

**AMENDED COST ESTIMATE OF ELECTRICAL WORKS FOR CONSTRUCTION OF 500 BED SSB BLOCK AT GOA BENAULIM**

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	<b>SUB HEAD 1: HT SUB STATION</b>					
<b>1.01</b>	<b>HT Panel</b>					
	Supply, erection, testing and commissioning of indoor type HT Panel having <b>630A, 33 kV</b> , 3 Phase, 50 Hz., metal clad, dead front, 26.3 KA rupturing capacity Vacuum Circuit Breakers with interlocking scheme for the operation of different VCB, connections etc. complete with following incomers and outgoings including interlocking as per technical specifications and drawings including connections etc. including necessary control cabling interconnection between transformer and LT panel, battery charger panel etc door interlocking and expandable as required, complete in ready to use condition.					
	a <b>INCOMER :</b>					
	i <b>2 No. VCB Panel having following</b>					
	1 No. 630A, 33 kV, 3 Phase, 50Hz., metal clad, dead front, 26.3 KA rupturing capacity, Fully Drawout type, Vacuum Circuit Breaker (VCB)					
	1 set of 33kV/110V Potential Transformers with HRC fuses for metering and protection.					
	1 Set of Phase indicating lamps with HRC fuses					
	1 No. 0-33 kV digital voltmeter with selector switch					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY					
	2 No. Push button for CLOSE and TRIP					
	1 set of 175/5-5A Current Transformer for metering and protection or as required by state electricity board.					
	1 No. digital Ammeter with selector switch to select R, Y or B phase current.					
	1 Set of Microcontroller based numerical relay with IDMT +INST having 4 element relay (3O/C+1E/F). Relay should have display of phase current and trip history.					
	8 window Alarm annunciator with separate hooter, accept and rest push buttons.					
	1 Set of undervoltage relay and Overvoltage relay					
	1 set of trip circuit supervision relay					
	Auxiliary Relay with shunt trip coil.					
	1 No. Master Trip relay					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	1 No. digital Power factor meter					
	1 No. digital Frequency meter					
	1 No. 3-Phase digital Trivector Meter of suitable rating					
	<b>BUSBARS :</b>					
	33KV, 630 Amps, 26.3 KA Three Phase busbars of Copper.					
b	<b>OUTGOINGS :</b>					
i	<b>4 No. VCB Panels each having following</b>					
	1 No. 630A, 33kV, 3 Phase, 50Hz., metal clad, dead front, 26.3 KA rupturing capacity, Fully Drawout type, Vacuum Circuit Breaker (VCB)					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY					
	Push buttons for CLOSE and TRIP					
	1 set of 50/5-5A Current Transformer for metering and protection as per requirement.					
	1 set of 33kV/110V Potential Transformers with HRC fuses for metering and protection.					
	1 No. digital Ammeter with selector switch to select R, Y or B phase current.					
	1 Set of Microcontroller based numerical relay with IDMT +INST having 4 element relay (3O/C+1E/F). Relay should have display of phase current and trip history.					
	1 No. Master Trip Relay					
	1 set of trip circuit supervision relay					
	Auxiliary Relay with shunt trip coil.					
	8 window Alarm annunciator with separate hooter, accept and rest push buttons.					
c	<b>BUS COUPLER:</b>					
i)	<b>1 No. VCB having following:</b>					
	1 No. 630 A, 33kV, 3 Phase, 50 Hz, metal clad, dead front, 26.3 rupturing capacity, Fully Drawout type, Vacuum Circuit Breaker (VCB).					
	1 Set of Phase indicating lamps with HRC fuses.					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP.					
	Push button for ON and OFF.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	<b>HT Panel as mentioned above.</b>	<b>Set</b>	1	7000000		7000000
<b>1.02</b>	<b>TRANSFORMER</b>					
	Supply, installation, testing and commissioning of <b>2500 KVA</b> , 33kV/0.433 kV., 3 Phase, 4 wire, 50 Hz., ON-AN Transformer, Dyn11 Vector group, copper bound with outdoor duty type, On load tap changer on HV Side range -15%, 0, +5% in the steps of 1.25% per step, type transformer with RTCC+AVR inclusive of all control cable. Cable box connection including cable adapter box at primary and secondary end (LT side) shall be connected through busduct/ cable, complete with all accessories including first filling of oil, double float buchholz relay protection, high winding temperature, oil temperture sensors and gauges etc. confirming to IS 1180 ammended upto date, interconnection of control cables and accessories etc complete. Note-Transformer will have metering CT & PT of class 0.5 including interconnection of control cables as per detailed technical specifications and as required. Transformer losses must be as per 1180 ammended up to date.	<b>Set</b>	4	4000000		16000000
	<b>BATTERY CHARGER PANEL</b>					
<b>1.03</b>	Supply, erection, testing and commissioning of battery charger panel with 24 Volts DC continuous output for control supply of HT panel complete with battery, control cabling etc. as required. Capacity of battery charger panel should be suitable for above mentioned HT Panels.					
	2 numbers battery of minimum 180 AH ampere hour capacity.					
	Boost and Trickle charger suitable for above items.					
	1 No. AC Voltmeter (0-500Volt).					
	1 No. DC Voltmeter.					
	1 No. DC Ammeter.					
	1 set of AC and DC indicating lamps.					
	1 No. DC Battery charging position indicator.					
	DC distribution board suitable for above application to incoming & outgoing MCBs include tripping, closing and indication etc.					
	Control cabling between DC Distribution panel to the HT panel of the Substation with suitable core 1.5 sqmm copper cable.	<b>Each</b>	1	125000		125000
<b>1.04</b>	<b>BUS DUCTS :</b>					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	Supply, Installation, testing and commissioning of <b>following rating</b> 3 Phase, 4 Wire, sandwich construction Aluminium Bus Duct having 65kA short ckt for one Second with temperature rise of 55Deg. above ambient of 40deg. In extruded aluminium/ sheet steel housing suitable for operation on 415V, 50Hz AC supply with 50% neutral complete with all accessories bends, flange ends with adaptor box, Tinned copper laminated flexibles for all the panels , flexible joints, earth bus (minimum 2 runs of suitable rating aluminum strips), plug in point at required positions, expansion joints, transposition joint, end covers, ceiling/wall/ floor mounted support structure of painted/ powder coated with required hardware for installation, supporting arrangements, etc.Indoor type busduct shall be IP54 & Outdoor Busduct shall be IP65 protected . Outdoor /indoor duty type complete as per technical specifications and as requirment. <b>Note-</b> for outdoor installtion canopy will be mounted on bus duct for protection. Canopy Fabricated out of 1.2mm GI/CRCA powder painted.					
