

**BOQ FOR THE PROPOSED ELECTRICAL WORKS OF SOYATKALAN BRANCH FOR STATE BANK OF INDIA**

**ELECTRICAL WORKS**

**Note:- The rates quoted includes all other taxes , duties , loading, unloading , transportation, other expenses etc to site. only GST will be paid Extra.**

I.No.	Description of items	Unit	Qty	in INR	
				Rate Rs	Amount Rs
<b>(A)</b>	<b>ELECTRICAL WIRING WORK</b>				
	Note: Use of Flexible conduits & Elbows in Circuit wiring is not allowed except in exceptional site conditions with the approval of Bank's Engineer / Architect and All wiring laying in the MS/PVC conduit strickle follow IE( Indian Electricity) rules, IS code, follow in all items of project/work execution. Proper ferrules, lux, thimble , gland termination to be done in all cabling & wiring from both load/source end. Conduit carrying submain will not carry circuit/point wiring. Similarly conduit carrying circuit wiring will not carry submain/point wiring. Conduit carrying point wiring will not carry submain/circuit wiring. All Electrical works (Cabling/wiring/panel etc ) to be carried out as per layout/General Arrangement (GA)Drawing attached only.				
<b>1</b>	<b>ELECTRICAL WIRING</b>				
	Wiring for light point/ fan point/ wall fan point/ exhaust fan/ light sockets etc. with 1.5 sq.mm. PVC insulated 1100 V Grade copper conductor (FRLS) wires & 1.5 sq.mm. copper earth wire in concealed/ surface using 16 SWG MS conduits, accessories such as bends, tees, saddles, draw boxes, mounting boxes, inner plates, cover plates, ceiling rose etc (wherever required) and chromium plates brass screws/ rowel plug etc. The circuit wiring starting from DB to point control box/ switch box using 2 X 2.5 sq.mm PVC insulated 1100 V grade multi- stranded copper conductor wire & 2.5 sq.mm. PVC insulated earth wire (color code to be used). (Flexible conduit/ elbow not allowed). The conduit to be laid in ceiling with proper clamps/ wall/ floor and filling the chase with cement mortar and finishing the same in original form/ wooden partition/ above false ceiling with proper clamps etc. all complete.				
	<b>(Wherever required as per standard specifications).</b>				
	<b>i) Each circuit shall have independent earth wire.</b>				
	<b>ii) Each point shall be earthed.</b>				
	<b>iii) Circuit wiring is to be included in point wiring rates.</b>				
a	One light points controlled by one 6 amp. Modular switch.	Nos.	26		
b	Two light points controlled by one 6 amp. Modular switch.	Nos	25		
c	One call bell point with ceiling rose/ 6amp. 3 pin socket controlled by one 6 amp. Push Modular switch. With call bell	Nos	1		
d	Celing fan point with one nos 6 amp switch and 2 module electronic regulator including wiring & ceiling rose	Nos.	10		
e	One 5 pin socket controlled by one 6 amp. Modular switch complete assembly includes plate box etc. on same light switchboard	Nos	5		
<b>2</b>	<b>6 AMP. POINTS ON SEPARATE BOARD :</b>				
a	Same as serial no 1 but using 2*2.5 + 1*2.5 Sqmm Copper Conductor FRLS wires from DB to first 6A, 5 Pin modular socket controlled by one 6A switch and looped to the nearest second point with same 2*2.5 + 1*2.5 Sqmm copper conductor wires FRLS insulated 1100V grade (max 3 points per circuit).				

