



BIDDING DOCUMENT
for
Construction of Multipurpose Ground at
High Field, Aizawl

VOLUME-II
(Price Bid)

Issued on : 2nd December, 2021
Invitation for Bids No : B. 11030/144 (Proc-Gen)/2018-ASCL/140
Package No : MIZ-AIZ-129A/PG-HF/20
Employer : AIZAWL SMART CITY LIMITED, AIZAWL
State : MIZORAM
Country : INDIA



AIZAWL SMART CITY LIMITED, AIZAWL

Price Bid

This Section contains the forms which are to be completed by the Bidder and submitted as part of his Price Bid.

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Letter of Price Bid

Date:

Contract Package No.:

Invitation for Bid No.:

To:.....

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8;
- (b) We offer to execute in conformity with the Bidding Documents and the Technical Bid submitted for the following Works:
- (c) The total price of our Bid, excluding any discounts offered in item (d) below is:
- (d) The discounts offered and the methodology for their application are:
- (e) Our Bid shall be valid for a period of days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (f) If our Bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;
- (g) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
- (h) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date

Schedules
Bill of Quantities

Preamble

(A) General

1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, Conditions of Contract, Specifications and Drawings.
2. For the construction of works, the quantities given in the Bill of Quantities are estimated quantities, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the agreed individual item rates. Bills will be raised monthly. The method of measurement shall be as per norms laid out by the Bureau of Indian Standard's publication IS: 1200 (Latest Editions with updated amendments).
3. A rate or price shall be entered against each item in the Priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor has failed to enter a price or rate shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
4. The whole cost of complying with the provisions of the contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of work.
5. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. Reference to relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.
6. The rates and prices tendered in the priced Bill of Quantities shall, except in so far as it is otherwise provided under the Contract, include all constructional plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out in the Contract. Import duty and excise duty on materials and goods to be imported shall not be included in the Unit Rates
7. Arithmetic errors will be corrected by the Employer as follows:
 - a. if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;
 - b. if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
 - c. if there is a discrepancy between words and figures, the Amount (In INR) in words shall prevail, unless the Amount (In INR) expressed in words is related to an arithmetic error, in which case the Amount (In INR) in figures shall prevail subject to (a) and (b) above.

8. Rock is defined as all materials that, in the opinion of the Engineer, require blasting, or the use of metal wedges and sledgehammers, or the use of compressed air drilling for their removal, and that cannot be extracted by ripping with a tractor of at least 150 brake hp with a single, rear-mounted, heavy-duty ripper.

(B) Work Items

The Bill of Quantities contains Schedules as below:

Construction of Multipurpose Ground at High Field, Aizawl

ABSTRACT OF COST**Construction of Multipurpose Ground at High Field, Aizawl**

The quoted rate and amount are inclusive of taxes, duties and cess including all cost payable by the successful Bidders in executing the subjected contract package.

Sl. No.	DESCRIPTION		AMOUNT
A	CIVIL WORKS		
1	EARTH WORK		
2	CONCRETE WORK		
3	REINFORCED CEMENT CONCRETE		
4	BRICK WORK		
5	MARBLE AND GRANITE WORKS		
6	WOOD WORK & ALUMINIUM FITTINGS		
7	STEEL WORK		
8	FLOORING		
9	FINISHING		
10	DISMANTLING AND DEMOLISHING		
11	ALUMINIUM WORK		
12	WATER PROOFING		
13	HORTICULTURE WORKS		
14	ROAD WORK		
15	Septik Tank		
	Subtotal	A	
B	SERVICES		
16	Electrical Works		
17	Water Supply & Sanitary Works		
18	Fire Protection Works		
	Subtotal	B	
C	ADDITIONAL WORKS		
19	MARKET RATE ITEMS		
	Subtotal	C	
	Total Amount	A+B+C=D	
20	Contingency		97,66,275.00
	GRAND Total Amount		
	(Rupees _____ only)		

DETAILED BILL OF QUANTITIES (BOQ)
Construction of Multipurpose Ground at High Field, Aizawl

A) CIVIL WORKS					
Sl. No.	Particulars/Items	Unit	Quantity	Rate (Rs.)	Amount (Rs.)
<u>1. EARTH WORK</u>					
1	Carriage				
	EARTH - 5 Km	Cum	12446.15		
2	Beyond 5 KM per unit per Km	Cum	12446.15		
3	Clearing and grubbing road land including uprooting rank vegetation, grass, brush shrubs, saplings and tree of girth upto 300mm, removal of stumps, disposal of serviceable material upto 100 metres from road boundary. By Mechanical means. (for all classes of jungle).				
	For External Area except Ground taking lump sum area	Sqm	1000.00		
4	Close timbering over areas including strutting, shoring and packing, cavities (wherever required) etc. complete. (Measurements to be taken of the face area timbered) : Depth exceeding 3 m but not exceeding 4.5 m.				
	For Parking area where working space is not available	Sqm	342.00		
5	Extra for planking, strutting and packing materials for cavities (in close timbering) if required to be left permanently in position. (Face area of timber permanently left to be measured).				
	Provisional	Sqm	22.50		
6	Earth work in excavation by mechanical means (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by engineer-in-charge. All kinds of soil (excluding ordinary & hard rock)				
PARKING					
	Total Area of Parking Raft	Cum	17005.00		
External Development - Boundary Wall Footings, Toilet Block Footings, Gate - 1 Footings, Gate - 2 Footings, Green Room & Store Room Footings, Side Stairs & Drains					

		cum	1462.19		
7	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.				
	Block A	Cum	4732.27		
	External Development	Cum	1288.78		
8	Extra for every additional lift of 1.5 m or part thereof in excavation/banking excavated or stacked materials				
	All kinds of soil				
	Block A	Cum	42275.00		
9	Providing and filling approved river sand in trenches, plinth, etc. in layers not exceeding 20 cms in depth, consolidating each layer by ramming and watering and dressing complete.				
	PARKING - Lower Basement	Cum	141.20		
	External Development - Below Paver Blocks Area, Toilet Block, Store & Green Room, Stage				
		Cum	76.16		
10	Diluting and injecting chemical emulsion for post constructional anti termite treatment with Chlorphyriphos/Lindane emulsifiable chemical 20% with 1% concentration				
	Treatment of soil under existing floor using chemical emulsion @ 1 litre per hole, 300 mm apart including drilling 12mm diameter holes and plugging with cement mortar 1:2 (1 cement: 2 coarse sand) to match the existing floor.				
	PARKING - Lower Basement	Sqm	1412.00		
				Total (1) =	
<u>2. CONCRETE WORK</u>					
1	Providing and laying in position cement concrete of specified grade excluding cost of centring and shuttering -All work upto plinth level				
	1:3:6(1cement:3course sand:6 stone aggregate 20mm nominal size)				
	Footings	Cum	231.28		
	External Development	Cum	110.45		
2	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work upto plinth level:				

	1:2:4 (1 Cement : 2 course sand : 4 stone aggregate 20mm nominal size)				
	Provisional for External Development	Cum	2.00		
3	Providing and laying cement concrete in retaining wall, return wall, walls (any thickness) including pilasters, piers, columns, abutments, pillars, posts, plain window sills, sunken floors, etc. upto floor five level excluding the cost of centering, shuttering and finishing:				
	1 : 2: 4 (1 cement : 2 course sand :4 stone aggregate 40 mm)				
	Provisional Qty for Sunken , Window cills etc.				
	PARKING		1.00		
	EXTERNAL		2.00		
4	Providing and laying damp-proof course 40mm thick with cement concrete 1:2:4 (1 cement : 2 course sand : 4 stone 12.5 mm size).				
	PARKING - Ground Floor External B/W				
		sqm	22.66		
5	Extra for providing and mixing water proofing material in doses by weight of cement as per manufacturer's specification				
	Qty Transfer From DPC	Per Bag of Cement	22.66		
6	Applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7 kg. per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.				
	Qty Transfer From DPC	Sqm	22.66		
7	Making plinth protecton 50mm thick of cement concrete 1:3:6 (1 cement :3 coarse sand : 6 graded stone aggregate 20mm nominal size) over 75 mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.				
	Provisional for Toilet/Store/Green Room etc.	Sqm	30.00		
				Total (2) =	

3. REINFORCED CEMENT CONCRETE				
1	Providing and laying in position machine batched and machine mixed design mix M-20 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS:9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. "(Note:Cement content considered in this item is @ 330 kg/cum." Excess/less cement used as per design mix is payable/recoverable separately).			
	All works upto plinth level			
	PARKING - Foundation, Retaining Wall, Columns, Lift Walls, Slab Beams, Slabs, Staircases			
	Foundation	Cum	1950.89	
	External development - Boundary Wall Footings, Side Step Foundation, Toilet Block (foundations, columns & beams), Green Room & Store Room (foundations, columns & beams), Main Gate-2 (foundations, columns & beams), Drain, Provisional			
		Cum	151.16	
2	All work form plinth level upto floor V level			
	PARKING - Lift Walls & Misc. Provisional			
	Lift Walls Top Level (+97.5 m) to lift top	Cum	11.43	
	External development - Boundary Wall (columns & beams), Side Step (walls & steps), Toilet Block (columns, beams, slabs, projection), Green Room & Store Room (columns, beams, slabs, projection), Main Gate-1 (columns & slabs), Main Gate-2 (columns, beams & slabs), Misc Provisional			
		Cum	322.06	
3	Extra for providing richer or leaner mixes respectively at all floor levels.			
	Providing M-25 grade concrete instead of M-20 grade BMC/RMC. (Note:- Cement content considered in M-25 is @ 330 Kg/cum)			
	External Development	Cum	473.22	
4	Providing M-30 grade concrete instead of M-20 grade BMC/RMC. (Note:- Cement content considered in M-25 is @ 350 Kg/cum)			
	PARKING - Sub Structure	Cum	1962.32	

5	Centering and shuttering including strutting, propping etc. And removal of form for all heights				
	Foundation, footings, bases of column etc. for mass concrete.				
		Sqm	499.46		
	External Development - Boundary Wall - Footings, Side Steps Foundation, Toilet Block Foundation, Green Room & Store Room Foundation, Main Gate-2 Footings, Drain				
		Sqm	341.55		
6	Walls including attached pillasters, buttresses, string course, etc.				
	PARKING	Sqm	1751.07		
7	Suspended floors, roofs, landings, shelves and their support, balconies and chajjaj, etc.				
	PARKING	Sqm	2279.11		
	External Development - Toilet Block (slab, projection), Green Room & Store Room (slab, projection), Main Gate-1 (slab), Main Gate-2 (slab)				
		Sqm	919.89		
8	Lintels, beams, plinth beams, girders, bressumers & cantilevers, etc.				
	Block A - Beams & Slab Beams	Sqm	2001.28		
	External Development - Boundary Wall (plinth beam & top beam), Toilet Block (plinth beams & beams), Green Room & Store Room (plinth beams & beams), Main Gate-2 (plinth beams & beams)				
		Sqm	623.63		
9	Columns, pillars, piers, abutments, posts and struts.				
	Block A	Sqm	952.56		
	External Development - Columns of Boundary Wall, Toilet Block, Green Room & Store Room, Main Gate-1, Main Gate-2				
		Sqm	472.43		
10	Staircases (except spiral staircase) excluding landings.				
	PARKING	Sqm	37.00		
11	Steel reinforcement for RCC work including straightening, cutting, bending, placing in position and binding all complete.				
	Thermo-Mechanically Treated bars of grade Fe-500 or more				

	Block A	Kg	273336.53		
	External	Kg	66786.33		
				Total (3) =	
<u>4. BRICK WORK</u>					
1	First class Brickwork in foundation and plinth in :				
	In cement mortar 1:6 (1 cement : 6 coarse sand)				
	PARKING - Staircase Steps	cum	1.01		
	EXTERNAL DEVELOPMENT	cum	121.26		
2	First class brick in superstructure above plinth level upto floor V level in :				
	In cement mortar 1:6 (1 cement : 6 coarse sand)				
	PARKING - Staircase At Ground Level	cum	23.18		
	External Work - Misc. provisional	cum	5.75		
3	Half brick masonry with first class brick in foundation and plinth in :				
	in cement mortar 1:4 (1 cement : 4 coarse sand)				
	PARKING - Basement I Outer Wall Grid, Shop 1 & 2 Walls, Staircase Wall				
		Sqm	225.38		
	External Work - Toilet, Main gate - 1, Main gate - 2, Boundary Wall, Green Room & Store Room, Stage above NGL, CM Bunglow road entrance wall, CM Bunglow road entrance toilet, Misc. provisional				
		Sqm	741.95		
4	Half Brick Masonry with first class brick in superstructure above plinth level upto floor V level:				
	In cement mortar 1:4 (1 cement : 4 Course sand)				
	External Work - Provisional For Misc Works/Planters etc.				
		Sqm	25.00		
5	Extra for providing and placing in position 2 Nos. 6mm dia.M.S. bars at every third course of half brick masonry.				
		Sqm	777.94		
				Total (4) =	

5. MARBLE & GRANITE WORK				
1	Marble work gang saw cut (polished and machine cut) of thickness 18 mm for wall lining (veneer work), backing filled with a grout of 12 mm thick average in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing with white cement mortar 1:2(1 white cement :2 marble dust) with an admixture of pigment to match the marble shade: (To be secured to the backing by means of cramps, which shall be paid for separately)			
	Raj Nagar Plain white marble/green white marble/plain white marble.			
	Parking - Lift Facia	sqm	22.47	
2	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 location, 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.			
	Granite (galaxy black)			
	TOILET BLOCK - Wash Basin Counter	Sqm	2.77	
3	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.			
	Granite work			
	TOILET BLOCK - Wash Basin Counter	Rm	4.66	
4	Extra for fixing marble/granite stone over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based (Araldite or equivalent) adhesive including cleaning etc. complete.			
	Block B	Rm	4.66	
5	Extra for providing opening of required size and 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.			
	Toilet Block - Wash Basin Counters	Per Opening	4.00	

6	Providing and fixing cramps of required size and shape in RCC/CC backing with cement mortar 1:2 (1 cement : 2 coarse sand) including drilling necessary hole in stones and embedding the cramp in the hole (fastener to be paid separately)				
	Stainless steel cramps - For Lift Wall Lining	Kg	100.00		
7	Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the case with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6mm nominal size) as per direction of Engineer-in-charge and finished smooth.				
	Granite Stone of approved shade				
	PARKING - Ground Floor, Toilet Urinals	sqm	1.13		
8	Providing & fixing eternal wall cladding with decorative high pressure laminated sheet of approved quality & make to frame, backing or studing with screws etc.complete.				
	08 mm thick	sqm	148.08		
				Total (5) =	
<u>6. WOOD WORK & ALUMINIUM FITTINGS</u>					
1	Providing 1st class local wood dressed in frames of chaukat for doors, window, clerestory windows fixed in position.				
	PARKING - Stair Doors	Cum	0.10		
	Toilet Block - D1, D2, Main Gate-1, Main Gate-2	Cum	0.37		
2	Providing and fixing 40mm thick panelled door shutter comprising of styles and rails of seasoned Teak wood with pannels of Duratough Board 25mm thick as per required architectural design including MS Butt Hinges with necessary screws but excluding vernishing/ painting etc.				
	40 mm thick				
	PARKING - Stair Doors	sqm	4.41		
	Toilet Block - D1, D2, Main Gate-1, Main Gate-2				
		sqm	10.40		

3	Providing and fixing alluminium sliding door bolts (aldrops) anodised transparent or dyed to required colour or shade with nuts and screws etc. complete.			
	300x16 mm			
	PARKING - Stair Doors	No	4	
	Toilet Block - D1, D2, Main Gate-1, Main Gate-2			
		No	16	
4	Providing and fixing Aluminium Tower Bolts (Socket Bolts) anodised transparent or dyed to required colour or shade with necessary screws etc. complete.			
	250 mm			
	PARKING - Stair Doors	No	2.00	
	Toilet Block - D1, D2, Main Gate-1, Main Gate-2			
		No	8.00	
5	150 mm			
	PARKING	No	2.00	
	Toilet Block - D1, D2, Main Gate-1, Main Gate-2			
		No	8.00	
6	Providing and fixing Aluminium handles anodised transparent or dyed to required colour or shade with necessary screws, etc. complete.			
	125mm			
	PARKING - Stair Doors	Each	8.00	
	Toilet Block - D1, D2, Main Gate-1, Main Gate-2			
		No	8.00	
7	Providing and fixing Imex window fittings including necessary screws complete. Friction hinges for Aluminium windows etc.			
	PARKING - Provisional for Ventilators	No	5.00	
	Toilet Block - For Ventilators	No	2.00	
8	Providing and fixing bright finished brass two lever mortise door lock with necessary screws, etc. complete.			
	Knob type			
	PARKING	No	1.00	
				Total (6)=

