

PUNJAB NATIONAL BANK - CLPC BRANCH, HALDWANI
ABSTRACT TENDER FOR ELECTRICAL WIRING, UPS CABLING,
DATA CABLING, FIRE FIGHTING, CCTV, A.C WORKS

ELECTRICAL WORKS:-

S. NO.	DSR NO.	Description	Unit	Qty.	Rate	Amount
A		SUB HEAD -1 CIRCUIT CUM POINT WIRING				
1		Wiring for the following light points including circuit mains with 1.5 sq.mm. PVC insulated FRLS copper conductor stranded flexible wires in concealed or surface mounted 25 mm dia PVC conduit with 6 amps single pole rockers operated flash mounted switch in 1.6 mm thick GI box and earthing with 1.5 sq.mm PVC insulated FRLS copper conductor stranded flexible wires, GI flexible down rod conduit etc as required at site.				
1.1	1.1.1	Primary points controlled by one 6 amps switch	Pts	210		
1.2		Two points controlled by one 6 amps switch	Pts	10		
1.3		Three points controlled by one 6 amps switch	Pts	8		
1.4		Wiring for the ceiling fan points including circuit mains with 2.5 sq.mm PVC insulated FRLS copper conductor stranded flexible wires & in concealed or surface mounted 25 mm dia PVC conduit including fan regulator, fan hook box etc with 6 amps single pole rocker operated flush mounted switch in 1.6 mm thick GI box and earthing with 2.5 sq.mm PVC insulated FRLS copper conductor stranded flexible wire.	Pts	4		
2	1.23	Supplying and fixing following piano type switch/ socket on the existing switch box/ cover including connection etc. as required.				
	1.23.1	5/6 amps switch	No	30		
	1.23.4	3 pin 5/6 A socket outlet	No	30		
	1.23.3	15/16 amps switch	No	15		
	1.23.5	6 pin 15/16 A socket outlet	No	15		
3		Wiring for light point as in item No. A-1 above controlled by SPMCB provided in the DB. (Cost of MCB not to be included here)				
3.1		Three points controlled by one MCB with 2.5 sqmm wire.	Pts	1		
3.2		Five points controlled by one MCB with 2.5 sqmm wire.	Pts	1		
		Six points controlled by one MCB with 2.5 sqmm wire.	Pts	1		
3.3		Nine points controlled by one MCB with 2.5 sqmm wire.	Pts	1		
4		Wiring for exhaust fan points with 2.5 sq.mm Insulated FRLS copper conductor stranded flexible wires in concealed or surface mounted 25mm dia PVC including 6 amps flush mounted switch at the normal switch level in 1.6 mm thick GI box and 6 amps 3 pin flush mounted socket outlet near exhaust fan and earthing with 2.5 sq.mm. PVC insulated FRLS copper conductor strande flexible wire.	Pts	4		
5		Supply, Instalation, Testing & Commissioning of following rating MCCB/MCB isolator with 1.6 mm thick CRCA sheet enclosure duly treated, painting etc as required at site.				
a.		32 amps TPN MCB isolator	Set.	RO		
b.		20 amps DP MCB isolator	Set.	10		

