

ARCHITECT / CONSULTANT

SANDEEP GOVALKAR DESIGN ASSOCIATES

CLIENT: CENTRAL BANK OF INDIA.

THE PROPOSED CIVIL CONSTRUCTION AND SANITARY / PLUMBING WORKS OF RSETI OF CENTRAL BANK OF INDIA, AT NAGAON, DIST: DHULE.

BILL OF QUANTITIES

SCHEDULE OF ITEMS-ELECTRICAL WORKS

PART A

SECTION - A PANEL & DBs

SR. NO.	DESCRIPTION	QTY	UNIT	RATE	TOTAL
1	Supply, Installation, Testing, Commissioning of MAIN INCOMMER/SWITCH	1	Nos		
	Supply, installation, testing & commissioning of 210 A 35kA, MCCB, 4P with Mic. releases as follows:				
	i. Over load release 0.8 to 1.0 Ir				
	ii. Short circuit release				
	iii. Rotary operating handle				
	iv. R,Y,B Indication lamps				
	Outgoing:				
	2 Nos. 200 A MCCBs, 3P with adjustable Thermal magnetic releases OL, SC for each feeders as follows:				
	i. Over load release 0.8 to 1.0 Ir				
	ii. Short circuit release				
	iii. Rotary operating handle				
2	Supply, Installation, Testing, Commissioning of MAIN LT PANEL				
	Incommer:				
a	1No. 200A, 35kA, MCCB, 4P with Mic. releases as follows:				
	i. Over load release 0.8 to 1.0 Ir				
	ii. Short circuit release				
	iii. Rotary operating handle				
	iv. R,Y,B Indication lamps				
b	Tinned & Sleeved Aluminium Bus Bars - 4Pole, 35kA.				
c	Load Manager suitable for I, V, KVA, KW, KWH, with 300/5A CT's-one set of three nos-				
	Outgoing:				
d	MCCBs, 3P with adjustable Thermal magnetic releases OL, SC for each feeders as follows:				
	i. Over load release 0.8 to 1.0 Ir				
	ii. Short circuit release				
	iii. Rotary operating handle				

	100A, TPN, 25kA - 3 Nos.	1	Nos		
	MCB, 10kA, D-Curve as follows :				
	1. 63A, TPN, MCB - 8Nos.				
	2. 20A, DP, MCB - 4 Nos				
e	APFC Section-50KVAr Automatic control capacitor bank				
	100A, TPN, 25kA - 1No as Incomer				
	6 stage APFC Relay				
	15KVAr capacitor bank with 63A Backup MCB, 50A TP contactor, 15KVAr heavy duty capacitors, start/ stop, etc - 1Sets				
	10KVAr capacitor bank with 32A Backup MCB, 20A TP contactor, 10KVAr heavy duty capacitors, start/ stop, etc - 2 set				
	05KVAr capacitor bank with 32A Backup MCB, 12A TP contactor, 05KVAr heavy duty capacitors, start/ stop, etc - 3 set				
	The Panel shall be suitable for Top entries floor mounting.				
	The above complete with all accessories.				
4	S & I of 125A 4POLE 35kA MCCB with metal enclosure for UPS INPUT.	1	Nos		
5	Supply, Installation, Testing, Commissioning of 1 X 20 KVA UPS O/P PANEL FOR COMPUTERS and CRITICAL EQUIPMENTS				
	Incommer:				
a	1 Nos. 100A, 35kA, MCCB, 4P with adjustable Thermal magnetic releases, as follows: (with 1 NO+1 NC)				
	i. Over load release 0.8 to 1.0 Ir				
	ii. Short circuit release				
	iii. Rotary operating handle				
	iv. R,Y,B Indication lamps				
c	Load Manager suitable for I, V, KVA, KW, KWH, with 300/5A CT's-one set of three nos-	1	Nos		
b	Bus Coupler : 1 No. 100A, 4P, 35kA MCCB without releases				
c	Tinned & Sleeved AL Bus Bars - 4Pole, 35kA, 250A (P=N).				
	Outgoing:				
d	MCB, 10kA, D-Curve as follows :				
	1. 63A, DP, MCB - 6Nos				
	The Panel shall be suitable for Top entries wall / floor mounting type				

