, profiles, trim section, caps etc. of size as mentioned in architectural GFC drawing or as directed by the Engineer-in-charge. Junctions of laminated glass shall be covered with aluminium capping profile / section as shown & of size mentioned in GFC drawing including backer rod & weather sealant to seal the junctions complete as directed by Engineer-in-Charge. Shop drawings shall be submitted by contractor for obtaining approval from the Engineer-in-charge before the execution of work. Item rate shall include the laminated glass, EPDM, PVC beading, silicone sealant and all necessary except the MS framing work. MS framing work shall be measured in separate relevant item.</p>	40	sqm	6480.94	259,237.46
	(1)Light Transmission - 42% to 46% (2) Reflection (Ext.) - 19% to 24% (3) Reflection (Int.) - 5 to 8% (4) Solar Factor - 0.4 to 0.43 (4) U value -4.5 to 4.7 W/Sqm K. The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.				
12.10	<p>Supply and Installation of dormakaba automatic Sliding door operator ES 250 PRO Easy 6150 mm with ST-Flex Profile System with 13.52mm laminated glass. Low-noise drive motor without gearbox, TÜV design tested for 1.5 Million Cycle of operation in accordance with low voltage guidelines of IEC /EN 60335-2-103 and fulfils EN 16005 and DIN 18650-1 / DIN 18650-2 standards. The Profile Finish should be Silver Anodized E6/CO, with operator dimensions (H x D) : 100 x 180 mm. Drive with acoustically decoupled and exchangeable running rail and wear-resistant special surface. Rollers made of special plastic, Counter rollers as derailment protection. Mounting plate with prefabricated fixing holes and threaded holes. Microprocessor-controlled control unit, Self-learning, with adjustable parameters for opening and closing speed, hold-open time 0- 180 Sec, with smps, Class of protection IP 20. ES 250 PRO Easy, Maximum Panel Weight Carrying Capacity of 2 X 125 Kgs / 1X 125 kgs each leaf. The Max. opening and closing force by the operator should not exceed 150N and maximum power consumption should not exceed 130W during operation mode. The operator should be equipped with Program Switch with key, EM failsafe lock with Nemo Combi sensor with 2x Microwave for activation and double rows of 24 spots failsafe Safety infrared curtains without the need of Photocell. The system shall have constant power supply 230V+ 5%, 50Hz, AC The operator seamlessly integrates with the Dormakaba ST-Flex Profile System, designed to accommodate 8 - 22 mm toughened glass with appropriately sized rubber gaskets. The profile dimensions do not exceed 30x47 mm, and the ST Flex possesses Valid Environmental Product Declaration Certification in accordance with ISO 14025 and 15804 standards . (The cost of Toughened / laminated glass shall be paid in their respective item.)</p>	1	each	578751.31	578,751.31
	<p>Clear Passage Width = 2400mm Clear Passage Height = 2600mm Max Panel Weight Double Sliding = 2 x 125 Kgs.</p>				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	Frameless Glass Door with 13.52mm Laminated Glass & Top and Bottom Rail				
12.11	Providing and fixing double leaf doors with TPTA Door Top Rail, TPTA Door Bottom Rail with Lock, 13.52mm Laminated Glass, pull Handle TGDI-H 600 back to back with 500mm CTC, 9401 floor stop half dome with 45mm dia , PT 24 Top Pivot and floor spring dormakaba BTS 75V conforming to DIN EN1154 with adjustable spring strength EN 1-4, Floor Spring tested for durability of 500,000 cycles. Suitable for door leaf weight upto 100 kg & Max door leaf width upto1100mm. Approved make : Dormakaba , hafele or approved equivalent (13.52 laminated glass to be paid separately) :	1	Each	89226.34	89,226.34
12.12	Frameless Glass Door with 13.52mm Laminated Glass & Top and Bottom Rail				
12.12.1	Providing and fixing double leaf doors with TPTA Door Top Rail, TPTA Door Bottom Rail with Lock, 13.52mm Laminated Glass, pull Handle TGDI-H 600 back to back with 500mm CTC, 9401 floor stop half dome with 45mm dia , PT 24 Top Pivot and floor spring dormakaba BTS 80 conforming to DIN EN1154 with adjustable spring strength EN 6, Floor Spring tested for durability of 500,000 cycles. Suitable for door leaf weight upto 300 kg & Max door leaf width upto1400mm. Approved make : Dormakaba , hafele or approved equivalent (13.52 laminated glass to be paid separately) :	4	Each	110931.51	443,726.03
12.12.2	Supply and Fixing of Single Glazed Fixed Glass partition of 13.52 mm Laminated Glass using dormakaba TPTA Rails - TPTA Top Rail : 100mm High & 32mm wide and filler profile 3mm, TPTA Bottom Rail : 100mm High & 32mm wide and filler profile 7mm. Approved make: Dormakaba. (13.52 laminated glass to be paid separately)	10	Sqm	14187.95	141,879.54
12.13	Fire Rated Un-Insulated Doors				
12.13.1	Providing and fixing of Hollow metal ISI marked Un-Insulated fire rated doors as per IS 3614 : 2021, for stability and integrity shall be within the scope of work. Pressed galvanized steel conforming to IS 277 with following specification. Contractor/ manufacturer shall provide test certificate not older than one year for the prototype tested as per IS / ISO 3008 part 1 tested at CBRI / Cerifire or third party certified lab, for maximum rating of 2 Hrs, in latched /unlatched condition (if used with deadbolts and pull handles). Labeled doors with certification shall be with vision glass as a part of complete assembly. Manufacturer test certificate shall cover doors both single and double leaf and all doors supplied shall be within the tested specimen, deviation in specification and sheet thickness other than what is mentioned in the test certificates are not allowed. Proper label confirming the type of door and the hourly rating is mandatory from Approved manufacturer or equivalent.	18	sqm	18396.64	331,139.57

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	<p>Size of door fame and shutter shall be as per the manufactures specification with 2 Hrs fire rated. Door frame shall be single rebate grooved profile of size 125 x 55 mm made out of 1.60mm (16gauge) minimum thick galvanized steel sheet. Frames shall be mitered and field assembled with self-tabs. Frames to have in build grooved sealing system and shall be site fitted with fire rated EPDM gasket as standard. All provision should be mortised, drilled and tapped for receiving appropriate hardware. Frames should be provided with back plate bracket and anchor fasteners for installation on a finished plastered masonry wall opening including necessary 3mm/4.8 mm thick steel hinge reinforcement, 1.2 mm thick steel lock strike reinforcement with tapped holes welded to the frame and 1.2mm thick mortar guard at the back of all hardware cutout in the frame. The frame will have a provision of G.I. Anchor fastners 14 nos (5 each on vertical style & 4 on horizontal style of size M8 x 80) suitable for fixing in the opening along with Factory made Template for SS Ball Bearing Hinges of approved Size.. The frames should be zinc phosphated and finished with minimum 50 micron Thermosetting Powder Coating of approved colour and shade / finish in desired RAL Shade. Frames shall be filled with fire rated puff.</p>				
	<p>Door leaf shall be 46mm thick fully flush double skin door, Un-insulated with or without vision lite as per GfC drawing. Door leaf shall be manufactured from 1.2mm (18gauge) minimum thick galvanized steel sheet. The internal construction of the door should be rigid reinforcement pads for receiving appropriate hardware. The infill material shall be structural small cell resin bonded Honey comb craft paper treated with appropriate fire retardent paint. All doors shall be factory prepped for receiving appropriate hardware and provided with necessary reinforcement for hinges, locks, and door closers. The edges should be interlocked with a bending radius of 1.4mm. For pair of doors integrated astragals has to be provided on the meeting stile for both active and inactive leaf. Vision lite wherever applicable should be provided as per manufacturer's recommendation with a clip-on arrangement. The glass should be 6mm clear borosilicate fire rated glass of relevant rating of the door. The shutters should be zinc phosphated and finished with minimum 50 micron Thermosetting Powder Coating of approved colour and shade / finish in desired RAL Shade.</p>				
	<p>All doors and frames should be zinc phosphated and finished with minimum 50 micron Thermosetting Powder Coating of approved colour and shade / finish in desired RAL Shade and shall have passed minimum 500 hours of salt spray test. Once frame installed should be filled with PUF as recommended by the manufacturer.</p>				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	This item includes 2 Hrs Fire Rated Door Single/double leaf of size as mentioned in GFC Drawing with vision panel 200 x1000 mm or size as mentioned in GFC drawing with hardware set stainless steel grade 304 ball bearing butt hinges (3043F MT of Dorma or equivalent make), stainless steel grade 304 pull handle of 300mm long on both side (TGDI-D300 of Dorma or equivalent make), mortise dead lock with both side cylinders (Dormakaba 288a dead lock complete with CR 6612 escutcheons and 70mm 3526, 6 pin Euro profile cylinder with both side key operation or approved equivalent), Fire rated door closer TS Kompakt, Size 2/3/4, Std arm of dormakaba or approved equivalent, Concealed Automatic Drop down Seal & smoke seal of Dorma or approved equivalent make, all hardware are as per List of preferred makes & inclusive of PUFF Grouting. All hardware fittings should be minimum two hour fire rated.				
	Hollow metal stainless steel double swing doors				
12.14	Providing and fixing of Heavy duty Shakti Hormann Hollow metal stainless steel double swing doors confirming to IS 16074 & IS 4351 made of pressed Stainless steel of 304 grade confirming to IS 277 with the following specification. Doors shall be manufactured in ISO 9001: 2015 certified company for quality management. Doors shall be with flush vision glass of complete assembly.	18	sqm	23413.91	421,450.36
	Door frame shall be profile of size 143 x 50mm made out of minimum 1.60mm (16gauge) thick stainless steel sheet. Frames shall be mitered only. Frames shall be field assembled with self tabs. Bolted & butted joints are not acceptable. All provision should be mortised, drilled and tapped for receiving appropriate hardware. Frames should be provided with back plate bracket and anchor fasteners for installation on a finished plastered masonry wall opening. once frames installed it should be grouted with non fire rated PUF.				
	Door leaf shall be 46mm thick fully flush double skin door, with or without vision lite with flush fixing. Door leaf shall be manufactured from minimum 1.2mm (18guage) thick stainless steel sheet. The internal construction of the door should be rigid reinforcement pads for receiving appropriate hardware. The infill material shall be resin bonded honeycomb core. The edges should be interlocked with a bending radius of 1.4mm. Vision lite wherever applicable should be provided a flush fixing arrangement. Glass shall be minimum 6mm clear toughned double glass with suitable tape and silicon as per manufacturers recommendation as per architect elevation drawings.				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	Rate are inclusive of door frame, door shutter as a complete assembly, as mentioned in GFC Drawing with vision panel 200 x1000 mm or size as mentioned in GFC drawing with hardware set stainless steel grade 304 ball bearing butt hinges (3043F MT of Dorma or equivalent make), stainless steel grade 304 pull handle of 300mm long on both side (TGDI-D300 of Dorma or equivalent make), mortise dead lock with both side cylinders (Dormakaba 706 dead lock complete with CR 6612 escutcheons and 3026, 6 pin Euro profile cylinder with both side key operation standard length 60 mm in satin nickel plated finish or approved equivalent), Stainless steel grade 304 3101-1 & 3101-2 lever action flush bolt with 19 mm projecting bolt of Dormakaba or approved equivalent make, Dust 3124 with 16 mm dia hole of Dormakaba or approved equivalent make . All hardware are as per List of preferred makes				
	TOTAL CARRIED TO SUMMERY				20,007,237.16
	SECTION 13.00				
	WATER-PROOFING				
13.1	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":				
13.1.1	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	2145	sqm	1684.60	3,612,708.93

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
13.2	Cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement.				
13.2.1	12 mm cement plaster	100	sqm	449.55	44,955.00
13.2.2	20 mm cement plaster	1018	sqm	587.20	597,710.88
13.3	15 mm cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement on the rough side of single or half brick wall.	492	sqm	506.60	249,019.23
	Acrylic cementitious modified two component waterproofing				
13.4	Providing and applying waterproofing treatment to the sunken slabs, Balconies or other location as per GFC drawing, including cleaning of surface to remove dust, loose particles, etc with compressed air or any other suitable technique depending on site conditions, grinding any sharp edges, etc as per the instructions of Engineer in charge and post cleaning applying a two component acrylic modified cementitious coating system at a total consumption of 1.8 to 2 Kgs/Sqm in two coats complete as per manufacturers specification or as directed by Engineer-in-charge.	1379	sqm	716.36	987,824.62
	The waterproofing system should exhibit the following properties: Density : 1.5 to 2 kg/ltr, Elongation at break (ASTM D412): 200 to 250%, Crack resistance at 20 degree centigrade > 2 mm				
	All corners in sunkens must be sealed a Seal Tape S, an elastic waterproof sealing tape with a woven bonding mesh on each surface and an elastic expansion zone in the center. The waterproofing should be taken to a height of 300 mm in the vertical.				
	The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The work shall be carried out by a specialist agency generally in accordance with above specifications and shall carry a guarantee against leakage, seepage etc. for ten years.				
13.5	Grading roof for water proofing treatment with				
13.5.1	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4graded stone aggregate 20 mm nominal size)	5	Cum	8,042.30	40,211.50