7. STEEL WORK					
1	Supplying and fixing steel rolling shutter of approved make, made of required size of 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 wire spring and M.S. top cover.				
	PARKING - Shops	Sqm	9.00		
2	Providing and fixing ball bearing for rolling shutters.				
		Nos	2.00		
3	Extra for providing mechanical device, chain and crank operation for operating rolling shutters.-				
	Exceeding 10.00 sqm and upto 16.80 sqm in area. (average say 14.00 sqm)				
		Sqm	9.00		
4	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories and stainless steel dash fastners, stainless steel bolts etcf. of 80 cm high in staircase, etc. consisting of 75mm for rail and ost, 64 mm for longitudinal intermediate rail and 25 mm of vertical section, spacing 125 mm interval and as per approval of Engineer-in-charge.				
	EXTERNAL DEVELOPMENT - Running Track Outer Side, Running Track Inner Side, Ramp				
		Sqm	574.53		
5	Steel work welded in built up sections/framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
	In a grating, frames, guard bar, ladders, railings, brackets, gates & similar works.				
	For DG , Substation etc. foundation & other Misc., For Boundary Wall, For Main Gates, For CM's Office gate, For CM's Office entrance road grating, For Ground Drain, For Jogging track @ 80 Kg/Sqm				
		Kg	84760.00		
	For Basement Grills	Kg	5000.00		

				Total (7) =	
8. FLOORING					
1	Cement concrete flooring 1:2:4 (1 cement : 2 sand : 4 well graded stone aggregate 20 mm size) finished with a floating coat near cement including cement slurry etc. complete but excluding the cost of nosing of steps etc. 40mm thick with 20mm nominal size stone aggregate				
EXTERNAL DEVELOPMENT - Seating Steps, Risers					
		Sqm	267.43		
2	52 mm thick Cement concrete flooring with concrete hardener topping under laayer 40 mm cement concrete 1:2:4 (1 cement : 2 sand : 4 well graded stone aggregate 20mm size)and top layer 12 mm thick cement hardener consisting of mix 1:2 by volume hardening compound moxed @ 2 litre per 50kg of cement.This includes cost of cement slurry but excluding the cost of nosing of steps etc. complete.				
PARKING - Basement I, Basement II					
		Sqm	2623.01		
3	Providing and fixing glass strips 40 MM wide and 4 mm thick in joints of terrzi/cement concrete floors. For Cement Flooring				
PARKING - Horizontal & Vertical					
		Rm	1025.00		
4	Chequered precast cement concrete tiles 22mm thick with marble chips of size upto 6mm in floor, treads of step, landing, foothpath and courtyard jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing and cleaning etc. complete on 20mm thick bed of cement mortar 1 : 4 . medium shade using 50% white cement & 50% ordinary cement				
External Develpoment					
		Sqm	157.94		
5	Kota stone slab flooring over 20mm (average) thick base laid over cement mortar 1:4 and jointed with white cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete. 25 mm thick.				
PARKING - Stair Treads, Landing, Basement I below Stair Area, Shop I, Shop II, Stage					
		Sqm	174.53		

6	Kota stone slab 25 mm thick in skirting, risers of steps, dado and pillars laid on 12 mm (average) thick base laid over cement mortar 1:3 and jointed with white cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete.		
	PARKING - Stair Risers, Skirting		
		Sqm	26.68
7	Extra for kota stone flooring in treads of steps and risers using single length upto 1.05m.		
	PARKING	Sqm	27.68
8	Extra for pre finished nosing in steps and treads of kota stone.		
	PARKING	Sqm	27.68
9	Providing and laying Precast interlocking Paver tiles (CDI pattern) of approved make locally available at Aizawl over a sand cushion and 100 mm thick PCC bed of 1:2:4 including supplying, placing and cleaning, etc., complete (Cost of dressing of soil and PCC to be paid separately).		
	External development - Spectators circulation area, Near Toilet & Around Cycle Track, Canopy Walk, 1200 mm wide footpath alongside road, Main Entry, Main Entry ramp risers, Misc		
		sqm	622.53
10	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to 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 course sand) and jointing with cement slurry @ 3.3 kg per sqm. including pointing in white cement mixed with pigment of matching shade complete.		
	Toilet Block - DA Toilet, Female Toilet, Male Toilet		
		sqm	25.72
11	Providing and ceramic glazed floor tiles of size 300x300mm or more (thickness to be specified by manufacturer) of 1st quality conforming to IS:15622 of approved make in all colours, shades, except white, ivory, grey, fume red brown, laid on 20 mm thick cement mortar 1:4 (1 cement : 4 course sand) including pointing the joints with white cement and matching pigments etc. complete as per designed colour.		
	Gloss Finish		

	Toilet Block - DA Toilet, Female Toilet, Male Toilet			
		Sqm	141.36	
				Total (8) =
9. FINISHING				
1	12 mm cement plaster 1:6 (1 cement : 6 fine sand)			
	PARKING - Basement I Internal Side, Basement II Internal Side			
		Sqm	1,197.60	
	External Work - Misc. provisional			
		Sqm	581.10	
2	15 mm cement plaster 1:6 (1 cement : 6 fine sand)			
	PARKING - Provisional Qty			
		Sqm	100.00	
	External Development		Sqm	581.10
3	20 mm cement plaster 1:4 (1 cement : 4 fine sand)			
	PARKING - External Side, Basement I, Basement II			
		Sqm	2,112.00	
	External Development - Store Room & Green Room, Stage			
		Sqm	178.56	
4	6 mm cement plaster to ceiling 1:4 (1 cement : 4 fine sand)			
	PARKING		Sqm	4,317.39
	External Development		Sqm	919.89
5	Extra for providing and mixing water proofing materials in proportion recommended by manufacturer in			
	20mm cement plaster 1 : 4 (1cement : 4 sand)			
	PARKING		Sqm	2,112.00
	External Development		Sqm	178.56
6	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plasterd wall surface to prepare the surface even and smooth complete.			
	PARKING			
	12 mm Plaster		Sqm	1,197.60
	15 mm Plaster		Sqm	100.00
	External Development			

	12 mm Plaster	Sqm	581.10		
	15 mm Plaster	Sqm	581.10		
7	Finishing walls with exterior emulsion of required shade on new work (three or more coats) to give an even shade.				
	Premium exterior emulsion like weather shield, weathercoat etc.				
	PARKING - Provisional Qty	Sqm	100.00		
	External Development	Sqm	295.00		
8	Applying one coat of Efflorescence resistant penetrating primer for Raincoat, Newcoat & Heatshield of approved brand and manufacture on wall surface, cement primer of approved brand and manufacture on wall surface.				
	Block A - Provisional	Sqm	10.00		
	External Development - Provisional	Sqm	10.00		
9	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications.				
	On steel work - Provisional	Sqm	100.00		
	On concrete work - Provisional	Sqm	100.00		
10	White washing with lime to give an even shade: New work (Three or more coats)				
	Provisional	Sqm	500.00		
11	Painting with silicon and acrylic emulsion based water thinnable sealer of approved brand and manufacture on wet or patchy portion of plastered surfaces: Two coats				
	PARKING	Sqm	1,297.60		
	External Development	Sqm	1,162.20		
12	French spirfit polishing (two or more coats) on new works including a coat of wood filler:				
	PARKING - For Both Sides of Doors D1	Sqm	10.58		
	External Development - Toilet Block, D1, D2	Sqm	24.95		
13	Applying priming coat with ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood) and Plywood.				

	PARKING	Sqm	10.58		
	External Development	Sqm	24.95		
14	Applying priming coat with ready mixed red oxidized zinc chromate primer of approved brand and manufacture on steel galvanised iron/steel works.				
	PARKING - Provisional	Sqm	100.00		
	External Development - Provisional	Sqm	100.00		
				Total (9) =	
<u>10. DISMANTLING & DEMOLITION</u>					
1	Demolishing cement concrete manually/by mechanical means including disposal of material within 50 metres lead as per direction of Engineer-in-charge.				
	Nominal concrete 1:4:8 or leaner mix				
	Existing Gallery (considering 40% area PCC), Existing Building (considering 40% area PCC), Misc. Provisional, Toilet at Cm bungalow residence				
		Cum	19.76		
2	Demolishing R.C.C. work manually/by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 meters lead as per direction of Engineer-in-charge.				
	Existing Gallery columns, Existing Gallery Foundations, Existing Building Foundation, Existing Building columns, Existing Building beam, Existing Building Slab, Misc.				
		Cum	118.62		
3	Demolishing stone rubble masonry including stacking of serviceable material and disposal of unserviceable material within 50 metres lead :				
	- In cement mortar				
	CM Bungalow road wall dismantling				
		Cum	20.25		
4	Extra for cutting reinforcement bars in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B.work)				
	Slabs cross section, Misc. Foundation beam etc.				
		Sqm	26.40		

5	Extra for scrapping, cleaning and straightening reinforcement from R.C.C. or R.B. work				
	Considering 05 Kg/Sqft	kg	26900.00		
6	Demolishing brick work manually/by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead:				
	In cement mortar				
	Existing Gallery, Existing Building, Toilet at CM bungalow entrance				
		Cum	34.50		
7	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50metres lead.				
	Cm Bungalow fencing & existing building roof etc.				
		Kg	5000.00		
8	Dismantling barbed wire or flexible wire rope in fencing including making rolls and stacking within 50 metres lead.				
	CM Bungalow road fencing dismantling				
		Kg	200.00		
				Total (10) =	
<u>11. ALUMINIUM WORK</u>					
1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make conforming to IS:733 and IS:1285, anodised transparent or dyed to required shade according to IS:1868. (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene flt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing/panelling, C.P. brass/ stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to be paid for separately). For fixed portion				
	Powder coated				
	PARKING - Provisional for ventilators				
		Sqm	6.25		

	EXTERNAL DEVELOPMENT - Toilet Ventilators, Main Gate -1, Main Gate -2, Misc. provisions				
		Sqm	15.40		
2	For shutters of doors, windows and ventilators including providing and fixing hinges/pivots and making provision for fixing of fittings wherever required including the cost of PVC/ neoprene gasket required. (Glazing to be paid for separately).				
	Powder coated				
	PARKING	Sqm	6.25		
	EXTERNAL DEVELOPMENT	Sqm	15.40		
3	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.				
	With glass panes of 5.50 thickness				
	PARKING	Sqm	6.25		
4	Frosted glass of 4.00 mm thickness				
	External Development	Sqm	15.40		
5	Filling the gap in between aluminium frame & adjacent RCC/Brick/Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and directions of Engineer-in-charge complete. Upto 5mm depth and 5 mm width.				
	PARKING - Provisional for Ventilators	Metre	30.00		
	External Development - Toilet Ventilators, Misc.	Metre	9.40		
				Total (11) =	
<u>12. WATER PROOFING</u>					
1	Applying double coated top seal (cement based polymer modified water proofing slurry coating on the surface of cement concrete for prevention of water infiltration and dampness in water tanks, basement, terraces, etc.) @ 3 kg per sqm.				
	PARKING - Outer Walls, Terrace Slab				
		Sqm	2616.50		

	External Works - Store & Green Room, Guard Room, Toilet Block			
		sqm	77.78	
				Total (12) =
<u>13. HORTICULTURE WORKS</u>				
1	Trenching in ordinary soil upto a depth of 60 cm including removal and stacking of serviceable materials and then disposing off by spreading and neatly levelling within a lead of 50 m and making up the trenched area to proper levels by filling with earth or earth mixed with sludge and/or manure before and after flooding trench with water (excluding coat of imported earth, sludge or manure).			
	Area as per Autocad Polyline			
	Provisional			
	Total Green Area	Cum	30.00	
2	Supplying and stacking of good earth at site including royalty and carriage upto 1 km (earth measured in stacks will be reduced by 20% for payment).			
	Green Area	Sqm	10.00	
3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 km lead complete (manure measured in stacks will be reduced by 8% for payment).			
	Screened through sieve of I.S. designation 4.75 mm			
	Green Area	Cum	5.00	
4	Rough dressing the trenched ground including breaking clods.			
	Total Green Area	100 Sqm	1.00	
5	Fine dressing the ground	100 sqm	1.00	
6	Spreading of sludge, dump manure or/and good earth in required thickness (Cost of sludge, dump manure or/and good earth to be paid separately).			
	Green Area	Cum	10.00	

7	Grassing with selection No.1 grass including watering and maintenance of the lawn for 60 days or more till the grass forms thick lawn, free from weeds and fit for mowing including supplying good earth, if needed (the grass and good earth shall be paid for separately).				
	In rows 5 cm apart in both direction				
	Green Area	100 Sqm	1.00		
8	Making tree guard 53 cm dia. And 1/3 high as per design from empty coal tar drums supplied free by the department or any other source including providing and fixing 2 nos.M.S. sheet rings 50x0.5 mm with rivets complete in all respects including painting inside and outside of tree guard with:				
	A coat of coal tar				
	For Trees	No	20.00		
				Total (13) =	
<u>14. Road Work</u>					
1	Compacting Original Ground				
	Compacting original ground supporting subgrade (Loosening of the ground upto a level of 500mm below the subgrade level, watered, graded and compacted in layers to meet requirement of table 300-2 for subgrade construction)				
	Road Area, Cycle Track, Walking Track, Cricket Pitch				
		Cum	505.20		
2	Granular Sub-Base (Table:- 400-1)				
	Planter Mix method (Construction of granular sub-base by providing the material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401)				
	for Grading-I Material				
	Road Area, Cycle Track, Walking Track, Cricket Pitch				
		Cum	217.47		
3	Wet Mix Macadam (Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper at site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density.)				

	Road Area, Cycle Track, Walking Track, Cricket Pitch			
		Cum	226.93	
4	Tack coat (Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at required rate on the prepared bituminous/granular surface cleaned with mechanical broom.)			
	Granular surface Not Treated with Primer			
	Road Area, Cycle Track, Walking Track, Cricket Pitch			
		Sqm	1612.00	
5	Dense Graded Bituminous Macadam (Providing and laying bituminous macadam with 100120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @4.0 to 4.5% by weight of total mix of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specifications on clause No. 507 complete in all respects.)			
	for Grading I (40mm nominal size)			
	Road Area, Cycle Track, Walking Track, Cricket Pitch			
		Cum	99.80	
6	Bituminous Concrete (Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6% of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specifications on clause No. 507 complete in all respects.)			
	Case II Using Modified Bitumen			
	for Grading II (10mm nominal size)			
	Road Area, Cycle Track, Walking Track, Cricket Pitch			
		Cum	64.48	

7	Cast in Situ Cement Concrete M20 kerb (Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408)			
	Using Concrete Mixer			
	Pavement at starting of Road, Both Side road & other pavement area			
		Metre	1000.00	
				Total (14) =
15. SEPTIK TANK (50 Users x 2)				
	Size = 2 nos x 5 x 2 x 1.69 m			
1	Earth work in excavation by mechanical means (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by engineer-in-charge.			
	All kinds of soil (excluding ordinary & hard rock)			
	Excavation	Cum	105.23	
2	Providing and laying in position cement concrete of specified grade excluding cost of centring and shuttering -All work upto plinth level			
	1: 4 :8 (1 cement : 4 course sand : 8 stone aggregate 40 mm nominal size)			
	Septik Tank	Cum	3.47	
3	Providing and laying in position machine batched and machine mixed design mix M-20 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS:9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. "(Note:Cement content considered in this item is @ 330 kg/cum." Excess/less cement used as per design mix is payable/recoverable separately).			

