



**NAYA RAIPUR DEVELOPMENT AUTHORITY**

**Tender Document for the  
Construction of Office for Chhattisgarh State Laghu Vanopaj  
Sangha Plot No. 88, Sector 24 at NayaRaipur ,Chhattisgarh  
(Following Three-Envelope Tender Procedure)**

**TENDER DOCUMENT (PART ONE)**

**NIT No. : 19 /CGSLVS /EEC-I / CE (E) / NRDA / 2015-16, Raipur,**

**Dated: 16.06.2015**

**Issued by:** Chief Executive Officer,  
Naya Raipur Development Authority (NRDA)  
1<sup>st</sup> Floor, Utility block, Capitol Complex, Sector- 19,  
Naya Raipur- 492 002, Chhattisgarh  
Tel No: + 91 771 2511500; Fax No.: +91 771 2511400.  
Website: [www.nayaraiipur.gov.in](http://www.nayaraiipur.gov.in)

## 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:// nayaraipur.gov.in/documents/gcc.pdf](http://nayaraipur.gov.in/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')

**COST ABSTRACT****Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh**

<b>Sl. No.</b>	<b>Description of Items</b>	<b>Amount in Figures (In INR)</b>	<b>Amount in Words ( In INR)</b>
<b>A</b>	<b>Civil Work</b>	Rs. -	
<b>B</b>	<b>Plumbing Works</b>	Rs. -	
<b>C</b>	<b>HVAC Work</b>	Rs. -	
<b>D</b>	<b>Fire Fighting Work</b>	Rs. -	
<b>E</b>	<b>Electrical Works</b>	Rs. -	
	<b>Total Project Cost ( INR )</b>	Rs. -	

BILL OF QUANTITY						
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
<b>A</b>	<b>CIVIL WORKS</b>					
<b>I</b>	<b>EARTH WORK</b>					
1	Excavation in all types and sizes of foundations, trenches and drains or for any other purpose with all lead and lift including seperation of usefull soil for refilling and stacking & levelling of same, and disposal of surplus excavated stuff and spoils beyond NRDA boundries or as directed by Engineer In-charge including souring, dewatering, surface dressing, etc..., complete as per direction of Engineer In-charge.					
a	In all types of soil	cum	1,160.00			-
b	In Soft rock	Cum	10.00			-
c	In hard rocks requiring blasting	Cum	10.00			-
d	In hard rock where blasting is prohibited	Cum	10.00			-
2	Surface dressing of the ground including removing vegetation and making up undulations and in-equalities not exceeding 15 cms in depth/ height including disposal of rubbish upto 1.5 m lift and lead upto 50m (at least 5m away from the dressed area).	sqm	3,052.00			-
	<b>BACK FILLING</b>					
3	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	2,373.32			-
4	Providing and filling in plinth with sand/ Crusher dust and hard moorum under floor in layers not exceeding 20cm in depth consolidating each deposited layer by ramming and watering, including dressing etc. complete.	cum	135.05			-
5	Supplying chlorpyriphos/ Lindane emulsifiable concentrate of 20% in sealed containers including delivery as specified.	litre	475.00			-

<p style="text-align: center;"><b>BILL OF QUANTITY</b>  <b>Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh</b></p>						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
6	Diluting chemical emulsion (Chlorpyriphos/ lindane) in water as per manufacturers recommendation and injecting for post - constructional anti-termite treatment:					
a	Along external wall where the apron is not provided using diluted chemical emulsion @ 7.5 litres / sqm of the vertical surface of the substructure to a depth of 300 mm including excavation channel along the wall & rodding etc. complete:	metre	850.00			-
b	Along external wall below concrete or masonry apron along the plinth wall using diluted chemical emulsion @ 0.65 litres per hole including drilling 12mmdia holes 300mm apart and plugging the same with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing apron after injecting chemical emulsion.	metre	135.00			-
7	Diluting chemical emulsion (Chlorpyriphos/ lindane) in water as per manufacturers recommendation and injecting for pre-constructional curative cum preventive anti-termite treatment: (Five year service guarantee bond to be signed by contractor)					
a	Surface treatment by spreading emulsion under floor, over the plinth area before laying base concrete @ 5 litres / sqm.	sqm	850.00			-
8	Providing and laying 150/ 230 mm thick dry rubble packing below flooring, etc. and in foundations where directed with good quality blue basalt stone of approximately cubical shape of required thickness, hand setting including filling chips, spall sand in interstices ramming with mechanical rammer, watering, etc. as directed by Engineer-In -Charge etc. complete.	cum	447.63			-
<b>II</b>	<b>FORMWORK</b>					
9	Providing and fixing formwork including centering, shuttering, strutting, staging, propping bracing etc. complete and including its removal at all levels, for:					
a	Foundations, footings, base of columns and plinth beam in any shape and size.	sqm	307.06			-
b	Wall of any thickness including attached pilasters, buttresses etc.	sqm	368.60			-
d	Edge of slab, breaks in floor and walls upto 200mm.	metre	498.00			-

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
e	Columns, Pillars, Piers and likes- rectangular or square in shape	sqm	1,102.00			-
f	Suspended floors, roofs, access platform, balconies (plain surfaces) and shelves (cast in situ)	sqm	2,945.71			-
g	Beams, lintels, cantilevers & walls	sqm	1,409.45			-
h	Stair cases of all types excluding spiral and folded plate type, including risers and landings	sqm	160.48			-
10	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	409.00			-
11	Extra for providing fixing and removing of propping from lower floor upwards for the concreting. Propping should be provided two floors below. The props of lower floor must be 50% of the props of the floor above including wedging etc. complete. In case propping is done in one floor below, only half the rate shall be paid.	sqm	1,472.86			-
12	Extra for unsupported individual columns with height more than 4.0 m from the immediate lower level in every floor. (Full area of column is to be paid)	sqm	2,076.00			-
III	<b>CEMENT CONCRETE (PLAIN AND REINFORCED)</b>					
13	Providing and laying design mix reinforcement cement concrete with crushed graded stone aggregate 20mm nominal size Including plastisizers or retarders if required, using batching plant, transit mixer and concrete pump, in all works upto floor five level excluding cost of reinforcement and form work.					
a	M-20 (using minimum cement 390 kg/cum concrete)	cum	200.00			-

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b	M-25 (using minimum cement 410 kg/cum concrete)	cum	2,000.00			-
c	M-30 (using minimum cement 420 kg/cum concrete)	cum	650.00			-
d	M-35 (using minimum cement 428 kg/cum concrete)	cum	50.00			-
1A	Providing and laying nominal mix plain cement concrete with crushed stone aggregate using concrete mixer in all works upto plinth level excluding cost of form work					
a	1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	cum	100.00			-
b	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 40mm nominal size)	cum	10.00			-
14	Providing and fixing tapered/ parallel threaded couplers conforming to IS code on "Reinforcement Couplers for Mechanical Splices of Bars for Concrete Reinforcement - Specification", to reinforcement bars including therading, enlargement at connection by forging, protecting the prepared reinforcement bars and related operations as required to complete the works as per directions of the Engineer-in-Charge. (The length of bars in which coupler is to be provided should not be less than 4 metre, no deduction for labour and binding wire saved for not providing lap length shall be made).					
a	Coupler for 16 mm dia reinforcement bar	Each	50.00			-
b	Coupler for 20 mm dia reinforcement bar	Each	50.00			-
c	Coupler for 25 mm dia reinforcement bar	Each	50.00			-

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d	Coupler for 28 mm dia reinforcement bar	Each	50.00			-
e	Coupler for 32 mm dia reinforcement bar	Each	50.00			-
15	Providing and laying 300 micron Polythene sheet over compacted earth/blinded soling to act as vapour barrier including cutting lapping, jointing etc. complete: Rate to include net overlapping of joints by 100mm. Sealing joints with adhesive (Only plan area to be measured for payment ).	Sqm	600.00			-
16	Providing & laying plum concrete using 150mm & down size selected rubble stones placed in concrete 1:2:4 in the proportion of 40% rubble & 60%concrete consolidation, finishing, curing etc. as per item above.	cum	120.00			-
17	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:					
a	Thermo-Mechanically treated bars (HYSD Fe 500) including binding wire 18 SWG GI wires.	kg	2,10,000.00			-
	<b>DAMP-PROOF COURSE (DPC)</b>					
18	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	28.05			-
<b>IV</b>	<b>WATER PROOFING</b>					
19	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: 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 compound conforming to IS:2645 over the levelling course (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 cum/sqm thoroughly embedded in the 2nd layer	sqm	421.07			-



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20	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	25.00			-
21	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 :					
a	Serrated with central bulb (225mm wide, 8-11mm thick).	metre	45.00			-
b	Dumb bell with central bulb (180mm wide, 8mm thick).	metre	55.00			-
c	Kickers (320mm wide, 5mm thick).	metre	65.00			-

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22	<p>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:</p> <p>i) 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.</p> <p>ii) 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.</p> <p>iii) 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.</p> <p>iv) 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.</p> <p>v) 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:</p>	m2	551.00			-
23	<p>Providing post water proofing treatment against dampness &amp; seepage in walls of basement, plinth, super structure (horizontal or vertical) consisting of following operations:</p> <p>i) Removing loose material and cleaning the surface.</p> <p>ii) Drilling 20 mm dia holes in walls/ floor in zigzag manner spacing not more than 150 mm center to center.</p> <p>iii) Injecting polymer based high strength water proofing compound of approved brand &amp; make admixed with cement in the ratio as specified by manufacturer, in holes by pressure pump.</p> <p>iv) Plugging holes with polymer compound admixed with cement.</p> <p>v) Providing and laying of bonding slurry prepared by mixing of cement with approved make and brand acrylic polymer (as per IS 13435 Part-3) in two layers (totaling up to 3mm thick) by brush. Second layer to be laid after 4 hours of first layer.</p> <p>vi) Providing and laying 15 mm thick cement plaster in cement mortar 1:4 (1 cement : 4 coarse sand) and finishing the surface with neat cement admixed with integral water proofing compound (IS: 2645) as per manufacturers recommendations.</p>	m2	297.27			-

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24	<p>Water proofing IN TOILET / KITCHEN (FLAT SLAB) :</p> <p>Providing and laying waterproofing for toilets/ kitchen (flat slab) with Cementitious Catalytic</p> <p>Providing and laying waterproofing for toilets (flat slab) as per specifications listed below with guarantee of 15 years</p> <p>The first part consisting of grouting the porous slab area (if required) with non-shrink cementitious grout.</p> <p>The second part consisting of treating the cracks and construction joints by routing-out to a minimum 3/4" x 3/4" groove and treating it with a specialised non-shrink cementitious compound XYPEX Modified Mortar.</p> <p>The third part consisting of making vata (gola) at the interface joint of the toilet slab and masonry wall with a specialised non-shrink cementitious compound XYPEX Modified Mortar.</p> <p>The fourth part consisting of sealing / packing all joints of outlet pipes, etc. with a specialised non-shrink cementitious compound XYPEX Modified Mortar and topping it with liquid-applied APAAR Flexiroof - 60.</p> <p>The fifth part consisting of providing and applying providing and applying Cementitious "Catalytic" In-depth Crystalline Waterproofing System of XYPEX make, as per manufacturers' specification to permanently fix non-soluble crystalline growth throughout the capillary tracts and pores of concrete at a speed of 30 cms per year inside concrete. The Cementitious "Catalytic" In-depth Crystalline Waterproofing System shall be able to withstand atleast 405 ft. of water head pressure supported by at least two International Test reports showing clear Scanning Electron Microscopic (SEM) photographs of densified and mature crystals formation and Permeability test as per IS 2720 conducted by CBRI the concrete Should not absorbed water more than 1.5 gms and not more than 1 mm from the concrete surface. The product to be listed in ICC-ES EVALUATION REPORT</p>	sqm	338.69			-
25	<p>(A) WATERPROOFING: PODIUM LANDSCAPE GARDEN</p> <p>1) Grouting the porous slab area with non-shrink cementitious grout</p> <p>2) Treating the cracks and construction joints by routing-out to a minimum 10mm x 10mm groove and treating it with a XYPEX Modified Mortar, a specialised non-shrink cementitious compound.</p> <p>3) Making vata (gola) at the interface joint of the slab and building wall with XYPEX Modified Mortar, a specialised non-shrink cementitious compound.</p> <p>4) Sealing all joints of outlet drain pipe, etc. with XYPEX Modified Mortar, a specialised non-shrink cementitious compound.</p> <p>5) Providing and applying XYPEX Concentrate "Catalytic" In-depth Crystalline Waterproofing System by brush to permanently fix non-soluble crystalline growth throughout the capillary tracts and pores of concrete.</p> <p>6) Providing &amp; applying two coats APAAR Flexiroof – 60 by brush, High Performance Rubber Modified Liquid Waterproofing Membrane over the entire Podium slab and wall up to 300mm.</p> <p>7) Providing and sprinkling of quartz pieces on the second coat of wet membrane to provide protection of membrane as well as bonding of subsequent screed. Brushing of the excess sand after the membrane is set.</p>					

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
	(B) PROTECTION, INSULATION & SLOPE MAKING: (These parts shall be carried out by the gardening agency / civil Contractor). 8) Providing and laying average 15-20mm thick cement mortar 1:4 with required slopes. (by Civil Contractor) 9) Providing and laying 75mm thick (average) M20 grade concrete in proper slope with 12mm and down size aggregates and coarse sand admixed with Integral Waterproofing Compound. 10) PIPING NETWORK: Providing and fixing network of perforated pipes as per calculated design. The perforated pipe shall be half embedded in concrete and half popping-out of the protective plaster in the ninth part. 11) DRAINAGE: Providing and laying a drainage layer which is minimum 125 mm thick section of aggregate, coarse at the bottom and finer towards the top (this part shall be carried out by the gardening agency). 12) SOIL CONTAINMENT: Providing and laying polypropylene filtration geo-membrane. 13) Providing and laying earth / growing medium as specified by the landscape architect.	sqm	35.00			-
26	PODIUM (DRIVEWAY / HARDSCAPE) :- Providing and applying waterproofing for Podium (driveway / hardscape) as per the specifications listed below and as approved by the engineer-in-charge with a guarantee of 15 years :- CONCRETE WATERPROOFING: The first part consisting of grouting the porous slab area with non-shrink cementitious grout. The second part consisting of treating the cracks and construction joints by routing-out to a minimum 3/4" x 3/4" groove and treating it with XYPEX Modified Mortar, a specialised non-shrink cementitious waterproof compound. The third part consisting of making vata (gola) at the interface joint of the slab and building wall with XYPEX Modified Mortar, a specialised non-shrink cementitious waterproof compound. The fourth part consisting of sealing all joints of outlet drain pipe, etc. with XYPEX Modified Mortar, a specialised non-shrink cementitious waterproof compound and topping it with liquid-applied APAAR Flexiroof-60 Flexible Waterproofing Membrane. The fifth part consisting of providing and applying Cementitious "Catalytic" In-depth Crystalline Waterproofing System as per manufacturers' specification to permanently fix non-soluble crystalline growth throughout the capillary tracts and pores of concrete at a speed of 30 cms per year inside concrete. The Cementitious "Catalytic" In-depth Crystalline Material of XYPEX make shall be applied by brushing at the coverage rate of 0.8 kg./sq.m on the entire podium driveway / hardscape slab and wall upto 300 mm height. VIBRATION-WITHSTANDING WATERPROOF MEMBRANE WITH HIGH ELONGATION: The sixth part consisting of providing and applying liquid-applied, high build waterproofing membrane based on PU polymer modified bitumen emulsion with addition of silicone and acrylic having elongation > 900%, (offered system : APAAR Flexiroof-60) at the coverage rate of 1kg/sqm in two coats as per manufacturer's specifications approved by Consultants over the entire podium driveway / hardscape slab and walls upto 300 mm height.	sqm	173.00			-

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	<p>PROTECTION FOR THE MEMBRANE :</p> <p>The seventh part consisting of providing and sprinkling of protective 8/12 grade quartz pieces on the second coat of the wet membrane, to provide for protection of the membrane as well as bonding of the subsequent screed, as per manufacturer's specifications approved by Consultants. Brushing off the excess sand after the membrane has set.</p> <p>CONCRETE SCREED FOR SLOPE :</p> <p>The eighth part consisting of laying and finishing avg. 50 mm thick, M-20 sloping concrete screed (utilizing 12 - 20 mm baby chips) admixed with XYPEX Admix C-2000 NF an Integral Waterproofing Compound @ 1.2% by weight of cement and 100% virgin polypropylene fibres of fibrillated grade @ 1 packet / bag of cement.</p>					
27	<p>WATER BODY AREA ON PODIUM :</p> <p>Providing and laying waterproofing for water bodies on podium, as per specifications listed below with a minimum guarantee period of 15 years : -</p> <p>The first part consisting of grouting the porous slab area with non-shrink cementitious grout.</p> <p>The second part consisting of treating the cracks and construction joints by routing-out to a minimum 3/4" x 3/4" groove and treating it with XYPEX Modified Mortar, a specialised non-shrink cementitious waterproof compound.</p> <p>The third part consisting of making vata (gola) at the interface joint of the slab and wall with XYPEX Modified Mortar, a specialised non-shrink cementitious waterproof compound. .</p> <p>The fourth part consisting of sealing all joints of outlet drain pipe, etc. with XYPEX Modified Mortar and topping it with liquid-applied APAAR Flexiroof -60 Flexible Waterproofing Membrane..</p> <p>The fifth part consisting of providing and applying Cementitious "Catalytic" In-depth Crystalline Waterproofing System of XYPEX make shall be applied by brushing at the coverage rate of 0.8 kg./sq.m on the entire water body area on podium slab and entire walls from inside.</p>	sqm				-

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28	<p>OH WATER TANK :-            Providing and laying waterproofing for OH water tanks as per specifications listed below with a minimum guarantee period of 15 years-            Checking the overhead water tank by filling it with water fully and marking the defective porous areas.            The first part consisting of grouting the porous concrete with non-shrink cementitious grout.            The second part consisting of treating the cracks and construction joints by routing-out to a minimum ¾" x ¾" groove and treating it with a specialised non-shrink cementitious compound XYPEX Modified Mortar.            The third part consisting of making vata (gola) at the interface joint of the RCC slab and wall with a specialised non-shrink cementitious compound XYPEX Modified Mortar.            The fourth part consisting of sealing / packing all joints of outlet pipes, etc. with a specialised non-shrink cementitious compound XYPEX Modified Mortar.            The fifth part consisting of providing and applying "XYPEX Concrete Waterproofing by Crystallization" with coverage rate of 0.8 kg/sqm supported by at least two International Test reports showing clear Scanning Electron Microscopic (SEM) photographs of dandified and mature crystals formation to plug all the capillary tracks and pores of the concrete permanently and Permeability test as per IS 2720 conducted by CBRI the concrete Should not absorbed water more than 1.5 gms and not more than 1 mm from the concrete surface.            The product to be listed in ICC-ES EVALUATION REPORT INDEX January 2009, 2010 &amp; 2011 and the product should be green Certified under any EcoLable programover the entire RCC slab and wall.            The sixth part consisting of providing and laying 20 - 25 mm thick, CM 1: 3 screed admixed with XYPEX C-2000 NF integral Crystalline Waterproofing Compound @1.2% by weight of cement and 100% virgin polypropylene fibres of fibrillated grade @ 1 packet / bag of cement. (With XYPEX System 20-25 mm thick screed is not required).</p>	sqm	52.47			-
V	<b>STONE WORK</b>					
29	Random rubble masonry with hard stone in foundation and plinth in Cement Mortar 1:6 (1 Cement : 6 Coarse Sand) including leveling up with cement concrete 1:6:12 (1 cement : 6 coarse sand: 12 stone aggregate 20mm nominal size) at plinth level.	cum	447.63			-
30	Extra for random rubble masonry with hard stone in superstructure above plinth level for every floor or part thereof in addition to rate for foundation and plinth.	cum	126.71			-
31	Extra for random rubble masonry with hard stone in square or rectangular pillars.	cum	52.34			-
32	Stone work with DHOLPUR SAND STONE (machine cut edge) exposed face machine cut and table rubbed with rough backing for wall lining etc. (Veneer work) upto 10 metre height, backing filled with a grout of 20 mm thick cement mortar 1:3 (1 cement : 3 coarse sand), including pointing in white cement mortar 1:2 (1 cement : 2 stone dust) with an admixture of pigment matching the stone shade. (To be secured to the backing by means of cramps which shall be paid separately)					

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a	60mm. Thick	sqm	15.00			-
b	100 MM THICK Bilha stone 400 mm x 100 mm	sqm	75.00			-
33	Stone tile work (mirror polished, machine cut edge) for wall lining upto 10 metre height, with special adhesive over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), including pointing in white cement mortar 1:2 (1 cement : 2 marble dust) with an admixture of pigment matching the stone shade.					
a	Granite Stone of any colour and shade - 8mm thick	sqm	10.00			-
34	Providing and fixing dry cladding upto 10 metre heights with 30mm thick gang saw cut DHOLPUR SAND STONE (machine cut edges) of uniform colour and size upto 1mx1m size, fixed to structural steel frame work and/ or with the help of cramps, pins etc. and sealing the joints with weather sealant. (The steel frame work, stainless steel cramps and pins etc. shall be paid for separately.)	sqm				-
35	Same as above item 7 but in 100 mm thick Bilha stone in 100 mm high bands	sqm				-
36	Same as above item 7 but in 30 mm thick polished granite as per drg.	sqm	700.00			-
37	Extra for stone work for wall lining on exterior wall beyond 10m height from ground level for every additional height of 3 metre or part thereof.	sqm	50.00			-
38	Providing and fixing clamps of required size and shape for anchoring stone wall lining to the backing or securing adjacent stone in stone wall lining in cement mortar 1:2 (1 cement : 2 coarse sand) including making the necessary chases and/or holes in stone/wall.					

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88,Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a	Stainless steel cramps with stainless steel nuts and bolts and washer (total weight not less than 260 gms).	kg	728.00			-
39	Providing and fixing structural steel frame (for dry cladding of sand stone) on walls at all heights using M.S. square/ rectangular tube in the approved pattern including cost of cutting, bending, welding etc. The frame work shall be supported in wall with the help of MS brackets/ lugs of angle iron/ flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block of grade 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) of size 300x230x300mm and with approved expansion hold fasteners on CC/RCC surface including drilling necessary holes, approved cramps/ pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of "ZINC" primer and painted with two or more coats of epoxy paint. (Stainless steel cramps shall be paid separately)	kg	5,250.00			-
VI	<b>BRICK WORK</b>					
40	Brick work with modular fly-ash lime bricks (FALG Bricks) confirming to IS:12894-2002 of class designation 40 in foundation and plinth in:					
a	Cement Mortar 1:5 (1 cement : 5 coarse sand)	cum	100.00			-
b	Extra for brick work in superstructure above plinth level for every floor or part thereof in addition to rate for foundation and plinth	cum	225.00			-
c	Providing and laying AAC Autoclaved aerated concrete block confirming to IS: 2185 (Part-3)-1984) in block masonry with AAC blocks of width 100/200 mm height 200/250/300mm, length 400/500/600 mm (approved sizes) with cement mortar 1:6 (1 cement, 6 coarse sand) in superstructure. AAC blocks should have specific gravity 0.6 to 0.65 and crushing strength should not be less than 3N/ sqmm (testing as per IS: 6441-1972)	cum	825.00			-
VII	<b>WOOD WORK</b>					
41	Providing and fixing flush door shutters, confirming to IS : 2202 (Part - I), decorative type core of block board construction with frame of first class hard wood and well matched teak ply veneering with vertical grains or cross bands and face veneers on both faces of shutters excluding hinges.					