	<b>OUTDOOR TYPE BUSDUCT (IP65) with Canaopy Fabricated out of 1.2mm GI / CRCA Powder painted</b>					
A)						
i	4000 Amp	Meter	350	54780		19173000
ii	2000 Amp	Meter	200	28270		5654000
B)	<b>INDOOR TYPE BUSDUCT (IP54)</b>					
i	4000 Amp	Meter	380	49800		18924000
ii	3200 Amp	Meter	350	38900		13615000
iii	2000 Amp	Meter	200	25700		5140000
	<b>HT CABLE</b>					
1.05	Supply of following sizes of 33 kV grade multicore aluminium conductor XLPE armoured and overall HR PVC seathed power cable as per IS : 7098.					
i)	3 Core, 240 sq mm	Mtrs.	1000	2331		2331000
1.06	Laying of one number XLPE power cable of 33 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	i) upto 400 Sq mm	Meter	500	301		150500
1.07	Laying of one number XLPE power cable of 33 KV grade of following size in the existing RCC/HUME/ METAL pipe as required.					
	i) upto 400 Sq mm	Metre	300	68		20400
1.08	Laying of one number XLPE power cable of 33 KV grade of following size in the existing masonry open duct/cable tray as required.					
	i) upto 400 Sq mm	Metre	200	58		11600
1.09	Supplying and making end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size 3 Core, XLPE aluminium conductor cable of 33kV grade as required.					
	i) 240 sqmm 3 core (Heat Shrunken Type) Indoor Type	Each	6	15518		93108
	ii) 240 sqmm 3 core (Heat Shrunken Type) Outdoor Type	Each	8	21224		169792
1.10	Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc as required.					
	i) 150 mm dia	Metre	500	405		202500
	i) 300 mm dia	Metre	500	592		296000
	<b>CABLE ROUTE MARKER</b>					
1.11	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	30	269		8070
	<b>SAFETY EQUIPMENT</b>					
1.12	i) Providing and fixing HT (33 kV) danger notice plate of 250 x 150 mm made of mild steel, atleast 2 mm thick and vitreous enameled white on both sides and with inscription in signal red colour on front side as required.	Each	1	163		163

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
ii)	Providing and fixing MV danger notice plate of 200 x 150 mm made of mild steel, atleast 2 mm thick and vitreous enamelled white on both sides and with inscription in signal red colour on front side as required.	Each	30	149		4470
iii)	Supply & erection of the following Safety and testing Equipment including miscellaneous items like Clamps, nuts & Bolts, rawl plugs etc. at suitable places in the Substation building as required.					
a)	GI buckets, 4 nos of 5 Litres Capacity duly painted white inside and red oxide paint out side and with 'FIRE' written in white paint & Filled with Dry sand and mounted on MS angle iron bracket of Size 50 x 50 x 6 mm thick and 1200 mm long including grouting in wall / floor etc as required .	Each	2	1200		2400
b)	Supplying, storing, handling and fixing in position First Aid Medical Box complete as per technical specifications as required.	Each	1	1136		1136
c)	Shock Treatment Chart duly glazed mounted on Aluminum Frame with Sheet Glass as required.	Each	1	687		687
d)	Supplying and laying of 36 kV grade 1 metre wide anti skid chequered type rubber mat.	Metre	10	2500		25000
e)	Supplying and laying of 1.1 kV grade 1 metre wide anti skid chequered type rubber mat.	Metre	5	1800		9000
f)	Supply rubber hand gloves 33 kV grade as per I.S. Code.	Set	1	400		400
g)	Supplying of digital Earth Tester complete with probes etc as required	Set	1	6000		6000
h)	Supplying of Telescopic folding Aluminium ladder folding double with sitting stand 6 M etc as required.	Each	1	5000		5000
1.13	Providing and fixing of M.S Slotted angle iron with fixing materials and painting for cable racks in trenches/ on wall etc. as required.	KG	1000	70		70000
1.14	Providing and fixing of M.S Slotted angle 'C' channel/ Ladder type rack/ tray including fixing material grouted in wall or hanging with M.S rod hanger from ceiling including 2 coat synthetic enamel painting over 1 coat of red oxide primer etc. as required.	KG	800	150		120000
1.15	Fabrication and Installing following size of preforted M.S Cable tray including Horizontal and vertical bends, reducers, tee, crossmember and other accessories as required and duly Suspended from the ceiling with M.S 12 mm rod suspenders and including painting etc. as required.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
i)	150 mm width x 50 mm depth x 1.6 mm thickness	Metre	1500	393		589500
ii)	300 mm width x 50 mm depth x 1.6 mm thickness	Metre	1000	556		556000
iii)	450 mm width x 62.5 mm depth x 2.0 mm thickness	Metre	400	782		312800
iv)	600 mm width x 62.5 mm depth x 2.0 mm thickness	Metre	200	1008		201600
<b>1.16</b>	Fabrication and Installing following size of Ladder type M.S Cable tray including Horizontal and vertical bends, reducers, tee, crossmember and other accessories as required and duly Suspended from the ceiling with M.S 12 mm rod suspenders and including painting etc. as required.					
i)	450 mm width x 62.5 mm depth x 2.0 mm thickness	Metre	300	2042		612600
ii)	600 mm width x 62.5 mm depth x 2.0 mm thickness	Metre	200	2538		507600
	<b>TOTAL SUBHEAD 1: H.T. SUB STATION AS MENTIONED ABOVE</b>					<b>91938326</b>
<b>2.00</b>	<b>SUBHEAD 2: MAIN LT PANEL.</b>					
	<b>MAIN L.T. PANEL</b>					
	Supply, installation, testing and commissioning of LT Panel, as per IEC 61439-1&2 cubicle type, totally enclosed, free standing type, dust ,damp and vermin proof panel , powder coated, made up of CRCA sheet, complete with aluminum busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, necessary interlocking, and having incoming and outgoing switchgears as mentioned below. Complete as per technical specifications and as required.					
	<b>Note :</b>					
1	All ACBs shall have spare contacts & BMS Compatiable					
2	All relays to operate at 240Volts, Single phase, 50Hz., AC supply through UPS. UPS of suitable Rating is also in the scope of Supply					
3	Intelligent Panel Meter: Flush mounting, 96X96 mm size class 1 accuracy and LCD display. Panel meter should be suitable for true RMS reading. Meter should measure line and phase voltage, current of all 3 phases and neutral, HZ, PF, KW, KWH, KVAR, KVARH, KVA, KVAH, THD Voltage and current including one set of CT. Meter should be EMI/ EMC complaint. Meter should be with RS 485 port for communication on Modbus protocol.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
4	All ACBs shall have Ics=Icu=Icw=65 KA for 1 second.					
5	All ACBs should have Icw =Ics=Icu=100%					
6	All MCCBs shall have Ics=Icu.					
7	DG should have Automatic change over on LT panel ie. at the time of power failure DG should start Automatically and Switch ON DG incomer & Correspondingly Switching Off the transformer Incomer , Bus coupler & vise versa.					
<b>2.01</b>	<b>MAIN LT PANEL</b>					
<b>A</b>	<b>INCOMER:</b>					
i)	<b>6 No. ACB Panels each having following:</b>					
	4000 A, 415/V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & earth Fault trip including under voltage release and lockable trip push button. ACB should have Icw=Ics =Icu=65KA for 1 sec.					
	Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
	Push button to Close the ACB					
	R, Y & B Phase indicating lamps (LED type) with 6A control SP MCBs					
	Intelligent Panel Meter As Mention Above including one set of C.T					
	One set of dual core dual ratio CT of 4000/2000/5/5A for capacitor panel.					
	CT suitable for AHF -Class of accuracy should be 0.5, Burden 15VA ,secondary ratio 4000 /1 Amp .					
<b>B.</b>	<b>BUSBARS :</b>					
	4000 Amps TPN busbars of Aluminium with temperture rise of 40 degree celsius over and above ambient temperture of 45 degree Celsius, 65kA for 1sec.					
<b>C.</b>	<b>BUS COUPLER :</b>					
i)	<b>3 No. ACB Panels each having following:</b>					



S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	4000 A, 415 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & earth Fault trip including lockable trip push button. The ACB should have Icw =Ics=Icu=65 KA for 1 sec.					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP.					