	All work upto foundation & plinth level.				
	Slab of Septik tank	Cum	4.58		
	Extra for providing richer or leaner mixes respectively at all floor levels.				
4	Providing M-25 grade concrete instead of M-20 grade BMC/RMC. (Note:- Cement content considered in M-25 is @ 330 Kg/cum)				
	Qty Same as RCC	Cum	4.58		
5	Suspended floors, roofs, landings, shelves and their support, balconies and chajjaj, etc.				
	Septik Tank Slab	Sqm	21.62		
	Steel reinforcement for RCC work includingh straighthening, cutting, bending, placing in posiiton and binding all complete.				
6	Thermo-Mechanically Treated bars of grade Fe-500 or more				
	RCC Qty x 100 Kg/Cum	Kg	458.44		
7	First class Brickwork in foundation and plinth in :				
	In cement mortar 1:6 (1 cement : 6 coarse sand)				
	Long Walls, Short Walls, Chamber				
		Cum	14.06		
8	Half brick masonry with first class brick in foundation and plinth in :				
	in cement mortar 1:4 (1 cement : 4 coarse sand)				
	Internal Wall	Sqm	9.92		
9	12 mm cement plaster 1:3 (1 cement : 3 fine sand)				
	Internal	Sqm	60.84		
10	15 mm cement plaster 1:6 (1 cement : 6 fine sand)				
	External Walls	Sqm	59.56		
				Total (15) =	
		TOTAL- CIVIL WOORKS (A)			

B) 16) ELECTRICAL WORKS					
Sl.No	DESCRIPTION	UNIT	Quantity	RATE (Rs)	AMOUNT (Rs)
1	CHAPTER 1: DG SET (62.5KVA RADIATOR COOLED)				
1.1	Supplying, installation, testing and commissioning of 62.5 KVA rating silent type DG set (with acoustic canopy) complete with following:				
1.1.1	Supplying, installation, testing and commissioning of 4 stroke Diesel engine of suitable BHP at 1500 rpm suitable for rated output of the alternator at site condition, capable of taking 10% overloading for one hour in any 12 hrs of running without loosing its rpm complete with Dynamically balanced flywheel, direct/flexible coupling, Exhaust gas turbo charged with Cooling System , Automatic safety control in case of low lubrication oil pressure, Automatic safety control in case of high water temperature. Automatic overspeed trip protection. The engine shall have Lubrication oil pump.Lubrication oil filter.Lubrication oil cooler.Bye-pass filter,Fuel pump,Fuel Filter,Hoses for fuel tank.Air intake manifold.Air cleaner dry type. Governor EFC type. Selfstarter. Alternator for battery charging. Residential silencer. Flexible pipe for silencer. Batteries for excitation with 230 V, Single Phase, 50 HZ, AC operated Battery Charger for DG Battery charging only with Boost and trickle charging facility and protection from over charging the battery with voltmeter of range 0-50 Volts and Ammeter of range 0-50 Amp. Techometer with hour meter,Auto mains failure controller, Engine control panel as applicable & as per manufacturers standard .				
1.1.2	Supplying, installation, testing and commissioning of synchronous alternator at 1500 rpm, 3 phase ,50Hz AC supply with 0.8 pf (lagging) at site condition.The alternator shall have SPDP enclosure (IP-23), brushless continuous duty, self excited and self regulated suitable for the environmental conditions and with H class of insulation.The alternator shall be fitted with thermistors (controlled by AMC controller) for winding and bearing temperature and space heaters, AVR , battery charger for self excitation etc. complete in all respects.The alternator shall be fitted with suitable arrangement to bring out bus duct/cables of required sizes as mentioned in the SLD, along with CT for restricted earth fault protection and droop compensation .The rate shall include complete supplying, installation, testing and commissioning rates including cost of all tools and accessories (as mentioned below and any other required) required to Complete the job in full respect.				
1.1.3	1 No. 990 litre external day oil tank				
1.1.4	Piping from day oil tank to DG inbuilt fuel tank (20 m - 25mm dia)				
1.1.5	Exhaust piping as per CPCB-2 norms (20 metres approx verticle including expansion bellows, clamps and all other required accessories.				

1.1.6	Support structure for piping			
1.1.7	Lightning arrester & Aviation Obstruction lighting at the top of DG exhaust pipe - 1 Set			
1.1.8	AMF Panel :Fabricating, Installing, Testing & Commissioning of outdoor type automatic mains failure control including manual bypass panel, suitable for rated KVA silent type DG set complete with relays, timers, set of CT's for metering & protection and energy analyser to indicate currents, phase and line voltages, frequency, power factor, KWH, KVARH & provision for overload, short circuit, restricted earth fault, under frequency, control cable & suitable size of armoured XLPE power cable of 1.1 KV grade from AMF panel to diesel engine complete in all respect and inter locking including the following:-			
a	DG Set and AMF panel shall be provided outside the building, hence nothing extra shall be paid for control and power cables up to 25 mtr. length, between DG sets and AMF panel.			
b	Required rating MCCB - 1 Nos., Ics=Icu=Icw=36kA for 1 sec.			
c	Auto/Manual/Test/Off selector switch.			
d	1 Nos. over voltage relay, 1 Nos. reverse power relay and 1 Nos. under voltage relay.			
e	Rated ON load Auto change over switch - 1 Nos.			
f	3 nos. current transformers 15 P 10 accuracy for protection and 15 VA class- 1 for metering. - 1 Set			
g	Energy analyser unit to indicate current voltage frequency power factor and KWH.			
h	LED Indicating lamps for load on mains and load on DG set. - 1set			
i	Fuse for instruments/MCB. - 1set			
j	Battery charger, complete with transformer /rectifier, D.C. voltmeter and ammeter, selector switch for trickle, off and boost and current.			
k	Main supply failure monitor			
l	Supply failure timer.			
m	Restoration timer.			
n	Control unit with three impulse automatic engine start/stop and failure to start lockout.			
o	Impulse counter with locking and reset facility.			
p	ON/OFF/Control switch with indicator.			
q	Audio/Video annunciation for High water temperature, Low lubricating oil pressure, Engine over speed, Engine fails to start, Full load / maximum load warning.			
		Set	1.00	
	SUBTOTAL (1)			

2	CHAPTER 2: LT PANELS				
2.1	Supply, of indoor/outdoor floor mounted/ wall mounted, IP43/IP55, factory built, modular, sectionalised, compartmentalized, extendable type LT cubicle panel of suitable size suitable for operation on 433/415 volts, 50 Hz AC 3 phase 4 wire supply system fabricated from CRCA sheet steel of 2mm thick for frame work and covers, 3mm thick for gland plates with stiffeners wherever required, having vibration free structure chemically treated with seven tank process or better before painting for surface treatment and powder coated in approved shade, with suitable electrolytic grade high conductivity bus bars extensible, DMC/ SMC (whichever is superior) bus bar supports, with short circuit withstand capacity as mentioned ,bottom base channel of section not less than 100mmX 50mmX 5 mm thick, fabrication shall be done in transportable sections, entire panel shall have a common earth bar of required size at the rear with 2 Nos. earth stud, connections and interconnection with solid conductor wires / copper strips, neutral links, control wiring with 1.5 sqmm. & 2.5sqmm. PVC insulated FRLS copper conductor S/C cable for voltage & current respectively, including providing and fixing following switch gears and as per schedules ,technical specifications etc.complete as required.				
a	The Switchboards shall have provision to accommodate all cables from the bottom /top as required.				
b	All live accessible parts shall be shrouded with 1mm thick polycarbonate/3 mm thick FRP sheet and all equipment shall be finger touch proof. The busbar insulation shall be with heat shrinkable sleeves according to the colour code. SMC shrouds and busbar supports shall be used. All MCCB door handle shall be interlocked and lockable in OFF position.				
c	Galvanised hardware with zinc passivation shall be used in fabrication of Switchboards.				
d	Suitable Aluminium earth bus to be provided throughout the length of Switchboards.				
e	All indication lamps / illuminated push buttons shall be LED type.				
f	2A SP MCBs shall be used as backup protections.				
g	All MCCBs shall be provided at least with ON, OFF & Trip indication lamps.				
h	All MCCBs shall be with thermal magnetic releases up to 250 A rating and with microprocessor based releases above 250 A rating, line load reversibility, Ics = 100% Icu,& extended rotary handle unless otherwise specified				
i	All MCCB shall have rotary handle with pad locking arrangement.				
j	All microprocessor based MCCBs and all thermal magnetic based MCCBs shall be provided earth fault protection.				
k	Door interlocking for all outgoing feeders shall be provided.				
l	All TP MCCB'S shall have solid neutral link,disconnect type.				

m	All control & power wiring shall be broughtout upto the cable alley in the terminal blocks.	
n	All ACBs shall be with micropocessor based releases (O/C, S/C, E/F & Instantaneous). All ACBs shall have ZSI protection & trip history.	
o	All outgoing terminals shall be provided in cable alley on proper insulated supports (SMC/DMC).	
p	All rear door of Main Isolation Panel shall be almirah type with lockable arrangement.	
q	Space heater shall be provided with thermostat with 6A MCB as backup protection inside all cable alleys controlled with feeder 20 A DP MCB 10 KA.	
r	An approval shall be taken for each panel before manufacturing.	
s	Provision of one 6/16 amp socket & compartment lighting for each vertical section of panel.	
t	5 nos extra of each R,Y,B,G,A colour indicating lamp and illuminated push buttons and normal push button shall be provided with all panels.	
u	MIMIC diagram shall be provided for Main Isolation panel	
v	MIMIC shall be made of polycarbonate sheet of 5 mm thickness fixed on acylic sheet of 2mm thick.the size of panel shall be such that the diagram can be visualized from 5 to 6 meter distance. The panel shall display complete single line diagram of Main LT Panel. this line diagram shall be made from luminous non fading materials to glow in dark and each breaker legend shall be provided with bi-colour LED lights to show the ON/OFF status of the respective feeder (Incomers / Bus couplers)	
w	Illuminated push button on Starter Panels of Pumps.	
x	Interlocking / Auto start command terminals for starter Panels.	
y	All breaking Capacity for ACB to be $I_{cs}=100\%I_{cu}$ and I_{cw} for 1 sec..	
z	All breaking Capacity for MCCB to be $I_{cs}=100\%I_{cu}$	
aa	All ACB's shall have all standard accessories such as CT's Arc chute,safety shutter,etc.	
ab	Links and drops from ACB/MCCB shall be designed for full rated current of ACB/MCCB rating at same amount of current density as of main busbar.	
ac	All MCB to be C Curve for raw power and D curve for UPS power.	
ad	Removable lifting hook shall be provided in all transportation section.	
ae	Each Section of the Main isolation to be provided with Ventilation Fans.	
af	Multifunction meters installed shall be BMS Compatible, capable of delivering Bacnet, Modbus or Lonworks protocol etc.	
ag	Bus bar shall be high conductivity (99%), ETP - Electrical grade copper or 50-55% Aluminium as specified in BOQ.	
ah	Bus bar shall be designed on 45 deg. Ambient temperature and limit of temperature rise shall be 35 deg. Over and above Ambient	

	temperature.			
ai	Bus bars shall be with heat shrinkable PVC sleeves.			
aj	MCB's shall be of minimum 10kA fault with stand capacity.			
ak	Concerning vendor needs to furnish the busbar calculations (for both phase and earth bus) at the time of GA approval and busbar size has to be as per the approved GA drawing.			
am	No Deration in ACBs till 50deg.C and as per deration higher rating to be selected.			
	Main Isolation Panel	Set	1.00	
2.2	Incoming from LT METER: 1 x 125 A, FP, 35 kA, MCCB			
	<p>1 x 50kA, 2kVp (Type 1+2) surge arrester with suitable Fuse. 1 x R,Y,B,On,Off,Trip,Spring charge, Service position, test position, ready to close, trip circuit healthy LED indication lamp with 2A control MCB etc. as required. 1 x (16 window annunciation panel with trip, accept & reset options along with hooter) 1 x (Restricted earth fault relay each with 4 nos. CL-PS, 15VA, ring type CT of required ratio) 1 x (emergency Push buttons, auto/manual switch, etc. as required) 1 x (3 nos. 200/1A, CL-1, 15VA, ring type CT for 240V actuated numeric type APFC relay) 1 x (emergency Push buttons, auto/manual switch, etc. as required) 1 X (Digital flush type class -1.0 accuracy multifunction meter with RS-485 communication port for measurement of at least THD, KVARH KW, KWH, KVAR, PF, V, A, Hz with 15VA Class 1.0 CTs of required ratio)</p>			
	Busbar (1 Set - 4P + E) Busbar made up of electrolytic grade high conductivity aluminium in rectangular cross section and suitable for 415V, FP, 50 Hz, 300 A, 36 kA for 1 sec of required length and cross sectional area.			
	Incoming from 62.5 KVA DG Set - 1 nos.: 1 x 125 A, FP, 35 kA, MCCB (ELECTRONIC)			
	<p>1 x 50kA, 2kVp surge arrester with suitable Fuse. 1 x R,Y,B,On,Off,Trip,Spring charge, Service position, test position, ready to close, LED indication lamp with 2A control MCB etc. as required. 1 x (16 window annunciation panel with trip, accept & reset options along with hooter) 1 x (Auxiliary contactor 6 No + 6 NC, suitable for 24 V DC.)</p>			
	<p>1 x (start/stop, trip/reset, spring charge, emergency Push buttons, auto/manual switch, test, service, trip circuit healthy, DC healthy indications etc. as required)1 X (Digital flush type class -1.0 accuracy multifunction meter with RS-485 communication port for measurement of at least THD, KVARH KW, KWH, KVAR, PF, V, A, Hz with 15VA Class 1.0 CTs of required ratio)</p>			

	1 x (IDMT based relay module with Ac inverse time overcurrent, instantaneous overcurrent relay, instantaneous earth fault relay, Overvoltage, undervoltage with dead band bypass feature, frequency, phase sequence, reverse power and earth fault relay along with 1000/1A, CL-5P10, 15VA, CT) 1 x (Restricted earth fault relay with required CTs)			
	Micro PLC for Auto Load Management as per Logic mentioned in Single Line Diagram, comprising required Auxiliary relays (24V DC, indication lights, Push button, Emergency stop, A/M position switch, Battery charger (230V A/C / 24V DC), Batteries, Digital I/O card, analogue card, 24V DC power supply as required.			
	The AMF operation of DG Sets shall be carried out by controller installed on each DG Set by DG Manufacturer however required coordination and provisions to achieve the same in coordination with PLC based Auto Load Management is included in the scope of work of Panel Manufacturer.			
	Outgoings :			
	3 x 63 A, TPN, 36kA, MCCB with On, Off, Trip indication and o/l, s/c & e/f protection with microprocessor based release.. 3 X (Digital flush type class -1.0 accuracy multifunction meter with RS-485 communication port for measurement of at least KWH, KVAR, PF, V, A, Hz with 5VA Class 1.0 CTs of required ratio)			
	4 x 40 A, FP, 36kA, MCCB with On, Off, Trip indication and o/l, s/c & e/f protection with microprocessor based release.. 3 X (Digital flush type class -1.0 accuracy multifunction meter with RS-485 communication port for measurement of at least KWH, KVAR, PF, V, A, Hz with 5VA Class 1.0 CTs of required ratio)			
	8 x 40 A, DP MCB			
	4 x 16 A, DP MCB			
	Fire Pump Panel	Set	1.00	
2.3	Incomer : R,Y,B LED indication lamp with 2A control MCB. 1 x 63 A, FP, 25kA, MCCB with trip settings as required. 1 x 100 A, FP, auto transfer switch with CTTS and neutral overlapping. 1 x (Digital flush type class -1.0 accuracy multifunction meter with RS-485 communication port for measurement of KWH, KVAR, PF, V, A, Hz with 5VA Class 1.0 CTs of required ratio)			
	Busbar (1 Set - 4P + E) Busbar made up of electrolytic grade high conductivity aluminium in rectangular cross section and suitable for 415V, FP, 50 Hz, 100 A, 16 kA for 1 sec of required length and cross sectional area.			
	Outgoings : 3 x 40 A, FP, 16kA, MCCB with trip setting as required. 3 x 25 A, FP, 16kA, MCCB with trip setting as required.			
	Lift Panel	Set	1.00	

