

**BOQ FOR ELECTRICAL WORKS FOR CANARA BANK
PROPOSED NEW BRANCH AT TEZU, ARUNACHAL PRADESH**

GENERAL NOTE

1	UPS input and Output wiring should be done with FRLS Insulated stranded copper conductor laid through M.S Conduit. (From input DB to UPS and from UPS Output to UPS Output DB)
2	All wires for circuit wiring and other wiring should be drawn inside M. S. Conduits Only unless otherwise specified
3	Specifications of all wires should be followed strictly as mentioned in the BOQ
4	All makes of materials should be strictly followed as mentioned in the detailed specifications of the Tender document
5	Earthing Test Certificate MUST be provided alongwith the Final bill for further bill verification
6	Single Line diagram showing the all the wiring including point wiring, computer and RAW power wiring, Circuit wiring etc. all complete should be submitted with the Final Bill
7	Only DATA and Voice point wiring is allowed to be carried out through MS Conduits

PART A: ELECTRICAL WORKS FOR BRANCH

Sl. No	Description	Unit	Qty	Rate	Amount
SECTION-A					
1	PVC board for Fitting of indicator Bulbs directly connected from LDb, PDB, ACDB and UPS DB with necessary holders etc. with proper marking				
	8 Module (125mmX125mm)	No.	1		
2	Main Distribution Board				
a	Supplying, installing, testing & commissioning of surface/recessed mountings, Double door 415 volts TPN MCB distribution board of steel, 1.6 mm thick dust phosphatized and painted, inclusive of 100 amps, tinned copper bus bars, earth bar, common neutral link, din bar for mounting of MCB's detachable gland / knock out plate & with built in loose wire box, and superior make terminal connectors for all incoming and outgoing circuits duly prewired with adequate size of PVC insulated copper wires between the bus bars and the MCB's as well as the incomer and up to the terminal connectors/ neutral link and ready for installation of following ways as required.				
b	Use 'B' curve MCB's for lighting & small power circuits, 'C' curve for motor duty i.e. for pumps, AC motors, window and split AC's etc.& 'D' curve for UPSDB's i.e. for computers/ PC's circuit. Main incomer & outgoing circuit MCB's shall be selected accordingly i.e. type B, C & D. Contractor to select the MCB's accordingly as per the nature of the circuit/ load.				
c	Each DB shall have separate neutral links of rating not less than 100A for each phase. The main incoming neutral link shall be in addition to three outgoing neutral links and shall be of 125 A.				
d	UPS DB's shall have a dedicated Earthing link fixed on insulated supports, which will be in addition to body earth link.				
e	All internal inter MCB connecting wiring with in the DB's shall be PVC insulated flexible copper conductor wires of adequate capacity as per the current rating. Inside each DB, a DB chart is to be fixed.				
2.1.	S.I.T.C. of TPN 6 way Double Door Vertical Distribution Board with following M.C.B./M.C.C.B./RCCB & cable end boxes at Input & Output. [Main VTPN]				