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
13.6	Providing and fixing ceramic based Heat Resistant Terrace Tiles (300 mm x 300 mm x 10 mm) with SRI (solar refractive index) > 90, solar reflection > 0.78 and initial emittance > 0.78, Water absorption < 0.5% on waterproof and sloped surface of terrace, including fixing tiles with cement based high polymer modified quick set tile adhesive (water based) conforming to IS: 15477, in average 6 mm thickness, keeping the joints 4 mm wide & minimum 4 mm deep allround & the joint should be filled with approved quality Cementitious grout 500 series sanded grout & grout admix 1776 manufactured by M/s Laticrete or super grout & admix GT1 of Ardex Endura or approved equivalent as per manufacturer specifications or as directed by the Engineer-in-charge. The laying of Tile shall be got done through the authorized applicator of the manufacturer. Skirting upto 150 mm height shall be provided along the parapet walls in the same manner as shown in the GFC drawing or as directed by the Engineer-in-charge. Basic rate of 10 mm thick heat resistant tile 650/- per sqm (F.O.R at site including GST).	1992	sqm	1,445.83	2,880,527.11
13.7	Terrace/ Roof Waterproofing cum Thermal Insulation				
	Surface preparation: Cleaning and making necessary surface preparation by compressed air/ mechanical scarifier to remove any dust and laitance etc., chasing open the construction joints and sealing the same to form a V shaped groove of approx. 15 mm width and 15 mm depth, using polymer modified mortar 1:3 Cement Mortar having polymer @10% by weight of cement). Providing 75mmx75 mm coving at H-V junctions using acrylic polymer modified mortar. Also cutting the the groove at height of 300mm / 450mm on parapet wall for the purpose of terminating the extended waterproofing.				
	APPLICATION OF PRIMER: Over the well prepared surface, providing and applying 2 component solvent free epoxy based primer @ 4 to 6 m2/Kg., covering the entire area uniformly. Allow the primer to dry.				
	APPLICATION OF WATERPROOFING LAYER: Over the dried primer layer, providing and applying 2 component solvent free plural spray applied elastomeric seamless hybrid polyurea polyurethane waterproofing coating and achieving a minimum system thickness of 1.5mm in two alternative coats using high pressure projection equipment for two components with heating arrangement and a 1:1 mixing by volume. On the vertical parapet wall extend the waterproofing treatment up to 300 mm/ 450mm as per architectural drawing and terminate on the wall, and filling the groove (10mmX10mm) cut on the wall and filling with 1 component polyurethane sealant of shore A hardness 25. The waterproof coating shall exhibit following properties: a. Elongation is > 400 %, (ASTM D412) b. Tensile Strength is > 13 N/mm2, (ASTM D 412) c. Solid contents of 100% & Shore A Hardness is 70- 80. (ASTM D2240) d. crack bridging - up to 3.0 mm				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	APPLICATION OF THERMAL INSULATION LAYER: Over the waterproofing layer, providing and applying Spray Applied 2 componenet CFC free, Polyurethane Foam using PUR spray equipment to build 50 mm thickness. The applied foam must be covered with waterproofing coat within 7 days of application to avoid U.V degradation. The thermal insulation layer shall have: a.Core Density : 45 - 50 Kg./m3(as per ASTM D 1622) b.compressive strength with rise of >300kPa (as per ASTM D-1621) c.tensile strength of >350kPa as per ASTM D 1623 d.fire resistance property conforming to Class B2 as per DIN 4102 e.Closed Cell Content, having apperent volume 90-98 % (as per ASTM D 2856) f. Thermal Conductivity of 0.023 W/m.k at 25°C mean temperature (as per ASTM C518/91)				
	APPLICATION OF SEALER COAT: Over the entire polyurethane foam, Providing and applying liquid-applied, a single component PU based seamless waterproofing membrane, coverage at the rate 2.3 - 2.5 kg/m2 in 3 coats to achieve DFT of 1.5 mm. The PU membrane shall be terminated 300mm / 450mm above FFL, self-curing for 5 days, then ponding with water for 24 Hrs. to check water tightness up to 50 mm. The Waterproofing material shall have Solids minimum 85%, Tensile strength minimum 1.2 Mpa as per ASTM D 412, Elongation > 400% as per ASTM C 1305, crack bridging up to 2mm, Shore A Hardness > 50 as per ASTM D 2240, Puncture Resistance > 300 N as per, ASTM E154-2013 Water Head Resistance 50M as per DIN 1048				
	SEPARATION LAYER: Supplying & applying 200 gsm Geotextile (non woven polyester) over the entire membrane maintaining proper overlaps of 100 mm.				
	The entire treatment will be taken upto 30 cm / 45 cm on parapet wall or upto parapet projection as per architectural drawing. For the purpose of measurement the entire treated surface will be measured.				
13.7.1	The work shall be carried out by a specialist agency or an company authorized applicator in accordance with above specifications and shall carry a guarantee against leakage, seepage etc. for ten years.	1947	sqm	4724.58	9,196,387.22
	Make : Fosroc, Pidilite, CICO				
	Basement Waterproofing Horizontal				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
13.8	Supplying and installing 1.5 mm composite thick fully bonded weldable HDPE membrane, having tensile strength of >25 MPa, elongation of >400% (ASTM D 412), puncture resistance of >900 N (as per ASTM E 154), joint adhesion at overlap >15000 N/m ASTM D 6392 :2012, peel adhesion to concrete >1500 N/m ASTM D903:1998, Resistance to hydrostatic head pressure@70meter as per ASTMD 5385, UV resistant up to 28 days and conforming to IS 16471:2017 requirements of UG waterproofing structures, as per manufacturer's recommendation. The membrane should be minimum 2.0 m wide and with minimum 75mm factory made selvages and comprising of an HDPE layer and a pressure sensitive adhesive layer which is covered by a weather proof protective and trafficable granular layer to protect self adhesive polymer layer. The membrane overlaps should be thermo-fused to ensure seamless joints. The membrane shall form an integral, adhesive and permanent bond to poured concrete to prevent water migration at the interface of the membrane and structural concrete	239	sqm	1209.24	289,310.67
	HDPE Membrane shall be applied with following steps and as per manufacturer recommendation: 1) Cleaning of PCC surface to remove dust, loose particles, etc with compressed air or any other suitable technique depending on site conditions, grinding any sharp edges, etc. 2) HDPE Membrane laid over the PCC and continued over the side of raft, vertical portion of retaining wall. The membrane shall have 75mm side laps and 80mm end laps which shall be sealed as per manufactures specification and instructions.				
	Contractor shall submit methodology statement with all detail in illustrative sketch form and get approved from Architect / Engineer in charge before start of work. The work shall be carried out by a specialist agency or an company authorized applicator in accordance with above specifications and shall carry a guarantee against leakage, seepage etc. for ten years.				
	Make : Fosroc, Pidilite, Henkel, Tikidan				
	Basement Waterproofing Vertical				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
13.9	<p>Providing and laying of minimum 1.5 mm thick SBS modified self-adhesive waterproofing membrane topped with impervious, non-perforated HDPE valeron or equivalent film, for use in retaining walls, conforming to the requirements of ASTM D5147 for thickness with a puncture resistance of >200 N as per ASTM E154. The vital physical and chemical parameters of the membrane shall be as under:</p> <ul style="list-style-type: none"> • Tensile strength in (L/T) as min 4 N /mm² (as per ASTM D882), • Tear resistance as min 150 N/mm (as per ASTM D 4073), • Peel Strength to concrete as min 2.2 N/mm as per ASTM C 794 • Elongation (L/T)% - L -250-300, T- 250-350 (as per ASTM D 882), • Softening point of membrane not less than 105°C (as per IS 1205/1978), • Cold flexibility shall be upto -10°C when tested in accordance with ASTM D 5147 • Crack bridging ability - min 1.5mm as per ASTM C 836 	204	sqm	787.43	160,990.06
	The application includes cleaning the surface, priming the surface with cold applied bituminous primer, laying the membrane, rolling, properly sealing the joints & maintaining 75 mm overlap between the membrane's edge & min 100 mm overlap on the end joints of the membrane over the slab etc. complete. HDPE Dimple Protection board 8mm shall be spot bonded on retaining wall before back filling as per manufacturer's specification.				
	Contractor shall submit methodology statement with all detail in illustrative sketch form and get approved from Architect / Engineer in charge before start of work. The work shall be carried out by a specialist agency or a company authorized applicator in accordance with above specifications and shall carry a guarantee against leakage, seepage etc. for ten years. for both supply and application.				
	Make : Fosroc, Pidilite, Henkel, Tikidan				
13.10	<p>Termination: Termination of vertical waterproofing membrane shall be done by providing & applying aluminium strip flashing with fasteners at the top and sealing the joints with PU/PS Sealant or the membrane will be finished on the top by tucking into a groove cut in the concrete and sealed with a suitable mastic sealant as per manufacturers specification or as directed by Engineer-in-charge.</p>	50	meter	349.97	17,323.52

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
13.11	Providing and laying integral cement based treatment for waterproofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-charge and consisting of : i) 1st layer of 22 mm to 25 mm thick approved and specified rough stone slab over a 25 mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound confirming to IS:2645 in the recommended propotion over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. ii) 2nd layer of 25 mm thick cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportions. iii) Finishing top with stone aggregate of 10 mm to 12 mm nominal size spreading @ 8 cudm/sqm thoroughly embedded in the 2nd layer.				
13.11.1	Using rough kota stone	239	sqm	1515.60	362,607.30
13.12	Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25 mm thick with cement slurry mixed with water proofing compound confirming to IS:2645 in recommended proportions with a gap of 20 mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with cement mortar 1:3 (1 cement : 3 coarse sand) 20 mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge.				
13.12.1	Using rough kota stone	204	sqm	2024.70	413,949.92
13.13	Providing and applying of swellable type water stop tape,19mm x 25mm thick in linear meter (expansive nature) for construction joints treatment of RCC structure, such as raft slab, retaining walls, water storage tank and at the junctions of raft slab with the retaining walls etc.. After cleaning the surface, one coat of required primer for swellable water stop tape shall be applied throughout the length of the joint @3.78 litre per 240 running meter. Over the primed surface swellable type water stop tape shall be placed. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guaranteed for 10 years against any leakage.	99	metre	573.45	56,771.55
SUM CARRIED OVER TO SUMMARY PAGE					18,910,297.50
SECTION 14.00					
GENERAL DEVELOPMENT AND ROAD WORKS					
14.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 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.				
14.1.1	All kinds of soil.	391	Cum	260.30	101,777.30

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
14.2	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
14.2.1	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)	94	Cum	6812.00	640,328.00
14.2.2	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)	90	Cum	7294.70	656,523.00
14.3	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.	100	per bag of 50 kg cement used	18.15	1,815.00
14.4	Providing and Laying at or near ground level reinforced cement concrete in kerbs, edgings, steps etc. as per approved pattern and design including the cost of required centring, shuttering and finishing smooth with 6 mm thick cement plaster 1:3 (1 cement : 3 fine sand) on exposed surfaces, but excluding the cost of reinforcement complete as per direction of Engineer-in-Charge.				
14.4.1	1:1½:3 (1 Cement: 1½ coarse sand(zone-III) derived from natural sources: 3 graded stone aggregate 20 mm nominal size derived from natural sources).	20	cum	8726.85	174,537.00
14.5	Providing, fabricating and fixing in position steel reinforcement for R.C.C. structures as per design including unloading and incidental charges for handling, cutting, bending and binding with 16 gauge GI wires (to be supplied by the contractor at his own cost) welding if necessary etc complete as directed. Payment will be made on the length basis and converted into weight by using standard IS coefficient.				
14.5.1	Hot rolled deformed bar of grade Fe 500 / Thermo-Mechanically Treated bar	7280	kg	107.85	785,148.00
14.6	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:				
14.6.1	With cement mortar 1:6 (1 cement : 6 coarse sand).	50	cum	7132.25	356,612.50
14.7	Brick edging 7 cm wide, 11.4 cm deep to plinth protection with bricks of class designation 75 including grouting with cement mortar 1:4 (1 cement : 4 fine sand) etc complete as directed. The net running length of bricks on edge shall be considered for payment.	132	metre	59.45	7,847.40
14.8	Rough dressed Kota stone paving				
14.8.1	Rough dressed Kota stone paving and other finishing work to the pattern called for using 30 mm (nominal) thick Kota 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.	238	sqm	1355.31	322,563.78

