

SBI INFRA MANAGEMENT SOLUTIONS PVT LTD (SBIIMS)
(WHOLLY OWNED SUBSIDIARY OF SBI)
CIRCLE OFFICE, PATNA
SCHEDULE OF WORKS: ELECTRICAL WORKS
PROJECT: BARHARWA BRANCH
UNDER RBO: PAKUR, AO DEOGHAR



NO.	DESCRIPTION	UNIT	QTY		
	ELECTRICAL				
1	SUPPLY, LAYING, LUGGING, DRESSING, GLANDING, FINISHING, TESTING AND COMMISSIONING OF POWER CABLE: Following 1.1KV grade fire resistant A2XFY XLPE armored aluminium conductor cable with one no. 10 SWG GI wire , laying of the cable by making 500MMX800MM cable trench with bricks and sand protection, partly through 40MM GI Pipe and partly on wall/column including supply and fixing with 300mm apart MS clamps/galvanized bar saddles and double compression type brass cable gland Dowel make along with rubber rings for dust and moisture proof entry of the cable and finishing the ends by crimping method. It will be contractors responsibility to make the necessary arrangements for obtaining electrical connection for the bank, i.e. liaisoning with electricity board. Make (NICCO/RR/POLYCAB/UNIVERSAL/MES CAB)				
1.1	3.5CX95 SQMM cable Main incoming cable	Mtr.	90		
2	MAIN INCOMING SOURCE PANEL (MISP) : Supply, installation, testing and commissioning of main incoming (MIP) Panel suitable for wall /floor mounted indoor type, air insulated, totally enclosed vermin-proof (IP 42), dead front, cubicle type, 2 mm thick sheet steel enclosure use on 415 V, 3 Ph., 4 wire, 50 Hz. A.C. system, instrumental panel, CTs, incoming and outgoing cable compartment. The Panel shall be complete with switches as per site requirement, interconnection, G.I. earth busbar of adequate size covering the total length of switch board with drilled holes, G.I. bolts, nuts, washers etc. as directed by E-I-C. The cubicle should be painted with two coats of light grey synthetic enamel paint over two coats of zinc chromate primer. The complete fabrication, construction shall be done as per the site condition and conforming to the relevant IS. Name plate of Panels Danger Board, incoming and outgoing feeders with Ampere rating of switches are to be fixed up on front door above or below the respective switches. Approval of Manufacturer's drawings from E-I-C. The Panel consists of the following INCOMING : 1 No. : 415V, 160A 4P MCCB (36 KA). 1 No. : 415V, 200A 4P On-Load Changeover Switch 1 No. : Digital Multi Function Meter (MFM) for Current, Voltage, Frequency, Power. 3 Nos.: LED Phase indicating lamps. 3 Nos.: Suitable CTS(200/5) PVC sleeved TPN Tinned Copper Busbar 30mm x 6mm for phases and neutral. G.I. EARTH BUSBAR 25mm x 3mm covering the total length of panel. OUTGOING : Termination I: (To be connected with C.O.) 6 Nos. 32-63A (10 KA) DP MCB for UPS supply, BM AC, System AC & LDBs etc. 1 No. 63A (25KA) 4P MCCB for ATM/E-LOBBY 1 no. 63A (10 KA) TPN MCB. Termination-II: (Not to be connected with C.O.) 1 Nos. 63A (25KA) 4P MCCB for ACDB	SET	1		
3.1	UPS INCOMING DB: Supply of all required materials and fixing of input UPS box (Company made) having provision of the following arrangement complete with all respects per the direction of engineer in charge 2 No. 63A (10KA) DP MCB(or 2 No. 4 Pole 40A 10KA MCB if UPS is 3 Phase)	No.	1		
3.2	UPS OUTGOING DB: Supply of all required materials and fixing of output UPS box (Company made) having provision of the following arrangement complete with all respects per the direction of engineer in charge Incoming: 1 no. 63 A DP MCB Outgoing: 3 No. 40A (10KA) DP MCB	No.	1		
4	ACDB / RAW POWER DB/ LIGHT DB / COMPUTER DB Supply and installation of following metallic double door MCB Distribution Board with MCB having breaking capacity of 10 KA (minimum) complete with busbar, interconnection, painting, mounted on flat iron frame on wall/flushed with finished wall by chase cutting, mending good to original finish painting etc. as required. Name plate & number of DBs are to be fixed up on front door of DBs for their identification. (MCB -C SERIES) DB shall be of the same make of mcb				
(a)	(a) ACDB: Consumer unit TPN MCB DB complete with busbar and the following MCBs. INCOMING : 1 No. 415V 63A 10KA FP MCB OUTGOING : 9 Nos. 240V 32A 10 KA SP MCB, 3 Nos. 240V 25A 10 KA SP MCB	No.	1		
(b)	COMPUTER DISTRIBUTION BOARD (CDB) : Supply and installation of following metallic double door MCB distribution board with RCBO of 100mA sensitivity. SPN 8 way MCB DB complete with bus bar and the following RCBO Incoming: 1 no. 240V 40A DP RCBO, Outgoing: 8 no. 240V 10A SP MCB	No.	3		
(c)	(C) LDB / RPDB: Consumer unit TPN MCB DB complete with busbar and the following MCBs. INCOMING : 1 No. 240V 40A 10KA 4P MCB OUTGOING : 10 Nos. 240V 10A to 16A 10 KA SP MCB	No.	3		

