



**NAYA RAIPUR DEVELOPMENT AUTHORITY**

**Modified**

**Tender document for the work of Forest and Water  
Resources Department Buildings at Sector-19 of  
Naya Raipur**

**(Following Three-Envelope Tender Procedure)**

**Schedule – A  
Price Tender**

**To be submitted in ENVELOPE-3**

**NIT no. 8 /F & WRD / EE-IV/CE(E)/NRDA/2011-12, Raipur Dated: 19.01.2012**

**Issued by:** Chief Executive Officer,  
Naya Raipur Development Authority (NRDA)  
Near Mantralaya Mahanadi Dwar  
Raipur 492 001, Chhattisgarh  
Tel: (0771) 4066011, Fax: (0771) 4066188,  
E-mail: ceo@nayaraipur.com

## Tender Document Contains

- (a) Only schedule "A" and Section-I of schedule "D" are to be filled & signed by the tenderer  
 (b) All the certificates as per pre qualification criteria shall be appended with relevant forms of schedule "D"

1. PART ONE (NRDA F-1)-(Attached herewith, to be submit along the tender)
  - Part (A)
    - a) Press Notice
    - b) Detailed NIT
  - Part (B)
    - a) **Schedule-A**
      - (i) **Cost Abstract**
      - (ii) **Bill of Quantities**
    - b) Schedule-B –NIL
    - c) Schedule-C –NIL
    - d) Schedule-D
      - Section-I..... Technical tender forms
        - (i) Letter of Technical Tender
        - (ii) Tenderer's Information Sheet
        - (iii) Annual Turnover
        - (iv) Specific Construction Experience
        - (v) Declaration
        - (vi) Check list for Technical tender evaluation
      - Section –II .....Scope of work
      - Section –III..... Technical specifications of work
      - Section –IV..... Special Conditions of Contract
      - Section –V..... List of approved makes
      - Section –VI..... Drawings
    - e) Schedule-E
    - f) Schedule-F
2. PART TWO (NRDA F-2/3 )-Standard form (Not Attached herewith, and not to be submitted along the tender)
 

**Important note: - Link site [http:// nayaipur.com/documents/gcc.pdf](http://nayaipur.com/documents/gcc.pdf)**

  1. General Guidelines
  2. Tender
  3. General rules and directions
  4. Conditions of contract
  5. Clauses of contract
  6. Model rules relating to labour, water supply and sanitation in labour camps safety code
  7. Sketch of cement Godown
  8. Contract forms
    - (a) Draft Format for Performance Security
    - (b) Earnest Money Deposit Form (Bank Guarantee)
    - (c) Format of Contract Agreement
    - (d) Draft Format for Performance Guarantee for Water Proofing and Anti-termite Works
    - (e) Indemnity Bond
    - (f) Indenture Bond
    - (g) Notice for Appointment of Arbitrator
  9. Proforma of schedules (Schedule 'A' to Schedule 'F')

## Naya Raipur Development Authority (NRDA) Raipur, Chhattisgarh

### Document details

**Name of work : Forest and Water Resources Department Buildings at Sector-19 of Naya Raipur**

**Name of Tender:**

### Details

- a) Cost of Tender Document : Rs
- b) EMD : Rs

Signature of Tenderer

Date: \_\_\_\_\_

Signature of Contractor.....

Signature of NRDA.....

<b>Cost Abstract for Works</b>			
<b>Sl. No.</b>	<b>Description of Items</b>	<b>Amount in INR in Figures</b>	<b>Amount in INR in Words</b>
A	Civil Works		
B	Electrical Works		
C	Public Health Engineering Works		
D	Fire Fighting		
E	HVAC Works		
	<b>Total Amount</b>		

## BILL OF QUANTITY

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
<b>A</b>	<b>CIVIL WORKS</b>						
<b>1</b>	<b>EARTH WORK</b>						
1.1	Clearing grass and removal of the rubbish upto a distance of 50 m outside the periphery of the area cleared.	sqm	7500	6776	14276		
1.1.1	In all types of soil						
	<b>Rate In Words</b>						
1.2	Excavation for all types and sizes of foundations, trenches and drains or for any other purpose including disposal of excavated stuff upto 1.5 m lift and lead upto 50m (at least 5m away from the excavated area), including dressing and leveling of pits.						
1.2.1	In all types of soil	cum	36807	6641	43448		
	<b>Rate In Words</b>						
1.2.2	In ordinary rock	cum	3681	664	4345		
	<b>Rate In Words</b>						
1.3	Extra for every additional lift of 1.5 m or part thereof.						
1.3.1	Depth exceeding 1.5 M. but not exceeding 3 M.						
a	All types of soil	cum	11481	1680	13162		
	<b>Rate In Words</b>						
b	Ordinary and hard Rock	cum	1276	187	1462		
	<b>Rate In Words</b>						

Signature of Contractor.....

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
1.3.2	Depth exceeding 3.0 M	cum					
a	All types of soil	cum	3720	561	4280		
	<b>Rate In Words</b>						
b	Ordinary and hard Rock	cum	413	62	476		
	<b>Rate In Words</b>						
1.4	Filling from available excavated stuff (Excluding rock) in trenches, plinth, sides of foundation etc. in layers not exceeding 20cm in depth consolidating each deposited layer by ramming and watering with a lead upto 50 M. and lift upto 1.5 M.	cum	18335	7847	26182		
	<b>Rate In Words</b>						
1.5	Providing and filling in plinth with sand/ Crusher dust under floor in layers not exceeding 20cm in depth consolidating each deposited layer by ramming and watering, including dressing etc. complete.	cum	11635	3043	14678		
	<b>Rate In Words</b>						
1.6	Supplying chlorpyriphos/ Lindane emulsifiable concentrate of 20% in sealed containers including delivery as specified.	litre	1636	682	2318		
	<b>Rate In Words</b>						
1.7	Diluting chemical emulsion (Chlorpyriphos/ lindane) in water as per manufacturers recommendation and injecting for preconstructional curative cum preventive anti-termite treatment:(Five year service guarantee bond to be signed by contractor)						

Signature of Contractor.....

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
1.7.1	Surface treatment by spreading emulsion under floor, over the plinth area before laying base concrete @ 5 litres / sqm.	sqm	4770	3958	8728		
<b>Rate In Words</b>							
1.7.2	Treatment of inside of plinth masonry wall on using diluted chemical emulsion @ 1.5 litre per hole, including drilling 12 mm diameter holes in plinth wall below plinth protection at the intervals of 300 mm and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand).	metre	1055	261	1316		
<b>Rate In Words</b>							
1.7.3	Treatment of outer side of plinth masonry wall using diluted chemical emulsion @ 1.5 litre per hole, including drilling 12 mm diameter holes in plinth wall at the junction of floor at the intervals of 300 mm and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand). metre 9.70	metre	545	360	905		
<b>Rate In Words</b>							
1.8	Carriage by mechanical transport for 5 km lead:						
1.8.1	Earth	cum	30175	12755	42930		
<b>Rate In Words</b>							
<b>2</b>	<b>FORM WORK</b>						
2.1	Providing and fixing formwork including centering, shuttering, strutting, staging, propping bracing etc. complete and including its removal at all levels, for:						
2.1.1	Foundations, footings, base of columns and plinth beam in any shape and size.	sqm	8522	8621	17143		
<b>Rate In Words</b>							

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
2.1.2	Wall of any thickness including attached pilasters, buttresses etc.	sqm	2818	3554	6372		
	<b>Rate In Words</b>						
2.1.3	Window sills, anchor blocks, string course, bends, copings, bed plates and like.	sqm	105	40	145		
	<b>Rate In Words</b>						
2.1.4	Edge of slab, breaks in floor and walls upto 200mm.	Metre	600	199	799		
	<b>Rate In Words</b>						
2.1.5	Columns, Pillars, Piers and likes- rectangular or square in shape	sqm	9070	2712	11782		
	<b>Rate In Words</b>						
2.1.6	Columns, beams & walls- circular or any other geometrical shape other than square and rectangular in all sizes	sqm	227	6	233		
	<b>Rate In Words</b>						
2.1.7	Suspended floors, roofs, access platform, balconies (plain surfaces) and shelves (cast in situ)	sqm	20386	9227	29613		
	<b>Rate In Words</b>						
2.1.8	Beams, lintels, cantilevers & walls	sqm	9811	4805	14616		
	<b>Rate In Words</b>						
2.1.9	Vertical and horizontal fins individually or forming box, louvers bands, almirah shelves and likes.	sqm	153	60	213		
	<b>Rate In Words</b>						
2.1.10	Folded plates slabs	sqm	250		250		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
2.1.11	Weather shade, chhajja, Cornices and mouldings.	sqm	415	281	696		
	<b>Rate In Words</b>						
2.1.12	Stair cases of all types excluding spiral and folded plate type, including risers and landings	sqm	422	235	657		
	<b>Rate In Words</b>						
2.2	Extra for additional height every 1m or part thereof where height of staging for formwork exceeds 4.0 m, with adequate bracing, propping etc at all levels, for suspended floor, roof, landing, beam and balcony. (only plan area is to be measured)	sqm	440	210	650		
	<b>Rate In Words</b>						
2.3	Providing and fixing double scaffolding system (cup lock type) on the exterior side, upto seven story height made with 40mm dia. M.S. tube 1.5 m centre to centre horizontal & vertical tubes joining with cup & lock system with M.S. tubes, M.S. tube challies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it there after .The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer-in-charge. The elevation area of the scaffolding shall be measured for payment purpose .The payment will be made once irrespective of duration of scaffolding.	sqm	5382	1760	7142		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
<b>3</b>	<b>CEMENT CONCRETE (PLAIN AND REINFORCED)</b>						
3.1	Providing and laying nominal mix cement concrete with crushed stone aggregate using concrete mixer in foundation, plinth and at ground level excluding cost of form work.						
3.1.1	1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size).	cum	2585	1176	3761		
<b>Rate In Words</b>							
3.2	<b>PCC works</b>						
3.2.1	Providing and laying nominal mix reinforcement cement concrete with crushed stone aggregate using concrete mixer in all works upto floor five level excluding cost of reinforcement and form work.						
	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size).	cum	42	19	61		
<b>Rate In Words</b>							
3.2.2	Providing and laying design mix plain cement concrete with crushed graded stone aggregate 20mm nominal size using batching plant, transit mixer and concrete pump, in all works upto floor five level excluding cost of form work.						
	M-20 (using minimum cement 390 kg/cum concrete)	cum	223	208	431		
<b>Rate In Words</b>							

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
3.3	Providing and laying design mix reinforcement cement concrete with crushed graded stone aggregate 20mm nominal size using batching plant, transit mixer and concrete pump, in all works upto floor five level excluding cost of reinforcement and form work.						
3.31	M-25 (using minimum cement 410 kg/cum concrete)	cum	188	77	265		
	<b>Rate In Words</b>						
3.32	M-30 (using minimum cement 420 kg/cum concrete)	cum	10600	6085	16685		
	<b>Rate In Words</b>						
3.4	Providing and placing in position reinforcement for R.C.C. work including straightening, cutting, bending, binding etc. complete as per drawings including cost of binding wire all complete:						
3.4.1	Thermo-Mechanically treated bars	kg	1242406	743582	1985988		
	<b>Rate In Words</b>						
3.5	Providing and laying damp proof course (upto 50mm thick) with plain cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded crushed stone aggregate 20mm nominal size) including formwork.	cum	19	8	27		
	<b>Rate In Words</b>						
3.6	Providing and mixing water proofing material in PCC/ RCC work in the proportion recommended by the manufacturer.	kg	100	60	160		
	<b>Rate In Words</b>						
3.7	Applying a coat of hot bitumen 30/40 using @ 1.7kg/ sqm on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	sqm	234	124	358		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
3.8	Making 50mm thick plinth protection of plain cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded crushed stone aggregate 20mm nominal size) over 75mm bed of dry brick ballast 40mm nominal size well rammed and consolidated and grouted with sand including finishing the top smooth.	sqm	947	201	1148		
	<b>Rate In Words</b>						
3.9	Providing and filling in position, blown bitumen in expansion joints	per cm. depth and per cm width.	1700	1200	2900		
	<b>Rate In Words</b>						
3.1	Providing and fixing in position copper plate as per design for expansion joints.	kg	450	240	690		
	<b>Rate In Words</b>						
3.11	Providing and fixing aluminium strip 1.60 mm thick on expansion joints with iron screws as per design to match the colour, shade of wall treatment .	sqm	60	18	78		
	<b>Rate In Words</b>						
3.12	Providing and fixing in position impregnated fibre board conforming to IS: 1838 in expansion joints, including cost of primer, sealing compound all complete.						
3.12.1	25mm thick	sqm	60	60	120		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
3.13	Providing and fixing 6 mm thick asbestos sheet covering over expansion joints with iron screws as per design to match the colour/shade of wall treatment.	sqm	100	80	180		
	<b>Rate In Words</b>						
<b>4</b>	<b>WATER PROOFING</b>						
4.1	Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures using rough Kota stone and consisting of:						
4.1.1	i) 1st layer of 22mm to 25mm thick approved rough Kota stone slab over a 25mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing (levelling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound.						
	ii) 2nd layer of 25mm thick cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound.iii) Finishing top with stone aggregate of 10mm to 12mm nominal size spreading @ 8 cudm/sqm thoroughly embedded in the 2nd layer.	sqm	3048	2413	5461		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
4.2.1	Providing and laying integral cement based treatment for water proofing on the vertical surface at all levels by fixing 22 mm to 25mm thick rough Kota stone slab with cement slurry mixed with water proofing compound conforming to IS:2645 with a gap of 20mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with 20mm thick cement mortar 1:3 (1 cement : 3 coarse sand) with neat cement punning mixed with water proofing compound complete.	sqm	2024	1846	3870		
	<b>Rate In Words</b>						
4.3	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of WC, kitchen and the like consisting of:						
4.3.1	1st course of applying cement slurry @ 4.4 Kg/sqm mixed with water proofing compound conforming to IS 2645 including rounding off junction of vertical and horizontal surface.						
	2nd course of 20mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound including rounding off junction of vertical and horizontal surface.						
	3rd course of applying blown or residual bitumen applied hot @ 1.7 Kg. per sqm of area.						
	4th course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 Kg. per sqm of area.	Sqm	550	350	900		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
4.4	Providing and placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete :						
4.4.1	Serrated with central bulb (225mm wide, 8-11mm thick).	metre	170	120	290		
<b>Rate In Words</b>							
4.5	Providing and laying integral cement based water proofing treatment on roofs, balconies, terraces etc with average thickness of 120mm and minimum thickness at khurra as 65 mm, consisting of following operations including surface preparation:						
4.5.1	Applying a slurry coat of neat cement using 2.75 kg/sqm. of cement mixed with water proofing compound conforming to IS. 2645 over the RCC slab including adjoining walls upto 300mm height.						
	Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) mixed with water proofing compound conforming to IS : 2645 over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand ) mixed with water proofing compound conforming to IS : 2645 to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs.						
	After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645.						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	Finishing the surface with 20 mm thick joint less cement mortar of mix 1:4 (1 cement :4 coarse sand) mixed with water proofing compound conforming to IS : 2645 including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep.						
	The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order:	sqm	5088	2440	7528		
	<b>Rate In Words</b>						
<b>5</b>	<b>STONE WORK</b>						
5.1	Providing, fixing and Applying Mint white to pure white Gwalior Stone work (machine cut edges) of Average size 600x600 mm , average thickness of 25mm in the patten specified by the architect in Vertical Wall Cladding, fixed with a high strength polymer based stone adhesive (FERO 1133 & FAD 1 ADMIX from FerrousCrete.)All exposed joints to be neatly grouted with white cement mortar (1:2) mix with matching pigment. Any stone adhesive for fixing of stone should be a water free two part system and fixing should be in accordance to the manufacturer guidelines.).Cost to Exclude scaffolding which is taken and paid for separately.	sqm	600	745	1345		
5.1.1	Applying Silicon based stone sealer (Ferro 201 from Ferrouscrete or approved equivalent) for six sided sealing of Gwalior stone /Other Natural stones) using brushed application as per manufacturer recommendation , done at the time of installaion of the stone.	sqm	600	745	1345		



Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
<b>6</b>	<b>BRICK WORK</b>						
6.1	Half brick thick modular fly-ash lime bricks 100mm thick (FALG Bricks) confirming to IS of crushing strength not less than 35 kg/sqcm and water absorption not more than 20% in superstructure above plinth level upto floor five level.						
	Cement Mortar 1:4 (1 cement : 4 coarse sand)	sqm	746	354	1100		
	<b>Rate In Words</b>						
6.2	Extra for providing and placing in position hopping 25x1.60 mm or 2 Nos 6mm dia MS bars reinforcement at every third course of half brick masonry.	sqm	746	354	1100		
	<b>Rate In Words</b>						
6.3	Brick work with modular fly-ash bricks 100mm thick (FALG Bricks) confirming to IS:12894-2002 of class designation 40 in foundation and plinth in:						
	Cement Mortar 1:3 (1 cement : 3 coarse sand)	sqm	6517	1495	8012		
	<b>Rate In Words</b>						
6.4	Brick work with modular fly-ash bricks 200mm thick (FALG Bricks) confirming to IS:12894-2002 of class designation 40 in foundation and plinth in:						
	Cement Mortar 1:3 (1 cement : 3 coarse sand)	cum	1817	763	2580		
	<b>Rate In Words</b>						
6.5	Half Brick (9cm) work for plinth protection with modular bricks of class designation 35 including grouting with cement mortar 1:4 (1 cement : 4 coarse sand)	metre	645	335	980		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
6.6	Extra for brick work in superstructure: Above plinth and upto floor five level.	Cum	175	120	295		
	<b>Rate In Words</b>						
6.7	Extra for brick work in square and rectangular pillars.	cum	7	12	19		
	<b>Rate In Words</b>						
6.8	Providing and Fixing 25mm thick extruded polystrene having density 32-35 kg/m3 foam or any other equivalent approved make for external wall insulation on all floors.By providing Cavity wall complete as per directions of engineer-in-charge and manufacturers specification	sqm	665	104	769		
	<b>Rate In Words</b>						
<b>7</b>	<b>WOOD WORK</b>						
7.1	Providing and fixing flush door shutters, exterior grade, commercial type, core of block board construction with frame of first class hard wood and well matched commercial ply veneering with vertical grains, cross bands and face veneers on both faces of shutters excluding hinges with a treatment of Phenol formaldehyde as per IS specification.						
7.1.1	35 mm. thick (single leaf)	sqm	768	384	1152		
	<b>Rate In Words</b>						
7.2	Extra for double leaf shutter instead of single leaf.	sqm	768	0	768		
	<b>Rate In Words</b>						
7.3	Extra for cutting rebate in flush door shutter (total area of door shutter to be measured).	sqm	10	0	10		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
7.4	Providing and fixing of bright finished brass mortice latch and lock 100x65mm with six levers and a pair of lever handles with brass polished MS screws etc. complete.	each	2	0	2		
	<b>Rate In Words</b>						
7.5	Providing and fixing 150mm bright finished brass floor door stopper with rubber cushion & brass polished MS screws etc complete to suit the shutter thickness.	each	4	0	4		
	<b>Rate In Words</b>						
7.6	Providing and fixing antique finished brass butt hinges with antique brass polished MS screw complete:						
7.6.1	125x85x5.50mm (Heavy Type)	each	20	0	20		
	<b>Rate In Words</b>						
7.7	Providing and fixing antique finished brass door latch with antique brass polished MS screw complete:						
7.7.1	300 x16x5 mm	each	4	0	4		
	<b>Rate In Words</b>						
7.8	Providing and fixing antique finished brass tower bolts (Barrel type) with antique brass polished MS screw complete:						
7.8.1	250 x10 mm	each	4	0	4		
	<b>Rate In Words</b>						
7.9	Providing and fixing powder coated aluminium sliding door bolts with 16mm rod, necessary M.S. nuts bolts and screws etc complete.						
7.9.1	300x16mm	each	343	149	492		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
7.9.2	250x16mm	each	175	71	246		
	<b>Rate In Words</b>						
7.10	Providing and fixing powder coated aluminium tower bolts (Barrel type) with necessary M.S. screws etc complete.						
7.10.1	250 x10mm	each	343	149	492		
	<b>Rate In Words</b>						
7.10.2	200 x10mm	each	175	71	246		
	<b>Rate In Words</b>						
7.11	Providing and fixing powder coated aluminium door handles 2.5mm thick with necessary M.S. screws etc complete.						
7.11.1	150 mm	each	343	149	492		
	<b>Rate In Words</b>						
7.11.2	100 mm	each	175	71	246		
	<b>Rate In Words</b>						
7.12	Providing and fixing hanging powder coated aluminium door stopper with necessary M.S. screws etc complete.						
7.12.1	Single	each	343	149	492		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
7.13	Providing and fixing factory made 25mm thick PVC flush door shutters made out of a one piece Multi chamber extruded PVC section of the size of 762mm X 25mm or less as per requirement with an average wall thickness of 1mm ± 0.3mm. PVC foam end cap of size 23x10mm are provided on both vertical edges to ensure the overall thickness of 25mm. An M.S. tube having dimensions 19mm x 19mm is inserted along the hinge side of the door. Core of the door shutter should be filled with High Density Polyurethane foam. The Top & Bottom edges of the shutter are covered with an endcap of the size 25mm X 11mm. Door shutter shall be reinforced with special polymeric reinforcements as per manufactures' specification.	sqm	112	57	169		
<b>Rate In Words</b>							
7.14	Providing and fixing factory made P.V.C. door frame of size 50x47mm with a wall thickness of 5mm, made out of extruded 5mm rigid PVC foam sheet mitred at corners and joined with 2 Nos of 150mm long brackets of 15x15mm M.S. square tube, the vertical door profiles to be reinforced with 19x19mm M.S. square tube of 19 gauge, EPDM rubber gasket weather seal to be provided through out the frame. The door frame to be fixed to the wall using M.S. screws of 65/100mm size complete as per manufacturers specification and direction of Engineer-in-Charge.	metre	352	179	531		
<b>Rate In Words</b>							
7.15	Providing and fixing aluminum U beading of required size to Prelaminated /flush door shutter including fixing etc. complete.	kg	370	188	558		
<b>Rate In Words</b>							

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
7.16	Providing and fixing IS: 3564 marked Aluminium die cast body tubular type universal hydraulic door closer with necessary accessories and screws etc complete.	each	343	149	492		
<b>Rate In Words</b>							
7.17	Providing and fixing of 12 mm Plain toughened glass fixed glazing partition by using WCP (N/s) (Wall Connecting Profile non-security version) on top,bottom and sides of glass panels.upto Height=2700mm	sqm	105	6	111		
<b>Rate In Words</b>							
7.18	Providing and fixing 12 mm Plain toughened fully frame less glazed doors including all SS accessories with Standard patch fittings such as PT24,PT10,PT20,US10 including the Floor spring BTS75V as per EN1154.upto width=1100mm and Height=2400mm	sqm	45	20	65		
<b>Rate In Words</b>							
7.19	Providing and Fixing SS finish H-Type Handle 1000mm*38mm size for Glass Doors	each	54	10	64		
<b>Rate In Words</b>							

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
7.20	<b>STRUCTURAL GLAZING- CONCEALED ALUMINIUM FIXED SECTIONS AS PER ELEVATIONS</b> -Providing and fixing Semi Unitized glazing to fixed panels with No Aluminum Section exposed to outside and only glass panels with weather silicon joint visible from outside.The system specially designed to withstand a pressure of 150kg/m2 aluminum section of grade 63400WP IS:733 and IS:1285 pure polyester powder coated ( 60-80 micron thickness and paint warranty of a minimum of 10 years) in an approved color with mullion fixed to beams / columns through adequately designed MS Anchor Brackets and expansion fasteners (with SS screws, nuts, bolts and fasteners ) as required. The design to be as per BIS Code for required wind pressure IS:875 Part III aluminum section alloy as per IS:8147 system penetration, seismic movement and structural movement.	sqm	1052	815	1867		
	The proposed system should be a tested system verified with the attachment of supporting test certificates to be provided along with the proposal. The mullion depth to be a minimum of 125mm (except in the strip glazing areas) and the mullion width to be a minimum of 50 mm. Silicon sealant weathering grade shall be of make "Dow Corning" and using heavy density tape. All gaskets to be EPDM with internal glazing gaskets having shore hardness of 70 and all system assembly screws to be of SS 302 A2 grade.						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	IT IS PREFERRED THAT The system to be a mechanical fixing one whereby an aluminium u-channel is inserted between the 2 panes of the DGU and structurally bonded with the help of aluminium cleats providing a more safe and secure glass fixing. There should be no use of structural silicon for bonding of the glass with the aluminium sections at the vision panel area. No fixing screws should be visible on the outside surface of transoms and mullions connection joints when viewed from inside. An EPDM transom seal piece provides a seal at the transom joint to facilitate zone draining. An EPDM water draining piece to be provided at transom joints to facilitate removal of any water that enters. <b>Glass to be 6mm Clear Toughened + 12mm Air Space + 6mm Toughened ST 767 (Blue ray,Antellio Plus Series) Saint Gobain make insulated glass (DIG Unit) or approved equalent</b>						
	<b>Approved Glass Makes</b> :DIG Unitsin Saint Gobain,ASAHI,Glaverbel						
	<b>Approved Aluminium Makes</b> : Jindal,Hindalco Profiles						
	<b>Rate In Words</b>						
7.21	FRAMELESS SPIDER GLAZING SYSTEMS : Providing and fixing Frame less Glazing with spider fittings and only silicon joints visible from outside. They are designed to be as per BIS Code for required wind						
	Pressure with the scope of work including all fixing accessories like spider fittings, patch fittings, U Channel 22.5mm x 17.5mm including costs to 12mm thick clear toughened glass,	sqm	116	45	161		
	Fin Wall of 17.52 Laminated thick clear glass.						
	<b>Rate In Words</b>						



Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
7.22	Providing/Fixing Fire rated steel doors with 2 hours fire rated retardant fully insulated steel composite light weight asbestos free fire proof doors confirming to BS:476 part-22,IS :3614part -II. The frame size 90mmX65mm comprises of L-type joint of tubular section (size 65mmX 25mm)so as to accommodate the shutter of 65mm thk. comprising of welded box sections faced with 16SWG CR sheet on both sides with MS circular ball bearing hinges & all steel works primed with fire retardant anti-corrosive primer the tubular sec. of frame,shutter & welded box of shutter are filled with proprietary fire rated insulation material.(rate is inclusive of	Sqm	25	25	50		
7.22.1	Extra for Fire rated steel doors with magnetic ss plate outside/vision panel.	Sqm	25	33	58		
	<b>Rate In Words</b>						
<b>8</b>	<b>STEEL AND ALUMINIUM WORK</b>						
8.1	Structural steel work riveted or bolted or welded in built-up sections, trusses and frames work upto a height of 5m above plinth level, including cutting, hoisting, fixing in position and applying a priming coat of red oxide zinc chromate primer.	KG	3482	6393	9875		
	<b>Rate In Words</b>						
	Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of red oxide zinc chromate primer.						
	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	KG	0	720	720		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
8.2	Providing and fixing approved pipe hand rail to walls (ramps, stair cases) including cutting chases and repairing the same to original condition, applying a priming coat of red oxide zinc chromate primer.						
8.2.1	M.S Pipe	KG	1888	1793	3681		
	<b>Rate In Words</b>						
8.3	Providing and fixing M.S. fan clamp/ hook for ceiling fan made out of 16 mm dia M.S. bar bent to shape with hooked ends in R.C.C. slabs, beams during laying including painting the exposed portion of loop.	each	400	250	650		
	<b>Rate In Words</b>						
8.4	Providing and fixing in position doors, windows and ventilators frames made of cold rolled pressed steel sheet framed profiles made from commercial M.S. Sheets conforming to I.S. 513 of 1973 and as per general specifications of I.S 4351 including hinges jamb, lock jamb, steel butt hinges, base tie, joints mitred and welded with 10cm long legs of size 15x3mm M.S. flat, embedded in cement concrete blocks 15x10x10cm size of grade M-10 or rawl plugs and screws or with fixing clips or with bolts and nuts including neatly compacted filling M-10 cement concrete in profile section applying a priming coat of red oxide zinc chromate primer.						
8.4.1	Single rebate 100mmx50mm size, 1.6mm thick sheet.	metre	1930	852	2782		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
8.5	Providing and fixing aluminium work for doors, windows, ventilators and partitions made out of extruded aluminium standard sections (main section with minimum 1.5mm thickness) conforming to IS: 733, IS: 1285 mitred and jointed mechanically including aluminium cleats, neoprene weather stripping gasket beveled edge beading, screws duly fixed in wall/ floor with fixing clips or hold fasteners or bolts and nuts as required aluminium sections shall be anodized transparent or dyed to approved shade according to IS: 1868, minimum anodic coating shall be of grade AC-15. (Glazing and panelling to be paid for separately)						
8.5.1	For fixed portion	KG	7773	2803	10576		
	<b>Rate In Words</b>						
8.5.2	For shutter of doors, windows & ventilators including providing and making provision for fixing of fitting wherever required including the cost of PVC/ neoprene gasket required (Fittings shall be paid for separately).	KG	3026	1228	4254		
	<b>Rate In Words</b>						
8.6	Providing and fixing 12mm thick Pre-laminated particle board with hard board lipping flat pressed three layer or graded wood particle board conforming to S: 12823 Grade I Type II, in panelling fixed in aluminium doors, windows shutters and partition frames with C.P. brass/ stainless steel screws etc. complete.						
8.6.1	With decorative lamination on both side	sqm	768	384	1152		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
8.7	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. Complete. (Cost of aluminium snap beading shall be paid in basic item):						
8.7.1	With float glass panes of 6 mm thickness	sqm	1708	400	2108		
	<b>Rate In Words</b>						
	Extra for substituting 6mm Float glass with 6mm coated glass (Saint Gobain Antelio plus series, Blue Ray ST 767)	sqm	1708	400	2108		
	<b>Rate In Words</b>						
8.8	Providing stainless steel railing/ grill made of S.S. flats, hollow S.S. pipe or square/ rectangular sections of approved design fixing in stair case, balcony or other places with metal fasteners and stainless steel bolts etc complete.	KG	13590	983	14573		
	<b>Rate In Words</b>						
	<b>9 ROOFING AND CEILING</b>						
9.1	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10mm and down grade) including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design.	metre	665	332	997		
	<b>Rate In Words</b>						
9.2	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1mx1mx400micron, finished with 12mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement rounding the edge sand making and finishing the outlet complete.	each	38	21	59		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
9.3	Providing and fixing 100 mm diameter and 60 cm long stone ware rain water spout in cement mortar 1:4 (1 cement : 4 fine sand)	each	38	21	59		
	<b>Rate In Words</b>						
9.4	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 150mm diameter and weighing not less than 440 grams.	each	38	21	59		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
9.5	Providing and fixing at all height false ceiling consisting of frame work "W" / "U" / "L" sections made of G.I. sheet with zinc coating of grade 120 consisting of angle cleats of size 25mm wide x 1.6mm thick with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with dash fastener 12.5mm diax40mm long with 6mm dia bolts to the angle hangers of 25x25x0.55mm of required length, and other end of angle hanger being fixed with nut and bolts to G.I. channels 45x15x0.9mm running at the rate of 1200mm centre to centre to which the ceiling section 0.5mm thick button wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in a direction perpendicular to G.I. channel with connecting clips made out of 2.64mm diax230mm long G.I. wire at every junction including fixing the gypsum board with ceiling section and perimeter channels 0.55mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all screws @ 230mm interval including jointing and fixing to a flush finish of tapered and square edges of the board with recommended filler, jointing tapes, finisher and two coats of primer suitable for board as per manufactures specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer in Charge but excluding the cost of painting with 12.5 mm thick tapered edge gypsum board conforming to IS: 2095- Part I.	sqm	5823	1662	7485		
<b>Rate In Words</b>							

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
9.6	Hall Ceiling Specification (Auditorium):- Providing and fixing of Anutone Subtex Nubby Soft Fibre Square edge 15mm for Ceiling of size 595x595x15 mm is to be installed on framework .( Concealed grid system to be used) Which will comprise of NRC 0.94 base panel with humidity resistance of 90% RH and light reflectance upto 85% with Leed points Green Performance certified. Subtex Nubby Soft Fibre 15mm for Ceiling tile meet the stringent fire test required having Class 'A' rating for Flame Ignitability test as per ASTM-E-84, with complete framework as per Installation details	sqm	211		211		
<b>Rate In Words</b>							
9.7	Providing and laying 20mm thick MICROLOOK (600x600mm) of durable with back of the tile duly sanded and finished with coat of protective paint suitable for grids size 600mmx600mm supersion system shall be armstrong prelude XL15 exposed grid T-section Flange exposed shall be powder coated white colour, Main runner size shall be 24mmx32mm cross runner 24x27mm, Perimeter 19mmx19mm. All section out of 0.45m thick G.S. Sheet.	sqm	2781	2650	5431		
<b>Rate In Words</b>							
9.8	Providing and laying Metal Ceilings GI- Lay in Microperforated for grids size 600mmx600mm suspension system shall be armstrong suprafine 38 exposed grid T-section Flange exposed shall be powder coated white colour, Main runner size shall be 24mmx32mm cross runner 24x27mm, Perimeter 19mmx19mm. All section out of 0.45m thick G.I. Sheet.	sqm	725	499	1224		
<b>Rate In Words</b>							

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
9.9	Providing and laying Wood Works 12mm of durable with back of the tile duly sanded and finished with coat of protective paint suitable for grids size 600x600 mm suspension system shall be armstrong Prelude Peakform exposed grid T-section Flange exposed shall be powder coated white colour, Main runner size shall be 24mmx32mm cross runner 24x27mm, Perimeter 19mmx19mm. All section out of 0.45mm thick G.I. Sheet.	sqm	295	73	368		
	<b>Rate In Words</b>						
<b>10</b>	<b>PLASTERING AND POINTING</b>						
10.1	6mm thick cement plaster of mix:						
10.1.1	In Cement mortar 1:4 (1 cement : 4 fine sand)	sqm	20362	12395	32757		
	<b>Rate In Words</b>						
10.2	12mm thick cement plaster of mix:						
10.2.1	In Cement Mortar 1:4 (1 cement : 4 fine sand)	sqm	11393	5254	16647		
	<b>Rate In Words</b>						
10.3	15mm thick cement plaster on the rough side of single or half brick wall of mix:						
10.3.1	In Cement Mortar 1:4 (1 cement : 4 fine sand)	sqm	17806	3103	20909		
	<b>Rate In Words</b>						
10.4	18mm thick cement plaster in two coats with under layer of 12mm thick plaster 1:5 (1 cement : 5 fine sand) and top layer of 6mm thick with cement plaster 1:3 (1 cement : 3 fine sand) finished rough with sponge.	sqm	6526	1898	8424		
	<b>Rate In Words</b>						



Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
10.5	Extra for plastering of exterior walls when height exceeds 10m above ground level for every additional height of 3.0m or part thereof.	sqm	788	475	1263		
	<b>Rate In Words</b>						
10.6	Extra for plastering done on mouldings, cornices or architraves including neat finish to line and level.	sqm	500	110	610		
	<b>Rate In Words</b>						
10.7	Providing and applying plaster of paris putty over plastered wall surface including scaffolding complete						
10.7.1	Upto 2 mm thickness to make surface even and smooth in line and level.	sqm	29199	8357	37556		
	<b>Rate In Words</b>						
	<b>FLOORING</b>						
11.1	52 mm thick cement concrete flooring with under layer of 40mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) and top layer of 12 mm thick cement metallic hardener concrete mix 1:2 (1 cement hardener mix : 2 stone aggregate of 6 mm size by volume) with metallic hardening compound of approved quality mixed with cement in ratio of 4:1 (4 cement : 1 metallic floor hardening compound by weight) including finishing etc. complete.	sqm	2706	2172	4878		
	<b>Rate In Words</b>						
11.2	Cement plaster skirting upto 30 cm. height with cement mortar 1:3 (1 cement : 3 fine sand) finished with a floating coat of neat cement including rounding of junction with floor.						
11.2.1	18 mm thick in two layers of 12mm and 6mm	sqm	480	46	526		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
11.3	Providing and fixing ceramic glazed wall tiles conforming to IS : 15622 of approved make, colours, shades and size on wall and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with matching pigment complete.						
a	Size 200x300mm	sqm	1555	338	1893		
b	Size 300x300mm	sqm	1170	840	2010		
11.4	Providing and laying vitrified floor tiles with double charge/ multi charge printing with water absorption less than 0.5% and conforming to IS : 15622 of approved make in all colours and shades and size mentioned below (+/- 10mm), laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc. Complete:						
11.4.1	Size 600x600mm	sqm	6772	3288	10060		
	<b>Rate In Words</b>						
11.4.2	Size 1000x1000mm	sqm	1249	168	1417		
	<b>Rate In Words</b>						
11.5	15 mm thick Table rubbed polished Granite stone slab flooring laid over 20mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing etc. complete. (Area of slab should be 0.50 sqm and above)						
11.5.1	Granite stone black	sqm	1595	748	2343		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
11.6	15 mm thick Table rubbed polished Granite stone slab in risers and treads of steps skirting dado and pillars laid on 12mm (average) thick base of cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry including rubbing and polishing etc. complete (single stone is to be used for risers and treads of steps and width of stone for skirting and dado shall be equal to the height of skirting & dado and length of 1.0 m).						
11.6.1	Granite stone black	sqm	40	45	85		
	<b>Rate In Words</b>						
11.7	25mm thick KOTA stone slab flooring over 20mm (average) thick base of cement mortar 1:4 laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including grinding rubbing and polishing etc. complete (Area of slab to be over 0.20 sq.m and upto 0.50 sq.m)	sqm	4382	1856	6238		
	<b>Rate In Words</b>						
11.8	25mm wooden planking tongued and grooved in flooring including fixing with iron screws complete with						
11.8.1	Teak wood	sqm	30	25	55		
	<b>Rate In Words</b>						
11.9	Providing and laying ceramic Anti skid floor tiles 450x450mm conforming to IS : 15622 of approved make, colour, shade laid on 20 mm thick Cement Mortar 1:4 (1 cement : 4 coarse sand) including pointing the joints with white cement mixed with matching pigment etc. complete						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
11.9.1	In all colours except White, Ivory, Grey, Fume Red Brown, In colours such as White, Ivory, Grey, Fume Red Brown.	sqm	894	373	1267		
	<b>Rate In Words</b>						
<b>12</b>	<b>STONE WORK (Wall Lining)</b>						
12.1	15mm thick Granite work (machine cut, table rubbed & mirror polished) for wall lining (veneer work) in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing with cement mortar 1:2 (1 white cement: 2 marble dust) mixed with matching pigment. (Area of slab should be over 0.5 sqm).						
12.1.1	Granite stone black	sqm	583	117	700		
	<b>Rate In Words</b>						
12.2	15mm thick Granite work (machine cut, table rubbed & mirror polished) for kitchen platform, vanity counters, window sills and similar locations of required size laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) including joints treated with white cement mixed with matching pigment including rubbing and polishing to edge moulding to give high gloss finish.						
12.2.1	Granite stone black	sqm	50	50	100		
	<b>Rate In Words</b>						
12.3	Extra for providing edge moulding to 15mm thick stone counters, vanities etc. including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in- Charge.						
12.3.1	Granite work	metre	250	199	449		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
12.4	Extra for fixing marble /granite stone in facia and drops of width upto 150 mm with epoxy resin based adhesive instead of cement mortar including cleaning etc. complete.	metre	185	180	365		
	<b>Rate In Words</b>						
12.5	Extra for making opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/Granite/stone work including making necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc. complete.	each	40	50	90		
	<b>Rate In Words</b>						
12.6	Mirror polishing on marble work/Granite work where ever required to give high gloss finish complete.						
12.6.1	On kitchen platform, sills and similar	sqm	25	167	192		
	<b>Rate In Words</b>						
<b>13</b>	<b>DISTEMPERING, PAINTING AND FINISHING</b>						
13.1	Applying one coat of cement primer on wall surface.	sqm	10073	1045	11118		
	<b>Rate In Words</b>						
	<b>EXTERNAL FINISHIES</b>						
13.2	Wall painting with acrylic luxury emulsion (plastic) paint (top most approved branded quality) to give an even shade.						
13.2.1	On new work (two or more coats)	sqm	2010	0	2010		
	<b>Rate In Words</b>						
13.3	Providing and applying 2mm thick ready mix exterior grade putty (Birla wall care, Alltek Superfine W/R of (NCL), J.K. wall putty) on walls to make the surface smooth and even.	sqm	6526	904	7430		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
13.4	Finishing walls with water proofing cement paint to give an even shade.						
13.4.1	On new work (Two or more coats )	sqm	6526	904	7430		
	<b>Rate In Words</b>						
13.5	Painting new exterior surface (two or more coats) with PREMIUM TEXTURED paint as per manufacturer's specifications to give protective and decorative finish including cleaning washing of surface etc. complete with:						
13.5.1	On new work (Two or more coats )	sqm	3600	441	4041		
	<b>Rate In Words</b>						
13.6	Providing & Applying Natural stone based Textured finishes suitable for external surfaces .The finish should be highly resistant to alkalies matters & other weather effects.The colour & finish & brand as per Architect's specification. Cost to include all necessary scaffolding, Labour and application up-to a height not exceeding 15.0m on the exterior surface.						
13.6.1	Natural Stone Granular Finishes series.Approved Color	sqm	275	2142	2417		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
13.7	Providing and fixing aluminium work for doors, windows, ventilators and partitions made out of extruded aluminium standard sections (main section with minimum 1.5mm thickness) conforming to IS: 733, IS: 1285 mitred and jointed mechanically including aluminium cleats, neoprene weather stripping gasket beveled edge beading, screws duly fixed in wall/ floor with fixing clips or hold fasteners or bolts and nuts as required aluminium sections shall be anodized transparent or dyed to approved shade according to IS: 1868, minimum anodic coating shall be of grade AC-15. (Glazing and panelling to be paid for separately)						
	For fixed portion						
13.8	Providing fixing Aluminium Louvers of approved section and thickness as per design, and finishes as specified by the architect	Kgs	296	195	491		
	<b>Rate In Words</b>						
13.9	Providing and Fixing (Glass Reinforced Concrete) Louvers/ screen in approved shade and finish of minimum 1" thickness. This is to be Dry cladded on a M.S. subframe of minimum 2" x 2" section size (of as appropriately required for the span) which would be fully secured to the masonry/civil structure using appropriate fasteners. GRC screen would be fixed with the subframe using S.S. screws. Cost to include complete installation, including subframe upto a maximum height of 16 m	sqm	205	105	310		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
13.10	Designing, providing and fixing 4mm thick Aluminium Composite cladding (Wfor external facade either segmental / straight in plan wherever specified with extruded Aluminium U sections, angle cleats, weather silicone sealants of Dowcorning 991 or equivalent, backer rod, stainless steel screws, rivets, brackets, drilling and fixing the cladding to either masonry or reinforced cement concrete as the case may be as per manufacturer's specifications, complete the work in all respects including all necessary accessories. At all soffits Aluminium Cladding shall be bend at 900 and joints at corner or edges will not be acceptable.	sqm	225	200	425		
<b>Rate In Words</b>							
13.11	Providing & Fixing 10mm thick twin wall polycarbonate sheet with aluminum profile and adhesive of approved make ,complete in all finishing for external canopy's	sqm	43	156	199		
<b>Rate In Words</b>							
13.12	Providing fixing Metal Screen using a combination of MS tubular Frames and Traditional "Walri Metal Artwork" insert witin the supporting frame. Representative architectural imagery of the finished product as attached.	Kgs	378	0	378		
<b>Rate In Words</b>							
<b>INTERNAL FINISHIES</b>							
13.13	Preparation of wall surface by applying a coat of putty comprising of chalk mitti, varnish and white lead in ratio 2½:1:1 (2½ kg chalk mitti : 1 litre varnish : 1 kg white lead) respectively, sand papering and making the surface smooth to proper shape and presentable conditions.	sqm	3547	1045	4592		



Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
13.15	Wall painting with acrylic luxury emulsion (plastic) paint (top most approved branded quality) to give an even shade.						
13.15.1	On new work (two or more coats)	sqm	1695	766	2461		
	<b>Rate In Words</b>						
13.16	Distemping with acrylic washable distemper to give an even shade.						
13.16.1	On new work (two or more coats)	sqm	710	44	754		
	<b>Rate In Words</b>						
13.17	Providing and applying special / texture paint / Granular paint / stone base paint of approved shade & make as per manufacturers specification and architects instructions. Interior Grade Textrue finishes as <b>Spectrum Paints Perlina finish in Light shades</b> and equivalent in Ultratech and or Heritage -Refer Approved Brands List	sqm	484	50	534		
	<b>Rate In Words</b>						
13.18	Providing & Fixing 1.0mm thk laminate in approved color and Finish style (Except Metallic Shades from approved make) with fevicol adhesive on wooden box framework fabricated out of commercial board 19mm thick. Maximum projection of the framwork from the installed surface shall not exceed 200mm.The groove between joints shall be as per drg issued at site. Any subframe required shall be included int the cost.	sqm	52	34	86		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
13.19	Providing and laying vitrified tiles in skirting, dado and pillars laid different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades,						
	Size of Tile 60x60 cm	sqm	290	0	290		
	<b>Rate In Words</b>						
13.20	Providing and Fixing Brick Tile (Unistone) for wall cladding thickness varying from 1/2" to 1" and machine cut size 3"x9" in C.M.(1:4) ,complete with all finishings ( approved make).	sqm	119	94	213		
	<b>Rate In Words</b>						
13.21	Providing and Fixing Glass Mosaic tiles of approved make and color with tile fixing adhesive and finishing of tiles with manufacturer approved grouting compound, complete with all necessary finishing required as per the technical specs of the product.	sqm	307	22	329		
	<b>Rate In Words</b>						
13.22	Providing and Fixing (Glass Reinroced Concrete) Jali work in approved shade and finish of minimum jali thickness of 1" and border thickness of 2" all around with a ready made panel size of 900mm x 1200mm.This is to be Dry cladded on a M.S. subframe of minimum 2" x 2" section size (of as appropriately required for the span) which would be fully secured to the masonry/civil structure using appropriate fastners. GRC screen would be fixed with the subframe using S.S. screws. Cost to include complete installation ,including subframe upto a maximum height of 16 m	sqm	196	86	282		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
13.23	LAQUERED GLASS Providing & Fixing 4mm thk. Lacquered glass of specified colour , fixed with Silicon sealent approved by manufacturer of glass or with necessary hardware(like screws, studs etc.)if required.The glass must be properly finished from edges & machine grinded & polished .The groove between glass to glass joint as per drgs issued by Architect.The glass shall be fix on 6mm ply back surface fixed to existing gypsum stud partition						
13.23.1	Extra White, Light Blue, Super White, Flame red	sqm	10	0	10		
	<b>Rate In Words</b>						
13.23.2	Almond Green, Opera Red, Black, Solar yellow, Aqua Blue.	sqm	22	0	22		
	<b>Rate In Words</b>						
13.24	Providing & Fixing Cement Board 25mm thick as wall panelling over masonry work including the cost of any subframes in Hardwood and /or Mild steel used for mounting the cement board.The spacing of the sections should be such to ensure adequate strength and load bearing capacity of the cement board . Finished grooves of 6-12 mm to be provided as per the drawings and specifications	sqm	179	0	179		
	<b>Rate In Words</b>						
13.25	Providing & Fixing wooden framework for wall panelling with 40mmx40mm Kail Wood section with frame grid of 600x600mm on wall , or column with necessary fastners . The wood shall be treated with anti-termite treatment.	sqm	52	216	268		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
13.26	Providing & Applying stainless steel sheet bands of 150mm in width and thickness upto 2.0 mm on wall paneling design as per detailed drawings and approval of architecture.	kg	657	0	657		
	<b>Rate In Words</b>						
13.27	Providing and Applying MDF Jalli work 19mm thick with router Cutting as per detailed drawings and approval of architecture.	sqm	14	16	30		
	<b>Rate In Words</b>						
13.28	Wall Specification (Acoustics) :- Providing and Fixing (Cord) Panel of size 2400x600x25 mm ND 4 with H-Spline. Which will comprise to NRC 0.95 Soak Panel is to be installed on framework and meet the stringent fire test required having Class 'P' rating for Ignitability test as per BS 476 part 5 and Class '1' rating as per BS 476 part 7 for Surface Spread of Flame test. Class 'P' and Class '1' are the highest rating. BS 476 part 6 Fire Propagation index and for Flaming ISO 1182 and Smoke density as per ASTM E 662 besides base panel conform to EN 13168 2000 with complete frame work as per Installation details given.	sqm	255	0	255		
	<b>Rate In Words</b>						
13.29	Providing & Applying Soft Board fabric panels with Fabric to be neatly stretched and mounted on board using adhesive and nailing.	sqm	72	20	92		
	<b>Rate In Words</b>						
13.30	Providing & Applying Mineral wool insulatiion at inner side of glazing fixed at RCC slab or Beams as per detailed drawings and approval of architecture (of high density) of approved make.	sqm	500	160	660		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
13.31	Providing & Fixing Roller Blinds (Approved Make) of approved colour ,complete in all finishing. Approved Brands- Hunter Douglas ,Sun Flex , Vista- Screening Fabric with Partial screening fabric	sqm	526	195	721		
	<b>Rate In Words</b>						
13.32	Providing & Fixing Venetian Blinds(Approved Make) of approved colour ,complete in all finishing. Including 44mm x25mm Headchannel, Spline shaft, Slat Travellers of high grade plastic , Tilt Control with braided nylon cord, Traversign cord 2.0mm dia with Fabric Slats 100mm wide woven/nonwoven/fiber glass fabric	sqm	15	15	30		
	<b>Rate In Words</b>						
13.33	Providing & Fixing 1.0mm thk approved colour laminate of approved make with fevicol adhesive on commercial board 19mm thickl.The groove between joints shall be as per drg issued at site.	sqm	660	216	876		
	<b>Rate In Words</b>						
13.34	Providing & Fixing 3M Etching LUMAR FILM including Plotter cutting.	sqm	115	74	189		
	<b>Rate In Words</b>						
<b>14</b>	<b>ROAD WORK</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
14.1	Construction of embankment / sub grade with Material Obtained from Borrow Pits (Construction of embankment with approved material/selected soil having C.B.R. > 5 (unless specified otherwise in the contract) obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2)	Cum	2547	2415	4962		
<b>Rate In Words</b>							
	Construction of granular sub-base by providing close graded Material, , carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface watering, rolling and compacting with vibratory power roller at OMC to achieve the desired density, complete as per clause 401						
14.1.1	By mix in place method						
14.2.2	Disintegrated rock i.e moorum having CBR value not less than 20 and P.I. and L.L. not more than 6 and 20 respectively.	cum	1274	1208	2482		
<b>Rate In Words</b>							
14.3	Dry Lean Cement Concrete Sub- base (Construction of dry lean cement concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing.)	Cum	900	850	1750		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
14.4	Cement Concrete Pavement (Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per drawing)	Cum	900	850	1750		
	<b>Rate In Words</b>						
	<b>Road Furniture</b>						
14.50	Road Marking with Hot Applied Thermoplastic Compound with Reflectorizing Glass Beads on Bituminous Surface (Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqmt area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes )	Sqmt	140	116	256		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
14.6	Boundary pillar (Reinforced cement concrete M15 grade boundary pillars of standard design as per IRC:25-1967, fixed in position including finishing and lettering but excluding painting)	each	10	10	20		
<b>Rate In Words</b>							
14.70	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)	meter	934	770	1704		
<b>Rate In Words</b>							
14.8	Excavation for all types and sizes of foundations, trenches and drains or for any other purpose including disposal of excavated stuff upto 1.5 m lift and lead upto 50m (at least 5m away from the excavated area), including dressing and leveling of pits.	Cum					
a	In all types of soils such as moorum, sand, sandy silt, clay, black cotton soil, kankar etc						
	Depth of excavation up to 1.5 m	Cum	169	139	308		
<b>Rate In Words</b>							
b	In ordinary rock						
	Depth of excavation up to 1.5 m	Cum	19	15	34		
<b>Rate In Words</b>							