2.4	Incomer : R,Y,B LED indication lamp with 2A control MCB. 1 x 40 A, FP, 16kA, MCCB with trip settings as required. 1 x (Digital flush type class -1.0 accuracy multifunction meter with RS-485 communication port for measurement of KWH, KVAR, PF, V, A, Hz with 5VA Class 1.0 CTs of required ratio)			
	Busbar (1 Set - 4P + E) Busbar made up of electrolytic grade high conductivity aluminium in rectangular cross section and suitable for 415V, FP, 50 Hz, 100 A, 10 kA for 1 sec of required length and cross sectional area.			
	Outgoings : 1 x 40 A, DP, ELCB 1 x 40 A, DP, 10kA, MCB "C Curve". 2 x 16 A, DP, 10kA, MCB "C Curve".			
	Feeder pillar (External Lighting)	Set	1.00	
2.5	Incomer : a) 40A 4P 16KA MCCB with microprocessor based release with 100A 4P Contactor.. b) 40 4P 16KA MCCB with thermal magnetic based release with 100A 4P Contactor. c) Digital dual channel timer with 48 hr. battery back up, with astronomical time switch auto / manual by pass switch with indicating lamp and photo sensor for operation of lights. Note: The arrangement shall be as shown in single line diagram			
	Busbar Section-1 (1 Set - 4P + E)-Direct Feeders Busbar made up of electrolytic grade high conductivity aluminium in rectangular cross section and suitable for 415V, FP, 50 Hz, 100 A, 10kA for 1 sec of required length and cross sectional area.			
	Outgoings: 1 x 40 A, FP, 10kA, MCB "C Curve". 5 x 25 A, DP, 10kA, MCB "C Curve".			
	Busbar Section-2 (1 Set - 4P + E)-Feeders through timer & photo sensor Busbar made up of electrolytic grade high conductivity aluminium in rectangular cross section and suitable for 415V, FP, 50 Hz, 100 A, 10kA for 1 sec of required length and cross sectional area.			
	Outgoings: 4 x 25 A, DP, 10kA 300mA RCBO 8 x 25 A, DP, 10kA 300mA RCBO			
2.6	Supply, installation, testing and commissioning of 200 A 4P 16KA MCCB in a sheet steel enclosure suitable for indoor application with required arrangement for incoming and outgoing cable complete as required.			
		Set	1.00	

2.7	Supply, installation, testing and commissioning of 63 A 4P 16KA MCCB in a sheet steel enclosure suitable for indoor application with required arrangement for incoming and outgoing cable complete as required.				
		Set	1.00		
	SUBTOTAL (2)				
3	CHAPTER 3 : UPS AND INVERTER				
3.1	Supplying, installation, testing and commissioning of 10kVA modular type (hot swappable modules suitable for sports lighting load , rating should be 10KVA connected in parallel in the same chassis to give desired output) the cabinet shall be suitable to house minimum 10KVA or higher, VFI (voltage frequency independent) online double conversion fully microprocessor based, indoor type, compact UPS system of mentioned rating with IGBT based PWM technology to achieve THD < 3% and input power factor of greater than 0.95 at 50% loading, suitable for three phase AC input voltage 380 V to 440 V, 50 Hz +3% / - 3 % and three phase AC output voltage $415 \pm 1\%$ volts & frequency 50 ± 0.5 Hz with all components as mentioned in BOQ, specifications and schedule, complete as required and as per technical specification. Each unit shall be comprising of the following:				
a	Fully DSP controlled power factor corrected rectifier and IGBT inverter capable of providing high quality AC power for sensitive electronic equipment loads.				
b	100% rated Inbuilt static switch at the inverter output + 2 Nos. 100% rated Inbuilt static switches at the static bypass line.				
c	100% rated Inbuilt Maintenance Bypass.				
d	Web-enabled Monitoring and Management through SNMP protocols for multi-OS environments.				
e	Supplying, unloading, installing, testing and commissioning of necessary VRLA batteries of suitable size having 15 minutes back up time to 80KVA UPS for full load (20% aging factor to be considered), Note : Concerning vendor needs to furnish the battery sizing calculations at the time of GA approval and battery size has to be as per the approved GA drawing.				
f	Supply, unloading, installation, testing & commissioning of matching cabinet/open racks to house above mentioned batteries for 80 KVA UPS system along with suitable size interconnecting cable (for UPS to Battery and battery to battery), MCCB etc. complete as required & as per specifications.				
		Set	1.00		

3.2	Supply ,installation , testing and commissioning of 3000 VA Pure Sine Wave Inverter system for a constant secondary voltage of 240 volts at 50 Hz, single phase, batteries backup of minimum 30 Minutes back up duration including, batteries, battery chargers, rectifiers, transformers, controls, protection and instruments , Trolley etc complete as required.				
		Set	1.00		
	SUBTOTAL (3)				
4	CHAPTER 4: LT CABLES & TERMINATIONS				
4.1	Supplying following 1.1kV grade, XLPE insulated, FRLS type armoured/unarmoured cables suitable for 415V, 50Hz, AC system, with inner and outer PVC sheath, outer sheath provided with FRLS insulation and with all components as mentioned in BOQ, specifications and schedule, complete as required.				
4.1.3	3.5C X 95 Sqmm A2XFY.	Metre	200.00		
4.1.4	3.5C X 50 Sqmm A2XFY.	Metre	1.00		
4.1.5	4C X 35 Sqmm A2XFY.	Metre	1.00		
4.1.6	4C X 25 Sqmm A2XFY.	Metre	1.00		
4.1.7	4C X 16 Sqmm 2XWY.	Metre	1.00		
4.1.8	4C X 10 Sqmm 2XWY.	Metre	250.00		
4.1.9	4C X 10 Sqmm A2XFY.	Metre	1.00		
4.1.10	4C X 6 Sqmm A2XFY.	Metre	400.00		
4.1.11	1C X 70 sqmm 2XWY	Metre	1.00		
4.1.12	1C X 25 sqmm 2XWY	Metre	1.00		
4.1.13	1C X 10 sqmm 2XY	Metre	1.00		
4.2	Supplying following 1.1kV grade, XLPE insulated, FRLS type control cables,suitable for 415V, 50Hz, AC system, with inner and outer PVC sheath, outer sheath provided with FRLS insulation and with all components as mentioned in BOQ, specifications and schedule, complete as required.				
4.2.1	2C X 2.5 sqmm copper conductor	Metre	20.00		
4.2.2	4C X 2.5 sqmm copper conductor	Metre	20.00		
4.2.3	6C X 2.5 sqmm copper conductor	Metre	40.00		
4.2.4	10C X 2.5 sqmm copper conductor	Metre	20.00		
4.3	Laying of one number PVC insulated and PVC sheathed/XLPE power cable of 1.1kV grade of following size in the existing RCC trench / Hume pipe / pipe complete as required.				

4.3.1	Up to 35 sqmm	Metre	350.00		
4.3.2	Above 35 sqmm and up to 95 sqmm	Metre	1.00		
4.3.3	Above 95 sqmm and up to 185 sqmm	Metre	100.00		
4.3.4	Above 185 sqmm and up to 400 sqmm	Metre	1.00		
4.4	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required.				
4.4.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	Metre	300.00		
4.4.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	Metre	1.00		
4.4.3	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	Metre	100.00		
4.4.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	Metre	1.00		
4.5	Supplying and making end termination with brass compression gland and aluminium / copper lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required.				
4.5.3	3.5C X 95 Sqmm A2XFY.	Each	4.00		
4.5.4	3.5C X 50 Sqmm A2XFY.	Each	1.00		
4.5.5	4C X 35 Sqmm A2XFY.	Each	1.00		
4.5.6	4C X 25 Sqmm A2XFY.	Each	1.00		
4.5.7	4C X 16 Sqmm 2XWY.	Each	1.00		
4.5.8	4C X 10 Sqmm 2XWY.	Each	12.00		
4.5.9	4C X 10 Sqmm A2XFY.	Each	1.00		
4.5.10	4C X 6 Sqmm A2XFY.	Each	30.00		
4.5.11	1C X 70 sqmm 2XWY	Each	1.00		
4.5.12	1C X 25 sqmm 2XWY	Each	1.00		
4.5.13	1C X 10 sqmm 2XY	Each	1.00		
4.5.14	2C X 2.5 sqmm copper conductor	Each	2.00		
4.5.15	4C X 2.5 sqmm copper conductor	Each	2.00		
4.5.16	6C X 2.5 sqmm copper conductor	Each	2.00		

4.5.17	10C X 2.5 sqmm copper conductor	Each	2.00		
4.5.18	21C X 2.5 sqmm copper conductor	Each	2.00		
	SUBTOTAL (4)				
5	CHAPTER 5: CABLES MANAGEMENT				
5.1	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc. as required.				
5.1.1	300 mm width x 50 mm depth x 1.6 mm thickness	Metre	40.00		
5.1.2	900 mm width x 75 mm depth x 2 mm thickness	Metre	20.00		
5.2	Supplying and installing following size of perforated painted with powder coating M.S. cable trays "bends" with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc. as required.				
5.2.1	300 mm width X 50 mm depth X 1.6 mm thickness	Each	2.00		
5.2.2	900 mm width x 75 mm depth x 2 mm thickness	Each	2.00		
5.3	Supplying and installing following size of perforated painted with powder coating M.S. cable trays "Tee" with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc. as required.				
5.3.1	300 mm width X 50 mm depth X 1.6 mm thickness	Each	1.00		
5.3.2	900 mm width x 75 mm depth x 2 mm thickness	Each	1.00		
	SUBTOTAL (5)				
6	CHAPTER 6: DISTRIBUTION BOARD				

6.1	Supplying, fitting & fixing of following MCB DB in sheet steel phosphatized powder painted MCB DB, with busbar neutral link , earth bar and din rail conforms to IS13032, IS 8623, BS 5486 240V or 415V 50Hz on surface or recessed including interconnection, painting, etc, as required.			
6.1.1	8 way MCB DB SP&N SD metallic door	Each	1.00	
6.1.2	12 way MCB DB SP&N SD metallic door	Each	7.00	
6.1.3	8 way (8+24) MCB DB TP&N DD metallic door	Each	2.00	
6.2	Supplying and fixing 20 A, 415 V, TPN Industrial type socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 20 A, “C” curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.			
		Each	1.00	
6.3	Supplying and fixing 20 A, 240 V, SPN Industrial type socket outlet, with 2 pole and earth, metal enclosed plug top alongwith 20 A, “C” curve, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.			
		Each	1.00	
6.4	Supplying and fixing of all type and rating of MCB / RCCB / ELCB etc 240/415V 50Hz Ac supply in existing MCB DB complete with connection testing and commissioning etc in complete.			
6.5	6-32 Amp SP MCB C-series	Each	102.00	
6.6	6-32 Amp DP MCB C-series	Each	1.00	
6.7	50/63Amp DP MCB C-series	Each	7.00	
6.8	50/63Amp 4P MCB C-series	Each	2.00	
6.9	Supplying and fixing of all type and rating of RCCB / ELCB etc 240/415V 50Hz Ac supply in existing MCB DB complete with connection testing and commissioning etc in complete.			
6.9.1	40Amp DP RCCB 100mA	Each	8.00	
6.9.2	63Amp DP RCCB 100mA	Each	2.00	
	SUBTOTAL (6)			

7	CHAPTER 7: WIRING				
7.1	Light / Ceiling Fan / Exhaust Fan point etc (Modular Type) Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per standard IS 694(1990) Life shield - halogen free flame retardant (HFFR) 1100 voltage graded copper flexible wire stranded copper 1.5 sq.mm running inside FRLS PVC Conduit pipe heavy duty 20mm dia fixed, surface on the ceiling / floor /wall as per convenience including junction box having required no. of ways from control switch to Light / Ceiling Fan / Exhaust Fan point etc as required				
7.1.1	Light point medium point (Modular)	Point	50.00		
7.1.2	Light point long point (Modular)	Point	19.00		
7.2	Light Plug/Socket Point 5/6Amp (Modular Type) Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per standard IS 694(1990) Life shield - halogen free flame retardant (HFFR) 1100 voltage graded copper flexible wire stranded copper 2.5 sq.mm running inside PVC casing & capping (Gr-I) 20x12mm fixed, surface on the ceiling / floor /wall as per convenience including junction box having required no. of ways from DB to light / plug/socket / 5/6A point etc. as required				
7.2.1	Light/Plug point medium point (Modular)	Point	4.00		
7.2.2	Light/Plug point long point (Modular)	Point	4.00		
7.3	Power Plug Socket Point 15/16Amp (Modular Type) Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per standard IS 694(1990) Life shield - halogen free flame retardant (HFFR) 1100 voltage graded copper flexible wire stranded copper 4.0 sq.mm running inside PVC casing & capping (Gr-I) 30x12mm fixed, surface on the ceiling / floor /wall as per convenience including junction box having required no. of ways from DB to power plug/socket point 15/16A etc. as required				
7.3.1	Power point medium point (Modular)	Point	10.00		
7.3.2	Power point long point (Modular)	Point	12.00		
7.3.3	Power point very long point (Modular)	Point	10.00		

7.4	Power Plug Socket Point 20/32Amp (Modular Type) Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per standard IS 694(1990) Life shield - halogen free flame retardent (HFFR) 1100 voltage graded copper flexible wire stranded copper 4.0 sq.mm running inside PVC casing & capping (Gr-I) 30x12mm fixed, surface on the ceiling / floor /wall as per convenience including junction box having required no. of ways from DB to power plug/socket point 20/32A etc. as required				
7.4.1	Power point medium point (Modular)	Point	2.00		
7.4.2	Power point long point (Modular)	Point	2.00		
7.4.3	Power point long point (Modular)	Point	2.00		
7.5	Main to Submain Copper Wire (Single Phase - Two Wire) Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per standard IS 694(1990) Life shield -halogen free fire retardant (HFFR) 1100 voltage graded copper flexible wire stranded copper of different sizes as mentioned below running inside PVC casing & capping (Gr-I) of all available sizes diameter fixed, surface on the ceiling / floor /wall as per convenience including junction box having required no. of ways from main to submain/db to SBD/Switchboard SDB to switchboard etc as required				
7.5.1	2 x 2.5 sq.mm. + 1 x 2.5 sq.mm. earth wire.	Point	20.00		
7.5.2	2 x 4 sq.mm. + 1 x 4 sq.mm. earth wire.	Point	3.00		
7.5.3	2 x 6 sq.mm. + 1 x 6 sq.mm. earth wire	Point	3.00		
7.5.4	2 x 10 sq.mm. + 1 x 10 sq.mm. earth wire.	Point	1.00		
7.6	Main to Submain Copper Wire (Three Phase - Four Wire) Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per standard IS 694(1990)Life shield - halogen free fire retardant (HFFR) 1100 voltage graded copper flexible wire stranded copper of different sizes as mentioned below running inside PVC casing & capping of all available sizes dia' fixed, surface on the ceiling / floor /wall as per convenience including junction box having required no. of ways from main to submain/db to SBD/Switchboard SDB to switchboard etc as required				
7.6.1	4 x 2.5 sq.mm. + 2 x 2.5 sq.mm. earth wire.	Metre	5.00		
7.6.2	4 x 4 sq.mm. + 2 x 4 sq.mm. earth wire.	Metre	5.00		

7.6.3	4 x 6 sq.mm. + 2 x 6 sq.mm. earth wire	Metre	60.00		
7.6.4	4 x 10 sq.mm. + 2 x 10 sq.mm. earth wire.	Metre	80.00		
7.6.5	4 x 16 sq.mm. + 2 x 16 sq.mm. earth wire.	Metre	5.00		
7.7	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
7.7.1	20 mm	Metre	50.00		
7.7.2	25 mm	Metre	400.00		
7.7.3	32 mm	Metre	100.00		
7.7.4	40 mm	Metre	50.00		
7.7.5	50 mm	Metre	50.00		
7.8	Supplying and fixing of following sizes of FRLS PVC conduit along with accessories in surface/recess including painting of conduit in case of surface, cutting the wall and making good the same in case of recessed conduit as required.				
7.8.1	20 mm	Metre	80.00		
7.8.2	25 mm	Metre	100.00		
7.8.3	32 mm	Metre	20.00		
7.8.4	40 mm	Metre	20.00		
7.8.5	50 mm	Metre	20.00		
7.9	Supplying and fixing modular switch board (decorative type) round mechanism of following sizes / modules on surface or recessed including PVC/Steel boxes, modular plate and necessary switches plug/socket and fan regulator etc. with necessary painting if necessary				
7.9.1	2S	Each	35.00		
7.9.2	1S 2M	Each	15.00		
7.9.3	1S 2M 20 Amp DP with indicator	Each	6.00		
7.9.4	2S 1M two way	Each	6.00		
7.9.5	Multistandard Socket 6/10/13A 2/3 pin	Each	20.00		
7.9.6	Modular information socket Cat-6 UTP	Each	20.00		
7.9.7	Modular stepped fan regulator 100W humming free 2M	Each	20.00		
7.9.8	3S	Each	10.00		