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
14.8.2	Rough dressed Kota stone paving and other finishing work to the pattern called for using 40 mm (nominal) thick Kota 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.	238	sqm	1531.34	364,458.92
14.9	15 mm cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement on the rough side of single or half brick wall.	100	sqm	506.60	50,660.00
14.10	12 mm cement plaster of mix :				
14.10.1	1:6 (1 cement : 6 coarse sand)	200	sqm	343.65	68,730.00
14.11	Surface dressing including preparation & Consolidation of sub-grade with power road roller of 8 to 12 tonne capacity after excavating/filling earth to an average up to 22.5 cm depth, dressing to required grade, slope and camber and consolidating with road roller including watering and making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth lead upto 50 metres etc complete as directed.	2550	sqm	218.90	558,195.00
14.12	Providing and laying in a compact manner rubble soling for sub-base in plinth or else where in 15 cm layers with specified stone aggregates using average 65 to 100 mm size stones including filling the voids with a largest possible stone speallings and murrum with consolidating each layer with 8 to 10 tonne capacity power vibro road roller etc complete as per detailed drawings including watering, leveling and compaction of soil layer below as per directin of Engineer in-charge etc complete as directed.	106	cum	3400	360,400.00
14.13	Providing and laying compacted manner water bound mecadum/ wet mixed mecadum in two layers of 75 to 100 mm thick of machine crushed stone metal of size 45 to 63 mm & 45 to 90 mm with using 25% stones screenings as filler and with binding material murrum including screening, sorting, spreading to template, watering and consolidation of each layer with 8 to 10 tonne capacity power road roller etc complete. Rate to include cost of all materials, labours and compaction of soil layer below as per direction of the engineer. - Double layer metaling.	77	cum	3258	250,845.98
14.14	Providing and laying machine batched, machine mixed and machine vibrated vacuum dewatered controlled design mix cement concrete of grade M25 (design of concrete mix will be done by contractor) with minimum 330 kg of OPC consumption per cubic meter of concrete for reinforced cement concrete pavement work / industrial floor slab/ road work over prepared sub-base in alternate panels in required thickness for required size in line, level and maintaining slope including form work using MS channels of required height compacting with needle /surface vibrator, leveling with trimix surface vibrator.				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	Vacuum dewatering with trimix vacuum pump, floating and further compaction with trimix skin floater equipped with floating disk, cutting the concrete for formation contraction / expansion joint as directed and details by cutting up to 1/4th thickness of concrete slab and 8 mm wide with mechanized screw and filling the same with semi rigid epoxy base approved sealant and finally finished with stripped / broom finish with wire brush with providing necessary steel reinforcement, curing etc complete as directed by engineer in -charge (Reinforcement steel shall be paid for separately.)				
14.14.1	With M25 grade concrete.	65	cum	10912	709,281.63
14.15	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction,of approved size, design& shape, laid in required colour and pattern over andincluding 50mmthick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	255	sqm	972.00	247,860.00
14.16	Providing and laying 500x500x40 mm thick Turf paver (Turf pave XD) on 150 mm thick sub grade of compacted bed of 20 mm thick nominal size stone aggregate and base course and filling with 150 mm thick Jamuna sand, including spreading, well ramming, consolidating and finishing smooth etc. all complete as per direction of Engineer-in-charge. This item include mix of soil and cocopeat in ratio of 1:2 to be filled in voids for planting grass all inclusive.	85	sqm	1708.10	145,188.50
14.17	Providing and laying 80mm exposed aggregate finished path with an under layer 50mm thick cement concrete 2:4:7 (2 cement :4 coarse sand:7graded stone aggregate 30mm nominal size) and top layer of 30mm thick jaisalmer/ red sandstone/ dholpur sandstone/ delhi quartzite stone washed grit paving n grey cement mixed with required pigment in the ratio 1:1.5 (1 grey cement : 1.5 pigment) and with cement concrete 1:0.50:2 (1cement : 0.50 coarse sand : 2 white sand stone chipping 10mm normal size) over under layer in panels as per approved pattern including scrubbing and washing the top layer with brushes and water to expose the stone chipping and furrowing the existing under layer with scratching tool and applying slurry over the under layer 2.00kg of cement per square metre, forming grooves of 15mm x 15mm, providing and removing wooden battens, repair of edges & finishing the groove complete as per specification and direction of consultant and Engineer-in-Charge.	85	sqm	1639	139,347.30
	SUM CARRIED OVER TO SUMMARY PAGE				5,942,119.31
	Grand Total for civil & structure (1 to 14)----- (A)				323,963,603.29
Sec : 2	15.1 SANITARY FIXTURES				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.1.1	Providing and Fixing of white vitreous china wall hung European type water closet Size 355x375x540 mm with C.P. bolts, nuts, C.I. chair or other hanging arrangement, with Solid plastic seat and with quite close slim seat cover in white colour, C.P. brass hinges rubber buffers with accessories,C.I./M.S. brackets painted with two coats of enamel paint of approved shade over a coat of primer. C.P. brass screws, including cutting and making good the wall and floors wherever required				
a)	(Make: Jaquar CNS-WHT-963UFSM)	132	Each	11238.73	1,483,512.36
b)	(Make: Jaquar "ARTIZE" SGS-WHT-41953NBIUF)	4	Each	29197.29	116,789.16
15.1.2	Providing and Fixing Concealed in wall Flushing Cistern with dual flush Actuator Plate (plastic body in approved finish), flush-stop function, noise less float valve and fast filling action with all component parts of high quality including fixing frame and set complete in all respects as per direction of the engineer-in-charge				
a)	(Make: Jaquar "Artize" JCS-WHT-2431FP & JCP-CHR-392415)	132	Each	13109.40	1,730,440.80
b)	(Make: Jaquar Jaquar APC-WHT-5012500FS & ACP-CHR-5012501)	4	Each	23547.70	94,190.80
15.1.3	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:				
a)	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	1	Each	6767.40	6,767.40
15.1.4	Providing and Fixing vitreous china floor mounted (European Type) water closet with 'P' or 'S' trap, C.P. bolts, nuts with solid plastic seat & lid, C.P brass hinged rubber buffers with dual flush 3/6 litre capacity cistern with flush pipe, clamp and rubber adapter joint C.P.brass screws and washers complete including cutting and making good the walls and floors wherever required etc. complete in all respect as per direction of Engineer-in-charge.				
a)	(JAQUAR CNS-WHT-853S220SPPSM)	5	Each	17232.63	86,163.15
b)	(JAQUAR DIS WH T 93951 UF) for Universal Toilet	1	Each	29797.65	29,797.65
15.1.5	Providing and Fixing White vitreous china Table top wash basin with C.I. brackets painted white,CP Brass Bottle trap, 15 mm CP Brass auto closing pillar cock, 32mm dia. C.P. waste, C.P chain and rubber plug, C.P. connecting pipe to wall and C.P wall flange and rubber adapter for waste connection complete including cutting and making good the walls wherever required etc. complete in all respect as per direction of Engineer-in-charge.				
a)	(Make: Jaquar JDS-WHT-25907N)	139	Each	9227.92	1,282,680.88
b)	(Make: Jaquar SGS-WHT-41903)	4	Each	21131.05	84,524.20

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.1.6	Fixing of vitreous china Wall hung rectangular wash basin (Disabled friendly) specially fabricated brackets painted white with C.P. wall flange and rubber adopter for waste connection complete, including cutting and making good the walls wherever required. Star white color (Make:Jaquar Cat No: DIS-WHT-93801 for Universal Toilet)	1	Each	13786.95	13,786.95
15.1.7	Providing and Fixing C.P. brass wall mounted central hole Wash Basin mixer with 450mm long copper pipe complete including cutting and making good wherever required				
a)	(Make: JAQUAR KUP-CHR-35233NKPM)	139	Each	7784.20	1,082,003.49
b)	(Make: JAQUAR LEB-CHR-45233)	4	Each	18678.36	74,713.46
c)	(Make: JAQUAR KUP-CHR-35011BPM) for Universal Toilet	1	Each	6536.53	6,536.53
15.1.8	Providing and Fixing vitreous china urinal with electrical/battery operated concealed automatic flushing system CP Brass body with C.I. hangers, 15mm dia inlet to built in spreaders with inbuilt waste with C.P flange for urinal complete including cutting and making good the walls and floors wherever required etc. complete in all respect as per direction of Engineer-in-charge (Make: Jaquar URS-WHT-13267).	6	Each	29458.67	176,752.01
15.1.9	Providing and Fixing of white vitreous china urinal partition / division plate of 610x410x380 mm app. size, fixed with expandable anchor fasteners with C.P. brass bolts and washers, embedded in wall and set in cement concrete complete including cutting and making good the walls wherever required (Make: Jaquar JSE-CHR-110UC450X)	4	Each	6470.48	25,881.93
15.1.10	Providing and fixing kitchen sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P. brass waste complete, including painting the fittings and brackets, cutting and making good the walls wherever required:				
a)	White glazed fire clay sink of size 600x450x 250mm	5	Each	3892.75	19,463.75
15.1.11	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required :				
a)	Kitchen sink with drain board 510x1040 mm bowl depth 250 mm	2	Each	6945.60	13,891.20
15.1.12	Providing and Fixing of wall mounted CP brass sink mixer with Swinging casted spout of required size wall mounted with 450 mm long copper pipe including cutting and making good the walls wherever required (Make: Jaquar LYR-CHR-38165)	7	Each	7096.54	49,675.77
15.1.13	Providing and Fixing CP brass bib cock of approved quality conforming to IS: 8931 15 mm nominal bore	6	Each	506.80	3,040.80

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.1.14	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms. 15 mm nominal bore	1	Each	820.7	820.70
15.1.15	Providing and Fixing CP Towel Rack 600 mm long fixed to PVC cleats with C.P. brass screws including cutting and making good the walls wherever required (Make: Jaquar JAQUAR ACN-CHR-1111BSM)	136	Each	2945.00	400,520.00
15.1.16	Providing and Fixing C.P. brass towel ring "Square" fixed to PVC cleats with C.P. brass screws including cutting and making good the walls wherever required etc. complete in all respect as per direction of Engineer-in-charge (Jaquar ACN-CHR-1121N).	138	Each	1378.41	190,221.24
15.1.17	Providing and Fixing 4-Way diverter with Built-in NRV with Divertor handle for bath and shower complete as per instructions of the engineer-in-charge				
a)	(Make: JAQUAR KUP-CH-R-35065MKPM)	132	Each	4893.76	645,976.76
b)	(Make: JAQUAR SIG-CHR-41065)	4	Each	18956.16	75,824.62
15.1.18	Providing and Fixing Shower Head: Over head Rose shower with revolving joint (with body rotation) & 115 mm long shower arm complete as directed by Engineer-in-charge (Jaquar SHA CHR 479L450&OHS-CHR-1989)	136	Each	2604.27	354,180.95
15.1.19	Providing and Fixing CP Bath spout with wall flange complete as per instructions of the engineer-in-charge or as per equivalent make				
a)	(Make: JAQUAR SPJ-35429PM)	132	Each	2050.89	270,718.07
b)	(Make: JAQUAR SPT-CHR-41429)	4	Each	8539.57	34,158.27
15.1.20	Providing and Fixing SS Manual Mat finish liquid soap dispenser with simple push lever filled with liquid soap 1200 ml (one time) including cutting and making good the walls, wherever required				
a)	(Make: JAQUAR ACN-CHR-1137N)	136	Each	3613.39	491,421.10
b)	(Make: SDR-BLC-DJ016ASN)	4	Each	3765.30	15,061.20
15.1.21	Providing and fixing CP Brass Bottle Trap with wall connection pipe, wall flange and Waste coupling complete of approved quality & make etc. complete in all respect as per direction of Engineer-in-charge (Make: JAQUAR ALD-769L250X190).				
a)	32 mm dia	147	Each	2683.11	394,416.70
15.1.22	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 15mm nominal bore	600	Each	574.30	344,580.00
15.1.23	Providing and Fixing of 15mm C.P.brass angle valve with C.P copper connecting pipe 450 mm long and nuts, rubber washer and C.P. brass flange complete, including cutting and making good the wall wherever required (Make: Jaquar AQT-CHR-3057P).	20		589.90	11,798.03

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.1.24	Providing and Fixing C.P. Brass Toilet paper holder, including cutting and making good the walls wherever required etc. complete in all respect as per direction of the Engineer-in-charge (Make: Jaquar ACN-CHR-1151N).	142	Each	1032.53	146,619.68
15.1.25	Providing and fixing Health faucet with 1 metre long Flexible Tube and CP wall hook with PVC & SS Screws wherever required complete as directed by the Engineer-in-charge (Make: JAQUAR ALD-CHR-573)	142	Each	1566.10	222,386.33
15.1.26	Providing and fixing C.P cast brass Double coat hook as approved with C.P. brass screws complete as per instructions of the engineer-in-charge (JAQUAR AKP-CHR-35761P)	142	Each	1239.39	175,993.56
15.1.27	Providing and Fixing CP auto push cock with CP Wall flange for drinking water purpose complete as per direction of the engineer-in-charge	2	Each	2920.00	5,840.00
15.1.28	Providing and Fixing hand drier cast iron body with Stainless Steel finish, operated with 230 volts, single phase, with fully hygienic condition, with all accessories including cutting and making good the walls, wherever required (JAQUAR HDR SS F AK280 3D)	2	Each	7936.00	15,872.00
15.1.29	Providing and Fixing straight / offset type flexible single body push fit type WC pan connector with factory supplied seal guard with integral Single mould sealing fins made of flexible EVA body, including bush / adaptor for use with C.I. Pipe as supplied with the pan connector etc. complete in all respect as per direction of Engineer-in-charge.	141	Set	642.96	90,657.38
15.1.30	Providing and Fixing Vertical Grab Bar fixed to wooden cleats with C.P. brass screws complete in all respects (Make: WAC-SAP-BR0600CSN)	1	Each	2832.83	2,832.83
15.1.31	Providing and Fixing Horizontal Grab Bar fixed to wooden cleats with C.P. brass screws complete in all respects (Make:WAC-SAP-BG0800CSN)	1	Each	7830.19	7,830.19
TOTAL SUB HEAD 15.1					10,278,341.90
15.2	SOIL, WASTE AND VENT PIPES				
15.2.1	Providing and fixing soil, waste and vent pipes :				
a)	75 mm dia				
	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	390	Metre	964.25	376,057.50
b)	100mm dia				
	Hubless centrifugally cast (spun) iron pipes epoxy coated	1 625	Metre	1169.30	1,900,112.50
15.2.2	Providing and fixing bend of required degree with access door, insertion rubber washer 3mm thick, bolts and nuts complete				
15.2.2.1	75mm Dia pipe				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	10	Each	418.95	4,189.50