6		Wiring for following 250 volts single phase and neutral 6 amps switched socket outlet for lift shafts with 4 sq.mm PVC insulated FRLS copper conductor stranded flexible wires in concealed or surface mounted 25 mm dia PVC including 16 amps 3 pin switched socket in 1.2 mm thick GI boxes and earthing with 2.5 sq.mm PVC insulated FRLS copper conductor stranded flexible wire.				
6.1		6 amps switched socket outlet	Set.	20		
7		Wiring for following 250 volts single phase and neutral 16 amps switched socket outlet for lift shafts with 4 sq.mm PVC insulated FRLS copper conductor stranded flexible wires in concealed or surface mounted 25 mm dia PVC conduit including 16 amps 3 pin switched socket in 1.2 mm thick GI boxes and earthing with 2.5 sq.mm PVC insulated FRLS copper conductor stranded flexible wire.				
7.1		16 amps switched socket outlet	Set.	15		
8	1.14	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/recessed medium class PVC conduit as required.				
	1.14.1	a) 2 x 1.5 + 1 x 1.5 sq.mm. wire	RM	10		
	1.14.2	b) 2 x 2.5 + 1 x 2.5 sq.mm. wire	RM	15		
	1.14.3	c) 2 x 4 + 1 x 4 sq.mm. wire	RM	10		
9	1.21	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/ recess including cutting the wall and making good the same in case of recessed conduit as required				
	1.21.1	a) 20 mm dia	RM	20		
	1.21.2	a) 25 mm dia	RM	20		
	1.21.3	a) 32 mm dia	RM	20		

S. NO.	DSR NO.	Description	Unit	Qty.		
B		SUB HEAD- II: INSTALLATION LIGHTING FIXTURES, FITTING AND ACCESSORIES				
1		Supply, Installation, Testing & Commissioning of following lighting fixture complet with all accessoriess/ switchgears/ lamps etc as required				
a)		Recessed mountedl mounted Light fixture similar to Havells India Ltd make cat no. LHEDDZP7IL1E036- PLAN 2 X 2 PLR36 WLED857S or approved equal in quality and design as per approved list of make complete with 1 x 36 W lamp.	Each	16		
b)		Surface/ wall mounted Light fixture similar to Havells India Ltd make cat no. 2835/0.2W Bridgelux LED Lumiline or approved equal in quality and design as per approved list of make complete with 1 x 20 W lamp.	Each	15		
c)		Surface/ wall mounted Light fixture similar to Havells India Ltd make cat no. LHEBGTP7PZ1W010Integrate LR10 WLED857S or approved equal in quality and design as per approved list of make complete with 1 x 10 W lamp.	Each	20		
d)		Surface/ wall mounted Light fixture similar to Havells India Ltd make cat no. LHF0AHC1TZ1C040 Flooreine WL 1 LSE27 CRM or approved equal in quality and design as per approved list of make complete with 1 x 18 W lamp.	Each	6		
e)		Supply & Fixing of Ceiling Fan 1200 mm energy efficiency type with regulator.	Nos	15		
f)		Supply & Fixing of Wall Mounted Fan energy efficiency type with regulator.	Nos	4		
g)		Supply & Fixing of Exhaust Fan 150mm dia	Nos	4		
2	1.42	Installation, testing and commissioning of prewired, Led fitting/ compact fluorescent fitting of all types, with all accessories and tube etc. including supplying and fixing ball and socket arrangement, 2 no. down rods of 20 mm dia X 1.6 mm thick steel conduit upto 30 cm length, painting and wiring the down rods and connection with 1.5 sq mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	Each	15		

S. NO.	DSR NO.	Description	Unit	Qty.		
C		SUB HEAD HI: CABLES, MAINS, SUB MAINS AND CABLE TRAYS				
1		Supply, Installation, Testing and Commissioning of following XLPE insulated and PVC sheathed XLPE Power Cable of 1.1 kV grade copper conductor armoured cable of following sizes.				
a)		3 core, 6 sq.mm	RM	18		
b)		4 core, 25 sq.mm	RM	15		
c)		3 core, 4 sq.mm	RM	20		
2		Supplying and making End termination with brass double compression glands and copper lugs for following size of PVC insulated and PVC sheathed/XLPE aluminium/ copper conductor cable of 1.1 kV grade as required				
a)		3 core, 6 sq.mm	Set	8		
b)		4 core, 25 sq.mm	Set	4		
c)		3 core, 4 sq.mm	Set	5		
		<u>TOTAL</u>				