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a	<p>4 Pole ,Type C, 63 Amp 30KA MCB as Incomer - 1 no.s 25A DP "C" Class MCB . for input to LDB - 1 Nos 25A DP "C" Class MCB for input to Raw PDB- 1 Nos. (Water Dispenser, Mobile Charger & Ancillary services Load) 40A DP "C" Class MCB for input to ACDB- 1 Nos. 25 DP "C" Class MCCB for Inverter INPUT AND OUTPUT- 2 Nos,</p> <p><u>Note- Rates Shall be inclusive of S.I.T.C. 3X35 sqmm Armoured alluminium cable from the Main LT panel to the main DB including 4 X10 Sq.mm. F.R.L.S. Copper Flexible wires with 2 X 10 Sqmm Copper Earth Wires in Rigid MS conduit from 100 A MCCB in Metal Box (Metering Cabinet) at the output of Br. Meter to Main DB and any other ancillary items as directed by Engineer-in-Charge/ Architect.</u></p>	No.	1		
Section B					
3	MCB DISTRIBUTION BOARD				
	<p>Supplying, installation, testing and commissioning of surface/recess mounting, 220/415 volts prewired MCB distribution boards with all switchgears as specified below, of sheet steel, dust protected, duly phosphatized and powder painted, inclusive of 200 amps tinned uniformly rated electrolytic copper bus-bar, common neutral link, earth bar, din bar for mounting MCB/MCCB/RCCBs detachable gland/knock out plates and with built in loose wire box, and superior make terminal connectors for all incoming and outgoing circuits, duly prewired with adequate size of FR MS insulated copper conductor upto the terminal connector/neutral link and ready for installation as specified below:</p>				
3.1.	S.I.T.C. Of L.D.B. [MCB DB- LIGHT] (LIGHT DB)				
a.1.	<p>S & I of 4 Way, IP 43 PPI TPN Horizontal Distribution Board for distribution to all Light points of different areas (as indicated in the circuit diagram), having below mentioned switchgears (Earth bar inside these DB should be insulated from the body) - 25A, 10kA, TPN MCB as incomer - 1 Nos, output of which is directly connected to 5W Red colour indicator Light With 3 No of 25 A DP RCCB (30 mA) each phase Outgoing. 6/10 Amp (10 KA) SP MCB as outgoing - 4 Nos.</p>	No.	1		
<p><u>Note- Rates Shall be inclusive of S.I.T.C. of 3X 6+1x4 Sq.mm. F.R.L.S. copper flexible wires in 19/20 mm. MS conduit from Main D.B To L.D.B</u></p>					
b	S.I.T.C. Of P.D.B. [MCBDB-POWER] (Raw Power DB)				
b.1.	<p>S & I of 4 Way, IP 43 PPI TPN Horizontal Distribution Board for distribution to all raw power points of different areas (as indicated in the circuit diagram), having below mentioned switchgears (Earth bar inside these DB should be insulated from the body) - Incomer 25Amp 10kA, TPN MCB - 1 No . output of which is directly connected to 5W Yellow colour indicator Light With 3 No of 25 A DP RCCB (30 mA) each phase Outgoing. 16A SP MCB-1 Nos. 10A SP MCB- 5 Nos. with all wiring connections.(Max. 3 Points to be looped on one MCB, 4 nos. in exceptional case.)</p>	No.	1		
<p><u>Note- Rates Shall be inclusive of S.I.T.C. of 3X 6+1x4 Sq.mm. F.R.L.S. copper flexible wires in 19/20 mm. MS conduit from Main D.B To RPDB</u></p>					

