N.O.W. - ELECTRICAL WORKS OF STATE BANK OF INDIA, MODEL TOWN BRANCH AT PANIPAT

BILL OF QUANTITIES (ELECTRICAL INSTALLATION)

S. No.	Item	Qty	Units	Rate	Amount
1	**SUB HEAD 1 (COMPUTER POINTS AND DISTRIBUTION)**				
1.1	Supply all materials, receiving, storing, handling, fixing and laying 3 x 2.5 sq.mm PVC insulated copper conductor armoured cable and fixing of cable on wall with suitable size of clamps/saddles or laid in floor or recessed wall including cutting of floor/wall for computer points with suitable size GI Box with modular plate and cover in front including providing and fixing 3 no. 5 amp 5 pin modular sockets controlled by 1 no. 5 Amp switch with indicator (**to be provided above the table top in partition**) connection end terminations with suitable size of glands etc. complete as required. **(Only two points can be connected in series with single cable). (Make: Anchor/Crabtree/North West/ Legrand / L& T / GoldMetal/ REO)**	22.00	each		
	4 points for BM Cabin, 2 points per Manager Seat, 2 point per Counter , 2 per N/W Rack as per the drawing provided.				
1.2	As per item 1.1 above but with 2 no. 16 amp 5 pin modular sockets controlled by 1 no. 16 amp modular switch and 6 amp indicator Lamp including the cover plate.	3.00	each		
	3 Points for ATM in E- Lobby				
2	As per item 1 above but with 1 no. 5 amp 5 pin modular sockets controlled by 1 no. 5 amp modular switch including the cover plate. **(For T.V on Pillars/ Machines /Lounge)**	3.00	each		
3	Providing and fixing, testing and commissioning of Heavy Duty modular air-conditioning plug & socket arrangement**(Make: Anchor/Crabtree/North West/ Legrand / L& T / GoldMetal/ REO)**				
3.1	25 amp air-conditioning point modular type socket **{ to be fixed 1.5 foot below false ceiling }** with 25 amp DPMCB **C SERIES { to be fixed at Normal Height }.**	7.00	each		
4	Supply, installation, testing and commissioning of following capacity 3 pin metal clad industrial type plug and socket arrangement with plug top, cap and chain controlled by under noted capacity: (**Make: Havells/Standard/ Hager/Legrand/Lauritz Knudsen / Indoasian)**				
4.1	32 Amp Socket with 32 Amp. DP MCB "C" Series for A.Cs **(for 2.0 TR Cassette AC's)**	2.00			
	As per the Plan provided by the Architect for Cassette A.C.				
5	**Point Wiring**				
5.1	Wiring for light point/ ceiling fan point/ exhaust fan point with 2 x 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit ISI Mark, with 6 Amp modular switch,modular plate, suitable GI junction & switch boxes & clip and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required**. (Wires Make: Havells / RR Kable / KEI/ Finolex / Polycab) (Switches Make: Anchor/Crabtree/North West/ Legrand / L& T / GoldMetal/ REO)**				
a)	Single 6 Amp Switch controlling 1 light point for T-5, exhaust Fans , Ceiling fan and other separate room supply only	28.00	no.		
b)	Single 6 Amp Switch controlling 4 no. LED downlight / 2 no. 2'- 0"x 2'-0" 36 watt light fittings	60.00	no.		
c)	Single 6 Amp Socket controlling by 5 Amp Modular switch in switch boards etc complete as required	12.00	no.		
6	**Light Duty RAW Point :**				
a)	Supply all material, storing, handling, fixing in suitable size of GI/PVC box including providing 1 no. 6 amp socket controlled by 5 Amp modular type switch with modular cover plate etc complete as required including 2 X 1.5 sq. mm FRLS copper wire + 1-1.5 sq.mm earth wire in dia 2 mm in thickness ISI Mark PVC pipe. **(Switches Make: Anchor/Crabtree/North-West/ Legrand/ L& T / GoldMetal/REO) (Wires Make: Havells/ RR Kable / KEI /Finolex / Polycab) (Switch, Socket to be fixed above the Table Top in the Partition) (one point per Seat)**	8.00	no.		