6	Supply, Installation, Testing & Commissioning of Distribution Boards complete with MCBs/Isolators/ Bus bars and interconnections. Preferably standard DB's of specified makes as per list of materials shall be used (DOUBLE DOOR IP42)				
a	6 way TPN DB (LDB's/RPDB's)	8	Nos		
	Incommer 32A TP MCB-- 1 No.				
	Incommer 25A, 100mA, 2P RCCB- 3 Nos.				
	Outgoing 10 A/16A/20 A SP MCBs -12Nos.				
	Separate Nuetral Buses for Each Poles to be given				
b	12 way SPN DB (UPSDBs)	4	Nos		
	Incommer 63A DP MCB-- 1 No.				
	Outgoing 10 A/16A/20 A SP MCBs -12Nos.				
	Separate Nuetral Buses for Each Poles & Insulated Earth Bus to be given				
c	TPN as follows: ETPN DB (ELDB)	2	No.		
	Incommer 32A, 100mA, 2P RCCB- 1 No.				
	Outgoing 10 A/16A/20 A SP MCBs -10Nos.				
	Separate Nuetral Buses for Each Poles & Insulated Earth Bus to be given				
	TOTAL FOR SECTION: A				

SECTION - B L.T. CABLES

1	Supply and laying of Aluminium/Copper Armoured (FR XLPE) 1.1kv grade, fixed to walls, ceilings or laid in ready-made trench or tied to cables trays with cable ties as follows:				
a	3.5 Core 210 sq. mm. Armoured Aluminium cable with twin 14 SWG GI earth	50	Mtrs		
b	4 Core 50 sq. mm. Armoured Aluminium cable with twin 14 SWG GI earth. (For UPS Incoming)	200	Mtrs		
c	4 Core 16 sq. mm. Armoured Copper cable with twin 14 SWG GI earth.	75	Mtrs		
d	4 Core 10 sq. mm. Armoured copper cable with twin 10 SWG GI earth -For LIGHTING DB'S / RAW POWER DB'S/ UPS POWER DB	250	Mtrs		
2	Termination of the above cables with Heavy duty Double Compression Brass cable glands & copper heavy duty lugs with bi metallic rings. (4c/3.5c/3c)				
a	3.5 Core 185 sq. mm. Armoured Aluminium cable.	2	Nos		
b	3.5/4 Core 50 sq. mm. Armoured Aluminium cable.	12	Nos		
c	4 Core 16 sq. mm. Armoured Copper cable.	6	Nos		
3	Supply & Laying flexible Copper Cables for UPS Input & Output Connections in PVC flexible conduits (FR) including Termination.				
a	Single Core 16 Sqmm Copper cable (UPS)	40	Mtrs		
	TOTAL FOR SECTION: B				

SECTION - C : CABLE TRAYS & RACEWAYS

1	Supply and laying Raceways/Conduits in the trenches OR fixed to walls /Ceiling as detailed above or through partitions with all accessories, bends, pull wire separately. The metal conduits / Raceways shall be earth. The rate include all accessories but excluding the floor mounted junction boxes which shall be paid. the rate shall include bends, couplers etc.				
a	100mm x 40mm Aluminium Section, 2.0mm Thk.	40	Mtrs		
b	83mm x 38mm Aluminium Section, 1.60mm Thk.	50	Mtrs		
c	63mm x 38mm Aluminium Section, 1.60mm Thk.	50	Mtrs		
d	25 mm HMS PVC conduits	600	Mtrs		
2	Supply & installations of pre galvanised Junction Boxes made of 2.0 mm thk/1.6mm thk, with removal Stainless Steel Top Cover 2.0mm thk , all side entries for raceways, complete with all accessories. The rate to include fixing the junction box on the floor Trenches or floor described above. Sample junction box to be approved first.				
a	450mm x 450mm wide x 50mm ht - 2.0mm thk	4	No		
b	350mm x 350mm wide x 50mm ht - 2.0mm thk	5	No		
c	250mm x 250mm wide x 50mm ht - 1.6mm thk	4	No		
TOTAL FOR SECTION: C					

