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

**15/10/2018**

| NO. | DESCRIPTION | UNIT | QTY | RATE | AMT |
|---|---|---|---|---|---|
| | **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**.(polycab/RR/Havells)** | | | | |
| **1.1** | **3.5CX95 sqmm cable Main incoming cable** | Mtr. | **50** | | |
| **1.2** | **3.5CX50 sqmm cable for Auxiliary Panel** | Mtr. | **30** | | |
| **2** | **MAIN TPN SFU:** Supply, installation, testing and commissioning (SITC) of following TPN SFU with HRC fuses in sheet steel enclosure with cable end box on MS Angle frame/ MS Legs/ wall with interconnection, painting and finishing. To be completed in all respect. | | | | |
| **2.1** | **200A TPN SFU with HRC fuses for MAIN Supply** | No. | 1 | | |
| **2.2** | **160A TPN SFU with HRC fuses for GEN SET Supply** | No. | 1 | | |
| **3** | **MAIN PANEL:** SITC of wall/ floor mounted indoor type, vermin-proof, 14SWG sheet steel enclosure Main Panel suitable for 415V, 3 Phase, 4 wire, 50Hz AC System,. Each unit shall be accommodated in separate compartments having gasket hinged door with locking arrangement. The cubical should be painted with 2 coats of light grey synthetic enamel paint over two coats of red oxide primer. Name plate of panel, danger boards, incoming and outgoing feeders with ampere rating of switches/ change over switch are to be fixed up on Front door. Short circuit current for all MCBs should be of 10KA(min.). Prior approval of manufacturer's GA drawings from engineer is required. | | | | |
| **3.1** | **Incoming:-** In **= 200**Amp., Icu= 36KA, Ics= 100% of Icu, 4pole MCCB- 1 no., In = 160Amp., Icu= 36KA, Ics= 100% of Icu, 4pole MCCB- 1 no. (for DG supply) | Set | **1** | | |
| **3.2** | 2 no. 415V , In= 63A, Icu= 25KA, Ics= 100% of Icu, 4P MCCB for ACDB. | | | | |
| **3.3** | **PVC sleeved TPN tinned copper bus bar:** 4X30MMX5MM for phases and neutral.<br>CU Earth bus bar: 20MMX3MM covering the total length of the panel | | | | |
| **3.4** | **METERS**: 2 sets of 3 no. LED phase indication | | | | |
| **3.5** | **ONLOAD CHANGE OVER SWITCH**: SITC of 1 no. 415V, 200A, 4P with ON indication on load Change over switch (Make: HPL SOCOMEC) with suitable enclosure. | | | | |
| **4** | **EARTHING WORKS / ITEMS:-** | | | | |
| **4.1** | SITC of OBO Betterman/JK/JEF eco safe/ make earthing system – * - UL Listed Earth Electrode - Copper bonded low carbon steel electrode, coating 250 microns<br>- Tested as per IEC 62561-2<br>- Meets the requirement of IS 3043 and IEC 60364-5-54<br>- Tested for short circuit withstanding capacity<br>- High tensile strength<br>In one set it should include:<br>a) One nos of Earthing rod-Type 17 3000 CCER, Length – 3000 mm<br>Outer Dia – 17.2 mm Copper bonded low carbon steel Electrode WITH 250 microns copper bonded<br>b) One bag (25 KG) Earth Enhancement Compound confirming to IEC 62561-7<br>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** | | |
| **4.2** | Supply of materials, laying under ground/walls/floor making end termination and testing of G.I. flat (25x3mm) laid from GI pipe earth pit to main panel as per direction of E-I-C | Mtr | **60** | | |
| **4.3** | **(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 masonary 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** | | |