	Push button to CLOSE the ACB.					
	1 Set of Ammeter with ASS and CTs.					
	<b>D. OUTGOING.</b>					
	<b>i) 4 No. ACB Panels each having following:</b>					
	3200 A, 415V, Fully Motorised, Fully Drawout type (EDO), FP, Air Circuit Breaker with microprocessor based overload, short circuit, instantaneous & earth Fault trip including and loackable trip push button. ACB should have Icw=Ics=Icu=65KA for 1 sec.					
	Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
	Push button to CLOSE the ACB					
	Intelligent Panel Meter as mention above					
	<b>ii) 7 No. ACB Panels each having following:</b>					
	2000 A, 415V, Fully Motorised, Fully Drawout type (EDO), FP, Air Circuit Breaker with microprocessor based overload, short circuit, instantaneous & earth Fault trip including and loackable trip push button. ACB should have Icw=Ics=Icu=65KA for 1 sec.					
	Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
	Push button to CLOSE the ACB					
	Intelligent Panel Meter as mention above					
	<b>iii) 5 No. ACB Panels each having following:</b>					
	1000 A, 415V, Fully Motorised, Fully Drawout type (EDO), FP, Air Circuit Breaker with microprocessor based overload, short circuit, instantaneous & earth Fault trip including loackable trip push button. ACB should have Icw=Ics=Icu=65 KA for 1 sec.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
	Push button to CLOSE the ACB					
	Intelligent Panel Meter as mention above					
iv)	<b>2 No. ACB Panels each having following:</b>					
	800 A, 415V, Fully Motorised, Fully Drawout type (EDO), FP, Air Circuit Breaker with microprocessor based overload, short circuit, instantaneous & earth Fault trip including loackable trip push button. ACB should have Icw=Ics=Icu=65 KA for 1 sec.					
	Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
	Push button to CLOSE the ACB					
	Intelligent Panel Meter as mention above					
v)	<b>15 Nos. MCCB FEEDER as per following details/ specifications:</b>					
	630 Amp, 415 volts, 65 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP .					
	Intelligent Panel Meter as mention above					
vi)	<b>8 Nos. MCCB FEEDER as per following details/ specifications:</b>					
	400 Amp, 415 volts,65 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP .					
	Intelligent Panel Meter as mention above					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
vii)	<b>9 Nos. MCCB FEEDER as per following details/ specifications:</b>					
	250 Amp, 415 volts, 65 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP .					
	Intelligent Panel Meter as mention above					
viii)	<b>6 Nos. MCCB as per following details/ specifications:</b>					
	160 Amp 415 volts, 65 KA (Isc), FP, MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP .					
	Intelligent Panel Meter as mention above					
	<b>Main LT Panel Hospital Block as mentioned above.</b>	<b>Set</b>	1	22137000		22137000
	<b>CAPACITOR PANEL (1000 KVAR at 415V)</b>					
2.02	Supply, installation, testing and commissioning of LV cubicle type totally enclosed free standing type, powder coated, dust, damp and vermin proof Capacitor Panel complete with busbars, MV danger notice plate, ammeter, ammeter selector switch, indicating lamps, CTs, heavy duty, MPP resin filled, type Capacitors suitable for non linear loads upto 15% with Copper wound 14% D-tunned filters with linearity should not be less than 143%, total operating losses of capacitor shall not more than 0.5 W/ KVAR, Contactors suitable for capacitor switching or Capacitor duty switching contactor with current limiting contactor circuit to suppress switching inrush current interconnections with suitable capacity aluminium leads/ solid aluminium strips, rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as per technical Specifications as required.					
a)	<b>INCOMER:</b>					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	2000 A, 415 Volts, Fully Motorised, Fully Drawout type (EDO), 50 KA, Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit & Instantaneous Earth fault trip including lockable trip push button.					
	Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP.					
	R, Y & B Phase indicating lamps (LED type) with 6A control SP MCBs.					
	Day & Night mode selector Switch.					
	16 steps Intelligent microprocessor based Automatic Power factor Correction relay having measurement sensitivity of 1 % or better.					
	Extension of incoming busbars for connection of multicore armoured aluminium cables.					
	ON/ OFF delay timers for switching capacitor circuit.					
	<b>b) METERING:</b>					
	1 set of Digital Amp. Meter, Digital Power factor meter and Digital voltmeter.					
	<b>c) BUSBARS:</b>					
	2000 Amps TPN busbars of aluminum with temperture rise of 40 degree celsius over and above Ambient temperture of 45 degree celsius.					
	<b>d) OUTGOINGS:</b>					
	<b>i) 9 Nos.100kVAR at 415V Delta connected step as per following details/ specification:</b>					
	200 Amps, 415 volts, 50 KA TP MCCB with Thermal Magnetic release having variable current settings.					
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	415 volts, TP Capacitor duty Contactor Suitable for capacitive switching including current limiting contactor circuit to suppress switching inrush current and suitable for 100KVAR step.					
	"ON" and "OFF" LED indicating lamp and 2A control SP MCBs.					
	Push button for CLOSE and TRIP.					
	100 KVAR heavy duty MPP type resin filled capacitors suitable for non linear loads upto 15%, & total operating losses not more than 0.5 W per KVAR.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	415Volts, 14% copper wound D-tuned reactor suitable for 50KVAR step .This 50KVAR further connect parallel (2x50KVAR) to make physicaly 100KVAR steps for effective heat dissipation.					
	<b>ii) 2 Nos. 50kVAR at 415V Delta connected step as per following details/ specification:</b>					
	100 Amps, 415 volts, and having O/L, S/C & inbuilt E/F protection. TP MCCB with Thermal Magnetic release having variable current settings.					
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	415 volts, TP Capacitor duty Contactor Suitable for capacitive switching including current limiting contactor circuit to supress switching inrush current and suitable for50KVAR step.					
	"ON" and "OFF" LED indicating lamp and 2A control SP MCBs.					
	50 KVAR heavy duty MPP type resin filled capacitors suitable for non linear loads upto 15% & total operating losses not more than 0.5 W per KVAR.					
	415Volts, 14% copper wound D-tuned reactor suitable for 50KVAR step.					
	<b>CAPACITOR PANEL AS MENTIONED ABOVE</b>	<b>Set</b>	4	2400000		9600000
<b>2.03</b>	<b>ACTIVE HARMONIC FILTER (AHF) 300Amps at 440V</b>					
	Supply, installation, testing ,supply and commissioning of LV cubicle type totally enclosed free standing type, powder coated, dust, damp and vermin proof Active harmonic flttrer of 3-phase /4-wire, 440V ,300A IGBT based AHF with 60 Amp module. In which 300=(60x3 installed capcity + 60 x2 spare or as per standerd design of the manufacturer). It should eliminate the harmonic up to the 50th order and should have 3 level topology with IP 20 encloser.AHF shall have low losses (less then or equal 25W/Amp) and As per technical Specifications required.( approved Make: Siemens, L&T, EPCOS, ABB, Schneider)					
	<b>a) INCOMER:</b>					
	630A, 415 Volts, MCCB, 50 KA, Four Pole, with microprocessor based overload, short circuit & Instantaneous Earth fault trip					
	Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP.					
	R, Y & B Phase indicating lamps (LED type) with 6A control SP MCBs.					
	Extension of incoming busbars for connection of multicore armoured aluminium cables.					