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
14.9	Filling from available excavated stuff (Excluding rock) in trenches, plinth, sides of foundation etc. in layers not exceeding 20cm in depth consolidating each deposited layer by ramming and watering with a lead upto 50 M. and lift upto 1.5 M.	Cum	125	103	228		
<b>Rate In Words</b>							
14.10	Providing and laying nominal mix cement concrete with crushed stone aggregate using concrete mixer in all works upto floor five level excluding cost of form work. (RMC: Using batching plant, transit mixer and concrete pump etc.)						
	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size).	Cum	35	29	64		
<b>Rate In Words</b>							
14.11	Providing and laying nominal mix reinforcement cement concrete with crushed stone aggregate using concrete mixer in all works upto floor five level excluding cost of reinforcement and form work.						
	1:1½:3 (1 cement : 1½ coarse sand : 3 graded stone aggregate 20mm nominal size).	Cum	588	575	1163		
<b>Rate In Words</b>							

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
14.12	Providing, hoisting and fixing upto 5m above ground level precast reinforced cement concrete work in string courses, bands, copings, bed plates, anchor blocks, plain window sills and the like including the cost of required centring, shuttering, finishing smooth with 6 mm thick cement plaster 1:3 (1 cement : 3 fine sand) on exposed surfaces complete but excluding cost of reinforcement with 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size).	cum	110	110	220		
<b>Rate In Words</b>							
14.16	Providing & laying 60mm thick precast interlocking concrete blocks of approved size (approx 305 sqcm) and shape/ pattern, over 40 mm thick average complete coarse sand bed with joints of 3mm thick filled by fine sand including leveling with surface vibrator, temping and sweeping etc. complete of minimum compressive strength of 250 kg/sq.cm						
a	Plain precast interlock concrete block	sqm	1093	645	1738		
b	Coloured pigment precast interlock concrete blocks	sqm	1638	967	2605		
<b>Rate In Words</b>							
14.17	Providing and fixing 20mm thick Jaisalmer stone flooring in any pattern over & including 20mm thick cement mortar bedding in CM 1:6 including cement float and filling joints with white neat cement slurry mixed with pigment to match the shade of stone with all wastage of all material including grinding, finishing, polishing and cleaning etc. complete (Edges and joints of stone are cut neatly so that thickness of joints to be not more than 1.50mm ) and i/c cost of all materials, labour and running & hire charges of all machineries required for the work at all heights.	sqm	800	655	1455		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
14.18	Providing & laying 60mm thick precast interlocking grass paver concrete blocks of approved size (approx 305 sqcm) and shape/pattern, over 40 mm thick average complete coarse sand bed with joints of 3mm thick filled by fine sand including leveling with surface vibrator, temping and sweeping etc. complete of minimum compressive strength of 250 kg/sq cm.	sqm	2108	705	2813		
	<b>Rate In Words</b>						
14.19	15 mm thick Table rubbed polished Granite stone slab flooring laid over 20mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing etc. complete. (Area of slab should be 0.50 sqm and above)						
	Granite stone black approved by engineer in charge	sqm	127	60	187		
	<b>Rate In Words</b>						
<b>15</b>	<b>HORTICULTURAL &amp; LAND SCAPING</b>						
15.1	Trenching in ordinary soil upto a depth of 60cm including removal and stacking of serviceable materials and then disposing of by spreading and neatly levelling with in a lead of 50m and making up the trenched area to proper levels by filling with earth or earth mixed with sludge or/and manure before and after flooding trench with water (excluding cost of imported earth, sludge or manure).	cum	500	330	830		
	<b>Rate In Words</b>						
15.2	Supplying and stacking of good earth at site including royalty, loading, unloading and carriage upto 10 km (earth measured in stacks will be reduced by 20% for payment).	cum	440	242	682		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
15.3	Supplying and stacking sludge at site including royalty, loading, unloading and carriage upto 10 km (sludge measured in stacks will be reduced by 8% for payment).	cum	294	161	455		
	<b>Rate In Words</b>						
15.4	Rough dressing the trenched ground including breaking clods.	sqm	5871	3215	9086		
	<b>Rate In Words</b>						
15.5	Uprooting weeds from the trenched area after 10 to 15 days of its flooding with water including disposal of uprooted vegetation.	sqm	800	400	1200		
	<b>Rate In Words</b>						
15.6	Fine dressing the ground	sqm	5871	3215	9086		
	<b>Rate In Words</b>						
15.7	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).	cum	294	161	455		
	<b>Rate In Words</b>						
15.8	Mixing earth and sludge or manure in proportion specified or directed.	cum	55	38	93		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
15.9	Grassing with 'Doob' grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for mowing including supplying good earth if needed (the good earth shall be paid for separately).						
15.9.1	In rows 7.5 cm apart in either direction.	sqm	5871	3215	9086		
	<b>Rate In Words</b>						
15.10	Preparation of beds for hedging and shrubbery by excavating 60cm deep and trenching the excavated base to a further depth of 30cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, levelling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and levelling as directed, within a lead of 50m lift upto 1.5 m complete (cost of sludge, manure or extra earth to be paid	cum	495	338	833		
	<b>Rate In Words</b>						
15.11	Digging holes in ordinary soil and refilling the same with the excavated earth mixed with manure or sludge in the ratio of 2:1 by volume (2 parts of stacked volume of earth after reduction by 20% : 1 part of stacked volume of manure after reduction by 8%) flooding with water, dressing including removal of rubbish and surplus earth, if any with all leads and lifts (cost of manure, sludge or extra good earth if needed to be paid for separately) :						
15.11.1	Holes 1.2 m dia and 1.2 m deep.	each	15	10	25		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
15.11.2	Holes 60 cm dia, and 60 cm deep.	each	20	15	35		
	<b>Rate In Words</b>						
15.12	Providing and fixing M.S. flat iron tree guard 60cm dia. and 2m height above ground level formed of 4 nos. 25x6mm and 8 nos. 25x3mm vertical M.S. flats riveted to 3 nos. 25x6mm M.S. flat iron rings in two halves, bolted together with 8mm dia. and 30mm long bolts including painting two coats with paint of approved brand and manufacture over a coat of priming, complete in all respects.	each	35	25	60		
	<b>Rate In Words</b>						
15.13	Edging with modular fly-ash bricks of crushing strength not less than 25kg/ sqcm laid dry length wise including excavation, refilling, consolidating with hand packing and spreading neatly surplus earth within a lead of 50 m :	metre	1350	825	2175		
	<b>Rate In Words</b>						
15.14	Filling mixture of earth and sludge or manure in the desired proportion in trenches, flooding with water and levelling (cost of supplying earth and sludge or manure and mixing excluded).	cum	125	75	200		
	<b>Rate In Words</b>						
15.15	Flooding the ground with water including making kiaries and dismantling the same.	sqm	5871	3215	9086		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
15.16	Providing and planting following herbs in garden including preparation of soil, base plantation, providing and spreading different fertilizers, soil and sand:						
15.17.1	Hedges like Alife, Dorenta, Tikoma etc	each	10	5	15		
	<b>Rate In Words</b>						
15.17.2	Furn like Arica, China etc (3 year old)	each	10	5	15		
	<b>Rate In Words</b>						
15.17.3	Hibiscus (Flower)/ Rose	each	10	10	20		
	<b>Rate In Words</b>						
15.17.4	Carpet grass	sqm	100	100	200		
	<b>Rate In Words</b>						
15.18	Providing and fixing water spouts for water body system complete in all respect.	each	9	5	14		
	<b>Rate In Words</b>						
<b>SUBTOTAL CIVIL WORKS</b>							
	<b>Rate In Words</b>						
<b>B BILL OF QUANTITIES FOR ELECTRICAL WORKS</b>							
	<b>HV CABLE LAYING (33 KV)</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
1	Supplying and laying one number following sizes XLPE, steel armoured, aluminium conductor power cable of 33 KV grade direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.						
	3 x 150 sq mm	Meter	20	60	80		
	<b>Rate In Words</b>						
2	Supplying and laying one number following sizes XLPE, steel armoured, aluminium conductor power cable of 33 KV grade in existing RCC/HUME/STONEWARE/METAL pipe as required.						
	3 x 150 sq mm	Meter	8	8	16		
	<b>Rate In Words</b>						
3	Supplying and laying one number following sizes XLPE, steel armoured, aluminium conductor power cable of 33 KV grade in existing masonry open duct as required.						
	3 x 150 sq mm	Meter	32	32	64		
	<b>Rate In Words</b>						
4	supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminum conductor cable of 33 KV grade as required :						
	150 sq. mm	Each	2	2	4		
	<b>Rate In Words</b>						
5	Supplying and making outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminum conductor cable of 33 KV grade as required :						
	150 sq. mm	Each	1	1	2		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
	<b>CABLE TRAYS AND ROUTE MARKER</b>						
6	Supplying and installing following size powder coated, perforated M.S. cable trays with perforation not more than 17.5% rigidly suspended from the ceiling with M.S. suspenders at a distance not more than 2.5 metre and near every junction/ joint etc complete as required.						
a	300 mm width X 50 mm depth X 1.6 mm thickness	Meter	1250	750	2000		
	<b>Rate In Words</b>						
b	600 mm width X 62.5 mm depth X 2.0 mm thickness	Meter	975	500	1475		
	<b>Rate In Words</b>						
7	Supplying and fixing of following sizes powder coated, perforated, M.S. cable trays bends (horizontal) turning at 90° in same plane with perforation not more than 17.5% rigidly jointed with cable tray etc. complete as required.						
a	300 mm width X 50 mm depth X 1.6 mm thick	Each	12	12	24		
	<b>Rate In Words</b>						
b	600 mm width X 62.5 mm depth X 2 mm thick	Each	12	12	24		
	<b>Rate In Words</b>						
8	Supplying and fixing of following sizes vertical, powder coated, perforated, M.S. cable trays bends (vertical) turning at 90° in another plane with perforation not more than 17.5% rigidly jointed with cable tray etc. complete as required.						
a	300 mm width X 50 mm depth X 1.6 mm thick	Each	4	6	10		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
b	600 mm widthX62.5 mm depthX2 mm thick	Each	4	4	8		
	<b>Rate In Words</b>						
9	Supplying and making cable route marker with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size ) of size 60 cm X 60 cm at the bottom and 50 cm X 50 cm at the top with a thickness of 10cm including inscription duly engraved as required	Each	20	20	40		
	<b>Rate In Words</b>						
10	Supplying and fixing cable route marker with 10 cm X 10 cm X 5 mm thick G.I. plate with inscription there on, bolted /welded to 35 mm X 35 mm X 6 mm angle iron, 60 cm long and fixing the same in ground as required.	Each	5	5	10		
	<b>Rate In Words</b>						
	<b>POLE AND POLE ERECTION</b>						
11	Supply of hot dipped galvanized (in single dip to average 70 micron) octoganal pole made of 3mm thick steel plate having base plate 200x200x12mm, window and flush cover with locking arrangement at suitable height from base for cable termination block, pole suitably reinforced with welded steel section at window cut section to make the strength of pole unaffected, including template and anchor plate 240x240x3mm with 4 nos 450mm long, 16mm dia foundation bolts bolts (EN8 grade).						
	5 metre high, minimum dia 129mm at bottom and 75mm at top	Each	52	52	104		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
12	Erection of GI octagonal pole on existing cement concrete foundation having grouted bolts and nuts, aligning in true vertical position as required.						
	5 metre high	Each	52	52	104		
	<b>Rate In Words</b>						
13	Designing and providing suitable RCC foundation for 3m to 12 metre high GI octagonal pole including steel reinforcement (minimum 90kg per cum), form work, embedding 2 nos 50mm dia PVC pipe for cable entry in each foundation, excavation disposal of surplus soil and curing etc. as required.	cum	52	52	104		
	<b>Rate In Words</b>						
	MV CABLE LAYING						
14	Supplying and laying following sizes one number PVC insulated, PVC sheathed, steel armoured, aluminium conductor power cable of 1.1 KV grade direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required						
a	3.5 x 95 sq. mm.	Meter	15	15	30		
	<b>Rate In Words</b>						
b	3.5 x 120 sq. mm.	Meter	15	15	30		
	<b>Rate In Words</b>						
c	3.5 x 300 sq. mm.	Meter	65	65	130		
	<b>Rate In Words</b>						
d	3.5 x 400 sq. mm.	Meter	350	350	700		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
e	4 x 10 sq. mm.	Meter	1250	1250	2500		
	<b>Rate In Words</b>						
15	Supplying and laying following sizes additional one number, PVC insulated, PVC sheathed, steel armoured, aluminium conductor power cable of 1.1 KV grade direct in ground as in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.						
a	3.5 x 50 sq. mm.	Meter	15	15	30		
	<b>Rate In Words</b>						
b	3.5 x 95 sq. mm.	Meter	125	125	250		
	<b>Rate In Words</b>						
c	3.5 x 120 sq. mm.	Meter	10	10	20		
	<b>Rate In Words</b>						
d	4 x 10 sq. mm.	Meter	200	200	400		
	<b>Rate In Words</b>						
16	Supplying and laying following sizes one number PVC insulated, PVC sheathed, steel armoured, aluminium conductor power cable of 1.1 KV grade in existing RCC/ HUME/ STONEWARE/ METAL pipe as required.						
a	3.5 x 50 sq. mm.	Meter	20	20	40		
	<b>Rate In Words</b>						
b	3.5 x 95 sq. mm.	Meter	10	10	20		
	<b>Rate In Words</b>						
c	3.5 x 300 sq. mm.	Meter	15	15	30		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
d	3.5 x 400 sq. mm.	Meter	45	45	90		
	<b>Rate In Words</b>						
17	Supplying and laying following sizes one number, steel armoured, aluminium conductor power cable of 1.1 KV grade on surface/ existing cable tray as required.						
a	4 x 16 sq. mm.	Meter	100	100	200		
	<b>Rate In Words</b>						
18	Supplying and laying following sizes one number, steel armoured, aluminium conductor power cable of 1.1 KV grade on surface/ existing cable tray with M.S flat clamp and steel dash fastener/ G.I. bolts and nuts as required.						
a	3.5 x 50 sq. mm.	Meter	100	100	200		
	<b>Rate In Words</b>						
b	3.5 x 95 sq. mm.	Meter	550	550	1100		
	<b>Rate In Words</b>						
c	3.5 x 120 sq. mm.	Meter	145	145	290		
	<b>Rate In Words</b>						
d	3.5 x 185 sq. mm.	Meter	150	150	300		
	<b>Rate In Words</b>						
e	3.5 x 300 sq. mm.	Meter	20	20	40		
	<b>Rate In Words</b>						
f	3.5 x 400 sq. mm.	Meter	205	205	410		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
19	Supplying and making end termination with brass compression gland and aluminum lugs for following size armoured aluminum conductor power cable of 1.1 KV grade as required.						
a	3½ X 50 sq. mm	Each	12	12	24		
	<b>Rate In Words</b>						
b	3½ X 95 sq. mm	Each	22	22	44		
	<b>Rate In Words</b>						
c	3½ X 120 sq. mm	Each	18	18	36		
	<b>Rate In Words</b>						
d	3½ X 185 sq. mm	Each	6	6	12		
	<b>Rate In Words</b>						
e	3½ X 300 sq. mm	Each	4	4	8		
	<b>Rate In Words</b>						
f	3½ X 400 sq. mm	Each	22	22	44		
	<b>Rate In Words</b>						
g	4 X 10 sq. mm	Each	134	134	268		
	<b>Rate In Words</b>						
h	4 X 16 sq. mm	Each	162	162	324		
	<b>Rate In Words</b>						
	<b>HDPE, G.I. &amp; RCC PIPES</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
20	Supplying and laying following size RCC Hume pipe class NP-2 (in standard length of 2 metre) with collar in ground below road, path etc at a depth not less than 50 cm including excavation, dismantling of road if required and refilling the trench etc. as required.						
a	200 mm dia	Metre	25	25	50		
	<b>Rate In Words</b>						
b	300 mm dia	Metre	10	10	20		
	<b>Rate In Words</b>						
	<b>EARTHING</b>						
	COPPER WIRE / STRIP CONNECTION						
21	Supplying and laying 25 mm X 5 mm copper strip at 0.50 Meter below ground as strip earth electrode, including soldering, excavation and refilling the trench etc. as required.	Meter	200	200	400		
	<b>Rate In Words</b>						
22	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode at 0.5 Metre depth below ground level including excavation and refilling the trench etc. as required.	Meter	75	75	150		
	<b>Rate In Words</b>						
23	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	Meter	150	150	300		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
24	Providing and fixing earth bus of 50 mm X 5 mm copper strip on surface for connections etc. as required.	Meter	200	200	400		
	<b>Rate In Words</b>						
25	Supplying and laying 6 SWG G.I. wire at 0.50 Meter below ground level for conductor earth electrode, including soldering, excavation and refilling the trench etc. as required.	Meter	2500	2500	5000		
	<b>Rate In Words</b>						
26	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Meter	5500	5500	11000		
	<b>Rate In Words</b>						
27	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Meter	1500	1500	3000		
	<b>Rate In Words</b>						
	<b>MAIN SWITCHES, MCCB's, MCB's &amp; MCB DB's</b>						
28	Supplying and fixing on surface/ recess prewired horizontal type following way, 415 volts TP&N, MCB distribution board of sheet steel phosphatized and powder painted complete complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks including interconnections, earthing etc. as required. (But without MCB/ RCCB/ Isolator)						
a	4 way (4 + 12), Double door	Each	26	12	38		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
b	6 way (4 + 18), Double door	Each	6	5	11		
	<b>Rate In Words</b>						
c	8 way (4 + 24), Double door	Each	16	7	23		
	<b>Rate In Words</b>						
d	12 way (4 + 36), Double door	Each	30	16	46		
	<b>Rate In Words</b>						
29	Supplying and fixing on surface/ recess prewired vertical type following way, 415 volts TP&N, MCB distribution board of sheet steel phosphatized and powder painted complete complete with loose wire box, terminal blocks, 200 amps tinned copper busbar, common neutral link, earth bar, din bar, detachable gland plate, loose wire box, superior make terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks including interconnections, earthing etc. as required. (But without MCB/ RCCB/ Isolator) (Note: Prewired vertical type MCB TPDB is normally used where 3 phase outlets are required.)						
a	4 way (4 + 12), Double door	Each	1	1	2		
	<b>Rate In Words</b>						
b	8 way (4 + 24), Double door	Each	1	1	2		
	<b>Rate In Words</b>						
c	12 way (4 + 36), Double door	Each	2	1	3		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
30	Supplying and fixing SP MCB, 240 volts, 'B' series, suitable for lighting and other loads in the existing MCB DB complete with connections, testing and commissioning etc. as required.						
	6 amps to 32 amps	Each	884	630	1514		
	<b>Rate In Words</b>						
31	Supplying and fixing SP MCB, 240 volts, 'C' series, suitable for inductive load in the existing MCB DB complete with connections, testing and commissioning etc. as required.						
	6 amps to 32 amps	Each	1000	600	1600		
	<b>Rate In Words</b>						
32	Supplying and fixing TP MCB, 440 volts, 'C' series, suitable for inductive/ motor load in the existing MCB DB complete with connections, testing and commissioning etc. as required.						
a	6 amps to 32 amps	Each	20	15	35		
	<b>Rate In Words</b>						
b	40 amps	Each	4	3	7		
	<b>Rate In Words</b>						
33	Supplying and fixing TP&N MCB, 440 volts, 'B' series, suitable for lighting and other loads in the existing MCB DB complete with connections, testing and commissioning etc. as required.						
a	40 amps	Each	28	16	44		
	<b>Rate In Words</b>						
b	63 amps	Each	54	33	87		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
34	Supplying and fixing TP&N MCB, 440 volts, 'C'series, suitable for inductive/ motor load in the existing MCB DB complete with connections, testing and commissioning etc. as required.						
a	40 amps	Each	2	2	4		
	<b>Rate In Words</b>						
b	63 amps	Each	2	2	4		
	<b>Rate In Words</b>						
35	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	Each	10	10	20		
	<b>Rate In Words</b>						
36	Supplying and fixing TPN and earth, 440 volts, industrial type, socket outlet, enclosed metal plug top along with 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.						
a	20 Amp with "C" series TP MCB	Each	32	28	60		
	<b>Rate In Words</b>						
b	32 Amp with "C" series TP MCB	Each	28	22	50		
	<b>Rate In Words</b>						
37	Supplying and fixing sheet steel enclosure of suitable size made of 1.6mm thick CRCA MS sheet, for 100 amps MCCB on existing metal board/ wall including painting etc as required.	Each	4	3	7		
	<b>Rate In Words</b>						
	<b>POINT WIRING</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
38	Wiring for light/ fan/ exhaust fan / call bell point with 1.5 sqmm FR PVC insulated stranded copper conductor single core cable in concealed PVC conduit, with 5 amp modular switch, modular base and cover plate, suitable size G.I. box and earthing the point with same size cable as required.						
	Short Point	Point	588	278	866		
	Medium Point	Point	2214	871	3085		
	Long Point	Point	751	622	1373		
<b>Rate In Words</b>							
39	Wiring for twin control light point with 1.5 sqmm FR PVC insulated stranded copper conductor single core cable in concealed PVC conduit, with 5 amp modular switch, modular base and cover plate, suitable size G.I. box and earthing the point with same size cable as required.	Point	36	30	66		
<b>Rate In Words</b>							
40	Wiring for light plug point with 2x2.5 sq mm FR PVC insulated stranded copper conductor cable in concealed PVC conduit along with modular type 6 Amp switch and 3 pin 6 amps socket outlet with modular base and cover plate, suitable size G.I. box, earthing the switch box and socket outlet with same size cable etc. as required						
a	Short Point	Point	280	93	373		
<b>Rate In Words</b>							
b	Medium Point	Point	98	44	142		
<b>Rate In Words</b>							
c	Long Point	Point	112	30	142		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
d	Extra Long Point I	Point	28	20	48		
	<b>Rate In Words</b>						
e	Extra Long Point II	Point	32	28	60		
	<b>Rate In Words</b>						
f	Extra Long Point III	Point	15	12	27		
	<b>Rate In Words</b>						
41	Wiring for power plug point with 2x4 sq mm FR PVC insulated stranded copper conductor cable in concealed PVC conduit along with modular type 16 Amp switch and 6 pin 16 amps socket outlet with modular base and cover plate, suitable size G.I. box, earthing the switch box and socket outlet with same size cable etc. as required.						
a	Short Point	Point	192	15	207		
	<b>Rate In Words</b>						
b	Medium Point	Point	202	40	242		
	<b>Rate In Words</b>						
c	Long Point	Point	180	36	216		
	<b>Rate In Words</b>						
d	Extra Long Point I	Point	96	26	122		
	<b>Rate In Words</b>						
e	Extra Long Point II	Point	64	27	91		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
f	Extra Long Point III	Point	28	12	40		
	<b>Rate In Words</b>						
42	Wiring for power plug point with 2x6 sq mm FR PVC insulated stranded copper conductor cable in concealed PVC conduit along with modular type 32 Amp SPMCB "C" series and 6 pin 20 amps socket outlet with modular base and cover plate, suitable size G.I. box, earthing the switch box and socket outlet with same size cable etc. as required.						
a	Short Point	Point	32	28	60		
	<b>Rate In Words</b>						
b	Medium Point	Point	45	41	86		
	<b>Rate In Words</b>						
43	Supplying and fixing following modular switch, socket, other accessories on the existing modular plate & switch box including connections but excluding modular plate etc. as required.						
a	Plug Top (Deluxe type) 3 pin 5/6 Amps (For light plug).	Each	565	227	792		
	<b>Rate In Words</b>						
b	Plug Top (Deluxe type) 3 pin 16 Amps (For power plug).	Each	762	156	918		
	<b>Rate In Words</b>						
44	Providing and fixing composite unit for computer points having modular type 1 No 6 pin 16 amp socket outlet, 1 No 16 amp switch, 3 Nos 3 pin 6 amp socket outlets, 3 Nos 6 amp switches, suitable G.I. box, base and cover plates, earthing the sockets and switch box including etc. as required.	Each	407	424	831		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