S. NO.	DSR NO.	Description	Unit	Qty.	Rate	Amount
D		SUB HEAD - IV: CONDUIT PANEL & SWITCHBOARDS (MDB)				
1		Desgn, Fabrication, Assemble, Wiring and SITC of front operated cubicle type compartmentalised as per form 3B, front access free standing, dust and vermin proof (IP 54 ingress protection) main switchboards suitable for use at 415 volts, 3 phase 4 wire 50 Hertz system suitable for fault level of required value symmetrical at 415 volts, fabricated from 2 mm thick CRCA MS sheets with hinged, gasketed (metal based neoprene) and lockable doors of 1.6 mm thick having structural reinforcement with suitable angle/ channel/ T/ flat sections including 3 mm thick gland plates on top and bottom and including lifting hooks and including powder coated paint finish of approved shade over metal surface cleaned and treated with Nine tank process complete with interconnections etc. as per specification as required and as below.				
		All Switchboards shall have provision for entry of cables from the top or bottom as required				
		All live accessible parts shall be shrouded and all equipments shall be finger touch proof. The Busbars insulation shall be with heat shrinkable sleeves. SMC/DMC shrouds and busbar supports shall be used. Padlocking facility shall be provided on all out going feeders doors and switch handles shall be lockable in off position.				
		Space heater with thermostate & internal lighting shall be provided in all panels.				
		GA drawings shall be got approved before fabrication.				
		All ACB/MCCB's /MCB/ Equipment shall be as per technical specifications.				
1		<u>Main LT Panel</u>				
		<u>Section - 1</u>				
A		<u>Incoming Air Circuit Breaker 'A'</u> <u>(For Transformer supply</u>				
		150 amps TPN manually operated fully drawout type MCCB with built in microprocessor based release unit for short circuit, over current and earth fault protection with adjustable setting as per specification and with following accessories				
i		Electronic energy meter with RS 485 port communication of accuracy class-I, with 3 Nos. 1600/5 amps 15 VA CTs to measure and display the following electrical quantites:				
a		Real Time				
b		Total active energy (KWH/MWH)				
c		Maximum demand (KVA/MVA) (KW/MW)				
d		Instantaneous power factor				
e		Current				
f		Voltage				
g		Frequency				
ii		Phase indicating light and shall be protected				

iii		Breaker ON/OFF/TRIP indicating lights with control MCB's. - 1 set				
iv		24 V DC Shunt trip coil. -1 set				
vi		Undervoltage relay with timer (27) -1 set				
vi		Over voltage relay with timer (59) - 1 set				
vii		3 Nos. 0-1600 / 5 amps CTR digital ammeter with 3 nos 1600 / 5 amps, 15 VA Class I CT's - 1 set				
viii		0-500 Volt digital voltmeter with selector switch and shall be protected by 2 amp TP MCB's -1 set				
ix		Auxiliary contacts required for necessary electro-mechanical interlocking of breakers.				
		Bus Bars				
		200 amps TPN (35 KA) AL bus bars with colour coded heat shrinkable insulating sleeves - 1 set				
		Outgoing				
i		100 amps TPN manually operated fully drawout type air circuit breaker with ON/OFF/TRIP indicating lamps with MCB's and over current/ short circuit thermal releases etc. - 1 No.				
ii		63 amps DP MCB manually operated fully drawout type air circuit breaker with ON/OFF/TRIP indicating lamps with MCB's and over current/ short circuit thermal releases etc. - 1 No.				
iii		40 amps DP MCB manually operated fully drawout type air circuit breaker with ON/OFF/TRIP indicating lamps with MCB's and over current/ short circuit thermal releases etc. - 1 No.				
iv		32 amps DP MCB manually operated fully drawout type air circuit breaker with ON/OFF/TRIP indicating lamps with MCB's and over current/ short circuit thermal releases etc. - 2 No.				
v		20 amps DP MCB manually operated fully drawout type air circuit breaker with ON/OFF/TRIP indicating lamps with MCB's and over current/ short circuit thermal releases etc. - 2 No.				
vi		20 amps DP MCB - 2 No.				
D		Notes:				
i		All outgoing feeders shall have suitable range Digital ammeter with selector switch, CTs and phase indicating light protected by 2 amps MCBs except capacitor feeders.				
ii		All breakers shall be electrically/ mechanically interlocked as per schematic				
iii		All outgoing shall be suitable for provision of shunt trip coil in future				
iv		All outgoing/ incoming feeder shall have the provision for internal lighting.				
v		CT's on R/Y phase for PFCR for each I/C feeder.				
vii		All incoming/ outgoing ACB/MCCB shall be suitable for minimum 35 KA (ICS) breaking capacity and as per the detailed specification				
viii		Space heater with thermostate shall be provided in the above panel.				
		Main LT panel described as above.	Set	1		
		<u>TOTAL</u>				