	Sumation CT class .5, 4000+4000/1 ratio burden 15VA					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	<b>b) METERING:</b>					
	1 set of Digital Amp. Meter, Digital Power factor meter and Digital voltmeter.					
	<b>c) BUSBARS:</b>					
	630 Amps TPN busbars of aluminum with temperture rise of 40 degree celsius over and above Ambient temperture of 45 degree celsius.					
	<b>d) OUTGOINGS:</b>					
	<b>i) 4Nos.60 Amp at 440V IGBT based Module step as per following details/ specification:</b>					
	60 Amp module with 12 IGBTs ,3 level topology .					
	Internal fuse suitable for 60Amp module.					
	"ON" and "OFF" LED indicating lamp ON Modules					
	<b>ii) 1Nos.60 Amp at 440V IGBT based Module step as per following details/ specification:</b>					
	Spare for 60 Amp module with 12 IGBTs ,3 level topology in future.					
	<b>AHF PANEL as mentioned above</b>	<b>Set</b>	<b>4</b>	<b>1350000</b>		<b>5400000</b>
	<b>TOTAL SUBHEAD 2: LT PANEL AS MENTIONED ABOVE.</b>					<b>37137000</b>
<b>3.00</b>	<b>SUBHEAD 3 : DG SET &amp; ACCESSORIES</b>					
<b>3.01</b>	<b>SOUND PROOF DG SETS OF 1250 KVA.</b>					
	<b>DG SET OF 1250 KVA</b>					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	Supply, installation, testing and commissioning of sound proof (silent type) Diesel Generating set having 1250 KVA Prime Power Ratings , 415 volt at 1500 RPM, 0.8 power factor suitable for 50 Hz, 3 phase system , suitable bhp, <b>water cooled Radiator</b> type diesel engine- alternator set mounted on common base frame, return fuel cooler, battery & battery charger, Anti Vibration mounting pads, Engine alternator safeties, electronic governor including all accessories, their wiring and control cable between DG set and panel etc. is also in the scope of supply, including its connections etc. complete as per technical specification. This includes the following:					
	- Supplying and fixing of suitable sizes Heavy class MS pipe for DG exhaust complete with bends, elbow, flanges etc including silencer and catalytic convertor exhaust pipe /chimney including supoport as per CPCB norms for exhaust of DG sets.					
	- Supply and fixing of 50mm thick compressed mineral wool insulation (Rock wool) for D.G. exhaust pipe with 22 gauge aluminium sheet cladding etc. as required for the under mentioned dia pipe.					
	- Supply, installation, testing and commissioning of suitable size fuel pipe for connecting diesel engine to individual day service tank including supply and fixing of required valves & filters etc. as required.					
	- Fabrication of supports for exhaust pipe, fuel pipe or for any other purpose out of suitable M.S. structural steel including supplying and applying of enamel paint of approved shade after one coat of steel primer of reputed company.					
	- Supplying and fixing of suitable capacity cable adapter box for alternator (if required)					
	- Providing and fixing oil tank of 990 litres capacity complete with suitable M.S. fabricated MS stand oil level indicator gauge tank and stand duly painted, complete with float switches etc. as required.					
	- Supply of sutibale hand manual pump with 20 Meter Hard PVC pipe for filling the Oil from drum in D.G set					
	- First filling of Full capacity of Diesel in D.G set after complete testing of D.G set at site. For commissioning of D.G set Diesel will provided by the contractor.					
	- Initial Supply as well as first replacement of lube oil ("B" Check including Spare) , fuel for 8 hrs for full load test run would be provided by Contractor before handling over D.G Set to the Client.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
-	Factory assembled Sound proof Canopy as per pollution control board requirement to achieve noise level desired during night condition, with base frame, doors, inspection window, fresh air supply fans etc					
-	Any other item required for completion of system above (D.G. set)					
	<b>DG Set (1250 KVA) as mentioned above.</b>	Set	4	12554297		50217188
<b>3.02</b>	<b>SYNCHRONISING-CUM-AMF PANEL (for 4 nos. DG Sets mentioned above)</b>					
	Supply, installation, testing and commissioning of Synchronising Panel, M.V. cubicle type, totally enclosed, free standing type, powder coated , dust, damp and vermin proof indoor type Panel made up of CRCA sheet, complete with aluminium busbars, M.V. danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, and having incoming and outgoing switchgears as mentioned below and complete as required.					
	Note :					
	1. All ACBs shall have Spare contacts					
	2. All relays to operate at 240Volts, Single phase, 50Hz., AC supply through UPS					
	3. Panel shall be suitable for manual synchronising & auto synchronising and automatic operation (AMF) for 2 nos. DG Sets and shall be complete with 1 no. operator control & software with PC					
A.	<b>INCOMER :</b>					
i)	<b>4 Nos. ACB as per following details/ specification:</b>					
-	2000 A, 415/500V, Fully Drawout type (EDO) (Breaking Capacity=65kA), three Pole & Neutral contractor with suitable rating contactor Air Circuit Breaker with microprocessor based overload, short circuit & earth fault release.					
-	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
-	Push button for CLOSE and TRIP with lock & key arrangement					
-	R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs					
-	Digital multi function meter with one set of suitable CTs, CT shorting links, R/Y/B LED indicating lamps and 2A cobntrol SP MCBs					



S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
ii)	<b>BUSBARS :</b>					
-	4000 Amps TPN busbars of aluminum with temperture rise of 50 degree celsius over and above Ambient temperture of 45 degree celsius.					
B.	<b>OUTGOING :</b>					
i)	<b>2 Nos .ACB Panel consisting of the following</b>					
-	4000A, 415/500V, Fully Drawout type (EDO) (Breaking Capacity=50kA), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit & earth fault release					
-	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
-	Push button for CLOSE and TRIP with lock & key arrangement					
-	R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs					
-	Digital multi function meter with one set of suitable CTs, CT shorting links, R/Y/B LED indicating lamps and 2A cobntrol SP MCBs					
C.	<b>SYNCHRONISING COMPONENTS :</b>					
	<b>Metering &amp; Indication :</b>					
-	Power and Energy Monitor					
-	Set running indicating lights : 230 volts AC-22mm dia					
-	Emergency stop push button 230 volts AC-22 mm dia					
-	Governor/AVR raise/lower joy stick					
-	12 window annunciation with hooter, test accept & reset push button					
-	Motorised potential AVR					
-	Time Totalizer					
D.	<b>Manual Synchronising :</b>					
-	144 mm sq. Double voltmeter(AC/DC)					
-	144 mm sq. Double frequency meter					
-	144 mm.sq. synchroscope					
-	Check Synchronizing relay					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
-	Synchronizing switch					
-	Selector switch					
-	Dark and Bright lamps					
-	Breaker Control Switch					
-	Mode selector switch (Manual/Auto/stand alone)					
-	Engine Cranking Relay.					
-	Main supply voltage monitor, alternator voltmeter monitor and Engine Starting Relays					
-	Auxillary relays, timer, push button and control fuses.					
-	Timer for AMF Circuit (2 sets)					
-	DG Start/stop push button					
-	Auxilliary relays for overspeed, low lub oil pressure (LLOP) & high water temperature					
-	8 channel temperature controller for winding/bearing protection					
-	Pulsating cable required to connect field RTD's/PTC's to temperature scanners.					
E.	<b>Auto Synchronizing with PLC control</b>					
-	Voltage monitors for DG supply					
-	Voltage monitors for main supply					
-	Line synchronising module					
-	Windows based operator interface graphics software					
-	CPU (Allen Bradley/Siemens/ABB/Schnieder) with desk.					