45	Wiring for circuit/ sub main wiring along with earth wire with the following sizes of FR PVC insulated copper conductor, single core cable in concealed PVC conduit as required.						
a	3 X 1.5 sq. mm in 20mm conduit	Meter	3905	3905	7810		
	<b>Rate In Words</b>						
b	3 X 2.5 sq. mm in 20mm conduit	Meter	14750	14750	29500		
	<b>Rate In Words</b>						
c	4 X 25 sq. mm + 2 X 16 sq. mm in 50mm conduit	Meter	4575	4575	9150		
	<b>Rate In Words</b>						
46	Supplying and fixing of following sizes PVC conduit along with accessories in concealed complete as required.						
a	20 mm	Meter	5700	5700	11400		
	<b>Rate In Words</b>						
b	25 mm	Meter	12800	12800	25600		
	<b>Rate In Words</b>						
c	32 mm	Meter	150	150	300		
	<b>Rate In Words</b>						
d	50 mm	Meter	255	255	510		
	<b>Rate In Words</b>						
47	Extra for providing modular starter in power point wiring instead of modular 32 amp SPMCB and 16 amps socket outlet as required.	Point	22	22	44		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
48	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	124	124	248		
	<b>Rate In Words</b>						
	<b>METAL, WOODEN AND PVC BOXES</b>						
	<b>Rate In Words</b>						
49	Supplying and fixing following size/ modules, GI box along with modular base & cover plate for modular switches in recess etc as required.						
a	75mmX75mm (1 Module)	Each	788	489	1277		
	<b>Rate In Words</b>						
50	Supplying and drawing following pair 0.5 sq mm FR PVC insulated copper conductor, unarmored telephone cable in the existing surface/ concealed steel/ PVC conduit as required.						
	4 Pair	Meter	6500	4000	10500		
	<b>Rate In Words</b>						
51	Supplying and drawing following co-axial TV cable PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ concealed steel/ PVC conduit as required.						
	RG-8 grade, 0.7 mm solid copper conductor	Meter	500	500	1000		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
52	Supplying and fixing following modular switch, socket, other accessories on the existing modular plate & switch box including connections but excluding modular plate etc. as required.						
a	Telephone socket outlet	Each	250	131	381		
	<b>Rate In Words</b>						
b	T.V. antenna socket outlet	Each	10	8	18		
	<b>Rate In Words</b>						
c	Computer Outlet Jack	Each	500	322	822		
	<b>Rate In Words</b>						
d	25/32 amp A.C. Starter switch	Each	10	7	17		
	<b>Rate In Words</b>						
	<b>FANS, LUMINARIES AND LAMPS</b>						
53	Supplying and fixing modular stepped type electronic fan regulator (two module size) moving all rounds on the existing modular plate and switch box including connections but excluding modular plate etc. as required.	Each	218	175	393		
	<b>Rate In Words</b>						
54	Supplying, installation, testing and commissioning of following sizes ceiling fan with resistance type regulator, including wiring the down rods of standard length up to 30 cm with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable, earthing etc. complete as required.						
	1200 mm sweep	Each	218	175	393		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
55	Supplying, installation, testing and commissioning of following sizes heavy duty (continuous running) exhaust fan in existing opening in wall including earthing etc. complete as required.						
	450 mm sweep	Each	16	13	29		
	<b>Rate In Words</b>						
56	Supplying, installation, testing and commissioning of following sizes fancy exhaust fan having built in lovers in existing opening in wall including earthing etc. complete as required.						
	300 mm sweep	Each	8	7	15		
	<b>Rate In Words</b>						
57	Supplying, installation, testing and commissioning of following mirror optics concealed type CFL fitting (luminaries) complete with copper ballast, but without CFL lamp, in false ceiling, earthing the fitting etc. as required.						
	3x36 W	Each	999	503	1502		
	<b>Rate In Words</b>						
58	Supplying, fixing and testing of approved make bulk head luminaire consisting of pressure die cast Alu. Housing, lamp holder, prismatic glass cover, rubber gasket and wire guard delux type including fixing on wall as required, with necessary material complete.	Each	2	2	4		
	<b>Rate In Words</b>						
59	<b>Sub Station Works</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	Package SubStation	Nos.	2	0	2		
	Supply, installation and testing and commissioning of pre fabricated factory built compartmentalised type outdoor duty package substation made of 2mm thick GI sheet enclosure with a base of 4mm thick GI hot dip galvanized sheet, accessible from all around for all the equipments housed inside, all the doors must be a locking provision and the partitions between the different compartments must be atleast of 2mm thk GI sheet and having a provision of sufficient ventilation avoiding heating of the material kept inside the enclosure.						
	The package includes 3 way HT switchgear (SF6 insulated ring main unit), suitable rating oil immersed transformer, sufficient size rack fitted with suitable rating ACB and sufficient numbers of suitable rating ACB/MCCBs as an outgoing feeders, sufficient rating capacitor bank with APFCR relay, the system should have a provision of remote control operation and indicators for all kind of faults, the work involves all the internal connections, terminations including supply of inter connected cables, terminations and all other accessories require to furnish the job.						
	The package substation comply with IEC 1330 recommendations, and supply exactly complete in all manners with the material as shown in drawing enclose herewith or as mentioned below;						
	33 KV, indoor duty, 3 way extensible free standing metal clad SF6 insulated ring main unit complete with all necessary protection and accessories with having a provision of an addition of flexible communication unit for automation at later stage.						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	33 /.433KV 750 KVA, 3 phase, Cu. Wound, ±5% off load type tap changer, Oil Type transformer complete with all necessary protection and accessories						
	1 no. 1500 Amps. 4 Pole, 50 KA EDO ACB as an outgoing feeder complete in all respects.						
	1 no. 800 Amps. 3 Pole, 50 KA Fixed Type ACB as an outgoing feeder of Capacitor Bank complete in all respects.						
	Capacitor Bank (5 KVAR x 4 + 15 KVAR x 2 + 25 KVAR x 2 + 50 KVAR x 5) with sufficient stage APFCR relay for auto on / off of capacitors with suitable rating MCCB, contactor etc.						
	1 no. 1250 Amps. 4 Pole, 50 KA EDO ACB as an outgoing feeder complete in all respects.						
	<b>Rate In Words</b>						
59.1	Supply,Instalation,testing and commissioning of pre fabricated factory built compartmentalised type outdoor duty package substation made of 2mm thick GI sheet enclosure with a base of 4mm thick GI hot dip galvanized sheet, accessible from all around for all the equipments housed inside, all the doors must be a locking provision and the partitions between the different compartments must be atleast of 2mm thk GI sheetand having a provision of sufficient ventilation avoiding heating of the material kept inside the enclosure.	Nos	0	2	2		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	The package includes 3 way HTswitchgear (SF6 insulated ring main unit), suitable rating oil immersed transformer, sufficient size rack fitted with suitable rating ACB and sufficient numbers of suitable rating ACB/MCCBs as an outgoing feeders, sufficient rating capacitor bank with APFCR relay, the system should have a provision of remote control operation and indicators for all kind of faults, the work involves all the internal connections, terminations including supply of inter connected cables, terminations and all other accessories require to furnish the job.						
	The package substation comply with IEC 1330 recommodations, and supply exactly complete in all manners with the material as shown in drawing enclose herewith or as mentioned below;						
	11 KV, indoor duty, 3 way extensible free standing metal clad SF6 insulated ring main unit complete with all necessary protection and accessories with having a provision of an addition of flexible communication unit for automation at later stage.						
	11 /.433KV 750 KVA, 3 phase, Cu. Wound, ±5% off load type tap changer, Oil Type transformer complete with all necessary protection and accessories						
	1 no. 1500 Amps. 4 Pole, 50 KA EDO ACB as an outgoing feeder complete in all respects.						
	1 no. 800 Amps. 3 Pole, 50 KA Fixed Type ACB as an outgoing feeder of Capacitor Bank complete in all respects.						
	Capacitor Bank (5 KVAR x 4 + 15 KVAR x 2 + 25 KVAR x 2 + 50 KVAR x 5) with sufficient stage APFCR relay for auto on / off of capacitors with suitable rating MCCB, contactor etc.						
	1 no. 1250 Amps. 4 Pole, 50 KA EDO ACB as an outgoing feeder complete in all respects.						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
<b>60</b>	<b>M.V.PANELS</b>						
	Supply,Instalation,testing and commissioning of cubicle type free floor mounted, free standing, indoor duty dust proof, vermin proof etc. front operated panels made out of 14 SWG stove enameled sheet steel and manufactured exactly as per specifications laid in this document and will be complete with the main and auxiliary bus bars, interconnection, cable glands, earth terminals and aluminum earth tape of 25 x 3 mm from end to end of the panel, earth bus and will be powder coated paint finished and consisting of the following.(All MCCBs shall have rotary handle)						
<b>a</b>	<b>Main LT Panel-1</b>	Set	1	0	1		
	INCOMER						
	4 Nos. 1250A, FP, 50 kA, EDO ACB with Microprocessor based release having short circuit, over current, earth fault, under voltage relay with communication port RS 485						
	1 Nos. 630A, FP, 50 kA, EDO ACB with Microprocessor based release having short circuit, over current, earth fault, under voltage relay with communication port RS 485						
	96 mm square flush pattern digital Voltmeter(0-500 V), accuracy class 1, suitable range for 3 phase, 4 wire operation with LED display and built-in selector switch along with 3 nos. of 2 Amp SP / MCBs.- 2 Sets						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	Intelligent multi function digital meter to read V,A,KVA, KW, KVAR, KWH, PF, Hz etc with communication module (RS485) and LED display with 3 Nos CTs, 15 VA, class 1.0 and control circuit wiring with 2 Amp. SP/MCBs.-2 sets.						
	96 mm sq. Flush pattern Digital Type Ammeter of suitable range (to measure 0-800A), for 3 phase 4 wire operation with LED display and selector switch with 3 numbers of class 1.0 accuracy, 15 VA burden & suitable range CTs.- 2 sets.						
	5 sets Indication Lamps, LED type for R,Y,B and breaker 'ON' , 'OFF', 'TRIP' indications each with 2 Amp MCBs for protection.						
	BUS COUPLER						
	1 Nos.1250A, FP, 50 kA, EDO ACB without release but with RS 485 communication port						
	1 Nos.630A, FP, 50 kA, EDO ACB without release but with RS 485 communication port						
	2 Set Indication Lamps, LED type for 'ON' , 'OFF', 'TRIP' indications with 2 Amp SP MCBs, auxiliary contact contactors for positive electrical interlocking of breakers etc. as required.						
	BUSBARS						
	1 set of high conductivity Aluminium bus bars of minimum 1600 Amps capacity, TPN with heat shrinkable coloured sleeves and i/c DMC busbars supports at required intervals.						
	Accessories for Electrical & Mechanical Interlocking						
	Electrical & mechanical interlocking arrangement as per drawing and specifications among 5 nos. Incomers for DG Sets,Transformer and 2 Bus coupler including interconnections etc. as required.						
	OUTGOINGS						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	2 Nos. 500A, TPN, 35 kA, MCCB with Microprocessor based release having adjustable over load and adjustable short circuit, auxiliary contact, Rotary handel, spreader link, etc..						
	17 Nos. 200A, TPN, 50 kA, MCCB with Microprocessor based release having adjustable over load and adjustable short circuit, auxiliary contact, Rotary handel, spreader link, etc..						
	COMPONENTS FOR AMF OPERATION OF 2 Nos. 625 KVA AND 1 No. 250 KVA DG SET ( 1 SET FOR EACH DG SET)						
	Each AMF section shall have the one set of following items:						
	Relays, control contactors, Aux.Relays, Timers:						
	1 No. Microprocessor based AMF logic relay having UV and OV, Phase reversal, engine start relay ,engine cranking relay, Auto/Mannual/ test / service etc.						
	1 Set of All other auxiliary relays, auxiliary / control contactors ( 24V DC and 230V AC), timers, Three impulse unit , Master trip relay, etc of suitable rating and quantity as required to achieve AMF function as described in technical specifications.						
	1 Set LED Indication lamps, Push buttons, window annunciation fascia etc of required quantity as per technical specifications.						
	Metering:						
	1 set of Digital AC Ammeter of suitable range with built-in selector switch, Cast Resin CTs & control MCBs						
	1 set of Digital AC Voltmeter of suitable range with built-in selector switch & control MCBs						
	1 no.Digital Frequency meter						
	1 No.Digital Power factor meter						
	1 No. Digital DC Voltmeter						
	1 No. Digital DC Ammeter						
	Others						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	1 set of required quantity of suitable range and accuracy class of Cast Resin CTs for Metering & Protection						
	1 set of required quantity and rating of HRC fuse for control & protection circuits - 01 Set						
	1 set of 24V DC battery charger comprising of transformer, rectifier unit & charge rate selector switch etc., - 01 Set.						
	1 No. Hooter						
	1 Lot of Control wiring from DG set to AMF Panel						
	All other accessories & components required for proper operation of AMF logic and inter locking etc.						
	Instruments						
	Intelligent multi function digital meter to read V,A,KVA, KW, KVAR, KWH, PF, Hz etc with communication module (RS485) and LED display with 3 Nos CTs, 15 VA, class 1.0 and control circuit wiring with 2 Amp. SP/MCBs.-2 sets.						
	1 Set R Y B phase indicating lamps with protection fuses.						
	1 Lot of control wiring.						
	1 Set of designation plates.						
	Other items such as:-						
	Illumination light interlocked with doors.						
	Suitable Nos. and dia of Exhaust Fan with Temp. rise thermostat.						
	<b>Rate In Words</b>						
<b>b</b>	<b>MAIN L.T. Panel 2</b>	Set	0	1	1		
	<b>Incoming</b>						
	2 Nos. of 630A, FP, 50 kA,MCCB with Microprocessor based release having short circuit, over current, earth fault, under voltage relay with communication port RS 485						
	1 Nos. of 315A, FP, 50 kA, MCCB with Microprocessor based release having short circuit, over current, earth fault, under voltage relay with communication port RS 485						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>BUSBARS</b>						
	800 Amp TPN busbars of high conductivity electrolytic quality aluminium alloy						
	<b>BUS COUPLER</b>						
	1 Nos. of 315A, FP, 50 kA, MCCB						
	<b>INSTRUMENTS</b>						
	3 Nos. 0 to 500 Volt Digital type voltmeter for 3 phase, 4 wire operation and selector switch alongwith 3 Nos.control MCB's.						
	2 Nos. of Digital type Ammeter of suitable range (measure 0 to 630Amp) for 3 phase, 4 wire operation alongwith suitable range Cast Resin CT's.						
	1 Nos. of Digital type Ammeter of suitable range (measure 0 to 315Amp) for 3 phase, 4 wire operation alongwith suitable range Cast Resin CT's.						
	3 Sets of phase indicating lamps, LED type, RYB with control MCBs.						
	3 Sets of ON-OFF indication lamps (LED type) control MCBs.						
	1 No. Suitable Rating C.T. meter for common Services						
	<b>OUTGOINGS</b>						
	14 Nos. 250A, TPN, 50 kA, MCCB with Microprocessor based release having adjustable over load and adjustable short circuit, auxiliary contact, Rotary handel, spreader link, etc..						
	2 Nos. 125A, TPN, 50 kA, MCCB with Microprocessor based release having adjustable over load and adjustable short circuit, auxiliary contact, Rotary handel, spreader link, etc..						
	2 Nos. 100A, TPN, 35 kA, MCCB with Microprocessor based release having adjustable over load and adjustable short circuit, auxiliary contact, Rotary handel, spreader link, etc..						
	<b>COMPONENTS FOR AMF OPERATION OF 2 Nos. 380 KVA AND 1 No. 250 KVA DG SET ( 1 SET FOR EACH DG SET)</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	Each AMF section shall have the one set of following items:						
	<b>Relays, control contactors, Aux.Relays, Timers:</b>						
	1 No. Microprocessor based AMF logic relay having UV and OV, Phase reversal, engine start relay ,engine cranking relay, Auto/Mannual/ test / service etc.						
	1 Set of All other auxiliary relays, auxiliary / control contactors ( 24V DC and 230V AC), timers, Three impulse unit , Master trip relay, etc of suitable rating and quantity as required to achieve AMF function as described in technical specifications.						
	1 Set LED Indication lamps, Push buttons, window annunciation fascia etc of required quantity as per technical specifications.						
	<b>Metering:</b>						
	1 set of Digital AC Ammeter of suitable range with built-in selector switch, Cast Resin CTs & control MCBs						
	1 set of Digital AC Voltmeter of suitable range with built-in selector switch & control MCBs						
	1 no.Digital Frequency meter						
	1 No.Digital Power factor meter						
	1 No. Digital DC Voltmeter						
	1 No. Digital DC Ammeter						
	<b>Others</b>						
	1 set of required quantity of suitable range and accuracy class of Cast Resin CTs for Metering & Protection						
	1 set of required quantity and rating of HRC fuse for control & protection circuits - 01 Set						
	1 set of 24V DC battery charger comprising of transformer, rectifier unit & charge rate selector switch etc., - 01 Set.						
	1 No. Hooter						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	1 Lot of Control wiring from DG set to AMF Panel						
	All other accessories & components required for proper operation of AMF logic and inter locking etc.						
	<b>Rate In Words</b>						
c	Supply,Instalation,testing and commissioning of " <b>POWER DISTRIBUTION BOARDS</b> " with the following items and as required for completeness and as per direction of engineer, attached specification CSPDCL standards and electrical Inspectorate standards.	Set	12	7	19		
	Incoming						
	1 Nos.200 Amps TP feeder each having one number 3 phase 415 Volts, 50 Hz, 35 KA front operated 200 Amps. TP MCCB with isolable neutral complete in all respects.						
	Bus bar						
	1 set of 250 Amps, 415 volts, 3 phase, 4 wire colour coded aluminium TPN bus bar, after taking all derating factors.						
	Outgoings						
	16 Nos.100 Amps FP feeder each having one number 3 phase 415 Volts, 50 Hz, 25 KA front operated 100 Amps. TPN MCCB with isolable neutral.						
	Instruments						
	1 Nos. 0-500 Volts, 96 sq.mm digital voltmeter with protection fuses and selector switch.						
	1 Nos. 0-200 Amps, 96 sq.mm digital ammeter with 200/5A CT's and selector switch.						
	1 Set R Y B phase indicating lamps with protection fuses.						
	1 Lot of control wiring.						
	1 Set of designation plates.						
	Other items such as:-						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	Illumination light interlocked with doors.						
	Suitable Nos. and dia of Exhaust Fan with Temp. rise thermostat.						
	<b>Rate In Words</b>						
61	Supply,Instalation,testing and commissioning of " <b>Common Services PDB</b> " with the following items and as required for completeness and as per direction of engineer, attached specification CSPDCL standards and electrical Inspectorate standards.	SET	1	1	2		
	Incoming						
	1 Nos. 200 Amps TP feeder each having one number 3 phase 415 Volts, 50 Hz, 35 KA front operated 200 Amps. TP MCCB with isolable neutral complete in all respects.						
	Bus bar						
	1 set of 250 Amps, 415 volts, 3 phase, 4 wire colour coded aluminium TPN bus bar, after taking all derating factors.						
	Outgoings						
	2 Nos. 200 Amps TPN feeder each having one number 3 phase 415 Volts, 50 Hz, 25 KA front operated 200 Amps. TP MCCB with isolable neutral.						
	4 Nos. 100 Amps TPN feeder each having one number 3 phase 415 Volts, 50 Hz, 25 KA front operated 100 Amps. TP MCCB with isolable neutral.						
	Instruments						
	1 Nos. 0-500 Volts, 96 sq.mm voltmeter with protection fuses and selector switch.						
	1 Nos. 0-200 Amps, 96 sq.mm ammeter with 200/5A CT's and selector switch.						
	1 Set R Y B phase indicating lamps with protection fuses.						
	1 Lot of control wiring.						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	1 Set of designation plates.						
	Other items such as:-						
	Illumination light interlocked with doors.						
	Suitable Nos. and dia of Exhaust Fan with Temp. rise thermostat.						
	<b>Rate In Words</b>						
62	<b>Supply,Instalation,testing and commissioning of " LIFT PANEL PDB" with the following items and as required for completeness and as per direction of engineer, attached specification CSPDCL standards and electrical Inspectorate standards.</b>	SET	1	1	2		
	Incoming						
	1 Nos. 100 Amps TP feeder each having one number 3 phase 415 Volts, 50 Hz, 25 KA front operated 100 Amps. TP MCCB with isolable neutral complete in all respects.						
	Bus bar						
	1 set of 160 Amps, 415 volts, 3 phase, 4 wire colour coded aluminium TPN bus bar, after taking all derating factors.						
	Outgoings						
	4 Nos. 100 Amps TPN feeder each having one number 3 phase 415 Volts, 50 Hz, 25 KA front operated 100 Amps. TP MCCB with isolable neutral.						
	Instruments						
	1 Nos. 0-500 Volts, 96 sq.mm voltmeter with protection fuses and selector switch.						
	1 Nos. 0-100 Amps, 96 sq.mm ammeter with 100/5A CT's and selector switch.						
	1 Set R Y B phase indicating lamps with protection fuses.						
	1 Lot of control wiring.						
	1 Set of designation plates.						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	Other items such as:-						
	Illumination light interlocked with doors.						
	Suitable Nos. and dia of Exhaust Fan with Temp. rise thermostat.						
<b>Rate In Words</b>							
63	<b>Lift Panel</b>	SET	4	6	10		
	Supplying, fixing, testing & commissioning the wall mounted, vermin proof, dust proof, indoor duty, industrial type double door with IP-45 protection, access from the front and shall have a lock on an outer door, These sub distribution boards are suitable for surface / recessed mounting as per standard specifications with details as follows:						
	Incoming						
	1 No. 100 Amps.25 KA TP MCCB						
	Outgoings						
	1 Nos. 63 Amps FP feeder each having one number 3 phase 415 Volts, 50 Hz, 10 KA front operated 63 Amps.FP ELMCB						
	3 Nos.6A-20A (10 KA) SP MCB						
	Bus bars						
	1 set of 415V, 3 phase 4 wire, 50 HZ Colour coded copper bus bars.						
	Neutral Link						
	Suitable for all outgoing.						
	Earthing Terminals.						
	Earthing terminals suitable for all outgoing.						
<b>Rate In Words</b>							

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
66	Supply,Instalation,testing and commissioning of " <b>External Lighting Panel</b> " with the following items and as required for completeness and as per direction of engineer, attached specification CSPDCL standards and electrical Inspectorate standards.	Nos.	1	1	2		
	Incoming						
	1 Nos.100 Amps TPN feeder each having one number 3 phase 415 Volts, 50 Hz, 25 KA front operated 100 Amps.TP MCCB with suitable rating astronomic timer complete with contactor etc. and all other accessories.						
	Outgoings						
	7 Nos. 25 Amps FP feeder each having one number 3 phase 415 Volts, 50 Hz, 10 KA front operated 25 Amps.FP MCB						
	Bus bar						
	1 set of 160 Amps, 415 volts, 3 phase, 4 wire colour coded aluminium TPN bus bar, after taking all derating factors.						
	Instruments						
	1 No 0-500 Volts, 96 sq.mm voltmeter with protection fuses and selector switch.						
	1 No 0-100 Amps, 96 sq.mm ammeter with 100/5A CT's and selector switch.						
	1 Set R Y B phase indicating lamps with fuses.						
	1 Lot of control wiring.						
	1 Set of designation plates.						
	<b>Rate In Words</b>						
	<b>SUB STATION SAFETY EQUIPMENT :</b>						
67	Supply and fixing glass framed standard shock treatment chart in two different languages in A2 size.	Job	2	2	4		



Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
68	Supply and fixing of flame retardant electrical insulation mat of 3.0 mm thick to withstand upto 33 kV conforming to IS 15652:2006 with upto date amendments and having minimum width 1000mm (+ 20mm). The sufficient of adhesive / compound shall be supplied to fix the insulation mat on the front/rear side of electrical installation. Mat shall be ISI marked. Its leakage current at 11 KV shall not be more than 10 mA. The mat shall be welded by hot gas welding with filler material method by making V groove cut at joints with suitable welding cord of insulating material of matching colour to provide a seamless jointed surface as per IS :8002.	RM	10	10	20		
	<b>Rate In Words</b>						
69	Supply and fixing of flame retardant electrical insulation mat of 2.0 mm thick to withstand upto 3.3 kV conforming to IS 15652:2006 with upto date amendments and having minimum width 1000mm (+ 20mm). The sufficient of adhesive / compound shall be supplied to fix the insulation mat on the front/rear side of electrical installation. Mat shall be ISI marked. Its leakage current at 11 KV shall not be more than 10 mA. The mat shall be welded by hot gas welding with filler material method by making V groove cut at joints with suitable welding cord of insulating material of matching colour to provide a seamless jointed surface as per IS :8002.	RM	20	20	40		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
70	Supply and fixing single line diagram, schematic diagrams etc. of A1 size on suitable Aluminium sheet including lamination etc. as required complete on wall.	Job	1	1	2		
	<b>Rate In Words</b>						
71	Supply & fixing following danger notice plate made of mild steel sheet of at least 2mm thick & vitreous enamelled white on both sides and with inscription in signal red colour on front side as required.						
a	Danger board for 33KV size 250mm x 200mm.	Each	2	2	4		
	<b>Rate In Words</b>						
b	Danger board for 433V size 200mm x 150mm .	Each	5	5	10		
	<b>Rate In Words</b>						
c	Caution board printed in signal red "Man on Line", size 200mm x 150mm .	Each	2	2	4		
	<b>Rate In Words</b>						
d	Caution board printed in signal red "Don't switch on", size 200mm x 150mm .	Each	2	2	4		
	<b>Rate In Words</b>						
72	Supply and fixing G.I. Fire Buckets 13 litre capacity painted in post office red colour and written with white paint 'FIRE', filled with Dry Sand and suitable hanging arrangement on wall hook made out of 13 mm dia MS rod & conforming IS 2546 - 1974.	Each	6	6	12		
	<b>Rate In Words</b>						
73	Supply of First Aid Box containing material as prescribed by St. John Ambulance brigade OR Indian Red Cross conforming to IS 2217-1963.	Each	4	4	8		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
74	<b>DIESEL GENERATING SETS</b>						
	Supply, instalation, erection, testing and commissioning of the following rating diesel generating set (on an existing RCC plateform constructed as per mnfr. details) @ .8 p.f. (continuous rating), 415 Volts, 3 phase 4 wire, 50 Hz AC alternator coupled on a common base frame with a radiator cooled Diesel Engine complete with all standard accessories, floor mounted, fixed type, vermin proof, dust proof, outdoor duty (can be kept outside, i.e. open to sky) silent enclosure suitable for the specified rating DG Sets for sound proof treatment, so that the sound level should not be more than 72 dB at 3(Three) meter distance from the running DG sets, service manual, self starting device, fly wheel, coupling with guard, V belts,						
	Radiator, instrumentation panel, sufficient number of ant vibration isolation pads, grouting bolts, residential silencer, exhaust flexible coupling, 24 volts chargeable batteries set as per mnfr. recommendation, battery charger, Neutral CT's of suitable ratio and class PS accuracy for Alternator REF protection etc., sufficient quantity of first filling of engine oil, gear oil, high spped diesel oil (enough for atleast 8 Hrs. running at full load) etc. The erection and commissioning works involve all the required approvals from local SEB or all other statutory authorities/agencies before completion of work.						
	250 KVA	NOS.	1	1	2		
	NOTE						
	(i) Antivibration mounting pads to be incorporated during installation.						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	(ii) Silencer pipe of engine is to be extended out of the building with suitable dia of pipe duly painted with anticorrosive paint and heat insulated with suitable asbestos rope duly claded with plaster of paris, rate of which deemed to be included in the unit rate of Gen set.						
	(iii) Enough Capacity Diesel for 8 Hrs. and first filling of Lubricating oil shall be provided by the contractor, cost of which deemed to be included in the unit rate of DG Set.						
	(iv) The erection and commissioning works involve all the required approvals from concerned statutory authorities / agencies before completion of work.						
	Supply, erection, testing and commissioning of Exhaust pipes for DG Sets, MS pipes with bends, flanges, and all other accessories require to complete the job in all maners as per specifications and requirements. Exh. pipe shall be insulated with low resin bonded wool of min 75mm. thickness min. 144Kg/ m3 density.						
	150mm X 4.85mm thick medium grade or as per mnfr. recommendation	RM	20	20	40		
	<b>Rate In Words</b>						
	<b>FIXTURES</b>						
	Supplying, storing, assembling, fixing, testing & commissioning the following fixtures including cost of hangers, chains or any other item required for fixing including flexible wire from outlet to fitting.						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
75	Indoor duty surface mounted fixture made of CRCA sheet steel suitable for 2 x 36 W compact fluorescent lamp. The work involves assembly, fixing, connecting, commissioning and testing of the fixtures. The fitting will be complete with 2 x 36W compact fluorescent lamp, vitreous enamelled reflector, ballasts, starters, p.f., improving capacitors, holders, control wiring etc. as required. <b>Bajaj Cat No. BASM 236(530188) SGW OR Wipro Cat No.CRESCENT WVP 44236 Or Approved Equivalent</b>	Nos	195	96	291		
<b>Rate In Words</b>							
76	Indoor duty surface mounted LED STRIP warm white fixture made of CRCA sheet steel suitable for installing in cove. The work involves assembly, fixing, connecting, commissioning and testing of the fixtures. The fitting will be complete with ballasts, control wiring etc. as required. <b>From Approved Brands IN RM</b>	MTR.	652	267	919		
<b>Rate In Words</b>							
77	Indoor duty recessed mounted decorative type fixture made of CRCA sheet steel suitable for 12 W high power LED lamp. The work involves assembly, fixing, connecting, commissioning and testing of the fixtures. The fitting will be complete with LED, control wiring, control gear etc. as required. <b>BAJAJ: Cat No. BJSM 012( 110813)OR Wipro Cat PLAY No.LD44-012 Or Approved Equivalent</b>	Nos.	964	431	1395		
<b>Rate In Words</b>							

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
78	Indoor duty recessed mounted decorative type compact flourescent lamp fixture made of CRCA sheet steel suitable for 2 Nos 36 W compact flourescent lamp. The work involves assembly, fixing, connecting, commissioning and testing of the fixtures. The fitting will be complete with 2 x 36w, copper ballasts, starters, p.f., improving capacitors, holders, control wiring etc. as required. <b>BAJAJ Cat No. BSTI 236(53851) OR Wipro SPACIO Cat No WVP 52236 =.</b> <b>Or Approved Equivalent</b>	Nos.	623	293	916		
	<b>Rate In Words</b>						
79	Indoor duty surface / Wall mounted fixture made of CRCA sheet steel suitable for 9 Watt super flex LED. The work involves assembly, fixing, connecting, commissioning and testing of the fixtures. The fitting will be complete with LED, ballasts, control wiring etc. as required. <b>BAJAH: Cat No. BJSJ 0303 (220253) OR Wipro Cat No KOLORS LD20-003-045 (3X3W). Or Approved Equivalent</b>	Nos	116	193	309		
	<b>Rate In Words</b>						
80	Indoor duty recessed mounted decorative type metel halide lamp downlighter fixture made of CRCA sheet steel suitable for 1 Nos 70 W metel halide lamp. The work involves assembly, fixing, connecting, commissioning and testing of the fixtures. The fitting will be complete with 1 Nos. metel halide lamp, ballasts, starters, p.f., improving capacitors, holders, control wiring etc. as required. <b>Bajaj: Cat No. BJD 70 MH(161826) OR Wipro Cat No WCH 50070 Or Approved Equivalent</b>	Nos.	38	0	38		
	<b>Rate In Words</b>						
	<b>COMPUTER SYSTEM</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
81	Supplying and laying cable trunking /raceway with two coparments of GI 1.6 mm thick specially treated corrosion proof rectangular profiles high tensile strenth, top and bottom plates are double folded and spot welded together to the full hight of the traks to give the required regidity and to prevent seepage of concrete or screed water ect. complete with removable 12 SWG stenless steel covers, rigt angles and 145° bends, adapters, tee peices, couplers etc. all as per specification of the following sizes.						
a	300mmx38mmx1.6mmthk.	Rmtr	750	500	1250		
	<b>Rate In Words</b>						
b	600mmx38mmx1.6mmthk.	Rmtr	1000	700	1700		
	<b>Rate In Words</b>						
82	Supplying and installation of underfloor fly over junction box of following sizes to be connected to the underfloor trunking for drawing of cables for LAN and VOICE. The cover plate shall be screwed with 1.6 mm thick this should be of GI type.						
a	300 mm x 300 mm x 40 mm GI	Nos.	20	11	31		
	<b>Rate In Words</b>						
b	600mmx38mmx1.6mmthk.	Rmtr	42	26	68		
	<b>Rate In Words</b>						
83	Supplying and fixing suitable size MS boxes (with hinged cover and duly painted) recessed in wall with adequate knockouts including chase cutting and making the surface good and making connections complete as required as a junction box in shaft	Nos.	16	13	29		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>EARTHING</b>						
84	Supply, installation, testing and commissioning of Maintenance Free Gel Earthing or equivalent- Dual Pipe (G.I) Technology of 3 mtr long 80/100 mm dia with the lead terminal at top filled with special earth inhenceing compound for lowering the effective ground impedence value to less than one ohm and ensuring that it should be less than one ohm by adding more earthing pits as a combined sets.The earthing inhancement compound shall boost moisture to retain the moisture duly tested & certified by CPRI & CETL Laboratory.Incase more earthing pits are added then interconnecting these pits shall be included in this item.	Nos.	34	34	68		
	<b>Rate In Words</b>						
85	<b>UPS SYSTEM</b>						
	Supply, installation, testing and commissioning of 6 kVA, Three phase input, single phase out put, true On Line UPS system with 20 minutes SMF battery back up (full load),with output isolation transformer, including all accessories, SMF batteries with powder coated MS cabinet including all accessories as required complete having following specification.						
	Fully digital controlled based on DSP						
	Power factor corrected front end > 0.9						
	Pure sine wave output						
	Full time output Voltage and frequency regulation						
	Auto regulation of battery end voltage						
	Intellegent interface with LED/ LCD display						
	Static bypass switch and manual bypass switch						
	Auto temperature compensation	Each	1	1	2		
	<b>Rate In Words</b>						



Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>External Illumination</b>						
86	Supply, storing, handling, assembling, fixing, testing & commissioning the <b>following fixtures ( under items 87.1)</b> including cost of hangers, chains, MS jali Cover and the civil construction materials are the part of the supply against this assignment or any other item required for fixing including flexible wire from outlet to fitting.						
<b>87</b>	<b>Flood Lighting</b>						
	Supply, Installation, wiring, connection, testing and commissioning of flood light conforming to the technical specifications and drawings forming part of this document. The work for each light point comprises of:	Nos.	20	16	36		
	Supply, Installation, Testing , Mounting junction box suitable for terminating incoming and outgoing 4-core cable along with suitable rating MCB.						
	Supplying, Storing, Handling and Mounting the flood light fixture with one no. 400 watts HPI-T lamp on brick pedestal, Connecting the fixture by using suitable size PVC flexible copper wires of colour green, red and black to the junction box.(The civil construction materials are the part of the supply against this assignment)						
	Testing the connections and completing the installation						
	<b>Rate In Words</b>						
	<b>FIRE ALARM SYSTEM</b>						
88	AUTOMATIC ANALOGUE ADDRESSABLE FIRE DETECTION & ALARM SYSTEM						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
88.1	Supply, Installation, Testing & Commissioning of 16 bit intelligent Addressable Fire Alarm Panel suitable forSupply, Installation, Testing & Commissioning of 16 bit intelligent Addressable Fire Alarm Panel suitable for 230V+ /- 10% with 10 loops ( each loop accessing at least 120 Devices ) including battery backup. The panel shall be microprocessor based with its own micro controller, memory, communication module and fire device loop interface cards for intelligent initiating and indicating devices and should also be networkable in peer-to-peer basis with other Addressable Fire Alarm Panels. The Panel shall be able to give pin point location of all Fire/Fault conditions of addressable units via the address codes for each unit. The Panel shall also be able to automatically switch off all Control Switches when ever any Alarm is triggered. The panel shall have Keypad operation, L C D unit to indicate Fire / Fault Signal of individual unit, etc complete in all respects. Battery shall be SMF type and shall be capable of operating the system for 24 hrs normal working conditions and capable of operating the system for 2 hrs during emergency conditions. The Panel shall also have Logic hardware and software built into it for initiating specific tripping, time delay operation of hooter. Panel shall be networked to Main Panel.	Each	1	0	1		
	(a) programming software for the system						
	(b) automatic system test activates						
	(c) detector sensitivity adjustments						
	(d) alarm verification						
	(e) Alpha/numerical display						
	(f) provision to connect to PCs and external printers						
	(g) Support modbus and bacnet protocol.						
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
88.2	Supply, Installation, Testing & Commissioning of 16 bit intelligent Addressable Fire Alarm Panel suitable forSupply, Installation, Testing & Commissioning of 16 bit intelligent Addressable Fire Alarm Panel suitable for 230V+ /- 10% with 8 loops ( each loop accessing at least 120 Devices ) including battery backup. The panel shall be microprocessor based with its own micro controller, memory, communication module and fire device loop interface cards for intelligent initiating and indicating devices and should also be networkable in peer-to-peer basis with other Addressable Fire Alarm Panels. The Panel shall be able to give pin point location of all Fire/Fault conditions of addressable units via the address codes for each unit. The Panel shall also be able to automatically switch off all Control Switches when ever any Alarm is triggered. The panel shall have Keypad operation, L C D unit to indicate Fire / Fault Signal of individual unit, etc complete in all respects. Battery shall be SMF type and shall be capable of operating the system for 24 hrs normal working conditions and capable of operating the system for 2 hrs during emergency conditions. The Panel shall also have Logic hardware and software built into it for initiating specific tripping, time delay operation of hooter. Panel shall be networked to Main Panel.	Each	0	1	1		
	(a) programming software for the system						
	(b) automatic system test activates						
	(c) detector sensitivity adjustments						
	(d) alarm verification						
	(e) Alpha/numerical display						
	(f) provision to connect to PCs and external printers						
	(g) Support modbus and bacnet protocol.						
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
88.3	Providing, installing, testing and commissioning of Repeater Panel for Fire Alarm System with piezo sounder, LCD alpha numeric character display with accept / reset buttons for alarm address of any sensor / field device. The Repeater Panel shall only provide field device address with room number. Analogue Output is not required. The Panel shall be connected to the Fire Alarm Panel.	Each	1	1	2		
<b>Rate In Words</b>							
88.4	Supply, installation, testing and commissioning of intelligent Addressable type Optical Smoke Detector complete with all accessories like base. base box, etc. to be installed under/above false ceiling, roof and concealed space, etc. interconnecting to loop cable complete as required	Each	526	293	819		
<b>Rate In Words</b>							
88.5	Supply, installation, testing and commissioning of intelligent Addressable type Optical Smoke cum heat Detector (3D)complete with all accessories like base. base box, etc. to be installed under/above false ceiling, roof and concealed space, etc. interconnecting to loop cable complete as required	Each	250	146	396		
<b>Rate In Words</b>							
88.6	Supply, installation, testing and commissioning of of Response Indicators outside the rooms for getting fire indications of detectors installed above false ceiling area interconnecting to loop cable complete as required.	Each	226	114	340		
<b>Rate In Words</b>							

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
88.7	Supply, installation, testing and commissioning of addressable Loop Isolators to protect one area or a number of devices with complete set to be installed under/above false ceiling, roof, concealed space, wall, etc. interconnecting to loop cable complete as required.	Each	12	9	21		
	<b>Rate In Words</b>						
88.8	Supply, installation, testing and commissioning of Addressable type Manual Call Point (break glass type) complete with Input Module, push button, enclosed in box with provision for cable or conduit coupling. The unit to be painted fire red outside, white inside and written 'In case of fire break glass'.	Each	20	16	36		
	<b>Rate In Words</b>						
88.9	Providing, installing, testing and commissioning of UL listed Hooter cum Strobe with Base plate	Each	20	16	36		
	<b>Rate In Words</b>						
88.10	Supply and laying of 2 x 1.5 mm <sup>2</sup> MICC mineral insulated copper cable complete with all accessories required e.g. shaddles, thimbles etc. directly clamped either on surface or recess or above false ceiling or concealed in wall etc. for control cabling of Fire detection and alarm devices and interconnecting them with panels etc.	Metre	12000	7600	19600		
	<b>Rate In Words</b>						
	<b>SUBOTAL ELECTRICAL COST</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
<b>C</b>	<b>PUBLIC HEALTH WORKS</b>						
	<b>I-Sanitary Fixture &amp; C.P.Fitting</b>						
1	Providing and fixing water closet squatting pan (Indian type W.C. pan), 100mm sand cast Iron P or S trap, 10 litre low level P.V.C. flushing cistern (same colour) conforming to IS : 7231, with flush bend and other fittings and fixtures complete including cutting and making good the walls and floors wherever required :						
	White Orissa pattern W.C. pan of size 580x440 mm	Each	24	12	36		
	<b>Rate In Words</b>						
2	Providing and fixing vitreous china water closet (European type W.C. pan) with white ISI marked plastic seat and lid, 10 litre low level white P.V.C. flushing cistern (same colour), conforming to IS : 7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required :						
	White wall hung type	each	35	17	52		
	<b>Rate In Words</b>						
3	Providing and fixing white colour vitreous china Wall mounted water closet (European type W.C pan) with fitting, seat cover, with fittings, uPVC Connector & Necessary Hanging Arrangements, Rubber Seal etc. complete including cutting and making good the walls and floors where ever required.						
a	W.C pan with Solid plastic seat cover	Each	94	25	119		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
4	Providing and fixing Concealed Cisterns Gebrit ( Twinline ) including all necessary fixing arrangements etc complete.	Each	94	25	119		
	<b>Rate In Words</b>						
5	Providing and fixing 15 mm nominal bore uplasticised PVC connection pipe with C.P brass nuts collar and PVC bush of approved quality and colour:						
a	30 CM length	each	21	25	46		
	<b>Rate In Words</b>						
b	45 CM length	each	300	29	329		
	<b>Rate In Words</b>						
6	Providing and fixing white vitreous china urinal basin with waste fitting as per IS : 2556, and other couplings in C.P. brass complete:						
	Flat back half stall urinal of size 580x380x350mm	each	48	24	72		
	<b>Rate In Words</b>						
7	Providing and fixing sensor and solonoid valves of approved make with C.P flange spreadset, including connecting spreader for individual urinals complete in all respects including cutting and making good the walls where ever required.	Each	48	24	72		
	<b>Rate In Words</b>						
8	Providing and fixing vitreous china wash basin with C.I. brackets, 32 mm C.P. brass waste of standard pattern, including painting of brackets, cutting and making good the walls wherever required :						
a	White colour Size: 1000mm X 470mm	each	94	25	119		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
b	White Oval or round size: 560x410mm.	each	74	44	118		
	<b>Rate In Words</b>						
9	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink without drain board as per IS 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required :						
a	610x510 mm bowl depth 200 mm.	each	11	8	19		
	<b>Rate In Words</b>						
10	Providing and fixing flexible P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.						
a	32 mm dia	each	74	44	118		
	<b>Rate In Words</b>						
b	40 mm dia	each	11	8	19		
	<b>Rate In Words</b>						
11	Providing and fixing cast iron grating for gully trap.						
a	150x150mm square	each	20	0	20		
	<b>Rate In Words</b>						
12	Providing and fixing 600x450 mm beveled edge 4mm mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	each	74	50	124		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
13	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 :						
a	5mm thick mirror	sqm	94	25	119		
	<b>Rate In Words</b>						
14	Providing and fixing 600x120x5mm glass shelf with edges rounded off supported on anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	each	94	25	119		
	<b>Rate In Words</b>						
15	Providing and fixing 15 mm nominal bore C.P. brass fittings of approved make and conforming to IS:8931 including C.P. brass extension if required:						
a	Bib cock (450gms)	each	59	24	83		
	<b>Rate In Words</b>						
b	Long nose bib cock (500gms)	each	11	8	19		
	<b>Rate In Words</b>						
c	Long body bib cock (500gms)	each	9	24	33		
	<b>Rate In Words</b>						
d	Two way bib cock (800gms)	each	59	24	83		
	<b>Rate In Words</b>						
e	Angle valve for basin mixer and geyser points (450gms)	each	321	150	471		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
f	Bottle trap set with extension pipes	each	94	23	117		
	<b>Rate In Words</b>						
g	Toilet paper holder	each	94	25	119		
	<b>Rate In Words</b>						
h	Soap dish plate	each	75	25	100		
	<b>Rate In Words</b>						
i	Towel rail (600mm long x 20mm dia)	each	94	25	119		
	<b>Rate In Words</b>						
16	Providing and fixing stainless steel drain jali of approved make/quality.	each	252	52	304		
	<b>Rate In Words</b>						
17	Providing and fixing complete set of sanitary fixtures for handicapped toilets, approved make comprising of EWC - P , Cistern, Seat Cover, Twin Flush Fittings, Wash Basin 450x300, Half pedestal, 1 faucet with spatula lever, 1 hinged rail and 2 grab bars, including cutting and making good the walls and floors wherever required complete as per directions of Engineer incharge.	each	4	3	7		
	<b>Rate In Words</b>						
18	Providing and fixing C.P. brass twin robe hooks two way of approved make including cutting and making good the walls wherever required complete to the satisfaction of Engineer in charge.	Each	94	25	119		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
19	Providing and fixing C.P. brass soap dish of approved make including cutting and making good the walls wherever required complete to the satisfaction of Engineer in charge.	Each	94	25	119		
<b>Rate In Words</b>							
20	Providing and fixing vitreous china Division Plate of approved make with expandable anchor fasteners with C.P. brass bolts and washers complete, including cutting and making good the walls where required to the satisfaction of Engineer in charge.	Each	24	20	44		
<b>Rate In Words</b>							
21	Providing and fixing CP brass hand shower (health faucets) with 8mm dia 1meter long flexible tube and wall of approved make with all fittings and fixtures complete including cutting and making good the walls and floors wherever required:	Each	94	25	119		
<b>Rate In Words</b>							
22	Providing C.P. Brass Pillar Cock ( Autoclosing System) ( Single hole) & 600mm long Copper pipes & nuts etc including necessary cutting and making good of approved make (for handwash and wash basin)	Each	74	44	118		
<b>Rate In Words</b>							
23	Florentine Officers Toilet	Each	94	25	119		
<b>Rate In Words</b>							
<b>Soil Waste ,Vent &amp; Rain water Pipes</b>							