S. NO.	DSR NO.	Description	Unit	Qty.	Rate	Amount
E		SUB HEAD - V: STRUCTURED CABLING FOR TELEPHONE & COMPUTER SYSTEM				
A		Telephone System				
1		Supply, installation, testing and commissioning of Krone type Telephone tag Block with Krone connector and Enclosure of following sizes.				
		a. 10 pair TTB.	Nos	3		
		b. 20 pair TTB.	Nos	R/O		
2		Supply, installation, testing and commissioning of Category 5 Riser cable consisting of multiple core solid copper conductors of 24 AWG size insulated with expanded polyethylene covered with a PVC skin and inner shielding for grounding.				
		a. 10 pairs unarmoured riser cable	RM	30		
		b. 20 pairs unarmoured riser cable	RM	R/O		
3		Supply, installation, testing and commissioning of 4 pair Category 5 cable consisting of 24 AWG solid copper conductors and as per the specification. The cable shall have flexible jacket and ricord for easy stripability.	RM	200		
4		Supply, Installation, Testing & Commissioning of flush mounted outlets wired to T 568 A or B with a faceplate. The plastic shall be high impact, flame retardant, UL rated thermoplastic. Dust cover / Blank shall be provided to protect unused faceplate openings. Termination caps and plastic cover shall be provided to protect jack wiring. Quoted price shall be inclusive of 1.6 mm thick GI				
		a. Single outlet faceplate with RJ-11 jack	Nos	27		
		b. Duplex outlet faceplate with 2 Nos. RJ-11 jacks	Nos	R/O		

S. NO.	DSR NO.	Description	Unit	Qty.	Rate	Amount
B		COMPUTER SYSTEM :				
1		Supply & fixing of 11U rack, Exhaust fan modem tray, Cable manager 1 Nos & Power manager of 6 nos Indian standard plugs to be wall mounted inside the UPS room with necessary power cords, wall bracket and clamps to complete the work.		1		
2		Supply & fixing of 24 port cat-6 patch panel to be mounted inside the 9U rack with power cords and other necessary accessories	Set	1		
3		Supply, Installation, Testing & Commissioning of 4 pair Category 6 LAN cable in existing raceways including PVC conduit concealed or surface mounted, consisting of 24 AWG solid copper conductor and as per the specification. The cable shall have flexible jacket and ripcord for easy stripability.	RM	120		
4		Supply, Installation, Testing & Commissioning of Cat 6 UTP Jack with Strain relief and bend limiting boot, exceed TIA/EIA-568-C.2 and ISO/IEC 11801 standards for Category 6/class E component performance, color Yellow + Single Port face plate of size 3x3, Material should be ABS / UL94 V-0 with shutter of ABS UL94V-0 having spring shutter of steel, stainless. holder, Jack of ABS UL 94V-0, cover label of Acrylic UL94V-0 with GI/Cromated Box.				
		Single Outlet faceplate with RJ-45 jack	Nos.	25		
5		Supply, Installation, Testing & Commissioning of following category 6 mounting cord for connecting the outlets to the data station (computer /Printer etc.). It shall have male RJ 45 connector on one end and male RJ45 connector or open ended wire or a connector suitable for data outlet at the other end. it shall be a 8 conductor. 4 pair cord with each conductor of 24 AWG stranded wire 1.20 long.	Nos.	25		