-	EPROM (EP)					
-	On line synchronizing and Load sharing modules					
-	PLC Rack etc. & any other item required for proper functioning of the system.					
-	Digital I / O modules as required with sufficient spare for future provision					
-	Analog I / O modules as required with sufficient spare for future provision					
-	PL to PLC communication card					
-	PL to PLC communication cable					
-	Power supply module					
-	Auto load sharing and management relay					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
-	1kVA, Single phase input and single phase output, 240volts, 50 Hz., AC, Online UPS with inbuilt 30 minutes battery backup in form of sealed maintenance free batteries with power wiring to the control bus for power supply to relays. (To be installed inside the panel)					
-	PC with P-IV intel processor, 80GB hard disk, 1GB RAM, 15" TFT colour monitor, PCI-VGA card 2MB, DVD drive (reader & writer)					
-	Auxilliary relays for output command					
-	Set of Software for PLC in CD					
-	1 Set mimic (SEM)					
-	Set of control MCBs					
F.	<b>DG PROTECTION AND AMF COMPONENTS:</b>					
-	Reverse power and Reactive power relay					
-	Over Voltage relay					
-	Under Voltage relay					
-	Over frequency relay					
-	Trip circuit supervision relay					
-	Master lockout relay					
-	Master trip/supervisory relay					
-	Battery charger (with trickle and boost charging).					
-	DC voltmeter and ammeter.					
-	DC ammeter.					
-	8 window Alarm annunciator with separate hooter, accept, reset and rest push button.					
-	Hooter.					
-	Engine Cranking Relay.					
-	Main supply voltage monitor, alternator voltmeter monitor and Engine Starting Relays.					
-	Auxillary relays, timer, push button and control fuses.					
-	Phase sequence relay					
G.	<b>ENCLOSURE :</b>					
-	Fabrication, PVC Sleeving, Control/Power Wiring and necessary hardware for complete synchronisation and load sharing					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	SYNCHRONISING-CUM-AMF PANEL (for 4 nos. 1250 kva DG Sets mentioned above)	Set	1	5250000		5250000
<b>3.03</b>	<b>Under Ground Diesel Tank</b>					
	Design, supply, installation, testing & commissioning of 20 KL underground MS diesel tank including all related civil works foundation, fencing, platform, for unloading of diesel . Flame proof push buttons, pumps (one working & one standby) for supplying of diesel from this UG tank to day tanks of all the DG sets complete with cabling, earthing, piping, float switches etc.Extinguishers shall be as per fire norms. including all necessary approvals from chief controller of explosives.	Set	1	3000000		3000000
	<b>TOTAL SUBHEAD 3: DG SETS &amp; ACCESSORIES AS MENTIONED ABOVE</b>					<b>58467188</b>
<b>4.00</b>	<b>SUBHEAD 4: RISING MAINS</b>					
<b>4.01</b>	Supply, installation, testing and commissioning of plug in type , indoor sandwich type with high conductivity Aluminium Conductor , 415 V,3 phase, 4 wire, vertical Aluminium Rising main Class F or better in following sizes including bends, flexible, provision of the tap off's as per requirement , Adaptor boxes for cable connection if required are inclusive , 2 nos of aluminium earthing strips 50 X 6mm through out the length of the rising mains, end cover, including all types of support and necessary hardware for installation of the rising main etc. complete as per specifications and as required. (Exact lengths to be measured at site).					
	<b>i</b> 400 A , 415 volts 35KA	<b>Metre</b>	80	11200		896000
	<b>ii</b> 630 A, 415 volts,50KA	<b>Metre</b>	120	11200		1344000
	<b>iii</b> 1000 A, 415 volts,50KA	<b>Metre</b>	120	15300		1836000
	<b>iii</b> 2000 A, 415 volts,50KA	<b>Metre</b>	40	25700		1028000
<b>4.02</b>	Supply, fixing, testing and commissioning of Direct End Feed Unit of following ratings, wall mounted, dust, damp and vermin proof complete with M.V. danger notice plate, interconnections with suitable capacity aluminium strips / bars, connection of incoming cables with thimbles, powder coat painted and having following incoming switchgears for rising main complete as required.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	<b>i) 1 No. MCCB Panels each having following</b>					
	1 no. 400 Amps, 415 volts, four pole, Moulded Case Circuit Breaker with microprocessor based release with variable current settings and having O/L, S/C & inbuilt E/F protection . Separate fault indication for O/L, S/C, & E/F to be provided on Panel Door. Indicating lamps with 6 A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB. Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V digital voltmeter with selector switch. 1 No. 0 to 630 Amp digital ammeter with selector switch with 400/5A C.T.'s.	Set	2	73300		146600
	<b>ii) 1 No. MCCB Panels each having following</b>					
	1 no. 630 Amps, 415 volts, four pole, Moulded Case Circuit Breaker with microprocessor based release with variable current settings and having O/L, S/C & inbuilt E/F protection . Separate fault indication for O/L, S/C, & E/F to be provided on Panel Door. Indicating lamps with 6 A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB. Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V digital voltmeter with selector switch. 1 No. 0 to 630 Amp digital ammeter with selector switch with 630/5A C.T.'s.	Set	3	85000		255000
	<b>iii) 1 No. ACB Panels each having following</b>					
	1000A 415V, 4P 50 kA EDO ACB with Microprocessor based release having Overload , Short circuit and Earth fault Protection ON /OFF/TRIP Indications with MCB. With 1 No. digital voltmeter with selector switch. 1 No Digital ammeter with selector switch with 1000/5A C.T.'s.	Set	3	340000		1020000
	<b>iv) 1 No. ACB Panels each having following</b>					
	2000A 415V, 4P 50 kA EDO ACB with Microprocessor based release having Overload , Short circuit and Earth fault Protection ON /OFF/TRIP Indications with MCB. With 1 No. digital voltmeter with selector switch. 1 No Digital ammeter with selector switch with 2000/5A C.T.'s.	Set	1	435900		435900

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
4.03	Supply, fixing, testing and commissioning of distribution tap off box of following Capacity on the existing rising mains complete with Four Pole, Moulded Case Circuit Breaker, interconnection, earthing etc. complete as required.					
	i 100 Amps with MCCB 35 KA	Nos	42	11461		481362
	ii 160 Amps with MCCB 35 KA	Nos	4	22037		88148
	iii 200 Amps with MCCB 35 KA	Nos	13	31300		406900
	iii 250 Amps with MCCB 35 KA	Nos	13	52747		685711
	iv 320 Amps with MCCB 35 KA	Nos	2	61500		123000
	v 400 Amps with MCCB 35 KA	Nos	10	61500		615000
	<b>TOTAL SUBHEAD - 4: RISING MAINS as mentioned above</b>					<b>9361621</b>
5.00	<b>SUB HEAD 5 :MV PANELS</b>					
	Supply, installation, testing and commissioning of following M.V cubicle type totally enclosed, wall mounted/Free standing type, powder coated, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as per technical specification and as required.					
	NOTE					
	All MCCBs shall have Ics=Icu.					
5.01	<b>MV PANEL EMEREGNCY ((Lower Ground, Ground , First, Second , Third , Fourth, Fifth, Sixth ,Seventh &amp; Eighth Floor) FOR SECTION-1 )</b>					
	a) <b>INCOMER:</b>					
	200 Amp 415 volts, 35 KA ( Ics=Icu) FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	300 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i)</b> 16 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker.					