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i)	Primary Point	Nos	12		
ii)	Secondary Point looped	Nos	7		
<b>3</b>	<b>Power Wiring (6 / 16 AMP. POWER POINTS)</b>				
	Same as serial no.1, but wiring for 16 Amp, 6-pin sockets by using 2*4 sq.mm. PVC insulated 1100 V grade copper conductor wire with independent 1* 4.0 sq.mm earth wire from D.B. to first point 1st socket and 1st to 2nd, socket with 2*2.5 sq.mm. and 1*2.5 earth wire including providing and fixing of 16 Amp, 6 –pin socket with 16 Amp. Switch. (Modular type switch/ socket/ plate etc. complete assembly) max 2 points per circuit.				
i)	Primary Point	Nos	14		
ii)	Secondary Point looped	Nos	7		
<b>4</b>	<b>AC/Geyser Point (Single Phase)</b>				
	Same as serial no.1, but wiring for A/C socket by using 2*4 sq.mm. PVC insulated 1100 V grade copper conductor wire and earthing with 1*4.0 sq.mm. PVC insulated 1100 V grade copper conductor wire with modular type AC box(tiny trip type) with socket complete in all respects controlled by 25/32 A SP MCB to be provided near indoor unit. The point starts from DB to stabilizer to the point near the indoor unit including top.	Nos	6		
<b>5</b>	<b>SPECIAL POINTS : ( For Computers )</b>				
	Wiring with 2x2.5 sq.mm. + 1x2.5 sq.mm. PVC insulated 1100 V grade multi stranded copper conductor wires in 2 mm thick PVC conduit from UPS DB to computer point. Each point to have 3 nos. 6 amps. 5 pin modular type sockets, one 6 amps modular switch with all accessories, inner/ outer plates, metal box etc. and to be fixed on wooden partitions/ by grouting on wall etc. as per requirement at site. The switch should be fixed above the top of counter with indicator and sockets under the counter b) Same as above but looped from the above 1st point to 2nd , point and 2nd point to 3rd point. (Maximum 3 points in a circuit)				
i)	Primary Point	Nos	11		
ii)	Secondary Point looped	Nos	7		
<b>(B)</b>	<b>CONDUITING FOR TELEPHONE, COMPUTER &amp; CONDUITING, WIRING FOR T.V. SYSTEM.</b>				
<b>6</b>	<b>TELEPHONE POINT</b>				
a	Wiring for VOICE from Jack Panel in data rack to computer workstation with Cat-6 voice cable in PVC conduits of size 20/ 25 mm including providing ferrules at both ends and termination at both ends including providing & fixing frame for Cat-6 with shutter, RJ 45 outlet, faceplate and mounting box complete of modular type. This work includes supply and laying of CAT-6 cable in PVC conduits throughout the length, from the I/O hub to the point.	Nos	14		
	Supplying, laying, effecting terminations, testing and commissioning of 0.51 mm dia Cu. Conductor, twisted, colour coded with polythene capor barrier, telephone cables in the existing tray or in conduit including providing &fixing conduit pipe or cable tray as required from building tag block to the floor as required.				
b	Supplying & fixing 20 pair krone tag block with enclosure.	Nos	1		
c	P/L 10 Pair of PVC insulated PVC sheathed multi core jelly filled armored telephone.	Mtr	50		