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c	S.I.T.C OF U.P.S. D.B. : (MCBDB-UPS)				
	S.I.T.C. of 8 way Single Door SPN D.B. with Incomer 25 Amp 10kA DP MCB - 1 No output of which is directly connected to 5W Blue colour indicator Light 10A SP MCB- 6 Nos. with all wiring connections.(Max. 3 work-Station Points to be looped on one MCB. 4 nos. in exceptional case) Note- Rates Shall be inclusive of S.I.T.C. of 3X 6+1x4 Sq.mm. F.R.L.S. copper flexible wires in 19/20 mm. MS conduit from Main D.B To UPS D.B	No.	1		
d	S.I.T.C OF U.P.S. D.B-2 : (MCBDB-UPS 2) for connction to Fire alarm/ BAS/ CCTV/ Network switch etc. directly connected from VTPN UPS output				
	S.I.T.C. of 6 way Single Door SPN D.B. with Incomer 25 Amp 10kA DP MCB - 1 No 10A SP MCB- 4 Nos. Note- Rates Shall be inclusive of S.I.T.C. of 3 X 4 Sq.mm. F.R.L.S. Copper Flexible wires in Rigid MS conduit from Main DB to MCBDB-UPS-1. (body to be earthed)	No.	1		
d	S.I.T.C of 32 Amp. D.P. MCB in Metallic box for Inverter I./P. & O/P to LDB	No	1		
e	S.I.T.C of 32A DP MCB in Metallic box for UPS I./P.& O./P.	No	1		
f	S.I.T.C. Of ACDB [MCB DB- AC] - If Required as per Bank approval				
	S & I of 4 Way, IP 43 PPI TPN Horizontal Distribution Board for distribution to all AC points of different areas (as indicated in the circuit diagram), having below mentioned switchgears (Earth bar inside these DB should be insulated from the body) - Incomer 40Amp 10kA, TPN MCB - 1 No . output of which is directly connected to 5W Green colour indicator Light With 3 No of 25 A DP RCCB (30 mA) each phase Outgoing. 10A SP MCB- 6 Nos. Note- Rates Shall be inclusive of S.I.T.C. of 4 x 6.0mm² + 2x4.0 mm² F.R.L.S. copper flexible wires in 19/20 mm. Medium Guage MS conduit from Main Panel To ACDB	No.	1		
	SECTION-C				
4	POINT WIRING				
4.1	Supply & Installation of concealed point wiring using 3 x 1.5 sqmm stranded FRLS copper conductor in M.S Conduit including the cost of circuit wiring from the relevant DB's with 3x 1.5 sq mm stranded FRLS copper conductor in M.S Conduit . PIN GRIP Lugs should be used for connection/ terminations at both the ends with proper colour coding of phase, neutral and earth wire (Phase R,Y,B Neutral-Black & Earth - Green Colour). The rate shall also include concealed M.S Box, Cover Plate and Switches of grid plate type switches and sockets of approved shade and make as approved by Bank / Architect. Each circuit should not have more than 8 points / 800 W in one loop as per the following configuration.				
a (i)	Primary light points including the cost of 6A switch (Single Point-24 Nos. Double Loop Points- 8 Nos)	Pts	32		
(ii)	Primary light points including the cost of 6A switch in UPS Power	Pts	8		
b	Secondary 6A Plug point on switch board. [SO]	Pts	1		
c	16/6 A Plug Point directly taken from PDB for hotplate/geyser / zerox / fridger etc.	Pts	1		
d	Exhaust fan/ Wall Fan point consisting of 6A socket near fan and switch on light switch board (Including One for Strong Room Exhaust Fan)	Pts	15		

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e	Wiring for Signages with 2R x2.5 Sq.mm and 1 Rx 1.5 Sq.mm, PVC insulated copper conductor flexible cable to be connected to the SPN D/D consumer along with a Timer and Contactor unit installed in Electrical Room room	Set	1		
f	S.I.T.C. of call bell with bell point .	Nos.	2		
4.2	COMPUTER/ RAW POWER WIRING				
	Note- All sockets should be placed below the workstations as mentioned in the drawings but the controlling switch should fixed above the work stations and at place as directed by the architect				
a	Supply & Installation of concealed UPS or stabilized power plug points on workstations / table for computers using 3 x 2.5 sqmm stranded FRLS copper conductor in M.S Conduit including the cost of circuit wiring from the relevant DB's with 3 x 4.0 sq mm stranded FRLS copper conductor in M.S Conduit . PIN GRIP Lugs should be used for connection/ terminations at both the ends with proper colour coding of phase, neutral and earth wire (Phase R,Y,B Neutral-Black & Earth - Green Colour). Each point shall consist of 3 Nos of 6A/16A 2 / 3 Pin sockets and 1 No 16A switch, wired together forming one point. Switches and sockets to be of approved shade and make. (Only 2 tables served by one circuit from UPS DB/ Not more than 2 points shall be permitted per loop) Cost is inclusive of necessary cutting the walls/ partitions and carrying all the wires through M.S Conduit and againg finishing the walls with Putty/ Cement/ POP to receive the final paint.. [SOC]	Pts	8		
b	S & I of points similar to above but to be used as raw power point on the tables consisting of one 6/16A socket with switch of other color and flexible cable of black color & circuit taken from Raw Power DB (2 tables (Maximum 3) served by one circuit from LDB/PDB) Taken Above False ceiling and through walls/ partitions inside M.S. Conduits as raceways are not provided. Cost is inclusive of necessary cutting the walls and including M.S. Conduits as required for taking the wires.	Pts	13		
	SECTION-D				
5	Supply, Installation, Testing and Commissioning of EARTHING				
5.1	Earthing with Copper earth plate 600 x 600 x 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc with charcoal/ coke and salt as required. Rate shall be inclusive of Providing & fixing 25 mm x 5 mm Cu strip on surface or in recess for connection as required.	Each	1		
5.2	Earthing with GI earth plate 600x600x3mmthick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc with charcoal/ coke and salt as required.Rate shall be inclusive of Providing & fixing 25 mm x 5 mm G.I. strip on surface or in recess for connection as required.	Each	1		
	SECTION-E				
6	LIGHTING FIXTURES (Bajaj or equivalent)				
6.1	S & I of lighting fixtures as per the details given below including necessary hardware such as clamps,nuts, bolts, nails, screws and suspension chains as required for fixing the fixtures in position as directed by architect / Consultant.				
a	PANEL LIGHT [PL] - Ultra Slim LED Panel made from extruded aluminium housing frame (recess / pendant) 2ft x 2ft , Wattage-30W, CCT- 4000 K, of Phillips, Havells, Bajaj, Wipro or equilivent as approved by the Engineer-incharge/ Architect.	No	18		