**BILL OF QUANTITY**  
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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a	35mm. thick ( single leaf)	sqm	175.00			-
42	Providing and fixing lipping with second class teak wood lipping (25 x 6 12 mm size) on all edges of shutters.	metre	750.00			-
43	Extra for providing louvers in flush doors upto 0.20 sqm					
a	Decorative type doors (50 x 5 mm)	sqm	3.00			-
43A	Extra for providing vision panel not exceeding 0.10 sqm in all type of flush shutters (excluding cost of glass)					
a	Rectangular or square	each	40.00			-
44	Providing and fixing 1.5 mm thick laminate of approved shade and colour with grooves and lines and in patterns on flush doors as instructed by the Architect/ Client. The Cost of necessary hardwares, adhesives, wastages etc as required to complete the works are included in the rate. The grooves to be finished in matching melamine polish, rate of which to be included in thsi item rate.	sqm	350.00			-
45	Providing 40x5mm iron hold fast 40cm long including fixing to frame with 10mm bolts nuts and wooden plug and embedding in Cement Concrete 1:2:4 in blocks of size 30x10x15cm.	each	700.00			-
46	Providing and fixing S.S. finished brass butt hinges with necessary S.S. finished MS screws complete:					

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a	125x85x5.50 mm (Heavy Type)	each	700.00			-
b	75x40x2.50 mm (Ordinary Type)	each	150.00			-
47	Providing and fixing S.S. finished brass door latch with necessary S.S. finished MS screws complete:					
a	300x16x5mm	each	15.00			-
48	Providing and fixing S.S. finished brass tower bolts (Barrel type) with necessary S.S. finished MS screws complete:					
a	250 x10 mm	each	350.00			-
b	100 x10 mm	each	150.00			-
49	Providing and fixing S.S. finished brass flush bolts with necessary S.S. finished MS screws complete:					
a	250 mm	each	10.00			-
50	Providing and fixing S.S. finished brass indication bolts (vacant/ engaged) with necessary S.S. finished MS screws complete.	each	22.00			-

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
51	Providing and fixing S.S. finished brass handle with necessary S.S. finished MS screws complete:					
a	125 mm	each	10.00			-
52	Providing & fixing S.S. finished brass 100mm mortice latch and lock with six levers and a pair of handle with necessary S.S. finished MS screws complete.	each	65.00			-
53	Providing and fixing 150mm S.S. finished brass floor door stoppers with rubber cushion with necessary S.S. finished MS screws to suit thickness of shutters.	each	65.00			-
53A	Providing and fixing antique/S.S. finished brass hard drawn hooks and eyes with antique/S.S. polished MS screws complete					
	300 mm	each	75.00			-
54	Providing and fixing Stainless steel "D" shape door handles made of 10mm dia rod with necessary stainless steel screws etc complete.					
a	200 mm	each	36.00			-
b	150 mm	each	15.00			-
c	125 mm	each	15.00			-
d	100 mm	each	15.00			-

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
55	Providing and fixing stainless steel fixed stopper with necessary stainless steel screws complete.					
a	100 mm long	each	25.00			-
b	75 mm long	each	35.00			-
c	60 mm long	each	15.00			-
d	50 mm long	each	15.00			-
55A	Providing and fixing IS: 3564 marked aluminium die cast body tubular type universal hydraulic door closer with necessary accessories and screws etc complete	each	150.00			-
56	Providing and fixing expandable fasteners of specified size with necessary plastic sleeves and galvanized M.S screws including drilling holes in masonry work /CC/ R.C.C by drilling machine and making good etc complete.					
a	50 mm long	each	145.00			-
57	Providing and fixing fire resistant door frame of section 143 x 57 mm having built in rebate made out of 16 SWG G.I. sheet (zinc coating not less than 120 gm/sqm) duly filled with vermiculite based concrete mix, suitable for mounting 60 minutes fire rated door shutters. The frame is fitted with intumescent fire seal strip of size 10x4 mm (minimum) around the frame and fixing with dash fastener of approved size and make, including applying a coat of approved brand fire resistant primer etc. complete as per direction of Engineer-in-charge (Dash fastener to be paid for separately). metre	metre	60.00			-

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
58	Providing and fixing 50 mm thick glazed fire resistant door shutters of 60 minutes fire rating conforming to IS:3614 (Part-II), tested and certified as per laboratory approved by Engineer-in-charge, with suitable mounting on door frame, consisting of vertical styles, lock rail, top rail 100 mm wide, bottom rail 200 mm wide, made out of 16 SWG G.I.sheet (zinc coating not less than 120 gm/m2) duly filled FR insulation material and fixing with necessary stainless steel ball bearing hinges of approved make, including applying a coat of approved fire resistant primer etc. all complete as per direction of Engineer-in-charge (panneling to be paid for separately).	sqm	85.95			-
59	Providing and fixing glazing in fire resistant door shutters, fixed panels, ventilators and partitions etc., with G.I. beading of appropriate size, made out of 20 SWG G.I.sheet (zinc coating not less than 120 gm/m2), fire resistant sealant, including applying a coat of approved fire resistant primer on G.I. beading etc., complete all as per direction of Engineer-in-charge. With clear fire resistant glass panes 6mm thick of approved brand, having minimum 60 minutes fire resistance	sqm	3.00			-
60	Providing and fixing panic bar / latch (Double point) fitted with a single body, Trim Latch & Lock on back side of the Panic Latch of reputed brand and manufacture to be approved by the Engineer- in- charge, all complete.	nos	10.00			-
61	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc.to be paid separately).	sqm	100.00			-

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
62	<p>Providing and fixing of 120 minutes fire rated doors system duly tested at CBRI, Roorkee for Integrity &amp; Insulation criteria as per the IS: 3614 Part 2 and BS: 476 part 20 at independent accredited fire test laboratory with standard heating conditions as specified in IS: 9809 - 1979 and BS: 476 part 20 &amp; 22: 1987 to achieve the required integrity and insulation (Temperature rise on the non fire side to the maximum of 180 deg C above the ambient temperature on the unexpected surface of the shutter) with following but not limiting to - Hardwood frame of section 150 x 75 mm with 2 nos of imported Promseal intumescent strip (10 mm x 4 mm) to take care of hot smoke, Concealed in the groove of the frame with fixing arrangements of 4 nos of Galvanized Iron, Hold fasts / Anchor fasteners including 4 nos stainless steel ball bearing hinges of SS 304/ 316 of size 100 mm x 75 mm x 2.5 mm thick to be capable of taking load upto 120 Kg of the shutter with SS pin, 55 mm thick single leaf shutter made out of perimeter rail of <b>Merandi seasoned hard wood of size 100 mm x 30 mm x and 2 nos of 9 mm thick Matrix mineral Engineered board with 30 mm x 100 mm internal stiles and rails of merandi seasoned hard wood. the infill shall be fire rated insulation ceramic fibre blankets of 30 mm thick x 96 kg/cum with fire rated cobra acrylic sealant of 1 mm on both sides.</b></p> <p>The shutters to be faced with water proof marine ply. All wooden surfaces include applying a coat of approved fire resistant primer and finished in thermosetting polyurethane paint (35 Microne DFT) of approved colour and make as specified by the Engineer-in-charge. The Promoseal Intumescent fire seal strip of size 20 mm x 4 mm, 1 nos. to be mounted in the grooves of shutter on all sides except bottom with 10 mm thick teak wood lipping on all sides. Each door to be fitted with fire rated door closer in SS finish, 120 minute fire rated clear wired galss vision panel 200mm x 300 mm x 6mm. ( door size 1200mm x 2400).</p>	nos.	5.00			-
63	Same as item above but with double leaf shutter 120 minutes fire rated door of size 1500 mm x 2400 mm annd with 304 grade SS door handle 250 mm long for both doors and dead lock with 80 mm cylinder including 8 nos nos stainless steel ball bearing hinges of SS 304/ 316 of size 100 mm x 75 mm x 2.5 mm thick	nos.	1.00			-
VIII	<b>STEEL AND ALUMINIUM WORK</b>					
64	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.					
a	In stringers, treads, landings etc. of stair cases including use of chequered plate whenever required, all complete	Kg	6.00			-
b	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	Kg	200.00			-

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
65	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.					
a	Single rebate 100mmx50mm size, 1.6mm thick sheet.	metre	550.00			-
66	Supplying and fixing rolling shutter of approved makes made of M.S. laths interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and out side locking with push and pull arrangement complete but excluding the cost of top cover and spring.					
a	80x1.25mm M.S. Laths	m2	18.00			-
67	Providing and fixing 27.5cm long wire spring for rolling shutters.	each	2.00			-
68	Providing and fixing M.S. sheet top cover for rolling shutter					
a	1.25mm thick	m2	18.00			-
69	Providing and fixing ball bearing for rolling shutters.	each	6.00			-
70	Providing and fixing mechanical device chain and crank operation for operating rolling shutters.	set	2.00			-

<p style="text-align: center;"><b>BILL OF QUANTITY</b>  <b>Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh</b></p>						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
71	Extra for providing grided rolling shutter manufactured out of 8 mm dia. M.S. bar instead of laths as per approved design (area of grill provided, only to be measured).	m2	3.00			-
71A	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910 on 12 mm dia steel bar conforming to IS: 1786 having minimum cross section as 23 mm X 25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacturer'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	200.00			-
72	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)					
a	For fixed portion	kg	1,370.00			-
b	For shutter of doors, windows & ventilators including providing and making provision for fixing of fitting wherever required including the cost of PVC/ neoprene gasket and all fittings required	kg	5,480.00			-
73	Extra for polyester powder coated (minimum 50 micron) aluminium sections instead of anodized.	kg	13,700.00			-



<p style="text-align: center;"><b>BILL OF QUANTITY</b>  <b>Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh</b></p>						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
74	Providing and fixing 12mm thick Pre-laminated particle board flat pressed with decorative lamination and balancing lamination on specified sides exterior Grade - I MDF Board 12 mm thick conforming to IS : 14587, fixed in aluminium doors, windows shutters and partition frames with C.P. brass/ stainless steel screws etc. complete.					
a	With decorative lamination on one side and balancing lamination on other side.	m2	17.28			-
74A	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS:733 and IS:1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions i.e. at top, bottom and sides with required EPDM rubber / neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineers-in-Charge. Polyester powder coated aluminium (minimum thickness of polyester coating 50 micron) with 12 mm thick ferro cement board, with decorative lamination on both sides in panelling fixed in aluminium doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of Engineer-in-Charge.					
a	Aluminium Frame with Ferro cement Board	m2	5.00			-
75	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):					
a	With float glass panes of 6 mm thickness	m2	15.00			-
76	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc. with 6 mm thick clear float glass both side having 12 mm air gap including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. complete.	m2	10.00			-

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
77	Providing and fixing of six/seven levers branded and approved mortise lock.	each	60.00			-
78	Providing and fixing of floor spring IS: marked (Everite, Door link or any equivalent make) with stainless steel cover plate including cutting and making good the floor etc. complete.	each	60.00			-
79	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.					
a	SS Grade 304	kg	2,500.00			-
80	Designing, providing and fixing aluminium frame work made of special aluminium section on building face with M.S. angle iron brackets fixed on RCC structure with S.S. hold fasteners, including providing and fixing two sided structural adhesive tape of appropriate grade (NORTON or equivalent), on aluminium sections for fixing aluminium/ glass panel, sealing on periphery of frame work, by providing EPDM gasket, silicon weather sealant between aluminium frame and building structure including hire charges of double scaffolding complete.	kg				-

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
81	Spider Glazing partition & Biparting Automatic Sliding door - Supplying, fabricating and installing Dorma or equivalent spider glazing partition and Biparting automatic sliding door of frameless 12mm thick clear toughened automatic sliding glass door shutters with high efficiency brushless servo motor and direct drive reduction gear. Class of protection IP 20. The system shall have constant power supply 210 V, 50/60 Hz for opening size all complete as per design and manufacturer's specification. The automatic door shall be mounted on a MS portal. The door shall comprise of two sliding panels of 1800 x 2400 with 12mm clear toughened glass. The fixed glasses on top shall be 12mm clear toughened glass and shall be held with required Dorma Stainless steel Spider and patch fittings as per approved shop drawings. with SS sliding assembly with automatic sensor device, s.s. fasteners, DC 793/795 Dow corning transparent weather silicone sealant or equivalent, 15mm toughened clear glass fins, sealing of periphery, assurance of watertightness etc., S.S. locking approved profiled edges etc., all complete as per drawings, approved shop drawings and specifications. Rate shall include all transport charges, handling, loading and unloading, installation, protecting the module and glass till handing over, testing, commissioning all necessary hardwares, structural supports if any etc complete as per manufacturer's specifications as directed.					
a	Spider Glazing in 12 mm thick toughened glass with 15 mm thick toughened glass fins and all fittings as mentioned above	sqm	166.73			-
b	Automatic Sliding door system alongwith glass doors as given above	sqm				-
82	<b>EXTERNAL FAÇADE</b> : Exterior Panelling System:Providing and fixing 200F Plain Aluminium Panel Ceiling of approved colour and make consisting of panel 200mm wide x 17mm deep x 0.7mm thick, panel length up to 6mtr, Coil Coated on a Continuous Paint Line, Double baked and Roll formed from enamelled Corrosion Resistance Aluminium Alloy AA3005 for higher strength and good Roll Forming characteristics. Panel shall be clipped to a Baked enamelled Aluminium Panel Carrier of 34.5mm wide x 48mm x 1.2mm thick in standard length of 5mtrs made of double baked enamelled Aluminium Alloy AA 5050 (Al.Mg) colour Black with cut outs to hold the panels of module 200mm at a distance at 1.2mtrs c/c. The panel carrier shall be suspended by means of a suitable rigid suspension support at a distance of 0.550mtr c/c. Paint Finish: Aluminium panels shall be chromatised for maximum bond between metal and paint, enamelled twice under high temperature one side with full primer and Luxacote finish, the other side (inner side) with a primer coat and skin coat on a Continuous Paint Line. Note : Rate is inclusive of all color shade and frame work all complete. ( Make: M/s Hunter Douglas India Pvt. Ltd./ Equivalent). The design of Structural Glazing and external facade has to be got vetted by IIT Roorkee / IIT Delhi without any extra payment.	Sqm	300.00			-

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
	Frame Work: Frame work shall be fabricated out of heavy duty extruded aluminium profiles of approved make polyester powercoated 60 microns as per approved colour/shade of appropriate coating grade as per specification. The aluminium members shall be protected with Masking Tapes all around the profiles for safety against external scratches at site (Masking Tapes shall be removed only at the time of handing over as per the instructions of Project Manager). The anchoring/bracing of the facade frame to the RCC slab/beams/columns shall be done with required no. of Galvanised MS brackets (Galvanising to be done conforming to IS:4759-1996 upto 610 gms. per sqm, 80-90 micron thickness) of approved design with SS dash fasteners of approved make of minimum 12mm dia and depth of minimum 100mm in the concrete and stainless steel bolts including providing and fixing of aluminium shims of various thickness to adjust the beam level & line variations.					
	The anchoring system shall be designed to withstand the dead load of the structure wall as well as stresses due to wind pressure etc. The glazing frame shall be aligned for each vertical mullion for the entire height and for each Transom for the entire width horizontally by lazer beam equipment to ensure 100 percent 'X' axis and 'Y' axis alignment. To make the joints water & air tight, the glazing framework shall be provided with approved in-built ventilation and drainage system. All the joints of the Structure Glazing system & the periphery of glass shall be properly sealed with specified weather silicon. The details for in-built ventilation & drainage system to be submitted by the contractor and got approved by the Project Manager. The Structure Glazing system should also provide for pressure equalisation. The details for pressure equalization to be submitted by the contractor and got approved by the Project Manager. The contractor shall provide the connectivity for Lighting Protection system in the Structure glazing as per the International Standard and shall also give the requirement of earth pits for the Lighting protection.					
	<b>Structural Glazing (with Frame)</b> Structural Glazing in panels of size as per drawings with Double Glazed unit with 6mm solar reflective high performance low -E glass +12 mm air gap + 6mm float glass to achieve U value 1.80 W/sqm - K and SGHC - 0.20 of approved make duly toughened including sub-frames, mullions, transomes, trims, aluminium extrusions polyester powder coated in approved colour, stainless steel brackets/ clamps, stainless steel bolts, nuts, washers and shims; approved expansion fasteners with stainless steel bolts, nuts and washers; silicon/ EPDM gaskets; drainage provisions; weather seals' flashings and seals at all interfaces with building structure, openings, louvers and cladding system; including bird/vermin proof closure at bottom and flashings at top etc. all complete as per shop drawings, samples and specifications of colours & shade as approved by the Project Manager. ( Saint Gobain, Asahi). At locations shown in drawing Aluminium powder coated profile tubes / fins/ horizontal members shall be placed on surface for aesthetic as per reference view and elevation. The size of the profile fins/ tubes shall be minimum 50					
83	Extra for providing & fixing openable window in structural glazing in above item , the cost of adjustable Stainless Steel Friction stay/ Hinges, button locking handle & other hardware as per design to be got approved by the Project Manager/ Architect.	sqm	45.00			-

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
84	Providing and fixing of Frameless Glass fixed window of any height as per drawings and specifications at all floors with 12mm thick clear toughened glass with all necessary fittings and hardwares of approved make including necessary fixing arrangements. The glass is fixed up with the cill / floor and lintel/ roof beam by embedding polyester powder coated Aluminium U channel of size 25 mm x 25 mm of 16 gauge. The U bottom will be grouted in the cill / floor and lintel by chasing the cill / floor and lintel including necessary filling up gaps at sides, top & bottom with required weather proof silicon & backer rod shall be inserted between aluminium channel and glass as well as both inside and outside around the periphery of the glass making the glazing air and water tight etc all complete as per directions and instructions of Engineer - in - charge at site.	sqm	150.00			-
85	Aluminium Louvers- Providing and fixing SL-4 84R Plain Panel Sun Louvers. of approved colour and make consisting of panel 84 mm wide x 16mm deep x 0.6mm thick with round edges panel length up to 6mtrs coil coated on a continuous paint line double baked and roll formed from enamelled corrosion Resistance Aluminium Alloy AA3005 (Al.Mg.) for higher strength and good Roll forming characteristics. Panel shall be clipped to baked enamelled Aluminium SL-4 panel stringer of 33mm wide and 86mm deep x 0.95 mm thick in a standard length of 5mtrs made of double baked enamelled Aluminium Alloy AA5050 (Al.Mg.) black with cut-outs to hold the panel in a module of 86mm centre to centre at a distance of 1mtr. The carrier shall be fixed to a suitable structure by means of rigid fixing details. Paint Finish: Aluminium panels shall be chromatised for maximum bond between metal and paint, enamelled twice under high temperature one side with full primer and Luxacote finish, the other side (inner side) with a primer coat and Skin Coat on a Continuous Paint Line. Note : Rate is inclusive of all color shade and suitable frame work for fixing. ( Make: M/s Hunter Douglas India Pvt. Ltd./ Equivalent)	sqm	100.00			-
86	Supply and install modular toilet cubicles of MERINO-BESCO make 'TITAN STD' series as per manufacturer's std specifications. All intermediate panels, pilasters, doors shall be made up of Solid Compact Laminate (Phenolic Core Board) as per IS 2046 based on thermosetting resins, homogeneously reinforced with cellulose fibers making cubicles impervious to Water, resistant to Fire, etc. <b>Compact laminate should be Greenguard and IGBC certified</b> <b>Hardware and Fixing</b> All accessories shall be of Merino's SS 304 grade including all hardware/fittings. The pilaster are anchored to the flooring using adjustable SS legs. The SS top rail shall be fixed on the top of the pilasters. <b>Accessories</b> :Std accessories include SS Hinges, SS Door knob, SS legs, SS thumb turn indicator, SS coat hook, SS top rail and SS channels (All accessories in SS 304 grade)					

BILL OF QUANTITY						
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a	Titan Std Series Cubicles: Std Sizes (W x D x H) - 900 mm x 1550 mm x 1980 mm, (Height is including 150 mm gap from bottom) Door size - 600 mm	Nos	2.00			-
87	<p>Façade cleaning System</p> <p>Providing and installing Façade cleaning System comprising of the following :</p> <p>1 nos Floor mounted Davits. Made of Aluminium Alloy. Aluminium - Mill Finish The davits will be Top Slewing, 360 degree Rotating Type. The davits to be anchored to the RCC pedestal with davit sockets.</p> <p>17 nos Davit Socket - Made of M.S. Plates. All Mild Steel shall be Hot Dip Galvanised</p> <p>17 nos H.D.U's - 4 bolts Holding Down Units. The anchorage units comprises of parallel M.S. Plates with Stainless Steel Bolts fixed to the RCC pedestal.</p> <p>1 no.Solo Power Cradle with safe working load of 180 kgs. The specifications further will be:</p> <p>1 nos. safety breaks</p> <p>2 nos Power cables suitable for height of the building</p> <p>2 nos. wire winders complete with clutches Winches will be of IP55 construction, fitted with 0.55 KW Motor, 415V, 3 phase 50 Hz supply and 500 kg winch capacity the body of the cradle will be clad with SS perforated sheet on an MS hot dip galvanised frame, including anti-tilt, overload, bottom strike, power failure, top limit, emergency stop, etc.</p>	Set	1.00			-
88	Design, Supply, Fabrication, Installation in position MS pergola in Mild steel for all leads and lifts AS/ DETAIL DRG. IN MS STRUCTURE, ACP CLADDING as per design. MS STRUCTURE in mild steel conforming to IS:1429 shall be done. Structure shall be analyzed and designed for primary loads and their combinations as specified in IS: 875 Part - I,II & III-1987. Welded structural joints and bolted structural joints shall conform to relevant IS codes. Exposed Structure shall be treated with suitable primer longwith two or more coats of Polyurethane paint of approved shade complete as per the satisfaction of the Engineer in Charge. ( Drawing isgiven for showing design intent of the Architect. Vendor has to design the structure and finishing accordingly)	sqm	50.00			-
IX	<b>ROOFING AND CEILING</b>					
90	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	250.00			-

BILL OF QUANTITY						
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
91	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	10.00			-
92	Providing 10mm thick plaster of paris (Gypsum anhydrous) ceiling height of 5m. above floor level over strips (Sal, Bija, Haldu) 25x6mm with 10mm gap in between and reinforced with rabbit wire mesh fixed into wooden frame (Frame work to be paid separately)					
a	Flat surface	sqm	761.77			-
93	<p>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/partit Coat on a Continuous Paint Line.</p> <p>Note : Rate is inclusive of all color shade and suitable frame work for fixing. ( Make: M/s Hunter Douglas India Pvt. Ltd./ Equivalent)</p> <p>ned hard wood. the infill shall be fire rated insulation ceramic fibre blankets of 30 mm thick x 96 kg/cum with fire rated cobra acrylic sealent of 1 mm on both sides. The shutters to be faced with water proof marine ply. All wooden surfaces include applying a coat of approved fire resistant primer and finished in thermosetting polyurethane paint (35 Microne DFT) of approved colour and make as specified by the Engineer-in-charge. The Promoseal Intumuscent fire seal strip of size 20 mm x 4 m</p>	sqm	2,267.54			-