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<b>7</b>	<b>COMPUTER NETWORKING</b>				
a	Wiring for computer networking from Jack Panel in data rack to computer workstation with Cat-6 computer cable in PVC conduits of size 20/ 25 mm including providing ferrules at both ends and termination at both ends including providing & fixing frame for Cat-6 with shutter, RJ 45 outlet, faceplate and mounting box complete of modular type. This work includes supply and laying of CAT-6 cable in PVC conduits throughout the length, from the I/O hub to the point.	Nos	27		
b	Supplying and fixing 9 U (Rack with glass door, opening in the front power panel 1 (horizontal), cable manager 1 lock & key).	Nos	1		
c	Supply, Installation, Testing & Commissioning of 16 port Jack Panel.	Nos	2		
d	Providing and fixing of flowing factory fabricated Patch cords. (DBPS Mounting Cord) (UTP/CAT 6 complete with connector on both side.)				
i)	Supplying and fixing Patch Cord-2 Meter- (DBPS Mounting Cord)	Nos.	27		
ii)	Supplying and fixing Patch Cord-1 Meter-	Nos	27		
<b>8</b>	<b>TV Point</b>				
a	Supply and fixing of 1.6 mm thick G.I. Box along with RG 6 T.V Co axial socket with Cover Plate.	Nos	1		
b	Supply, drawing, connecting, testing and commissioning of T.V Coaxial cable RG 6 in existing conduit.	R.Mtr	15		
<b>(C)</b>	<b>CABLES AND DISTRIBUTION BOARDS</b>				
<b>9</b>	<b>CABLES , MAINS &amp; SUBMAINS</b>				
	Supplying all materials and laying/ pulling 1100 volts grade PVC insulated copper conductor wires (FRLS) in MS conduit with all fixing accessories after cutting the floor, wall and the like etc. and replastering the floor level to original. Conduit must be 30 mm below the floor finish level.				
a	1 X 10 sq mm Cu wire for earthing.	Mtr	15		
b	Supplying, laying, testing & commissioning of 4 C X 10 sq.mm. at 1100 volts grade PVC insulated copper conductor armoured cable with 10 gauge earth copper wire including cables end termination using appropriate Lugs, Glands, termination accessories, Clamps etc. as required as per specification from main board to UPS Room	Mtr	25		
c	Supplying, laying, testing & commissioning of 4 C X 16 sq.mm. at 1100 volts grade PVC insulated aluminum conductor armoured cable with 10 gauge earth copper wire including cables end termination using appropriate Lugs, Glands, termination accessories, Clamps etc. as required as per specification (Light DB).	Mtr	18		
d	Supplying, laying, testing & commissioning of 4 C X 25 sq.mm. at 1100 volts grade PVC insulated aluminum conductor armoured cable with 10 gauge earth copper wire including cables end termination using appropriate Lugs, Glands, termination accessories, Clamps etc. as required as per specification (Power DB, AC DB).	Mtr	15		
e	Supplying, laying, testing & commissioning of 4 C x 50 sq.mm. at 1100 volts grade PVC insulated aluminum conductor armoured cable with 10 gauge earth copper wire including cables end termination using appropriate Lugs, Glands, termination accessories, Clamps etc. as required as per specification (Mains).	Mtr	20		
<b>10</b>	<b>DISTRIBUTION BOARDS</b>				

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	<b>Note:-The Panel shall be approved by The Bank Authority before Placing the Panel order, otherwise it will not considered</b>				
	Supplying, installing, testing & commissioning of surface/recessed mountings, Double door 415 volts TPN MCB distribution board of steel steel, 1.6mm thick dust phosphatized and painted, inclusive of 100 amps, tinned copper busbars, earthbar, common neutral link, din bar for mounting of MCB's detachable gland / knock out plate & with built in loose wire boxl, 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 upto the terminal connectors/ neutral link and ready for installation of following ways as required.				
	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 UPS DB'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.				
	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.				
	UPS DB's shall have a dedicated Earthing link fixed on insulated supports, which will be in addition to body earth link.				
	All internal inter 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.				
a	<b>6-way TPN DB (LIGHT DB)</b>	No.	3		
	Incomer:-				
	1 No. 40 Amp TPN (10 KA) MCB with 40 A DP RCCB (100 MA) each phase				
	Outgoing:-				
	10-12 Nos.6/10/25 Amp (10 KA) SP MCB				
b	<b>4-way TPN DB ( POWER DB)</b>	No.	2		
	Incomer:-				
	1 No. 63 Amp TPN (10 KA) MCB with 40 A DP RCCB (100 MA) each phase				
	Outgoing:-				
	12-14 Nos.6/10/25 Amp (10 KA) SP MCB				
c	<b>4-way V-TPN DB (AC )</b>	No.	2		
	Incomer:-				
	1 No. 80 Amp 4 Pole (16 KA) MCCB				
	Outgoing:-				
	4 No. 40 Amp (16 KA) TP MCB				
	3Nos.10/16/25/32 Amp (10 KA) SP MCB				
d	<b>4-way TPN DB UPS ROOM</b>	No.	1		
	Incomer:-				
	1 No. 40 Amp TPN (10 KA) MCB with 40 A DP RCCB (100 MA) each phase				
	Outgoing:-				