7	**Extension of wall fans / points:**				
a)	Extension as per item 5.1 of points with 2 x l.5 sq.mm. PVC insulated copper conductor FRLS cable in suitable dia MS conduit in recess conduit wiring system for wall fan points with modular switches of 6 amp **{to be fixed at Normal Height}** and 5 amp 5 pin modular sockets **{ to be fixed 1.5 to 2.0 foot below false ceiling}** as per requirement and filling chassis etc complete as reqd.	12.00	no.		
8	**Circuit Wiring:**				
a)	Circuit wiring from the MCB/MCCB from the Distribution Board to the Switch Board with 2 x 2.5 sq.mm + 1-1.5 sq.mm copper conductor (FRLS) in PVC Conduit concealed/open and making good the damaged surfaces as per direction of the Engineer-in-charge. including the cost of the PVC conduit 2mm thick. At least **9 points of Point Wiring shall required to be connected with single circuit. (Wires Make: Havells / RR Kable / KEI/ Finolex / Polycab)**	12.00	Each		

S. No.	Item	Qty	Units	Rate	Amount
9	**Heavy Duty Raw Power Point :**				
	Supply all material, storing, handling, fixing of **Raw Power points** in suitable size of GI/PVC box including providing 1 no. 15 amps 6 pin modular power sockets controlled by 1 no 15 A modular type switch and indicator **(Switch with Indicator to be fixed above the table top in partition)** with modular cover plate etc complete as required including 2X2.5 sq. mm FRLS copper wire + 1-1.5 sq.mm earth wire in dia 2 mm in thickness ISI Mark PVC pipe. **(Switches Make: Anchor/Crabtree/North-West/ Legrand/ L& T / GoldMetal / REO) (Wires (Make: Havells/ RR Kable / KEI /Finolex / Polycab) {Two points to be provided per circuit} .**	12.00	each		
	2 points for BM Cabin, 1 point per Counter, 2 for Pantry as per the drawing provided.				
	Maximum 3 Circuits of (Phase Nuetral Earth) should run through single PVC Pipe Conduit.				
10	Providing & laying following sizes of PVC insulated copper conductor cable of 1100 V in flexible/PVC conduit with accessories such as glands. bends etc.(as per requirement) including making necessary Inter connection etc complete as reqd.				
a)	2 x 6 sq.mm with 1 no. suitable PVC insulated earth wire	20.00	mtr.		
11	Supply Installation, Testing & Commissioning of factory fabricated Double Door IP 43 distribution board rust inhibited, powder coated sheet fabricated comprising of incoming & outgoing isolator & MCB's neutral link or neutral bus, top and bottom detachable entry earthing bolts Interconnection and grouting bolts etc complete as require as per details below:- (**Make: Havells/Standard/ Hager/Legrand/Lauritz Knudsen / Indoasian)**				
a)	12 way MCBDB comprising of 1 no. 63 amp DPMCB "C"Series and 10 no. 6/10amp SPMCB's "C" SERIES. **(for the UPS points each DB to be connected to 12 UPS points i.e only two points shall be connected with one MCB)**	1.00	each		
b)	8 way MCBDB comprising of 1 no. 63 amp DPMCB "C"Series and 6 no. 6/10amp SPMCB's "C" SERIES. **(for the UPS points each DB to be connected to 12 UPS points i.e only two points shall be connected with one MCB)**	1.00	each		
c)	6 way MCBDB comprising of 1 no. 32 amp DPMCB "C"Series and 4 no. 6/10amp SPMCB's "C" SERIES. **(for the UPS points each DB to be connected to 8 UPS points i.e only two points shall be connected with one MCB) (UPS O/P ATM)**	1.00	each		
d)	4 way TPNDB comprising of 1 no. 63 Ampere TPN MCB "C" Series and 6 no. 32 amp DPMCB **(for Power Points & Split A.C on Main Panel). DPMCB must be of C Series.**	1.00	each		
e)	4 way TPNDB comprising of 1 no. 63 Ampere TPN MCB "C" Series and 3 no. 32 amp DPMCB "C" Series and 6 no.16 amp SPMCB "C" Series. **(for A.Cs and Power Points on Main Panel & ATM Supply).**	2.00	each		
f)	4 way TPNDB comprising of 1 no. 63 Ampere TPN MCB "C" Series with 30 mA ELCB and 12 nos. 6/10 amp SPMCB "C" Series. **(For Light Point Circuits).**	1.00	each		
g)	4 way DB comprising of 1 no. 100 amp 4 pole Isolator **(for UPS I/C Branch)**	1.00	each		
h)	4 way DB comprising of 2 no. 32 amp DPMCB "C " Series .**(UPS O/P Branch)**	2.00	each		
12	Supply, fixing and testing of following 3 pin metal clad industrial type plug & socket arrangement with plug top cap & chain controlled by 1 No. MCBof following Ratings. (**Make: Havells/Standard/ Hager/Legrand/Lauritz Knudsen / Indoasian)**				
a)	20/25 amp Socket with 20/25 amp SPMCB "C" Series **{ UPS O/G Branch & 2 for UPS ATM }**	6.00	no.		