BILL OF QUANTITY							
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh							
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR	
6	Perforated with non woven tissue ( for Acoustics), Coil Coated, Tile Ceiling System:Providing & fixing of Flexalum® Lay-in Plain Tile False Ceiling on 24mm 'T' Framework of module 600mm x 600mm. Panels shall be manufactured by Hunter Douglas of size 575mm x 575mm made out of 0.6mm thick Aluminium alloy. Tiles to be stove enamelled on a continuous application for pre-treatment. The coils to go through 4 stages of pre-treatment, three times oven baked through conversion coating, priming and finish coat ensuring superior adhesion, high corrosion resistance and good colour stability. The coils to be painted on both sides after degreasing. Inside surface to have a primer of 5 microns and a coat of natural colour of 5 microns, exposed surface to have a primer of 5 microns, binder of 5 microns and topcoat of approved colour of 15 microns. The Tile will be manufactured on advanced equipment, which includes several levelling. The tile end shall be raised upward by 38mm and bend outward to lay the tile in framework. Grid system for fixing ceiling tiles shall comprise of Tees. The 24mm main tee runners shall be suspended at an interval of 1200mm centre to centre. The 24mm cross tee runner shall be suspended at 600mm centre to centre and further supported with 24mm cross tee at 600mm centre to centre with interlocking arrangements to form grid of 600mm x 600mm. The main tee shall be supported by means of 4mm G.I. rod from slab/roof. The suspension shall be provided at 1200 to 1500mm centre to centre. Mode of Measurements: Measurements shall be wall to	sqm	1,523.66				-
7	Providing and Fixing Decosonic™ Hi-Strength Glass Reinforced Gypsum Board Ceiling Tile with water resistant properties, suspended on 24mm Decosonic™ Suspension System for superior water resistance and durability. Panels shall be of Size 600*600*9mm with decorative PVC vinyl top layer of the choice of site in-charge with a PVC tape on all four sides for greater water resistance. The bottom of the tile shall be covered with factory pressed Aluminum foil for lifetime protection and combustion Grade B1 according to the standard GB8624-1997 and fire resistance class conforming to BS1230 Part 1 1985, BS 476 Part 8 1972. GRID: Providing and fixing tiled false ceiling of approved materials of size 600*600 mm in true horizontal level, suspended on inter locking. Decosonic metal grid of hot dipped galvanized steel sections consisting of main "T" runner with suitably spaced joints to get required length and of size 24x32 mm made from 0.27 mm thick sheet, spaced at 1200 mm center to center and cross "T" of size 24x28 mm mid system for fixing ceiling tiles shall comprise of Tees. The 24mm main tee runners shall be suspended at an interval of 1200mm centre to centre. The 24mm cross tee runner shall be suspended at 600mm centre to centre and further supported with 24mm cross tee at 600mm centre to centre with interlocking arrangements to form grid of 600mm x 600mm. The main tee shall be supported by means of 4mm G.I. rod from slab/roof. The suspension shall be provided at 1200 to 1500mm centre to centre. Mode of Measurements: Measurements shall be wall to wall without any deductions for lights, diffusers, columns etc. ( Make: M/s Hunter Douglas India Pvt. Ltd./ Equivalent)d on PU polymer modified bitumen emulsion with addition of silicone and acrylic having elongation > 900%, (offered system : APA	sqm	300.00				-
8	Providing Cove in Gypsum ceiling 150 mm x 150 mm in straight / curved profile as required with all supporting members and finish as per Gypsum false ceiling	RM	350.00				-
X	<b>PLASTERING AND POINTING</b>						



BILL OF QUANTITY						
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88,Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
95	15mm thick cement plaster on the rough side of single or half brick wall of mix:					
a	In cement Mortar 1:3 (1 cement : 3 fine sand)	sqm	25.00			-
b	In Cement Mortar 1:4 (1 cement : 4 fine sand)	sqm	6,500.00			-
96	6mm thick cement plaster 1:3 (1 cement : 3 fine sand) finished with a floating coat of neat cement and a thick coat of lime wash on top of wall when dry for bearing of R.C.C. slab and beam.	sqm	4,271.76			-
97	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	2,500.00			-
98	Extra for providing and mixing water proofing materials in cement plaster work in proportion as recommended by manufacturer.	kg	1,076.00			-
99	Extra for plastering of exterior walls when height exceeds 10m above ground level for every additional height of 3.0m or part thereof.	sqm	1,600.00			-
100	Providing and fixing chicken mesh weighting not less than 250 gms/ sqm as per IS : specification in the required width with 10mm long steel nails on vertical and horizontal surface near R.C.C. and brick walls junctions including scaffolding and all lead and lifts etc. complete before plastering upto 10mts in height.	sqm	499.00			-
101	Providing Plaster of Paris (POP) rendering over cement plaster upto 8mm thickness for walls beams at all heights and ceiling and levels including scaffolding staging etc, complete	sqm	3,500.00			-

<p style="text-align: center;"><b>BILL OF QUANTITY</b>  <b>Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh</b></p>						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
102	Providing and making 12mm thick plain cement mortar bands in cement mortar 1:4 (1 cement : 4 fine sand) per cm width:					
a	Sunk Bands	rmtr.	300.00			-
103	Providing and making 18mm thick plain cement mortar band in cement mortar (1 cement:4 fine sand) per cm width					
a	Raised Band	rmtr.	2,000.00			-
XI	<b>FLOORING</b>					
104	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	135.00			-
105	Providing and laying R.C.C. vacuum dewatering concrete flooring with floor hardener of approved make to be sprinkled at the rate of 5 kg/sqm before mechanical troweling as per manufacturer's specifications including mixing, tamping mechanically, consolidating, leveling cement concrete of grade M25 Design Mix in grade slab, 150 thick including suction drying, mechanical trowelling (power float) and finishing, curing, cutting expansion grooves and filling expansion grooves with polysulphide joint fillers complete as specified and directed including shuttering but excluding reinforcement, including doweled construction joints as per drawings.	CUM	10.00			-
106	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 IN FLOORING ANS 100 MM HIGH SKIRTING:					

BILL OF QUANTITY						
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88,Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a	Size 600x600mm	sqm	100.00			-
b	Size 800x800mm	sqm	1,918.44			-
107	Deduct for not using 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) bedding in laying of floor tiles.	sqm	2,361.96			-
108	Extra for fixing glazed/ Ceramic/ Vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, using 5kg. adhesive per sqm of tile area, in average 3mm thickness in place of cement mortar.	sqm	2,018.00			-
109	Chequered pre-polished precast cement concrete floor tiles confirm to IS 1237:1980 (Reaffirmed in 1996) for heavy duty tiles (Exterior Grade), 22-25mm thick in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tile including cleaning of joint etc complete on 20 mm thick bed of cement mortar 1:4 (1 cement :4 coarse sand) ( Make : Ultra / Equivalent)					
a	Light shade using white cement	sqm	40.00			-
110	Extra for nosing in Granite stone for treads,capping on wall cladding, cills, coping	metre	1,050.00			-
111	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)					
a	Granite stone Jet black/ as per selection by Engineer In charge	sqm	500.00			-

<p style="text-align: center;"><b>BILL OF QUANTITY</b>  <b>Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh</b></p>						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
112	15 mm thick Table rubbed polished Granite stone slab in risers and treads of steps skirting dado , capping on wall cladding, cills, coping 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).					
a	Granite stone Jet black/ as per selection by Engineer In charge	sqm	600.00			-
113	25 mm 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				-
114	KOTA stone slab 25mm thick in risers and treads of steps, skirting dado and pillar laid in 12mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete. (single stone is to be used for riser and treads of steps and the width of stone for skirting and dado shall be equal to the height of skirting/ dado with a minimum length of 1.0 M.)	sqm	20.00			-
115	Extra for nosing in steps and treads of kota stone slab.	metre	120.00			-
116	Providing and laying upto 10mm wide stone strips for pattern in flooring of approved colour and shade of:					
a	Granite stone Jet black/ as per selection by Engineer In charge	metre	275.00			-

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88,Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
14	Precast interlocking concrete paver blocks: Providing & laying factory made confirm technical specification of Bureau of Indian Standards 15658 of 2006 of heavy duty pavers resulting in consistent and uniform quality, rubber moulded, white cement based, pigmented block lacquer coating and cured through drying process mechanically vibrated and compacted precast interlocking premium concrete paver blocks in M40 grade, 60mm thickness of approved size, design and colour with providing and laying in position 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. Coloured pigment precast interlock concrete blocks. as per direction of engineer in charge. ( Make: Ultra /Equivalent)					
a	Coloured pigment vermiculite texture, lacquer finsh precast interlock concrete blocks	each	100.00			-
15	Precast interlocking concrete grass paver blocks:Providing & laying factory made confirm technical specification of Bureau of Indian Standards 15658 of 2006 of heavy duty pavers resulting in consistent and uniform quality, rubber moulded, white cement based , pigmented block lacquer coating and cured through drying process mechanically vibrated and compacted precast interlocking premium concrete paver blocks in M40 grade , 60mm thickness of approved size, design and colour with providing and laying in position 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. Coloured pigment precast interlock concrete blocks. ( Make: Ultra /Equivalent)	metre	1,000.00			-
119	Providing and fixing precast compressed plain cement concrete edge restraint of size 500mmx250mmx60mm of compressive strength of 200kg. per sq.cm manufactured by electro hydraulically operated block machine by excavated trench of 150mm depth etc. complete	metre	200.00			-
120	Providing and laying brush concrete flooring of 12mm thick cement concrete (1 cement :2 black metal, 6mm size) mixed with granite pigment of approved quality in a ratio of 2.08 kg/sq metre are laid over & including a base of 40mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm size) with 12.50 mm size graded B.T metal mechanically mixed including neat cement finish over granite with red/ approved colour pigment including glass strip of size 45x3 mm including glass strip of size 45x3 mm including cost of all material & labor etc. complete.	sqm	200.00			-

BILL OF QUANTITY						
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
121	Providing and fixing 1st quality ceramic glazed wall tiles of size 600 mm x 300mm conforming to IS:15622 of minimum thickness 8mm, of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over minimum 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete. (Basic price of tile= Rs 600/sqm)	sqm	1,000.00			-
122	Providing and fixing of Italian Marble stone of thickness 19/20 mm in flooring as per drawings & specifications. The Italian marble should be factory processed, pre polished (diamond polished), surface calibrated, four side trimmed with the reinforcement of epoxy resin and fiber glass backing. The fixing of stone shall be done as per approved pattern and design with smooth and even surface without holes or pits. The top surface of full slab should be treated with epoxy resin (under vacuum & controlled temperature) with slab size not less than 1200 x 600 mm in combination of approved shades & colour, laid in 20 mm thick cement mortar 1:3 (1 cement: 3 coarse sand) including finishing the joint with Laticrete or Araldite joint filler or approved equivalent of approved shade etc to match the colour of Italian marble stone slab including edge polishing wherever required all complete as per directions & instructions of Engineer in charge. (Basic cost of Italian marble = Rs 5000/sqm)	sqm	5.00			-
123	Same as item no. 20 above but on wall & column surface cladding / skirting with minimum 12mm thick cement mortar 1:3 including half round moulding on edges and providing grooves as directed	sqm	5.00			-
124	Providing and laying machine cut, machine mirror polished Granite Slabs of approved colour of size 750 mm x 750 mm and 18-20 mm thick of approved quality for flooring in square or diamond pattern on a bed of 1:6 cement mortar including neat white cement float including filling joints with white cement slurry, curing and cleaning complete as per detail dwg.	sqm	5.00			-
125	Same as above item no. 21 but for shot blasted rectangular granite stone band in flooring of width varying from 250mm-500mm and minimum length of 1800mm complete. as per detail drawing.	sqm	5.00			-
126	Same as above item no. 21 but for for larger size slabs of Granite in flooring upto 1200 x 1200mm as per detail drawing.	sqm	5.00			-

BILL OF QUANTITY						
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
127	Providing & laying 18-20mm thick shot blasted granite slabs of approved colour & quality in a radial pattern with an inlay of 18 to 20 mm thick machine cut, machine mirror polished granite band of width upto 150mm of approved colour and quality intersplayed within the shot blasted granite as per detail drawing. Maximum size of shot blasted granite slab: upto 2000 x 2000 mm in a single piece	sqm	5.00			-
128	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :					
a	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	sqm	5.00			-
129	Providing and laying machine cut granite slab of approved colour for flooring in strips of 300 x 1800mm size, combination of mirror polished & shot blasted, 18 - 20mm thick of approved quality in required pattern on a bed of 1:6 cement mortar including neat white cement float including filling joints with white cement slurry, curing and cleaning complete as per detail dwg	sqm	5.00			-
130	Same as above item no. 26 but using only machine cut, machine mirror polished black granite stone in strips of 300 x 1800mm as per detail dwg.	sqm	5.00			-
131	Same as above item no. 26 but of only machine cut, shot blasted Granite strips of size 300 x 1800mm as per detail dwg.	sqm	5.00			-
132	Providing & Fixing double window cills hand cut, machine mirror polished green Kotah stone (Horizontal & Vertical) 25-32 mm thk. & reqd. width on 1:4 cement plaster/ Cement paste over 50mm thk bedding mortar 1:4, with required pins incl. cement float, filling joints with neat cement slurry, stone pieces to be fixed with Araldite or approved equivalent adhesive, including curing, 3 coats of polishing (incl. Edge Polish), cleaning and rubbing complete & as per drawing.	sqm	5.00			-

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
133	Providing and fixing 18 to 20mm thick granite stone partitions, mirror polished on both sides with edge polished of approved quality and colour for urinals including cutting holes of required sizes for pipes in appropriate places, fixing in cement mortar 1:3, curing, cleaning etc.complete.	sqm	5.00			-
134	38 mm thick Parquet (wood blocks) flooring of teak wood laid over 25mm thick leveling layer of cement concrete 1:2:4 (1 cement : 2 Coarse sand : 4 stone aggregate 10mm nominal size) to be paid separately coated with thin layer of hot bitumen (blown type) @ 2.45 kg/sqm including fixing blocks after dipping in hot bitumen (blown type) upto half depth planned, leveled, smooth and finished complete	sqm	260.00			-
XII	<b>MARBLE WORK (Wall Lining)</b>					
135	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).					
c	Granite stone lakha red/ shahi red/ approved colour and design	sqm	50.00			-
136	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.					
a	Granite stone lakha red/ shahi red/ approved colour and design	sqm	35.00			-
137	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	44.00			-



<p style="text-align: center;"><b>BILL OF QUANTITY</b>  <b>Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh</b></p>						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
138	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	40.00			-
139	Mirror polishing on marble work/Granite work where ever required to give high gloss finish complete.					
a	On walls	sqm	50.00			-
b	On kitchen platform, sills and similar	sqm	32.00			-
<b>XIII</b>	<b>DISTEMPERING, PAINTING AND FINISHING</b>					
140	Wall painting with acrylic luxury emulsion (plastic) paint (top most approved branded quality) to give an even shade.					
a	On new work (two or more coats)	sqm	4,426.83			-
141	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	100.00			-
142	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:					

BILL OF QUANTITY						
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a	On new work (Two or more coats )	sqm	2,472.88			-
143	Applying priming coat on steel work with red oxide zinc chromate primer.	sqm	450.00			-
144	Painting on new work (two or more coats) to give an even shade with:					
a	Satin synthetic enamel paint (top most approved branded quality)	sqm	431.27			-
145	Extra for painting with spray painting machine instead of paint brush:					
b	On new work	sqm	431.27			-
146	Providing and laying Melamine polish on new wood work (two or more coats) with spray machine after preparing surface by rubbing down smooth with sand papers, preparation of surface, applying 5 to 10 coats of french sprit polish, applying two coats of Melamine sealer and finally applying two coats of Melamine clear as per manufacturers specifications complete:	sqm	234.00			-
147	Providing and laying PU polish on new wood work (two or more coats) with spray machine after preparing surface by rubbing down smooth with sand papers, preparation of surface, applying 5 to 10 coats of french sprit polish, applying two coats of PU sealer and finally applying two coats of PU clear as per manufacturers specifications complete:	sqm	50.00			-

<p style="text-align: center;"><b>BILL OF QUANTITY</b>  <b>Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh</b></p>						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
148	Providing and applying 3 coats over a coat of primer, of oil bound distemper of approved shade and of approved make over concrete/ plastered surfaces including preparing of the surfaces, scaffolding etc complete in all respects.	sqm	551.52			-
	<b>SubTotal Civil Works</b>					-

## BILL OF QUANTITY

Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
<b>PLUMBING WORKS</b>						
<b>I</b>	<b>SEWERAGE SYSTEM</b>					
1	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.					
	In all types of soil	cum	125			
2	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	40			
3	Providing and fixing square-mouth S.W. gully trap grade 'A'q complete with C.I. grating brick masonry chamber with 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 :					
	100x100 mm size P type	each	3			
4	Providing and fixing on wall face or under floor UV stabilized Unplasticised Rigid PVC pipes (single socketed) having 3.2mm wall thickness conforming to IS : 13592 (4kg/sqcm) including required couplers, jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion etc complete.					
4.2	150 mm diameter	Metre	5			

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
4.3	200 mm diameter	Metre	125			
5	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:					
5.2	150 mm diameter S.W. pipe	Metre	5			
5.3	200 mm diameter S.W. pipe	Metre	125			
6	Constructing brick masonry manhole with modular 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 :					
6.1	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :	Each	2			

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## Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
6.2	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg) :	Each	4			
7	Extra for depth for manholes					
7.1	Size 90x80 cm	Each	3			
7.2	Size 120x90 cm	Each	2			
8	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	10			
<b>I</b>	<b>SANITARY WORK</b>					
1	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 :					

## BILL OF QUANTITY

## Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
1.1	White wall hung type	Each	32			
2	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 :					
2.1	White Size 550x450 mm	Each	34			
3	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink with 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 :					
3.1	1145x510 mm bowl size 560x410x241 mm	Each	2			
4	Providing and fixing 15 mm nominal bore C.P copper connection pipe with C.P brass nuts collar and PVC bush of approved quality:					
4.1	30 CM length	Each	66			
5	Providing and fixing flexible P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.					
5.1	32 mm dia	Each	34			

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
5.2	40 mm dia	Each	2			
6	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	34			
7	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:					
7.1	Long body bib cock (500gms)	Each	2			
7.2	Piller cock (400gms)	Each	34			
7.3	Tow way Bib cock (800gms)	Each	32			
7.4	Angle valve for basin mixer and geyser points (450gms)	Each	66			
7.5	Bottle trap set with extension pipes	Each	36			



BILL OF QUANTITY						
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
7.6	Toilet paper holder	Each	32			
7.7	Soap dish plate	Each	34			
7.8	Towel ring (150 mm dia)	Each	34			
7.9	Health foscet (hand jet) with flexible connection pipe (for WC)	Set	32			
8	Providing and fixing C.P. cast brass twin coat hooks fixed to wooden cleats with C.P. brass screws Jaquar (Cat. No. ACN-1161N)	Each	32			
9	Providing and Fixing S.S. body 1.2 litre liquid soap dispenser horizontal /vertical Sartin finish with simple push lever filled with liquid soap (one time) including cutting and making good the walls, wherever required (JAQUAR ACN-1135N)	Each	34			
10	Providing and fixing vitreous china sensor type urinal with flushing valve large (semistall) of size 610x390x370 mm or eqv. size with C.I. hangers, C.P. 15mm Spreader, 32mm dia C.P. brass domical waste, 32 mm dia cast Bottle Trap including connection pipe to wall with C.P flange complete including cutting and making good the walls and floors wherever required . (Make: Hindware -Senso -Cat. No. 60018 & Vijay for Bottle Trap Cat No. 565, or approved Equivalent)	Each	6			

## BILL OF QUANTITY

## Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
11	Providing and Fixing white vitreous china urinal partition of 680x300 mm app. size, fixed with expandable anchor fasteners with C.P. brass bolts and washers, embedded in wall and set in cement concrete complete including cutting and making good the walls wherever required. Star White Colour (Hindware New Division Plate cat. No.:61005, Parryware PW-C0571)	Each	3			
12	Installation, Testing and commissioning of follind Grab rail for water coset complete including cutting and making good the walls wherever required.	Each	5			
13	Supply, Installation, Testing & Commissioning vitreous china wall hung European type water closet straight / offset type flexible single body push fit type WC pan connector with factory supplied seal guard of McAlpine with C.P. bolts, nuts, C.I. chair or other hanging arrangement, with Solid plastic seat and slow falling cover, C.P. brass hinges rubber buffers with accessories, C.I./M.S. brackets painted with two coats of enamel paint of approved shade over a coat of primer. C.P. brass screws, including cutting and making good the wall and floors wherever required. (Make.: Hindware Wave Cat. No: 92067, Parryware PW-C844K) (for CMD toilet)	Each	6			
14	Supply, Installation, Testing & Commissioning vitreous china wall hung European type water closet straight / offset type flexible single body push fit type WC pan connector with factory supplied seal guard of McAlpine with C.P. bolts, nuts, C.I. chair or other hanging arrangement, with Solid plastic seat and slow falling cover, C.P. brass hinges rubber buffers with accessories, C.I./M.S. brackets painted with two coats of enamel paint of approved shade over a coat of primer. C.P. brass screws, including cutting and making good the wall and floors wherever required. (Make: Hindware Model: Studio (SPECIAL-Cat. No:20061), (Parryware PW-C0207 Cascade NXT Wall Hung)) (for other toilet)	Each	25			

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## Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
15	Supply, Installation, Testing & Commissioning vitreous china sensor type urinal with flushing valve large (semistall) suitable for 250ml pre use flushing & 350ml post use flushing of size 610x390x370 mm or eqv. size with C.I. hangers, C.P. 15mm Spreader, 32mm dia C.P. brass domical waste including connection pipe to wall with C.P flange complete including cutting and making good the walls and floors wherever required. (Make: Hindware-Senso Art, Cat. No. 60018) Note:- The price should be inclusive of required sensor & valves etc as required for complete working.	Each	12			
16	Supply, Installation, Testing & Commissioning white vitreous china urinal partition of 680x300 mm app. size, fixed with expandable anchor fasteners with C.P. brass bolts and washers, embedded in wall and set in cement concrete complete including cutting and making good the walls wherever required. Star White Colour (Hindware New Division Plate cat. No. 61001, Parryware PW-C0571)	Each	12			

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88,Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
II	<b>SOIL, WASTE &amp; VENT PIPE</b>					
13	Providing and fixing <b>uPVC pipes type -B</b> conforming to IS: 13592 for soil, waste and vent pipes including all fittings rubber ring type (plain or with access door) e.g. bends, junctions, cowls, offsets, access pieces, jointing with rubber ring joints with lubricant etc. fixed with clamps to walls with cement concrete 1:2:4 blocks complete in all respects. ( Make : KML Classic / Equivalent)					
	For soil, waste and vent pipes					
13.1	90 mm OD	Metre	50			
13.2	110 mm OD	Metre	430			
13.3	160 mm OD	Metre	15			
14	Providing, fixing, jointing and testing in position the following <b>uPVC pipes</b> conforming to IS 4985 of 6 kg/sqcm pressure rating including all fittings, solvent weld joints, testing complete for drainage system cut to required length to be laid under floor including covering all around with cement concrete and making good the same complete as required.( Make : KML Classic / Equivalent)					
	<b>For waste pipes</b>					
14.1	40mm OD	Metre	75			
14.2	50mm OD	Metre	15			