	<b>MV PANEL - EMERGENCY as mentioned above</b>	<b>Set</b>	10	124000		1240000
<b>5.02</b>	<b>MV PANEL EMERGENCY (Ground , First, Second , Third , Fourth, Fifth, Sixth ,Seventh &amp; Eighth Floor) FOR SECTION-2,SECTION-3)</b>					
	<b>a) INCOMER:</b>					
	100 Amp 415 volts, 35 KA ( Ics=Icu) FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	300 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i)</b> 8 no. 40 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	<b>MV PANEL - EMERGENCY as mentioned above</b>	<b>Set</b>	18	72000		1296000
<b>5.03</b>	<b>MV PANEL -NORMAL SECTION -1 (Lower Ground, Ground , First, Second , Third , fourth Fifth, Sixth ,Seventh, eighth Floor)</b>					
	<b>a) INCOMER:</b>					
	400 Amp, 415 volts, 35 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	500 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 18 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker.</b>					
	<b>MV PANEL -NORMAL as mentioned above</b>	<b>Set</b>	10	176700		1767000
<b>5.04</b>	<b>MV PANEL -NORMAL (SECTION -2 (Ground, &amp; Eighth Floor ) (SECTION -3 ( Ground, Eighth Floor )</b>					
	<b>a) INCOMER:</b>					
	160 Amp, 415 volts, 35 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					



S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	300 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i)</b> 8 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker.					
	<b>MV PANEL -NORMAL as mentioned above</b>	<b>Set</b>	<b>4</b>	<b>88000</b>		<b>352000</b>
<b>5.05</b>	<b>MV PANEL -NORMAL (SECTION -2 ( Second , Third , Fourth, Fifth, Sixth &amp;Seventh Floor) (SECTION -3 ( Second , Third , Fourth, Fifth, Sixth , &amp; Seventh Floor)</b>					
	<b>a) INCOMER:</b>					
	250 Amp, 415 volts, 35 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	400 Amp TPN Aluminium busbars					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	<b>c) OUTGOING:</b>					
	<b>i) 12 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker.</b>					
	<b>MV PANEL -NORMAL as mentioned above</b>	<b>Set</b>	12	138600		1663200
<b>5.06</b>	<b>MV PANEL -NORMAL (SECTION -3 (First Floor) (SECTION -4 (First Floor)</b>					
	<b>a) INCOMER:</b>					
	320 Amp, 415 volts, 35 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	400 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 16 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker.</b>					
	<b>MV PANEL -NORMAL as mentioned above</b>	<b>Set</b>	2	168600		337200
<b>5.07</b>	<b>MV PANEL - LIFT -1</b>					
	<b>a) INCOMER:</b>					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	250 Amp, 415 volts, 35 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	400 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 10 Nos. MCCB as per following details/ specifications:</b>					
	63 Amp 415 volts, 35 KA TP+NL MCCB with thermal magnetic release having variable current settings					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	<b>MV PANEL - LIFT-1 as mentioned above</b>	<b>Set</b>	<b>1</b>	<b>279600</b>		<b>279600</b>
<b>5.08</b>	<b>MV PANEL - LIFT -2 &amp; 3</b>					
	<b>a) INCOMER:</b>					
	125 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB to indicate ON, OFF, TRIP .					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	400 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 4 Nos. MCCB as per following details/ specifications:</b>					
	63 Amp 415 volts, 35 KA TP+NL MCCB with thermal magnetic release having variable current settings.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	<b>MV PANEL - LIFT-2 &amp;3 as mentioned above</b>	<b>Set</b>	2	146500		293000
<b>5.09</b>	<b>Main Computer Panel For Section -1,2,3 (Ground Floor)</b>					
	<b>INCOMER:</b>					
	250 Amp, 415 volts, 35 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	<b>b) BUSBARS:</b> 400 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 10 Nos. MCCB as per following details/ specifications:</b>					
	63 Amp 415 volts, 35 KA TP+NL MCCB with thermal magnetic release having variable current settings.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	<b>ii) 6 no. 40 Amps , 240 volts, 9 KA ,Double Pole, Miniature Circuit Breaker.</b>					
	<b>Main Computer Panel as mentioned above</b>	<b>Set</b>	<b>3</b>	<b>311300</b>		<b>933900</b>
<b>5.10</b>	<b>Sub Computer Panel ( First, Second , Third , Fourth, Fifth, Sixth ,Seventh, &amp; Eighth Floor) Section-1</b>					
	<b>a) INCOMER:</b>					
	63 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB to indicate ON, OFF, TRIP .					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b> 300 Amp TPN Aluminium busbars					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	<b>c) OUTGOING:</b>					
	<b>i)</b> 10 no. 40 Amps ,240 volts, 9 KA ,Double Pole, Miniature Circuit Breaker.					
	<b>Sub Computer as mentioned above</b>	<b>Set</b>	8	51100		408800
<b>5.11</b>	<b>Sub Computer Panel ( First, Second , Third , Fourth, Fifth, Sixth ,Seventh, &amp; Eighth Floor) for Section -1 and Section 2</b>					
	<b>a) INCOMER:</b>					
	63 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB to indicate ON, OFF, TRIP .					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	300 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i)</b> 6 no. 40 Amps ,240 volts, 9 KA ,Double Pole, Miniature Circuit Breaker.					
	<b>Sub Computer as mentioned above</b>	<b>Set</b>	16	51100		817600
<b>5.12</b>	<b>Equipment Panel</b>					
	<b>a) INCOMER:</b>					
	1000 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	1250 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 2 Nos. MCCB as per following details/ specifications:</b>					
	400 Amp 415 volts, 35 KA TP+NL MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	<b>ii) 2 Nos. MCCB as per following details/ specifications:</b>					
	250 Amp 415 volts, 35 KA TP+NL MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	<b>iii) 2 Nos. MCCB as per following details/ specifications:</b>					
	160 Amp 415 volts, 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	<b>Equipment Panel as mentioned above</b>	<b>Set</b>	<b>1</b>	<b>880000</b>		<b>880000</b>
<b>5.13</b>	<b>UPS INPUT PANEL for ICU &amp; OT</b>					
	<b>a) INCOMER:</b>					
	<b>i) 1 No. MCCB Panels each having following</b>					
	630 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	800 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 1 Nos. MCCB as per following details/ specifications:</b>					
	630 Amp 415 volts, 35 KA TP+NL MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					



S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
ii)	<b>2 Nos. MCCB as per following details/ specifications:</b>					
	320 Amp 415 volts, 35 KA TP+NL MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	<b>UPS INPUT PANEL as mentioned above</b>	Set	2	371300		742600
<b>5.14</b>	<b>UPS OUTGOING Panel</b>					
a)	<b>INCOMER:</b>					
i)	<b>2 No. MCCB Panels each having following</b>					
	320 Amp 415 volts, 35 KA, Motorised, FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
b)	<b>BUSBARS:</b>					
	500 Amp TPN Aluminium busbars					
c)	<b>OUTGOING:</b>					
i)	<b>1 Nos. MCCB as per following details/ specifications:</b>					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	630 Amp 415 volts, 35 KA TP+NL MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	<b>UPS OUTGOING Panel as mentioned above</b>	Set	2	291000		582000
<b>5.15</b>	<b>OT &amp; ICU Panel</b>					
	<b>a) INCOMER:</b>					
	<b>i) 2 No. MCCB Panels each having following</b>					
	630 Amp 415 volts, 35 KA, Motorised, FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	400 Amp TPN Aluminium busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 2 Nos. MCCB as per following details/ specifications:</b>					
	63 Amp 415 volts, 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
i)	18 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
	<b>OT Panel as mentioned above</b>	Set	2	31900		63800
<b>5.16</b>	<b>Axiliary Panel</b>					
a)	<b>INCOMER:</b>					
i)	<b>1 No. MCCB Panels each having following</b>					
	250 Amp 415 volts, 35 KA, Motorised, FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter with selector switch.					
	Digital ammeter with selector switch with one set Suitable C.Ts.					