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.2.2.2	100mm Dia pipe				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	152	Each	567.20	86,214.40
15.2.3	Providing and fixing plain bend of required degree.				
15.2.3.1	75mm				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	10	Each	252.50	2,525.00
15.2.3.2	100mm				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	290	Each	368.00	106,628.00
15.2.4	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3mm thick, bolts and nuts complete.				
15.2.4.1	75x75x75mm				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	105	Each	337.85	35,305.33
15.2.4.2	100x100x100mm				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	418	Each	581.45	243,046.10
15.2.5	Providing and fixing double equal plain junction of required degree.				
15.2.5.1	75x75x75mm				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	48	Each	418.95	19,900.13
15.2.5.2	100x100x100x100 mm				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	86	Each	760.70	65,039.85
15.2.6	Providing and fixing door piece, insertion rubber washer 3 mm thick, bolts & nuts complete :				
15.2.6.1	75 mm dia				
	Sand cast iron S&S as per IS - 3989	19	Each	537.00	10,203.00
15.2.6.2	100 mm dia				
	Sand cast iron S&S as per IS - 3989	152	Each	683.85	103,945.20
15.2.7	Providing and Fixing Terminal guard				
15.2.7.1	75 mm				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	24	Each	427.80	10,160.25
15.2.7.2	100 mm				
	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	48	Each	427.80	20,320.50
15.2.8	Providing and fixing shielded coupling for Hubless centrifugally cast iron pipe				
15.2.8.1	75 mm				
	SS 304 grade coupling with EPDM rubber gasket	19	Each	389.05	7,391.95
15.2.8.2	100 mm				
	SS 304 grade coupling with EPDM rubber gasket	19	Each	432.05	8,208.95

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.2.9	Providing and fixing 150 mm dia cast iron, soil, waste and vent pipes Hubless centrifugally cast (spun) iron pipes of epoxy coated inside & outside IS:15905 including all fittings, (plain or door) e.g. bends, junctions, cowls, offsets, access pieces etc.and jointing with refined pig lead joints including cutting holes in walls and floors, excavation, refilling and disposal of surplus earth wherever required and making good complete.	33	Metre	2747.92	91,368.39
15.2.10	Providing and fixing M.S. stays and clamps for sand cast iron/centrifugally cast (spun) iron pipes of diameter:				
a)	75mm	333	Each	90.30	30,024.75
b)	100mm	1 188	Each	139.70	165,893.75
15.2.11	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 :				
a)	For 110mm inlet and 110mm outlet Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	285	Each	854.55	243,546.75
15.2.12	Providing and Fixing uPVC floor drain of the following sizes .				
a)	110 x 50 mm Size	5	Each	385.00	1,925.00
15.2.13	Providing and Fixing uPVC inlet fitting with one or more inlets (including fabrication at site if required. Service Saddle will be supplied by Client) from 110mm outer dia uPVC pipe and solvent welded sockets and fixed to uPVC Trap and set in cement concrete 1 :2 :4 (1 Cement ; 2 coarse sand : 4 aggregate stone of nominal size 20mm) as per drawing complete.	285	Each	610.00	173,850.00
15.2.14	Providing & fixing cast brass clean out plug (FCO & COP) with suitable insert keys for opening, male threaded joint with G.I. socket caulked to soil pipe/waste pipe of C.I. and C.I. (LA) pipe as required. (Both for floor & along ceiling level)				
a)	110 mm OD	5	Each	1705.00	8,525.00
b)	160 mm OD	2	Each	2910.00	5,820.00
15.2.15	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 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design :: 180 x 150 mm size P type With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	20	Each	2802.15	56,043.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.2.16	Providing and Fixing uPVC pipes conforming to relevant IS class 6kg./cm ² including all fittings with or without access doors i.e bends, junctions, cowls, offsets, etc., and jointing with Solvent cement as per Manufacturer's specifications including cutting holes in walls and floors, wherever required and making good the same complete as directed by the Project-in-Charge. (Structural supports to be paid separately)				
a)	32 mm OD	310	Metre	80.00	24,800.00
b)	40 mm OD	10	Metre	80.00	800.00
c)	50 mm OD	10	Metre	105.00	1,050.00
d)	160 mm OD	360	Metre	645.00	232,200.00
15.2.17	Supplying all materials and constructing 75 class designation brick masonry channel in cement mortar 1:4 (1 cement : 4 coarse sand) including necessary excavation and refilling, 100mm thick bed concrete 1:5:10 (1 cement: 5 coarse sand : 10 graded stone aggregate 40mm nominal size) and 50mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) as bed concrete, for filling haunches and neatly finished inside and exposed surface with 12mm thick plaster in cement mortar 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement to the required gradient, with minimum 80mm thick 1:2:4 cement concrete (1 cement: 2 coarse sand: 4 graded stone aggregate) at the top of both edges with required groove to hold the gratings flush to the floor finishing as per Architectural details, including disposal of the surplus earth, complete as directed by the engineer-in-charge.				
	Size 300mm wide and 300mm average depth.	1	Metre	7000.00	7,000.00
15.2.18	Providing and laying cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 stone aggregate 20mm and down gauge) 75mm in bed and around C.I. soil and waste pipe. 100mm, 75mm and 50mm dia pipes under floor including centering and shuttering wherever required.	330	metre	632.78	208,817.90
15.2.19	Providing and fixing 125mm dia square C.P frame and grating with connecting stainless steel screws, complete as per requirements. (Make: NEER N-VG-300) (Sample to be approved)	290	Each	889.15	257,852.88
	TOTAL SUB HEAD 15.2				4,508,765.57
15.3	WATER SUPPLY (INTERNAL AND EXTERNAL)				
15.3.1	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m : All Kinds of Soil Pipes, cables etc, not exceeding 80 mm dia.	181	Metre	215.6	38,915.80
15.3.2	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, i/c cutting and making good the walls etc. Internal work - exposed on wall				
a)	20 mm nominal bore	71	metre	437.30	31,157.63

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
b)	25 mm nominal bore	166	metre	551.70	91,720.13
c)	32mm nominal bore	257	metre	667.00	171,085.50
d)	40 mm nominal bore	456	metre	811.90	370,226.40
e)	50 mm nominal bore	276	metre	1048.35	288,820.43
f)	65 mm nominal bore	86	metre	1296.10	110,816.59
g)	80 mm nominal bore	67	metre	1380.31	91,790.57
15.3.3	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc. External works				
a)	25 mm nominal bore	5	metre	467.75	2,221.81
b)	32 mm nominal bore	24	metre	540.30	12,832.13
c)	40 mm nominal bore	128	metre	617.05	79,136.66
d)	50 mm nominal bore	24	metre	762.15	18,101.06
15.3.4	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. CONCEALED WORK, including cutting chases and making good the wall etc.				
a)	15 mm nominal outer dia pipes	428	metre	497.80	212,809.50
b)	20 mm nominal outer dia pipes	941	metre	537.60	505,612.80
c)	25 mm nominal outer dia pipes	741	metre	627.25	464,792.25
d)	32 mm nominal outer dia pipes	10	metre	739.3	7,023.35
15.3.5	Providing and fixing Stainless Steel 316 L pipes conforming to EN 10312 complete with Press Type fittings with SC-Contur in accordance with DVGW regulation W534 such as sockets, bends, elbows, tees, reducers, unions, Flanges, clamps/structural steel supports, hangers etc. necessary adapters for GI to copper and copper to CP fittings, jointing, sundries, cutting holes in walls/floors/slabs & making good including wrapping with polythene sheet tape etc. complete (internal work):				
a)	15 mm OD	5	metre	895.27	4,252.53
b)	22 mm OD	105	metre	1328.65	138,843.78
c)	28 mm OD	133	metre	1657.28	220,417.93
d)	35 mm OD	190	metre	2483.99	471,957.17
e)	42 mm OD	247	metre	2961.52	731,496.47
f)	54 mm OD	133	metre	3783.10	503,151.87
g)	76.1 mm OD	86	metre	7865.29	672,481.93
h)	88.9 mm OD	57	metre	9282.50	529,102.41
15.3.6	Providing and Fixing uPVC pipes conforming to relevant IS class 10kg./cm2 including all fittings with or without access doors i.e bends, junctions, cowls, offsets, etc., and jointing with Solvent cement as per Manufacturer's specifications including cutting holes in walls and floors, wherever required and making good the same complete as directed by the Project-in-Charge. (Structural supports to be paid separately) (For Garden hydrant only)				
a)	25 mm O.D.	5	metre	70.00	332.50
b)	32 mm O.D.	24	metre	85.00	2,018.75
c)	40 mm O.D.	128	metre	105.00	13,466.25
d)	50 mm O.D.	24	metre	140.00	3,325.00
e)	63 mm O.D.	5	metre	190.00	902.50
f)	75 mm O.D.	5	metre	255.00	1,211.25

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.3.7	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) :				
a)	20 mm dia	19	Each	346.80	6,589.20
b)	25 mm dia	24	Each	439.25	10,432.19
c)	32 mm dia	10	Each	489.05	4,645.98
d)	40 mm dia	5	Each	631.30	2,998.68
e)	50 mm dia	5	Each	823.30	3,910.68
f)	65 mm dia	5	Each	1136.80	5,399.80
15.3.8	Painting G.I. pipes and fittings with synthetic enamel white paint with two coats over a ready mixed priming coat, both of approved quality for new work :				
a)	20 mm dia	71	metre	17.25	1,229.06
b)	25 mm dia	166	metre	20.00	3,325.00
c)	32 mm dia	257	metre	17.25	4,424.63
d)	40 mm dia	456	metre	20.00	9,120.00
e)	50 mm dia	276	metre	23.85	6,570.68
f)	65 mm dia	86	metre	25.00	2,137.50
g)	80 mm dia	67	metre	27.00	1,795.50
15.3.9	Providing and filling sand of grading zone v or coarser grade all-round the G.I. Pipe in external work				
a)	25 mm dia pipe	5	metre	160.70	763.33
b)	32 mm dia pipe	24	metre	164.90	3,916.38
c)	40 mm dia pipe	128	metre	167.00	21,417.75
d)	50 mm dia pipe	24	metre	173.25	4,114.69
15.3.10	Painting G.I. pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality :				
b)	25 mm dia pipe	5	metre	18.35	87.16
c)	32 mm dia pipe	24	metre	22.20	527.25
d)	65 mm dia pipe	128	metre	25.25	3,238.31
e)	80 mm dia pipe	24	metre	30.50	724.38
15.3.11	Providing and fixing 25mm thickness thermaflex thermal insulation on pipe," a flexible elastometric foam of closed cells (Class 'O')structure having thermal conductivity 0.038w/m.k at 20 degree centigrade, water vapour permeability $\mu > 7000$ and class 0 fire propagation including all required accessories e.g. adhesive and tape on all joints complete." Applying single layer of 6mm thick cement plaster in the ratio of 1:4 (1cement: 4 fine sand) for pipes exposed in shaft and terrace as per instruction of project incharge. The insulation to be applied on following outer dia pipe, (Make: Thermaflex)				
a)	16.0 mm [OD] [9 mm thick insulation]	143	Metre	125.00	17,812.50
b)	20.0 mm [OD] [9 mm thick insulation]	499	Metre	130.00	64,837.50
c)	22.2 mm [OD] [9 mm thick insulation]	285	Metre	170.00	48,450.00
15.3.12	Providing and cladding 28 gauge aluminum sheets with 50mm overlap and fixing with self tapping recessed screws, complete as per requirements over the insulated hot water pipes as per above item for external insulation.(Exposed Hot water supply)				
a)	15 mm dia	143	Metre	120.00	17,100.00
b)	20 mm dia	499	Metre	150.00	74,812.50
c)	25 mm dia	285	Metre	300.00	85,500.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.3.13	Providing and fixing forged brass lever operated ball valve of full flow with forged brass ball (Machined to mirror smooth finish with hard chrome plated) and spindle with setting and gland of superior quality having minimum working pressure of 16 kg/cm2 etc. complete in all respect.				
a)	20 mm dia	280	Each	713.43	199,760.93
b)	25 mm dia	670	Each	1096.83	734,876.88
c)	32 mm dia	10	Each	1762.63	17,626.25
d)	40 mm dia	50	Each	2518.90	125,944.93
e)	50 mm dia	40	Each	3255.54	130,221.60
15.3.14	Providing and fixing C.I butterfly valve, wafer end type class PN 1.6 as per I.S:13095 or BS:5155, including necessary nuts, bolts, gaskets etc., complete (flanges to be paid separately)				
a)	65 mm dia	3	Each	4302	12,906.00
b)	80 mm dia	2	Each	4982	9,964.00
15.3.15	Constructing masonry chamber 30x30x50 cm with FPS bricks, inside with brick work in cement mortar 1:4 (1 cement : 4 Coarse sand) for stop cock, with C.I. surface box 100x100x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement: 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 mix (1 cement : 5 fine sand and 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design. With common burnt clay FPS (non modular) bricks of class designation 7.5	2	Each	1992.60	3,985.20
15.3.16	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 100mm. top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design : With common burnt clay F.P.S.(non modular) bricks of class designation 7.5.	1	Each	10862.40	10,862.40
15.3.17	Making connection from existing external water line i.e drilling/cutting, and making connection complete including excavation, refilling, disposal of surplus earth, and supplying all material so to make it functional. If it is necessary to break or excavate the road for laying pipes and making connection, it should be restored to its original surfacing	1	LS	15000.00	15,000.00
	TOTAL SUB HEAD 15.3				7,457,051.73
15.4	EXTERNAL SEWERAGE AND DRAINAGE SYSTEM				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.4.1	Excavating trenches of required width for pipes, cables, etc., including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5m, including getting out the excavated soil, and then returning soil as required, in layers not exceeding 20cm 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. All Kinds of Soil Pipes, cables etc., exceeding 80mm dia but not exceeding 300mm dia	912	Metre	352.15	321,160.80
15.4.2	Extra for excavating trenches for pipes, cables, etc. in All Kinds soil exceeding 1.5 m in depth but not exceeding 3 m. (Rate is over corresponding basic item for depth upto 1.5 metre). All Kinds of Soil Pipes, cables etc., exceeding 80mm dia but not exceeding 300mm dia	19	Metre	729.80	13,866.20
15.4.3	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round 150 MM Dia HDPE pipes including bed concrete as per standard design :				
	a) 200 mm dia	333	Metre	1375.45	457,337.13
	b) 250 mm dia	342	Metre	1590.55	543,968.10
	d) 300 mm dia	138	Metre	1880.00	258,970.00
15.4.4	Providing and laying cement concrete 1:2:4 (1 cement :2 Coarse sand: 4 graded stone aggregate 40mm nominal size) 15cms around SW/RCC/CILA pipes including bed concrete 15cms thick as per standard design.				
	a) 200 mm dia	38	Metre	1600.00	60,800.00
	b) 250 mm dia	38	Metre	1900.00	72,200.00
	c) 300 mm dia	19	Metre	2200.00	41,800.00
15.4.5	Providing, laying and jointing HDPE Double Wall Coil (DWC) SN-8 Grade pipes conforming to IS: 16098 including all fittings wherever required e.g., tees, bends of any degree, couplings, adapters, plugs, unions etc. and jointing as manufacturer recommondation etc. including testing of joints etc. complete.				
	a) 200 mm OD	371	metre	932.00	345,306.00
	b) 250 mm OD	380	metre	1335.00	507,300.00
	c) 300 mm OD	152	metre	2106.00	320,112.00
	d) 450 mm OD	10	metre	3301.00	31,359.50
15.4.6	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 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design :: 150 x 100 mm size P type With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	18	Each	2734.2	49,215.60