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
24	Providing fixing and push on jointing sand cast iron S&S pipe as per IS: 3989 for soil, waste and vent pipes including EPDM rubber gasket complete:						
a	100 mm dia.	metre	1685	1100	2785		
	<b>Rate In Words</b>						
b	75 mm dia:	metre	60	35	95		
	<b>Rate In Words</b>						
c	150 mm dia.	metre	120	105	225		
	<b>Rate In Words</b>						
25	Providing fixing and push on jointing sand cast iron S&S bend with access door of required degree as per IS: 3989, insertion rubber washer 3 mm thick, bolts and nuts including EPDM rubber gasket complete:.						
a	100 mm dia	each	57	18	75		
	<b>Rate In Words</b>						
b	75 mm dia	each	3	3	6		
	<b>Rate In Words</b>						
c	150 mm dia	each	6	6	12		
	<b>Rate In Words</b>						
26	Providing fixing and push on jointing sand cast iron S&S plain bend of required degree as per IS: 3989 including EPDM rubber gasket complete:.						
a	100 mm dia	each	110	84	194		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
b	75 mm dia	each	3	3	6		
	<b>Rate In Words</b>						
c	150 mm dia	each	6	6	12		
	<b>Rate In Words</b>						
27	Providing fixing and push on jointing sand cast iron S&S heel rest sanitary bend as per IS: 3989 including EPDM rubber gasket complete::						
a	100 mm dia	each	45	10	55		
	<b>Rate In Words</b>						
b	75 mm dia	each	1	0	1		
	<b>Rate In Words</b>						
c	150 mm dia	each	2	2	4		
	<b>Rate In Words</b>						
28	Providing fixing and push on jointing sand cast iron S&S double equal junction with access door of required degree as per IS: 3989, insertion rubber washer 3 mm thick, bolts and nuts including EPDM rubber gasket complete:						
a	100x100x100x100mm	each	2	5	7		
	<b>Rate In Words</b>						
b	75x75x75x75 mm	each	1	1	2		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
29	Providing fixing and push on jointing sand cast iron S&S double equal plain junction of required degree as per IS: 3989 including EPDM rubber gasket complete:						
a	100x100x100x100 mm	each	2	6	8		
	<b>Rate In Words</b>						
b	75x75x75x75 mm	each	1	1	2		
	<b>Rate In Words</b>						
30	Providing fixing and push on jointing sand cast iron S&S single equal junction with access door of required degree as per IS: 3989, insertion rubber washer 3 mm thick, bolts and nuts including EPDM rubber gasket complete:						
a	100x100x100 mm	each	185	100	285		
	<b>Rate In Words</b>						
b	75x75x75 mm	each	4	2	6		
	<b>Rate In Words</b>						
c	150x150x150mm	each	3	3	6		
	<b>Rate In Words</b>						
31	Providing fixing and push on jointing sand cast iron S&S single equal plain junction of required degree as per IS: 3989 including EPDM rubber gasket complete::						
a	100x100x100 mm	each	105	62	167		
	<b>Rate In Words</b>						
b	75x75x75 mm	each	2	2	4		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
c	150x150x150mm	each	3	3	6		
	<b>Rate In Words</b>						
32	Providing fixing and push on jointing sand cast iron S&S double unequal junction with access door of required degree as per IS: 3989, insertion rubber washer 3 mm thick, bolts and nuts including EPDM rubber gasket complete:						
a	100x100x75x75 mm	each	1	1	2		
	<b>Rate In Words</b>						
33	Providing fixing and push on jointing sand cast iron S&S double unequal junction of required degree as per IS: 3989 including EPDM rubber gasket complete:						
a	100x100x75x75 mm	each	1	1	2		
	<b>Rate In Words</b>						
34	Providing fixing and push on jointing sand cast iron S&S single unequal junction with access door of required degree as per IS: 3989, insertion rubber washer 3 mm thick, bolts and nuts including EPDM rubber gasket complete:						
a	100x100x75 mm	each	2	1	3		
	<b>Rate In Words</b>						
35	Providing fixing and push on jointing sand cast iron S&S single unequal plain junction of required degree as per IS: 3989 including EPDM rubber gasket complete:						
a	100x100x75 mm	each	2	2	4		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
36	Providing fixing and push on jointing sand cast iron S&S double equal plain invert branch ( Y ) of required degree as per IS: 3989 including EPDM rubber gasket complete:						
a	100x100x100x100 mm	each					
	<b>Rate In Words</b>						
b	75x75x75x75 mm	each					
	<b>Rate In Words</b>						
37	Providing fixing and push on jointing sand cast iron S&S single equal plain invert branch ( Y ) of required degree as per IS: 3989 including EPDM rubber gasket complete:						
a	100x100x100 mm	each	128	95	223		
	<b>Rate In Words</b>						
b	75x75x75 mm	each	3	3	6		
	<b>Rate In Words</b>						
38	Providing fixing and push on jointing sand cast iron S&S double unequal plain invert branch ( Y ) of required degree as per IS: 3989 including EPDM rubber gasket complete:						
a	100x100x75x75 mm	each	1	1	2		
	<b>Rate In Words</b>						
b	150x150x100x100mm	each	0	2	2		
	<b>Rate In Words</b>						
39	Providing fixing and push on jointing sand cast iron S&S single unequal plain invert branch ( Y ) of required degree as per IS: 3989 including EPDM rubber gasket complete:						
a	100x100x75 mm	each	2	1	3		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
b	150x150x100mm	each	25	25	50		
	<b>Rate In Words</b>						
40	Providing fixing and push on jointing sand cast iron S&S off sets as per IS: 3989 including EPDM rubber gasket complete:						
a	75 mm dia, 76 mm projected	each	1	1	2		
	<b>Rate In Words</b>						
b	100 mm dia, 76 mm projected	each	7	7	14		
	<b>Rate In Words</b>						
c	75 mm dia, 114 mm projected	each	1	1	2		
	<b>Rate In Words</b>						
d	100 mm dia, 114 mm projected	each	5	5	10		
	<b>Rate In Words</b>						
e	75 mm dia, 152 mm projected	each	1	1	2		
	<b>Rate In Words</b>						
f	100 mm dia, 152 mm projected	each	4	4	8		
	<b>Rate In Words</b>						
41	Providing fixing and push on jointing sand cast iron S&S door piece as per IS: 3989 including EPDM rubber gasket complete:						
a	100 mm	each	12	10	22		
	<b>Rate In Words</b>						
b	75 mm	each	2	2	4		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
42	Providing fixing and push on jointing sand cast iron S&S terminal guard as per IS: 3989 including EPDM rubber gasket complete:						
a	100 mm	each	12	12	24		
	<b>Rate In Words</b>						
b	75 mm	each	2	2	4		
	<b>Rate In Words</b>						
43	Cutting chases in brick masonry walls for following diameter sand cast iron/ centrifugally cast (spun) iron pipes and making good the same with cement concrete 1:3:6 ( 1 cement : 3 coarse sand :6 graded stone aggregate 12.5 mm nominal size) including necessary plaster and pointing in cement mortar 1:4 (1 cement : 4 coarse sand) :						
a	100 mm dia.	metre	9	7	16		
	<b>Rate In Words</b>						
b	75 mm dia.	metre	1	1	2		
	<b>Rate In Words</b>						
c	150 mm dia	metre	2	2	4		
	<b>Rate In Words</b>						
44	Painting sand cast iron/ centrifugally cast (spun) iron soil, waste vent pipes and fittings with paint of any colour over a coat of primer (of approved quality) for new work :						
a	100 mm diameter pipe	metre	1050	980	2030		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
b	75 mm diameter pipe	metre	60	35	95		
	<b>Rate In Words</b>						
c	150 mm dia	metre	105	105	210		
	<b>Rate In Words</b>						
45	Repainting sand cast iron/ centrifugally cast iron (spun) iron, soil, waste, vent pipes and fittings with paint of any colour such as chocolate, grey or buff etc :						
	100 mm diameter pipe	metre	1050	980	2030		
	<b>Rate In Words</b>						
	75 mm diameter pipe	metre	35	35	70		
	<b>Rate In Words</b>						
	150 mm diameter pipe	each	105	105	210		
	<b>Rate In Words</b>						
46	Providing and fixing M.S. holder bat clamp of approved design to sand cast iron/ cast iron (spun) pipes comprising of M.S. flat brackets made of 50x5mm flat of specified shape, projecting 75mm outside the wall surface and fixed on wall with 4nos, 6mm dia expansion hold fasteners including drilling necessary holes in brick wall/ CC/ RCC surface and the cost of bolts etc. The pipes shall be fixed to the already fixed brackets with the help of 30mm x1.6mm galvanised M.S. flats of specified shape and of total length 420mm and shall be fixed with M.S. nuts, bolts, & washers of size 25x6mm, one bolts on each side of the pipe.						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
a	Total bracket length 580mm of approved shape and design (for single, 100mm dia pipe).	each	1165	125	1290		
	<b>Rate In Words</b>						
b	Total bracket length 810mm of approved shape and design (for two, 100mm dia pipes).	each	15	15	30		
	<b>Rate In Words</b>						
c	Total bracket length 1040mm of approved shape and design (for three, 100mm dia pipes).	each	45	45	90		
	<b>Rate In Words</b>						
47	Providing and fixing G.I. inlet fitting with maximum 3 inlets 32,40 or 50 mm size fabricated from 100mm dia, upto 600mm length G.I. pipe and require size of Socket including welding and set in cement concrete as per standard drawing complete including two coats of bitumastic paint .	Each	181	81	262		
	<b>Rate In Words</b>						
48	Providing and fixing CP Brass floor cleanout plug of approved make as per drawing complete with G.I. Socket jointed to drainage pipe outlet with lead caulked joint.						
a	100 mm dia	Each	55	36	91		
	<b>Rate In Words</b>						
b	150 mm dia	Each	8	0	8		
	<b>Rate In Words</b>						
49	Providing and fixing G.I. Reducer Elbow jointed to drainage pipe as per standard drawing complete including two coats of bitumastic paint .						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	100x50 mm dia	Each	72	52	124		
	<b>Rate In Words</b>						
50	Providing and fixing on wall face UV stabilized Unplasticised Rigid PVC pipes (single socketed) having 3.2mm wall thickness conforming to IS : 13592 (4kg/sqcm) including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion.						
a	75 mm dia pipe.	metre	12	6	18		
	<b>Rate In Words</b>						
b	110 mm dia pipe.	metre	525	400	925		
	<b>Rate In Words</b>						
51	Providing and fixing on wall face UV stabilized Unplasticised -PVC moulded fittings/ accessories having 3.2mm wall thickness for Rigid PVC pipes conforming to IS : 13592 (heavy) jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion.						
a	Coupler						
	110 mm	each	45	21	66		
	<b>Rate In Words</b>						
b	Single tee with door						
	110x110x110 mm	each	35	21	56		
	<b>Rate In Words</b>						
c	Single tee without door						
i	75x75x75 mm	each	3	2	5		
	<b>Rate In Words</b>						
ii	110x110x110 mm	each	35	21	56		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
d	Bend 45°						
i	75 mm bend	each	2	2	4		
	<b>Rate In Words</b>						
ii	110 mm bend	each	13	0	13		
	<b>Rate In Words</b>						
e	Plain bend						
i	75 mm bend	each	2	2	4		
	<b>Rate In Words</b>						
ii	110 mm bend	each	13	21	34		
	<b>Rate In Words</b>						
f	Vent cover						
i	75 mm	each	1	1	2		
	<b>Rate In Words</b>						
ii	110 mm	each	35	21	56		
	<b>Rate In Words</b>						
52	Providing and fixing cast iron trap of self cleansing design with sand cast iron screwed down or hinged grating with or without vent, arm complete, including cost of cutting and making good the walls and floors						
	100mm inlet and 100mm outlet centrifugally cast (spun) iron S&S as per IS: 3989.	each	181	112	293		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>WATER SUPPLY SYSTEM</b>						
53	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes in concealed in wall, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints including cutting chases and making good the walls etc complete as per direction of Engineer in Charge.						
a	20 mm nominal outer dia .Pipes.	metre	835	295	1130		
	<b>Rate In Words</b>						
b	25 mm nominal outer dia .Pipes.	metre	185	85	270		
	<b>Rate In Words</b>						
c	32 mm nominal outer dia .Pipes.	metre	95	40	135		
	<b>Rate In Words</b>						
54	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes in trenches, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings. This included jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge.						
a	20 mm nominal outer dia pipes	metre	32	20	52		
	<b>Rate In Words</b>						
b	25 mm nominal outer dia pipes	metre	55	35	90		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
c	32 mm nominal outer dia pipes	metre	65	45	110		
	<b>Rate In Words</b>						
d	40 mm nominal outer dia pipes	metre	95	75	170		
	<b>Rate In Words</b>						
e	50 mm nominal outer dia pipes	metre	550	450	1000		
	<b>Rate In Words</b>						
55	Providing and fixing on wall surface G.I. pipes medium class complete with G.I. fittings and clamps, including cutting, making good the walls etc. and testing of joints complete:						
a	15 mm dia. nominal bore	metre	15	15	30		
	<b>Rate In Words</b>						
b	20 mm dia. nominal bore	metre	35	30	65		
	<b>Rate In Words</b>						
c	25 mm dia. nominal bore	metre	75	35	110		
	<b>Rate In Words</b>						
d	32 mm dia. nominal bore	metre	125	50	175		
	<b>Rate In Words</b>						
e	40 mm dia. nominal bore	metre	135	45	180		
	<b>Rate In Words</b>						
f	50 mm dia. nominal bore	metre	85	125	210		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
56	Providing and fixing concealed in wall G.I. pipes medium class complete with G.I. fittings and clamps, including painting with anti corrosive bitumastic paint, cutting chases, making good the walls etc. and testing of joints complete:						
a	15 mm dia nominal bore	metre	12	25	37		
	<b>Rate In Words</b>						
b	20 mm dia nominal bore	metre	24	12	36		
	<b>Rate In Words</b>						
57	Providing and laying in trenches/above terrace/inside shaft G.I. pipes medium class complete with G.I. fittings including excavation of trenches, refilling the same and testing of joints complete:						
a	15 mm dia. nominal bore	metre	6	6	12		
	<b>Rate In Words</b>						
b	20 mm dia. nominal bore	metre	6	6	12		
	<b>Rate In Words</b>						
c	25 mm dia. nominal bore	metre	6	6	12		
	<b>Rate In Words</b>						
d	32 mm dia. nominal bore	metre	6	6	12		
	<b>Rate In Words</b>						
e	40 mm dia. nominal bore	metre	12	12	24		
	<b>Rate In Words</b>						
f	50 mm dia. nominal bore	metre	25	55	80		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
g	65 mm dia. nominal bore	metre	85	55	140		
	<b>Rate In Words</b>						
h	80 mm dia. nominal bore	metre	175	6	181		
	<b>Rate In Words</b>						
58	Making connection of G.I. distribution branch in G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete: (Dia of main line to be measured)						
	50 mm nominal bore	each	2	2	4		
	<b>Rate In Words</b>						
59	Providing and fixing G.I. Union in G.I. pipe (New work) including cutting and threading the pipe and making long screws etc. complete:						
a	15 mm nominal bore	each	4	2	6		
	<b>Rate In Words</b>						
b	20 mm nominal bore	each	125	42	167		
	<b>Rate In Words</b>						
c	25 mm nominal bore	each	13	13	26		
	<b>Rate In Words</b>						
d	32 mm nominal	each	12	21	33		
	<b>Rate In Words</b>						
e	40 mm nominal bore	each	17	5	22		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
f	50mm nominal bore	each	10	3	13		
	<b>Rate In Words</b>						
g	65mm nominal bore	each	2	2	4		
	<b>Rate In Words</b>						
h	80 mm nominal bore	each	3	0	3		
	<b>Rate In Words</b>						
60	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):						
a	25 mm nominal bore	each	3	7	10		
	<b>Rate In Words</b>						
b	32 mm nominal bore.	each	12	17	29		
	<b>Rate In Words</b>						
c	40 mm nominal bore	each	17	3	20		
	<b>Rate In Words</b>						
d	50 mm nominal bore	each	10	9	19		
	<b>Rate In Words</b>						
e	65 mm nominal bore	each	1	4	5		
	<b>Rate In Words</b>						
f	80 mm nominal bore	each	3	0	3		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
61	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :						
	15 mm nominal bore	each	4	2	6		
	<b>Rate In Words</b>						
	20 mm nominal bore	each	125	34	159		
	<b>Rate In Words</b>						
	25 mm nominal bore	each	10	5	15		
	<b>Rate In Words</b>						
62	Providing and fixing gun metal non- return valve (horizontal type) of approved quality (screwed end) :						
a	50 mm nominal bore	each	2	2	4		
	<b>Rate In Words</b>						
63	Providing and fixing gun metal non- return valve (vertical type) of approved quality (screwed end) :						
a	50 mm nominal bore	each	4	4	8		
	<b>Rate In Words</b>						
b	65 mm nominal bore	each	2	2	4		
	<b>Rate In Words</b>						
64	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main :						
	25 mm nominal bore	each	2	2	4		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
65	Painting G.I. pipes and fittings with synthetic enamel white paint over a red oxide zinc chromate priming coat, both of approved quality for new work:						
a	15 mm diameter pipe.	metre	15	15	30		
	<b>Rate In Words</b>						
b	20 mm diameter pipe.	metre	35	35	70		
	<b>Rate In Words</b>						
c	25 mm diameter pipe.	metre	75	45	120		
	<b>Rate In Words</b>						
d	32 mm diameter pipe.	metre	125	60	185		
	<b>Rate In Words</b>						
e	40 mm diameter pipe.	metre	135	50	185		
	<b>Rate In Words</b>						
f	50 mm diameter pipe.	metre	85	145	230		
	<b>Rate In Words</b>						
66	Repainting G.I. pipes and fittings with synthetic enamel white paint of approved quality:						
a	15 mm diameter pipe.	metre	15	15	30		
	<b>Rate In Words</b>						
b	20 mm diameter pipe.	metre	35	35	70		
	<b>Rate In Words</b>						
c	25 mm diameter pipe	metre	75	45	120		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
d	32 mm diameter pipe	metre	125	60	185		
	<b>Rate In Words</b>						
e	40 mm diameter pipe	metre	135	50	185		
	<b>Rate In Words</b>						
e	50 mm diameter pipe	metre	85	145	230		
	<b>Rate In Words</b>						
67	Painting G.I. pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality:						
a	15 mm diameter pipe	metre	6	6	12		
	<b>Rate In Words</b>						
b	20 mm diameter pipe	metre	6	6	12		
	<b>Rate In Words</b>						
c	25 mm diameter pipe	metre	6	6	12		
	<b>Rate In Words</b>						
d	32 mm diameter pipe	metre	6	6	12		
	<b>Rate In Words</b>						
e	40 mm diameter pipe	metre	12	12	24		
	<b>Rate In Words</b>						
f	50 mm diameter pipe	metre	25	55	80		
	<b>Rate In Words</b>						
g	65 mm diameter pipe	metre	85	55	140		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
h	80 mm diameter pipe	metre	175	6	181		
	<b>Rate In Words</b>						
68	Providing and filling fine sand or coarser grade all-round the G.I. pipes in external work.						
a	15 mm diameter pipe	metre	6	6	12		
	<b>Rate In Words</b>						
b	20 mm diameter pipe	metre	6	6	12		
	<b>Rate In Words</b>						
c	25 mm diameter pipe	metre	6	6	12		
	<b>Rate In Words</b>						
d	32 mm diameter pipe	metre	6	6	12		
	<b>Rate In Words</b>						
e	40 mm diameter pipe	metre	12	12	24		
	<b>Rate In Words</b>						
f	50 mm diameter pipe	metre	25	55	80		
	<b>Rate In Words</b>						
g	65 mm diameter pipe	metre	85	55	140		
	<b>Rate In Words</b>						
h	80 mm diameter pipe	metre	175	6	181		
	<b>Rate In Words</b>						
69	Providing and placing in position C.I. sluice valves category "A" (with cap) complete:						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	100 mm diameter	each	0	0	0		
	<b>Rate In Words</b>						
70	Providing and placing in position C.I. sluice valves category "B" (with cap) complete:						
	100 mm diameter	each	0	0	0		
	<b>Rate In Words</b>						
71	Providing lead caulked joints to S.C.I or C.I. (spun) pipes and specials including testing of joints but excluding the cost of pig lead:						
a	100 mm diameter pipe	each	2560	1850	4410		
	<b>Rate In Words</b>						
b	150 mm diameter pipe	each	450	450	900		
	<b>Rate In Words</b>						
72	Supplying pig lead at site of work.	quintal	15	12	27		
	<b>Rate In Words</b>						
73	Providing and placing in position C.I. double acting air valve of approved make.						
	50 mm dia	each	1	1	2		
	<b>Rate In Words</b>						
74	Providing and fixing enclosed type water meter (bulk type) conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. (The tail pieces if required will be paid separately) :						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	80/ 50 mm dia nominal bore	each	2	2	4		
	<b>Rate In Words</b>						
75	Providing and fixing C.I. dirt box strainer for bulk type water meter with nuts, bolts, rubber insertions etc. complete conforming to IS : 2373 :						
	50/80 mm dia	each	2	2	4		
	<b>Rate In Words</b>						
76	Providing and placing on terrace (at all levels) polyethylene water storage tank ISI marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	litre	30000	25000	55000		
76.1	Cutting holes upto 30x30 cm in walls including making good the same :	each	10	10	20		
	<b>Rate In Words</b>						
77	Cutting holes upto 15x15 cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including finishing complete so as to make it leak proof.	each	5	5	10		
	<b>Rate In Words</b>						
78	Making chases upto 7.5x7.5 cm in walls including making good and finishing with matching surface after housing G.I. pipe etc.	metre	2	2	4		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
79	Making hole upto 20x20 cm and embedding pipes upto 150 mm diameter in masonry and filling with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) including disposal of malba.	metre	2	2	4		
<b>Rate In Words</b>							
80	Constructing masonry Chamber 30x30x50 cm, inside with Fly ash Bricks of 35 kg/ cm <sup>2</sup> in cement mortar 1:4 (1 cement : 4 coarse sand) for stop cock, with C. I. surface box 100x100 x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand:10 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12mm thick finished with a floating coat of neat cement complete as per standard design :	each	12	12	24		
<b>Rate In Words</b>							
81	Constructing masonry Chamber 60x60x75 cm, inside with Fly ash Bricks of 35 kg/ cm <sup>2</sup> in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm. top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design :	each	1	1	2		
<b>Rate In Words</b>							

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
82	Constructing masonry Chamber 90x90x100 cm, inside with Fly ash Bricks of 35 kg/ cm <sup>2</sup> in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm. top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size ) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design :	each	1	1	2		
<b>Rate In Words</b>							
83	Constructing masonry Chamber 120x120x100 cm, inside with Fly ash Bricks of 35 kg/ cm <sup>2</sup> in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm. top diameter, 160 mm bottom diameter and 180 mm deep ( inside) with chained lid and RCC top slab 1:2:4 mix (1 cement :2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design :	each	4	4	8		
<b>Rate In Words</b>							

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
84	Constructing masonry Chamber 60x60x75 cm, inside with modular well burnt clay bricks of 35 kg/ cm <sup>2</sup> in cement mortar 1:4 (1 cement : 4 coarse sand) for fire hydrants, with C.I. surface box 350x350 mm top and 165 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand :10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design :	each	1	1	2		
	<b>Rate In Words</b>						
85	Constructing masonry Chamber 60x45x50 cm, inside with Fly ash Bricks of 35 kg/ cm <sup>2</sup> in cement mortar 1:4 (1 cement : 4 coarse sand) for water meter complete with C.I. double flap surface box 400x200x200 mm (inside) with locking arrangement and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 ( 1 cement : 5 fine sand :10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design :	each	1	1	2		
	<b>Rate In Words</b>						
	<b>EXTERNAL SEWERAGE &amp; DRAINAGE SYSTEM</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
86	Providing, laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete :						
	100 mm diameter	metre	20	10	30		
	<b>Rate In Words</b>						
87	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete 150mm thick as per standard design:						
	100 mm diameter S.W. pipe	metre	20	15	35		
	<b>Rate In Words</b>						
88	Providing and fixing square-mouth S.W. gully trap grade 'A' complete with C.I. grating brick masonry chamber with well Fly ash Bricks crushing strength not less than 35kg/ cm <sup>2</sup> , 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 :						
a	100x100 mm size P type	each					
	<b>Rate In Words</b>						
b	150 x 100 mm size P type.	each	20	10	30		
	<b>Rate In Words</b>						
89	Providing and laying non-pressure NP3 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 :						
a	100 mm dia. R.C.C. pipe	metre	10	10	20		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
90	Constructing brick masonry manhole with fly ash Bricks crushing strength not less than 35kg/ cm <sup>2</sup> in cement mortar 1:4 ( 1 cement : 4 coarse sand), R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation in cement concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size) inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design :						
91	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) :	each	15	12	27		
	<b>Rate In Words</b>						
92	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg) :	each	2	2	4		
	<b>Rate In Words</b>						
93	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (heavy duty) 560 mm internal diameter, total weight of cover and frame to be not less than 208 kg (weight of cover 108 kg and weight of frame 100 kg) :	each	1	1	2		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	Extra for depth for manholes						
a	Size 90x80 cm	metre	4	12	16		
	<b>Rate In Words</b>						
b	Size 120x90 cm	metre	1	1	2		
	<b>Rate In Words</b>						
94	Providing and constructing fly ash Bricks masonry circular arch type manhole upto 1.67m depth, 0.91m internal dia at bottom and 0.56m dia at top having fly ash masonry wall 190mm thick with well Fly ash bricks crushing strength not less than 35kg/cm <sup>2</sup> in cement mortar 1:4 (1 cement : 4 coarse sand), in side cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement, providing and fixing S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182kg, in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) all complete as per standard design (excavation and foot rests shall be paid for separately) :						
	Manhole of depth 0.91m.	each	14	12	26		
	<b>Rate In Words</b>						
95	Providing and constructing extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91m and upto 1.67m	metre	1	1	2		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
96	Constructing fly ash bricks masonry circular manhole 1.22m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 ( 1 cement : 4 coarse sand) inside cement plaster 12mm thick with cement mortar 1:3 ( 1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 ( 1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 ( 1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement all complete as per						
	1.68 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182kg, fixed in cement concrete 1:2:4 ( 1 cement : 2 coarse sand : 4 grade stone aggregate 20mm nominal size) including centering shuttering all complete. ( Excavation), foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :						
	With F.P.S bricks class designation 75	each	10	0	10		
	<b>Rate In Words</b>						
96.1	Extra depth for circular type manhole1.22 m internal dia (at bottom) beyond 1.68 m to 2.29m :						
	With F.P.S bricks class designation 75	Meter	2	0	2		
	<b>Rate In Words</b>						



Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
97	Constructing fly ash masonry circular manhole 1.52m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 ( 1 cement : 4 coarse sand) inside cement plaster 12mm thick with cement mortar 1:3 ( 1 cement : coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 ( 1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 ( 1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement all complete as per standard design :						
	2.30 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182kg, fixed in cement concrete 1:2:4 ( 1 cement : 2 coarse sand : 4 grade stone aggregate 20mm nominal size) including centering shuttering all complete. ( Excavation), foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :						
	With F.P.S bricks with class designation 75	each	1	0	1		
	<b>Rate In Words</b>						
97.1	Extra depth for circular type manhole1.52 m internal dia ( at bottom)beyond 2.30 m :						
	With F.P.S bricks with class designation 75	Meter	0	0	0		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
98	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910 on 12mm dia steel bar conforming to IS : 1786 having minimum cross section as 23 mmx25mm and over all minimum length 263 mm and width as 165mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	each	55	10	65		
	Replacement of M.S. foot rests in manholes including dismantling concrete blocks and fixing with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) :						
a	With 20x20 mm square bar	each	35	35	70		
	<b>Rate In Words</b>						
b	With 20 mm diameter round bar	each	10	0	10		
	<b>Rate In Words</b>						
99	Supplying and fixing C.I. cover without frame for manholes :						
	560 mm diameter C.I. cover (heavy duty) the weight of the cover to be not less than 108 kg.	each	2	2	4		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
100	Providing and fixing in position precast circular 560mm internal dia SFRC/ R.C.C. manhole cover or cover and frame of approved quality:						
a	Cover and frame H D - 20	each	1	1	2		
	<b>Rate In Words</b>						
b	Cover and frame EHD - 35	each	1	1	2		
	<b>Rate In Words</b>						
101	Supplying and fixing C.I. cover 300x300 mm without frame for gully trap (standard pattern) the weight of cover to be not less than 4.5kg.	each	20	10	30		
	<b>Rate In Words</b>						
102	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete :						
	For pipes 100 to 230 mm diameter	each	1	1	2		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
103	Providing sand cast iron drop connection externally for 60 cm drop from branch sewer line to main sewer manhole including inspection and cleaning eye with chain and lid, sand cast iron drop pipe and bend encased all-round with cement concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) with all centering and shuttering required, cutting holes in walls and making good with brick work in cement mortar 1:4 (1 cement : 4 coarse sand) plastered with cement						
	mortar 1:3 (1 cement : 3 coarse sand) on inside of the manhole wall lead caulked joints between sand cast iron pipes and fittings, stiff cement mortar 1:1 (1 cement : 1 fine sand) joints between sand cast iron tee and S.W. pipe, making required channels complete as per standard design and specifications :						
103.1	100 mm dia. sand cast iron drop connection	each	1	1	2		
	<b>Rate In Words</b>						
103.2	150 mm dia. sand cast iron drop connection	each	1	1	2		
	<b>Rate In Words</b>						
104	Extra for depths beyond 60 cm of sand cast iron drop connection complete :						
104.1	For 100 mm dia. sand cast iron drop connection	metre	1	1	2		
	<b>Rate In Words</b>						
104.2	For 150 mm dia. sand cast iron drop connection	metre	1	1	2		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
105	Raising manhole with cover and frame slab to required level including dismantling existing slab, taking out the existing CI frame & cover of manhole and raising it upto ground/ road level, refixing of frame and cover in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 crushed stone aggregate 20mm) all around the frame, including making good the damage, form work, curing, complete. (Brick work of raising depth of manhole to be paid separately)						
a	Rectangular manhole 90x80 cm with rectangular cover 600x450 mm of grade LD - 2.5	each	12	12	24		
<b>Rate In Words</b>							
b	Rectangular manhole 120x90 cm with circular cover 500 mm dia of grade MD - 10	each	2	2	4		
<b>Rate In Words</b>							
c	Rectangular manhole 120x90 cm with circular cover 560 mm dia of grade HD - 20	each	1	1	2		
<b>Rate In Words</b>							
d	Circular manhole 140 cm dia with circular cover 600 mm dia of grade EHD - 35	each	10	10	20		
<b>Rate In Words</b>							
106	Providing and constructing fly ais masonry road gully chamber 50x45x60 cm with well burnt modular clay bricks crushing strength not less than 35kg/cm <sup>2</sup> in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm precast R.C.C. horizontal grating with frame complete as per standard design :	each	78	51	129		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
107	Providing and constructing fly ais masonry road gully chamber 45x45x77.5 cm with well burnt modular clay bricks crushing strength not less than 35kg/cm <sup>2</sup> in cement mortar 1:4 (1 cement : 4 coarse sand ) with precast R.C.C. vertical grating complete as per standard design :	each	12	10	22		
	<b>Rate In Words</b>						
108	Providing and constructing fly ais masonry road gully chamber 110x50x77.5 cm with well burnt modular clay bricks crushing strength not less than 35kg/cm <sup>2</sup> in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm precast R.C.C. horizontal grating with frame and vertical grating complete as per standard design :	each	19	4	23		
	<b>Rate In Words</b>						
109	Providing and constructing soak pit 2.5 m diameter 3.0 metre deep with 45 x 45 cm dry brick honey comb shaft with well burnt modular clay bricks crushing strength not less than 35kg/cm <sup>2</sup> and S.W. drain pipe 100 mm diameter, 1.8 m long complete as per standard design.	each	15	10	25		
	<b>Rate In Words</b>						
110	Providing and fixing S.W. intercepting trap in manholes with stiff mixture of cement mortar 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete :						
	150 mm dia	each	1	1	2		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
111	Providing & laying cement concrete 1:5:10 (1cement : 5 coarse sand : 10 graded stone aggregate 40mm nominal size) allround S.W. pipes including bed concrete as per standard design:						
a	100mm dia S.W. pipe	metre	15	15	30		
	<b>Rate In Words</b>						
b	160mm dia u.P.V.C. pipe	metre	280	70	350		
	<b>Rate In Words</b>						
c	200mm dia u.P.V.C. pipe	metre	270	100	370		
	<b>Rate In Words</b>						
112	Providing and laying non-pressure NP3 class (light duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 find sand) including testing of joints etc. complete.						
a	150mm dia RCC Pipe	metre	55	45	100		
	<b>Rate In Words</b>						
b	250mm dia RCC Pipe	metre	900	605	1505		
	<b>Rate In Words</b>						
c	300mm dia RCC Pipe	metre	325	115	440		
	<b>Rate In Words</b>						
113	Providing and laying cement concrete 1:5:10 (1 cement : 5 fine sand: 10 graded stone aggregate 40 mm nominal size) upto haunches of RCC pipes including bed concrete as per specifications.						
a	150mm dia RCC Pipe	metre	55	45	100		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
b	250mm dia RCC Pipe	metre	900	605	1505		
	<b>Rate In Words</b>						
c	300mm dia RCC Pipe	metre	380	215	595		
	<b>Rate In Words</b>						
114	Providing and fixing uPVC pipes ( confirming to IS 4985-2000 ) fixing with as recommended by the manufacturer, necessary fixing arrangement including cutting chase or holes in walls / floors and making good the same complete as per specification.						
a	160 mm dia ( 6 Kg/Cm2 Pressue Rating )	Meter	280	70	350		
	<b>Rate In Words</b>						
b	200 mm dia ( 6 Kg/Cm2 Pressue Rating )	Meter	270	100	370		
	<b>Rate In Words</b>						
c	250 mm dia ( 6 Kg/Cm2 Pressue Rating )	Meter	55	100	155		
	<b>Rate In Words</b>						
115	Providing & fixing and commissioning of Domestic water pumps Verital type pump single Phase 230 volts along with the following capacity including electrical works and all accessories	Set	1	1	2		
	Domestic water supply Pump :						
	Capacity : 5000Ltrs/hr.						
	Head : 25 meter						
	HP : 1 HP or as required						
	Two Pumps with Electrical Panel						
	(one working & one Stand by unit)						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
116	Providing and fixing liquid level controller for pumps including probes, wiring, cable, conduit and making connection to pump pannel complete in all respects and making system functional ( sensor sholud be mercury float type.)						
a	For Domestic & Raw pump U.G.Tank to O.H.Tank :						
	1 no. each sensor at low level of UG tank to cut in pump, one no. each at higher level of O.H.Tank to cut off pump, one no each for dry running protection						
	Sensor with panel	Each	1	1	2		
	Cable ( 2 core 2.5 mm )	Meter	35	35	70		
	Conduit	Meter	35	35	70		
	Installation	Each	1	1	2		
	<b>Rate In Words</b>						
b	Providing & fixing submersible dewatering pump , open impeller sump pump with vortex impeller 400/440 voltas, 50 cycles, AC supply, 3-phase motor of the following specification and inter locking PLC arrangement with Sump Pump (for Drainage for Pump room )	Set	2	2	4		
	(a) Discharge : 200 lpm						
	(b) Head : 6 metre						
	(c) HP : 1 HP/As required.						
	(d) Casing : S.S. / C.I.						
	(e) Impeller & Shaft : S.S. 410						
	(f) Solid Handling Capacity : 50 mm						
	(g) Length of water proof cable with each pump:10 Mtr.						
	(h) Length of GI lifting chain with each pump : 5 Mtr.						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	(i)2 pumps with panel						
	<b>Rate In Words</b>						
	<b>SUBTOTAL PLUMBING WORKS</b>						
	<b>Rate In Words</b>						
<b>D</b>	<b>BILL OF QUANTITIES FOR FIRE FIGHTING WORKS</b>						
	FIRE FIGHTING SYSTEM AND HYDRANT SYSTEM						
1	Providing, laying, testing and commissioning of C class heavy duty MS pipe conforming to IS: 1239 / IS:3589 including MS fittings like elbows, tees, flanges, tapers, nuts, bolts, gaskets etc., in ground including excavation and providing cement concrete b						
a	25mm dia.	Metre	4250	2500	6750		
	<b>Rate In Words</b>						
b	32.mm dia.	Metre	1450	650	2100		
	<b>Rate In Words</b>						
c	40 mm dia.	Metre	1050	595	1645		
	<b>Rate In Words</b>						
d	50mm dia.	Metre	750	325	1075		
	<b>Rate In Words</b>						
e	65mm dia.	Metre	425	245	670		
	<b>Rate In Words</b>						
f	80mm dia.	Metre	345	195	540		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
g	100mm dia.	Metre	395	290	685		
	<b>Rate In Words</b>						
h	150mm dia.	Metre	1515	995	2510		
	<b>Rate In Words</b>						
i	200mm dia	Metre	18	18	36		
	<b>Rate In Words</b>						
2	Painting for M.S. pipe with a coat of red oxide primer and two or more coats of synthetic enamel paint of approved colour and Quality to give an even shade including surface preparation.						
a	25 mm dia	Meter	4250	2500	6750		
	<b>Rate In Words</b>						
b	32.mm dia.	Meter	1450	650	2100		
	<b>Rate In Words</b>						
c	40 mm dia.	Meter	1050	595	1645		
	<b>Rate In Words</b>						
d	50mm dia.	Meter	750	325	1075		
	<b>Rate In Words</b>						
e	65mm dia.	Meter	425	245	670		
	<b>Rate In Words</b>						
f	80 mm dia	Meter	295	195	490		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
g	100 mm dia	Meter	370	290	660		
	<b>Rate In Words</b>						
h	150 mm dia	Meter	870	605	1475		
	<b>Rate In Words</b>						
i	200 mm dia	Meter	18	18	36		
	<b>Rate In Words</b>						
3	Providing and applying one coat of 4 mm thick of approved make anti rust pipe protection including approved primer as per manufacturers specifications and lap of 25 mm to make an impermeable layer on MS pipes in trenches or on structural/masonry mem						
a	80 mm dia	Meter	50	30	80		
	<b>Rate In Words</b>						
b	100 mm dia	Meter	25	25	50		
	<b>Rate In Words</b>						
c	150 mm dia	Meter	645	390	1035		
	<b>Rate In Words</b>						
4	Supplying and fixing Stainless Steel -IS:3444 Grade-1 single headed internal/ external hydrant valve with instantaneous Stainless Steel couplings of 63 mm dia with cast iron wheel ISI marked conforming to IS 5290 (Type - A) with blank Gunmetal cap and c	Each	36	24	60		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
5	Supplying and fixing 63 mm dia, 15 mtr. long Pyroprotect (FH-PY) hose pipe with 63 mm dia Male and Female Stainless Steel-IS:3444 Grade-1 couplings duly binded with GI wire, rivets etc. conforming to IS 636 (Type -A) as required.	Each	72	48	120		
	<b>Rate In Words</b>						
6	Supplying and fixing First-Aid Hose Reel with MS construction spray painted in Post office Red, conforming to IS 884 with upto date amendments, complete with the following as required.						
	30 m. long 20 mm (nominal internal) dia water hose rubber as per IS: 444 marked.						
	20 mm (nominal internal) dia gun metal globe valve & nozzle.						
	Drum and brackets for fixing the equipments on wall.						
	Connections from riser with 25 mm dia stop valve (gun metal) & M.S. Pipe.	Set	22	12	34		
	<b>Rate In Words</b>						
7	Supplying & fixing 63 mm dia Stainless Steel IS: 3444 Grade-1 branch pipe with 20 mm (nominal internal diameter) size Gun Metal nozzle conforming to IS 903, suitable for instantaneous connection to interconnect hose pipe coupling as required.	Each	36	24	60		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
8	Supplying and fixing of hose cabinet shutter of size 900 mm x 2100 mm, door frame made of 2 mm thick SS sheet and 40x40x5 Stainless Steel Grade-304 angle with 6 mm thick glazed glass doors i/c 'necessary locking arrangement , as required.	Each	14	12	26		
	<b>Rate In Words</b>						
9	Supplying and fixing of hose cabinet of size 900 mm x 600 mm x 500 mm made of 2 mm thick MS sheet with 6 mm thick glazed glass doors i/c 'necessary locking arrangement suitable to accommodate external hydrant with butterfly valve, 2 Nos. 15 mtr. long Hose	Each	22	12	34		
	<b>Rate In Words</b>						
10	Providing, installation, testing and commissioning of dual plate non-return valve of following sizes confirming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc. as required.						
a	80mm dia	Each	1	1	2		
	<b>Rate In Words</b>						
b	100mm dia	Each	1	1	2		
	<b>Rate In Words</b>						
c	150mm dia	Each	5	5	10		
	<b>Rate In Words</b>						
d	200mm dia	Each	1	1	2		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
11	Supplying, fixing, testing and commissioning of butterfly valve PN 1.6, with Bronze/Gunmetal seat duly ISI marked complete with Nuts, Bolts, washers, gaskets, conforming to IS 13095 of following sizes as required.						
a	80mm dia	Each	2	2	4		
	<b>Rate In Words</b>						
b	100mm dia	Each	2	2	4		
	<b>Rate In Words</b>						
c	150mm dia	Each	23	17	40		
	<b>Rate In Words</b>						
d	200mm dia	Each	3	3	6		
	<b>Rate In Words</b>						
12	Providing and fixing brass ball valve (full bore type) with plastic coated lever and screwed female ends tested to 20 Kg/ cm2 of approved quality as specified.						
a	25 mm dia	Each	27	8	35		
	<b>Rate In Words</b>						
b	50 mm dia	Each	5	8	13		
	<b>Rate In Words</b>						
13	Providing and fixing suction coupling for fire brigade drawl of water from tank with 150 mm dia GI (Medium) pipe and foot valve (Pipe max 8 M long).	Each	1	1	2		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
14	Providing and fixing M.S. structural work fabricated from standard sections, (MS rounds, angles, channels etc.) including cutting to size,drilling welding including cost of (Hilti) fasteners, clamp in RCC structural members as directed, including two or m	KG.	1000	750	1750		
<b>Rate In Words</b>							
15	Providing and fixing 150 mm dia C.I. double flanged sluice valves rated to PN 1.6 with C.I. Wheel bolts, nuts,washers 3mm thick insertion rubber gasket including matching flanges table E, complete.	Each	3	3	6		
<b>Rate In Words</b>							
16	Supplying and fixing 4 way fire brigade connection of cast iron body with 4 Nos. Gun metal male instantaneous inlet couplings complete with cap and chain as reqd. for 150mm dia MS pipe connection, conforming to IS 904 as required.	Each	1	1	2		
<b>Rate In Words</b>							
17	Supplying and fixing 2 Way FBC of CI body with 2 No. Gun Metal male instantaneous inlet couplings complete with cap and chain as required. For 100 mm dia M.S. Pipe connection conforming to IS : 904 as required.	Each	1	1	2		
<b>Rate In Words</b>							
18	Providing and fixing gunmetal single acting air release valve with screwed inlet 25 mm dia.	Each	8	5	13		
<b>Rate In Words</b>							
19	Providing and fixing standard fireman's axe ( tested for 20000 Volts) with heavy insulated rubber handle.( ISI marked)	Each	22	15	37		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
20	Providing and constructing masonry chamber 90x 90 x 100 cms inside with 75 class designation fly ash brick work in cement mortar 1:5 (1cement : 5fine sand) for water meter ,M.S. cover (6mmthick sheet with locking arrangement, 600 x600 with M.S. frame etc. all epoxy coated andR.C.C. top slab 1:2:4 mix(1 Cement : 2 coarsesand : 4 graded stone aggregate 20mm nominalsize) including necessary excavation, back fillingfoundation concrete 1:5:10 mix (1 cement : 5fine sand and 10 graded stone aggregate 20mmnominal size) leaving a pocket of 30x30 cmwith out concrete and filled with pebbles andinside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finishedwith a floating coat of neat cement and outsideplaster finished rough complete.	Each	3	3	6		
	<b>Rate In Words</b>						
21	Providing and fixing pressure switch with suitable for 1-10 Kg/cm <sup>2</sup> including electrical connections setting of Cut-In and cut-Off pressure complete in all respects.	Each	4	4	8		
	<b>Rate In Words</b>						
22	Providing, fixing, testing and commissioning 25mm diameter inspecting and testing assembly with gunmetal isolation valve gunmetal sight glass bypass valve and connected to 50mm drain line.	Each	5	5	10		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
23	Providing and fixing 15 mm dia, Quartzoid bulb type G.M. Sprinkler Head set to operate at 680 C of approved make chrome plated complete with decorating Plate (Ressette)						
23.1	Pendant type with quartzoid bulb, operating temperature at 68oC as per specification with rosette plate.	Each	1550	1038	2588		
	<b>Rate In Words</b>						
23.2	Horizontal sidewall extended through sprinkler.	Each	165	71	236		
	<b>Rate In Words</b>						
24	Flow switches suitable for fixing in 50mm to 150mm dia, complete with all accessories to provide indication in annunciator panel.	Each	5	4	9		
	<b>Rate In Words</b>						
25	Providing and fixing 150 mm dia installation control valve complete with all accessories i.e. drain valve, pressure gauge etc.	Set	2	2	4		
	<b>Rate In Words</b>						
	<b>FIRE PUMPS AND ACCESSORIES</b>						
26	Supplying, Installation, Testing and Commissioning of Diesel engine driven main fire pump suitable for automatic operation and consisting of following: complete in all respect as required.						
	Horizontal type, multistage, centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal to ensure a minimum pressure of 3.5 kg/sq.cm at highest and farthest outlet at specified flow of 2280 lpm at 75 m. head conform						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	Suitable HP, 1500 RPM water cooled with radiator, diesel engine conforming to relevant BS& IS standard complete with auto starting mechanism, 12 volts/24 Volts electric starting equipment, Diesel Tank, exhaust pipe extended upto 1 m. outside pump house du						
	M.S.fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required.	Each	1	1	2		
	<b>Rate In Words</b>						
27	Suitable cement concrete foundation duly plastered with anti vibration pads.						
	Supplying, Installation, Testing and Commissioning of Electric driven main fire pump suitable. for automatic operation and consisting of following: complete in all respect as required.						
	Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanic.al seal to ensure a minimum pressure of 3.5 kg/sq.cm. at highest and farthest outlet at specified flow of 2280 lpm at 75						
	Suitable HP Squirrel cage induction motor, TEFC, synchronous speed 1500 RPM, suitable for operation on 415 volts, 3 phase 50 Hz. AC with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS:325.						
	M.S fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required.						
	Suitable cement concrete foundation duly plastered with anti vibration pads.	Each	2	2	4		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
28	Supplying, Installation, Testing and Commissioning of Electric driven pressurisation pump suitable for automatic operation and consisting of following: complete in all respect as required.						
	Horizontal type, singlestage, centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal and flow of 180 lpm at 75 m. head conforming to IS : 1520.						
	Suitable HP Squirrel cage induction motor TEFC type suitable for operation on 415 volts, 3 phase 50 Hz. AC with IP 55 class of protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS : 325.						
	M.S fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required.						
	Suitable cement concrete foundation duly plastered with anti vibration pads.	Each	1	1	2		
	<b>Rate In Words</b>						
29	Supplying and fixing air vessel made of 450 mm dia, 8 mm thick MS sheet,1200 mm. height with air release valve on top and flanged connection to riser, drain arrangement with 25 mm dia Gun metal wheel valve, with required accessories, pressure gauge and pa	Each	1	1	2		
	<b>Rate In Words</b>						
30	Supply, installation, testing and commissioning of pressure guage 0-200 PSI ( 0 - 14 Kg ) range, 3/8" BSP bottom entry, 4" dial weather proof with stainless steel internals, siphon tube amd ball valve including fittings, etc. complete as required	Each	22	22	44		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
	<b>Main Fire Pump Panel</b>						
31	Fabricating, supplying, Installtion, testing and commissioning of electrical control panel of cubicle construction, floor mounted type, fabricated out of 2 mm thick CRCA sheet, compartmentalised with hinged locakable 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 inernal wiring, earth terminals, numbering etc. complete in all respects, suitable for operation on 415 V, 3 phase, 50 Hz AC supply with enclosure protection class IP 42 as required.						
	Common panel in Fire Pump House						
	Incomer						
	200 Amps TPN, MCCB, 35 KA with Microprocessor based release						
	Digital Voltmeter ( 0 - 500 volts ) with selector switch						
	Digital Ammeter ( 0 - 250 Amps ) with selector switch& CTs etc.						
	Set of 3 phase indicating Lamps LED type with protective fuse.						
	Set of Al. Bus bar of 250 Amps,						
	Outgoing						
	02 Nos. 200 Amp, TPN, 35 KA MCCB with thermal release						
	02 Nos. 63 Amp, TPN, 25 KA MCCB with thermal release						
	Main Fire& sprinkler Pump : 2 set per pump						
	01 nos., 63 Amps TPN, MCCB, 25 KA with thermal magnetic release suitable HP fully automatic star / delta starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiringrequired for automatic operation, selector switch for local / remote, auto / manual / Off operation.						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	Jockey Pump						
	01 nos., 63 Amps TPN, MCCB, 25 KA with thermal magnetic release suitable HP fully automatic DOL starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local / remote, auto / manual / Off operation.						
	Diesel Engine Control						
	Control for Diesel Engine comprising :						
	Auto / manual Selector Switch & 3 attempt starting device, timers and relays as required, push buttons, start / stop in manual mode.						
	Indication lamp for High / Low Lube Oil pressure, High water Temperature and Engine ON indication.						
	battery Charger suitable for 12 V / 24 V DC with boost and trickle selector switch, 0 -15 V / 0 - 30 V DC volt meter, 0 - 20 A DC Ammeter.						
	All standard relays and accessories for automatic operation of diesel engine.						
	Designing, supply, installation, testing and commissioning of System Controller to control operation of Main Electric Pump, Diesel Pump, and Pressurisation Pump in sequence as per specifications consisting of relays, timers, sensors, annunciation window for fault indication complete as per specifications.	Set	1	1	2		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
32	Providing and fixing dust & vermin proof cubicle type motor control centre fabricated from powder coated 16 SWG MS sheet for ELECTRICAL PANEL FOR TERRACE PUMP suitable for Terrace fire Pump and automatic/Manual operation complete in all respect as required.						
	Electric panel board comprising of DOL starter auxiliary switch, main in commer, three phase preventer, voltmeter indication lamps, pressure gauge M.C.B.20amp.	Set	1	1	2		
	Rating including all connections with copper cable etc. (To start the terrace pumps)						
	<b>Rate In Words</b>						
	Terrace Fire Pump						
33	Providing fixing multi stage horizontal centrifugal pump with volute bronze impeller connected to TEFC induction motor suitable for 400/410 Volts, 3 Phase, 50 Cycles, AC Supply with the following specifications:						
	a. Capacity : 900 LPM      b. Head : 35 m						
	c. HP : As required.      d. RPM : 2900						
	e. Mover : Electric Motor driven						
	f. Material of Construction:						
	Shaft & Sleeve : S.S. 410						
	Impeller : Bronze						
	Bearing : Grease lubricated						
	Seal - Mechanical seal.	Each	1	1	2		
	g) Pump foundation as per manufacturer.						
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
34	Providing and fixing resilient rubber lined neoprene single arch vibration eliminators with unit control suitable for fire pump upto 450 C. Temperature working pressure 20 Kg. per square centimeter.						
a	80 mm dia	Each	2	2	4		
	<b>Rate In Words</b>						
b	100 mm dia	Each	2	2	4		
	<b>Rate In Words</b>						
c	150 mm dia	Each	6	6	12		
	<b>Rate In Words</b>						
35	Providing and fixing heavy duty PVC insulated, PVC armoured aluminium conductor cables 1100V grade including necessary support clamps and connection lugs complete in all respects.						
a	Power cable 3core 16 sqmm.	Meter	35	35	70		
	<b>Rate In Words</b>						
b	Power cable 3.5 core 70 sqmm.	Meter	25	25	50		
	<b>Rate In Words</b>						
	<b>HAND APPLIANCES</b>						
36	Supply & Fixing ISI marked (IS:13849) Portable Fire Extinguisher, ABC type capacity 5 kg, finished externally with red enamel paint, complete in all respects including initial fill and wall suspension. Capacity 5 kg	Each	50	24	74		
	<b>Rate In Words</b>						



Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
37	Supply & Fixing ISI marked (IS:2878) Portable fire Extinguisher, Carbon-dioxide type flat base including valve, discharge hose of not less than 10 mm dia. min. 600 mm long & complete in all respects including initial fill with CO2 gas confirming to IS:307-1966 filled to a filling ratio of not more than 0.667 and wall suspension bracket. Capacity 4.5 Kg.	Each	50	24	74		
	<b>Rate In Words</b>						
38	Supply & Fixing ISI marked (IS:10204) Portable Fire Extinguisher, Trolley mounted Mech. Foam type capacity 09 ltrs with gun-metal cap and nozzle and complete respects in all respects including initial fill and wall suspension. Capacity 9.0 ltrs	Each	1	1	2		
	<b>Rate In Words</b>						
39	Supply & Fixing of ISI marked (IS:2878) Fire Extinguisher, Trolley mounted, CO2 (gas pressure) type capacity 22.5 Kg. with gun-metal cap. And nozzle and complete in all respects including initial fill and wall suspension bracket. Capacity 22.5 Kg.	Each	1	1	2		
	<b>Rate In Words</b>						
	<b>Sub Total-Fire Fighting Works</b>						
	<b>Rate In Words</b>						
<b>E</b>	<b>BILL OF QUANTITIES FOR HVAC SYSTEMS</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
1.2	<b>Indoor Units</b>						
	Supply Installation Testing and commissioning of VRV / VRF Indoor units equipped with pre-filter, fan section with low noise fan, multispeed motor, coil section with DX coil, outer cabinet, drain pan, insulation, pipe connections etc. of various capacities as under						
1.2.1	Low static Ductable units of following capacity (FCU hide away type)						
A	2.5 HP	nos	1	1	2		
1.2.2	Supply Installation Testing and commissioning of Indoor Units 4 way flow Cassette type of Capacity						
B	5HP	Nos	0	2	2		
	<b>Rate In Words</b>						
C	4 HP	Nos	0	6	6		
	<b>Rate In Words</b>						
D	3 HP	Nos	20	3	23		
	<b>Rate In Words</b>						
E	2.5 HP	Nos	0	4	4		
	<b>Rate In Words</b>						
F	2 HP	Nos	2	6	8		
	<b>Rate In Words</b>						
1.2.6	Supply Installation Testing and commissioning of Hi-wall type Indoor Units of Capacity						
F	2.5 HP	Nos	0	3	3		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
G	2 HP	Nos	84	25	109		
	<b>Rate In Words</b>						
H	1.5 HP	Nos	68	12	80		
	<b>Rate In Words</b>						
1.3	Supply Installation Testing and commissioning of Corded remote controls	Nos.	174	61	235		
	<b>Rate In Words</b>						
1.4	Supply Installation, Testing and commissioning of Imported fittings (Ref Net) Y-joints etc.	Nos	158	65	223		
	<b>Rate In Words</b>						
1.5	Control & Transmission Wiring						
	Providing & fixing control cum transmission wiring of 2 core x 1.5 sq. mm. copper in PVC conduits between indoor and outdoor unit.	RM	2000	900	2900		
	<b>Rate In Words</b>						
1.6	Controller Wiring						
	Providing & fixing control wiring of 2 core x 1.5 sq.mm copper between indoor units and their wired remote.	RM	2000	900	2900		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
<b>2</b>	<b>Double Skin Air Washer Units</b>						
	Supply, Installation ,Testing and commissioning of sheet metal sectionalized construction double skin Air Washer Unit, each complete with Blower section Wet section and filter section as detailed in the specifications and complete with forward curved DIDW Blower with TEFC 4 Pole motor, belt drive package, vibration isolation pads -spring mounted, 200/300 mm Thick CELDEC cooling pad, Mist eliminator, 50 mm thick pre filters, 2 nos monobloc pumps etc complete as per specifications and as mentioned in the schedule of equipment of following capacities.						
2.1	AWU No. 1,3,8 5000 CFM 65 mm static/200 mm fill- WATER	No.		3	3		
	<b>Rate In Words</b>						
2.2	AWU No. 7 8000 CFM 65 mm static/200 mm fill- WATER	No.					
	<b>Rate In Words</b>						
2.3	AWU No. 5 10000 CFM 65 mm static/200 mm fill-WATER	No.		1	1		
	<b>Rate In Words</b>						
2.4	AWU No. 2,4,6 16000 CFM 65 mm static/ 200 mm fill- WATER	No.		2	2		
	<b>Rate In Words</b>						
2.5	AWU No. 9,10 27000 CFM 55 mm static / 200 mm Fill- WATER	No.		2	2		
	<b>Rate In Words</b>						
2.6	AWU No. 1 42500 CFM 65 mm static/200 mm fill-FOREST	No.	1		1		
	<b>Rate In Words</b>						
2.7	AWU No. 2 19000 CFM 65 mm static/ 200 mm fill-FOREST	No.	1		1		
	<b>Rate In Words</b>						
2.8	AWU No. 3-8, 10000 CFM 55 mm static / 200 mm Fill- FOREST	No.	6		6		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
3	Supply Installation and commissioning of FRP sheet canopy with slope on the rear made of FRP sheet of minimum thickness 6 mm suitably secured on MS hot dip galvanised angle frame. The canopy should be extending at least 600 mm on each side of the air washer and shall have its own support from the roof. The canopy shall also have drain trap at the rear with PVC drain pipe to collect the rain water near the drain trap.						
	For Air washer unit no 1,2	No.	2	2	4		
	<b>Rate In Words</b>						
<b>4</b>	<b>Inline Duct fans (rectangular Duct fans)</b>						
4.1	1500 cfm 10 mm static	No.	44	22	66		
	<b>Rate In Words</b>						
4.2	750 cfm 25 mm static	No.	27	22	49		
	<b>Rate In Words</b>						
4.3	300 cfm 15 mm static (circular in line)	No.	15	2	17		
	<b>Rate In Words</b>						
4.4	600 cfm 15 mm static ( circular in line)	No.	9	4	13		
	<b>Rate In Words</b>						
4.5	1200 cfm 15 mm static (circular inline)	No.	4	2	6		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
5	Supply Installation, Testing and commissioning of SISW Lift well and Staircase pressurization blowers of following capacity complete with Blower, Motor, foundation, Foundation bolts, Belt Drive Package, spring type Vibration isolation pads, canvass etc.						
5.1	4000 CFM, 25 mm static	Nos	2	2	4		
	<b>Rate In Words</b>						
5.2	3000 CFM, 25 mm static	Nos	4	4	8		
	<b>Rate In Words</b>						
6	<b>AIRCOOLED PACKAGED UNITS</b>						
	Supplying, installing and commissioning of Air cooled type Packaged air-conditioning units complete with Hermetically sealed MULTI SCROLL compressors fitted inside the indoor unit & first charge of refrigerant & oil ,air cooled condenser, fan section with statically/dynamically balanced centrifugal blower driven by a TEFC squirrel cage three speed motor, Multi rows cooling coil of copper with aluminium fins etc. The enclosures shall be fabricated of M.S. The Package unit shall be equipped with synthetic fiber filter, insulated drain pan, controls all encased in a unit. The casing shall be factory powder coated. Electrical panel board for Package units shall comprise of SFU's, Fuses, Voltage scanner, complete with overload, low voltage, high voltage & phase imbalance protection. Along with VI Pads complete with all ancillaries including MS painted stand for Outdoor units of suitable size, foundation and allied minor civil works as per instructions of engineer in charge of following ratings including electric control panel & fitting as per specifications.						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	11-11.5 TR nominal capacity suitable for at least 4400 CFM air capacity. (with 2 compressors)	Nos	2	2	4		
	<b>Rate In Words</b>						
<b>1</b>	<b>PIPING &amp; INSULATION</b>						
1.1	<b>Refrigerant Piping</b>						
	Supply, Installation, testing and commissioning of Interconnecting refrigerant pipe work with (19 mm/13mm thick) closed cell elastomeric nitrile rubber tubular insulation between each set of indoor & outdoor units as per specifications, all piping inside the room shall be properly supported with MS hanger and all external piping shall run in covered cable tray.						
A	38.2 mm O.D (insulation: 19 mm).	Rm	300	150	450		
	<b>Rate In Words</b>						
B	31.8 mm O.D.(insulation : 19 mm)	Rm	250	125	375		
	<b>Rate In Words</b>						
C	28.6 mm O.D.(insulation : 19 mm)	Rm	200	100	300		
	<b>Rate In Words</b>						
D	25.4 mm O.D.(insulation : 19 mm)	Rm	200	100	300		
	<b>Rate In Words</b>						
E	22.2 mm O.D.(insulation : 13 mm)	Rm	320	160	480		
	<b>Rate In Words</b>						
F	19.1 mm O.D.(insulation : 13 mm)	Rm	400	200	600		
	<b>Rate In Words</b>						
G	15.9 mm O.D.(insulation : 13 mm)	Rm	250	125	375		

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
H	12.7 mm O.D.(insulation : 13 mm)	Rm	250	110	360		
	<b>Rate In Words</b>						
I	9.5 mm O.D.(insulation : 13 mm)	Rm	400	160	560		
	<b>Rate In Words</b>						
J	6.4 mm O.D.(insulation : 13 mm)	Rm	550	225	775		
	<b>Rate In Words</b>						
2	Supply, Installation, testing and commissioning of PPRC piping complete with fittings, supports as per specifications						
A	25 mm Dia	Rmt	1740	610	2350		
	<b>Rate In Words</b>						
3	<b>REFRIGERANT PIPING</b>						
	Supplying, Installation, Testing and Commissioning of Refrigerant piping complete with all fittings such as bends, tees, elbows etc. including insulation as per specifications. The quoted rates shall include rates for chiseling, making good of wall and clamps etc.						
	Refrigerant piping for 11/11.5 TR units (for 2 circuits - i.e 2 Suction and 2 discharge lines)	Rmt	165	0	165		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
4	Supply, Fabrication, Installation and testing of Rectangular sheet metal ducts in accordance with the approved shop floor drawings and specifications, and shall also confirm to the specifications.						
4.1	24 gauge	SqM	800	360	1160		
	<b>Rate In Words</b>						
4.2	22 Gauge	SqM	1200	550	1750		
	<b>Rate In Words</b>						
4.3	20 gauge	SqM	750	650	1400		
	<b>Rate In Words</b>						
4.4	18 gauge	SqM	100	80	180		
	<b>Rate In Words</b>						
5	Supply, Installation and Testing of multi-blade type louver damper of Aluminium construction for supply/return air collars to be provided with suitable links , levers and quadrants for manual control of volume of air flow and for proper balancing of air distribution as per approved shop floor drawings and specifications.	SqM	60	20	80		
	<b>Rate In Words</b>						
6	Supply, Installation and Testing of multi-blade box type GI construction damper for ducts to be provided with suitable links and quadrants for control of volume of air.	SqM	18	7	25		
	<b>Rate In Words</b>						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
7	Supply, Installation, Testing and commissioning of fusible link type of approved make of at least 90 minute fire rating and as per the specifications as detailed earlier in the relevant sections. The fire damper shall be complete with UL stamped IIT Roorkee approved fusible link and fire damper design. The fire dampers shall be located in the supply/ return air ducts, at all fire rated crossovers (shafts / walls etc.)The fire damper shall be supplied with a suitable device such as solenoid or limit switch for interlocking with the fire alarm system of the building for enabling tripping of the AHU motor in the event of fire / smoke in the respective zone after receiving the low voltage signal from the fire panel .						
7.1	Bare Fire Dampers with sleeve and fixing arrangement.	SqM	6	5	11		
	<b>Rate In Words</b>						
7.2	Motorised Actuators as per specifications	No	13	11	24		
	<b>Rate In Words</b>						
8	Supply, Installation, Testing and commissioning of single louvered supply air grille as per approved colour and shop floor drawings.						
8.1	Powder coated extruded aluminium grilles of approved shade and colour.	SqM	60	22	82		
	<b>Rate In Words</b>						
8.2	Powder coated extruded aluminium grilles of approved shade and colour (Double Louvered).	SqM	0	4	4		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
9	Supply, Installation and Testing of air transfer grilles of approved make and colour.	SqM	0	4	4		
<b>Rate In Words</b>							
10	Supply, Installation, Testing and commissioning of square supply air diffusers as per approved shop floor drawings and colour. Each diffuser will be equipped with removable core and aluminum volume control damper.						
10.1	Powder coated extruded aluminium supply air diffuser of approved colour and shade.	SqM	2	2	4		
<b>Rate In Words</b>							
11	Supply, Installation, Testing and commissioning of square return air diffusers as per approved shop floor drawings and colour. Each diffuser will be equipped with removable core.						
11.1	Powder coated extruded aluminium return air diffuser of approved colour and shade.	SqM	2	2	4		
<b>Rate In Words</b>							
12	Supply, Installation and Testing of fresh air grilles / exhaust air grill of powder coated, extruded aluminum construction as per specifications and approved colour and shade.	SqM	10	8	18		
<b>Rate In Words</b>							
13	Supply, installation testing and commissioning of Extruded AL construction Round Toilet Exhaust valves.	Nos	60	50	110		
<b>Rate In Words</b>							

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
14	Supply and Application of thermal insulation of ducting with approved sample of closed cell Elastomeric Nitrile rubber insulation, as per specifications.						
14.1	6 mm thick with aluminum foil	SqM	200	125	325		
	<b>Rate In Words</b>						
14.2	6 mm thick without aluminum foil applied from inside of the duct.	SqM	850	400	1250		
	<b>Rate In Words</b>						
<b>C</b>	<b>Associated Electrical Works</b>						
1	Manufacture, Supplying, fixing in position, connecting, testing and commissioning of following AC Control panels. Each motor shall be provided with suitable incoming MCCB/ switch fuse unit, Contactors, over load relays, push button stations. Single phase preventers etc. All the components shall be housed in 2 mm thick MS sheet steel housing. The control panel shall be cubical type, dust and vermin proof, hinged and lockable doors and dead front operation. Provide cable glands as required. All interlocking wiring, timers and control wiring shall be done, and earthing the panel. Provide separate compartment for each motor controls. Interlock the door with switch handle complete as required. The bus bars shall be of copper. The control panel shall be suitable for 35 mVA fault level at 415 volts.						
1.1	Air Washer unit Panel						
	Incoming						
	1 no. 100 amp TPN MCCB, with standard releases.						
	0-500 volts voltmeter with SS with control fuses. (1set)						
	0-100 amp ammeter with SS and 100/5 CT's.						
	Phase indicating lights with control fuses.						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	ON/OFF indicating lights.						
	Bus Bars						
	125 amp TPN aluminum bus bar with heat shrinkable insulation colored sleeves (The current density of the bus bar shall be 1.3 sq mm / Ampere.						
	Outgoings						
	1 nos. 63 amp, TPN MCCB, 10 KA with operating handles and heavy duty solid neutral link with suitable capacity Star Delta Starter for the blower fan motor.						
	2 nos. 10 amp, TP MCB, 10 KA for 2 numbers pump motor feeders, with the followings for each feeders: The DOL starter shall be selected for the motor rating with suitable contactors etc.						
	Panel complete as above	No.	6	6	12		
	<b>Rate In Words</b>						
1.2	Air Washer unit Panel (AWUP - 2,3)						
	Incoming						
	1 no. 63 amp TPN MCB, with standard releases.						
	0-500 volts voltmeter with SS with control fuses. (1set)						
	0-100 amp ammeter with SS and 100/5 CT's.						
	Phase indicating lights with control fuses.						
	ON/OFF indicating lights.						
	Bus Bars						
	100 amp TPN aluminum bus bar with heat shrinkable insulation colored sleeves (The current density of the bus bar shall be 1.3 sq mm / Ampere.						
	Outgoings						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	1 nos. 32 amp, TPN MCB, 10 KA with operating handles and heavy duty solid neutral link with suitable capacity DOL starter for the blower fan motor.						
	2 nos. 10 amp, TP MCB, 10 KA for 2 numbers pump motor feeders, with the followings for each feeders: The DOL starter shall be selected for the motor rating with suitable contactors etc.						
	Panel complete as above	Nos	2	2	4		
	<b>Rate In Words</b>						
1.3	Control Panel For VRV Units						
	Designing, fabricating, transporting to site, installing, testing and commissioning of floor mounted, self supported, compartmentalized LT cubical pattern (Extendable Type) metal clad switch board, fabricated from 2mm (14 G) thick CRCA sheet steel suitable for 31 MVA rupturing capacity at 415 V, 3 phase, 4 wire, 50 HZ AC supply and equipped with PVC sleeved aluminum bus bars of specified rating and following switch gears inter connected by PVC sleeved solid conductors, including 7-tank cleaning, degreasing, phosphating process and treatment of panel with anti-corrosive zinc based primer paint and finally powder coating the panel, complete with earthing terminals, cable and bus bar alleys and hoisting hooks as required. The LT panel will comprise ACBs and MCCBs as described below for incoming and outgoing power supplies.						
	<b>INCOMING MCCB FEATURES</b>						
	All the incoming circuit breakers of panels shall consist of following accessories:						
	i. 0-500 V range voltmeter 144 x 144 mm size with selector switch and back up fuses. : 1 Set.						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	ii. Suitable range of ammeter 144 x 144 mm size with selector switch and CTs as mentioned in schedule. : 1 Set.						
	iii. Phase indicating neon lamps with MCB protection. : 3 Sets.						
	iv. Breaker 'ON'/'OFF' indication lamp with MCB protection. : 2 sets.						
	v. Standard trip and over load relays.						
	vi. ON/OFF push buttons with motorized spring charged mechanism 230 V AC. : 1 No.						
	<b>OUTGOING MCCB FEATURES :</b>						
	Each outgoing MCCB with microprocessor release ICS=ICU KA capacity 35 KA of panel shall consist of following accessories :						
	Suitable range of ammeter 144 x144 mm size with selector switch and CT as mentioned in schedule. 1 Set						
	Suitable range of voltmeter 144 x 144 mm size with fuse as mentioned in schedule. 1 Set						
	Breaker 'ON'/'OFF' indication lamp with back-up fuse protection. 2 Sets						
	Standard over load and short circuit release.						
	Main control panel ( MCC 1)	No	4	2	6		
	<b>Rate In Words</b>						
	<b>Incoming MCCB</b>						
	160 Amps TPN MCCB 35 KA Microprocessor type with 400/5A ratio Current Transformer, 0- 500 A ammeters & selector switch Voltmeter with selector switch, along-with other accessories as specified. : 1 Set						
	<b>Bus Bars (35 KA)</b>						
	200 Amps TPN electrolytic aluminum E 91 grade bus bars with heat shrinkable insulation cover sleeves.						
	<b>Outgoings</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	63A, TPN MCCB-25KA with 0-60 A ammeter 100 / 5A Current Transformer & selector switch, indication lamp with MCB for 'ON' status of equipment. Overload and under voltage protection device, ELCB of minimum 300 mA current sensitivity, Time delay relay, Single phase preventer, phase reversal protection : 4 Sets for ODU's						
	Interlocking with signal /communication wire as per recommendation of VRF OEM .						
1.4	Ventilation panel for Exhaust fans / pressurisation fans						
	Incomer						
	1 no. 32 amp TPN MCB, with standard releases.						
	0-500 volts voltmeter with SS with control fuses. (1set)						
	0-50 amp ammeter.						
	Phase indicating lights with control fuses.						
	ON/OFF indicating lights.						
	Bus Bars						
	Suitable capacity aluminum BB with heat shrinkable insulation colored sleeves (The current density of the bus bar shall be 1.3 sq mm / Ampere.						
	Outgoings						
	1 nos. 32 amp, TPN MCB. The feeder shall have suitable starter for the fan motor alongwith protection relays , metering etc.	Nos	5	8	13		
	<b>Rate In Words</b>						
2	PVC insulated PVC sheathed , copper armoured cable of 1.1kV grade with termination glands and GI earthing, identification tags , clamps , saddles etc. with cable tray						
2.1	4 C x 10 Sqmm	RM	550	225	775		



Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	<b>Rate In Words</b>						
2.2	4 C x 6 Sqmm	RM	200	100	300		
	<b>Rate In Words</b>						
2.3	3Cx 25 Sqmm	RM	50	25	75		
	<b>Rate In Words</b>						
2.4	3Cx 16 Sqmm	RM	10	5	15		
	<b>Rate In Words</b>						
2.5	3Cx 10 Sqmm	RM	15	8	23		
	<b>Rate In Words</b>						
2.6	3Cx 6 Sqmm	RM	20	10	30		
	<b>Rate In Words</b>						
2.7	3Cx 4 Sqmm	RM	100	50	150		
	<b>Rate In Words</b>						
2.8	4 C x 25 sqmm	RM	300	150	450		
	<b>Rate In Words</b>						
2.10	3 x 2.5 sq.mm	Mtr	350	175	525		
	<b>Rate In Words</b>						
2.11	3 x 1.5 sq.mm	Mtr	1500	620	2120		
	<b>Rate In Words</b>						
3	Control Cabling						
	Copper conductor, PVC insulated, PVC sheathed armoured cable of 1.1 kV grade in MS conduits.						

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Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
3.1	4C x 1.5 Sqmm	RM	100	50	150		
	<b>Rate In Words</b>						
3.2	5C x 1.5 Sqmm	RM	10	5	15		
	<b>Rate In Words</b>						
<b>D</b>	<b>VENTILATION EQUIPMENT</b>						
1	Supply, installation, testing and commissioning of AXIAL FLOW FAN complete with totally enclosed fan cooled motor belt drive, multi sheaved pulley mounted on motor and fan shaft, belt guard, motor mount, and vibration isolators. The fan should be Hot Dipped Galvanized steel. The fan shall be selected for low noise level and low RPM (less than 1000 RPM) Fan motor shall be suitable for 415 + 10% volts, 50 cycles, 3 phase power supply. The smoke evacuation fan from the basement and atrium shall be capable of work at 300 Deg c for at least 2 hours. The fans for the basement shall be dual speed and shall be able to deliver double the normal air quantity during emergency. Fan capacity shall be as follows:						
	<b>Location</b>						
	<b>Air Quantity (CFM)</b>						
<b>1.1</b>	<b>Fire Rated</b>						
	Basement–Parking Exhaust Normal 17500 CFM 10 mm static, Emergency 35000CFM / 40mm suitable for high temperature application (rated for fire- 300 Deg for 2 hrs, Hot Dipped galvanized).	Nos	4	0	4		
	<b>Rate In Words</b>						

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
2	Supply of Ductless Ventilation / Jet fans as per attached specifications & Technical Details for Normal ventilation and Smoke Extraction application. The complete fan assembly with its Casing, impeller & motor (not only the motor or one of the item) shall be imported from manufacturer and certified as tested for 300oC for 2 hours operation. Each fan shall be complete with motor and impeller. Casing shall be made of Hot Dipped Galvanise Steel. The motor shall be dual speed and shall be suitable for 3phase 415 +10% volts, 50 Hz, A/C power supply. The fan shall be suitable to operate at 300 Deg C for 2 hours.						
	1589 CFM at low speed and 3178 CFM at high speed. With a sound level of 47 (Low speed).	Nos	15	0	15		
	<b>Rate In Words</b>						
3	Supply installation Testing and commissioning of Carbon Monoxide Sensor	Nos	5		5		
	<b>Rate In Words</b>						
4	CFD (Computational Fluid Dynamics) analysis for the basement from the jet fan manufacturer as per the requirement of local fire safety norms and to ensure that the jet fans are placed in a manner to ensure evacuation of car exhaust / toxic fumes and smoke as and when required.	Lot	1	0	1		
	<b>Rate In Words</b>						
5	Main control panel (MCC 2) PLC based for basement Ventilation						
	Supply of Electrical Panel with feeders and starters	No	1	0	1		

Sr. No.	Description of Items	Unit	Quantity		Total	Rate in INR	Total Amount in INR
			Forest (A)	Water (B)	(A+B)		
	a for 15 nos. 3 phase dual speed fans of 1.2 kw (high speed) / 0.24 kw (low speed) each and logic controller with necessary logic for CO detectors and control of jet fans. 7 nos. CO sensor ( shown separately below) will be connected with each of the panel which will provide input to the panel for running a particular numbers of fans of a particular zone as described in sequence of operation						
	b. Suitable for 4 nos. 3 phase fans of 5.5 KW/22.5 KW each fresh air fans with dual speed starter						
	c. Suitable for 5 nos CO Sensor.						
	<b>Rate In Words</b>						
	<b>Subtotal HVAC Works</b>						