SECTION - D : POWER OUTLETS & WIRING

1	Supply and fixing of computer power outlets, Modular type (shuttered) switch sockets.				
a	Set of 3 nos of 6A socket controlled by 16A switch. The switch sockets shall be mounted in modular furniture or Zinc chromated plated recess mounting box fixed to the wall/partitions as directed.	4	Nos		
b	Set of 2 nos of 6A socket controlled by 16A switch. The switch sockets shall be mounted in modular furniture or Zinc chromated plated recess mounting box fixed to the wall/partitions as directed. (On UPS Power)	5	Nos		

c	1Nos 6A, Switch Socket. The switch socket set shall be flush mounted in modular furniture. The rate shall include connections, Testing & commissioning etc. (On Raw Power for Charging and equipments)	5	Nos		
3	Supply & Laying of flexible Copper wires (FRLS) for Power sockets for UPS Power through already laid Raceways/conduits/Cable Trays etc.				
a	3 Nos of 2.5 Sqmm.	250	Mtrs		
4	Supply, installation, testing & comissioning of MCB's in Metal boards, as follows:				
b	40/63A TPN MCB in Weatherproof Enclosure in IP65 enclosure	6	Nos		
	TOTAL FOR SECTION : D				
SECTION -E : POINT WIRING					
1	Point wiring through Medium Guage 25mm/20mm PVC Conduits MMS with 3 Nos of 1.5 sqmm (Phase, Neutral & Earth), PVC Insulated Copper Conductors FRLS Grade , controlled from MCB in DB, looped points, switch board control with 6A modular switches, lighting coffer points etc. The looped points from primary to secondary shall be with 3x1.5sqmm FR grade copper wires. Note that the lighting coffer points shall be considered as one single point. The Point wiring shall be directly terminated in the fitting through PVC Flexible conduit & coupling (from ceiling to fitting). The Rate shall includes the circuit wiring from DB to Switch board & Switch board to switch boards. (LEGRAND-MYRIUS,schneider)				
a	For primary light points controlled from Switch boards with 6A Modular switches.	130	Nos		
b	For Secondary light points looped from primary points	30	Nos		
c	For 6A 5 pin Socket controlled with 6A Switch fixed on Lighting Switchboard.	40	Nos		

d	For Exhaust Fan Points with 6A Socket near Fan & 6A Switch on nearest Lighting Switchboard.	10	Nos		
	TOTAL OF SECTION : E				
SECTION - F : EARTHING					
1	Preparation and commissioning of earth pits Chemical earths (Ashlok or equivalent). The electrode shall be 80mm Dia & connected with 25mmx3mm thick G.I strip and terminated into the chamber with brass nut bolt arrangement. The rate shall include cost of earthing strip upto the chamber. The earth resistance shall not exceed 2.0 ohms. The rate shall include testing the same & documentation. (IS 3043 1987):	1	Nos		
2	Preparation and commissioning of earth pits Chemical earths (Ashlok or equivalent). The electrode shall be 80mm Dia & connected with 25mmx3mm thick copper strip and terminated into the chamber with brass nut bolt arrangement. The rate shall include cost of earthing strip upto the chamber. The earth resistance shall not exceed 2.0 ohms. The rate shall include testing the same & documentation. (IS 3043 1987):	2	Nos		
a	For UPS System - 2Nos				
3	Supply and laying of earthing strips from earthing chamber to varoius Power Panels and terminating the same. Strip to be laid through cable trenches/cables trays with required clamping arrangement. The portion on building wall & upto the main panel shall be fixed with spacers and saddles. Joints shall be lap welded//Brazed & coated with bitumen. The rates shall include cost of all materials & accessories.				
a	50mm x 6mm GI earthing strip	20	Mtrs		
c	25mm x 3mm GI earthing strip	50	Mtrs		
d	25mm x 3mm Cu earthing strip: Eqi Pot Bonding earth strip & Server earth Mat	50	Mtrs		
4	Supply & laying of single core flexible PVC insulated Copper conductor through PVC conduits of suitable sizes of 2mm thk, from Earth Pit to UPS/Comm equipement thro' ducts,trays etc. The rates shall include cost of Termination & all materials & accessories. (FRLS)				
c	PVC insulated Single core 6 sqmm.without conduit & tied with Cables.	150	Mtrs		
	TOTAL OF SECTION -F				