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	10 -12Nos. 6/10/16/25/32 Amp (10 KA) SP MCB, For Lights, Power & spare, UPS etc				
e	4-way SPN DB with 2 No 40A (10KA) DP MCB (For UPS Input)	No.	2		
<b>(D) LIGHT FITTINGS, FANS, CALL BELL</b>					
<b>11 LIGHT FITTINGS &amp; ACCESSORIES</b>					
	Supplying, installation with hanging support, testing and commissioning of following light fixtures with electronic Ballasts, Tubes, lamps, all fixing materials including connecting wires etc. all complete as per the directions of Engineer-in-charge (All LED Light Fixures should be covered with minimum 3 Years onsite replacement warranty)				
a	FULL GLOW 2 X 2 LED 36 W slim Smart Panel of make As specified in tender document or approved by SBI/Architect.	Nos	22		
b	Supplying, fixing, testing and commissioning of 15 W LED commercial type RECESSED down lighter of make As specified in tender document or approved by SBI/Architect.	Nos	21		
c	Supplying, fixing, testing and commissioning of 15 W LED commercial type SURFACE down lighter of make As specified in tender document or approved by SBI/Architect.	Nos	2		
d	Supplying, fixing, testing and commissioning of 3 W LED commercial type spot down lighter of make As specified in tender document or approved by SBI/Architect.	Nos	3		
e	LED 18 watt Tube Light 1200mm with all accessories.make As specified in tender document or approved by bank	Nos	13		
f	LED 9 watt Tube Light 600mm with all accessories.make As specified in tender document or approved by bank	Nos	3		
g	LED Strip for cove lighting 15 W per 5 M with driver and necessary installation fittings Led strip light (5 mtr.) make as specified in tender document or approved by SBI/Architect.	Mtr	15		
h	Supply, installation, testing and commissioning of following fans with all fixing materials like white Polycarbonate 2 mm Hylem sheet cover, down rods, fan box as required etc. all complete as per the directions of Engineer-in-charge				
i)	ceiling fan 1200mm dia	Nos	10		
ii)	Oscillating wall fan (Metallic Body) Sweep 400/450 mm , RPM 1300	Nos	3		
i	EXHAUST FAN:- Single phase, 300mm sweep, 900 rpm, metallic exhaust fan of the following single phase Exhaust fan continuously rated, capacitor start and run type, totally enclosed and ruggedly built, pre lubricated double ball bearing, copper wounded, A & E class insulation, dynamically balanced, below 40 db sound level etc, front cover with grill/gravity louver for protection purpose with 12 mm plywood complete in all respect make as under: CG/USHA/ ORIENT/HAVELLS/ALMONARD/ALSTOM	Nos	2		
j	CALL BELL: Electronic Bell with battery backup, simple ding-dong type, each unit to have a different sound.	Nos	1		

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<b>(E) EARTHING, MAIN PANEL, METER BOARD</b>					
<b>12</b>	<b>EARTHING SYSTEM</b>				
a	Supply, Installation, Testing and Commissioning of Maintenance Free Earthing system made up of copper-bonded rod of 10 feet length, 23 mm dia. (Minimum copper bonding shall be 0.25mm) along with Rod-to-Conductor connectors, Earth enhancement material, Pit Cover and other accessories as required and as per specification and other applicable codes (include chamber for earthing, Earthing certificate to be submitted along with the bill).	Nos	2		
b	Supply, Installation, Testing and Commissioning of Maintenance Free Earthing system made up of GI rod of 10 feet length, 17.2 mm dia. along with Rod-to-Conductor connectors, Earth enhancement material, Pit Cover and other accessories as required and as per specification and other applicable codes (include chamber for earthing, Earthing certificate to be submitted along with the bill).	Nos	1		
c	Providing and fixing of Copper/ GI strips in surface or in recess for loop earthing etc. as required.				
i)	Copper Strip 25 mm x 3 mm with proper clamps	Mtr.	10		
ii)	G.I.Strip 25 X 5 mm	Mtr.	30		
iii)	Providing and fixing 2 X 8 SWG dia. Cu earth wire in PVC conduit on surface or in recess for loop earthing along with the existing surface/ recess cable as required. <b>Dedicated Earthing for UPS output DB only</b>	Mtr.	30		
<b>13</b>	<b>MAIN PANEL AND METER BOARD</b>				
	Designing, fabrication, supply, installation, testing and commissionings of front operated cubicle type compartmentalised, front access, free standing on 75MM "I" MS channel, dust and vermin proof (IP 42 degree protection) panel suitable for use at 415V, 3 phase, 4-wire 50Hz system suitable for fault level of required value symmetrical at 415V fabricated from 2mm thick CRCA MS sheets with hinged, gasketted (Metal based neoprene) locable doors having structural reinforcement including 3mm thick gland plates on top and bottom, lifting hooks, GI earth strip of required size with 2 nos earth terminals, 2 nos 230V AC operated 250mm X 250mm size axial fans for exhaust of heat with On-Off toggle switches including 2 coated primer and 2 power coated paint finish of approved shade over metal surface cleaned and treated with seven tank process complete with interconnections etc as per specifications as required.main panel board of approved make (KRYPTON POWER CONTROLS/NEPTUNE/TRICOLITE/AMPTECH Or should be CPRI Approved, Type of Approval as instructed by the SBI/Architect)as per the following specifications,should be CPRI Approved.				
	All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The busbars insulation shall be withheat shrinkable sleeves SMC/ DMC shrouds and busbar supports shall be used. Padlocking facility shall be provided on all outgoing feeders doors and switch handles shall be locable in OFF position.				
	Suitable arrangement shall be made for termination of multiple incoming cables.				
	All kA values indicated shall be Ics breaking capacity				