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.4.7	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 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design :: 180 x 150 mm size P type With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	5	Each	2802.15	14,010.75
15.4.8	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with RCC Top slab with 1:2:4 mix (1 cement : 2 coarse sand: 4 graded stone aggregate 20mm nominal size) foundation concrete 1:4:8 mix (1 cement :4 coarse sand: 8 graded stone aggregate 40 nominal size), inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design . Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (Heavy 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) : With common burnt clay FPS(non modular) bricks of class designation 7.5	15	Each	12770.55	191,558.25
15.4.9	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with RCC Top slab with 1:2:4 mix (1 cement : 2 coarse sand: 4 graded stone aggregate 20mm nominal size) foundation concrete 1:4:8 mix (1 cement :4 coarse sand: 8 graded stone aggregate 40 nominal size), inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design . 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 116 kg (weight of cover 58 kg and weight of frame 58 kg) : With common burnt clay FPS(non modular) bricks of class designation 7.5	3	Each	26405.50	79,216.50
15.4.10	Extra depth of manholes Size 90x80cms With FPS Bricks with class designation75	5	metre	8825.40	44,127.00
15.4.11	Extra depth of manholes Size 120x90cms With FPS Bricks with class designation75	1	metre	10585.50	10,585.50
15.4.12	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand), inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	20	Each	12725.00	254,500.00
15.4.13	Extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91 m to 1.67 m				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	6	Metre	7591.80	45,550.80
15.4.14	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :				
	1.68 m deep with SFRC Cover and frame (heavy duty HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	1	Each	24702.75	24,702.75
15.4.15	Extra depth for circular type manhole 1.22 m internal dia (at bottom) beyond 1.68 m to 2.29 m :				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	1	Metre	9861.45	9,861.45
15.4.16	Constructing brick masonry road gully chamber 45x45x77.5 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) with precast R.C.C. vertical grating complete as per standard design : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	10	Each	6889.80	68,898.00
15.4.17	Constructing brick masonry road gully chamber 50x45x60 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	10	Each	5957.9	59,579.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.4.18	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 : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	26	Each	11520.55	299,534.30
15.4.19	Construction of rain water harvesting well of 3.5 metre dia and 4 metre effective depth with the operation of earth work in excavation and drilling with RC/DC/Calyx rig having 400/450mm dia bore size in all kind of starta except rock, back filling around harvesting well with available excavated earth, with necessary compaction and shifting of surplus earth outside by mechanical means as directed by the Engineer-In-Charge, PCC 1:5:10 , 200mm thick foundation concrete, brick work in cement mortar 1:4 (1 cement : 4 coarse sand), PVC coated safety steel foot rest of 12mm dia MS bars grouted rigidly in cement concrete 1:2:4 @300mm c/c, 200mm thick RCC tank cover slab in cement concrete M20 i/c providing and placing necessary steel raft, bars and to keep the provision of removable slab of approx. 1mx1m size, filling 300mm, 300mm & 300mm thick of 40-65mm nominal size graded loose boulders, Gravel 5-10 mm size and sand layer respectively, CI vent pipe, (100mm dia), 250mm dia uPVC slotted pipes 6Kg./sq cm working pressure, filling around the slotted pipes and packing 3mm to 6mm sized graded and screened rounded Pea Gravel duly washed fabricating and placing grating at the mouth of pipes, placing 560mm dia SFRC manhole cover with frame etc. i/e all necessary materials and equipments required for all relevant operations as shown in the drawing.	1	Each	650000	650,000.00
15.4.20	Construction of brick masonry desilting chamber of size 200x100x60cm (effective depth) before rainy well with 75 class designation bricks in cement mortar 1:4 (1 cement : 4 coarse sand) , foundation concrete 1:4:8 mix (1 cement : 4 coarse sand; 8 graded stone aggregate 40mm nominal size), inside and outside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement inside and rough plaster on outside, including fixing of grating , neatly finished complete in all respects including necessary excavation, refilling and disposal of surplus earth, complete. (Shop drawing to be submitted for approval before execution of work)	2	Each	51000.00	102,000.00
15.4.21	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 :				
15.4.22	For pipes 250 to 300 mm diameter	2	Each	922.40	1,844.80

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.4.23	Supply, Installation, Testing and Commissioning of NS10 Grease separator made of polyethylene as per DIN EN 1988 and DIN4040-100; for below ground installation with integrated sludge trap and top cover having nominal diameter 600 mm with load class B125 (EN 124); Ventilation provision; Draining connection, Discharge pipe work OD 160 mm Compression fittings and connection pipe with coupling ; Standard odour tight top 2 nos. cover of 600 mm dia. clear opening, load class B125 according to EN 124 including related Civil works as per preliminary details given in the above mentioned drawings complete in all respects. Grease Storage: 400L, Sludge Trap: 1000 L, Overall Capacity: 1600L, Weight 340kg (Empty) Model-NS- 10_93010/120B Make-KESSEL Dimension: L:2910 mm, W:1200, D:1870	1	Each	757825.11	757,825.11
15.4.24	Screw Sludge Pump Supply, Testing & Commissioning of Screw Sludge pump for removal of grease waste, mounted on SS Mover Trolley with Control Panels, Storage Tanks accordingly complete in all respects to handle grease from grease trap in Environment Friendly way with following specifications: Grease Waste Mover Trolley Heavy-duty waste mover trolley designed to carry and transport grease waste efficiently. Material: Stainless steel construction for durability and corrosion resistance. Load capacity: Minimum 1500 kg. Locking wheels: Four swivel casters with brakes for easy maneuverability and stability during operation. Dimensions(L*W*H): 1500*1200*200 mm As per manufacturer's specifications to fit securely on top of the screw sludge pump with control unit & storage tank 500 liters.. Safety features: Handles or grips for manual handling and safety while moving the trolley. Screw Sludge Pump A reliable and efficient screw sludge pump for transferring sludge and grease waste from the / Grease Separator to storage tank to the treatment system/. Capacity: upto 10 m ³ /hr at 6 m head . Power source: Electric motor with adequate power rating for efficient pumping. Inlet and Outlet: Standard connections for seamless integration with the system. Control Panel Assembly An electrical control panel to operate and manage the screw sludge pump and related equipment safely. Material: High quality steel enclosure with proper ventilation. Control components: Contactors, relays, circuit breakers, and necessary safety devices.				
	On/Off switches: User-friendly switches for pump activation and deactivation. Overload protection: Provision for protecting the pump motor from overload conditions. Voltage: 230 V , As per the local electrical standard. Storage Tank A storage tank for collecting and holding the grease waste before it is pumped into the treatment system.				
	Material: Corrosion-resistant material such as HDPE. Capacity not less than 500 liters. Inlet and Outlet: Standard connections for easy integration with the pump and other components. Level indicator: A level gauge to monitor the grease waste volume in the tank. (Make: Kessel)	1	Each	315174.00	315,174.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.4.25	Construction of Neutralization chamber of size 2000 mm x1000 mm (Internal) with effective depth of 600 mm with Brick Masonry in Cement 1:4 (1 Cement: 4 Coarse sand) over a bed of 150 mm thick PCC 1:4:8 (1 Cement: 4 Coarse sand: 8 graded stone aggregate 40 mm nominal size) including a baffle wall of Brick work, covered with RCC slab of 150 mm thickness, of 1:2:4 mix (1 Cement: 2 Coarse sand: 4 graded stone aggregate of 20 mm nominal size) including centering, shuttering and reinforcement complete with providing and fixing Foot rests @300 mm C to C with two 600x600 mm DI Heavy duty Manhole Covers with Lifting arrangement, including 150 mm dia Inlet & Outlet pipes complete etc. in all respect as per direction of Engineer-in-charge.	1	Each	16050.65	16,050.65
TOTAL SUB HEAD 15.4					5,968,414.19
15.5	PUMPS AND EQUIPMENTS				
15.5.1	Filter Feed pump Supply, Installation, Testing and Commissioning In-line vertical multistage centrifugal pump set (for clear water) SS-304 casing, SS-304 impeller, SS-316 shaft, CI base with coating, complete directly coupled with TEFC induction motor of class "F" insulation & efficiency class IE-3, 2900 RPM, suitable for operation on 415 volts ±10%, 3 phase, 50 Hz, A.C. supply, mechanical seal, pressure gauges with gunmetal isolation cocks, vibration elimination pads etc. mounted on a MS base frame bolted to cement concrete foundation etc. complete in all respects and as per technical specification for following capacities:				
	No. of Pumps : 2(1W + 1S) Capacity : (120 LPM) of Each Pump Head : 25 m Note:-1 set consists of 2 nos. of pumps (1Working + 1Standby)	1	Set	342915.42	342,915.42
15.5.2	Dual media Filter at Water treatment plant Supply, Installation, Testing and Commissioning of vertical Dual media Pressure Sand Filter (comprising of minimum 750mm media in four graded layer and minimum Height on Straight 1500mm) fabricated from high performance M.S plate of minimum 10mm thick for shell & 12mm thick for dished ends,(Quality of Steel as per IS:2062 Grade B),Tested to 5.0 Kg/m ² , internally treated with coal-tar epoxy, air scouring, collection system initial charge of media, M.S face piping with necessary flanges, gaskets, isolating valves, accessories, nuts & bolts, external painting with 2 coats of red oxide primer and enamel paint etc. with suitable foundation bolts & other accessories, mounting frame, complete as required & as per technical specifications of the following capacities: Discharge : 7200 LPH Each Filtration Rate : 17500 lit./m ² /h Dia. : 800 mm I.D.	1	Each	279608.09	279,608.09