SECTION - G : ELECTRICAL FITTINGS					
1	Supply, Installation, Testing & Commissioning of 1x28T5 Patti type LED tubelight fixture. The rate shall include cost of tube & Connection with 3 Core 0.5sq. mm. Copper flexible cable. Fixture shall be fixed on round blocks.	130	Nos		
7	Supply & fixing of 1 x 35W LED Wall / Street light fitting with, with acrylic cover & all accessories. The fitting shall be fixed to wall with angled GI bracket of required diameter. The brackets shall be fixed with clamps to the wall. The rate shall include 6"x 6" junction box, weather proof with 4 no.s of 10A elmex terminals. The rate to include connection with 3core 0.5Sq.mm cable from JB to fitting . (Wipro / CG / GE / Philips/Osram make)	8	Nos		
10	Supply, Installation, Testing & Commissioning of 48" Ceiling Fan , supported with Down rods from ceiling salb / trusses Make : Crompton, Bajaj, GE.	50	Nos		
11	Supply, Installation, Testing & Commissioning of 9" Exahust fan 1000 rpm heavy duty. Make : Crompton, Bajaj, GE.	4	Nos		
	TOTAL OF SECTION : G				
SECTION - H : TELEPHONE					
1	Supply & Installation of RJ-11 telephone socket outlet point alongwith PVC back box upto individual Telephone socket including all necessary hardware & accessories, etc. complete as required.	4	Nos.		
	Supply, installation, testing and commissioning of indoor type telephone Main Distribution Frame (MDF) / Box with suitable S.S. frame for mounting tag module, cable, wires and incorporated in 16 SWG MS box with proper lockable cover. The box should be fixed on wall with suitable fasteners including painting & earthing. This also includes fixing the cable, distribution chart sufficient space for the cables, wires etc.to be provided in the box for :-				
2	Supply & Installation of 20 pair MDF with Krone module including all hardware & accessoried , etc. complete as required.	1	Nos.		

4	Supply & Laying of 20 pair telephone cable through heavy guage pvc conduit including all necessary hardware & accessories, etc.	50	Rmt		
5	Supply & Laying of CAT5 wire cable from Telephone MDF upto individual Telephone socket outlet through already laid trenches / raceways / conduits including all necessary hardware & accessories, etc. complete as required.	100	Rmt		
6	Cat 6 cabling	150	Rmt		
7	Cat 6	5	Rmt		
8	Cat 6 patch cord 1mtr	5	Rmt		
9	Cat 6 patch cord 2mtr	5	Rmt		
10	Server Rack 9U	1	Nos.		
11	Patch panel	1	Nos.		
	TOTAL OF SECTION :H				
	SUMMARY				
1	SECTION A : ELECTRICAL WORK				
2	SECTION B : L.T CABLES				
3	SECTION C : CABLE TRAYS & RACEWAYS				
4	SECTION D : POWER OUTLETS & WIRING				
5	SECTION E : POINT WIRING				
6	SECTION F : EARTHING				
7	SECTION G : LIGHT FIXTURES				
8	SECTION H : TELEPHONE				
	TOTAL Of PART A- TOTAL Section : A to H				
SEAL & SIGN OF CONTRACTOR					