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
14.3	63mm OD	Metre	20			
15	Providing and laying <b>cement concrete 1:2:4</b> (1cement: 2coarse sand: 4stone aggregate 20mm nominal size) all-round uPVC including centering and shuttering.					
15.1	4" dia pipe	Metre	430			
16	Providing and fixing uPVC floor drain of following size inlet and outlet including cutting and making good the walls and floors wherever required complete in all respects. ( Make : KML Classic / Equivalent)	Each	11			
17	Providing and fixing 110x110 mm uPVC 'P' trap with 2-3 inlets required size fitting with seal 50 mm of self cleansing design floor/ urinal trap without vent suspended with supporting clamp or in sunken portion including cutting and making good the walls and floors wherever required complete in all respects. ( Make : KML Classic / Equivalent)					
17.1	110 x110 mm outlet	Each	42			
18	Providing and fixing uPVC cleanout plug with openable cap for uPVC pipes ;( Make : KML Classic / Equivalent)					
18.1	For 110 mm OD pipes	Each	20			

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
18.2	For 160 mm OD pipes	Each	5			
19	Providing and fixing SS grating of approved quality and colour.Circular type 124 mm nominal dia with 25 mm waste hole.	Each	53			
<b>II</b>	<b>DRAINAGE</b>					
11	Providing and fixing on wall face or under floor UV stabilized Unplasticised Rigid PVC pipes (single socketed) having 3.2mm wall thickness conforming to IS : 13592 (4kg/sqcm) including required couplers, jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion etc complete.					
11.1	100 mm dia. R.C.C. pipe	Metre	10			
11.2	150 mm dia. R.C.C. pipe	Metre	250			
12	Providing and constructing brick masonry road gully chamber 50x45x60 cm with Fly Ash 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	13			

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
13	Constructing brick masonry manhole 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), 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 :					
13.1	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :	Each	2			
13.2	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg) :	Each	1			
14	Extra for depth for manholes					
14.1	Size 90x80 cm	Each	5			
14.2	Size 120x90 cm	Each	2			

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## Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
15	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	10			
16	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :					
16.1	200 mm dia Pipe	Metre	10			
16.2	250 mm dia Pipe	Metre	10			
III	<b>RAIN WATER SYSTEM</b>					
20	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.( Make : KML Classic / Equivalent)					
20.1	75mm dia	Metre	15			



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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
20.2	110mm dia	Metre	25			
20.3	150mm dia	Metre	135			
21	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.( Make : KML Classic / Equivalent)					
21.1	<b>Single tee without door</b>					
21.1.1	110x110x110 mm	Each	2			
21.1.2	150x150x150 mm	Each	5			
21.2	<b>Bend 45°</b>					
21.2.1	110 mm bend	Each	2			
21.2.2	150 mm bend	Each	5			

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
21.3	Plain bend					
21.3.1	110 mm bend	Each	2			
21.3.2	150 mm bend	Each	5			
22	Supplying, Installation, Testing and Commissioning of khurras 450x450mm with average minimum thickness of 5 cms cement concrete 1:2:4 (1 cement : 2 coarse sand: 4 graded stone aggregate 20mm nominal size) over PVC sheet 1m x 1m x 400 micron, finished with 12mm plaster in cement mortar 1:3(1 cement :3 coarse sand) finished with floating coat of neat cement including rounding of edges and finishing of outlet .... complete in all respects.	Nos	5			
23	Supplying, Installation, Testing and commissioning of dura coating cast iron hopper with cast aluminium ring and dome grating with S.S screw for rain water outlet including making joint to uPVC rain water pipe as per manufacturer's recommendations, complete making good the walls and floors wherever required.					
23.1	Flat type with 160mm OD outlet	Nos	5			
24	Providing and fixing PCC grating in lengths of 0.6 to 1 metre with angle iron frame for pump room drain					
24.1	300 mm wide 40 mm thick with F.P.S bricks	Metre	20			

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
<b>IV</b>	<b>WATER SUPPLY + EXTERNAL WATER SUPPLY</b>					
25	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. ( Make : KML Classic / Equivalent)					
	CONCEALED WORK including cutting chases and making good the walls etc.,					
25.1	15 mm nominal outer dia .Pipes.	Metre	350			
25.2	20 mm nominal outer dia .Pipes.	Metre	85			
25.3	25 mm nominal outer dia .Pipes.	Metre	40			
25.4	32 mm nominal outer dia .Pipes.	Metre	10			
26	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. ( Exposed on wall); ( Make : KML Classic / Equivalent)					
	INTERNAL WORK - EXPOSED ON WALL					

**BILL OF QUANTITY****Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh**

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
26.1	15 mm nominal outer dia .Pipes.	Metre	10			
26.2	20 mm nominal outer dia .Pipes.	Metre	35			

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
26.3	25 mm nominal outer dia .Pipes.	Metre	50			
26.4	32 mm nominal outer dia .Pipes.	Metre	80			
26.5	40 mm nominal outer dia .Pipes.	Metre	80			
26.6	50 mm nominal outer dia .Pipes.	Metre	65			
26.7	62.5 mm nominal outer dia .Pipes.	Metre	11			
26.8	75 mm nominal outer dia .Pipes.	Metre	5			
27	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):					
27.1	25 mm nominal bore	Each	5			

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
27.2	32 mm nominal bore	Each	10			
27.3	40 mm nominal bore	Each	7			
27.4	50 mm nominal bore	Each	2			
27.5	65 mm nominal bore	Each	1			
27.6	80 mm nominal bore	Each	1			
28	Supplying, Installation, Testing and Commissioning of forged brass nickel plated lever operated <b>ball valve</b> of full flow with forged brass hard chrome plated ball with min. working pressure of 15 Kg/cm <sup>2</sup> . Lever should be anti rust coating, complete in all respects .					
28.1	15 mm dia	Each	2			
28.2	20 mm dia	Each	12			

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
29	Supplying, Installation, Testing and Commissioning of forged brass auto air vent valve 10 PN rating including all fitting & accessories.					
29.1	15 mm dia	Each	7			
30	Supplying, Installation, Testing and Commissioning of float valve (brass) with copper float of approved quality suitable for high or low pressure complete in all respects.					
30.1	32 mm dia	Nos.	1			
30.2	40 mm dia	Nos.	1			
17	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings. This included jointing of pipes & fittings with onestep CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge. EXTERNAL WORK					
17.1	40 mm nominal outer dia pipes	Metre	50			
17.2	50 mm nominal outer dia pipes	Metre	50			

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Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh						
Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
17.3	62.5 mm nominal outer dia pipes	Metre	10			
18	Providing and fixing dial type pressure gauge with isolation cock. Dia diameter 100 mm calibration 0-8 Kg.	Each	6			
19	Providing and filling fine sand or coarser grade all-round the pipes in external work.					
19.1	40 mm nominal outer dia pipes	Metre	50			
19.2	50 mm nominal outer dia pipes	Metre	50			
19.3	62.5 mm nominal outer dia pipes	Metre	10			
20	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):					
20.5	65 mm nominal bore	Each	2			



## BILL OF QUANTITY

## Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
20.6	80 mm nominal bore	Each	1			
21	Providing and fixing gun metal non- return valve (horizontal type) of approved quality (screwed end) :					
21.5	65 mm nominal bore	Each	2			
22	Providing and placing in position C.I. double acting air valve of approved make.					
22.1	50 mm dia	Each				
22.2	80 mm dia	Each				
23	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) :					
	80 mm dia nominal bore	Each	1			

## BILL OF QUANTITY

## Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
24	Constructing masonry Chamber 60x60x75 cm, inside with modular well 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	5			
25	Supplying, Installation, Testing & Commissioning of masonry water meter chamber of internal size 120x120x 100 cms and built with full brick in cement mortar (1:5) on 75 cm thick PCC (1:5:10) foundation projecting 150 mm beyond brick wall alround 12 mm thick plastering in cement mortar (1:4) to outside and inside walls and neat cement finish to inside surface including necessary excavation providing 600x600 mm x 8 mm MS manhole cover epoxy coated with MS frame and locking arrangement and painting fixed to top RCC slab complete	Each	1			
26	Supplying, Installation, Testing, Commissioning and making connection to <b>Municipal water main</b> including cutting the existing main line and fixing required fitting and joints including excavation, bailing out water, back filling etc. complete in all respects. (excluding obtaining approval from Municipal corporation)	Each	2			
<b>IV</b>	<b>RAIN WATER HARVESTING</b>					
27	Rain Water Harvesting					
	Construction of rain water harvesting size 3m dia x 4.5m effective depth for the re-charging of storm water run off including the civil work with following specification [Construction of Chamber].					
	De-Silting Chamber:					

## BILL OF QUANTITY

Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
	Providing and constructing brick masonry desilting chamber of size 200x150xupto300 cms depth inside with 75 class designation brick work 345mm/230mm thick in cement mortar 1:5 (1cement:5 fine sand) with weep holes all around , SFRC cover heavy duty 560mm dia and 150 mm thick R.C.C. top slab 1:2:4 mix(1 Cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) including necessary excavation, back filling, disposal of surplus earth as directed, foundation concrete 1:5:10 mix (1 cement : 5 fine sand : 10 graded stone aggregate 40mm nominal size) below masonry walls with 150mm projection at either side including necessary baffle wall inside(as per std. drawing) , excavation,back filling and disposal of surplus earth upto a lead of 200 mtr., poly propylene coated rungs @ 300 mm c/c.	Each	1			
	Rain Water Harvesting Well Filtration Chamber:					
	Providing all material & constructing brick masonry recharge pit of 3.0m dia x 4.5m depth with brick work in cement mortar 1:5 ( 1 cement : 5 coarse sand) with 100mm dia weep holes at side walls @ 500 mm vertically & horizontally center to center, 200 mm thick RCC top slab in cement concrete (1:2:4 ) along with periferial & two nos. of intermediate RCC beams of size 250 x 450mm R/ F of slab 12 mm tor steel at bottom and 10 mm at top with a spacing of 125 mm c/c, 4 nos 16 mm tor steel bars at bottom & 2 nos. 12 mm tor steel bars at top for beams with 8 mm stirrups @ 150 mm c/c, 2 nos. heavy duty SFRC cover of 560 mm dia, rungs @ 300 mm c/c embedded in CC ( 1 : 2 : 4 ) blocks of 200 x 200 x 200 mm, 150 mm thick PCC in 1: 4 : 8 below footing with 150 mm projection, internal & external plaster in CM 1 : 3, necessary excavation, backfilling & disposal of surplus earth upto a lead of 200m complete in all respect.	Each	1			
	Drilling:					
	Drilling percolation borehole 200-250mm dia with reverse rotary method in all types of soil up to 100 m (approx.) depth including cost for mobilization of rig and making good the area upon completion of work. Contractor shall arrange for all necessary tools, water and consumable and laying for drilling.	Metre	90			
	Rate shall include excavation, back filling and all other operations necessary for completing the job.	Set	1			

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## Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
	Providing & laying silt free coarse sand in recharge pit.					
	Providing & laying washed river pebble of 5 - 10 mm size in recharge pit.	CUM	10			
	Providing & laying boulder of 10 - 30 mm size in recharge pit.					
	Providing & laying silt free pee gravel for injection bore.	CUM	10			
	Providing & laying boulder of 10 - 30 mm size in recharge pit.	CUM	10			
	Providing & laying silt free pee gravel for injection bore.	CUM	5			
<b>V</b>	<b>PUMPS</b>					
28	Supplying, installing, testing and commissioning single stage, submersible centrifugal pumps of closed coupled construction with CI body & cast iron (C.I) impeller connected to a fully submersible water/oil cooled motor suitable to operate with 380-415 volts 3 phase 50 cycles AC power supply with class F insulation and built -in temperature protection, pump connector unit with rubber diaphragm & bend, vertical discharge pipe, guide pipe, stainless steel chain/rope, water -proof power cable and level controller complete in all respects for fixed installation.					
	<b>For Sump pump (1working +1standby)</b>					
	Discharge 180 LPM.					
	Head 25 m					
	HP/Load 2.0 (Approx)	Set	1			

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
29	Providing and fixing compact, horizontal multistage end suction centrifugal pump with mechanical seal, C.I. Casing,(All C.I. Materials with CED Coating) and Stainless Steel Impellers connected to a TEFC induction motor suitable for 400/440 volts, 3 phase, Eff - IE2, 50 cycles, A.C. supply with 150 mm dia pressure gauge with gunmetal isolation cock, vibration eliminating for each pump including necessary structural supports, clamps, bolts, nuts washers and 1:2:4 PCC foundations					
a	<b>For Filter Feed pump (1working +1standby)</b>	Set	1			
	<b>Location - Plant Room</b>					
	Capacity 60 lpm					
	Head 25 m					
	HP/Load 1.0 (Approx)					
29	Supply, installation, testing & commissioning of Submersible single stage single entry pumps connected to TEFC open well submersible motor for 415 $\pm$ 10% volts, 3 phase, 50 cycles A.C. power supply with mechanical seal, pump connector unit with rubber diaphragm and bend, vertical. discharge pipe, in built level controller with operational moded as one pump working at low level, both pumps at high level with a hooter alarm and cut off at dry level as determined. The pump shall be provided with a lifting devise of pull chain/guide rail including interconnecting piping, valves (Ball Valve / Butterfly), Non return valves (GM/CI) etc. as per requirement complete in all respects.(with grinding facility).					
b	<b>For Dom. Water transfer pump (1working +1standby)</b>	Set	1			
	<b>Location - Plant Room</b>					
	Capacity 60 lpm					
	Head 56 m					
c	<b>For Flus. Water transfer pump (1working +1standby)</b>	Set	1			
	<b>Location - Plant Room</b>					
	Capacity 60 lpm					

## BILL OF QUANTITY

Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh

Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
	Head 56 m					
<b>30</b>	<b>MULTIGRADE PRESSURE SAND FILTER: (For Domestic Water)</b>					
	Supply, installation, testing & commissioning of vertical self supporting multi grade pressure filter (MGF) fabricated from MS sheet as per IS : 2825, pressure gauges at inlet & outlet, sample cock, air vent valve with piping, Galvanized Iron face piping distribution pipe with diffuser on top, Cast Iron butterfly valves and all accessories, with initial charge of filter media for filter, painting inside with food grade epoxy paint and outside with two coat of red oxide primer and two or more coat of synthetic enamel paint complete with bypass arrangement including piping and valves (3 Nos.) of required size.					
	Capacity/Flow rate : 60 lpm					
	Filtration rate/velocity : 18-20 M <sup>3</sup> /M <sup>2</sup> /hr					
	Max. operating pressure : 3.5 kg/Sq.cm					
	Test pressure : 5.5 kg/Sq.cm					
	Suggested diameter : 500 mm	Set	1			
<b>31</b>	<b>ACTIVATED CARBON FILTER: (For Domestic Water)</b>					
	Supply, installation, testing & commissioning vertical self supporting Activated Carbon Filter (ACF) fabricated from Mild Stil Sheet as per IS: 2825, pressure gauge at inlet & outlet, sample cock, GI face piping, Cast Iron Butterfly valve and all accessories, air vent valve with piping, with initial charge of filter media for activated carbon filter, painting inside with epoxy paint and outside with two coat of synthetic enamel paint complete with bypass arrangement including piping, Cast Iron valves (3 Nos.) of required size.					
	Capacity/Flow rate : 60 lpm					
	Filtration rate/velocity : 18-20 M <sup>3</sup> /hr					
	Max. operating pressure : 3.5 kg/Sq.cm					
	Test pressure : 5.5 kg/Sq.cm					
	Suggested diameter : 500 mm	Set	1			

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
32	<b>SOFTENER: (For Domestic Water)</b>					
	Supplying, installing, testing and commissioning of softener of welded construction fabricated from 6mm thick mild steel plates, as per IS codes, lined internally with 3mm thick natural rubber (Shore hardness 60 <sup>0</sup> -80 and continuity test with electrical resistance testing to be done. The vender shall submitted the certificate of having tested the same and externally with approved paint over 2 coats of red oxide primer top and botom dished ends of 6 mm thickness with frontal piping (M.S. fabricated flange pipe work lined internally with rubber similar as for main vessel) and valves back wash fittings and filter media etc. Softener shall be suitable for flow rate and specifications given below with regeneration period of 10 hrs and shall include standard fittings like manhole cover pressure gauges. Sampling cock rinse drain bolts, nuts & rubber gasket etc. complete. The softener plant shall include brine tank of M.S. welded construction lined internally with rubber similar as main vessel and capable of regenerating the softening plant. The brine tank shall have overflow & drain, outlet fitting complete regeneration assembly comprising of power valve, ejector, brine suction valve and all associated pipe work. A density meter for brine shall be included.					
	<b><i>Salt Saturation Arrangement:</i></b>					
	The brine tank shall be provided with salt saturation arrangement (with air agitation) comprising of Galvanized Iron Perforated (Min. 1 inch.) pipe grid laid in the bottom of brine tank, one no. positive discharge air blower of required capacity, valve & Nonreturn valve on blower and Galvanized Iron pipe interconnection from blower to grid complete.					
	Plant Sizes:					
	Capacity/Flow rate : 60 lpm					
	Raw Water Inlet Hardness* : 400 ppm (Approx.)					
	Output Water Hardness Desired : (< 50 ppm)					
	Regeneration Period : 8 Hours					
	Output between Regeneration (OBR) : 44.80 M <sup>3</sup>					
	Operating Pressure Maximum : 3.5 Kg/Sq.cm					
	Test pressure : 5.5 Kg/Sq.cm					
	Suggested diameter : 500 mm					
	Ion Exchange Resin - strongly acidic cationic resin Na - forms	Set	1			

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
33	Supplying, installing, testing and commissioning electronic chlorine solution dosing system comprising of Fibre Reinforced Plastic (F.R.P) / chemical grade High density polyethylene (HDPE) solution tank of 200 litres capacity electronic dosing pump of capacity 0-4 LPH against 4.5 Kg/Sq.cm dosing valves, flexible teflon tube pipes etc. complete for dosing of chlorine solution into water on line.	Set	1			
34	Supply, Installation, testing commissioning of G.I. Suction / delivery header heavy duty (class 'C') including all flanged connections as per drawing / site requirement, support from wall floor and ceiling etc. including dead end flanged connection for pump including all fittings & supports, painting, civil breakage and making good the same. (Maximum length 5.0m).					
34.1	50mm dia	Each	2			
34.2	65 mm dia	Each	6			
34.3	80 mm dia	Each	6			
34.4	100 mm dia	Each	2			
35	Supply, installation, testing & commissioning <b>Ball valve</b> with hard chrome plated ball inside PTEF (Teflon) seat & ring with chrome plated centre handle with female BSP threads complete in all respect.					



## BILL OF QUANTITY

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
35.2	32 mm dia	Each	1			
35.3	40 mm dia	Each	1			
35.4	50 mm dia	Each	1			
36	Supply, installation, testing & commissioning of CI slim seal <b>butterfly valves</b> Class (PN 1.6) complete with 2 Nos. matching flanges rubber insertion, nuts, bolts and washer etc. of following sizes :-					
36.1	65 mm dia	Each	10			
36.2	80 mm dia	Each	7			
36.3	100 mm dia	Each	1			
36.4	125 mm dia	Each	3			

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
37	Supply, installation, testing & commissioning of <b>Dual plate wafer type non return valve</b> tested to 15 Kg/Sq.cm pressure complete with all fitting and accessories .					
37.5	65 mm dia	Each	4			
37.6	80 mm dia	Each	2			
38	Supply, installation, testing & commissioning resilient rubber neoprene lined style <b>arch vibration eliminators</b> suitable for raw water upto pressure 20 Kg/Sq.cm.					
38.5	65 mm dia	Each	8			
38.6	80 mm dia	Each	4			
39	Supply, installation, testing & commissioning <b>C.I. Basket strainer/Y type suction strainer</b> with gunmetal or brass internal parts installed outside water.					
39.1	80 mm dia	Each	2			
39.2	100 mm dia	Each	1			

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
40	Providing and fixing mild steel (MS) puddle flanges of required size with 5mm thick mild steel (MS) plate including necessary welding as per details shown on drawings and directions of Engineer-in-charge for water tanks.					
40.1	50mm dia (4mm wall thickness)	Each	10			
40.2	65mm dia (4mm wall thickness)	Each	3			
40.3	80mm dia (4mm wall thickness)	Each	2			
40.4	100mm dia (4mm wall thickness)	Each	8			
40.5	150mm dia (4mm wall thickness)	Each	1			
41	Supplying, assembly, erection, testing and commissioning of magnetic level sensors and controllers, Chlorinated Polyvinyl Chloride (CPVC) probe tube, PP actuating float and all other equipment required for the performance of the system to the satisfaction of the engineer in charge complete including providing and fixing wiring from control junction box near the Under Ground tank to probes of required length, interconnection wiring between level controller and the concerned contactor in the starter panel as required. Level of all tanks (Under Ground and overhead tank) will be included in this item. The level controller will perform the following functions	Job	3			

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Sl. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
	To switch on the pumps when the level of water in the supply water tank is low and to cut off the pump when the level in the recieving water tank is high and switch off the pumps when the level of water in the supply water tank is low .					
	To indicate 5 levels of water in all tanks through a control panle with LEDs					
	To start the pumps in a cyclic order.					
	The system shall be complete to ensure automatic quotation of pump in accordance to water level in respective tanks.					
	<b>SubTotal Plumbing Works</b>					

<p style="text-align: center;"><b>BILL OF QUANTITY</b>  <b>Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88, Sector 24 at Naya Raipur ,Chhattisgarh</b></p>						
Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
<b>C</b>	<b>HVAC WORKS</b>					
	<b>Tendered Rates all Inclusive:</b>					
1.1.1	Unless otherwise provided in the Bill of Quantities, the rates tendered by the contractor for all items of the work shall be all inclusive and shall apply to all heights, lifts, leads and depths, in all positions of the building.					
1.1.2	Rates/prices quoted in this tender shall be inclusive of cost of materials, labours, supervision, installation, testing and commissioning, materials erection, tools, plant appliances, scaffolding, sleeves, cutting, patching, excavation and backfilling, painting, storage of material, service connections, transport to site, taxes, duties, transit insurance octroi and levies, all relevant insurance charges, breakage, wastage and all such expenses as may be necessary and required for the satisfactory completion of all the items of the work and final guarantee testing and to put there in working conditions and all other requirements as called for in all the parts of these Tender Documents.					
1.1.3	All rates quoted must be for complete items inclusive of all such accessories, fixtures and fixing arrangements, supports, nuts, bolts, hangers as are a standard part of the particular item except where specially mentioned otherwise.					
1.1.4	All rates quoted are inclusive of cutting holes and chases in walls and making good the same with cement mortar / concrete / water proofing of appropriate mix and strength. Rates are inclusive of holes, sleeves, recesses in the concrete and masonry work as the Work proceeds except foundation work.					
1.1.5	Nothing extra shall be payable to Contractor on account of any of the above factors.					
1.1.6	The client reserves the right to supply directly any of the items listed in the BOQ. For all such items, if desired by the Owner, installation, testing and commissioning shall be the responsibility of the Contractor.					
1.1.7	All the equipment /material shall be only from one of the I-preference of approved makes as per tender documents.					
1.1.8	Wooden frame work for mounting grills on walls shall be in the scope of HVAC works and nothing shall be paid extra for this. However, frame work for mounting grills/diffusers on false ceiling shall be provided by other agencies.					
1.1.12	The bidder should quote all imported equipment with price breakup in Foreign exchange and Indian Rupees.					