S. NO.	DSR NO.	Description	Unit	Qty.	Rate	Amount
F		SUB HEAD -VI ADDRESSIBLE FIRE ALARM SYSTEM				
1		<p>SITC of UL/V ds/ LPCB approved 32 bit microprocessor based hot redundant Intelligent Addressable Fire Alarm Control panel with battery back up for 24 hours and 2 Zone. The panel shall consist of with minimum 160 characters LCD displays. The panel shall be networkable and expandable. The control panel, batteries, battery charger etc, shall be Vds /LPCB approved and per EN-54/NFPA standard. The panel should be modular, decentralized, functionality. It should have protocol printer, batteries. Panel should be able to record at least 1000 events history. Each loop should be capable with up to 1 km loop length. The panel shall be able to interface with PA system.</p> <p>(Bidder shall propose a different panel configuration to accommodate complete detector and devices as BOQ with 80% loading as per capacity of different as specified in make list)</p>	Set	1		
2		Supply, Installation, Testing and Commissioning of UL Listed Fm, Vds Approved Analog Duct detectors-Addressable Optical smoke detector in housing with sampling tube etc. The optical sensor element shall have multiple selectable sensitivity levels as per NFPA/EN54/UL/Vds from local housing not acceptable. Approval should be for the total unit, with all other accessories, complete with Cable lugs at ends, cable compression glands, cable tags and Ferruling.	Nos.	14		
3		Supplying, installation, testing and commissioning of addressable manual call point complete as required.	Nos.	1		
4		S/I/T/C/ of Addressable Loop Powered multitone sounder cum strobe with integrated short circuit isolator (in case short isolator is not inbuilt, the price of this item shall be inclusive of an independent short-circuit isolator along with each loop powered sounder)	Nos.	1		
5		Supply, Installation Testing and Commissioning of 2x1.5 sq.mm Cu armored FRLS cable necessary accessories and hardware.	Mtr.	20		
6		Supply installation of Response Indicator.	Nos.	2		
7	1.21	Supplying and fixing of following size of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
a.	1.21.1	20 mm dia	RM	15		
b.	1.21.2	25 mm dia	RM	35		

S. NO.	DSR NO.	Description	Unit	Qty.	Rate	Amount
G		SUB HEAD-VLL-IP BASED CTV SYSTEM				
1		Supply , Installation,Testing and Commissioning of IP(Network) fixed lens 2.8 mm, Dome Camera type, 1.3 megapixel,Progressive @ 25 fps, DWDR 72 db, 3D DNR, True Daynight, 1.01 lux color sensitivity, 0 lux with IR upto 10 mts, IP66, IK 08 rated, built in micro SD card slot of capacity 64 GB, with POE, motion detection along with privacy masking. The camera shall be UL, FCC certified Complete with mounting bracket and all necessary accessories, civil, electrical works and peripheral items, as required.	Nos.	5		
2		Supply , Installation,Testing and Commissioning of 2 megapixel IP(Network) PTZ camera with 30x optical zoom and 16x digital zoom, the camera shall have 1/2.8" progressive scan CMOS, with 1920x1080 resolution @25fps, the camera shall have DWDR,C46D DNR True Daynight 0.3 lux color sensitivity, 0 lux with IR upto 150mts, IP66 rated, Built in micro SD card slot of capacity along 64GB with POE, motion detection along with privacy masking The camera shall be UL. CE, FCC certified. Complete with mounting bracket and all necessary, civil, electrical works and peripheral items, as required.	Nos	1		