b)	32 amp Socket with 32 amp SPMCB "C" Series **{ UPS I/C Branch }**	3.00	no.		
13	Providing, fixing, testing and commissioning of 15 Amp Power Point modular type socket with 25 amp DPMCB "C" SERIES along with Plug or the rooms so that the supply is connected only when the plug is inserted in the socket outside the rooms for fire safety. {**1 each for Record, Cash , Locker Room** }**(Make: Anchor/Crabtree/North West/ Legrand / L& T / GoldMetal/ REO)**	3.00	no.		
14	Providing & fixing suitable size of MS box fabricated with 16 S.W.G M.S. sheet either In recess wall or on surface to accommodate dedicated earth from earth electrode and further distribution of earth to computer points including providing 5mm backlite sheet on base connector strip and painting of box etc complete as required	1.00	job		
	TOTAL SUB-HEAD -1				
	SUB HEAD 2 (PANELS & CABLES)				
1	Providing & fixing 3 No. 200 amp kitkats (fuse carrier & base) with 1 no. neutral link on suitable size of backalite sheet of thickness not less than 6 mm etc. complete as reqd.	1.00	job		
	In Panel for All MCCBs connected the interconnections must be with solid Bus Bar only. (**Make: Havells/Standard/ Hager/Legrand/Lauritz Knudsen / Indoasian)**				
	Main Panel				
2.1	Supply at site installation testing and commissioning of panel fabricated with 16 G MS sheet. The panel shall be free standing type totally enclosed dust and vermin proof construction with rubber gaskets. The floor mounting panel shall have ISMC mounting channels, GI earth busbar, busbar chamber ,cable alleys interconnection with solid bar/PVC insulated copper conductor as per				

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	requirement, and suitable supports of busbars. The panel shall be painted with two coats of enamel paint (Grey shade) over primer and shall also be provided with designation of Incoming and outgoing feeder as details below:				
	INCOMING				
a)	1 no MCCB Breaking Capacity **36 KA 200 Amp 4P**, Model-DU250 Series, L&T make				
b)	1 no 0 -500V digital Voltmeter in separate compartment and digital Amp meter and one set of CTs (3 Nos) with CT Ratio 250/5 A with LED type phase Indication Lamps with protection fuses in a separate compartment				
c)	1 set of 300 Amps capacity 4 strips Aluminium bus bars chamber				
	OUTGOING	1.00	set		
a)	1 no. MCCB Breaking Capacity 25 KA 100 Amp 3P and 1 no. MCCB Breaking Capacity 25 KA 160 Amp 3 P with separate neutral Link, DU Series, **L&T make**				
	1 for A.C D.B				
	Emergency Panel				
2.2	Supply at site installation testing and commissioning of panel fabricated with 16 G MS sheet. The panel shall be free standing type totally enclosed dust and vermin proof construction with rubber gaskets. The floor mounting panel shall have ISMC mounting channels, GI earth busbar, busbar chamber ,cable alleys interconnection with solid bar/PVC insulated copper conductor as per requirement, and suitable supports of busbars. The panel shall be painted with two coats of enamel paint (Grey shade) over primer and shall also be provided with designation of Incoming and outgoing feeder as details below:				
	INCOMING				
a)	1 no MCCB Breaking Capacity **36 KA 160 Amp 4P**, Model-DU250 Series, L&T make				
b)	1 no 0 -500V digital Voltmeter in separate compartment and digital Amp meter and one set of CTs (3 Nos) with CT Ratio 250/5 A with LED type phase Indication Lamps with protection fuses in a separate compartment				
c)	1 set of 300 Amps capacity 4 strips Aluminium bus bars chamber				
	OUTGOING				
a)	4 no. of MCCB Breaking Capacity 10 KA 100 Amp 3P and 2 no. Of MCCB Breaking Capacity 10 KA 63 Amp 3P with separate neutral Link, **L&T make.**	1.00	set		
	1 outgoing for UPS , 2 for A.C / Raw Power ,1 for Light D.B, 1 for A.T.M				
3	Supply, installation, testing & commissioning of PVC insulated PVC sheathed armoured cable of 1100 V (IS-1554 part I) and fixing of cable on wall with suitable size of clamps/ saddles or laid in floor/recess wall including cutting of floor/wall and making good the damages etc. complete as reed. of followinq sizes:- **(Make: Havells/ RR Kable / KEI/Finolex/Polycab)**				
a)	3.5 x 50 sq.mm. aluminium conductor with 2 no. 8 S.WG. G.1. wire (**from the Main Panel to COS , from Genset to COS and from COS to Essential Panels)**	150.00	per mtr.		