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| **4.4** | Supply of materials, laying under ground/walls/floor, making end termination and testing of 2x6 mm multistrand copper wire to be inside PVC. Conduit cables laid from earth pit to UPS Outgoing DB and complete as per direction of Engineer-in-charge | Mtr | **60** | | |
| **5** | **POWER DISTRIBUTION BOARD (PDB) :** TPN MCB DB comprising of following: INCOMING 1 no. 415V 63A TPN MCB OUTGOING 12 no. 240V 25A SP MCBs, **(L&T/ABB/SCHNEIDER)** | No. | **1** | | |
| **6** | **RAW POWER TPN DB: TPN** MCB DB comprising of following**: INCOMING** 1 no. 415V 63A 4P MCB **OUTGOING** 3 no. 240V 25A SP MCBs, 9 no. 240V 16A SP MCBs Make-(L&T(exora)/ABB(elegance)/Schneider/Siemens | No. | **1** | | |
| **7** | **LIGHTING DISTRIBUTION BOARD (LDB): TPN** MCB DB comprises: INCOMING 1 no. 240V, 40A TPNP MCB OUTGOING: 12 no. 240V 10A SP MCB Make-(L&T(exora)/ABB(elegance)/Schneider/Siemens | No. | **1** | | |
| **8** | **SUBMAIN WIRING :** Sub-main wiring with 1100V grade **FRLS** insulated cover flexible copper cable with proper color coding through suitable MS conduit complete with all accessories as per requirement. | | | | |
| **8.1** | For ACDB with 4**CX10 sqmm 1100V** grade **FRLS** insulated core, FRLS insulated cover flexible copper cable with proper color coding through suitable MS conduit complete with all accessories as per requirement. 1 no. 2.5 sqmm earth **FRLS** insulated flexible copper wire in MS conduit | Mtr. | **40** | | |
| **8.2** | With 4 nos. 6 Sq.mm + 1 no. 2.5 Sq.mm. (green colour for earth) PVC insulated copper wire for RAW power DB, Main gate light cut-off & LDB | Mtr. | **90** | | |
| **9** | **AC POWER POINT:** AC power point wiring FRom PDB/ACDB/DB to AC Power pointsat hall, BM chamber, system room **with 1100V grade 2 no. 4 sqmm + 1 no. 2.5 sqmm FRLS insulated copper wire in MS conduit**. Complete with all accessories as per requirement. **North-west or equivalent make AC power unit having 25A, 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. | No. | **10** | | |
| **10** | **6/16A SOCKET OUTLET POINT WIRING** : Power point wiring for 5 pin 16A shuttered socket outlet(power unit combo 16A MCB protected socket **CS26401W, primo C&S equivalent)** & 16A switch with controlling switch From PDB with 1100V grade 2 no. 4 sqmm + 1 no. 2.5 sqmm **FRLS** insulated copper wire in MS conduit complete with all accessories as per requirement. With controlling switch, suitable mounting box( M.K./ Crabtree/ North-West) and FRont plate for socket outlet flushed with finished wall.**(Branch Manager, canteen,etc MAKE:- (ABB(CHEIRON)/LEGRAND(MYRIUS)/MK(BLENZ)** | No. | **6** | | |
| **11** | Double pole MCB DB in sheet steel enclosure with Incoming: 1 no. 20A DP MCB, Outgoing: 2 no. 10A SPN MCB complete with interconnection **for glow sign board and Street Light. (L&T/ABB/SCHNEIDER)** | No. | **1** | | |
| **12** | Supply & fixing of **415V MCB DB with** incoming 63**A 4P MCB** in MS Box for **main gate light cut off switch** complete with all accessories as per requirement**.** | No. | **2** | | |
| **13** | **POINT WIRING :** Supply and laying of electrical point wiring through MS conduit including modular switches conforming to the following specifications:point wiring work FRom switchboard to different outlet points. 1100V grade, FRLS PVC insulated flexible copper conductor cables having 3 no. 1.5sqmm single core copper wire. The work shall aLSo include necessary circuit wiring work FRom DB to switchboards including interconnection. The circuit wiring shall comprise of 1100V grade FRXLPE insulated core, FRPVC insulated cover flexible copper cable with proper color coding through suitable MS conduit complete with all accessories as per requirement.2X2.5 sqmm copper wire, and 1 no. FRXLPE insulated 1.5 sqmm copper wires in MS conduit, 6A switches, 6A socket outlets, stepped regulators and other necessary components of requisite module sizes including matching metal boxes. white switches with matt black cover plates. Work shall include all related activities. The work shall also include dismantling work & finishing good all damages.) All the wiring below false ceiling on wall must be concealed. All the drops fromm junction box to light point must be in flexible conduits.The work also involves dismantling work if any & finishing good all damages.Each switch board should have one 5A socket.(MAKE-SWITCHES-(ABB(CHEIRON)/LEGRAND(MYRIUS)/MK(BLENZ) | | | | |
| **13.1** | **LIGHT POINT** | | | | |
| **13.1a** | 1 light control by 1 switch | No. | **24** | | |
| **13.1b** | 2 lights control by 1 switch | No. | **18** | | |
| **13.1c** | Ups light points from emergency light DB(long points) | No. | **6** | | |
| **13.2** | **Wall bracket/ with supply and fixing of 6A socket near the fan and controlling switch at light /fan switch board Separate switchboard other than light/ fan .** | | | | |