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
1.1.13	The bidder should quote as per the equipment/ materials given in BOQ. Any suggested deviations can only be given as an option with proper justification.					
1.1.14	The quoted price shall include all labelling and identification of various equipment/piping as per relevant IS colour coding. In the absence of IS colour coding for any equipment, the labelling and identification shall be carried out as per good practice.					
1.1.15	All material shall be complete in all respect to run and complete operational requirement. All accessories shall be supplied by Vendor to achieve functional requirement of Equipment.					
1.1.16	All fan-motor efficiencies shall exceed ASHRAE- 90.1- 2007 criteria.					
<b>A)</b>	<b>VRF/VRV SYSTEM:</b>					
	Supply, installation, testing & commissioning of AIR COOLED and INVERTER BASED VARIABLE REFRIGERANT VOLUME MODULAR TYPE AIR CONDITIONING SYSTEM with R410A suitable for $415 \pm 10\%$ , $50 \pm 3\%$ Hz. The unit shall consist of indoor units and external condensing units including y-joints between indoor and outdoor units other accessories as listed below complete in all respects as under:					
<b>1.0</b>	<b>Outdoor Condensing Units</b>					
	Fully factory assembled, wired and tested Outdoor Condensing Units as per specifications and as required to make the system complete. Independent or combined outdoor units for each floor.combination as per specification.					
a)	14 HP Nominal Capacity	Nos.	4.00			-
b)	12 HP Nominal Capacity	Nos.	5.00			-
c)	10 HP Nominal Capacity	Nos.	1.00			-
<b>2.0</b>	<b>Indoor Units (VRF System)</b>					
<b>2.1</b>	<b>Ceiling Mounted Cassette Type Unit with Heat Pump</b>					

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a)	3.2 TR	Nos.	3.00			-
b)	2.5 TR	Nos.	4.00			-
c)	2.0 TR	Nos.	18.00			-
d)	1.3 TR	Nos.	2.00			-
e)	1.0 TR	Nos.	2.00			-
<b>2.2</b>	<b>Hi-Wall Unit with Heat Pump (VRF System)</b>					
a)	2.0 TR	Nos.	12.00			-
b)	1.6 TR	Nos.	11.00			-
c)	1.3 TR	Nos.	3.00			-
d)	1.0 TR	Nos.	4.00			-

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
e)	0.8 TR	Nos.	2.00			-
f)	0.6 TR	Nos.	5.00			-
<b>3.0</b>	<b>Thermostate Sensor</b>					
	Supplying and fixing of automatic thermostate sensor as per standard specification.	Nos.	66.00			-
<b>4.0</b>	<b>Copper Refrigerant Pipe</b>					
	Supply, Installation, testing & commisioning of Interconnecting hard/soft drawn <b>copper refrigerant pipe</b> work with (19mm/13 mm thick) closed cell elastomeric nitrile rubber tubular insulation between each set of indoor & outdoor units as per specifications, including cable & y-joints between indoor and outdoor units and all piping inside the room shall be properly supported with MS hanger & clamps and all external piping with UV coating as per specifications and drawing.					
a)	34.9 mm O.D. (insulation : 19 mm)	Rmt	135.00			-
b)	28.6 mm O.D. (insulation : 19 mm)	Rmt	75.00			-
c)	22.2 mm O.D. (insulation : 19 mm)	Rmt	35.00			-
d)	19.1 mm O.D. (insulation : 13 mm)	Rmt	90.00			-



Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
e)	15.9 mm O.D. (insulation : 13 mm)	Rmt	290.00			-
f)	12.7 mm O.D. (insulation : 13 mm)	Rmt	110.00			-
g)	9.5 mm O.D. (insulation : 13 mm)	Rmt	245.00			-
h)	6.4 mm O.D. (insulation : 13 mm)	Rmt	70.00			-
<b>5.0</b>	<b>uPVC Drain Pipe</b>					
	Supplying, laying, fixing, testing & commissioning of uPVC' pipes conforming to IS: 1239 (Part-1, 1990) complete with all necessary fittings such as elbows, tees, reducers etc and supports such as clamps etc. complete as per specifications					
a)	18 mm dia	Rmt	60.00			-
b)	32 mm dia	Rmt	150.00			-
c)	40 mm dia	Rmt	75.00			-
d)	50 mm dia	Rmt	40.00			-

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
<b>B</b>	<b>VENTILATION SYSTEM:</b>					
<b>6.0</b>	<b>Inline Fan</b>					
	Supply, installation, testing and commissioning of Inline fan complete with motor, drive mounting arrangement etc. complete in all respect as per specifications					
a)	450 CFM	Nos.	3.00			-
b)	250 CFM	Nos.	4.00			-
c)	1500 CFM	Nos.	1.00			-
<b>7.0</b>	<b>Propeller Fan</b>					
	Supply, installation, testing and commissioning of normal Propeller fan complete arrangement in all respect as per specifications					
a)	100 CFM	Nos.	9.00			-
<b>8.0</b>	<b>Louver Exhaust Fan</b>					
	Supply, installation, testing and commissioning of normal louver type exhaust fan 720 RPM complete arrangement in all respect as per specifications	Nos.	10.00			-
	<b>DSR ITEMS</b>					
<b>9.0</b>	<b>SHEET METAL DUCT: (Factory Fabricated)</b>					

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
	Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.					
a)	24 gauge galvanised sheet(0.63 mm)	Sqm	105.00			-
<b>10.0</b>	<b>EXHAUST AIR GRILLES</b>					
	Supplying & fixing of powder coated extruded aluminium exhaust Air Grills without aluminium volume control dampers as per specifications.	Sqm	1.50			-
<b>11.0</b>	<b>AXIAL FLOW FAN</b>					
	Supply, installation, testing and commissioning of axial flow fans complete with motor, drive (fan-motor efficiency exceeding ASHRAE 90.1-2007 Criteria), mounting arrangement etc. complete in all respect as per specifications and drawings. The complete fan assembly along with the motor & drive assembly shall be fire rated i.e. suitable to operate upto 250°C for 2½ hours and meet the duty parameters. The fan duty shall be :					
a)	6000 CFM for Liftwell Pressurization	Nos.	2.00			-
	<b>SubTotal of HVACWorks</b>					-

BILL OF QUANTITY						
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88,Sector 24 at Naya Raipur ,Chhattisgarh						
Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
<b>D</b>	<b>FIRE FIGHTING WORKS</b>					
<b>I</b>	<b>FIRE SUPPRESSION SYSTEM</b>					
<b>1.0</b>	Supply, erection, jointing, testing & commissioning of "C" Class MS pipes (as per IS: 1239) including necessary specials such as tees, bends, flanges reducers etc., complete on wall/ ceiling. The pipes to be erected on wall or suspended from beams, RCC roof slabs with suitable size MS bars/ angle irons including painting of metal part except pipe line.					
<b>1.1</b>	80 mm dia	Metre	80.00			
<b>1.2</b>	100mm dia	Metre	10.00			
<b>1.3</b>	150 mm dia	Metre	300.00			
<b>2.0</b>	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.					
<b>2.1</b>	80 mm dia	Metre	80.00			
<b>2.2</b>	100mm dia	Metre	10.00			
<b>2.3</b>	150 mm dia	Metre	300.00			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
3.0	Providing and wrapping 4 mm thick of approved make and quality bitumen based anti rust felt over MS pipe with overlap of 25 mm to make an impermeable layer including painting with one coat of bitumastic paint before felt complete. (Only on MS pipe to be laid in soil below ground).					
3.1	150mm dia	Metre	150.00			
4.0	Supplying and fixing swinging type First-Aid Hose Reel drum with MS construction spray painted in Post office Red colour, conforming to IS: 884 with upto date amendments, complete with brackets for fixing on wall, connections from riser with 25 mm dia MS/GI pipe and GM gate valve but excluding hose reel.	Each	5.00			
5.0	Supplying and fixing 19mm dia 30 metre long high pressure polypropylene First-Aid Hose Reel.	Each	5.00			
6.0	Supplying and fixing 63 mm dia, 15 mtr long RRL 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	18.00			
7.0	Supplying & fixing 63 mm dia Stainless Steel IS: 3444 Grade-1 branch pipe with 20 mm dia (nominal internal) Gun Metal nozzle conforming to IS: 903, suitable for instantaneous coupling connection to connect hose pipe coupling as required.	Each	5.00			
8.0	Providing and fixing standard fireman's axe (tested for 20000 Volts) with heavy insulated rubber handle. (ISI marked)	Each	5.00			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
9.0	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 conforming to IS: 904 including connection to existing MS pipe line complete as required.	Each	1.00			
10.0	Supplying and fixing 2 way Fire Brigade Connection of cast iron body with 2 Nos. Gun metal male instantaneous inlet couplings complete with cap and chain conforming to IS: 904 including connection to existing MS pipe line complete as required.	Each	1.00			
11.0	Providing and fixing gunmetal single acting air release valve with screwed inlet 25 mm dia and with necessary G.I. coupling, valve to be fitted on wet riser as per specification.	Each	1.00			
12.0	Supplying and fixing single headed internal hydrant valve with instantaneous Gun metal couplings of 63 mm dia with cast iron wheel ISI marked conforming to IS: 5290 (Type - A) with blank Gunmetal cap and chain as required.	Each	9.00			
13.0	Supplying, fixing, testing and commissioning of flanged 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.					
13.1	80 mm dia	Each	5.00			
13.2	100 mm dia	Each	1.00			
13.3	150 mm dia	Each	3.00			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
14.0	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.					
14.1	150 mm dia	Each	4.00			
15.0	Supplying and installing pressure gauge of 100 mm Ø., 0-300 PSI or 0-21 kg per cm square fitted with 12/15 mm Ø. pad cock valve, and G.I. pipe, elbow etc. as per requirement in approved manner.	Each	5.00			
16.0	Supplying, Installation, testing and Commissioning of black steel pipes to IS:1239 (Heavy class) including all fittings like anchor fasteners, brick masonry supports, couplings, bends, elbows, tees and flanges etc. welded or screwed joints as required, cutting holes and chases in brick or RCC walls and making good complete. including Painting M.S. pipes and fittings two or more coats of synthetic enamel paint of approved quality and shade over a coat of ready mixed red lead primer by spray painting method.					
	25 mm dia	Metre	10			
17.0	Providing and fixing fire hose cabinet fabricated from 16 gauge M.S. Sheet with single or double glazed front door (with 4 mm thick glass) and locking arrangement, painted fire red with stove enamelled paint "FIRE HOSE" written on front including necessary supports approximate size.					
17.1	2100x1200x600 mm deep.(Internal)	Each	5.00			
17.2	900x600x300 mm deep. (External)	Each	4.00			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
18.0	Providing and fixing heavy duty armoured cables 1.1 KVA grade including necessary support clamps at ceiling level and connection lugs complete in all respects.					
18.1	power cable aluminium 3 core 6 sq.mm	Metre	200.00			
<b>II</b>	<b>HAND APPLIANCES</b>					
19.0	Providing and fixing CO <sub>2</sub> type fire extinguishers with steel cylinder with a discharge valve and conforming to IS:15683. Extinguishers shall be painted with rex enamel paint and fixed to wall with brackets capacity 4.5 Kg.	Each	5.00			
20.0	Providing and fixing water CO <sub>2</sub> gas fire extinguishers with steel cylinder with a discharge valve and conforming to IS:940. Extinguishers shall be painted with rex enamel paint and fixed to wall with brackets capacity 9 litre.	Each	5.00			
21.0	Providing and fixing ABC powder type fire extinguisher suitable for inverted operation and fabricated from 1.6 mm M.S. sheet internally protected with anticorrosive treatment and hydraulically tested to a pressure of 25 Kg/Sqcm. Extinguishers externally painted with red enamel and fixed to wall with brackets complete with internal charge and spanner (Conforming to IS:13849 capacity 5 Kg.).	Each	5.00			
<b>III</b>	<b>SPRINKLER SYSTEM</b>					
22.0	Supply, erection, jointing, testing & commissioning of "C" Class MS pipes (as per IS: 1239) including necessary specials such as tees, bends, flanges reducers etc., complete on wall/ ceiling. The pipes to be erected on wall or suspended from beams, RCC roof slabs with suitable size MS bars/ angle irons including painting of metal part except pipe line.					
22.1	50 mm dia	Meter	45.00			



Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
22.2	65 mm dia	Meter	30.00			
22.3	80 mm dia	Meter	100.00			
22.4	100 mm dia	Meter	10.00			
22.5	150 mm dia	Meter	35.00			
	<b>Notes :</b>					
i)	<i>Pipes upto 50 mm dia shall be threaded joints, above 50 mm shall be welded joints.</i>					
ii)	<i>For Pipe up to 50 mm dia standard threaded forged steel fitting and Pipe above 50 mm dia standard MS fitting with welded joint shall be used.</i>					
iii)	<i>Steel Structural Supports are included in this item.</i>					
iv)	<i>G.I. pipe sleeve of suitable higher size shall be provided wherever the pipe are crossing the wall/floors and sealing the sleeves with glass wool in between and fire sealant compound at either end all as per Project Manager's requirement.</i>					
23.0	Providing and fixing 15 mm dia, Quartzoid bulb type G.M. Sprinkler Head set to operate at 680C of approved make chrome plated complete in all respect as required.					
23.1	Pendent / Upright ( 68 deg.C) sprinkler quick response	Nos.	258.00			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
23.2	Sidewall extended coverage (68 deg.C) sprinkler.	Nos.				
24.0	Providing and fixing Flow switches suitable for fixing in 50mm to 150mm dia pipe line, complete with all accessories to provide indication in annunciator panel.	Nos.	5.00			
25.0	Supplying, fixing, testing and commissioning of flanged 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.					
25.1	80 mm dia	Nos.	4.00			
25.2	100 mm dia	Nos.	1.00			
26.0	Providing and fixing gunmetal single acting air release valve with screwed inlet 25 mm dia and with necessary G.I. coupling, valve to be fitted on wet riser as per specification.	Each	1.00			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
27.0	Supply, installation, testing and commissioning of MS Pipe class 'C' (heavy duty) conforming to IS:1239 including all accessories such as screwed/welded joints, flanges, tees, reducers, structural steel supports and clamps etc. including lift to all heights, welding, jointing, painting and inserted rubber gaskets, nuts, bolts etc. as required. Pipes shall be painted with two coats of primer & two coats of post office red synthetic enamel paint over two coats of red oxide zinc chromate primer. Prior to application of primer surface to be cleaned including painting of legends both direction arrow as per approval of Project Manager and shall be fixed in ceiling, walls, columns for all heights with hangers/supports and fasteners all as per drawing including chasing of walls/columns /ceiling etc. and making good the same as required. G.I. pipe/PVC sleeve of suitable higher size shall be provided whenever the pipes are crossing the walls/floors and sealing the sleeves with glass wool in between & fire sealant compound at either end all as per Project Manager/Consultant requirement.					
27.1	25 mm dia	Meter	580.00			
27.2	32 mm dia	Meter	100.00			
27.3	40 mm dia	Meter	75.00			
	<b>Notes :</b>					
i)	<i>Pipes upto 50 mm dia shall be threaded joints, above 50 mm shall be welded joints.</i>					
ii)	<i>For Pipe up to 50 mm dia standard threaded forged steel fitting and Pipe above 50 mm dia standard MS fitting with welded joint shall be used.</i>					
iii)	<i>Steel Structural Supports are included in this item.</i>					
iv)	<i>G.I. pipe sleeve of suitable higher size shall be provided wherever the pipe are crossing the wall/floors and sealing the sleeves with glass wool in between and fire sealant compound at either end all as per Project Manager's requirement.</i>					

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
28.0	Providing and fixing 25 mm dia inspecting & testing assembly with gunmetal valve, gunmetal sight glass(if required), bypass valve & connected to drain line.	Nos.	5.00			
29.0	Providing & fixing cast iron flanged butterfly valve complete in all respects confirming to IS :13095 as per standard design complete in all respects.					
29.1	65 mm dia	Nos.	5.00			
30.0	Providing and fixing copper conductor PVC covered control cables from individual flow switches on each floor to annunciation panel installed in fire control room in basement including sleeves, cable clips, supports for horizontal runs making connection to each switch complete.					
30.1	4 core 2.5 Sqmm	Mtr	250.00			
31.0	Supply, installation, testing and commissioning of Main Sprinkler Zone control and indicating panel with audio visual alarm including power pack and battery back-up for 10 Hrs capacity as required, the panels shall have electronic circuitry and flashing audio / visual alarm system for sprinkler zones of following capacities: (Addressable Type)					
31.1	1 zones	Set	1.00			
32.0	Supply, installation, testing and commissioning of <b>Installation Control Valve</b> with Gong Bell Unit with tapping, pipes, Valves, interconnecting hoses and pipings complete as required to make it operational.	Set	1.00			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
33.0	Providing, fixing, jointing and testing of Sprinkler system as per the furniture drawing complete with required 25mm heavy quality (Class C) M.S. pipe ,drop down using <b>1000mm SS Flexible pipe</b> with GI fittings i.e. tees, bends, elbows, unions, reducers etc., making connection with existing pipe work, with supports including painting with two coats of enamel paint of fire red shade over a coat of prime (Internal work)	Nos.	120.00			
<b>IV</b>	<b>FIRE PUMPS &amp; ACCESSORIES</b>					
34.0	Providing and fixing pressure switch with suitable for 1-10 Kg/cm2 including 12/15 mm Ø isolation valve, G.I. nipple, elbow, electrical connections setting of Cut-In and cut-Off pressure complete in all respects and in an approved manner.	No.	5			
35.0	Supplying and installing pressure gauge of 100 mm Ø., 0-300 PSI or 0-21 kg per cm square fitted with 12/15 mm Ø. pad cock valve, and G.I. pipe, elbow etc. as per requirement in approved manner.	No.	5			
36.0	Supplying, fixing, testing and commissioning of flanged 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.					
36.1	150 mm dia	Nos.	9			
36.2	100 mm dia	Nos.	1			
36.3	80 mm dia	Nos.	1			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
37.0	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.					
37.2	100 mm dia	Nos.	3			
	Supply,Installations, Testing & Commissioning of factory-fitted fire pump sets confirming to TAC/NBC/IS Specifications consisting of following items complete in all respect as required.					
38.0	Diesel Engine Driven Fire Pumping set suitable for automatic operation consisting of the following as per specifications:	Each	1.00			
	Horizontal, centrifugal, end suction & top discharge Back pull out type pump in cast iron construction with CED coating, bronze impeller stainless steel 420 grade shaft with mechanical seal, at specified flow of 2280 LPM at 75 m complete with necessary 'Y' strainer on the suction side and pressure gauge with stop cocks etc, on the delivery side including bypass arrangement (with 50 mm dia G.M. stop valve and upto 5M G.I. Medium pipes) for periodical testing of the working of the pumping set as per TAC rules					
	Water cooled Diesel Engine confirming to relevant BS and IS standard (suitable for developing at least 2400 RPM) for above pump complete with automatic starting mechanism, 12/24 Volts batteries, automatic battery charger unit, holset coupling with the pump , fuel tank, silencer, exhaust pipe & all standard accessories as required as per TAC rules including earthing, mandatory spares and tool kit.					
	Common bed plate for mounting Pump and Engine fabricated of suitable M.S.Channel as per manufacturer's recommendations.					
	Suitable Pump foundations as per manufacturer 's design and required numbers of Dunlop Anti-vibration (cushy foot) heavy duty mounting pads.					
39.0	Electrical Motor Driven Fire Pumping set suitable for automatic operation consisting of the following as per the specifications.	Each	1.00			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
	Horizontal, centrifugal, end suction & top discharge Back pull out type pump in cast iron construction with CED coating, bronze impeller stainless steel 420 grade shaft with mechanical seal, at specified flow of 2280 LPM at 75 m complete with necessary 'Y' strainer on the suction side and pressure gauge with GM cocks on the delivery side including bypass arrangement (with 50 mm ball valve and upto 5M G.I. Medium pipes) for periodical testing of the working of the pumping set as per TAC rules.					
	Squirrel cage induction motor totally enclosed fan cooled type suitable for 415 Volts $\pm$ 15%, 3 phase, 50 HZ A.C. supply of suitable for the above pump coupled with spacer coupling including earthing, confirming to IS: 325-197					
	Common bed plate for mounting Pump and Motor fabricated of Motor fabricated of suitable M.S. Channel as per manufacturer's recommendations.					
	Suitable Pump-Foundations as per manufacturer's design and 4 nos. Dunlop (cushy foot) heavy duty Antivibration mounting pads.					
40.0	Electrical Motor Driven Automatic pressurisation (Jockey) pumping set consisting of the following as per specifications. vertical inline multistage type, fire pump for building pressure loss due to any leakage in the system and capable to deliver approx 180 LPM against a total head of 75 M having pump in cast iron base construction with CED coating and SS304 impellers & chamber stack with stainless steel 316 grade shaft completely arranged within a SS sleeve with cartridge type mechanical seal arrangement, complete with Pressure Gauge with G.M. stop valve etc. on the delivery side including bypass arrangement (with 25	Each	1.00			
	Squirrel cage induction motor totally enclosed fan cooled type suitable for 415 Volts $\pm$ 15% 3 phase. 50 hz A.C. supply of suitable for the above pump with synchronous speed of 3000 RPM confirming to IS: 325-1978, & duly coupled with above pump coupled with flexible coupling including earthing as per relevant Indian Standard & specifications.					
	Common bed plate for mounting pump and motor fabricated of suitable M.S. channel as per manufacturer's recommendations.					
	Pump foundations as per manufacturer ' s design and required numbers of Dunlop Anti-vibration (cushy foot) heavy duty mounting pads.					