b)	3.5 x 25 sq.mm. aluminium conductor with 2 no. 8 S.W.G G.1. wire **(from Main to the AC DB, UPS I/C, Power D.B)**	200.00	per mtr.		
c)	3 x 6 sq.mm copper conductor **(for UPS DB)**	150.00	per mtr.		
d)	4 x 10 sq.mm. aluminium conductor with 1 no. 8 S.W.G. G.1. wire **(from the Essential panel to the Lighting DB)**	50.00	per mtr.		
e)	3 x 2.5 sq.mm. copper conductor **(for the Air-conditioning wiring from 4 way TPNDB to A.C Socket)**	240.00	per mtr.		
4	End termination with Brass compression glands including providing lugs/ferruls and making necessary connections etc. complete as reqd. of following sizes:-				
a)	3.5 x 50 sq.mm. aluminium conductor	6.00	each		
b)	3.5 X 25 sq.mm aluminum conductor	12.00	each		
c)	3 X 6 sq. mm Copper conductor	6.00	each		
d)	4 X 10 sq. mm aluminium conductor	3.00	each		
e)	3 X 2.5 sq. mm Copper conductor	24.00	each		
5	Providing & fixing suitable size of angle iron frame suitable for installation on wall/floor including grouting of frame &painting etc. complete as reqd. comprising of the following:(**Make: Havells/Standard/ Hager/Legrand/Lauritz Knudsen / Indoasian/HPL)**				
a)	1 NO.4 pole 200 amp capacity changeover switch.	1.00	job		
6	Providing & fixing 16 S.W.G.M.S.sheet adaptor box, and also base frame for installation of M.C.B.D.B.s plug & socket arrangement and to cover cables in system room including painting	3.00	sq.mtr.		
	TOTAL SUB -HEAD 2				

S. No.	Item	Qty	Units	Rate	Amount
	SUB-HEAD 3 (EARTHING)				
1	Supply & fix copper plate earth station with 600x6000x3 mm thick copper plate including all accessories such as watering pipe & funnel and providing masonary enclosure at top with cover plate i/c excavation of pit supplying & filling of salt charcoal, refilling of pit etc complete as reqd as per IS 3043-1987. The voltage between neutral & earth must be below 1 volt. **(For the Branch UPS)**	1.00	set		
2	Supply & fix G.I. plate earth station with 600x600x6 mm thick G.I. plate including all accessories such as watering pipe & funnel and providing masonary enclosure at top with cover plate i/c excavation of pit, supplying & filling of charcoal, refilling of pit etc complete as reqd as per IS 3043-1987 **(for the neutral earthing from the point of neutral link beside the fuse connection and second for the body earthing connceted to bothe panel body and the ups base panel) [1st FOR NEUTRAL EARTHING and 2nd FOR BODY EARTHING]**	2.00	set		
	Chamber for the earthing shall be available at site without it the earthing cost shall not be paid for all the Earthings. You are also required to provide picture of earthing taken at the time of execution of the same.				