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b	<u>DOWN LIGHT [DL]</u> - Round LED recess-mounted designer panel with aluminium die cast housing , Wattage-18W, CCT- 4000 K, of Phillips, Havells, Bajaj, Wipro or equivalent as approved by the Engineer-incharge/ Architect.	No	15		
c	S.I.T.C. of 12/13 Watt 6000/6500 K,(≥720 lumens) Recessed/Surface mounted LED Down Lighting Fixtures with fixing accessories. As Emergency Light	No	8		
d	<u>1200 MM TUBE LIGHT [TL]</u> - LED batten tubes, Glaze LED Batten, High quality aluminium extruded with decorative end caps, Wattage-20W, CCT- 4000 K, of Phillips, Havells, Bajaj, Wipro or equivalent as approved by the Engineer-incharge/ Architect.	Each	5		
	<u>600 MM TUBE LIGHT</u> - LED batten tubes, Glaze LED Batten, High quality aluminium extruded with decorative end caps, Wattage-10W, CCT- 4000 K, of Phillips, Havells, Bajaj, Wipro or equivalent as approved by the Engineer-incharge/ Architect. [EL]	Each	2		
6.3.	Supplying including fitting fixing of following star rated new 450 mm dia bracket/wall fan in metal body and metal blade of Orient Electric (TORNADO Wall Black Metal) or equivalent of approved make , complete with all accessories with necessary connection cable, as approved by the Deptt.s etc. as required complete and as directed by the Bank				
	a) 400- 450 mm sweep	EACH	11		
6.4	Supply and fixing of 10" - 12" Metal bladed exhaust fans with louvers.[EF]	EACH	3		
7	WIRING FOR DATA AND VOICE OUTLETS				
a	Supplying, laying and termination of 4 pair Copper solid, twisted pair G600 CAT-6 cables through specified dia MS conduits / raceways. Cables must meet and exceed category 6/ class E standards requirements in ISO/IEC11801, CENELEC EN50173 & TIA 568-B2-1. and providing & terminating with RJ-45 (Krone make) with face plates / I/O Ports in suitable modular / MS box from server / EPABX room to individual work stations and terminating other end with RJ-45 connector including numbering with ferule. Note- Rates shall be all inclusive as mentioned in the description above and the payment for the same item shall be made on the number of points provided based on the above description.				
7.2	Outlets with Back Box & Single Face Plate & Termination Of LAN Cable etc. of Compscope/ D'Link Make (Including One extra in BM and 1 No for CCTV)	Nos	2		
	Same as above but with Double Face Plate & Termination Of LAN Cable etc. of Compscope/ D'Link Make	Nos	8		
	Tesing, Labelling, scanning of I/O Nodes & submission of report.	Nos	18		
	S.I.T.C. of 24 port Fully loaded Jack Panels	Nos	1		
	S.I.T.C. of 3 Ft. Factory Crimped Mounting Cords Same Makes as in Item no b.	Nos	18		
	S.I.T.C. of 7Ft. Factory Crimped Mounting Cords .Same Make as Item No b.	Nos	18		
	S.I.T.C. of 12 U VALRACK/PRESIDENT etc Network Rack with proper dressing of cables	Nos	1		