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.5.3	Water Softener at Water treatment plant Supply, Installation, Testing and Commissioning 'Cation' "Anion" exchange process water softener fabricated from minimum 8 mm thick M.S. plate on min. shell and 10 mm thick M.S. plate on dished ends (Quality of Steel as per IS:2062 Grade B) complete with initial charge of filter media and resins, face piping accessories, diaphragm valves of approved specifications, HDPE Brine tank of min. 500 Liters, piping testing and commissioning complete with resins of approved quality and make and regeneration assembly complete with valves, ejector, brine suction valves and piping. All internal parts of the softener shall be rubber lined Complete as required as per technical specifications.				
	For Blending purposes Minimum expected rate of flow: (3 m3/hr) Total soft water to be produced between two regenerations: .24 Cu.m Expected raw water hardness : app. 550 ppm Expected treated water hardness: less than 50 ppm (Zero Commercial Hardness) Max. working pressure : 3 Kg/cm2	1	Each	407645.38	407,645.38
15.5.4	Chlorinator at Water treatment plant Supply, Installation, Testing and Commissioning chemical dosing system consisting of 2 nos. electronic dosing pumps (1W+1S) with all accessories, suitable to doze chemical solution upto 1 ppm doze of Sodium Hypo-chloride solution to a filtered water flow of 7200 LPH against a pressure of 1.5 kg/cm2 complete with FRP moulded solution holding tank of min. 200 litre with all standard accessories & structural arrangement including suitable foundation bolts & other accessories etc. complete as per technical specifications as required. Note:1 set consists of 2 nos. of pumps(1W+1S)	1	Each	94665.34	94,665.34
15.5.5	<u>(Hydropneumatic Pumping System With Variable Frequency Drive)</u> Supply, Installation, Testing and Commissioning of compact packaged type skid mounted, self contained variable frequency drive hydropneumatic system complete as per the technical specification complete as required:-				
	(i) In- line vertical multistage centrifugal water pump set (for clear water) with SS-304 casing, SS-304 impeller with SS-316 shaft ,Cl base with coating complete directly coupled with TEFC induction motor of class "F" insulation & efficiency class IE-3, 2900rpm, suitable for operation on 415 Volts ±10%, 3 phase, 50 Hz A.C. supply. The entire system shall be mounted on a common base frame i/c common suction and common delivery of G.I heavy class pipe headers with flanges, interconnecting piping with all required Control Valves, Non-return valves, pressure guage with isolation cock etc. complete as required.				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	(ii) Pressure vessel of non corrosive FRP composite construction lined with NSF and/or FDA listed material, like high density polyethylene with fully replaceable polyurethane. Air cell burst pressure of minimum of 3 times the vessel operating pressure and prototype cycle tested for 80,000 cycles with charging connections to discharge pipe line with necessary flanges, gaskets, isolating valve, nuts/ bolts etc. with suitable foundation bolts etc complete as required.				
	(iii) Microprocessor based multi pump controller/panel with graphical display and variable frequency drive (VFD) mounted inside a panel complete with pressure sensor transmitter. The graphical display capable to show number of pumps running & also communicate with other controllers following with open protocol through RS485 port. System should be capable to compensate for frictional losses at lower flows. All alarms should be displayed in the controller. The panel should also have provision for manual / automatic alternate (cyclic) operation of pumps, ON/OFF switch complete as required.				
	(v) Necessary foundationing bolts, vibration elimination pads etc complete as required.				
	Domestic Potable Water Supply Pumps at Water treatment plant				
	Duty of each pump suitable for:- No. of Pumps : 2 nos. (1 W + 1 S) Capacity : 7.2 m ³ /hr (120 lpm) of Each Pump Head : 65 Meters Air Vessel : 100 Ltr tank Note:-1 set consists of 2 nos. of pumps (1Working + 1Standby+1 Air vessel)	1	Set	10 09 797.64	1,009,797.64
15.5.6	<u>Drainage Sump Pump for Plant room</u>				
	Supply, installation, testing and commissioning compact monoblock dry motor sump pumps of suitable rating, with non-clog free flow open impeller, solid handling capacity at least 28mm suitable for operation on 415 volts $\pm 10\%$, 3 Phase, 50Hz, A.C supply, speed 2900 RPM including oil chamber, guide wire for lifting & lowering of pump, G.I. galvanized lifting chain, complete.				
	The above pump sets must be supplied complete with following accessories.				
	GI Piping of 80mm dia for individual pump delivery line and 100mm dia for common delivery line, to be terminated outside the sump.				
	80mm dia Butterfly valve.-- 2 Nos				
	80 mm dia reflux valve.-- 2 Nos				
	Electrical switch panel with DOL starter having all necessary accessories & safety devices of standard specifications. Automatic built-up water level controller with necessary length of cable upto control panel.				
	No. of Pumps/set : 2nos. (1 W + 1 S)				
	Discharge - 250 LPM Each				
	Head - 15 Meters	1	Set	260687.02	260,687.02