7.9.9	3S 20A	Each	5.00		
7.9.10	4S	Each	10.00		
7.9.11	2S + 1R 100W (2M)	Each	5.00		
7.9.12	2S + 4S with indicator	Each	5.00		
7.9.12	6S	Each	5.00		
7.9.12	8S	Each	5.00		
7.9.12	6S + 1R 100W (2M)	Each	2.00		
7.10	Wiring for group controlled (looped) light point/fan point/exhaust fan point/ call bell point (without independent switch etc.) with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit, and earthing the point with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable etc. as required.				
		Each	104.00		
7.11	Providing and fixing M.S. Fan clamp type I or II of 16 mm dia M.S. bar, bent to shape with hooked ends in R.C.C. slabs or beams during laying, including painting the exposed portion of loop, all as per standard design complete as required.				
		Each	30.00		
7.12	Providing and fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp, of internal dia 140 mm, 73 mm height, top lid of 1.5 mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3 mm dia round headed screws, one lock at the corners. Clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing.				
		Each	8.00		
7.13	Supplying and drawing of UTP 4 pair CAT 6 LAN Cable in the existing surface/ recessed Steel/ PVC conduit as required.				
		Metre	250.00		
	SUBTOTAL (7)				
8	CHAPTER 8: EARTHING & LIGHTNING PROTECTION				
8.1	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/coke and salt as required.				
		Each	2.00		

8.2	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 water pipe etc. but without charcoal/ coke and salt complete as required.			
		Each	6.00	
8.3	Earthing with Copper earth plate 300 mm X 300 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and water pipe etc. but without charcoal/ coke and salt complete as required.			
		Each	6.00	
	Extra for salt & charcoal for GI or Copper plate electrode complete as required.			
		Each	20.00	
8.4	Supplying and laying of 6 SWG G.I. wire at 0.5m below ground level for conductor earth electrode including soldering etc. as required.			
		Metre	400.00	
	Supplying and laying of 6 SWG G.I. wire on surface or in recess for loop earthing etc. as required			
		Metre	100.00	
8.5	Supplying and laying of 25mmx5mm G.I. strip at 0.5m below ground level for conductor earth electrode including soldering etc. as required (25mmx5mm G.I. (1 KG/M)			
		Metre	115.00	
8.6	Supplying and laying of 25mmx5mm G.I. strip on surface or in recess for loop earthing etc. etc. as required (25mmx5mm G.I. (1.KG/M)			
		Metre	115.00	
8.7	Supplying and laying of 25mmx5mm copper strip in 40mm GI pipe for connection with earth electrode. (25mmx5mm copper (1.15 KG/M)			
		Metre	30.00	
8.8	Supplying and laying of 25mmx5mm G.I strip in 40mm GI pipe for connection with earth electrode. (25mmx5mm copper (1.00 KG/M)			
		Metre	30.00	
8.9	Providing and fixing of lightning conductor finial, made of 25 mm dia 300 mm long, G.I. tube, having single prong (one finger system) at top, with 85 mm dia 3 mm thick G.I. base plate including holes etc. complete as required.			

		Each	6.00		
8.10	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or on surface of wall for lightning conductor complete as required. (For Horizontal run)				
		Each	400.00		
8.11	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or on surface of wall for lightning conductor complete as required. (For vertical run)				
		Set.	100.00		
8.12	Providing and fixing testing joint, made of 20 mm X 3 mm thick G.I. strip, 125 mm long, with 4 Nos. of G.I. bolts, nuts, chuck nuts and spring washers etc. complete as required.				
		Metre	6.00		
SUBTOTAL (8)					
CHAPTER 9: INTERNAL & EXTERNAL LIGHTING FIXTURES AND FANS					
9					
9.1	Supply of 2'x2' 36-40W recess mounting type LED luminaire, IP 20 ,colour temperature 5700K having efficacy not less than 100 lm/W CRCA housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthing etc. upto suitable point complete as required. Fixture similar to WIPRO CAT : CRCO10R038HP57GL1 or equivalent				
	Notes:				
a	The fixtures shall be suitable for single phase, 50 Hz, 230 Volts, A.C. supply system.				
b	All fixtures shall be factory wired with copper conductor wires.				
c	All fixtures shall be supplied with Drivers, lamps/bulbs, as specified.				
d	The rate shall be quoted for the Catalogue no. specified for the fixture however if contractor wants to supply equivalent then sample shall have to be got approved from Architect before procurement.				
e	Any loss & damage during transportation shall be in scope of Electrical Contractor till final testing & commissioning.				
g	The Lighting Fixture supplier will be responsible for ensuring that lighting fixture is fixed properly as per their requirement.				
h	The fixing of lighting fixtures shall include all fixing accessories that are required to make the installation complete in all respects including the following :-				
i	Providing connecting wires and channel support wherever required.				

ii	Internal wiring between accessories.			
iii	Self interlocking connector blocks for connecting the wires from fixtures to the points.			
iv	Earthing of fixtures with PVC insulated copper conductor FRLS wire.			
v	Approved colour powder coated down rods, clamps and other components and fixing accessories wherever required.			
vi	Testing of fixtures before Installation.			
vii	Identification tags with a distance not more 3 meters to be used for circuit identification			
		Each	6.00	
9.2	Supply of 15W-20W surface mounting type circular downlighter LED luminaire, IP 20 ,colour temperature 5700K having efficacy not less than 85 lm/W, THD \leq 20%, die cast aluminium/polycarbonate housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthing etc. upto suitable point complete as required. Fixture Similar to Wipro Cat No.: LD80-171-XXX-60-SM or Equivalent			
		Each	4.00	
9.3	Supply of 10W-12W recess mounting type LED luminaire, IP 20 ,colour temperature 5700K having efficacy not less than 80 lm/W, THD \leq 20%, die cast aluminium/polycarbonate housing housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthing etc. upto suitable point complete as required. Fixture Similar to Wipro Cat No.: LD80-101-XXX-60-XX or Equivalent			
		Each	18.00	
9.4	Supply of 15W-20W recess mounting type circular downlighter LED luminaire, IP 20 ,colour temperature 5700K having efficacy not less than 85 lm/W, THD \leq 20%, die cast aluminium/polycarbonate housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthing etc. upto suitable point complete as required. Fixture Similar to Wipro Cat No.: LD80-171-XXX-60-XX or Equivalent			
		Each	68.00	

9.5	Supply of 1 ft linear 7-10W surface mounting type LED luminaire, IP 20 ,colour temperature 5700K having efficacy not less than 100 lm/W, THD \leq 20%, PC / PMMA housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthing etc. upto suitable point complete as required. Fixture similar to WIPRO CAT : LL20-111-XXX-65-NE3 or Equivalent				
		Each	13.00		
9.6	Supply of 4 ft linear 18W-20W surface mounting type LED luminaire, IP 20 ,colour temperature 5700K having efficacy not less than 100 lm/W, THD \leq 20%, PC / PMMA housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthing etc. upto suitable point complete as required. Fixture similar to WIPRO CAT : LL20-221-XXX-65-NE3 or Equivalent				
		Each	12.00		
9.7	Supply of linear bulk head light 9W-10W surface mounting type LED luminaire, IP 65 ,colour temperature 5700K having efficacy not less than 70 lm/W, THD \leq 10%, die cast aluminium housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthing etc. upto suitable point complete as required. Fixture similar to WIPRO CAT : LW07-141-XXX-57-XX or Equivalent				
		Each	37.00		
9.8	Supply, installation, testing & commissioning of LED FLOOD Light Luminaire consuming a system wattage of 80W (\pm 10%) & the luminaire shall be with system efficacy \geq 85lm/W. Housing: Die Cast Aluminium . IP66 , Optics: PC Reflector. The operating CCT shall be 5700K with CRI of \geq 70. The luminaire shall be with BIS Registered electronic driver with input voltage range of 150 to 270V , THD \leq 10% & PF \geq 0.9, 50,000 Hrs LED Life with L70 Criteria.The LED Driver shall be easily available in India for repair and service. The LED shall be SMD type. Luminaire shall have minimum surge protection of 4KV.The luminaire shall be with following certifications: LM79 & LM80 issued by LED manufacture along with Photo Biological Safety Standard. Fixture similar to Wipro Cat No.: LF19-931-060-57-XX or equivalent				
		Each	5.00		

9.9	Supply of BEE 5star rated 1200 sweep BEE 5 star rated ceiling fan, including wiring, the down rods of standard length (upto 30 cm) with 3x1.5 sqmm FRLS PVC insulated copper conductor single core cables etc., as required to do the job in all respect in accordance with laid specification or upto the satisfaction of engineer in charge.				
		Each	5.00		
9.10	Supply of 300mm size exhaust fan suitable for 230V, 50 Hz AC including modifying and finishing for hole/opening for the size of fan, MS louver/ shutter complete with frame for Ex.fan including its connection with 3x1.5 sq mm FRLS copper conductor wire with PVC sleeve, loop earthing, making the good damage complete as required to do the job in all respect in accordance with laid specification or upto the satisfaction of engineer in charge.				
		Each	8.00		
9.11	Supply, installation, testing & commissioning of LED Street Light Luminaire consuming a system wattage of 35W ($\pm 10\%$) & the luminaire shall be with system efficacy $\geq 110\text{lm/W}$. Housing: Die Cast Aluminium . IP66 , Optics: Lens . The operating CCT shall be 5700K with CRI of ≥ 70 . The luminaire shall be with BIS Registered electronic driver with input voltage range of 150 to 270V , THD $\leq 10\%$ & PF ≥ 0.9 , 50,000 Hrs LED Life with L70 Criteria. The LED Driver shall be easily available in India for repair and service. The LED shall be SMD type. Luminaire shall have minimum surge protection of 4KV. With AutoCutoff at 300V and will be normal once the supply normalise. The luminaire shall be with following certifications: LM79 & LM80 issued by LED manufacture along with Photo Biological Safety Standard. Fixture similar to Wipro Cat No.: Wipro Cat No.LR13-501-XXX-57-XX or equivalent				
		Each	17.00		

9.12A	<p>Supply & Installation of 3.0 mtr. long GI street light pole 4.5 mm wal thickness having 114 mm outer uniform dia. and 60.3 mm dia., 3.6 mm thick 100 mm long coller along with base plate of size 300 mm x 300 mm x 12 mm thick, suitable for mounting of 1 no. light fixture. Pole should be finished with adaqueate size flush door with openable chained cover in lower section with proper strengthning of cutout of door opening including necessary rubber gasket with two coats of pu paint of approved shade, supplying & fixing of suitable size SP MCB , neutral link, earth stud, heavy duty connector (suitable for 16 sq.mm terminations) complete as required.</p> <p>Note :</p> <ol style="list-style-type: none"> 1. The pole shall be either of same make as that of street light fixture or equivalent 2. The pole shall be installed in cement concrete 1:3:6 (1 cement : 3 Coarse sand : 6 graded stone aggregate of 40 mm nominal size) foundation minimum size of 0.21 cum including excavation and refilling etc. as required. Providing and fixing Foundation Bolt- M16 x 450 mm.(4Nos.) with nuts and and washer complete as required. 				
		Each	17.00		
9.12B	<p>Supply & Installation of 9.0 mtr. long GI street light pole 4.5 mm wal thickness having 114 mm outer uniform dia. and 60.3 mm dia., 3.6 mm thick 100 mm long coller along with base plate of size 300 mm x 300 mm x 12 mm thick, suitable for mounting of 1 no. light fixture. Pole should be finished with adaqueate size flush door with openable chained cover in lower section with proper strengthning of cutout of door opening including necessary rubber gasket with two coats of pu paint of approved shade, supplying & fixing of suitable size SP MCB , neutral link, earth stud, heavy duty connector (suitable for 16 sq.mm terminations) complete as required. Note : 1. The pole shall be either of same make as that of street light fixture or equivalent2. The pole shall be installed in cement concrete 1:3:6 (1 cement : 3 Coarse sand : 6 graded stone aggregate of 40 mm nominal size) foundation minimum size of 0.21 cum including excavation and refilling etc. as required. Providing and fixing Foundation Bolt- M16 x 450 mm.(4Nos.) with nuts and and washer complete as required.</p>				
		Each	6.00		

9.13	Make in India Sports Lighting LED system suitable for outdoor sports applications having proven track record of earlier successful similar applications. The system shall be supplied at site in a custom designed and pre-engineered condition with minimum scope for any field engineering etc. The lighting system manufacturer shall furnish a direct free warranty agreement to the owner which shall include free replacement of all parts as well as any repair / servicing that the system shall require during a ten year period. All the components of the lighting system shall be suitable for outdoor applications and tested at the lighting manufacturer's factory and certified as a system before being shipped to the site. (Pre-Approvals of the Light Fixtures before final procurement is a must) The LED lighting system shall consist of the following main components:				
		Each	6.00		
9.14	SITC of 8-10 watt LED Bolard light complete in all respect.	Each	11.00		
9.15	SITC of Wall bracket light including 50mm dia GI pipe having 600mm vertically and 300mm inclined at 45 degree, 16 / 18 SWG junction box with prewired 6 Amp SP MCB, loop-in -loop-out , terminal block, 25 - 30Watt LED street light and wiring with copper wire upto the fitting etc.complete in all respect as required.	Each	14.00		
SUBTOTAL (9)					
10	CHAPTER 10: MISCELLANEOUS WORKS				
10.1	Providing & fixing in position 1000 mm wide , Electrical Insulating Rubber Mats as per IS 15652:2006, 2 mm thick, suitable up to 11 KV , fire retardant, no effect of acids, alkalis and transformer oils, moisture proof, high tensile strength and texture finish / cloth impression (Anti slip , marking on top)				
		Metre	25.00		
10.2	Providing & fixing in position 1000 mm wide , Electrical Insulating Rubber Mats as per IS 15652:2006, 2 mm thick, suitable up to 1.1 KV , fire retardant, no effect of acids, alkalis and transformer oils, moisture proof, high tensile strength and texture finish / cloth impression (Anti slip , marking on top)				
		Metre	35.00		
10.3	Supply & fixing shock treatment chart duly mounted on a wooden frame with 5 mm thick glass as required (approx front area 1.20 Sq Metre)	Each	2.00		

10.4	Providing and fixing M.V danger board of 200 mm x 150 mm made mild steel at least 2 mm thick and vitreous enameled white on both sides and with inscription in single red colours on front side as required.				
		Each	8.00		
	SUBTOTAL (10)				
11	CHAPTER-11: IP BASED CCTV SYSTEM				
11.1	Supply, Installation, Testing & Commissioning of IP Network TDN Low-Light IR Dome Camera, 1/2.7" CMOS, 2 MP @ 25fps or better, triple stream, Min. Illumination required 0.05 lux @ F1.4 (color), 120dB True WDR, Min. Pixels 1920 × 1080, triple stream, 2.7–13.5 mm motorized focus & zoom lens, BLC, HLC, 3DNR, Privacy Mask, 3 IR LEDs Smart IR with upto 30m IR distance, 128GB SD card support, IP66, IK10, PoE, H.264 High Profile and MJPEG, PoE Class 3 and 12V DC, Having Operating temp range : 0°C to 60° C. Certifications: ONVIF Profile S & Profile G compliant, UL, CSA 60950-22, CE (EN 50130-4 & EN 55022) , FCC Part 15 & RoHS compliant complete as required and as per specifications.				
		Each	8.00		
11.2	Supply, installation, testing and commissioning of IP Based 270 Degree Panaromic Dome Camera, 12 Megapixel (4x3 MP), 1/3.2" CMOS Sensor, 2.8-6 mm remote zoom/focus lens, IR Sensitive, Day/Night 0.1 Lux Color Light Sensitive, WDR (120dB), Resolution 2048x1536p @ 25 FPS each sensor, 16 x optical zoom, 100 meter effective IR distance, 5 auto scan, auto focus, smart tracking, 128 GB SD card support, Ethernet 10/100 mbps, PoE Power, with IP 66 and IK-10 Rated housing (UL, CE-EMC, RoHS Certified) including mounting accessories complete as required to do the job in all respect in accordance with laid specification or upto the satisfaction of engineer in charge. Supply, installation, testing and commissioning of UL Listed, PTZ Camera with the following components / sub assemblies as per specifications complete etc. as required. Note : The camera shall be suitable for mounting on parapet wall / surface /lighting pole and quoted rate shall include all kind of supports required to complete the installation.				
		Each	1.00		