3		Supply , installation, testing & commissioning of Network video recorder , All-in one recording , dual stream, e-signature, electronic image stabilization, de-fog-viewing virtual disk quota management, and management solution for network surveillance systems of up to 32 channels, HDMI output (1080P) raid 6/10 controller 7X4 TB, Surveillance systems of up to 32 channels (all channels pre licensed), 8X HDD (4TB) max, 2Nos e-SATA for backup, redundant ethernet, redundant power supply, operating temperature- 10 °C to 55°C, NVR shall have video motion detection (VMD) facility for individual camera, hot swappable HDD, sufficient video recording capacity and complete as per specifications	Nos.	1		
4		Supply , installation, testing & commissioning of 18.5" LED Monitor, full HD, 450 cd/m², HDMI port, Component video inputs, 1 digital audio out etc.	Nos.	1		
5		Supply , installation, testing & commissioning of following size rack for switch mounting with fan power strip, PDU, glass front door, steel rear door, power supply , MCB , cable manager , drawer shelves and wiring channel to accommodate CCTV Systems equipment and accessories with hardware mounting kit as required.				
		a. 9U	Set	1		
		b. 22U	Set	RO		
6		Network Accessories :-				

B		Supply, installation, Testing & Commissioning of 4 pair category 6 UTP LAN Cable in existing raceways including PVC conduit concealed or surface mounted, consisting of 24 AWG solid copper conductor and as per the specification. The cable shall have flexible jacket and ripcord for easy stripability.	RM	25		
C		Supply and installation of flush mounted Category 6 T 568 A or B) outlet. The plastic shall be high impact, flame - retardant, UL rate thermoplastic Dust cover / blank shall be provided to protect unused faceplate openings. Termination caps and plastic cover shall be provided to protect jack wiring including suitable length of patch cord.				
		Single outlet faceplate with RJ-45 Jack	Nos.	6		
E		Supply Installation Testing & Commissioning of following sizes patch Cord.				
		a. 3 feet	Nos.	4		
		b. 7 feet	Nos.	2		
10	1.21	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed. conduit as required.				
a)	1.21.1	20 mm	RM	15		
b)	1.21.2	25 mm	RM	15		
c)	1.21.3	32 mm	RM	20		
11		Supply & Laying of 3 C x 1.5 Sq.mm Shielded unarmoured power cable.	RM	15		

H		Sub Head - VIII UPS SYSTEM				
1		1 x 8 KVA high performance true On-Line, Double conversion, fully microprocessor based IGBT/Rectifier & inverter with galvanic isolation transformer (external or induit) at output and fully digital UPS system with inbuilt static bypass switch arrangements, manual bypass, back feed protection, microprocessor based advance battery management with 15 minute back up suitable for 1 x25 KVA UPS system complete with battery racks, inter connecting links, DC isolator with fuse protection as required.				
		TOTAL				
I		SUB HEAD -IX : SWITCH BOARDS AND DISTRINATION BOARDS				
		MCCB, MCB & DB'S				
1	2.3	Supplying and fixing following way, single pole and neutral, sheet, MCB distribution board, 240 V, on surface / recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required (But without MCB/RCCB/Isolator)				
1.1	2.3.2	8 Way, double door	Nos.	1		
2	2.4	Supplying and fixing following way, horizonatal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface / recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections. Powder painetd including earthing etc. as required. (But without MCB/RCCB/Isolator)				
	2.4.2	6way (4+18) double door	Nos	1		
2.3	2.4.3	8way (4+24) double door	Nos	1		
3	2.10	Supplying and fixing 5 A to 32 A rating 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the ecisting MCB DB complete with connections, testing and commissioning etc. as required.				
3.1	2.10.1	Single pole	Nos.	25		
3.2	2.10.2	Single pole and neutral	Nos.	10		
4	2.11	Supply and fixing sigle pole, blanking plate in the existing MCB DB complete etc. as required.	Nos.	10		
		TOTAL				