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.5.7	Providing, laying, testing & commissioning of 'C' class heavy duty G.I. pipe conforming to IS 1239 including welding, fittings like elbows, tees, flanges, tapers, nuts, bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required :				
a)	50 mm dia	20	Metre	1031.54	20,630.70
b)	65mm dia	15	Metre	1202.98	18,044.72
c)	80mm dia	20	Metre	1388.11	27,762.23
d)	100mm dia	25	Metre	1808.36	45,209.03
15.5.8	Supply, installation, testing and commissioning reinforced neoprene rubber vibration eliminators/expansion joints (to provide relief from stresses at pipe flanges) suitable for upto 20 kg/cm ² pressure, complete as per specifications as required.				
a)	65 mm dia	8	Each	3960.73	31,685.87
b)	80mm dia	8	Each	5053.48	40,427.80
15.5.9	Providing, installation, testing and commissioning of stainless steel Y-strainer fabricated out of 1.6 mm thick stainless steel, Grade 304, sheet with 3 mm dia holes with stainless steel flange.				
a)	100mm dia	2	Each	6664	13,328.00
b)	150mm dia	1	Each	11144	11,144.00
c)	200mm dia	2	Each	22265	44,530.00
15.5.10	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 :				
a)	50 mm dia	5	Each	3784	18,920.00
b)	65mm dia	5	Each	4302	21,510.00
d)	100mm dia	5	Each	6667	33,335.00
15.5.11	Providing and fixing 50 mm dia gun metal gate valve with C.I. wheel of approved quality (screwed end) :	4	Each	1026.55	4,106.20
15.5.12	Providing, installation, testing and commissioning of non-return valve of following sizes conforming to API 594 complete with rubber gasket, GI bolts, nuts, washers etc. as required :				
a)	65mm dia	4	Each	6418	25,672.00
15.5.13	Supply, installation, testing and commissioning of 750 mm long hot dipped G.I. Puddle flanges for water tanks as per I.S. 1239 (Class C) with 6mm thick M.S. Plate of suitable size and welded around the pipe fixed in walls, beams and top slab of R.C.C tanks, complete with all details in all respects and as per drawing and specifications.				
a)	50 mm dia	5	Each	4000.00	20,000.00
b)	65 mm dia	1	Each	4200.00	4,200.00
c)	80mm dia	7	Each	4500.00	31,500.00
d)	100mm dia	5	Each	5300.00	26,500.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
f)	150 mm dia	3	Each	5500.00	16,500.00
g)	200mm dia	2	Each	5800.00	11,600.00
15.5.14	Providing, fixing and testing, double flanged Water Flow Meter complete with digital display provision & including Pulse generator and Remote Totalizer complete in all respect as per manufacturers specification, instructions and approval as per engineer in charge complete in all aspects				
a)	65 mm dia	3	Each	2900.00	8,700.00
15.5.15	Providing ,fixing , testing and commissioning of IP 67 (Weather Proof /Aluminium casing with positoner to indicate the valve position with key type manual overdrive) Motorized Butterfly valve for filling of water tank complete with high and low level float type sensors to control the valve .The sensors shall be installed in water tanks.The sensors will close the valve when water level is high in tank and open the valve when water tank level is low . The system should be complete in all respects with control panel indicating the position of valve i.e open /closed with accessories like wiring /conducting /flanges, nut bolts etc complete as per approved type and specifications as per instructions of the engineer - in - charge.				
a)	65 mm dia	3	Each	25967.53	77,902.59
15.5.16	Supply, installation, testing and commissioning of insect-proof coupling , to vent pipes of water tank with threaded or flanged joints, including G.I. flanges, nuts, bolts, 3mm thick rubber insertions complete as per technical specifications.				
a)	80 mm dia	2	Each	2000.00	4,000.00
b)	100 mm dia	2	Each	2500.00	5,000.00
15.5.17	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. In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete	750	Kg	172.60	129,450.00
15.5.18	Providing and fixing S.S. grating and preferably in 300mm long pieces, fabricated with 16x16mm square bars, @ 20mm clear spacing and welded to angle iron 25x25x5mm and placed firmly on angle iron frame of 30x30x5mm with 25x3mm hold fasts approximately 75mm long welded at intervals of 500mm complete as per attached details for drain (For the Kitchen area).	500	Kg	300	150,000.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.5.19	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910 on 12mm dia steel bar conforming to IS : 1786 having minimum cross section as 23 mmx25mm and over all minimum length 263 mm and width as 165mm 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.	60	Each	553.7	33,222.00
15.5.20	Providing and Fixing extra heavy duty, water tight double sealed Ductile iron Circular Manhole cover and frames specially casted for placing over the UG Water tanks with lifting and locking arrangements as per approved sample, complete in all respect including fixing in PCC as per site Requirement .	250	Kg	448.50	112,125.00
15.5.21	Electrical panel at Water treatment plant Equipments				
	Design, manufacture, supply, installation, testing and commissioning of the Plumbing panel , front operated, cubicle construction, Floor mounted type, fabricated out of 16 swg thick CRCA Sheet, Compartmentalized with hinged lockable doors, dust and vermin proof, Powder coated of approved shade, Cable alley, inter-connections, having Switch gear and accessories mounting, internal wiring, earth terminals, Top/ Bottom cable entry, numberings etc. suitable for operation of 415 volts, 3 phase, 50 Hz, AC Supply with enclosure protection class IP 54 complete as required and as specified with the following:				
	INCOMER -				
	<u>Each Incomer shall consist of :</u>				
	63 Amps, Four pole, 11 KA MCCB with rotary handle on door.				
	Voltmeter (0-500 Volts) with selector Switch & protected by MCB's.				
	Ammeter (0-100 Amps) with selector Switch & CT's etc.				
	Set of (R,Y,B) LED phase and ON & OFF indication Lamps.				
	BUSBAR				
	1 Set 11KV, 100 Amps Three Phase busbars of aluminium with Rear cable termination.				
	OUT GOING FOR :-				
	Filter feed pumps set (2 Nos. Pump (1W+1S) - 1 set))				
	<u>Pump feeder shall consist of :</u>				
	Suitable rating MPCB with DOL Starter for outgoing feeder of 1.5 HP. Each Compartment shall contain Auto/Manual Selector Switch and Indicating Lamp for ON/TRIP Status of Motor---2 Nos				
	Ammeter (0-100 Amps) with selector Switch & CT's etc.				
	Set of ON / OFF LED indication Lamps protected by MCB.				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	Domestic Potable Water Supply hydropneumatic pumps set (1 w+1s) pumps				
	Suitable rating MCCB with neutral link MCCB (Motor Duty) 1.1 KA with rotary handle on door suitable for 3 HP and for Connection to Built up Hydro Panel.---1No.				
	Salt saturator & Chlorine dosing system				
	<u>Each pump set feeder shall consist of :</u>				
	6 Amps. DP, 10 KA "C" curve MCB with DOL Starter suitable for single phase 240 V, 50 Hz AC supply. Interlocking with filter feed pump treated water pump suitable for 1 HP ---2Nos.				
	Set of ON / OFF indication Lamps protected by MCB.				
	For Drainage Sump Pumps Plant Room area - 2 Nos.(1W +1S)				
	<u>Pump feeder shall consist of :</u>				
	Suitable rating TP MCCB 25 KA with rotary handle on door suitable for Connection to Built up Panel.---1No				
	NOTE:-1. All MCCB shall have 100% Ics =Icu 2.Panel shall be provided with NO-NC Potential free contact for BMS compliance.				
	Complete Set as mentioned above	1	Set	588971.54	588,971.54
15.5.22	Pump motor controller cum water level indicating panel at Water treatment plant				
	Supply, installation, testing and commissioning of Centralised PLC control panel front operated, cubicle construction, wall mounted type, fabricated out of 1.6 mm thick CRCA Sheet, with hinged lockable doors, dust and vermin proof, powder coated of approved shade, interconnections, having, internal wiring, earth terminals, Top / Bottom control cable entry, numberings etc.comprises of touch-screen display board (Min.Diag. size 8") along with all accessories for complete Programmable logical controls & indications, having necessary interlocks, Inputs/Outputs, required number of repeater amplifiers, all audio-visual alarms as per the requirements listed below i/c emergency stop push button on the panel etc. The panel shall have BMS compatible Modbus protocol complete as required and as specified.				
	Water level indicators and controllers : The hydrostatic pressure sensor (Water level indicator) is working on hydrostatic pressure measurement principle made of Stainless Steel for installation in storage tanks, and capable of providing 4 to 20 mA analog signal compatible with PLC signal inputs and all control outputs to MCC panel (Plumbing/Water supply), complete as per working requirements for equipment detailed below.				
	a) <u>Fire Water Underground tanks- 1No.</u>				
	Real-Time water level indication monitoring				
	Low Level audio-visual alarm at less than 30% total capacity.				
	High Level audio-visual alarm at more than 100% total capacity.				
	b) <u>Raw Water Underground tanks- 1No.</u>				
	Real-Time water level indication monitoring				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	Low Level audio-visual alarm at less than 30% total capacity.				
	High Level audio-visual alarm at more than 100% total capacity.				
	Auto cut-out of raw water pumps at 95 % capacity of domestic tank				
	Auto cut-in of raw water pumps at 25 % capacity of domestic tank				
	Auto cut-out of filter feed pumps at 10% capacity of raw water tank				
c)	<u>Domestic Water Underground tanks- 1 No.</u>				
	Real-Time water level indication monitoring				
	Low Level audio-visual alarm at less than 30% total capacity.				
	High Level audio-visual alarm at more than 100% total capacity.				
d)	<u>Fire Water O.H. tanks- 1 No.</u>				
	Real-Time water level indication monitoring				
	Low Level audio-visual alarm at less than 30% total capacity.				
	High Level audio-visual alarm at more than 100% total capacity.				
e)	<u>Domestic Water O.H. tanks- 1 No.</u>				
	Real-Time water level indication monitoring				
	Low Level audio-visual alarm at less than 30% total capacity.				
	High Level audio-visual alarm at more than 100% total capacity.				
	Complete Set as mentioned above	1	Set	510015.21	510,015.21
15.5.23	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc. as required.				
a)	150 mm width X 50 mm depth X 1.6 mm thickness	20	Meter	604	12,080.00
b)	200 mm width X 50 mm depth X 1.6 mm thickness	20	Meter	689	13,780.00
c)	300 mm width X 50 mm depth X 1.6 mm thickness	20	Meter	777	15,540.00
15.5.24	Providing of following sizes of 1.1KV grade XLPE insulated and PVC sheathed copper conductor armoured stranded power cables conforming to IS 1554 (Part-1) & (7098 Part-1) as ammended upto date and as specified, including necessary support clamps at ceiling level, connection lugs and double compression glands, complete in all respects as per directions of the engineer-in-charge.				
a)	3 core 2.5 Sq.mm	10	Meter	137	1,370.00
b)	3 core 4 Sq.mm	20	Meter	206	4,120.00
c)	3 core 6 Sq.mm	20	Meter	304	6,080.00
d)	3 core 10 Sq.mm	30	Meter	257	7,710.00
e)	3 core 16 Sq.mm	40	Meter	270	10,800.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.5.25	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	1	Set	6256	6,256.00
15.5.26	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	20	Meter	706	14,120.00
15.5.27	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	20	Meter	1162	23,240.00
15.5.28	Providing & Fixing of electric insulated rubber mat non-skid type with grooved top size 1m x 2m and 12 mm thick as per IS : 5424 as required suitable for 1100 volts complete as per directions of the engineer-in-charge.	20	Each	2500.00	50,000.00
TOTAL SUB HEAD 15.5					4,646,406.77
15.6	RO DRINKING WATER & CHILLER SYSTEM				
15.6.1	<u>R.O. Plant For Visitor Hostel</u>				
1	Supply, installation, testing and commissioning of R.O. Plant capacity of 200 LPH (Complete system to be compact type, skid-mounted / cabinet enclosed, as per detailed shop drawings to be approved) for the following parameters and consisting of (but not limited to) the following main components:-				
	(i) Inlet Quantity : As per Detailing				
	(ii) Output Quantity : 200 LPH				
	(iii) Inlet TDS : 2000 PPM				
	(iv) Outlet TDS : 75 PPM				
	(v) Inlet Hardness : 350 PPM)				
	(vi) Outlet Hardness : 50 PPM)				
A)	Raw Water pumps of horizontal, centrifugal type suitable for a flow rate of 400LPH at 25m head. The Pump construction shall be of SS-304 & impeller shall be also SS-304 . The motor shall be TEFC suitable for a supply of 415V/3-phase/50Hz supply. The pump shall be supplied complete with base channel coupling foundations, bolts, pressure gauge at inlet and outlet of each pump. -- 2 Nos.				
B)	Special Antiscalant Dosing System consisting of one HDPE tank of 100 litre capacity with a positive displacement diaphragm dosing pump having variable flowrate of 0-6 LPH. The motor shall be suitable for operation at 240V/single phase/50Hz supply. the pump shall be supplied complete with necessary polypropylene piping, valves, strainers & injection fittings. -- 1 Set.				
C)	Micron cartridge filter suitable for a flowrate of 400LPH to achieve particle filtration of less than 5 microns. The unit shall be supplied complete with inlet and outlet branches removal cap for replacement of element, inlet and outlet pressure indicators. (One for the pressure treatment & other for CIP system) MOC: Polypropylene -- 2 sets				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
D)	R.O High Pressure feed pumps of vertical, multistage centrifugal type suitable for a flowrate of 400 LPH at 14 Kg/sq.cm. The pump construction shall be of SS-316-L & impeller shall be also SS-316-L. The motor shall be of TEFC suitable for a supply of 415V/3 phase/50 Hz supply. the pump shall be supplied complete with base channel coupling foundation, bolt, pressure gauge at inlet and outlet of each pump. - 2 Nos.				
E)	R.O. modules made out of Spiral Wound Thin Film composite suitable to withstand pressure of 20kg/sq.cm. Suitable BSPT/NPT connections shall be used for connecting feed & reject ends. the modules shall be supplied complete with all necessary instrumentation, valves for sampling, drain, reject & permeate, epoxy-coated structural steel bases and supports, as per following system capacity requirements: (i) Total net treated water output of system =200LPH (ii) System recovery = 60 % (iii) Filtration area per membrane = 85 sq.ft. (iv) Number of membranes = The total number of membranes required shall be as per requirements, supported by calculations from the vendor.				
F)	Clean in place pump of horizontal end suction suitable for a flow rate of 400 LPH at required head. The pump construction shall be of stainless steel SS-304. The motor shall be TEFC suitable for a supply of 415V/3 phase/50Hz supply. The pump shall be supplied complete with base channel, coupling, foundation bolts, pressure gauge at inlet & outlet of the pump . -- 1 Set				
G)	Centralised PLC control panel along with touch-screen digital display board along with all digital sensors for TDS & Flow, made out of CRCA sheet min. 2mm thick having main contactors for all pumps (listed above) including SPP, 3 phase thermal overload relay. The control panel for monitoring and control of P.O. system shall include all required signal lamps, HRC fuses, Annunciation box with Hooter. All control and power cabling along with double earthing between the panel shall be included in the scope of supply of the contractor. An emergency stop push button shall be provided in the panel. The MCC panel shall have the following interlocks:- i) High Pressure Pump unit trip in case of Low suction pressure. ii) High Pressure Pump unit trip in case of High discharge pressure. iii) Special anti-scalant dosing pump trips in case high pressure pump trips and vice versa. iv) High Pressure pump trip in case of high conductivity in permeate. v) SHC dosing pump trips incase high pressure pump trips and vice versa. vi) In all above cases Annunciator box indicates nature of malfunctioning.				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
vii)	The System should display the TDS of Raw Water & R.O. Water, Flow Rate of Inlet, Outlet & Reject Water simultaneously.				
H)	Instrumentation mounted in R.O. system/panel as follows:-				
i)	Digital Flow meters to measure and control the flow of feed/product/reject stream. -- 3 Nos.				
ii)	Pressure Gauges made out of SS316 (glycerine filled) of pricol/equivalent make. -- 5 Nos.				
iii)	Digital Conductivity probes for conductivity display -- 2 Nos.				
iv)	Pressure Switches to control pressure and given High/Low pressure trip. (Danfoss/Switzer/Square D make) -- 4 Nos.				
v)	Level switches to control water level in the output storage tank and soft Water Tank. -- 2 Nos. 1 Nos.				
vi)	ORP with dump valve. -- 1 Set				
I)	First fill of all chemicals and lubricants to commission and				
J)	All interconnecting piping work with valves:-				
i)	Low Pressure Side till R.O. feed water pump. Piping shall be of extra strong PVC and all valves shall be of extra strong PVC and all valves shall be PVC ball valves. -- 1 Lot				
ii)	High Pressure side piping from the R.O. high pressure pumps to the reject stream control valves shall be of SS - 304 using all SS fittings ball valves of suitable pressure rating shall be used till 25 mm size, above 25 mm, flanged globe/ wafer butterfly valves in SS construction shall be used. Rejects pressure control valves shall be globe valve and feed flow control valve shall be of SS-304. -- Lot				
	(All for above from "A" to "J" complete)	1	Set	375000.00	375,000.00
15.6.2	Complete Stainless Steel treated water storage tank (double Wall) of capacity 400 Litres including all inlet/outlet connections, accessories, valves, double seal manhole covers, insulation etc. The Stainless steel tank must be ozone resistant and to be used as ozone contact tank. Fabrication to be done as per approved shop drawing.	1	Set	65000.00	65,000.00
15.6.3	ONLINE CHILLER SYSTEM				
15.6.3.1	Supply, installation, testing and commissioning of MS powder coated online Chiller system capacity of 100 LPH with chilled SS water storage tank of 200 Ltr and Compressor capacity 1-1.5 TR, as per detailed shop drawings to be approved) for the following parameters and consisting of (but not limited to) the following main components complete in all respects as per the direction of the Engineer-In-Charge:-				
	(i) Cooling capacity : 100 LPH				
	(ii) Compressor Capacity : 1-1.5 TR				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	(iii) Refrigerant : R 22				
	(iv) Power Supply : 1/3 Ph, 220/440 V, 50 Hz				
	(v) Material of construction of body : MS Powder Coated				
	(vii) Inlet water Temperature :35 ± 5° C				
	(vii) Outlet water Temperature : 20 ± 3° C	1	Set	350000.00	350,000.00
15.6.3.2	Chilled Water Storage Tank : Capacity 200 Litre, Chiller storage tank shall be made out of 0.8 mm thick SS steel of grade SS 316L, covered with 60 mm thick puf insulation of density not less than 48 kg/m ³ , having suitable water level sensors, with copper pipe of 12.7 mm dia dipped inside it etc. complete as reqd.	1	Each	65000.00	65,000.00
	TOTAL SUB HEAD 15.6				855000.00
15.7	<u>AIR COOLED HEAT PUMP</u>				
15.7.1	<u>AIR COOLED HEAT PUMP FOR GENERATING HOT WATER</u>				
15.7.1.1	Hot Water Recirculation Pumps in Heat pump and tank.				
	Providing, fixing ,testing and commissioning suitable complete horizontal/ vertical multistage centrifugal pumping set having stainless steel (SS 304) impellers & shaft and single mechanical seal with pumps suitable for 415 Volts, Single Phase 50 cycles A.C Supply complete with all standard accessories including , M.S.channel, base plate complete with vibration isolators, isolating valve on suction and discharge, non return valve on discharge, pressure gauges with stop cock and dial type thermometer on suction or discharge.(suitable for hot water temperature up to 85 deg C.) The pump 2 No (1 working+1standby) complete with Control Unit Panel for automatic Cold & Hot water circulation, manifolds , as per the approval of Project-in-charge complete with base frame, necessary foundation as per requirement				
	Flow - 700 LPH Per Pump				
	Head - 15 M				
	Capacity - 2 No. 38 KW (1 W + 1 S)	1	Each	800000.00	800,000.00
15.7.1.2	<u>HOT WATER RETURN PUMP</u>				
	Providing, fixing ,testing and commissioning suitable complete horizontal/ vertical multistage centrifugal pumping set having stainless steel (SS 304) impellers & shaft and single mechanical seal with pumps suitable for 415 Volts, Single Phase 50 cycles A.C Supply complete with all standard accessories including , M.S.channel, base plate complete with vibration isolators, isolating valve on suction and discharge, non return valve on discharge, pressure gauges with stop cock and dial type thermometer on suction or discharge.(suitable for hot water temperature up to 85 deg C.) The pump 2 No (1 working+1standby) complete with Control Unit Panel for automatic Cold & Hot water circulation, manifolds , as per the approval of Project-in-charge complete with base frame, necessary foundation as per requirement	1	Each	85000.00	85,000.00
15.7.1.3	Hot Water Storage Tank Capacity 2000 Ltrs				
	Supply, installation, testing & commissioning of Stainless Steel Gr- 304(horizontal / Vertical) hot water				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	storage tank suitable for minimum 6 Kg /Sq.cm operating pressure. Tank shall be fabricated with minimum 6mm sheet & 8 mm Dish thickness. Tank shall be provided inlet from hydropneumatic system, inlet / outlet, overflow / drain connection with 12 mm thick MH cover (550 mm OD) pressure relief valve, pressure gauge & Hot water outlet. All the valves & accessories shall be suitable for an operating pressure as mentioned above. Tank shall be mounted on 450 mm high steel structural supports with access ladder painted with 2 coats of red oxide paint. (Inlet temperature to hot water storage tank 60-70 deg C)- Tank shall be insulated with 50 mm LRB/ Rock wool of density of 85Kg/m3, including 24 gauge aluminium cladding. Tanks shall comprise of 36 KW (6 KW x 6 Nos) heating 3 Phase elements fabricated with SS 316L as back up to maintain the 60 Deg temperature in supply.	1	Each	200000.00	200,000.00
TOTAL SUB HEAD 15.7					1,085,000.00
15.8	MISCELLANEOUS				
15.8.1	Providing and fixing 80 mm dia insect-proof coupling to vent pipes of overhead tank with threaded or flanged joints, including M.S. flanges, nuts, bolts, 3mm thick rubber insertions complete.	50	Each	1200.00	60,000.00
TOTAL SUB HEAD 15.8					60,000.00
15.9	FIRE FIGHTING WORKS				
15.9.1	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m : All Kinds of Soil Pipes, cables etc, not exceeding 80 mm dia.	162	Metre	215.6	34,819.40
15.9.2	PIPES AND VALVES				
15.9.2.1	Providing, laying, testing and commissioning M.S. Black ERW Heavy grade piping as per IS: 3589/ IS 1239. including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. in ground including welding, excavation and providing cement concrete blocks as supports, anti corrosive treatment with coaltar / asphalt tape as per IS 10221, refilling the trench etc. of following sizes complete as required.				
a)	150mm dia	162	Metre	3804	614,346.00
15.9.2.2	Providing, laying, testing and commissioning M.S. Black ERW Heavy grade piping as per IS: 3589/ IS 1239. including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe in wall /ceiling with suitable clamp / support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required				
a)	150mm dia	304	Metre	3574	1,086,496.00
b)	100mm dia	19	Metre	2555	48,545.00
c)	80mm dia	19	Metre	1885	35,815.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.9.2.3	Providing, fixing, testing & commissioning of Butterfly valve (double flanged) with C.I. body & disc, stainless steel/carbon steel shaft, Hand lever operated, PN 1.6 rating, conforming to IS:13095 / BS:5155 complete with nuts, bolts, washers, gaskets complete.				
a)	150mm dia	3	Each	8960	26,880.00
b)	100mm dia	2	Each	6667	13,334.00
c)	80mm dia	2	Each	4982	9,964.00
15.9.2.4	Providing and fixing forged brass lever operated ball valve of full flow with forged brass ball (Machined to mirror smooth finish with hard chrome plated) and spindle with setting and gland of superior quality having minimum working pressure of 12 kg/cm2 etc. complete in all respect.				
a)	25mm dia	2	Each	3255.54	6,511.08
15.9.2.5	Providing & fixing C.I horizontal/ vertical type non return valve (dual plate) conforming to IS:5312 with C.I. body, SS Disc, SS stem, EPDM seal, complete with companion flanges, bolts, nuts, washers & inserted rubber gasket complete as required to I.S:5312, Part-I, dual plate type, class PN 2.0				
a)	150 mm dia	3	Each	17786	53,358.00
15.9.2.6	Providing and Fixing Copper Alloy Air release valve, having threaded connection including the cost of 25 mm dia Gunmetal Gate valve with required fittings as per standard design.	2	Each	3085.00	6,170.00
15.9.3	FIRE FIGHTING EQUIPMENTS & ACCESSORIES FOR EXTERNAL & INTERNAL HYDRANT SYSTEM				
15.9.3.1	Providing and fixing Stainless steel landing valve hydrants to type 'A' of I.S: 5290-1977 with 63mm dia. instantaneous type single headed outlet, M.S. pipe bend and flange of required size with blank caps and chain, 1.6mm thick compressed asbestos gasket of approved specifications and make, complete with instantaneous spring lock type G.M. female coupling of 63mm dia. for connecting hose pipe, complete in all respect.	17	Each	6139	104,363.00
15.9.3.2	Providing and fixing standard short size Stainless steel branch pipe with hand operated gunmetal 20mm nominal bore outlet with standard instantaneous type 63mm dia coupling as per IS: 903.	17	Each	1662	28,254.00
15.9.3.3	Providing and fixing first aid fire hose reel (with wall mounting swinging-type drum complying to IS:884), fitted with Thermo Plastic Synthetic Reinforced Fire Hoses conforming to IS:12585-1988 (or EN 694:2001, of Type -2 class, 20 mm bore, with standard size outlet and shut off valve, brackets, complete in all respects.	17	Each	8675	147,475.00
15.9.3.4	Providing and fixing 63mm dia 15m fire hose, including Stainless steel male and female instantaneous type coupling approved by fire authority, machine wound with copper wire complete in all respects hose to IS:636 and coupling to IS: 903 with ISI certification.	34	Each	4448	151,232.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.9.3.5	Providing and fixing standard fire mans axe with heavy duty insulated rubber handle as per IS: 926 with clamps.	17	Each	920.00	15,640.00
15.9.3.6	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:				
	3 way-150 mm dia M.S. Pipe	1	Set	9455	9,455.00
15.9.3.7	Providing, fixing and commissioning of Fire door, fabricated from 16 gauge M.S sheet (with glass) with locking and break glass recess for key. Door shall be suitable for opening of size 900 x 2100 mm, duly painted with signage complete in all respects including necessary tagging.	17	Each	12000.00	204,000.00
15.9.3.8	Providing and fixing fire hose cabinet fabricated from Stainless steel SS grade 304 with single or double glazed front door and locking arrangement, including necessary supports of approximate size 2100x1200x900 mm deep to house two lengths of canvas hose with couplings, branch pipe, fire hose reel, nozzle, fireman axe, single outlet landing valve and first-aid hose reel, complete in all respects (The Sample to be approved).	17	Each	9000.00	153,000.00
15.9.3.9	Providing & fixing of pressure switch in M.S. pipe line including connection etc. as required.	20	Each	1546.00	30,920.00
15.9.4	FIRE PUMPS, MECHANICAL & ELECTRICAL ACCESSORIES				
15.9.4.1	(A) Supplying, installation, testing and commissioning of Electric driven Main Fire Pump suitable for automatic operation and consisting of following, complete in all respects, as required : (B) Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520. (C) Suitable HP Squirrel cage induction motor, TEFC, synchronous speed 1500 RPM, suitable for operation on 415 volts, 3 phase 50 Hz, AC supply with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325. (D) M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required. (E) Suitable cement concrete foundation duly plastered with anti vibration pads.				
	2280 lpm at 110 m Head	1	Set	403506	403,506.00
	Note:*The head of the pump is selected in a manner so as to give a minimum 3.5kgf/cm2 pressure at the highest/farthest point.				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.9.4.2	(A) Supplying, installation, testing and commissioning of diesel engine driven main fire pump suitable for automatic operation and consisting of following, complete in all respects, as required : (Diesel Driven Pump) (B) Horizontal type, multistage, centrifugal pump of cast of iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520. (C) Suitable HP, 1500 RPM water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12 /24 volts electric starting equipment, diesel tank, exhaust pipe extended upto 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications, painted with post office red colour etc. as required. (D) M.S fabricated, common base plate, coupling, coupling guard, foundation bolts etc. as required. (E) Suitable cement concrete foundation duly plastered and with antivibration pads.				
	2280 lpm at 110 m Head	1	Set	635909	635,909.00
	Note: * The head of the pump is selected in a manner so as to give a minimum 3.5kgf/cm² pressure at the highest/farthest point.				
15.9.4.3	(A) Supplying, installation, testing and commissioning of electric driven pressurisation pump suitable for automatic operation and consisting of following, complete in all respects, as required : (Jockey Pump) (B) Horizontal type, multistage, centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS: 1520. (C) Suitable HP squirell cage induction motor TEFC type suitable for operation on 415 volts, 3phase 50 HzAC supply with IP 55 class of protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS : 325. (D) M.S.fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required. (E) Suitable cement concrete foundation duly plastered and with anti vibration pads.				
	180 lpm at 110 m Head	1	Set	127148	127,148.00
15.9.4.4	Electrical Panel for Fire Pumps				
	Fabricating, supplying, installation, testing & commissioning of totally enclosed cubicle type fire pump control panel free standing, floor mounted, comparatmentalised, sectionalised, dust ,dump and vermin proof with suitable natural ventilation arrangement,front and rear accessible,lockable power cum control panel, fabricated from 1.6/2 mm thick MS sheet (to give IP 42 protection) seven tank powder coated with RAL7035 colour shade, heavy 4 strip sleeved Electrolytic grade aluminium bus bar, bus bar supports, inter connecting from bus bars to out going switches/ MCCBs including earthing the board suitable to accomodate the following including numbering etc. as required.				
	INCOMING:				
	400amp. TP +NL M.C.C.B. with rotary handle of breaking capacity 36KA				
	One-Digital voltmeter with phase selection switch				
	One-Digital Ammeter with phase selection switch				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
	3 Phase indicating lamps with SP MCB--3 Nos and 700 AMP AL.Bus bar.				
	Dual supply with on load changeover of required capacity				
	OUTGOING				
	One- 250 Amp. TP + NL M.C.C.B. with rotary handle of breaking capacity 35KA				
	One - 32 Amp.TP +NL M.C.C.B. with rotary handle of breaking capacity 35KA				
	One Fully Automatatic Star-Delta starters suitable for main fire Pump Motor with over load relay timer push buttons and Auto/Manual selector switch and single phase preventer relay.				
	one Fully Automatic star delta Starter suitable for Jockey Pump Motor with over load relay, timer push buttons and Auto/Manual selector switch and single phase preventer relay.				
	two panel type Digital Amp. meters one for each motor with ASS. CTS etc.				
	two sets of On/Off - neon indicating lamp.				
	Auxillary potential free contact to be provided for each pump set for sending data to BMS station for status only.				
	1 set of Automatic Trip unit of suitable rating operating at 12/24V DC for Fully Automatic Diesel engine starting system complete with battery charger, 8 window annunciator, indicating lights, transformer, rectifier, timer, voltmeter ammeter, selector switches, push buttons, auxiliary relay etc. complete as required as per NBC rules				
	All interconnecting power & control wires/cables suitable size within the panel .				
	(All for above complete set). (The shop drawing to be prepared and approved before fabrication)	1	Set	250000.00	250,000.00
15.10	Supplying and fixing of following powder coated perforated type cable tray system including fittings and accessiores on existing structural supports, fabricated from min. 2mm thick CRCA MS sheets including the cost of powder coatings of approved shade of min. 50 micron film thickness on MS surface cleaned and including the cost of providing loop earthing with 2 nos. 25mm x 6mm GI earth strips complete as per specifications and including the cost of approved arrangement of cable tray hangers fabricated from galvanized MS angles/flats/rods including jointg the steel section of the suupport arrangement with nuts and bolts/welding and including securing the support to the structural ceiling by dash fasteners etc.complete with spacing of 600mm for 900mm/1200mm and 750mm for lower sizes, as required, and as below.				
a)	300mm x50mmx50mm trays	20	Metre	777	15,540.00
b)	150mmx50mmx50mm trays	20	Metre	604	12,080.00
15.11	Providing and fixing C.I double flanged "Y" type strainer with S.S. mesh, including nuts, bolts and 3 mm thick gasket complete as required				
a)	200 mm dia	1	Each	22265	22,265.00
b)	150 mm dia	1	Each	11144	11,144.00