3	Supplying and laying 20 mm X 3 mm copper strip at 0.50 meter below ground as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc. as required	5.00	per mtr.		
4	Supplying, fixing & termination of 20 mm X 3 mm GI strip with earth station below ground level and on wall saddle etc complete as reqd.	10.00	per mtr.		
5	Providing & fixing 8 S.W.G Copper earth wire on surface or in recess for loop earthing etc. as required.	50.00	per mtr.		
6	Providing & fixing 8 S.W.G G.I. earth wire on surface or in recess for loop earthing etc. as required.	100.00	per mtr.		
7	Supply & laying following dia 2 mm in thickness PVC pipe under floor or in recessed walls from earth electrode to UPS room for computer dedicated earthing, for data cabling, electrical cabling etc. including providing 1 no. G.I. pull wire for data cabling making good the damages etc. wherever required.				
a)	25mm	100.00	per mtr.		
	TOTAL SUB-HEAD - 3				
	SUB HEAD 4 (NETWORKING)				
1	Wiring for computer networking starting from mounting rack with UTP CAT-6 cable in 2 mm thick 25mm dia ISI mark PVC conduit with accessories such as bends, junction boxes including providing and fixing I/O plates and SMB complete with all networking accessories etc complete as reqd.**(Make: D-LinK/MOLEX/AMP/COMMSCOPE).**	24.00	no.		
	2 points for BM Cabin, 2 points per Clerical/Officer, 2 point per Counter, 2 for ATM as per the drawing provided. Maximum 6 Data Cables can run in Single Conduit.				
2	Supply, installation, testing and commissioning of 24-port Patch Panel	1.00	no.		
3	Supply installation. testing and commissioning of mounted rack 12U height made of powder coated MS sheet including punching / laying networking wires complete .	1.00	no.		
	2 -24 Port Patch Panels must be fixed in one 12 U Rack				
4	Supply, fixing and commissioning of patch cable Cat-6 complete with 2 no. connectors etc. complete as reqd.				
a)	1m long	24.00	no.		
b)	2 m long	24.00	no.		
5	Wiring for telephone points with 0.6 mm dia 2 pair insulated annealed tinned electrolytic copper conductor in 2 mm thick 25 mm dia ISI marked PVC conduit complete with accessories such as bends, junction boxes etc. with suitable size of G.I. box modular plate and cover in front on surface or in recess including providing and fixing modular type telephone socket outlet and making necessary connections etc. complete as reqd. **(Make: D-link/KEI/Finolex / polycab)**	10.00	no.		
6	Supply, fixing and commissioning of cable Cat-6 complete with 2 no. connectors or as required etc. complete as reqd including upvc 19mm dia. pipe conduit of heavy duty.				
a)	50mm	30.00	mtr.		
7	Supply, fixing and commissioning of 20 pair tag Block Box i.e FRP/PVC/Metal junction box with KRONE disconnection module necessary tag for identification for the telephone points. (box and strips Krone make)	1.00	no.		
8	Providing , Laying, testing & commissioning of 20 pair telephone cable from outside govt. / bsnl DB to Rack for lease line, ISDN of **Make: Delton, finolex, polycab.**	30.00	per mtr.		
	TOTAL SUB -HEAD 4				

S. No.	Item	Qty	Units	Rate	Amount
	SUB-HEAD 5 (AIR CONDITIONING PIPING WORK)				
1	Supplying & Laying of following COPPER REFRIGERANT PIPING Thickness 22 SWG For Hi-wall Split AC complete with fittings Suction / Discharge line insulated with 12 mm SUPERLON / ARMAFLEX suction line. Multi-runs between Indoor & Outdoor units shall be considered as ONE length for the purpose of measurement. **Make- Totaline/Armacell**				
a)	1/4" + 1/2" Refrigerant Copper piping - For Hiwall Split AC's (1.0Tr / 1.5Tr)	120.00	per mtr.		
b)	5/8" + 3/8" Refrigerant Copper piping - For Hiwall Cassette AC's (2 Tr)	60.00	per mtr.		
2	Supply and laying following dia 3.38mm (confirming to ASTM D1785 standard) in thickness, heavy duty PVC pipe under floor or recessed in walls for AC drains, { To nearest To including bends, Tees etc as required complete in all respect **(Make: Diplast/Supreme)**	90.00	per mtr.		