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| **13.2a** | 1 fan control by one switch | No. | **8** | | |
| **13.2b** | 2 fans control by one switch | No. | **6** | | |
| **13.3** | **Ceiling fan point** with regulator(100w hum free,0-4 steps-1module mylinc LRGRAND/ABB/L&T),supply and installation of anchor fastener & hook to suspend the ceiling fan, for ceiling fan | No. | **5** | | |
| **13.4** | Exhaust fan point | No. | **2** | | |
| **14** | Supply and fixing and wiring of shuttered 2 nos 5pin 5/6A, shuttered sockets & 2 nos 5/6A switch **beside of computer points** on the plate & metal switch box ( (Switch shall be fixed above the table with suitable modular front plate/box and sockets shall be fixed below the **counters**) including its connections with frls **2CX2.5 sqmm flexible copper cable, and 1 no. FRLS insulated 1.5 sqmm single core copper wires in MS conduit** as required complete in all respect.(MAKE-SWITCHES-**(ABB(CHEIRON )/LEGRAND(MYRIUS)/MK(BLENZ)(raw power)** | No. | **18** | | |
| **15** | Providing 2 mtr length of flexible frls.**3CX2.5 sqmm flexible pvc multicore ywy copper cable with socket** one end connected to plug top 16A with indicator and other end connected to switch board inside and a suitable hook arrangement as required for hanging the cable for power supply disconnection at safe room/locker room ,Record room,Stationery room /antee room etc. | No. | **5** | | |
| **16** | **SUPPLY AND FIXING OF CALL BELLS :** Supply and fixing on wall call bell buzzer suitable for 240V single phase AC supply including inter connections etc as required. | No. | **1** | | |
| **17** | **AUXILIARY PANEL:** SITC of wall/ floor mounted indoor type, vermin-proof, 14SWG sheet steel enclosure Main Panel suitable for 415V, 3 Phase, 4 wire, 50Hz AC System,. Each unit shall be accommodated in separate compartments having gasket hinged door with locking arrangement. The cubical should be painted with 2 coats of light grey synthetic enamel paint over two coats of red oxide primer. Name plate of panel, danger boards, incoming and outgoing feeders with ampere rating of switches/ change over switch are to be fixed up on Front door. Short circuit current for all MCBs should be of 10KA(min.). Prior approval of manufacturer's GA drawings from engineer is required. | Set | **1** | | |
| **17.1** | **Incoming:-** In **= 125**Amp., Icu= 25KA, Ics= 100% of Icu, 4pole MCCB | | | | |
| **17.2** | **PVC sleeved TPN tinned copper bus bar:** 4X25MMX5MM for phases and neutral.<br>CU Earth bus bar: 20MMX3MM covering the total length of the panel | | | | |
| **17.3** | **METERS**: 1 no. Digital MFM for measuring voltage, current, Frequency and PF, 3 no. LED phase indication, 1 sets of 4A HRC fuses, 3 no. 200/5A CT | | | | |
| **17.4** | **Outgoing:- 3** no. 63A 4P MCB, 2 no. 63A 4P/DP MCB, 1 no. 20A DP MCB | | | | |
| **18** | **UPSDB :** INCOMING- **1 no. 63A DP MCB,OUTGOING** : **3 no. 32A DP MCBs** etc in sheet steel enclosure with provision for the service cable termination. | No. | **2** | | |
| **19** | **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: 10 no. 240V 6A SP MCB Make-(L&T(exora)/ABB(elegance)/Schneider/Siemens, (emergency light points at 1BM, 1near swo, 1 cash counter, 1ups, 1near electrical panel, 1 locker, 1vault.)** | No. | **2** | | |
| **20** | **SUBMAIN WIRING :** Sub-main wiring with 1100V grade **FRLS** insulated cover flexible copper cable with proper color coding through suitable MS conduit complete with all accessories as per requirement. | | | | |
| **20.1** | From Auxiliary panel to UPS DB via UPS with 2**CX10 sqmm 1100V** grade **FRLS** insulated core, FRLS insulated cover flexible copper cable with proper color coding through suitable MS conduit complete with all accessories as per requirement. 1 no. 2.5 sqmm earth **FRLS** insulated flexible copper wire in MS conduit | Mtr. | **24** | | |
| **20.2** | From 2**CX6 sqmm 1100V** grade **FRLS** insulated core, FRLS insulated cover flexible copper cable with proper color coding through suitable MS conduit complete with all accessories as per requirement. 1 no. 2.5 sqmm earth **FRLS** insulated flexible copper wire in MS conduit for CDB | Mtr. | **70** | | |