11.3	Supply , Installation , Testing and commissioning of 16 Channel NVR (Network Video Recorder), for recording @ 1080P with 02 nos. SATA HDDs minimum 16TB storage or more (recording requirement all cameras recording at 25fps for 30 days),H.265/H.264/MJPEG/MPEG4 codec decoding, Front Control Panel with LEDs Indication, 3 nos. USB, iPhone; iPad; Android based Mobile clients, Video Export feature on USB, Search Mode: Time/Date; Alarm; Motion Detection (MD); Exact Search (accurate to a second); Smart Search, Dual HDMI Output, Alarm Input (16 nos.), Alarm Output (6 nos.), 16 POE Ports, eSATA Device, 320Mbps each Incoiming & Outgoing throughput, Operating Temperature 0°C to 55°C Certification : CE, FCC & UL including fixing accessories and cable termination with required connectors/Jack including ONVIF Video management & recording software of Mirasys, Genetec & Onssi make with inbuilt video analysis enterprise level with central monitoring & unlimited client access, PTZ Control, Remote Viewing, Remote Storage, Playback. Supports JPEG, AVI, WAV export formats, Hourly schedules, Email Notification. complete as per tender specifications and as required.				
		Each	1.00		
11.4	Supply, installation, testing & commissioning with proper connection & termination of following size equipment rack made out of CRCA sheet to house all the control equipment complete as required in accordance with laid specification or upto the satisfaction of engineer in charge.				
11.4.1	19" equipment rack - 9 U	Each	2.00		
11.5	Supply, installation, testing and commissioning of Layer-2 PoE Distribution Switch 12 Gigabit Ports , Rack Mountable, 4 Port Combo Port POE+ Switch including Fibre module for LAN base feature set with support to integration with CCTV, with all related hardware complete as required and as per specifications				
		Each	1.00		
11.6	Supply, installation, testing and commissioning of Layer-2 PoE Distribution Switch 8 Gigabit Ports , Rack Mountable, 4 Port Combo Port POE+ Switch including Fibre module for LAN base feature set with support to integration with CCTV, with all related hardware complete as required and as per specifications				
		Each	1.00		
11.7	Supply, installation, testing and commissioning of 21" colour TFT Monitor including decodes and all accessories complete as required in accordance with laid specification or upto the satisfaction of engineer in charge complete as required and as per specifications				

		Each	2.00		
11.8	Supply installation, testing and commissioning of Desktop Computer comprising CPU, Keyboard and a mouse complete with operating system (OS) and other required software to control NVR in control room including Centralized Video Management Software as per the requirement of the successful operation of the surveillance system complete as required in accordance with laid specification or upto the satisfaction of engineer in charge.				
		Each	1.00		
11.9	Supply & laying of Cat 6 4 pair UTP cable for CCTV's signal/power including cable gland and other required accessories shall be laid in existing conduit/cable tray etc. complete as required in accordance with laid specification or upto the satisfaction of engineer in charge.				
		Metre	650.00		
11.10	Supply, Installation, Testing and Commissioning of armoured OM3 Single mode fiber optic cable for connectivity where ever required in prelaid conduits / raceways / HDPE / DWC pipes, whichever maybe available etc. as required				
		Metre	160.00		
	SUBTOTAL (11)				
12	ELECTRICAL CONNECTION FROM POWER & ELECTRICITY DEPARTMENT (Lump Sum)				
	SUBTOTAL (12)				
	TOTAL (B) (16)				

B) 17) WATER SUPPLY & SANITARY WORKS					
Sl. No.	DESCRIPTION	UNIT	Quantity	RATE (Rs)	AMOUNT (Rs)
1	CHAPTER 1: SANITARY FIXTURES AND ALLIED REQUISITES				
1.1	Providing and fixing vitreous china pedestal type water closet (EWC European type wc pan) with seat and lid, 10 litres low level flushing cistern including flash pipe with manually controlled device (handle over) confirming to is: 7231 with all fittings & fixtures complete ,including cutting & making good the walls wherever required .				

	White	Each	4.00		
1.2	Providing and fixing vitreous china Urinal flat back large 59 x 39 x 37.5cm of Parryware/ Hindware/ Cera and equivalent make with flush valve/spray with C.I or R.S brackets standard size of G.I flush pipe and C.P brass spreaders with brass unions and G.I clamps complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required.				
	White	Each	4.00		
1.3	Providing & fixing vitreous division plate 69x30cm size for urinals.				
	White	Each	4.00		
1.4	providing & fixing health faucet with flexible tube upto 1 meter long & holder of quality & make as approved by engineer in charge.				
		Each	4.00		
1.5	Providing and fixing white vitreous china wash basin standard of parryware /hindware/cera & equivalent make with R,S OR C.I brackets ,15mm c.p brass pillars taps , c.p brass chain with rubber plugs,32mm c.p brass waste of standard pattern ,32mm c.p brass taps & union complete including painting & brackets cutting & making good the walls wherever required.				
	White Vitreous China Wash basin size 630x450 mm with a pair of 15 mm C. P. brass pillar taps.				
	White	Each	4.00		
1.6	Providing & fixing CP brass 32mm size bottle trap of approved quality & make & as per the direction of engineer in charge.				
		Each	4.00		
1.7	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS ;13983 with c.i brackets & stainless plug 40mm including painting of fitting & brackets ,cutting & marking good the walls wherever required :(hindware & equivalent)				
	Single Sink 610x510 mm with bowl depth of 200mm.	Each	1.00		
1.8	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing:				
		Each	5.00		

1.90	Providing and fixing anodised aluminium towel rail complete with brackets fixed to wooden cleats with c.p brass screws.			
	600x20mm size.	Each	1.00	
1.10	Providing and fixing toilet paper holder:			
	C.P. brass toilet paper holder of standard size.			
		Each	4.00	
1.11	Providing and fixing liquid soap container with C.P brass lid and brackets fixed to wooden cleats with c.p brass screws.			
	Soap dish chromium plated with brackets.	Each	4.00	
1.12	Providing and fixing brass stop cock of approved quality.			
	15mm nominal bore	Each	12.00	
1.13	Providing and fixing 15mm nominal bore chromium plated brass pillar cock of approved quality.			
	Class 2	Each	4.00	
1.14	Supply, installation, testing and commisioning of C.P.cast brass twin coat hooks fixed to wooden cleats with C.P.brass screws.			
		Each	4.00	
1.15	Supply, installation, testing and commisioning of tissue paper dispenser complete including cutting and making good the walls screws. (Model No. Kimberly-Clark Aquarius Compact Hand Towel Dispenser or Equivalent)			
		Each	4.00	
	SUBTOTAL (1)			
2	CHAPTER 2: INTERNAL DRAINAGE			
2.1	Providing and fixing on wall face SWR PVC soil, waste and vent pipes including jointing with rubber lubricant/cement solvent complete.			
	110mm dia.	mtr.	120.00	
	75mm dia.	mtr.	260.00	
2.2	Providing and fixing SWR PVC plain bend of required degree (87.50°) including jointing with rubber lubricant/cement solvent complete.			
	110 mm dia.	Each	12.00	

	75 mm dia.	Each	5.00		
2.3	Providing and fixing SWR PVC plain bend of required degree (45°) including jointing with rubber lubricant/cement solvent complete.				
	110 mm dia.	Each	10.00		
	75 mm dia.	Each	3.00		
2.4	Providing and fixing SWRPVC bend with access door of required degree including jointing with rubber lubricant/cement solvent complete.				
	110mm dia SWRPVC bend with access door.	Each	2.00		
2.5	Providing and fixing single equal SWR PVC plain junction of required degree (T-junction) .				
	110x110x110mm.	Each	8.00		
2.6	Providing and fixing single equal SWR PVC plain junction of required degree with access door (T-junction) .				
	110x110x110mm.	Each	4.00		
2.7	Providing and fixing SWRPVC plain junction of required degree with access door (Y-junction) including jointing with rubber lubricant/cement solvent.				
	110 mm Y-junction of SWRPVC with access door.	Each	4.00		
2.8	Providing and fixing SWRPVC plain junction of required degree (Y-junction) including jointing with rubber lubricant/cement solvent.				
	110 mm Y-junction.	Each	2.00		
2.9	Providing and fixing SWRPVC socket including jointing with rubber lubricant/cement solvent.				
	110mm dia socket.	Each	25.00		
	75 mm dia socket.	Each	8.00		
2.10	Providing and fixing ventilation cowl including jointing with rubber lubricant/cement solvent complete.				
	110mm SWRPVC vent cowl	Each	2.00		

2.11	Providing and fixing W.C. connection bend type (siphon) (SWRPVC) including jointing with rubber lubricant/ solvent cement.			
		Each	4.00	
2.12	Providing and fixing upvc multi floor trap with floor trap grating including jointing with rubber lubricant/solvent cement.			
		Each	7.00	
2.13	Supplying, fixing, testing and commissioning of Heavy class SS grating with Cockroach proof SS strainer of approved design including setting in floor with cement mortar to match with floor finish as per architect requirement suitable for FD and FT. a) Size 100mm x 100mm			
		each	7.00	
2.14	Supplying, fixing, testing and commissioning of cast brass Floor Clean Out plug with suitable insert keys for opening, male threaded joint with G.I. socket drip seal to soil pipe / waste pipe of C.I. pipe as required complete as per drawing, approved sample and direction by Engineer-in-charge.			
	100 mm dia	Each	2.00	
	SUBTOTAL (2)			
3	CHAPTER 3: WATER SUPPLY			
3.1	Providing and fixing on terrace (at all floor levels) Polyethylene storage tank of approved brand and manufacture with cover and suitable locking arrangement and making necessary connections for inlet, outlet and overflow pipes but without the fittings & the base support for tank.			
	sintex & equivalent	Lit.	35000.00	
3.2	Fixing water meter and stop cock in G.I. pipe line including cutting and threading the pipe and making long screws etc. complete (cost of water meter and stop cock to be paid separately).			
		Each	1.00	
3.3	Providing and fixing brass ball valve of approved quality complete with plastic floats complete.			
	15mm nominal bore	Each	1.00	
	20mm nominal bore	Each	2.00	
	25mm nominal bore	Each	2.00	

3.4	Providing & fixing chlorinated polyvinyl chloride pipes having thermal stability for hot & cold water supply , including all cpvc plain & brass threaded fittings including bfixing the pipe with clamps at 1.00m spacing . This includes jointing of pipes & fittings with one step cpvc solvent cement & testing of joints complete as per direction of engineer in charge. (Internal Works - Exposed on wall)			
	15mm dia normal bore	mtr.	15.00	
	20mm dia normal bore	mtr.	10.00	
	25mm dia normal bore	mtr.	7.50	
	32mm dia normal bore	mtr.	20.00	
	40mm dia normal bore	mtr.	10.00	
	50mm dia normal bore	mtr.	9.00	
3.5	Extra for concealed in brick & RCC works by making chases up to 7.5x7.5 cm in walls & making good the same after housing pipes , etc.			
		mtr.	53.63	
3.6	Providing and fixing CPVC pipes having thermal stability for hot & cold water supply including all cpvc plain & brass threaded fittings . This includes jointing of pipes & fittings with one step cpvc cement solvent trenching refilling & testing of joints complete as per direction of engineer in charge. (External Works)			
	50mm dia nominal bore	mtr.	75.00	
3.7	Providing & Fitting Powder coated metal Strap/ holding clamps/ Clips with necessary metal fasteners and screws etc. complete			
	15/20/25 mm dia	Each	8.13	
	32/ 40/ 50mm dia.	Each	9.75	
3.8	Cutting holes upto 15x15 cm in rcc floors & roofs for passing drain pipe etc. & repairing the hole after insertion of drain pipe etc. with cement concrete (1cement: 2 coarse sand : 4 graded stone aggregate 20 mm nominal size aggregate) including finishing complete so as to make it leak proof.			
		Each	10.00	
3.9	Providing and fixing CPVC Ball valve /Globe/stop & waste valve/boiler drain etc.complete.			
	32 mm nominal bore	Each	2.00	
	40 mm nominal bore	Each	1.00	
	50 mm nominal bore	Each	4.00	
	SUBTOTAL (3)			

4	CHAPTER 4: EXTERNAL STORM WATER AND SEWER				
4.1	Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality				
	H D - 20				
	Rectangular shape 9000x800mm	each	7.00		
4.2	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :				
	150 mm dia. R.C.C. Pipe	Rm	100.00		
	200 mm dia. R.C.C. Pipe	Rm	25.00		
	250 mm dia. R.C.C. Pipe	Rm	15.00		
	300 mm dia. R.C.C. Pipe	Rm	75.00		
4.3	Providing and fixing square-mouth S.W. gully trp grade 'A' complete with C.I. grating brick masonry chamber with water tight C. I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:				
	180 x 150 mm size P type				
	With F.P.S. Bricks class designation 7.5	Each	2.00		
4.4	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				
		Each	11.00		
4.5	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone- III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (zone- III) : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :				

	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :				
	With common burnt clay F.P.S. (non modular)bricks of class designation 7.5				
		Each	7.00		
	SUBTOTAL (4)				
5	CHAPTER 5: EXTERNAL WATER SUPPLY CONNECTION				
	Lump Sum				
	TOTAL (B) (17)				

B) 18) FIRE FIGHTING SYSTEM					
Sl. No.	Description of Items	Qty	Unit	Rate (Rs.)	Amount (Rs.)
I	SUB HEAD - I (FIRE EXTINGUISHERS & MISC)				
1	Providing and fixing with bracket/supports etc. wall mounted fire extinguishers as per detail below:				
	Providing and fixing water based CO2 type extinguishers consisting of welded M.S. cylindrical body, squeeze lever discharge valve 30 cms long high pressure discharge hose, discharge nozzle, suspension bracket, ISI marked as per IS:15683 finished externally with red enamel paint and fixed to wall with brackets complete with internal charges.				
	Capacity 9 lit.	10.00	Each		
2	Providing and fixing CO2 extinguisher consisting of seamless MS cylindrical body squeeze lever discharge valve, internal discharge tube, 30 cms long high pressure discharge hose, discharge nozzle ISI marked as per IS:15683 including fixing with dash fasteners etc. complete.				
	Capacity 4.5 Kg	10.00	Each		
3	Providing and fixing mechanical foam type (ISI marked) fire extinguishers consisting of welded M.S. cylindrical body squeeze lever discharge valve 30 cm long high pressure discharge hose, discharge nozzle suspension bracket as per IS:15683 marked finished externally with red enamel paint and fixed to wall with brackets complete with internal charger.				
	Capacity 9 lit.	4.00	Each		

4	Supplying and fixing of fire buckets 5 Nos.in each set of approved quality, red painted from outside and white from inside conforming to IS : 2546/1974 with additional handle at the bottom, filled with fine sand and fixed on an angle iron frame as per the requirement of local authorities.				
		10.00	Each		
	Subtotal (I)				
II	SUB HEAD -II (EQUIPMENT)				
1	Supply, installation, testing and commissioning of electrically driven high pressure centrifugal factory fitted fire hydrant / sprinkler pump, suitable for automatic operation consisting of the following:				
	Supply, installation, testing and commissioning of centrifugal type Horizontal Split case type fire fighting pump having cast iron casing, bronze impellers and SS shaft . Pump shall be directly coupled to 75 HP 2950 RPM 415 V 50 cys. AC 3 phase squirrel cage ULL motor, Pump flow 2280 LPM (500 GPM as per NFPA20 guideline range pump) at @ 60 Mt. head with from all causes including pressure guages etc. (Fire Pump shall be UL FM Approved) & Panel should be FM/UL listeds from pump manufacturer as per suitable HP. (The pump should be tested for bench mark at factory and shall be gotten approved by the Local fire Authority).				
	Pump shall be capable of furnishing not less than 150% of rated capacity at a head of not less than 65% of the rated head. The shut off head shall not exceed 120% of rated head. Squirrel cage induction motor, TEFC type suitable for operation on 415 volts, 3 phase 50 HZ A.C supply, for the above pump with synchronous speed of 2900 RPM, conforming to IP 55 protection & class F insulation. The motor shall conform to IS 325-1978 (up to date) with flexible coupling and coupling guard, complete as required. Base Plate for Pump and motor to be common base plate of MS channel of required size. The assembly to be mounted on spring isoltor assembly. Capacity : 2280 LPM Head : 60 mtr.				
		1.00	Sets		
2	Diesel Driven Pump: Installation, testing and commissioning of Horizontal Split case Centifugal fire fighting pump heaving cast iron casing , Bronze impllers and SS shaft. Pump flow 2280 LPM (500 GPM as per NFPA20guideline range pump) @ 60 mtr head with automatic diesel engine operated drive with suitable BHP HE cooled diesel engine including half/full day oil tank, battery, chimney piping all complete (Fire Pump shall be UL FM Approved) & FM/UL listed panel from pump manufacturer.(The pump should be tested for bench mark at factory and shall be gotten approved by the Local fire Authority).				