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8	A.C POINT WIRING				
	A.C. power point wiring from AC DB with 1100 volt grade 2 Nos. single core 6 sq.mm. + 1 No. 4 sq.mm. (Green colour for earthing) PVC insulated flexible FRLS copper conductor cable through suitable size M.S. conduit (ISI marked embossed on conduit surface) complete with junction box, circular box, elbows, bends, couplers and other accessories on surface above false ceiling or concealed by chase cutting on wall complete with North-West make AC power unit having 25A DP MCB with enclosure, 25A Socket, 20A Starter, mounting box & front plate, interconnection, mending good all damages to original finish, painting etc. as required. All connections of wires to be done by means of 'Wago' type connectors. Each Ac will be connected through Inverter to be located near the ACDB. Rates shall be inclusive of cost of wires, wirings, sockets,starter, testing all complete	NOS	6		
9	MISCELLENOUS WORKS				
9.2	4 Pole 63 Amp Manual Changeover Switch For Mains to D.G. supply switching (If D.G. Back-up is provided). Rates shall be inclusive of complete wiring and no payment for wiring shall be entertained for this item of work	No	1		
	(A) TOTAL OF ELECTRICAL WORKS AT BRANCH				
PART B: ELECTRICAL WORKS FOR ATM					
	Note- All wires including Main Line, UPS Line, Cat-6 points should be drawn from the branch and no extra payment for the same shall be entertained in any ways and hence the contractor is advice to read the drawing or visit the site in advance before quoting the rates for the electrical works and the quoted rates shall be inclusive of all as mentioned above				
10	LED panel light- 36 W 2' x 2' PL (Back Lit Armstrong), Century Magic Light make with all accessories in complete.	2	Nos		
11	LED Down lights - RDL Series , 8W , Outer size (116x 36) mm of Century Magic Light make with all accessories in complete.(Including 2 nos in shutter boxing)	5	Nos		
12	Light point wiring with earth using 1.5 sq mm PVC copper Multistrand flexible wire all pulled through conceled PVC conduit with circuit wires	1	LS		
13	4 nos. 6 Amp one way switch with 4 module concealed backbox and plate for lighting (Anchor / Roma / Crabtree). This includes all the Switches for the light provided inside the Atm on Lumpsum basis and no payment per point wise will be entertained in this regards	1	Nos		
14	Power point wiring with earth using 2.5 sq mm PVC copper Multistrand flexible wire all pulled through conceled PVC conduit inclusive of 5/15 A switch, socket, back box, plate (2 Nos AC , 3 Nos UPS Pt for ATM machine, UPS i/p & o/p point ,Telephone and router,extra 1 nos.)	1	LS		
15	Fascia point Light point wiring with earth using 2.5 sq mm PVC copper Multistrand flexible wire all pulled through conceled PVC conduit with circuit wires	1	LS		
16	Data Point using cat - 5 cables of systemax make data cable pulled through PVC conduits and concealed along with end termination with RJ-45 I/O socket AT&T compatible with back box and plate and 5' long patch chord with both ends crimped.	2	Nos		
17	Extra For Cat-6 Cable above 10Metre length	100	Mtr		

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18	S.I.T.C. of 6WAY DB	1	Nos		
	S & I of 6 Way SPN, Main DB for distribution for ATM, having below mentioned switch gears (Earth bar inside these DB should be insulated from the body) - 25A, 36kA, DP MCB as incomer - 6/16/25/32 A SP MCB as outgoing -4 Nos.(1 for Lighting, 2 Nos for AC & i Extra)				
	<i><u>Note- Rates Shall be inclusive of S.I.T.C. of 3X 2.5 Sq.mm. F.R.L.S. copper flexible wires in 19/20 mm. MS conduit from Main D.B To L.D.B</u></i>				
	(B) TOTAL OF ELECTRICAL WORKS AT ATM				
	GRAND TOTAL (A + B)				