5	SUBMAIN WIRING Supply & laying of submain wiring with following sizes 1100 V grade, single core,FRLS PVC insulated multi stranded copper conductor wire (IS:694) in pre - laid (as per ISI) M.S. conduit including interconnection, painting etc. as required to be completed in all respect.				
(a)	With 4 nos. 10 Sq.mm + 1 nos. 2.5 Sq.mm. (green colour for earth) PVC insulated copper wire from Main panel to ACDBs.	Mtr	30		
(b)	With 2 nos. 6 Sq.mm + 1 no. 2.5 Sq.mm. (green colour for earth) PVC insulated copper wire from Main panel to UPS Incoming DB/UPS Outgoing to UPS O/G DB/LDB/ RPDB/CDB	Mtr	145		
(c)	With 4 nos. 6 Sq.mm + 1 no. 2.5 Sq.mm. (green colour for earth) PVC insulated copper wire from Main panel to UPS Incoming DB/UPS (if UPS is three phase)/ RPDB/LDB	Mtr	30		
6	(A) COMPUTER SOCKET OUTLET WITH WIRING Computer socket outlet cluster point including supply and fixing of modular type socket outlet clusters components and its wiring from CDB, complete in all respect as detailed below. Each computer socket outlet cluster comprising the following 6 Nos. 6/10A 5 pin modular type International sockets 1 No. 16A modular type common controlling switch with indicator on table top with 2 Nos. 2.5 Sq.mm. + 1 x 1.5 Sq.mm. (green colour for earth) PVC insulated copper wire in pre - laid (as per ISI) M.S. conduit including interconnection, painting etc. as required to be completed in all respect from CDB to Computer point.	No.	14		
7	(B) COMPUTER SOCKET OUTLET AND ITS WIRING Computer socket outlet cluster point including supply and fixing of modular type socket outlet clusters components complete in all respect as detailed below. Each computer socket outlet cluster comprising the following 3 Nos. 6/10A 5 pin modular type International sockets 1 No. 16A modular type common controlling switch with indicator on table top with 2 Nos. 2.5 Sq.mm. + 1 x 1.5 Sq.mm. (green colour for earth) PVC insulated copper wire in pre - laid (as per ISI) M.S. conduit including interconnection, painting etc. as required to be completed in all respect from CDB to Computer point.	No.	3		
8	(B) COMPUTER SOCKET OUTLET AND ITS WIRING Computer socket outlet cluster point including supply and fixing of modular type socket outlet clusters components complete in all respect as detailed below. Each computer socket outlet cluster comprising the following 2 Nos. 6/10A 5 pin modular type International sockets 1 No. 16A modular type common controlling switch with indicator on table top with 2 Nos. 2.5 Sq.mm. + 1 x 1.5 Sq.mm. (green colour for earth) PVC insulated copper wire in pre - laid (as per ISI) M.S. conduit including interconnection, painting etc. as required to be completed in all respect from CDB to Computer point.	No.	3		