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
41.0	Supply, installation, testing and commissioning of Fire authority approved suitable pressure vessel with air release valve (minimum 450 mm dia & 2000 mm height) with all fittings including one no. pressure gauge on the delivery side, 80 mm dia flanged inlet and 50 mm dia drain line with 50 mm dia G.M. gate valve.	No.	1			
42.0	Supply, fixing, testing and commissioning of Site Tube (of 3.0 - 5 M) with isolation valve at top and bottom demarcation on tube for making the installation of level indication on the RCC water tank complete.	Nos.	2			
43.0	Providing, fixing, testing and commissioning of heavy class MS pipe as per IS : 1239 marked with all necessary fittings like tees, elbows, flanges, reducers, gaskets, nuts and bolts etc. welded or screwed joints as required including fixing the pipe with necessary MS structural supports & clamping arrangement including painting of one primary coat of Zinc chromate with two coat of compatible synthetic paint give an even look (fire red, shade No. 536 as per IS:5) including all civil breakages and making good the same .GI pipe sleeves of suitable size shall be provided wherever the pipes are crossing the walls / floors / ceiling, the sleeves/ cutouts with fire sealent (equivalent to fire wall rating) compound at either end including cutting & making good the walls, floors, RCC work etc cutting chases & filling the same with cement concrete 1:3:6 (1 cement :3 coarse sand :6 graded stone aggregate 20 mm nominal size)					
43.1	65 mm dia (Nominal Bore)	RM	10			
43.2	80 mm dia (Nominal Bore)	RM	10			
43.3	100 mm dia (Nominal Bore)	RM	10			
43.4	150 mm dia (Nominal Bore)	RM	30			



Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
44.0	Providing, fixing, testing & commissioning of heavy class MS pipe, IS : 3589 marked with all necessary fittings like tees, elbows, flanges, blind flanges, reducers, gaskets, nuts, bolts & washers etc. welded or screwed joints as required including fixing the pipe with necessary MS structural supports (for delivery/suction manifold relating to the pumps) including painting of one primary coat of Zinc chromate with two coat of compatible synthetic paint give an even look (fire red, shade No. 536 as per IS:5) including all civil breakages and making good the same [ Location : Plant room].					
44.1	200 mm dia (6 mm thick) with necessary supports etc. as required.	RM	20			
44.2	250 mm dia with supports etc.	RM	20			
45.0	Providing and fixing C.I. Y type suction strainer with gunmetal or brass internal parts installed outside water tanks.					
45.1	250 mm dia	Each	1			
46.0	Providing, fixing, testing & commissioning of C.I. Butterfly valve conforming to IS : 13095 with flanges, gaskets, nuts, bolts and washers complete for following sizes :- [PN 1.6 rating].					
46.1	250 mm dia (Gear operated)	Nos.	1			
46.2	65 mm dia	Nos.	2			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
47.0	Providing, fixing, testing & commissioning of dual plate non-return valve complete with flange,gasket, nuts, bolts and washers etc. [PN 1.6 rating].					
47.1	200 mm dia	Nos.	1			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
47.2	65 mm dia	Nos.	1			
48.0	Providing, fixing, testing & commissioning of resilient rubber lined single arch vibration eliminators suitable for raw water up to 45°C temperature, working pressure 8.8 Kg/cm <sup>2</sup> and test pressure 14 Kg/cm <sup>2</sup> .					
48.1	150 mm dia	Nos.	6			
48.2	80 mm dia	Nos.	1			
48.3	65 mm dia	Nos.	1			
49.0	Providing and fixing exhaust, Diesel engine driven pump exhaust M. S. pipe class 'C' 150 mm dia including fitting like flanges, bends, reducers, etc. 50 mm thick fibre wool insulation aluminium cladding, 21 gauge, necessary excavation, fixing of silencer connections at engine exhaust, necessary supports, back filling, cutting and making good, bird proof and weather proof flap complete in all respect as directed.	RM	20			
50.0	Supplying, Installation, Testing and Commissioning of MS puddle flanges of required size with 5mm thick MS plate including necessary welding as per details shown on drawings and directions of Engineer-in-charge for water tanks.					
50.1	25mm dia (4mm wall thickness)	Each	4			

Sr. No	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
50.2	80mm dia (4mm wall thickness)	Each	8			
50.3	150mm dia (6mm wall thickness)	Each	12			
50.4	200mm dia (6mm wall thickness)	Each	1			
50.5	250mm dia (6mm wall thickness)	Each	2			
	<b>SubTotal of Fire Fighting Works</b>					

BILL OF QUANTITY							
Construction of Office for Chhattisgarh State Laghu Vanopaj Sangha Plot No. 88,Sector 24 at Naya Raipur ,Chhattisgarh							
Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
<b>E</b>		<b>ELECTRICAL WORKS</b>					
		<b>WIRING</b>					
1.00	3.70	Wiring for light/ fan/ exhaust fan / call bell point with 1.5 sqmm FRLS 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.					
	3.7.3	Medium Point	Point	685.00			-
2.00	3.10	Wiring for light plug point with 2x2.5 sq mm FRLS 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.					
	3.10.2	Medium Point	Point	259.00			-
3.00	3.11	Wiring for power plug point with 2x4 sq mm FRLS 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.					
	3.11.2	Medium Point	Point	159.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
4.00	3.13	Wiring for circuit/ sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in concealed PVC conduit as required.					
a	3.13.7	3 X 6 sq. mm in 25mm conduit	Meter	95.00			-
b	3.13.13	6 X 6 sq. mm in 32mm conduit	Meter	201.00			-
c	3.13.14	6 X 10 sq. mm in 40mm conduit	Meter	104.00			-
5.00	3.14	Extra cost for point wiring in concealed in PVC conduit at height above 4 meters from floor level, for every 2 meters or part thereof.	Point	19.00			-
6.00	3.15	Supplying and fixing of following sizes PVC conduit along with accessories in concealed complete as required.					
a	3.15.1	20 mm	Meter	3,800.00			-
b	3.15.2	25 mm	Meter	500.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
c	3.15.3	32 mm	Meter	20.00			-
d	3.15.4	40 mm	Meter	20.00			-
7.00	5.12	Supplying and drawing following pair 0.5 sq mm FRLS PVC insulated copper conductor, unarmored telephone cable in the existing surface/ concealed steel/ PVC conduit as required.					
a	5.12.2	2 Pair	Meter	2,750.00			-
8.00	5.13	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.					
a	5.13.1	RG-6 grade, 0.7 mm solid copper conductor	Meter	225.00			-
9.00	6.40	Supplying and fixing following size/ modules, GI box along with modular base & cover plate for modular switches in recess etc as required.					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a	6.4.1	75mmX75mm (1 Module)	Each	377.00			-
b	6.4.2	75mmX75mm (2 Module)	Each	10.00			-
c	6.4.3	100mmX75mm (3 Module)	Each	259.00			-
10.00	7.40	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	7.4.3	Bell push	Each	5.00			-
b	7.4.4	15/16 amps switch	Each	10.00			-
c	7.4.5	3 pin 5/6 amp socket outlet	Each	10.00			-
d	7.4.6	6 pin 15/16 amp socket outlet	Each	10.00			-



Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
e	7.4.10.	Telephone socket outlet	Each	181.00			-
f	7.4.11	T.V. antenna socket outlet	Each	9.00			-
g	7.4.12	Computer Outlet Jack	Each	187.00			-
11.00	7.6	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	5.00			-
12.00	7.8	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	20.00			-
13.00	7.13	Supplying and fixing call bell/ buzzer suitable for single phase, 230 volts A.C. supply, complete as required.					
	7.13.2	Deluxe	Each	5.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
14.00	7.17	Providing and fixing round/ hexagonal fan box (125mm dia) depth 75mm (max.) with 12mm dia steel bar hook, 1.6mm thick MS sheet cover, in RCC slab etc. as required.	Each	41.00			-
15.00	8.6	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.					
	8.6.1	300 mm sweep	Each	1.00			-
16.00	8.1	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 FRLS PVC insulated, copper conductor, single core cable, earthing etc. complete as required.					
	8.1.2	1200 mm sweep	Each	41.00			-
17.00	8.3	Providing and fixing phenolic laminated sheet cover of 180 mm dia 3 mm thick on the fan box etc. as required. (If provided at the time of installation of ceiling fan)	Each	41.00			-
18.00	8.4	Supplying and fixing of wall/ cabin fan of 400mm sweep including connection etc. as required.	Each	33.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
19.00	8.9	Supplying, installation, testing and commissioning of following T-5 fluorescent fitting (luminaries) complete with electronic ballast but without fluorescent lamp, on ceiling/ wall surface, earthing the fitting etc. as required.					
	8.9.1	Single box type with decorative end caps	Each	18.00			-
20.00	8.10.	Supplying, installation, testing and commissioning of following mirror optics surface type CFL fitting (luminaries) complete with copper ballast, but without CFL lamp, on ceiling/ wall surface, earthing the fitting etc. as required.					
	8.10.1	2x 9/11/13 W	Each	52.00			-
21.00	8.13	Supplying, installation, testing and commissioning of following CFL down lighter luminaries with mirror reflector, but without CFL lamp, on surface/ recess in false ceiling including connection, testing and commissioning as required.					
	8.13.2	For 2x13/18 watt CFL with cover	Each	5.00			-
22.00	8.14	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	19.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
23.00	8.17	Supplying, fixing, testing and commissioning of following CFL (Built in choke type) in existing lighting luminaries as required.					
a	8.17.2	9 Watt	Each	5.00			-
b	8.17.3	11 Watt	Each	5.00			-
c	8.17.5	20 Watt	Each	5.00			-
d	8.17.6	23 Watt	Each	5.00			-
e	8.17.7	26 Watt	Each	5.00			-
f	8.17.8	35 Watt	Each	5.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
24.00	8.19	Supplying, fixing, testing and commissioning of following 230/250 volts fluorescent lamp (tube) in existing lighting luminaries as required.					
	8.19.1	4' x 36/40 watt	Each	18.00			-
25.00	8.20	Supplying, installation, testing and commissioning of following 230/250 volts metal halide wide beam flood light luminaries with weather proof gear box, igniter, capacitor with IP 65 protection on wall surface/ building parapet/ pole bracket complete but without lamp as required.					
a	8.20.2	1x150 watt	Each	8.00			-
27.00	8.26	Supplying, fixing, testing and commissioning of following 230/250 volts metal halide lamp in existing lighting luminaries fixed on pole/ wall/ roof etc as required.					
a	8.26.1	70 watt (T)	Each	2.00			-
b	8.26.2	150 watt (T)	Each	8.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
28.00	8.27	Supplying, fixing, testing and commissioning of following 230/250 volts HPSV lamp tubular/elliptical in existing lighting luminaries on pole/ wall/ roof etc as required.					
	8.27.1	70 watt (E)	Each	-			-
29.00	11.7	Supplying and fixing on surface/ recess prewired following way, 240 volts SP&N, MCB distribution board of sheet steel phosphatized and powder painted complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, duly prewired with suitable size FRLS PVC insulated copper conductor up to terminal blocks including interconnections, earthing etc. as required. (But without MCB/ RCCB/ Isolator)					
a	11.7.5	2 + 8 way, Double door	Each	3.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
30.00	11.9	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 FRLS 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	11.9.7	8 way (4 + 24), Double door	Each	20.00			-
b	11.9.8	12 way (4 + 36), Double door	Each	1.00			-
32.00	11.10	Supplying and fixing <b>SP MCB</b> , 240 volts, ' <b>B</b> ' series, suitable for lighting and other loads in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
a	11.10.1	6 amps to 32 amps	Each	182.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
33.00	11.11	Supplying and fixing <b>SP MCB</b> , 240 volts, ' <b>C</b> ' series, suitable for inductive load in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
a	11.11.2	6 amps to 32 amps	Each	110.00			-
31.00	11.18	Supplying and fixing following rating, 240 volts <b>TWO POLE ISOLATOR</b> in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
	11.18.1	40 amps	Each	2.00			-
32.00	11.19	Supplying and fixing following rating, 415 volts, <b>FOUR POLES, ISOLATOR</b> in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
a	11.19.1	40 amps	Each	2.00			-
b	11.19.2	63 amps	Each	14.00			-
33.00	11.20	Supplying and fixing following rating, <b>double pole</b> , (single phase and neutral), 240 volts, residual current circuit breaker ( <b>RCCB</b> ), having a sensitivity current up to 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.					



Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a	11.20.1	25 amps	Each	2.00			-
b	11.20.2	40 amps	Each	43.00			-
c	11.20.3	63 amps	Each	23.00			-
34.00	11.22	Supplying and fixing single pole <b>blanking plate</b> in the existing MCB DB complete etc. as required.	Each	3.00			-
35.00	11.23	Supplying and fixing <b>2 pole</b> and earth, 240 volts, <b>industrial type, socket outlet</b> , enclosed metal plug top along with SP MCB in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket outlet and complete with connections, testing and commissioning etc. as required.					
a	11.23.1	20 Amp with "C" series MCB	Each	5.00			-
b	11.23.2	32 Amp with "C" series MCB	Each	2.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
36.00	14.2	Earthing with G.I. earth pipe 4.5 mtr long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. <b>with charcoal and salt</b> as required.	Set	4.00			-
37.00	14.3	Earthing with <b>G.I. earth plate</b> 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe, with charcoal and salt as required.	Set	10.00			-
38.00	14.4	Earthing with <b>copper earth plate</b> 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe, with charcoal and salt as required.	Set	6.00			-
39.00	14.7	Providing and fixing 25 mm X 5 mm copper <b>strip in 40 mm dia G.I. pipe</b> from earth electrode at 0.5 Metre depth below ground level including excavation and refilling the trench etc. as required.	Meter	30.00			-
40.00	14.9	Providing and fixing 25 mm X 5 mm copper <b>strip on surface</b> or in recess for connections etc. as required.	Meter	60.00			-
41.00	14.14	Supplying and laying 25 mm X 6 mm G.I. <b>strip at 0.50 Meter below ground</b> as strip earth electrode, including soldering, excavation and refilling the trench etc. as required.	Meter	200.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
42.00	14.15	Providing and fixing 25 mm X 5 mm G.I. <b>strip in 40 mm dia G.I. pipe</b> from earth electrode at <b>0.5 Metre depth below ground</b> level including excavation and refilling the trench etc. as required.	Meter	50.00			-
43.00	14.17	Providing and fixing 25 mm X 5 mm G.I. <b>strip on surface</b> or in recess for connections etc. as required.	Meter	500.00			-
47.00	14.18	Providing and fixing 6 SWG dia G.I. <b>wire on surface</b> or in recess for loop earthing as required.	Meter	500.00			-
44.00	16.20	Supplying and laying <b>HDPE pipe</b> of 4kg/sqcm in ground below road, path etc at a depth not less than 40 cm including excavation, dismantling of road if required and refilling the trench etc. as required.					
a	16.2.4	110 mm outer dia	Metre	20.00			-
b	16.2.6	160 mm outer dia	Metre	20.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
45.00	16.40	Supplying and laying following size <b>RCC Hume pipe</b> class NP-2 (in standard length og 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	16.4.2	150 mm dia	Metre	70.00			-
b	16.4.5	300 mm dia	Metre	20.00			-
46.00	17.1	Supplying and laying following sizes one number PVC insulated, PVC sheathed, steel armoured, aluminium conductor power cable of 1.1 KV grade <b>direct in ground</b> including excavation, sand cushioning, protective covering and refilling the trench etc as required.					
a	17.1.2	2 x 6 sq. mm	Meter	450.00			-
b	17.1.23	4 x 16 sq. mm.	Meter	50.00			-
c	17.1.24	4 x 25 sq. mm.	Meter	390.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
d	17.1.12	3.5x 35 sq. mm.	Meter	280.00			-
e	17.1.13	3.5x 50 sq. mm.	Meter	25.00			-
f	17.1.14	3.5x 70 sq. mm.	Meter	180.00			-
g	17.1.15	3.5x 95 sq. mm.	Meter	50.00			-
h	17.1.17	3.5 x 150 sq. mm	Meter	10.00			-
i	17.1.19	3.5 x 240 sq. mm	Meter	80.00			-
47.00	17.4	Supplying and laying following sizes one number PVC insulated, PVC sheathed, steel armoured, aluminium conductor power cable of 1.1 KV grade in existing <b>masonry open duct</b> as required.					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a	17.4.17	3.5 x 150 sq. mm.	Meter	20.00			-
b	17.4.20	3.5 x 300 sq. mm.	Meter	80.00			-
48.00	17.5	Supplying and laying following sizes one number, steel <b>armoured</b> , aluminium conductor power cable of 1.1 KV grade on <b>surface/ existing cable tray</b> as required.					
a	17.5.2	2 x 6 sq. mm	Meter	20.00			-
b	17.5.7	3 x 10 sq. mm	Meter	50.00			-
c	17.5.12	3.5 x 35 sq. mm.	Meter	50.00			-
d	17.5.13	4 x 10 sq. mm.	Meter	10.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
e	17.5.14	4 x 16 sq. mm.	Meter	5.00			-
f	17.5.15	4 x 25 sq. mm.	Meter	50.00			-
49.00	17.6	Supplying and laying following sizes one number, steel <b>armoured</b> , aluminium conductor power cable of 1.1 KV grade on <b>surface/ existing cable tray</b> with M.S flat clamp and steel dash fastener/ G.I. bolts and nuts as required.					
a	17.6.2	3.5 x 70 sq. mm.	Meter	40.00			-
b	17.6.4	3.5 x 120 sq. mm.	Meter	50.00			-
50.00	17.16	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	17.16.2	2 X 6 sq. mm	Each	44.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
b	17.16.8	3 X 10 sq. mm	Each	8.00			-
c	17.16.13	3½ X 35 sq. mm	Each	6.00			-
d	17.16.14	3½ X 50 sq. mm	Each	2.00			-
e	17.16.15	3½ X 70 sq. mm	Each	6.00			-
f	17.16.16	3½ X 95 sq. mm	Each	2.00			-
g	17.16.19	3½ X 185 sq. mm	Each	2.00			-
h	17.16.21	3½ X 300 sq. mm	Each	4.00			-



Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
i	17.16.23	4 X 10 sq. mm	Each	4.00			-
j	17.16.24	4 X 16 sq. mm	Each	4.00			-
k	17.16.25	4 X 25 sq. mm	Each	12.00			-
51.00	18.3	Supplying and laying following sizes one number XLPE, steel armoured, aluminium conductor power cable of 11 KV grade in existing RCC/ HUME/ STONEWARE/ METAL pipe as required.					
a	18.3.8	3 x 240 sq mm	Meter	50.00			-
52.00	18.4	Supplying and laying following sizes one number XLPE, steel armoured, aluminium conductor power cable of 11 KV grade in existing masonry open duct as required.					
a	18.4.8	3 x 240 sq mm	Meter	15.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
53.00	18.15	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 11 KV grade as required :					
a	18.15.8	240 sq. mm	Each	2.00			-
54.00	18.16	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 11 KV grade as required :					
a	18.16.8	240 sq. mm	Each	1.00			-
55.00	20.1	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	20.1.1	100 mm width X 50 mm depth X 1.6 mm thickness	Meter	25.00			-
b	20.1.2	150 mm width X 50 mm depth X 1.6 mm thickness	Meter	125.0			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
56	20.2	Supplying and fixing of following sizes powder coated, perforated, M.S. <b>cable trays bends (horizontal) turning at 90° in same plane</b> with perforation not more than 17.5% rigidly jointed with cable tray etc. complete as required.					
a	20.2.1	100 mm width X 50 mm depth X 1.6 mm thick	Each	3.00			-
b	20.2.2	150 mm width X 50 mm depth X 1.6 mm thick	Each	5.00			-
57	20.3	Supplying and fixing of following sizes vertical, powder coated, perforated, M.S. <b>cable trays bends (vertical) turning at 90° in another plane</b> with perforation not more than 17.5% rigidly jointed with cable tray etc. complete as required.					
a	20.3.1	100 mm widthX50 mm depthX1.6 mm thick	Each	2.00			-
b	20.3.2	150 mm widthX50 mm depthX1.6 mm thick	Each	3.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
c	20.3.4	300 mm widthX50 mm depthX1.6 mm thick	Each	3.00			-
58	20.5	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	8			-
59	21.6	Supply of hot dipped galvanized (in single dip to average 70 micron) octoganal pole made of 4mm thick steel plate having base plate 275x275x16mm, 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 270x270x3mm with 4 nos 750mm long, 24mm dia foundation bolts (EN8 grade).					
a	21.6.1	9 metre high, minimum dia 173mm at bottom and 75mm at top	Each	18.00			-
60	21.11	Erection of GI octogonal pole on existing cement concrete foundation having grouted bolts and nuts, aligning in true vertical position as required.					
a	21.11.7	9 metre high	Each	18.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
61	21.12	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	18			-
62	21.14	Supplying and fixing of 32mm dia x 2 metre long G.I pipe (light) bracket for mounting street light fittings of all types on poles including bending the pipe to the required shape, 2 Nos 40x3mm flat iron clamps with bolts and nuts including wiring with 1.5 sq. mm W.P /PVC wire etc. as required.	Each	18			-
63	21.15	Supplying and fixing water tight terminal box made of 1.6mm thick M.S. sheet with detachable gland plate in bottom, hinged front open able cover, rubber gasket, having 2 Nos 4way connector and 1 No SPMCB inside the box for cable connection, fixed to pole with 2 Nos clamp made from 40x3mm M.S. flat with 2 No nut bolt dully painted with 2 coat of red oxide paint and 2 coat aluminium paint complete as required.					
a	21.15.2	30x20x15 cms.	Each	18.00			-
64	NS-1	<b>315 KVA CSS</b>					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		Supply, receiving, storing, inspection, handling, assembling, installation in correct aligned position, effecting proper connections, testing and commissioning of Outdoor type package substation with continuous rating <b>315 KVA, Step Down, 11/0.433 kV oil filled Off load tap changer transformer</b> with +/- 2.5%, +/- 5%, -7.5%, -10% and -15% on H.V. side with 4 mm thick base and 2 mm thick wall of each compartment with compartment, with IP 54 for HT & LT compartment and IP 23 for transformer compartment, with naturally cooled type canopy (Hot Galvanized Steel) and the following specifications confirming to IS: 2026.					
		Package sub station should have the following equipments:					
		<b>3 way non extensible unit with 2 No. Isolator incomer.</b>					
		Single unit consisting of 2 No. 630A load break switch and 1 No. 200A Tee-Off with Vacuum circuit breaker and with O/C + E/F relay type VIP35 (for local trafo control.) with SF6 gas pressure indicator. This RMU shall be non-extensible type.					
		IDMT Relay for circuit Breakers-Self powered					
		The ring Switch and Tee-Off circuit breaker are provided with Integrated Earthing Switches with making capacity.					
		Neon cable indicator for ring switches & circuit breaker.					
		Integral earthing facility for ring switches.					
		Shunt Trip coil rated for 230V AC.					
		Trip push button for Tee-Off circuit breaker.					
		Padlocking facility.					
		All civil works such as PCC/RCC foundation, Platform, Fencing, Filling trench and pedestals etc.					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		11KV/433V,315kVA three phase, Dyn11, +5 to -15 in steps of 2.5% Off Load Tap Changer, CU/CU winding Oil type Transformer with standard accessories.					
		1 No. 433V, 800A LT device with PVC sleeved Aluminium Busbars.					
		<b>OUTGOING</b>					
		1 No. 4P 630A manually operated fixed type Microprocessor Based ACB with static trip unit.					
		<b>315 KVA CSS described as above</b>	Nos	1			-
65	24.7	<b>D.G. Set Work:</b>					
		Supplying, installation, testing and commissioning of diesel Generating Set (alternator directly coupled to diesel engine) complete in all respect broadly comprising of following and as per specification enclosed					
		A. Alternator : 200 KVA self excited, brush less type, 3 phase, 415 volts 50 Hz, 4 pole, AC alternator complete with all accessories.					
		B. Engine : water cooled diesel engine with rated capacity of 254 BHP at 1500 rpm, turbo charged, direct injection type, 4 stroke, 6 cylinder including fuel tank of minimum 990 ltrs. capacity fabricated with 3 mm thick MS sheet duly calibrated and painted with one coat of primer and two coats of synthetic enameled paint of approved colour, residential type silencer with exhaust pipe 150 mm dia MS pipe duly wrapped with asbestos rope of legging of specified quality and specification.					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		C. AMF Panel : Cubical, compartmentalized, AMF panel board with all power and control contactors, switches, meters and other accessories, internal wiring, connection, inter-connection etc. for trouble free smooth function for 200 KVA DG Set complete with battery charger and leads as required.					
		D. Base Plate : Common base plate of required size for mounting of engine alternator set fabricated from MS channel and vibration damping arrangement with cushy foot mounting i/c painting etc. as required.					
		E. Foundation : Suitable size cement concrete (1:2:4) foundation duly plastered and finished with neat coat of cement as required.	Set	1			-
64	NS-2	<b>M.V. SWITCH GEARS &amp; DISTRIBUTION BOARDS</b>	.				
		<b>GENERAL NOTES:</b>					
		This BOQ to be read in conjunction with technical specifications and Single Line Diagram . If any discrepancy occurs that should be brought to the notice of Client/Consultant before quoting the price otherwise stringent condition will be deemed to have been considered.					
		All ACBs to be provided with ON/OFF/Trip lamps, 3 NO + 3NC Auxiliary contacts other than used in control circuit.					
		All Transformer and DG incoming ACBs shall be provided with Microprocessor based O/L, S/C and E/F releases.					
		All outgoing ACBs shall be provided with thermal magnetic O/L and S/C releases.					
		All MCCBs shall be provided with rotary operating handle, thermal magnetic O/L & S/C releases and ON/OFF lamps. Incoming MCCBs should be provided with E/F release and shunt trip release also.					
		All meters shall be digital type.					
		Multi-function meter to be provided as required to cover all the parameters as mentioned.					
		All current/voltage transformer shall be cast resin type.					



Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		All indicating lamps shall be LED type.					
		Current density for bus bar shall not be more than 0.8A/Sqmm. Rating of Bus bar is after considering all derating factors. Neutral bus in DG Power Panel/Main LT Panel/Bus Duct shall be fully rated. (Bus bar sizing calculation to be submitted for approval.)					
		All starter shall be provided with ON/OFF/Trip lamp, start/stop button.					
		All internal control wiring shall be heat resistant type.					
		All incoming breakers in Main LT panel shall be electrically interlocked.					
		All TP feeders shall be provided with Isolable neutral link.					
		Bus bar chamber shall be provided at top only. Incoming and outgoing cable entry shall be from top/bottom as required.					
		DOL Starter shall be MPCB (with Magnetic element only). In case of S/C & O/L relay should trip respectively.					
		<b>M.V. PANEL BOARDS:</b>					
		Design, manufacture, supplying, fixing in position, testing and commissioning of following MV switchgear panels suitable for 415 V, 3 phase, 4 wire, 50 Hz power distribution system. The panel shall be Indoor, free standing, floor/wall mounting, sheet metal clad, cubicle, dead front, dust and vermin proof type compartmentalized design fabricated out of 14 SWG sheet steel, complete with copper bus bars, separate earth bus bar to be provided through out the length of the panel. The incoming and outgoing feeders shall be accommodated in a modular multitier arrangement and shall be interlocked to avoid paralleling, adequate size cable alley, painting, earthing, numbering, danger plate etc as required as per specifications and drawings.					
a	NS-2(i)	<b>Main LT Panel</b>					
		<b>Incoming:</b>					
		<b>Transformer Incomer</b> : One (1) Nos. 315 KVA Transformer incomer consisting of :					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		One Nos. 630A, 4-pole Motorise MCCB (25 KA) with microprocessor based O/L, S/C and E/F releases.					
		Metering, Indication & Protection:					
		Multifunction digital meter (consisting of Voltage, Current, Frequency, PF, kWh, kVA parameter) with RS-485 Port.					
		Sets of 600/5A, CL-1, 15VA CTs for measuring.					
		Sets of 600/5A, CL-5P 10, 15VA CTs for Protection.					
		Sets of phase indicating lamps with 2A control MCBs.					
		Sets of ON/OFF/Trip/Trip circuit healthy/ready to close lamps.					
		4W annunciator with Audio/Visual alarm and accept/test/ reset push button.					
		IDMTL relay Two O/C & One E E/F with 600/5A, CL-5P10, 15VA CTs.					
		600/5A, CL-1, 15VA CT for APFCR.					
		Restricted earth fault relay with 600/5A, CL-PS, CTs (3 Nos. to be mounted in panel and 1 No. to be supplied loose with panel).					
		Under voltage relay					
		Under frequency relay					
		Over frequency relay					
		Trip circuit supervision relay					
		Master trip lockout relay.					
		<b>D.G. Incomer</b> : One (1) Nos. 200 KVA D.G. set incomer consisting of :					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		One Nos. 400A, 4-pole Motorise MCCB (25 KA) with microprocessor based O/L, S/C and E/F releases.					
		<b>Metering and Indication for D.G. Incomer:</b>					
		Combined Ammeter/Voltmeter with inbuilt Selector Switch and 400/5A, CL-1, 15VA CTs and 2A control MCBs.					
		Sets of 400/5A, CL-1, 15VA CTs for measuring.					
		Sets of 400/5A, CL-5P 10, 15VA CTs for Protection.					
		Set of ON/OFF/Trip/Trip Circuit healthy/ready to close lamp.					
		Sets of phase indicating lamp with 2A control MCBs.					
		Reverse power relay.					
		Under voltage relay					
		Over voltage relay					
		Under frequency relay					
		Over frequency relay					
		Trip circuit supervision relay					
		Master trip lockout relay.					
		All incoming breakers shall be electrically interlocked, so that two supplies are not mixed up.					
		<b>Busbar</b>					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		Electrolytic high conductivity aluminium three pole and neutral busbars rated at 500 amps(after deration) having a maximum current density of 0.8 amp per sq mm insulated with heat shrinkable PVC sleeves.					
		Interlocking					
		Providing PLC bsased Electrical & Mechanical Interlocking, Auto On,OFF the D.G set with AMF complete as per specifications and as required in Main LT Panel.					
		<b>Outgoing feeders:</b>					
		1 Nos. 200A TP+NL thermal magnetic release MCCB(10-KA)					
		1 Nos. 150A TP+NL thermal magnetic release MCCB(10-KA)					
		1 Nos. 125A TP+NL thermal magnetic release MCCB(10-KA)					
		2 Nos. 100A TP+NL thermal magnetic release MCCB(10-KA)					
		6 Nos. 63A TP+NL thermal magnetic release MCCB(10-KA)					
		1 Nos. 40A TP+NL MCCB(10-KA)					
		2 Nos. 63A TPN MCB(10-KA)					
		1 Nos. 200A TP+NL Microprocessor Base MCCB(10-KA) <b>For spare only.</b>					
		1 Nos. 125A TP+NL thermal magnetic release MCCB(10-KA) <b>For spare only.</b>					
		1 Nos. 63A TP+NL thermal magnetic release MCCB(10-KA) <b>For spare only.</b>					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		1 Nos. 40A TPN MCB(10-KA) <b>For spare only.</b>					
		<b>Main LT Panel described as above</b>	set	1.00			-
b	NS-2(ii)	<b>125 kVAR Capacitor Banks :-</b>					
		<b>(1 x 50 kVAR + 2 x 25 kVAR + 2 x 10 kVAR + 1 x 5 kVAR)</b>					
		Supply and commissioning of Cubicle type, free floor mounted front operated panel with following capacitor units in formation including cost of tier formation, interconnections upto panel, connection to earthing system complete as specified for following rating capacitor unit suitable for operation on automatic control and shall form part of automatic control in cubicle form made out of 14 gauge CRCA powder coated sheet steel complete with 32 x 6 mm aluminium earth tape from end to end of the panel for following capacities of capacitor panel.					
		400A TP Al. busbar suitable for receiving incoming cables/Bus duct					
		6 Step APFC Relay having feature of changing the sequence of operation with Auto/Manual selector switch.					
		Auto/Manual Indicating lamps.					
		Set of Phase indicating lamps with 2A control MCBs.					
		400A TP Al. busbar suitable for receiving incoming cables/Bus duct					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		1 Sets of 50 kVAR each set having 125A TP MCCB (25kA), capacitor duty contactor, ON/OFF indicating lamps with 2A control MCBs and ON/OFF push buttons.					
		2 Sets of 25 kVAR each set having 63A, TP MCCB (25 kA) capacitor duty contactor, ON/OFF indicating lamps with 2A control MCBs and ON/OFF push buttons.					
		2 Sets of 10 kVAR each set having 25A, TP MCB (10 kA) capacitor duty contactor, ON/OFF indicating lamps with 2A control MCBs and ON/OFF push buttons.					
		1 Sets of 5 kVAR each set having 16A, TP MCB (10 kA) capacitor duty contactor, ON/OFF indicating lamps with 2A control MCBs and ON/OFF push buttons.					
		125 kVAR Capacitor Banks described as above	Set	1.00			-
c	NS-2(iii)	<b>Common Area Panel :-</b>					
		Tech. specification as described above					
		<b>Incoming:</b>					
		1 no. 100 Amps 10 KA, 4 pole MCCB with thermal magnetic releases and ON/OFF indicating lamps..					
		<b>Metering &amp; Indication:</b>					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		Combined digital Ammeter/Voltmeter with Selector Switch and 100/5A, CL-1, 10VA CTs and 2A control MCB.					
		Sets of phase indicating lamp with 2A control MCBs.					
		Sets of on, off, trip indicating lamp with 2A control MCBs.					
		<b>Bus Bar:</b>					
		Electrolytic high conductivity aluminium 4 pole busbars rated at 200 amps(after deration) having a maximum current density of 0.8 amp per sq mm insulated with heat shrinkable PVC sleeves.					
		<b>Outgoing:</b>					
		1 Nos. 63A TP+NL thermal magnetic release MCCB(10-KA)					
		One (1) Nos. 40 Amp DP MCB, 10 KA.					
		Two (2) Nos. 25 Amp DP MCB, 10 KA.					
		1 Nos. 63A TP+NL thermal magnetic release MCCB(25-KA) <b>For spare only</b>					
		Two(2) Nos. 40 Amp TPN MCB, 10 KA. <b>For spare only</b>					
		<b>Common Area Panel described as above</b>	Nos.	1.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
d	NS-2(iv)	<b>Plumbing Panel :-</b>					
		Tech. specification as described above					
		<b>Incoming:</b>					
		One (1) No. 63A, 4P MCCB (10kA) with thermal magnetic O/L, S/C releases and ON/OFF indicating lamps.					
		<b>Metering &amp; Indication:</b>					
		Combined digital Ammeter/Voltmeter with Selector Switch and 60/5A, CL-1, 10VA CTs and 2A control MCB.					
		Sets of phase indicating lamp with 2A control MCBs.					
		Sets of on, off, trip indicating lamp with 2A control MCBs.					
		<b>Bus Bar:</b>					
		Electrolytic high conductivity aluminium 4 pole busbars rated at 100 amps(after deration) having a maximum current density of 0.8 amp per sq mm insulated with heat shrinkable PVC sleeves.					
		<b>OUTGOING UNITS</b>					
		10 Nos.10A(100kA) TPN MPCB .					
		3 No. 10A(100KA) TPN MPCB <b>Only for spare.</b>					
		The Switchboard shall be complete with all interconnections, risers, internal wiring, labels etc complete as required.					



Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		Fully automatic DOL starters (for 2 H.P.motors) with push buttons and on/off indicating lights with MN type relay, contactors, direct type ammeter (2.5-4A for 2 HP), single phase preventors for all motors, with selector switch and fuses overload relay as required.					
		3 HP -2 Nos.Starter					
		2 HP -8 Nos.Starter					
		Spare N.O. - N.C. contacts for each starter - 3Set.					
		G.I. strip 25 x 3 mm throughout the length of MCC.					
		All internal wiring with colour coding from incoming mains to various switchgear, starter, meter, indicating lamp and bus bar.					
		All starters shall be compatible for remote operation.All Switch gears offered must be compatible with the H.P. of the motors offered					
		<b>Plumbing Panel described as above</b>	Nos.	1.00			-
e	NS-2(v)	<b>Fire Panel :-</b>					
		Tech. specification as described above					
		<b>Incoming:</b>					
		One (1) No. 200A, 4P MCCB (10kA) with thermal magnetic O/L, S/C releases and ON/OFF indicating lamps.					
		<b>Metering &amp; Indication:</b>					
		Combined digital Ammeter/Voltmeter with Selector Switch and 160/5A, CL-1, 10VA CTs and 2A control MCB.					
		Sets of phase indicating lamp with 2A control MCBs.					
		Sets of on, off, trip indicating lamp with 2A control MCBs.					
		<b>Bus Bar:</b>					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		Electrolytic high conductivity aluminium 4 pole busbars rated at 300 amps(after deration) having a maximum current density of 0.8 amp per sq mm insulated with heat shrinkable PVC sleeves.					
		<b>OUTGOING UNITS</b>					
		1 Nos.125A(10kA) TP+NL MCCB .					
		2 Nos. 20A(100KA)TPN MPCB .					
		1 Nos. 125A(25KA)TP+NL MCCB <b>Only for spare</b> .					
		1 No. 32A(10KA) TPN MCB <b>Only for spare</b> .					
		The Switchboard shall be complete with all interconnections, risers, internal wiring, labels etc complete as required.					
		Fully automatic DOL starters (for 5 H.P. motors) with push buttons and on/off indicating lights with MN type relay, contactors, direct type ammeter ( 20A for 5 HP), single phase preventors for all motors, with selector switch and fuses overload relay as required.					
		Fully automatic Star Delta starters (for 50 H.P. motors) with push buttons and on/off indicating lights with MN type relay, contactors, direct type ammeter ( 0-125A for 50 HP), single phase preventors for all motors, with selector switch and fuses overload relay as required.					
		50 HP -1 Nos.(Main Electrical pump) Starter					
		5 HP - 2 Nos.(Jockey Pumps) Starter					
		Spare N.O. - N.C. contacts for each starter - 3Set.					
		G.I. strip 25 x 3 mm throughout the length of MCC.					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		All internal wiring with colour coding from incoming mains to various switchgear, starter, meter, indicating lamp and bus bar.					
		All starters shall be compatible for remote operation.All Switch gears offered must be compatible with the H.P. of the motors offered					
		<b>Fire Panel described as above</b>	Nos.	1.00			-
f	NS-2(vi)	<b>External lighting panel</b>					
		<b>Incoming:</b>					
		Supply, installation, testing and commissioning of front operated, front access, totally enclosed, free standing, dust and vermin proof Panel with IP65 ingress protection, fabricated from 2 mm thick CRCA sheets, with hinged, gasketed and lockable doors including the cost of interconnections, copper crimping lugs, brass glands, bonding to earth and painting, suitable for use at 415 volts, 3 phase 4 wire 50 Hz system with 25 MVA rupturing capacity at 415 volts complete as per specifications, as required and as below.					
		One (1) No. 40A, DP MCB (10kA) with thermal magnetic O/L, S/C releases and ON/OFF indicating lamps..					
		One (1) No.40A, Timer Switch for automatic operation.					
		<b>Metering &amp; Indication:</b>					
		Combined digital Ammeter/Voltmeter with Selector Switch and 40/5A, CL-1, 10VA CTs and 2A control MCB.					
		Sets of phase indicating lamp with 2A control MCBs.					
		Sets of on, off, trip indicating lamp with 2A control MCBs.					
		<b>Bus Bar:</b>					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		Electrolytic high conductivity aluminium 4 pole busbars rated at 100 amps(after deration) having a maximum current density of 0.8 amp per sq mm insulated with heat shrinkable PVC sleeves.					
		<b>Outgoing:</b>					
		Ten(10) nos 10 Amp DP MCB, 10 KA.					
		Two(2) nos 10 Amp DP MCB, 10 KA. <b>For Spare only.</b>					
		External Lighting Panel described as above	Set	1.00			-
g	NS-2(vii)	<b>HVAC O/D Panel:</b>					
		<b>Incomer:-</b> One (1) No. 160A, 4P MCCB (10kA) with O/L, S/C releases.					
		<b>Metering and Indication:</b>					
		Combined digital Ammeter/Voltmeter/KWH with inbuilt Selector Switch and 160/5A, CL-1, 15VA CTs and 2A control MCBs.					
		Sets of phase indicating lamp with 2A control MCBs.					
		Sets of ON/OFF/TRIP indicating lamp with 2A control MCBs.					
		<b>Bus Bar:</b>					
		Electrolytic high conductivity aluminium 4 pole busbars rated at 200 amps(after deration) having a maximum current density of 0.8 amp per sq mm insulated with heat shrinkable PVC sleeves.					
		<b>Outgoings:</b>					
		Nine (9) Nos. 40 A 4P MCB (10 KA).					
		One (1) Nos. 32 A 4P MCB (10 KA).					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		Two (2) Nos. 40 A TPN MCB (10 KA).For Spare					
		Two (2) Nos. 32 A TPN MCB (10 KA).For Spare					
		<b>HVAC O/D Panel described as above</b>	Nos.	1			-
h	NS-2(viii)	<b>UPS Panel:</b>					
		<b>Incomer:-</b> Two (2) No. 160A, 4P Microprocessorbase MCCB (10kA).					
		Two (2) No. 160A, 4-pole, Contactor					
		<b>Metering and Indication:</b>					
		Combined digital Ammeter/Voltmeter/KWH with inbuilt Selector Switch and 160/5A, CL-1, 15VA CTs and 2A control MCBs.					
		Sets of phase indicating lamp with 2A control MCBs.					
		Sets of ON/OFF/TRIP indicating lamp with 2A control MCBs.					
		<b>Bus Bar:</b>					
		Electrolytic high conductivity aluminium 4 pole busbars rated at 200 amps(after deration) having a maximum current density of 0.8 amp per sq mm insulated with heat shrinkable PVC sleeves.					
		<b>Outgoings:</b>					
		Two (2) Nos. 40 A TPN MCB (10 KA).					
		Three (3) Nos. 25 A TPN MCB (10 KA).					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		Two (2) Nos. 40 A TPN MCB (10 KA).For Spare					
		One (1) Nos. 25 A TPN MCB (10 KA).For Spare					
		<b>UPS Panel described as above</b>	Nos.	1			-
i	NS-2(ix)	<b>Lift M/C Room Panel :-</b>					
		Tech. specification as described below					
		<b>Incoming:</b>					
		Two (2) No. 63A, 4P MCCB (25kA) with thermal magnetic O/L, S/C releases.					
		One (1) No. 63A, 4P A/M change over switch.					
		<b>Metering &amp; Indication:</b>					
		Combined digital Ammeter/Voltmeter/KWH with Selector Switch and 60/5A, CL-1, 15VA CTs and 2A control MCB.					
		Sets of phase indicating lamp with 2A control MCBs.					
		Sets of ON/OFF/TRIP indicating lamp with 2A control MCBs.					
		<b>Bus Bar:</b>					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		Electrolytic high conductivity aluminium four pole busbars rated at 100 amps having a maximum current density of 0.8 amp per sq mm suitable to with stand symmetrical fault level of 25 MVA at 415 volts. The neutral busbar is to be of 100% capacity.					
		<b>OUTGOING UNITS</b>					
		Two (2) Nos.40 Amp TPN RCBO, 10 KA.					
		Two (2) Nos.9-13 Amp TPN MPCB, 100 KA.					
		Two (2) Nos.40 Amp TPN RCBO, 10 KA. <b>Only for spare.</b>					
		One (1) Nos.9-13 Amp TPN MPCB, 10 KA. <b>Only for spare.</b>					
		The Switchboard shall be complete with all interconnections, risers, internal wiring, labels etc complete as required.					
		Fully automatic DOL starters (for 5 H.P motors) with push buttons and on/off indicating lights with MN type relay, contactors, direct type ammeter ( 9-13A for 5 HP), single phase preventors for all motors, with selector switch and fuses overload relay as required.					
		5 HP - 2 Nos. Starter					
		Spare N.O. - N.C. contacts for each starter - 3Set.					
		G.I. strip 25 x 3 mm throughout the length of MCC.					
		All internal wiring with colour coding from incoming mains to various switchgear, starter, meter, indicating lamp and bus bar.					
		All starters shall be compatible for remote operation.All Switch gears offered must be compatible with the H.P. of the motors offered					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		The Switchboard shall be complete with all interconnections, risers, internal wiring, labels etc complete as required.					
		<b>Lift M/C Room Panel described as above</b>	Nos.	1			-
65	NS-3	Supplying, fixing, connecting & testing of <b>Telephone Tag Block</b> krone type in a suitable size 1.6 mm thick dust and vermin proof Sheet steel enclosure duly painted by synthetic enamel over anti corrosive primer, lockable and hinged cover with provision for cable through glands complete in all respects. (Make- Om Entreprises)					
a	NS-3(i)	10 pair Krone	Each	1.00			-
66	NS-4	Supplying, laying, testing and commissioning of following size anealed tinned copper conductor PVC insulated and sheathed <b>armoured copper telephone cables</b> with suitable clamps, saddles and including making terminal joints complete as required.(Make-Skytone)					
a	NS-4(i)	10 pair	Mtrs	125.00			-
67	NS-5	Supply, laying, testing & commissioning Cat-6 cables in existing conduit/raceway for data.	Mtrs	2,900.00			-



Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
68	NS-6	<b>LIGHT FIXTURE SUPPLY ONLY</b>					
a	NS-6(i)	LED aviation light luminaire (Make- Bajaj, Model- (110731)Equivalent to Wipro, Philips.	Each	1			-
b	NS-6(ii)	20W LED Recess Mounted Down Lighter (MAKE Philips MODEL NO. DN 183B IXDLED-3000 PSW WH)	Each	55			-
c	NS-6(iii)	1X15W RECESS MOUNTED LED DOWN LIGHTER (MAKE Philips MODEL NO. DN194B 15W )	Each	20			-
d	NS-6(iv)	1X18W RECESS MOUNTED SQUARE LED (MAKE Philips MODEL NO. BBS 170 15 W)	Each	19			-
e	NS-6(v)	1X15W RECESS MOUNTED SQUARE LED (MAKE Philips MODEL NO. BBS 175 15 W)	Each	62			-
f	NS-6(vi)	1X18W RECESS MOUNTED LED DOWN LIGHTER (MAKE Philips MODEL NO. DN193B LED12S 18W).	Each	28			-
g	NS-6(vii)	1X43W 2ftX2ft RECESS MOUNTED LED LIGHT (MAKE Philips MODEL NO. RC380B LED-30-6500 PSE OD WH 40W)	Each	16			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
h	NS-6(viii)	1X43W 2ftX2ft RECESS MOUNTED LED LIGHT (MAKE Philips MODEL NO. RC380B LED-30-6500 PSE OD WH 40W)	Each	165			-
i	NS-6(ix)	LED exit signage of Box size in mm 325x425x365(Make-Prolite, Model No. PEL LED E/NM (RM) W, Code No. E 109).	Each	14			-
J	NS-6(x)	90W High performance LED street light suitable for primary/secondary roads.(Make- HPL, Model No. HPLLEDst9060)	Each	5			-
69	NS-7	<b>External Lighting:-</b>					
a	NS-7(i)	Post Top Gate Light luminaries suitable for 23 Watts CFL lamp, cast aluminium spigot & spun aluminium canopy duly pre-treated and powder coated , provided with polycarbonate diffusers duly gasketed, integral control gear comprising heavy duty copper ballast, lamp holder & 25W CFL lamp, connectors all duly wired , connection & wiring from junction box with 3# 2.5 sqmm copper wires, Mounted on existing gate column. Make: WIPRO Cat Ref: FPP21123 / equivalent	Nos.	2			-
70	NS-8	<b>Lightning Arrestor System</b>					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
a	NS-8(i)	Supply of ESE Stormaster type Lightning Protection complete with the Lightning Air Terminal - Configured as a Spheroid which is comprised of separate electrically isolated 4 panels surrounding an Earthed Central Finial. The Insulation material used to electrically isolate the panels shall be comprised of a base polymer which provides high Ozone & UV resistance with a di-electric strength of 24-38 KV/mm tested as per NFC 17-102 & IEC 60-1:1989. The ESE terminal shall be tested & certified by CPRI (Central Power Research Institute), Govt of India for the Impulse current of 45 KA (8/20 micro sec) with 5 positive & 5 negative impulse. The ESE Stormaster terminal shall be approved from DGMS (Director General of Mines Safety), Govt of India. The ESE Stormaster 15 terminal will offer a protection radius of 36 Mtr with Level 2/Medium protection @ 4 mtr mast high & preferably to be mounted on roof top & centre of the building.					
		Make: LPI (Australia) / equivalent Model: Stormaster 15 Medium protection: Protection Radius = 36 mtrs @4 mtrs height Mast	Nos.	1.00			-
b	NS-8(ii)	Supply of Mast (G.I. pipe of 2 to 5 mtrs height) for mounting the terminal & adaptor with the Stormaster ESE Air Terminal along with supporting stray wires, etc.	Nos.	1.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
c	NS-8(iii)	Supply of 02 Nos. advance maintenance free Chemical Gel Earthing of 10 feet long 5/8" dia Rod molecularly bonded with 250 micron copper coating and treated with SS bolt and nuts with 3 bag of 10 Kgs of RESLO (mixture Sulphate, Silica, Alumina, Iron Oxide, Titanium Oxide, Calcium Oxide, Potassium Oxide, Chloride, Magnesium Oxide, Sodium Oxide, Zinc Oxide, etc) Resistance Lowering Grounding Minerals. The chemical compound is tested and certified by International accredited and BIS (Bureau of Indian Standards) accredited laboratory. The testing laboratory is ISO 9001 & ISO 14001 certified.					
		Make: LPI (Australia) / equivalent	Set	1.00			-
d	NS-8(iv)	Supply of heavy duty weather proof environment friendly polyplastic earth pit chamber with cover of autolocking facility with the following dimensions - 254mm dia (top), 330mm dia (bottom) and 260mm height 4 knock-out openings at the bottom are provided for the easy interconnection of earth strips between the earth pits to form a grid.	Nos.	2.00			-
e	NS-8(v)	Supply of Lightning Strike Recorder - 6 digits display to record the lightning current in an IP 67 enclosure with the minimum sensitivity of 3KA & maximum capacity of 150 KA (8/20 micro second waveform)					
		Make: LPI (Australia) / equivalent Model: LSR1	Nos.	1.00			-
f	NS-8(vi)	Test Link Joint in an IP 55 weather proof polyplastic enclosure of suitable dimension.	Nos.	1.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
g	NS-8(vii)	Supply of down conductor of 70 sq.mm single core insulated flexible copper cable with necessary accessories, etc.	mtr	80.00			-
71	NS-9	<b>FIRE ALARM SYSTEM :</b>					
a	NS-9(i)	Supply, instalation, testing & commissioning of <b>Analogue Addressable Fire Alarm Control panel</b> shall be with switch mode power supply, battery back up and charger .The panel shall have 4 loops as capacity with the option of using 1/2/3/4 loops and with 254 devices per loop in any combination. The panel shall consisting with 160 character LCD display, Touch keys. Shall be networkable by RS 485 or TCP/IP , repeater/Mimic connectivity. USB - 2.0 for PC Interface. Degraded redundancy operating mode when the main CPU fails.	Nos.	1.00			-
b	NS-9(ii)	Supply, instalation, testing & commissioning of <b>Loop Card</b> which will have 254 devices of both detectors and modules in a single line circuit.	Nos.	2.00			-
c	NS-9(iii)	Supply, instalation, testing & commissioning of <b>Analogue Addressable repeater panel</b> shall be with switch mode power supply, battery back up and charger. The panel shall consisting with 160 character LCD display, Touch keys. Shall be networkable by RS 485 or TCP/IP, repeater/Mimic connectivity. USB - 2.0 for PC Interface. Degraded redundancy operating mode when the main CPU fail.	Nos.	1.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
d	NS-9(iv)	Supply, instalation, testing & commissioning of <b>Addressable Multi Sensor - Heat Cum Smoke detector</b> with base with Binary coded address setting. Dual LED's for 360° visibility. Sleek low-profile housing design. Regular 100mm base. IP Rating : IP - 42.	Nos.	5.00			-
e	NS-9(v)	Supply, instalation, testing & commissioning of <b>Addressable Smoke detector</b> with base with Binary coded address setting. Dual LED's for 360° visibility. Sleek lowprofile housing design. Regular 100mm base. IP Rating : IP - 42.	Nos.	250.00			-
f	NS-9(vi)	Supply, instalation, testing & commissioning of <b>Addressable Heat detector</b> with base with Binary coded address setting. Dual LED's for 360° visibility. Sleek lowprofile housing design. Regular 100mm base. IP Rating : IP - 42.	Nos.	2.00			-
g	NS-9(vii)	Supply, instalation, testing & commissioning of <b>Addressable Relay Module.</b>	Nos.	1.00			-
h	NS-9(viii)	Supply, installation, testing and commissioning of Dual LED <b>Response indicator</b> for indicating the activation of the Remotely located Detector.	Nos.	127.00			-
i	NS-9(ix)	Supply, installation, testing and commissioning of <b>Fault isolator</b> Module capable of monitoring shorted loop circuit and automatically restore communications when shorted conditions are corrected.	Nos.	20.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
j	NS-9(x)	Supply, installation, testing and commissioning of <b>Addressable Manual Call Point</b> - Resettable type - with back box with Binary coded address setting with Status LED for 360° visibility - IP:50 Rating.	Nos.	10.00			-
k	NS-9(xi)	Supply, installation, testing and commissioning of <b>Conventional type Horn</b> wall mounted type rated at 90 dBA @ 1m for Audible annunciation. <b>Note: Need to Connect with Addressable Control Module.</b>	Nos.	10.00			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
I	NS-9(xii)	Supply, installation, testing and commissioning of <b>Addressable Control Module</b> for monitoring the field devices. Binary Coding Setting.	Nos.	10.00			-
m	NS-9(xiii)	Supply, installation, testing and commissioning of <b>12 U, 19" Equipment Rack</b> with power coated finish with front lockable Door with M. S. Framed translucent Acrylic material, 2 Nos of fans for heat exhaust, Top & Bottom entry knock outs, back side lockable Door , inbuilt MCB, Power Points, raceways and partitions, one no. sliding Tray etc. complete as required to house the PC and other Equipment.	Nos.	6.00			-
72.0	<b>NS -10</b>	<b>CCTV SURVILLANCE SYSTEM</b>					
a	NS-10(i)	Supply, Installatin, Testing and Commissioning of 1/3" Super HAD - II CCD, PAL, Colour varifocal Dome Camera with High Resolution of 600 TVL, True Day Night operation, SNR More than 50 dB, Inbuilt surge protection, 360 degree flexible adjustment, having sensitivity of 0.1 Lux, Day Night operation feature,BMB, Digital wide Dynamic range, Auto white balance, BLC, Automatic Gain Control, 8 Zone privacy masking, motion Detection, Auto iris type varifocal Lens with focal length of 2.8 to 10 mm, OSd Support for remote camera finetunings, DC12V operating voltage compatibility etc. HDC-6605P(N) complete as required.	Nos.	20			-



Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
b	NS-10(ii)	Supply, Installation, testing and commissioning of 1/3" super HAD CCD high resolution IR C/CS Mount camera suitable for outdoor conditions with 540 TVL. 0 Lux sensitivity, (F1.2), internal sync, AWB / BLC / AGC with On-Off control, IR visible range of 40 to 50 mtrs., 9 to 22 mm VARifocal Lens, Equipped with latest Intelligent IR compensation technology, DC12V Operation Suitable for the Outdoor conditions with IP-66 rating.	Nos.	4			-
c	NS-10(iii)	Supply, Installation, Testing and Commissioning of 24 channel inputs, live viewing and recording capability with full D1 resolution on all the Channels , IE browser supported, SATA HDD interface, Powerful DVCS to monitor, multi-units of DVR, fitted with 2 TB HDD expandable to 16 TB with out any external storage arrangement, The hard dusc s shall be hot swappable, High profile H.264 video compression,Multilevel image quality adjustments, 16 line in video correesponding to each channel, . Full Pentaplex (multi-operational, - Display, Recording, Playback,, Networking, ,Backup), 396 zones motion Detection feature, User-friendly operations via front, panel, IR remote, controller or, remote software, Live or recorded video access, via Ethernet or modem, Support USB upgrade, PTZ dome control, Remote access through,TCP/IP, UDP, DHCP, DNS, IP Filter, PPPOE, DDNS, FTP, VGA and HDMI interface supports to interface with the CCTV Monitor.The DVR must support comprehensive Video Management Software. The Unit shall be equipped with 2 nos. of RJ-45 inputs and 2 Nos. of USB ports.HD16-DVR-Dand complete asrequired.	Nos.	1			-
d	NS-10(iv)	22" high resolution LCD Monitor.	Nos.	1			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
e	NS-10(v)	Supply, Installation, Testing and Commissioning of Comprehensive CCTV Monitoring Software Palteform suitable to cater to multiple DVR management, The Software should be able to establish virtual matrix System to support the flexibility of the operator.The Software plateform must enable the user to play Live, Recorded images, Control of the PTZ cameras, Video switch through Drag & drop etc to make the system flexible & user friendly.	Nos.	1			-
f	NS-10(vi)	Supply, laying , Fixing and Testing of RG 6 grade flexible Coaxial Cable of approved make in concealed or surface mounted existing PVC conduit.	Metre	800			-
g	NS-10(vii)	Supply, Installation, Testing and Commissioning of 12 V DC, Digital technology based Power Supply Units highly regulated and spikes free terminal voltage and heavy sourcing current for regulated terminal voltage complete as required.	Nos.	13			-
73.0	NS-11	<b>Public Address System</b>					
a	NS-11(i)	Supply installation, Testing & Commissioning of <b>RMS 240w Power amplifier</b> , battery voltage 24Vdc (max. 10% deviation) Frequency response 60Hz to 15kHz (+1/-3dB) Inputs XLR & Phone Jack, SIN >85dB, as per detailed technical specification etc as required.BOSCH LBD1935/00 or equivalent.	Nos.	3			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
b	NS-11(ii)	Supply installation, Testing & Commissoing of <b>RMS 240W Mixer Amplifier</b> , battery voltage 24Vdc (max. 10% deviation) Frequency 50Hz to 18kHz (+1/-3dB), Inputs 4 balanced inputs / 3 stereo line, Sensitivity 1.0mV (mic. inputs), SIN >75dB, as per detailed technical specification as required.BOSCH PLE-1ME240 or equivalent.	Nos.	1			-
c	NS-11(iii)	Supply installation, Testing & Commissoing of speaker <b>6W Ceiling Speaker</b> complete with all accessories.LBD 0606/10 or equivalent.	Nos.	89			-
d	NS-11(iv)	Supply installation, Testing & Commissoing of <b>wall mounted speaker 12W</b> wooden cabinet, factory fitted Speaker complete with all accessories.LBD 3903 or equivalent	Nos.	5			-
e	NS-11(v)	Supply installation, Testing & Commissoing of <b>Controller Voltage</b> VAS 230VAC, ±15%, 50/60 Hz, power consumption 600 VA, Voltage 24 VDC, +15% / -15% Output power RMS 240 W/360W, Frequency response 60 Hz to 18 kHz (+1/-3 dB at -10 dB ref rated output), Connector XLR, 6.3 mm jack, Sensitivity 1 mV (mic), 1 V (line), 255 messages, format WAV-file, 16-bit PCM, mono, Memory capacity 16 MB Flash ROM, as per detailed technical specification as required.BOSCH LBB1990/00 or equivalent.	Nos.	1			-
f	NS-11(vi)	Supply installation, Testing & Commissoing of <b>Keypad station</b> Voltage 18 to 24 VDC or VAC external power supply, Current consumption <30 mA (plus <15 mA per keypad) Input sound level (max) 110 dB, SPL Frequency response 100 Hz to 16 kHz, Speech filter - 3dB at 315 Hz, high-pass, 6 dB/oct, Output impedance 200 ohm, expandable upto 8 units, as per detailed technical specification as required BOSCH LBD1956/00 or equivalent.	Nos.	1			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
g	NS-11(vii)	Supply installation, Testing & Commissoing of <b>Rated power 12w, Volume Control</b> Attenuation step 5x3db+off, Frequency response 50Hz to 20kHz (-1 dB) as per detailed technical specification as required BOSCH LBC 1400/10 or equivalent.	Nos.	1			-
h	NS-11(viii)	Supply installation, Testing & Commissoing of <b>musical instrument named with Plena easy line SD tuner bgm source suitable for MP3 stored on SD card and USB memory</b> stick with FM tuner, FM tuner with RDS, presets and digital control,seprate output for digital source and FM tunner, Power 115-230 VAC, 50/60 Hz, FM Range 87.5 to 108 MHz, Maximum storage capacity 32 GB, track 2000, Frequency response 50 Hz to 20kHz, as per detailed technical specification as required.	Nos.	1			-
i	NS-11(ix)	Supply installation, Testing & Commissoing of <b>MS Equipment Rack</b> to place the Amplifiers, Player, and motioned all the above devises, having regulated power supply strip for all the devices, door lock and key, openable from front and rear, and required devises as per detailed technical specification as required.	Nos.	1			-
j	NS-11(x)	Supply installation, Testing & Commissoing of <b>Protocol Integration Connectors</b> with suitable shielded copper conductor cables as per detailed technical specification etc as per required.	Nos.	70			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
k	NS-11(xi)	Supply & Laying of 2x1.5 sqmm unsheathed twin parallel PVC insulated FRLS Copper conductor, 1.1KV Grade along with all materials and wiring with soldered terminals on either ends in existing PVC conduits.	Mtr	1500			-
74	NS -12	<b>ACCESS CONTROL SYSTEM:</b>					
a	NS -12(i)	Supply installation, Testing & Comissoing of Micro processor based standalone access control system with in built proximity reader and numeric key pad , 1000 user memory complete as required.	Nos.	2			-
b	NS -12(ii)	Supply installation, Testing & Comissoing of Electromagnetic lock 600LBS	Nos.	2			-
c	NS -12(iii)	Supply installation, Testing & Comissoing of L-Bracket for Glass door ( for installation of electromagnetic lock)	Nos.	2			-
d	NS -12(iv)	Supply installation, Testing & Comissoing of U-Bracket for Glass door ( for installation of electromagnetic lock)	Nos.	2			-
e	NS -12(v)	Supply installation, Testing & Comissoing of egressive switch for open the door	Nos.	2			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
f	NS -12(vi)	Supply installation, Testing & Commissoing of Proximity Access Card.	No.	10			-
g	NS -12(vii)	Supply installation, Testing & Commissoing of SMPS power supply 12 Volt 5 amp.complete as required.	Nos.	2			-
g	NS -12(viii)	Supply installation, Testing & Commissoing of 8 core shielded cable Multistand complete as required	Mtr.	25			-
75.0	NS-13	Supply, following sizes of flexible cable with electrolytic grade annealed bare copper conductor 1100 V grade.(For Fire alarm, PA, Access Control, CCTV etc)					
		Supply and drawing of 2 C x 1.5 Sq.mm. Sheathed anneled flexible copper Conductor FRLS cablein existing PVC Conduit, Complete with termination and testing as per requirement.	mtr	5,520.00			-
76	NS-14	Supplying all materials, storing, handling, fixing, laying, wiring and testing for the following Light Point with 1.5 sq.mm PVC insulated copper conductor 1100 volts grade stranded flexible wires in concealed/surface mounted FRLS PVC Conduit including cost of cutting & filling chases/ saddle, clamps, inspection/solid bends, sockets etc. and providing and fixing of 6 amps single pole modular flush mounted switch & switch plate in 1.2mm thick & 65mm deep GI box. The cost of circuit wiring with 2 x 1.5 Sqmm + 1 x 1.5 Sqmm PVC insulated copper conductor 1100 Volts grade wires shall be included in the cost of point wiring. (Cost of fish wire also to be included in the item)					

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
		<b>Controlled by MCB (Cost of MCB not be included):</b>					
a	NS-14(i)	First Point	Nos.	7.00			-
b	NS-14(ii)	Loop Point controled by same MCB in continuation	Nos.	14.00			-
77.0	NS-15	Supplying, instalation, testing, commissioning of wiring for a <b>4 Sets</b> on one circuit each set contains of <b>2 Nos 3 pin 240 volt 6 amp single phase and neutral socket outlet controlled by 1 No. 6Amp.</b> Switch with 2.5 sq.mm FRLS copper conductor 1100 Volt grade wires in existing surface/concealed conduit/ raceway as required and providing and fixing of 4 sets of a combined 2 Nos 3 pin 240 volt 6 amp socket outlet with safety shutters controlled by 1No.6 amp 240 volt single pole grid plate mounted switch in each set with moulded cover plate in recessed zinc chromate passivated MS box and including earthing of the 3rd pin with 2.5 sq. mm PVC insulated copper earth wire conductor wires complete as required.	Nos.	20			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
78.0	NS-16	Supplying, instalation, testing, commissioning of wiring for a <b>3 Sets</b> on one circuit each set contains of <b>2 Nos 3 pin 240 volt 6 amp single phase and neutral socket outlet controlled by 1 No. 6Amp. Switch</b> with 2.5 sq.mm FRLS copper conductor 1100 Volt grade wires in existing surface/concealed conduit/ raceway as required and providing and fixing of 3 sets of a combined 2 Nos 3 pin 240 volt 6 amp socket outlet with safety shutters controlled by 1No.6 amp 240 volt single pole grid plate mounted switch in each set with moulded cover plate in recessed zinc chromate passivated MS box and including earthing of the 3rd pin with 2.5 sq. mm PVC insulated copper earth wire conductor wires complete as required.	Nos.	22			-
79.0	NS-17	Supplying, instalation, testing, commissioning of wiring for a <b>2 Sets</b> on one circuit each set contains of <b>2 Nos 3 pin 240 volt 6 amp single phase and neutral socket outlet controlled by 1 No. 6Amp. Switch</b> with 2.5 sq.mm FRLS copper conductor 1100 Volt grade wires in existing surface/concealed conduit/ raceway as required and providing and fixing of 2 sets of a combined 2 Nos 3 pin 240 volt 6 amp socket outlet with safety shutters controlled by 1No.6 amp 240 volt single pole grid plate mounted switch in each set with moulded cover plate in recessed zinc chromate passivated MS box and including earthing of the 3rd pin with 2.5 sq. mm PVC insulated copper earth wire conductor wires complete as required.	Nos.	20			-
80.0	NS-18	Supply, instalation, testing & Commissioning of 8(2X4) modules brushed brass/copper colour pop-up boxes.(Make-Legrand, model No.-0540 18)(All switch socket, DATA outlet, telephone etc are considered separately)	Nos.	4			-



Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
81.0	NS-19	Supply, instalation, testing & Commissioning of 1 module Female BNC 75 jack(Make- Legrand, Model No.- 5722 76) for pop up box.	Nos.	4			-
82.0	NS-20	Supply, instalation, testing & Commissioning of 2 Module Female HD15(VGA)(Make- Legrand, Model No.- 5722 82) for pop up box.	Nos.	4			-
83.0	NS-21	Supply, instalation, testing & Commissioning of 2 ModuleHDMI socket (Make- Legrand, Model No.- 5722 81) for pop up box.	Nos.	4			-
84	NS-22	Design, fabrication, assembling, supply, installation, testing & commissioning of Earth box size L 450mm x W 300mm x D 150 mm made out of <b>pre-galvanized sheets</b> 1.2mm sheet steel and glazed steel door with acrylic, enclosure with 25x6 tinned cu strip with 10 holes & brassnut bolt & washer .	Each	5			-
85	NS-23	Supply, installation, testing, commissioning of Intel core-i-7(latest)Processor with EISA bus and with 3GHz minimum CPU speed, minimum of 8 GB RAM, 512 KB cache, 52X32X52X DVDRW+Blue ray RW Drive & 2TB HDD, optical Mouse, 106 keys keyboard, 10/100 Mbps Ethernet card, USB connection & internal modem, with for 32" LED HDTV over HDMI Port & Original Vista or Window 8 (Pro.) + M.S. Office (Pro.) loaded, & A4 Color Laser Jet printer.(For fire alarm, access control,PA CCTV).	Each	1			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
86	NS-24	<b>PASSANGER ELEVATOR:</b>					
		PASSANGER Elevator in lift shaft of dimensions 2500mm x2100mm (W x D), 13 passenger elevator with variable voltage variable frequency drive & ARD having a speed of 1.0 metre/ sec and travel height of 20.0 m(approx.) with 5 Stops and Microprocessor based control suitable for operation on 415 V, 50 Hz, 3 phase A.C. electric supply as required & Interior finish & Other Requirements as per specifications, including free mentinence period of Three (3) years.	Each	2			-
87	NS - 25	<b>Raceway</b>					
	25.1	Supplying, instalation, testing & commissioning of GI openable top cover raceway made from 2mm thick <b>pre-galvanized sheets</b> for top, bottom and sides and complete with 2mm thick top cover complete with rubber gasketing. The junction box shall be suitable to accommodate GI raceways specified below. Necessary civil work to support/ clamp from RCC slab/floor need to be included here too.(Junction Box price not included in the item).					
a)	NS-25.1(i)	75 mm wide x40 mm deep	Metre	20			-
b)	NS-25.1(ii)	100 mm wide x40 mm deep	Metre	100			-
c)	NS-25.1(iii)	150 mm wide x40 mm deep	Metre	15			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
d)	NS-25.1(iv)	300 mm wide x40 mm deep	Metre	50			-
88	25.2	<b>Junction Box</b>					
		Supplying, instalation, testing & commissioning of floor/ceiling recessed junction boxes for GI raceway systems fabricated from 3 mm MS sheets finished with <b>pre-galvanized sheets</b> , including 2 nos. GI strip at side for earthing, with 1, 2 or 3 nos "+", "I", "L' shaped support in the centre in case required with 3 mm thick neoprene gasketted removable cover fixed by counter sunk cadmium plated screws including the cost of earth links at all joints to ensure earth continuity and including the cost of chasing and making good recess in floor etc complete as required and as below. (in ceiling / Floor)(Only junction box price included in the item.)					
a	NS-25.2(i)	100X100 mm	Nos.	4			-
b	NS-25.2(ii)	150X150mm	Nos.	40			-
c	NS-25.2(iii)	200X200mm	Nos.	12			-

Sr. No	CG. SOR Code No.	Description	Unit	Quantity	Rate in INR (in Figures)	Rate in Word	Amount in INR
d	NS-25.2(iv)	350X350 mm	Nos.	15			-
89	NS - 26	<b>VTPN DB</b>					
		<b>DISTRIBUTION BOARD</b>					
		Supply,installation, testing & commissioning of following MCB/MCCB double door type <b>prewired Vertical Distribution boards</b> as per drawing & specification fabricated out of 16 SWG CRCA sheet steel in compartmentalized design as per specification and drawings. These distribution boards shall be surface/recessed in walls. All outgoing from DB shall be properly labelled. The rate includes the painting, numbering earthing etc. as required. DB shall be suitable for incoming aluminium armoured cable.					
		<b>8 Way VTPN DB</b>					
		Comprising of following:					
		Incoming:					
		One (1) No. 80 A FP MCCB(10KA)					
		Outgoing:					
		Two (2) Nos. 63A TPN MCB(10KA)					
		Two (2) Nos. 40A TPN MCB(10KA)					
		One (1) Nos. 25A TPN MCB(10KA)					
		Neutral link:					
		Separate for each outgoing					
		Earthing Terminals:					
		Separate for each outgoing	Nos.	5			-
		<b>Sub total of Electrical Works</b>					-