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.12	Providing and fixing flanged flexible connectors in SS 304 braiding, of rating PN 1.6 or equivalent, to provide stress relief for suction/delivery of pumps, complete with standard flanges, nuts, bolts etc.				
a)	150mm dia (min. 150 mm length)	10	Each	2800.00	28,000.00
b)	100mm dia (min. 150 mm length)	10	Each	2700.00	27,000.00
c)	80mm dia (min. 150 mm length)	10	Each	2500.00	25,000.00
d)	65mm dia (min. 150 mm length)	15	Each	2200.00	33,000.00
15.13	Providing and fixing Pressure gauge (0-14 Kg/Cm2) with necessary flanges and fittings such as tees, elbows and painting and supports etc. complete.				
a)	100mm dia	3	Each	1196	3,588.00
15.14	Providing and fixing pressure switch (for operation at 0-15 Kg./sqcm) with required fittings and accessories complete.				
a)	Standard type	10	Each	1546	15,460.00
15.15	Providing and fixing heavy duty FRLSH outer sheath Aluminum armored cables 1.1 KVA grade including necessary support clamps at ceiling level, connection lugs and double compression glands, complete in all respects.				
a)	Power cable 3 core 16 Sq.mm	20	Metre	270	5,400.00
b)	Power cable 3.5 core 120 Sq.mm	20	Metre	597	11,940.00
15.16	Providing and fixing 25mmx5mm GI strip in 40mm dia GI pipe from earth electrode as required.	20	Metre	706	14,120.00
15.17	Providing and fixing 25mmx5mm GI strip in on surface (or) in recess for earth connection etc as required.	20	Metre	244	4,880.00
15.18	PORTABLE FIRE EXTINGUISHERS				
15.18.1	Providing and fixing "ABC" stored pressure type Dry Chemical Powder (Mono-Ammonium Phosphate) fire extinguisher with fixing hangers, hose, brackets, screws to required size etc., complete as per IS: 15683:2006				
a)	6 Kg. Capacity	50	Each	5455.00	272,750.00
15.18.2	Providing and fixing CO ₂ type cylindrical shape fire extinguisher with fixing hangers, hose, brackets, screws to required size etc.,complete as per IS:15683:2006 - wall mounted type.				
a)	4.5 Kg. Capacity	17	Each	9500.00	161,500.00
15.18.3	Providing and fixing 9 litres capacity water type extinguishers with CO ₂ cartridge with fixing hangers, hose, brackets, screws to required size etc., complete as per IS:15683:2006 -Wall mounted type.	17	Each	3695.00	62,815.00
15.18.4	Providing and fixing 6 Kg K-type(Wet chemical) cylindrical shape fire extinguisher.	17	Each	2600.00	44,200.00
15.19	CIVIL WORKS FOR FIRE PROTECTION SYSTEM				

Item No.	Item Description	Quantity	Unit	Rate i/c GST	AMOUNT i/c GST
15.19.1	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. In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete	1 000	Kg	172.60	172,600.00
15.19.2	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :				
	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	250	Sqm	226.25	56,562.50
	TOTAL SUB HEAD 15.9				5,196,984.98
	Grand total for plumbing & FF (15.1 to 15.9)--- (B)				40,055,965.14
	Total (A+B) including multiplying factor of .2127 for GST				364,019,568.43
	Add GST correction factor of 0.973				354,191,040.08