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| **21** | **COMPUTER SOCKET OUTLET CLUSTER POINT WIRING** | | | | |
| **21.2a** | Each computer socket outlet cluster comprising the following : **5 no. 6/13 5 pin modular type socket, 1 no. 16A modular type common controlling switch with indicator**.(above table) including all inter connections as required **UPS Power** 1 no. front cover of suitable size,1 no. mounting box of suitable size.(MAKE-SWITCHES-(ABB(CHEIRON)/LEGRAND(MYRIUS )/MK(BLENZ)(raw power) with Computer socket outlet cluster point wiring **with 1100V grade FRLS insulated 2CX2.5 sqmm + 1 no. 1.5sqmm copper wire in MS conduit and conduit accessories FRom CDB to computer socket outlet.** | No. | **15** | | |
| **21.2b** | Supply and fixing and wiring of shuttered **3 nos 5pin 16A, shuttered sockets & 1 nos 16A switch** on the plate & metal switch box (suitable GI box) including its connections as required complete in all respect.(UPS Power in server room)(MAKE-SWITCHES-(ABB(CHEIRON)/LEGRAND(MYRIUS )/MK(BLENZ)(raw power) with Computer socket outlet cluster point wiring **with 1100V grade FRLS insulated 2CX2.5 sqmm + 1 no. 1.5sqmm copper wire in MS conduit and conduit accessories FRom CDB to computer socket outlet.** | No. | **2** | | |
| **21.2c** | Supply and fixing and wiring of shuttered 2 **nos 5pin 16A, shuttered sockets & 1 nos 16A switch** on the plate & metal switch box (suitable GI box) including its connections as required complete in all respect.(**UPS** Power in server room)(MAKE-SWITCHES (ABB(CHEIRON)/LEGRAND(MYRIUS )/MK(BLENZ)(raw power) with Computer socket outlet cluster point wiring **with 1100V grade FRLS insulated 2CX2.5 sqmm + 1 no. 1.5sqmm copper wire in MS conduit and conduit accessories FRom CDB to computer socket outlet.** | No. | **3** | | |
| **22** | **SUPPLY & INSTALLATION OF LIGHT FITTINGS & FANS** | | | | |
| **22.1** | SITC of LED light **12W** with holder in corners,toilet,back passage,ups etc. (philips/wipro/crompton/Bajaj) | No. | **8** | | |
| **22.2** | SITC **T5 LED 18/20W tube light** 4 Ft. with white diffuser coverbatten type, 230 V, 50 Hz duly wired and tested, philips/WIPRO/crompton(saferoom,pantry,record room, ups room etc | No. | **10** | | |
| **22.3** | SITC of LED **15W light & fixture recessed type** with all interconnection and fixing arrangements as required.(philips/Bajaj/GE/crompton/wipro) (lumens>1200,watt<15) | No. | **32** | | |
| **22.4** | SITC of **2"x2" LED) full glow light & fixtures recessed type** with all inter-connections and fixing arrangement as required.(philips/GE/crompton/wipro) (lumens>3000,<40watts,life >50000hrs) | No. | **14** | | |