	Pump shall be capable of furnishing not less than 150% of rated capacity at a head of not less than 65% of the rated head. The shut off head shall not exceed 120% of rated head. Heat exchanger cooled (secondary cooling) diesel engine of speed 1500 RPM suitable for the above pump with automatic starting mechanism and other accessories including fuel tank (fabricated from 3mm MS sheet, painted with two coats of synthetic enamel paint over a coat of primer) of capacity adequate to sustain pump operation for 8 hours continuous working. The tank shall be fitted with Magnetic oil level indicator, MH with cover, drain valve, air vent including structural supports (painted with approved shade), 2 Nos. x 12 volt battery, heat exchanger with necessary piping connections & fittings, flexible coupling, coupling guard & exhaust pipe connection complete as required. Base Plate for Pump and motor to be common base plate of MS channel of required size. The assembly to be mounted on spring isoltor assembly. Capacity : 2280 LPM Head : 60 mtr.				
		1.00	Set		
3	Supply, installation, testing and commissioning of Horizontal mono-block Pumps, suitable for operation on 415 volts \pm 6%, 3 phase, 50 HZ A.C supply. The installation shall be complete with Flexible coupling and coupling guard, complete as required. Jockey pump shall be of stainless steel construction. The pump head and base shall be CI GG20 construction and impellers, diffusers, shaft sleeve, seal bush & pump shaft shall be in SS 304 material. The pump shall be provided with mechanical seal The system shall be complete with necessary pressure gauge with gun metal shut off cock on delivery side (The pump should meet the condition and shall be gotten approved by the Local fire Authority).				
	Squirrel cage induction motor TEFC type for operation on 415 V, 3 phase 50 HZ AC supply for the above pump with a synchronous speed of 2900 R.P.M. with flexible coupling and coupling guard etc. as required. Base Plate for Pump and motor to be common base plate of MS channel of required size. The assembly to be mounted on spring isoltor assembly. Capacity : 180 LPM Head : 60 mtr.				
		1.00	Set		
	Note:				
	Contractor should submit the performance curve of Pump and got approved before placing the Purchase Order.				
4	Fabricating, Supplying, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header in pump house fabricated out of 10 mm thick MS sheet, Air Release Valve, complete with drain arrangement with 25 mm dia gun metal ball valve complete with all accessories etc. as required of the following sizes				
	2 Meter high and 450 mm dia suitable to operate Jockey Pump, Main Fire Pump & Diesel Engine Driven Fire Pump complete with all pressure switches as per specifications as reqd.				
		1.00	Nos.		

	Subtotal (II)				
III	SUB HEAD -III (Hydrants, Sprinkler, Piping & Accessories)				
1	Supplying, laying, fixing, testing and commissioning of following sizes (NB) of class 'C' M.S. pipes conforming to IS 1239 and 3589 including cutting, threading, welding etc. and providing all fittings e.g. elbows, reducers, clamps, hangers, flanges, gaskets, nuts, bolts and washers etc. including painting of pipes and fittings with red paint over a coat of ready mixed primer, both of approved quality and shade including cutting holes and chases in brick or RCC walls/slabs and making good the same etc. complete in all respect as required.				
1.1	200 mm dia	20.00	Metre		
1.2	150 mm dia	185.00	Metre		
1.3	100 mm dia	40.00	Metre		
1.4	80 mm dia	20.00	Metre		
1.5	65 mm dia	20.00	Metre		
1.6	50 mm dia	75.00	Metre		
1.7	40 mm dia	325.00	Metre		
1.8	32 mm dia	240.00	Metre		
1.9	25 mm dia	650.00	Metre		
2	Providing & fixing of heavy class M.S. pipes conforming to IS: 1239/3589 complete with fittings including trenching and refilling etc. (external work) including all fittings and accessories like tees, elbows, flanged joints, rubber insertion, nuts, bolts or cutting and welding joints. Providing thrust block at distance specified as per specifications. (Pipe shall be provided with anti corrosive protective treatment with coal tar/asphalt tape conforming to IS: 10221 standard complete as per specification). All work complete as per specification and as directed by Engineer-In-Charge.				
2.1	150 mm dia	40.00	RM		
3	Suplying, installing, testing and commissioning of following dia Y Strainer of ductile body flanged with stainless steel strainer as required.				
3.1	200 mm dia	1.00	Nos.		
3.2	150 mm dia	2.00	Nos.		
3.3	80 mm dia	1.00	Nos.		
4	Providing and fixing cast iron dual plate wafer type non return valves PN 1.6 including nuts, bolts, 1.5 mm thick gasket companion flanges as per table 'E' etc. complete.				
4.1	150mm dia	4.00	Nos.		
4.2	80 mm dia	2.00	Nos.		

5	Providing of Cast Iron Non Rising Spindle Gate Sluice valve PN 16 (Flanged) rating hand wheel operated, stain less steel stem with gun metal parts, Nut, bolts & washers etc. complete as required as per specification conforming to IS:14846.				
5.1	150mm Dia	4.00	Nos.		
6	Supplying of Butterfly valves of PN 1.6 rating of following sizes with EPDM rubber lining seat and CF-8 stainless steel disc duly ISI marked and stainless steel stem with lever/gear operation and cast iron body in powder coated finish for fire fighting application complete in all respects confirming to IS: 13095 as required.				
6.1	200 mm dia	1.00	Nos.		
6.2	150mm dia	10.00	Nos.		
6.3	80 mm dia	2.00	Nos.		
6.4	50 mm dia	2.00	Nos.		
7	Supplying and fixing Single Headed Internal Hydrant Valve oblique pattern with instantaneous Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked, conforming to IS : 5290 (Type A), with 80 mm dia flanged inlet, with ABS cap and chain complete with all accessories etc. as required.				
		4.00	Nos.		
8	Supply, Installation, Testing and Commissioning 63 mm dia. 15 Mtr. Long RRL hose pipe with 63 mm dia. male and female stainless steel couplings duly binded with GI wire rivets etc. ISI marked, IS 636 (type-A) as required.				
		8.00	Nos.		
9	Supplying and Fixing First Aid Hose Reel , wall mounting swinging type complete with drum & bracket of MS construction, spray painted in Post office Red, confirming to IS 884/1995 with upto date amendments, complete with the following as required.				
i)	30 Mtr Long 20 mm nominal internal dia as per IS 12585 water hose thermoplastic (Textile reinforced) Type II				
ii)	20 mm dia. ball valve & nozzle.				
iii)	Drum and brackets for fixing the equipments on wall.				
iv)	Connection from riser with 25 mm dia gun metal stop valve and M.S pipe as reqd.				
		4.00	Nos.		
10	Supplying and fixing Stainless Steel branch pipe with 20mm dia nozzle conforming to IS:903. suitable for instantaneous connections to hose pipe coupling etc. as required.				
		4.00	Nos.		

11	Supplying and fixing 4 way fire brigade connection of cast iron body with 4 nos. Stainless steel male instantaneous inlet couplings complete with cap and chain as required for 150mm dia MS pipe connection, conforming to IS 904 as required.				
		1.00	No.		
12	Providing,fixing,testing and commissioning of one number Stainless steel fire brigade section hose coupling (Fire brigade withdrawal connection) i/c foot valve in the bottom etc. as per specification complete as required. (M.S pipe of 100 mm dia will be paid in pipe item.				
		1.00	Nos.		
13	Supplying and fixing air vessel made of 250 mm dia, 8mm thick MS sheet, 1200mm in height with air release valve on top and flanged connection to riser, drain arrangement with 25mm dia Stainless Steel wheel valve, with required accessories, pressure gauge and painting with synthetic enamel paint of approved shade as required.				
		1.00	Nos.		
14	Providing & Fixing Pressure switch in the M.S Pipe Line including connection etc. as required.				
		6.00	Nos.		
15	Providing,fixing,testing and commissioning 100 mm dia pressure gauge of range 0 -015 Kg / sqcm conforming to IS - 3624 having bourdon tube of stain steel 310 in cast aluminium,stove enamelled, black, weather proof case with outer, screwed aluminium bezel and complete with necessary U-type stainless steel siphon tube and cock complete as required.				
		7.00	Nos.		
16	Providing and fixing flow switches in 100/150mm dia M.S Pipe as required.				
		2.00	Nos.		
17	Providing & Fixing testing & commissioning of installtion control valve of cast iron body and brass/bronze working parts comprising of water motor alarm. Bronze seat clapper, and clapper arm, hydraulically driven mechanical gong bell to sound continuous alarm when the Wet riser/ sprinkler System activates, pressure gauges, emergency release,strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required sizem flanges, orifice plate, gasket etc. of size 150mm dia as required.				
		1.00	Nos.		
18	Providing, fixing, testing & commissioning of 15 mm size quartzoid bulbtype sprinklers , of rating 68 degree C. with required accessories.				

18.1	Upright 68° C Chrome Plated	325.00	Nos.		
19	Fabricating, supplying, installation, testing and commissioning of electrical control panel of cubical construction, floor mounted type, fabricated from 2 mm thick CRCA sheet compartmentalised with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, inter connection, having switchgears and accessories mounting and internal wiring, earth terminals numbering etc complete in all respect, suitable for operation on 415 V, 3 phase, 50 Hz AC supply with enclosure protection class IP 42 as reqd				
	PANEL IN FIRE PUMP HOUSE				
	INCOMER				
	i) 800A, 4 pole, 35 KA, MCCB with microprocessor release with Ics=100% Icu digital Voltmeter (0-500 Volts) with selector switch. digital Ammeter (0-800Amps) with in built selector switch and CT's etc. Set of 3 Phase LED indicating lamps, Set of Al. bus bar for 1000 Amps. --1 Set				
	OUTGOING.				
	a) Main fire pump.				
	i) 400Amps. TP MCCB, 35/36 KA Ics=100% Icu with suitable HP fully automatic star/delta starter with over load protection, (without no volt and under voltage trip) current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local /remote, auto/manual/OFF operation. --- 1 set				
	ii) Digital ammeter with selector switch alongwith suitable ratio CTs --- 1 Set				
	iii) Pump on LED Indication lamp --- 1 No.				
	b) Jockey pump.				
	i) 63Amps. TP MCCB 25 KA Ics=100% Icu with suitable HP fully automatic star/delta starter with over load protection, (without no volt and under voltage trip), current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local / remote, auto/manual OFF operation. -2 sets.				
	ii) Digital ammeter with selector switch alongwith suitable ratio CTs -1 Set.				
	iii) Pump on LED Indication lamp - 1 No.				
	c) Diesel Engine Control				
	Control for Diesel Engine comprising:- Auto/Manual selector switch and 3 attempt starting device, timers and relays as required, push buttons, start/stop in manual mode. Indication lamp for High/Low Lub. Oil pressure, High Water Temp. and Engine ON indication Battery Charger suitable for 12/24 V DC with boost and tickle selector switch, 0-30 V DC volt meter, 0-20A DC Ammeter. All standard relays and accessories for automatic operation of diesel engine.				
	d) SYSTEM CONTROLLER				

	Designing, Supply, Installation, Testing and Commissioning of System controller to control operation of Main Electric Fire Pump, Diesel Pump, Pressurisation Pump in sequence as per specification consisting of relays, timers, sensors, annunciation window for fault indication, complete as per specification.				
		1.00	Job		
20	Supplying and Laying of XLPE insulated, PVC sheathed 1.1 KV grade armoured U.G. Cable of following sizes on surface/in existing cable tray suitably clamped as required.				
20.1	31/2 x 240 sq.mm.(aluminium conductor)	50.00	Mtrs.		
20.2	3 x 70 Sqmm(aluminium conductor)	30.00	Mtrs.		
20.3	3 x 10 Sq mm (Copper conductor)	30.00	Mtrs.		
20.4	2 x 2.5 Sq mm (Copper conductor)	50.00	Mtrs.		
21	Supplying and making end termination with brass compression gland and Al. lugs for following sizes of PVC insulated, PVC sheathed/ XLPE Al. conductor cables of 1.1 KV grade as required.				
21.1	31/2 x 240 sq.mm.	2.00	Sets		
21.2	3 x 70 Sqmm	4.00	Sets		
21.3	3 x 10 Sq mm (For Copper conductor)	4.00	Sets		
22	Suppling and fixing following sizes of perforated pre-painted 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 and nuts, painting suspenders etc as required.				
22.1	150 mm. (W) X 50 mm. (D) X 1.6mm.(TH)	30.00	Mtrs.		
22.2	300 mm. (W) X 50 mm. (D) X 1.6mm (TH)	20.00	Mtrs.		
23	Providing and fixing 25 mm x 5 mm G.I.Strip in on surface or in recess for loop earthing complete etc. as required.				
		50.00	Mtrs.		
24	Providing and fixing mettalic expansion bellows vibration eliminators with flange suitable for raw water upto 45 deg. C. temperature working pressure 7 kg/ sq.cm and test pressure 14 kg/sq.cm.				
24.1	80mm dia	2.00	Each		
24.2	150 mm dia	6.00	Each		
25	SITC of Fire Man's Axe				
25.1	Supplying, Installation, Testing and Commissioning of standard Fire Man's axe with heavy insulated rubber conforming to IS : 926				
		4.00	Each		

26	Supplying, installation, testing and commissioning of M.S cabinet size 1000 mm x 2100 mm x 600mm deep fabricated from 1.6mm thick M.S. sheets and M.S angle 40mmx40mmx6mm complete with glass, locking arrangements.				
		4.00	Each		
	Subtotal (III)				
	TOTAL (B) (18)				

19) MARKET RATE ITEMS					
Sl. No.	Particulars/Items	Unit	Quantity	Rate (Rs.)	Amount (Rs.)
1	Designing, Fabricating, supplying and fixing Ferrari/Sioen 1000+ Gsm, Type 3, PVDF including complete steel structure with Duco painted surface MS structure as per analysis/technical specifications/ Architechral , as per the approved shop drawings, as speciefic and as directed by Engineer-in-Charge. (Note:- RCC Structure work shall be paid extra if any)				
	Canopy Walk	Sqm	123.00		
2	Supply & Installation of FIFA Quality & Quality Pro certified Sports Artificial Turf from FIFA Preferred Manufacturer having Pile Height of 60 MM with following specification; Composition PE, Structure Monofilament, V Shape & Fibrillated Yarn, Emerald & Lime colour, Dtex 17500, Tape thickness 260µm & 85µm, Tape width 1.10mm & 6.0mm, Pile height 60mm±1mm, Gauge 3/4 inch, Stitches per 10cm 13±1, Stitches per m2 6825±100 according to ISO 1773, Total yarn weight 1620 Gms/Sqm ±10%, Double layer PU Backing, Weight 250 Gms/ Sqm, Secondary backing Weight 1150 Gms/Sqm ±10%, Total Carpet weight 3020 Gms/Sqm ±10%, Water Permeability of Turf carpet: > 2000 mm/hr, Infilling of Silica sand at the ratio of 15 kg/m2 & SBR Granules at the ratio of 17 kg/m2 Infill as FIFA standard & Test report. Installation of Turf should be done using a seam tape & suitable PU adhesive. Adhesive TDS should match the following basic properties: Colour & Form : Grass- green paste, Characteristics: 2 component, polyurethane – reaction adhesive for outdoor use, Specific Gravity : 1480 g/litre, Viscosity: Thixotropic, Solids: 100%, Application: Notched trowel or by suitable machine for applying to Seaming Tape.				
	Football graound, Goal Post Area	Sqm	2553.62		