9	C) RAW POWER SOCKET OUTLET AND ITS WIRING Raw power socket outlet cluster point including supply and fixing of modular type socket outlet clusters components AND WIRING 1100V grade, FRLS complete in all respect as detailed below. Each computer socket outlet cluster comprising the following 2 Nos. 16/20A 5 pin modular type International sockets. 1 No. 16/20A modular type controlling switch with 2 Nos. 2.5 Sq.mm. + 1 x 1.5 Sq.mm. (green colour for earth) PVC insulated copper wire in pre - laid (as per ISI) M.S. conduit including interconnection, painting etc. as required to be completed in all respect from RPDB to Raw Power Outlet.	No.	18		
10	SITC of North-west make AC power unit having 20A, single pole rating socket, MCB with plug, plug top & starter in sheet steel enclosure at proposed AC locations at 4.5 ft from the floor.The work shall also include Wiring from DB for AC pwer point with 2X4 sq. mm 1100V grade FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit alongwith 1 No. 2.5 sq. mm 1100V FRLS PVC insulated copper conductor single core cable for loop earthing as required	No.	12		
11	(a). Copper plate Earthing: Supply of material and installation of earth electrode made out of 50mm dia class B G.I. pipe of 2.5 metre long with arrangements for fitting./termination of copper wire with G.I. nut bolts, washers and 600x600x3 mm size copper plate including cost of charcoal salt and good quality soil, water pouring arrangements, brick masonry enclosure on top with removable CI cover and complete with labour for excavation of pit conforming of IS: 3043/1987 and as per direction of Engineer-in-charge.	No.	1		
12	(b). SITC of OBO Betterman/JK/JEF eco safe/ make earthing system - * - UL Listed Earth Electrode - Copper bonded low carbon steel electrode, coating 250 microns - Tested as per IEC 62561-2 - Meets the requirement of IS 3043 and IEC 60364-5-54 - Tested for short circuit withstanding capacity - High tensile strength In one set it should include: a) One nos of Earthing rod-Type 17 3000 CCER, Length - 3000 mm Outer Dia - 17.2 mm Copper bonded low carbon steel Electrode WITH 250 microns copper bonded b) One bag (25 KG) Earth Enhancement Compound confirming to IEC 62561-7 c) One nos of universal clamp .The work shall also include required masonry work, CI cover plate & Earthing name plate. The vendor shall also submit the earth test report with required values. Pics of earthing to be shown.	No.	1		
13	Supply and laying of 8 SWG Cu cotton coated wire in 20mm dia rigid PVC conduit for earthing From the existing earth pit to the Main panel/UPS	Mtr.	120		
14	SITC of Earth distribution Box (Bus Bar Station) to be installed in the branch near Main Panel, comprising of a bus bar of 3x25x180mm cu strip .	SET	1		