| **22.5** | SITC of **400mm hi flow model** wall mounted fan as required(counters,banking hall,columns, ups room, system room. (crompton/bajaj/orient) white in colour. | No. | **16** | | |
| **22.6** | SITC of **1400MM ceiling fan Crompton/,bajaj/orient White.** | No. | **5** | | |
| **22.7** | SITC of 9" dia 230V,1400 rpm exhaust fan as in toilets, ups room, toilets etc. (crompton/bajaj/orient) | No. | **2** | | |
| **22.8** | Supply & installation of LED street light fitting 1*40W (PHILIPS/BAJAJ/CROMPTON/WIPRO) | No. | **2** | | |
| **23** | **LAN CABLING WORK** | | | | |
| 23.1 | Supplying and installation of switch 24 ports 10/100 BASE-TX ports, as approved by the Bank. (**Make: CISCO**) | No. | 1 | | |
| 23.2 | Supply of 2 mtr. Long E-CAT 6 PATCH CHORD (**Make: D-LINK, AMP, HCL, Legrand**) | Nos. | 20 | | |
| 23.3 | Supply and laying of E-CAT 6 UTP cable for the Data Circuit through the PVC conduit, Rate to include for termination on both end or as directed by E-I-C. **(**MAKE- D-LINK, AMP, HCL) | Metre | 720 | | |
| 23.4 | Supply and fixing of information outlet box suitable for RJ 45 terminals including mounting box (PVC) & top cover, to be fixed a concealed manner in partition by necessary bolts & nuts or as directed at site. (MAKE- D-LINK, AMP, HCL, Legrand) | Nos. | 24 | | |
| 23.5 | Supply & installation of 9U Rack with power supply arrangement, ventilation fan, mounting racks ect. Complete with all accessories. | No. | 1 | | |
| | | | | **GRAND TOTAL (Excluding GST)** | |

**Note:**

**1** **Measurement sheet for the work done, GA drawing for Main panel, UPS panel and As built drawing, Earthing test report, Meggar test report & test certificates for the cables will be provided to the electrical engineer.** Work completion certificate which includes dismantling of existing wiring and Distribution boards will be provided by the branch manager. All cables except the ones mentioned have been included in their relevant sections. Distance between earthings must be at least 3.5 Mtr. **Since its a renovation of the branch, bank shall use the equipments, switchgear etc. if found in healthy condition.**

**2** Vendor shall provide five years warranty for the earthing pit with its standard earthing test value. Vendor shall also provide a certificate of warranty for the purchase of light fittings to the branch manager. 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. **VENDOR SHOULD VISIT THE SITE BEFORE PARTICIPATING IN THE TENDERING PROCESS.**

Signature of the contractor with official seal