	# Excavation & Earth Work according to Site requirement (Upto 6”), considering that client will provide us land with soil infill as per the desired levels# Preparing the slope & leveling using Auto Level# Compaction of sub-soil with 6-8 Ton Static Rollers # Weedicide Treatment of Land# Providing and laying of perforated PVC drain pipes Heavy Duty of 160mm Outer Dia with staggered perforations. Pipe would be placed diagonally in width after every 12 meter to cover-up desired Length (As shown in Drawing)# Supply and Placing of 200 Microns Geo textile Separation Barrier to cover the entire field including the edges# Providing and laying of perforated PVC drain pipes Heavy Duty of 200mm dia with staggered perforations. Pipe would be placed on both side of Lengths (As shown in Drawing)# Pipes would be placed on PCC Base # Support Retaining/Toe Wall using Concrete Blocks (150 mm Thick Width and Height would vary from 300mm to 450mm as per site requirements) towards four side# Providing and laying of compacted upto 100mm thick with 40-30mm metal Stone to form a contour and elevations to the desired level as per Drawings including all carriages upto site of work.# Providing and laying of compacted upto 30mm thick with 20mm-10mm metal Stone to form a contour and elevations to the desired level as per Drawings including all carriages upto site of work.# Providing and laying of compacted upto 20mm thick with 6mm metal stone mixed with Grit# Drain Chambers on end corners as per site requirement# Shifting of any Garbage/Waste material outside would be charged on Actual basis and not included in Proposal				
	Football ground, Goal Post Area, Less Parking Slab Area	Sqm	1793.62		
3	Providing & Fixing 08 Passenger lift as per below given specifications:-				
	Kone - Monospace or equivalent				
	Gearless Machine Room Less Lift				
	Speed - 1m/s				
	Drive - V3F				
	Nos of Stops - 3 Nos, Basement 1, Basement 2, Ground				
	CAR Size-1100 mm (W) x 1300 mm (D)				
	CAR Ceiling & Panels - SS Hairline Finish				
	Car Flooring - Stone Finish				
	Car Illumination - LED				
	CAR Entrance - Centre Opening Power with partial height glass Door in SS Hairline Finish.				
	Door Safety - Full Height Infra red safety curtains				
	Landing Entrance - Centre Opening Power with partial height glass Door in SS Hairline Finish.				
	Clear Opening - 800mm (W) X 2000 (H)				
	Control - Full Collective Simplex				

	CAR Indicators - KDS 90 PH COP- Surface Mounted Buttons-White LED				
	Landing Indicators - KDS 90 LCI- Flush Mounted Buttons-White LED.				
		Nos	1.00		
4	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge.				
	Made of G.I. wire of dia. 4 mm, PVC coated to achieve outer dia not less than 5 mm in required colour and shade				
	Around Football Playground	Sqm	432.00		
5	Boom Barrier for car: Electromechanical parking barrier with all accessories upto 6 meter length				
		Nos	2.00		
6	Supply & Installation of Reverse Vending Machine• Systematic way of collecting waste <ul style="list-style-type: none"> • Complete automation • Provision of advertising space and advertising rights to the customer. • Approx. Size = 850x850x1700mm • Database collection system • Front feeding approachable height • Touch screen monitor with Linux. • 2,3 Hp gear motor(Crompton, godrej, Havel's or equivalent) • SS304 Body with choice of stickers • E-wallet Reward system • Donation option • Coupon System(As per ASCL recommendation) • ASCL's advertising rights • One year free maintenance • Bin full sensors • Auto cut on overheating • Conveyor start and stop • Verification by Weight Sensors • IOT integrated • Photoelectric Sensors(Sick, Panasonic, Omron, Baumer or equivalent) • ASCL Logo 				
		Nos	1.00		
	Installation & supervision charges	Nos	1.00		
	Maintenance cost for 2nd Yr.	Nos	1.00		
	Maintenance cost for 3rd Yr.	Nos	1.00		

7	Supply, Installation, Yesting & Commisioning of Water ATM with built in water purification facility by UV, 4 L/min capacity, and of size 4'X4'X 8' Height. Tamper proof coin input, SS 304 Grade Structure, LED display & Alpha - Numeric Keypad for programming, Programmable Timer/ Volume based Water Dispenser (2 nos.) (200 ml to 20 litters), Programmable password for admin & operator, Contact less smart card authentication, Inbuilt smart card recharging system, Revenue reports, Inbuilt water totalize, Battery backup upto 6 Hrs., LED Indicators including transportation and installation,testing & commissioning, ASCL Logo			
		Nos	1.00	
	Cost of Water Connection	Nos	1.00	
	Providing and fixing 20mm diameter GI Pipe to T Cluster and 20mm Water Meter complete			
		Nos	1.00	
	Providing, laying and fixing 20mm diameter GI Pipe complete with all GI fittings complete in paved surface including road restoration			
		RM	30.00	
	Maintenance cost for 1st Yr.	Year	1.00	
	Maintenance cost for 2nd Yr.	Year	1.00	
	Maintenance cost for 3rd Yr.	Year	1.00	
8	Providing & Fixing of Smart Benches of Size 1200 x 455 x 1670 mm with 3 electricity outlet of .22 V			
	Battery: Li-ion Voltage: 11.1v/12.8v Cell Type: Li-on/LiFePO4			
	USB Number of USB-Ports: 4 Charging voltage: 5 V Charging current: 2 A			
	Wifi Internet connection: throught 4G- Wifi router (excl. Internal subscription) Reach Internet: 10-20 meters around the solar bench			
	Cooling: Cooling of the seating surface through air cooling.			
	Ambience Light Type LED: 5630/2835/3030 SMD LED Colors available: white, blue, green, red.			
	Advertising Space: Size: 250 x 250 mm , 350 x 250 mm			
		Nos	8.00	
9	Supplying & Installation of MERRY GO ROUND for Children Age group - 6 to 12 years Sefety Play area - 5 * 5 ft, Plate form H - ½ ft, Structure - CR Pipe Handrill - 60 MM, 32 OD CR Pipe Plate form base - 18 gauge M S Sheet, Color - To coat color full Aspa paint as per direction of Engineer-in-charge.			
		Each	2.00	

10	Supplying & Installation of Multiplay Station for Children Age Group- 6 To 12 Years. Safety Play Area - 40x30 FT, Spiral Slide, Standard Slide, Wav Slide, Double Swing, Circular Swing, FRP Parafit= 3x3, FRP 3 Canopy, Pipe= 75 MM, 32 MM, 25 MM, 19 MM 14-12 Guage Apolo Pipe ISI Mark. Paint= To Coat Colour Aspa Paint as per direction of Engineer-in-charge.				
		Each	1.00		
11	Supplying & Installation of Single Seesaw for Children Age Group- 6 To 12 Years. Safety Play Area - 3*8 ft, H=3 FT, LLDPE= 2 Seated Seesaw , Pipe= 75 MM, 60 MM AND 50 MM, 14 Guage Apolo Pipe ISI Mark. Paint= To Coat Colour Aspa Paint as per direction of Engineer-in-charge.				
		Each	2.00		
12	Providing & Installation of LED Acrylic Signage of Powder Coated Metal Letters for " CHIEF MINISTER's OFFICE" & "HIGHFIELD PLAYGROUND" Signage with Branded lighting from Backside.				
	Highfield Playground signage, Chief Minister's office signage	Sqm	5.75		
13	Synthetic Surface				
	Providing & Installation of Synthetic Jogging Track Flooring with 10 mm Shock absorber rubber cushions + 0.5 mm PU Sealer layer + 2 mm PU (Polyurethane) + EPDM Granulus & final line marking all complete as per direction of Engineer-in-charge. (Ecofloormate Type-4 or equivalent).				
	Jogging Track	Sqft	8575.72		
14	Providing and fixing of expansion joint system related with wall joint (internal/ external) location as per drawings and direction of Engineer-In- Charge. The joints shall be of extruded aluminum base members, self aligning / centering arrangement and support plates as per ASTM B221- 02. The material shall be such that it provides an Expansion Joints System suitable for vertical wall to wall/ wall to corner application, both new and existing construction in office Buildings & complexes with no slipping down tendency amongst the components of the Joint System. The Joint System shall utilize light weight aluminum profiles exhibiting minimal exposed aluminum surfaces mechanically snap locking the multicellular to facilitate movement. (Material shall confirm to ASTM 6063).				
	Wall Joint of 100 mm gap, Basement II Columns - internal, Basement I Columns - Internal, External Columns	Rm	67.20		

15	<p>Providing and fixing of expansion joint system of approved make and manufactures for various roof locations as per approved drawings and direction of Engineer-In-Charge. The joints shall be of extruded aluminum base members with, self aligning and self centering arrangement support plates asper ASTM B221-02. The system shall be such that it provides watertight roof to roof/roof to corner joint cover expansion control system that is capable of accommodating multidirectional seismic movement without stress to its components. System shall consist of metal profile that incorporates a universal aluminum base member designed to accommodate various project conditions and roof treatments. The cover plate shall be designed of width and thickness required to satisfy movement and loading requirements and secured to base members by utilizing manufacturer's preengineered self-centering arrangement that freely rotates / moves in all directions. The Self centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. The Joint System shall resist damage or deterioration from the impact of falling ice, exposure to UV, airborne contaminants and occasional foot traffic from maintenance personnel. Provision of Moisture Barrier Membrane in the Joint System to have water tight joint is mandatory requirement. (Material shall confirm to ASTM 6063).</p>				
	Roof Joint of 100 mm gap, Basement I Slab - Beams, Basement II Slab - Beams, Basement II Slab - Roof				
		Rm	81.63		
16	<p>Providing and fixing of expansion joint system related with floor location as per drawings and direction of Engineer-In-Charge. The joints system will be of extruded aluminum base members, self aligning / self centering arrangement and support plates etc. as per ASTM B221-02. The system shall be such that it provides floor to floor /floor to wall expansion control system for various vertical location in load application areas that accommodates multi directional seismic movement without stress to it's components. System shall consist of metal profiles with 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 Self - centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. Provision of Moisture Barrier Membrane in the Joint System to have watertight joint is mandatory requirement all as per the manufactures design and as approved by Engineer -in-Charge. (Material shall confirm to ASTM 6063).</p>				
	Floor Joint of 100 mm gap, Basement I Floor	Rm	27.21		

17	Providing and fixing 30mm thick light weight, high strength, membrane protective modular drainage cell all as directed by the Engineer In charge.				
	Area of Parking Slab within ground	Sqm	760.00		
	<u>SPECIFICATIONS OF OUTDOOR GYM EQUIPMENTS</u>				
	Certification by MSME /Govt. of India Certified Lab - All the equipments should be third party quality certified.				
	Nuts & Bolts should be galvanized.				
	User Weight - The fitness equipments should be designed for 110 kg user weight.				
	Column - The Pre Galvanized steel pipe, column footing plate screw with a pull-burst. The surface rust, acid decreasing, cleaning, phosphate rust after a special process. Throwing sand, imported plate plastic powder with a double surface house-hold level spraying layer, electrostatic spray, high temperature plastic 200 degree banking powder, smooth surface, UV Resistant.				
	Foundation Base - The Equipment shall be fixed on ground in 500 x 500 x 500 mm Base of concrete with minimum strength M-25, with J-bolt and when concrete is set fixing the equipment on it and cover nuts & bolts with base plate cover.				
	Anti-Rust - Shot blast/Grit blasting of equipment to clean the rust. Electro-static powder coating technique to process the pipe surface.				
	UV - Fully Resistant.				
	Quality Design Standard - All outdoor gym equipments must confirm DIN 79000 and EN 16630, C.E Certified I.S.O 9001:2015 , Quality Management System, ISO 14001:2014 Environ Management system.				
	SEAT - LLDPE / Deep drawn steel P.P powder coated / of anti-ultraviolet , anti-static decolorization element passing, strength, smooth surface , security assurance, weather resistane etc.				
	PLATFORMS - High strength punching plate, with a special process dealing with wavy surface microscopy, safe and beautiful non slip resistance.				
	Material central Pipe - Central 114 mm OD or as required Galvanized steel pipe and all supporting pipe cleaned by sand blasting, then coated with phosphate solution and finished with electro-static P.P powder coating or other similar available material meeting the requirement standard.				
	FASTNERS - Stainless steel screws to be used and at the contact point with the columns rubber pads to be used, screws to cover with a plastic cap, to enhance its security.				
	Wall thickness of pipe - Central Pipe 114 mm OD or as required 03 mm or as required wall thickness and supporting pipes 48 mm OD or as required, wall thickness 2.5 mm or as required.				
	FOOT REST - LLDPE/Aluminium Casting / Metal casting / Deep drawn steel / or as required P.P powder coated foot rest.				

18	Supplying & fixing of "Cross trainer double" of dimensions 800 mm (Length) x 400 mm (Width) x 1200 mm (Height). Note: - Galvanised material will be used. (Khalsa KOG 08 or equivalent).			
		Each	1.00	
19	Supplying & fixing of "Elliptical cross trainer double" of dimensions 1200 mm (Length) x 1000 mm (Width) x 1200 mm (Height) Note: - Galvanised material will be used. (Khalsa KOG 025 or equivalent).			
		Each	1.00	
20	Supplying & fixing of "Pull chair Double" of dimensions 1900 mm (Length) x 740 mm (Width) x 1920 mm (Height) Note: - Galvanised material will be used. (Khalsa KOG 012 or equivalent).			
		Each	1.00	
21	Supplying & fixing of "Leg Press Double " of dimensions 894 mm (Length) x 853 mm (Width) x 1203 mm (Height)Note: - Galvanised material will be used. (Khalsa KOG 014 or equivalent).			
		Each	1.00	
22	Supplying & fixing of "Chest Press Double " of dimensions 1900 mm (Length) x 740 mm (Width) x 1920 mm (Height) Note: - Galvanised material will be used. (Khalsa KOG 015 or equivalent).			
		Each	1.00	
23	Supplying & fixing of "Pec Dec Chest Expander" of dimensions 2100 (Length) x 750 (Width) x 2250 mm (Height). Note: - Galvanised material will be used. (Khalsa KOG 016 or equivalent).			
		Each	1.00	
24	Supplying & fixing of "Parallel Bars" of 1700 mm x (Length) 600 mm (Width) x 1200 mm (Height) . Note: - Galvanised material will be used. (Khalsa KOG 031 or equivalent).			
		Each	1.00	
25	Supplying & fixing of "Scalting Ladder" of 3000 mm x 956 mm x 2330 mm. Note: - Galvanised material will be used. (Khalsa KOG 041 or equivalent).			
		Each	1.00	
26	Supplying & fixing of "Chin up Bar " of 2000 mm Length, Height of Pole 2200 mm, Width - 200 mm . Note: - Galvanised material will be used. (Khalsa KOG 046 or equivalent).			
		Each	1.00	

27	Providing & Installation of Outdoor 30 mm thick EPDM Flooring in any colour, design/logo. (EPDM granules are 6 mm rest is base cushion surface). (Thermoblow or equivalent)			
	Flooring	Sqm	99.00	
28	<p>Supplying, fabricating and erecting of football goal post with overall dimensions above grass field of size 8.00 mts wide and 2.5 mts, in height, fabricated out of vertical and horizontal 'B' class G.I. pipe of 125mm dia, cross bars shall be of 2" dia.'B' class G.F. pipe, including fixing of highest quality nylon or Galvanized mesh of Poly Propylene for football goal nets which conform to ISO quality standards, made from premium 4.5mm X 24 ft X 8 ft braided white twine approved by Engineer to be attached to the main posts, cross bars with necessary hooks and anchored to the ground behind the goal posts. The vertical members of goal posts shall be sufficiently anchored below the ground with necessary excavation, cement concrete foundation etc. complete and with other members properly welded to each other to provide stable framework. The entire goal posts shall be painted with approved quality primer followed by ready mix paint of approved shade etc. complete.</p>			
		Pair	1.00	
	TOTAL (19)			