b)	<b>BUSBARS:</b>					
	400 Amp TPN Aluminium busbars					
c)	<b>OUTGOING:</b>					
i)	<b>16 Sets of following</b>					
	40 Amps, 415 volts, 9 KA , Four Pole, Miniature Circuit Breaker (D-type suitable for motors)					
	3 Phase, fully Automatic DOL starter Suitable for 5-7.5 HP with thermal overload relay with inbuilt single phase preventor, contactor, Push Buttons and Switches etc complete as required.					
	LED indicating Lamps for "ON", "OFF" & "TRIP".					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
ii)	8 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
iii)	8 no. 40 Amps, 220 volts, 9 KA, Double Pole, Miniature Circuit Breaker.					
	<b>Auxiliary Panel as mentioned above</b>	Set	1	198250		198250
	<b>TOTAL SUB HEAD 5: MV PANEL AS MENTIONED ABOVE</b>					<b>11854950</b>
	<b>SUB HEAD 6: MCB DISTRIBUTION BOARDS.</b>					
<b>6.00</b>	<b>MCB DISTRIBUTION BOARD</b>					
<b>6.01</b>	Supplying & fixing following way, three pole and neutral sheet steel, MCB distribution board, 415 volts, on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder coated including earthing connection bolt etc. as per technical specifications and as required. (but without MCB & RCCB).					
i	4 way (8+12), Double door	Each	40	2077		83080
ii	6 way (8+18) Double door	Each	123	2522		310206
iii	8 way (8+24), Double door	Each	125	2960		370000
<b>6.02</b>	Supplying & fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. Before procurement of DB the contractor has to take approval of DB schedule/drawing of each DB from the Electrical Engineer, HSCC, as per technical specifications and as required. (but without MCB & RCCB),					
i	8 way Double door	Each	10	1126		11260
ii	12 way Double door	Each	100	1316		131600
iii	16 way Double door	Each	30	1606		48180
<b>6.03</b>	Supplying & fixing 6 Amps to 32 Amps rating, 240 volts, 'B' series, miniature circuit breaker suitable for lighting & other loads of following poles in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications & as required.					
i	Single pole	Each	7454	168		1252272

S.No.		Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	ii	Triple pole & neutral	Each	10	714		7140
6.04		Supplying & fixing following rating, four pole, 415 volts, Miniature Circuit Breaker (MCB),in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
	i	25 Amps	Each	40	989		39560
	ii	32 Amps	Each	20	989		19780
	iii	40 Amps	Each	103	1381		142243
	iv	63 Amps	Each	125	1381		172625
6.05		Supplying & fixing following rating, four pole, 415 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
	i	25 Amps	Each	40	2037		81480
	ii	32 Amps	Each	20	2037		40740
	ii	40 Amps	Each	40	2061		82440
	iii	63 Amps	Each	125	2360		295000
6.06		Supplying and fixing following rating, double pole, 240 volts, MCB (B/C/D/ Curve) in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
	i	32 amps	Each	12	454		5448
	ii	40 amp	Each	30	726		21780
6.07		Supplying & fixing following rating, Double pole, 240 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
	i	32 amps	Each	100	1543		154300
	ii	40 amp	Each	30	1758		52740

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
6.08	Supplying and fixing Single pole Blanking plate in the existing MCB DB complete as required.	Each	250	23		5750
	<b>TOTAL SUB HEAD-6: MCB DISTRIBUTION BOARDS AS MENTIONED ABOVE</b>					<b>3327624</b>
7.00	<b>SUBHEAD 7 : UPS SYSTEM</b>					
7.01	<b>UPS 100 KVA. (OT)</b>					
	Supply, Installation, Testing and Commissioning of micro processor based 2 x 100 KVA at 0.8 power factor at out put. with over all efficiency of minimum 94% at full load, True Online Double Conversion UPS using PWM IGBT technology. 3 Phase input 415 V +10% -15% and input frequency 50 Hertz plus minus 5%, 3 phase input and 3 phase output fixed setting at 380, 400 and 415V. UPS operating in parallel redundant load sharing mode (N+1) configuration and each comprising of the following:					
	(a) 125% rated Rectifier cum charger unit + 100% rated inverter, integrated in UPS module					
	(b) IGBT Rectifier input for achieving THDi<5% and Input power factor of greater than 0.99					
	(c)100% rated external isolation transformer of H-class Delta/Star at the UPS output, after static bypass including cabling between UPS and transformer					
	(d) 100% rated Inbuilt static switch					
	(f) 100% rated Inbuilt Maintenance Bypass					
	(g) 100% rated moulded case circuit breaker having I thermal, magnetic and automatic U/V trip mechanics					
	(i) RS 485 port for BMS connectivity					
	(j) Supplying and installing Built-in suitable air-circulating fan .					
	Input phase reversal protection to be provided as standard, UPS should shift on battery and provide alarm.					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	(k) Supply, Installation, Testing and Commissioning of 12 V sealed maintenance free, Valve Regulated Lead Acid (VRLA) batteries for providing 30 minutes back up on each UPS at full load at 0.8 power factor.					
	(l) Supply, Fixing of battery rack for each UPS system along with inteconnecting links, BCB etc as required					
	(m) UPS Should be provided with of Static Bypass Module having High Switching Frequency Microprocessor Based with builtin Technical Protections like Short Circuit, Overload, High/ Low Voltage cutoff protection of load from source inclusive of Bypass facility, SBM is activated during malfunctioning conditions of Load like:- -Short Circuit - Overload - Over temprature -Bypassing of particular load if reqd.					
	<b>UPS 100 KVA SYSTEM AS MENTIONED ABOVE.</b>	<b>Set</b>	<b>1</b>	<b>4000000</b>		<b>4000000</b>
<b>7.02</b>	<b>UPS 120 KVA. (ICU)</b>					
	Supply, Installation, Testing and Commissioning of micro processor based 2 x 120 KVA at 0.8 power factor at out put. with over all efficiency of minimum 94% at full load, True Online Double Conversion UPS using PWM IGBT technology. 3 Phase input 415 V +10% -15% and input frequency 50 Hertz plus minus 5%, 3 phase input and 3 phase output fixed setting at 380, 400 and 415V. UPS operating in parallel redundant load sharing mode (N+1) configuration and each comprising of the following:					
	(a) 125% rated Rectifier cum charger unit + 100% rated inverter, integrated in UPS module					
	(b) IGBT Rectifier input for achieving THDi<5% and Input power factor of greater than 0.99					
	(c)100% rated external isolation transformer of H-class Delta/Star at the UPS output, after static bypass including cabling between UPS and transformer					
	(d) 100% rated Inbuilt static switch					
	(f) 100% rated Inbuilt Maintenance Bypass					

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	(g) 100% rated moulded case circuit breaker having I thermal, magnetic and automatic U/V trip mechanics					
	(i) RS 485 port for BMS connectivity					
	(j) Supplying and installing Built-in suitable air-circulating fan .					