NOTE:

1	The work must be guaranteed for a period of 12 months for its satisfactory performance from the date of completion and all defects cropping up within this period must be rectified at contractor's cost immediately. Contractors must visit the site before submitting their quotations.
2	Earthing test report, Meggar test report & test certificates for the cables will be provided to the Electrical Engineer
3	Measurement sheet for the work done, load calculation sheet, GA drawing for Main panel .THE CONTRACTOR SHOULD SUBMIT THE BUILTUP SLD OF PANEL, SLD OF DIFFERENT DBS TO DIFFERENT SWITCHBOARDS WITH NUMBERING, SLD OF DATARACK TO DIFFERENT I/O POINTS WITH NUMBERING, TELE. KRONE BOX TO DIFFERENT TELE. POINTS WITH NUMBERING, ETC. AFTER EXECUTION OF THE BRANCH. – 2 SETS OF COPIES – 1 WITH LAMINATION. All work to be carried without hampering banking operations. Dismantling wherever required in scope of vendor.
4	Work completion certificate including required dismantling work if any will be provided by the branch manager.
5	All cable and wire terminations must be proper with suitable lugging. There must not be any loose wiring/ cabling. There should not be any jointing in the cables/wires. All wiring accessories should be explosion proof only.
6	Additional inter-connections within the main panel and TPN SFU has been included in the rate of main panel.
7	Distance between power and electronic earthings must be at least 3.5 Mtr. In electrical room, ups room, there must be one emergency light point other than raw light point.
8	All cables except the ones mentioned separately in the estimation have been included in their relevant sections.
9	Proper load distribution is to be done by the vendor. Load variation over 10% will be unacceptable.

RECOMMENDED MANUFACTURERS

CONDUIT	
MS	- BEC/ NIC/ AKG/ BHARAT/ JINDAL
PVC RIGID	- BEC/ AKG/ PRECISION
GI FLEXIBLE	- BEC/ NIC/ AKG
GALVANISED STEEL	- BEC/ NIC/ AKG
PVC CASING CAPING	- PRECISION/ PRESTO-PLUS/ CLASSIC/ MODI
CABLES & WIRES	
11KV AL	- NICCO/ HAVELLS
1100V PVC/ XLPE INSULATED	- HAVELLS/ POLYCAB/ FINOLEX/ L&T
PVC INSULATED CU	- HAVELLS/ POLYCAB/ FINOLEX/ L&T
TELEPHONE	- FINOLEX/ DELTON/ BONTON
PROTECTIVE DEVICE	
TPN & SPN SFU WITH HRC FUSES	- L&T/ SCHNEIDER/ ABB/ GE
MCCB/ MCB/ MCB DB/ RCBO/ RCCB/ ACB/ ELCB	- L&T/ SIEMENS/ ABB/ GE
CHANGE-OVER-SWITCH	- L&T/ C&S/HPL SOCOMEC
CT	- L&T/ KAYCEE/ KUPPA/ SIEMENS
SWITCHES & SOCKETS	
6A/16A SWITCHES, SOCKET, TELE/LAN SOCKET, ELECTRONIC REGULATOR/ DIMMER	- NORTH-WEST/ LEGRAND/ L&T/ROMA
ON/ OFF SELECTOR SWITCHES	- SIEMENS/ L&T/ KAYCEE/ CROMPTON/ GEC
METAL CLAD SOCKET & PLUG	- SIEMENS/ L&T/ LEGRAND
BUZZER/CALL BELL	- BAJAJ/ ANCHOR/ SSK
INDICATING/ MEASURING	- AE/ IMP/ L&T/ GE/ TELEMECANIQUE/ PROK
KITKAT	- GECO/ ANCHOR
LIGHT FIXTURES	- PHILIPS/ WIPRO/ CG/ GE/SYSKA/ WIPRO
LED FIXTURES	- PHILIPS/ CG/ GE/SYSKA/ WIPRO
CAPACITORS	- L&T/ CROMPTON
APFC PANE	L- L&T/ SCHNEIDER/ SIEMENS
CEILING/ WALL FAN	- CROMPTON/ BAJAJ/ ORIENT/ POLAR
CABLE GLAND	- HMI/ BRACO/ COMET
CABLE LUGS	- DOWELL/ 3D
HRC FUSES/ BASE	- AE/ IMP/ MECO/ ENERCON
RELAYS	- KAPPA/ IMP/ AE/ KALPA
EXHAUST FAN	- CROMPTON/ BAJAJ/ ORIENT/ POLAR
BUS BAR TAPPING BOX	- SIEMENS/ SCHNEIDER/ ABB
OTHERS	- ISI/ IS