3	Cutting of floor/wall for laying of refrigerant/drain pipe including making good the damages etc. Complete as required.	80.00	per mtr.		
4	Supplying & Laying of insulation with 13 mm thickness on the Drain Pipe for Cassette A.C in False Ceiling area Only.	30.00	per mtr.		
5	Electrical flexible cable of 4 x 2.5sq.mm FRLS Cu cable multi strand suitable for 2 Tr H.W Split / Cassette & 1.5 Tr H.W Split. Multi-runs between Indoor & Outdoor units shall be considered as ONE length for the purpose of measurement.**(Make: Havells/ RR Kable / KEI/Finolex/Polycab)**	250.00	per mtr.		
	TOTAL SUB -HEAD 5				
	SUB HEAD 6 (SUPPLY AND INSTALLATION OF FANS AND FIXTURES)				
1	SITC of 2"x2" Celing grid 33-36 watt LED panel fixtures with essential driver in false ceiling including making necessary arrangement for mounting the fixtures and connection with 2 x 1.5 sq.mm insulated copper cable from adjacent point in PVC flexible pipe etc Complete as reqd. **Make Philips cat. RC 380 B- LED-30-6500PSE OD WH or equivalent of Wipro / Crompton / Bajaj/Havells).**	32.00	no.		
2	SITC of 15 watt LED fixtures /dowlighters with essential driver in false ceiling including making necessary arrangement for mounting the fixtures and connection with 2 x 1.5 sq.mm insulated copper cable from adjacent point in PVC flexible pipe etc complete as reqd. **Make Phillips cat no. DN - 192 - 1000 or equivalent of Wipro / Crompton / Bajaj/Havells).**	80.00	no.		
3	SITC of 5 watt LED fixtures /dowlighters with essential driver in false ceiling including making necessary arrangement for mounting the fixtures and connection with 2 x 1.5 sq.mm insulated copper cable from adjacent point in PVC flexible pipe etc complete as reqd. **Make Phillips cat no. DN - 192 - 1000 or equivalent of Wipro / Crompton / Bajaj/Havells).**	16.00	no.		
4	SITC of 18 watt of T5 LED fixtures directly on ceiling / wall including making necessary connections with 2x1.5 sq.mm insulated copper cable conductor wire etc. complete as reqd **Make Phillips or equivalent of Wipro / Crompton/ Bajaj/Havells).**	10.00	no.		
5	Supply of 450 mm sweep Metal Body Crompton greaves (or equivalent) **SDX BLCK GOLD / SSTROM 2** wall fan etc. 1325 rpm High Flow Model with 2 Pin Plug complete as required. **(M/s equivalent of Crompton / Havells / Usha / Orient)**	8.00	no.		
6	LED Strip light **(5 watt / metre & 60 LED / metre)** for cove **(M/s Phillips /Crompton /Wipro / Bajaj/ Havells)** Complete in all respects with suitable drivers. **(Warm White).**	80.00	per mtr.		
7	SITC of 1200 mm, 32-35W BLDC Ceiling Fan complete as required with Regulator to be provide in the switch board. **(M/s Crompton High Breeze or equivalent of USHA / Crompton / Orient / Khaitan).**	3.00	no.		
8	SITC of 200 mm exhaust fans complete with self opening louvers / shutters including necessary frame etc, complete as reqd. **(M/s Crompton High Breeze or equivalent of USHA / Crompton / Orient / Khaitan)**	6.00	no.		
9	SITC of 30 watt LED Street light /Flood light with IP- 65/66 Waterproof outdoor Protection for lighting the front side of the branch (**M/s Crompton Cat No. LSTS-30-CDL or equivalent of Philips/Wipro/Bajaj/Havells) .**	2.00	no.		
	TOTAL SUB – HEAD 6				
	TOTAL SUB-HEAD-1				
	TOTAL SUB-HEAD-2				
	TOTAL SUB-HEAD-3				
	TOTAL SUB-HEAD-4				
	TOTAL SUB-HEAD-5				
	TOTAL SUB-HEAD-6				
	TOTAL SUB-HEAD 1-5 (A)				
	TOTAL SUB-HEAD - 6 (B)				
	TOTAL PART (A+B)				