	Input phase reversal protection to be provided as standard, UPS should shift on battery and provide alarm.					
	(k) Supply, Installation, Testing and Commissioning of 12 V sealed maintenance free, Valve Regulated Lead Acid (VRLA) batteries for providing 30 minutes back up on each UPS at full load at 0.8 power factor.					
	(l) Supply, Fixing of battery rack for each UPS system along with inteconnecting links, BCB etc as required					
	(m) UPS Should be provided with of Static Bypass Module having High Switching Frequency Microprocessor Based with builtin Technical Protections like Short Circuit, Overload, High/ Low Voltage cutoff protection of load from source inclusive of Bypass facility, SBM is activated during malfunctioning conditions of Load like:- -Short Circuit - Overload - Over temprature -Bypassing of particular load if reqd.					
	<b>UPS 120 KVA SYSTEM AS MENTIONED ABOVE.</b>	<b>Set</b>	<b>1</b>	<b>4800000</b>		<b>4800000</b>
	<b>TOTAL SUBHEAD 7 : UPS SYSTEMS</b>					<b>8800000</b>
	<b>SUB HEAD 8: WIRING</b>					
<b>8.00</b>	<b>WIRING</b>					
<b>8.01</b>	<b>i</b> Wiring for light point/fanpoint/ exhaust fan point/call bell point with 1.5 sq.mm. PVC insulated, fire retardant low smoke (FRLS) copper conductor cable, single core/ multi strand, in steel conduit (Including supplying & recess laying of MS conduit and accessories) including the following and complete as required.					



S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
	<b>ii</b> Supplying and Fixing Modular type switches (modular Bell push in case of call bell points) in suitable size modular metal boxes, base plate & modular cover plates, space for fixing electronic fan regulator in case of fan point wiring & space for fixing 5A socket on the board etc.					
	<b>iii</b> Supplying and fixing Hexagonal fan Boxes with 3 mm thick hylem sheet covers in case of Fan Points					
	<b>iv</b> Supplying & Fixing Ceiling Rose in case of Exhaust Fan Points etc.					
	<b>Note :</b>					
	i) Unless otherwise specified all the conduiting work to be done in recess					
	<b>Point wiring as mentioned above</b>	<b>Point</b>	8650	1249		10803850
<b>8.02</b>	<b>i</b> Wiring for twin control light points with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable in MS conduit (including supplying and recess laying of MS conduit) including the following and complete as required.					
	<b>ii</b> Supplying and Fixing Modular type two numbers 2 Way switches in suitable size modular metal boxes, base plate & modular cover plates etc.					
	<b>Note :</b>					
	i) Unless otherwise specified all the conduiting work to be done in recess					
	<b>Wiring for twin control light points as mentioned above</b>	<b>Point</b>	300	1354		406200
<b>8.03</b>	Wiring for Submain/ circuit wiring with following size of PVC insulated FRLS copper conductor single core/multi strand cable in recessed steel conduit (including supply & laying of recessed conduit) as required.					
	<b>i</b> 2X1.5 Sqmm with 1 No. 1.5 sqmm PVC FRLS insulated, copper conductor for earthing.	<b>Metre</b>	10500	226		2373000
	<b>ii</b> 2X2.5 Sqmm with 1 No. 2.5 sqmm PVC FRLS insulated, copper conductor for earthing.	<b>Metre</b>	23949	265		6346485
	<b>iii</b> 2X4 Sqmm with 1 No. 4 sqmm PVC insulated FRLS copper conductor for earthing	<b>Metre</b>	36300	312		11325600
	<b>iv</b> 2X6 Sqmm with 1 No. 6 sqmm PVC insulated FRLS copper conductor for earthing	<b>Metre</b>	2250	404		909000
	<b>v</b> 2X10 Sqmm with 1 No. 10 sqmm PVC insulated FRLS copper conductor for earthing	<b>Metre</b>	2500	579		1447500

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
vi	4X4 Sqmm with 2 No. 4 sqmm PVC insulated FRLS copper conductor for earthing	Metre	800	498		398400
vii	4X6 Sqmm with 2 No. 6 sqmm PVC insulated FRLS copper conductor for earthing	Metre	1200	718		861600
viii	4X10 Sqmm with 2 No. 10 sqmm PVC insulated FRLS copper conductor for earthing	Metre	3075	1127		3465525
ix	4X16 Sqmm with 2 nos 16 sq mm PVC insulated FRLS copper conductor for earthing.	Metre	3125	1692		5287500
8.04	Supplying and fixing suitable Module GI box on surface or in recess including providing and fixing 3 pin 5/6 amps. modular socket outlet with shutters and 5/6 amps. modular type switch with indicator type, base plate, modular cover plate, connections etc. and all civil works 'complete as required.	Each	600	411		246600
8.05	Supplying and fixing suitable modular GI box on surface or in recess including providing and fixing 6 pin 15/16 A modular socket outlet with shutters and 15/16 A modular switch with indicator, base plate, modular cover plate, connections, etc. and all civil works complete as required.	Each	1300	492		639600
8.06	Supplying and fixing suitable Modular metal box on surface or in recess including providing and fixing three nos 3 pin 5/6 amps. modular socket outlet with shutters and one no. 10 amps. modular type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required. (For computer Points)	Each	580	867		502860
8.07	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing two nos 3 pin 5/6 amps. & two 6 pin 15/16 amp modular socket outlet with shutters and one no. 25 amps. modular Indicating type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required. (For Comb-1/ Bed Point)	Each	760	1102		837520
8.08	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing two nos 3 pin 5/6 amps. & one 6 pin 15/16 amp modular socket outlet with shutters and one no. 20 amps. modular Indicating type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required. (For Comb-2)	Each	360	794		285840

S.No.	Description.	Unit.	Qty.	Rate in Figures (in Rs.)	Rate in words (Rs.)	Amount in Figures (Rs.)
8.09	Supplying and fixing suitable Modular metal box surface or in recess including providing and fixing two nos 3 pin 5/6 amps. modular socket outlet with shutters and one no. 5 amps. modular type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required. ( COMBO POINT-3/ TV Point )	Each	100	744		74400
8.10	Supply and fixing following 20 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with plugs) in a metal box with 20 SP MCB in a sheet steel cover on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	Each	100	565		56500
8.11	Supply and fixing following 32 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with plugs) in a metal box with 20 SP MCB in a sheet steel cover on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	Each	50	1533		76650
8.12	Supplying, providing & fixing cordless musical bell with batteries etc of approved make complete as required.	Each	50	500		25000
8.13	Supply and fixing following FP MCCB, 415 volts, 35 KA (Isc), Four Pole with thermal magnetic release having variable current setting (0.8 to 1.0 In) with Extended rotary operating mechanism including door interlocking with defeat feature and padlock facility in a sheet steel enclosure on surface complete with all accessories including , connections, testing and commissioning etc. as required.					
	i 63 Amp	Each	4	7075		28300
	ii 63 Amp MCCB with 63 Amp RCCB	Each	16	10550		168800
	iii 100 Amp	Each	3	12510		37530
	iv 125 Amp	Each	2	21885		43770
	v 400 Amp	Each	5	26414		132070
8.14	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	200	26		5200
	<b>TOTAL SUBHEAD: 8- WIRING AS MENTIONED ABOVE</b>					<b>46785300</b>