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I.No.	Description of items	Unit	Qty	in INR	
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	GA drawings shall be got approved by SBI				
a	Fabrication, supply, installation, testing and commissionings of cubicle type floor/wall mounted L.T. panel made out of 2 mm thick CRCA sheet including connection,inter-connection alongwith 4 strip aluminium busbar as per CPWD specifications,(Part IV-Sub-station) etc. as required.(Meter Board)				
	<b>Incoming :-</b>				
	i) 1no. 125 Amp 4P MCCB (25 KA) thermal over current, instantaneous, Short circuit realease,Earth fault.				
	ii) Busbar :-200 Amps 4P aluminum conductor bus bar (BPTM type Heat-shrinkable busbar insulation) supported by DMC / FRP insulators.				
	Space shall be provide for the BSES Meter				
	Meter board shall be lockable.				
	Complete panel described as above.				
b.	Floor panel shall consists of : -				
	<b>INCOMER</b>				
	1no. 125 Amp 4P On Load Change over switch with 1 No. 125 Amps,TPN MCCB (25 KA) with extendible rotary handle each thermal over current, instantaneous, Short circuit realease,Earth fault.				
	<b>BUSBARS</b>				
	160 amps TPN pole busbar chamber of suitable length with copper busbars. All busbars and interconnections shall be of suitable size copper strips.				
	<b>INDICATING PANEL</b>				
	Digital flush type class-1.0 accuracy multifunction meter showing V, A, PF etc. with 3 Nos. current transformers of 100/5A ratio, 10 VA Class-1.0 metering. - 1 sets				
	Red/Green/Amber ON/OFF/TRIP indicating lamps with 2A SP MCB backup protection.				
	1 set of three phase indicating lamps along with 2A SP MCB backup protection.				
	Restricted Earth fault relay with 3 Nos. current transformers of 160/5 ratio, 15 VA Class 5P 10 (Numeric Relay not required.)				
	Undervoltage, Overvoltage & phase reversal relay for persisted voltage of 105-180% & 20-95% of rated voltage. (Numeric Relay not required.)				
	<b>OUTGOINGS:-</b>				
	2 Nos 63A TPN MCCB (16 kA) terminals suitable to receive cable on one side and wire connection to Bus bars. For capacitor Bank AND AC VTPN.				
	2 Nos 63A TPN MCB (10 kA) terminals suitable to receive cable on one side and wire connection to Bus bars. (For PDB,UPS)				
	1 Nos 40A TPN MCB (10 kA) terminals suitable to receive cable on one side and wire connection to Bus bars. (For LDB )				
	2 Nos 40A DP MCB (10 kA) terminals suitable to receive cable on one side and wire connection to Bus bars.				
	The electrical panel as described above and specifications complete.	Set	1		

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c	Supplying, installation, testing & commissioning of 12.5 KVAR, APFC Panel autooperation and power factor should be nearing unity complete as required including all contactors, relays, inducting units etc. as required at site". Capacitor make: L&T/ ABB/ Siemens/ Neptune	Set	1		
d	Providing and fixing of Kit Kat Rewirable Porcelian fuse carrier & base with wooden frame of 400 amp/415 Volt near meter box	Set	1		
<b>TOTAL OF ELECTRICAL WORKS</b>				<b>Rs.</b>	

**IN WORDS RS.**