

BILL OF QUANTITIES FOR REMAINING ELECTRICAL WORKS FOR CONSTRUCTION OF RSETI BUILDING AT BATHINDA.

S.No.	Item / Specifications	Qty.	Units	Rate	Amount
PART-I : COMPUTER POINTS & DISTRIBUTION					
1.1	Supply all material, storing, handling, fixing and laying of 3X2.5 Sq. mm. of PVC insulated PVC sheathed armoured cable of 1100 V (IS 1554, Part 1) and fixing of cable on wall with suitable size of clamps /saddles or laid in floor/recess wall including cutting of wall /floor and making good the damages etc for computer points in suitable size of box fabricated with 16 G MS sheet including providing 3 nos 5 amps 3 pin sockets controlled by 1 no 5 A modular type switch, indicator and fuse mounted on 3 mm thick ISI marked hylam sheet and painting of box etc complete as required Note; max. two computer points are to be provided on one circuit.	47	no.		
1.2	Supply, fixing & Wiring for light point/ Ceiling fan point/ exhaust fan point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. (i.e. including point wiring) Note: i.) For entry side Switchboard of each room, secondary 1no. 5A Switch & Sockets shall be looped from main circuit. ii.)Including circuit wiring 2 x 2.5 sq mm + 1 x 2.5 sq mm as earth wire as required. Ht. upto 4.5mtr from floor (Loop from respective room Lighting Circuit wiring)				
i	1 no. Light / CF / EF / call bell controlled by 1 no. switch	183	no		
ii	2 no. Light controlled by 1 no. switch	27	no		
iii	3 no. light controlled by 1 no. switch	31	no		
iv	4 no. light controlled by 1 no. switch	2	no		
v	5/6 pin 6 amp plug point with 6 amp switch (Dependent)	28	no.		
vi	Primary Wall fan point controlled by 5 AMP socket controlled by 5amp switch	4	no.		
vii.)	1 no. 15Amp 5 Pin Socket controlled by 1 no. 15 Amp. Switch	0	no.		
viii.)	FAN REGULATOR. Supply and fixing of Stepped type electronic fan reglator (2 module) on existing modular plate switch box including connection but excluding modular plate etc as required	80	no.		
ix.)	CALL BELL Supplying & fixing call bell/ buzzer suitable for single phase, 230Volta, complete as required.(Ding Dong Type)	2	no.		
1.3	TV Power Supply Point Supply all material, storing, handling, fixing for TV power supply points in 6Module GI box along with modular base & cover plate fabricated with 16 G MS sheet including providing 2 nos 5A 3 pin sockets controlled by 1 no 5 A modular type switch, blanking plate etc complete as required. Note: i.) 2 x 2.5 sq mm + 1 x 2.5 sq mm as earth wire included (Loop from respective room Lighting Circuit wiring)	7	no.		
1.4	5/6 AMP LIGHT PLUG SOCKET (Primary) (Independent) Supply and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular sockets outlet and 5/6 amps modular switch, including wiring connections with 2.5sq.. FRLS PVC insulated copper conductor single core cable etc complete as required. i.) 2 x 2.5 sq mm + 1 x 2.5 sq mm as earth wire included	68	Each		
1.5	15/16 AMP LIGHT PLUG SOCKET Supply and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 15/16 amps modular sockets outlet and 15/16 amps modular switch, including wiring connections with FRLS PVC insulated copper conductor single core cable etc complete as required. i.) 2 x 2.5 sq mm + 1 x 2.5 sq mm as earth wire included	24	Each		
1.6	Wiring for DB /circuit/submain wiring along with earth wire with following sizes of FRLS, PVC inslated copper conductor, single core cable in surface / recessed medium class PVC conduit as required (Including PVC conduit, bends & all Material) (Note : Only DB to Switch Board)				

ii	2 x 2.5 sq mm + 1 x 2.5 sq mm as earth wire	1100	Metre		
1.7	MCB DB DOUBLE DOOR (HORIZONTAL TYPE)				
i	6 Way TPN MCB DB Double Door in recessed wall including cutting of wall and making good the damages comprising 1no. 40A 4P MCB + 40A FP RCCB (30mA) as incomers and 6 / 10A SP MCB's etc in outgoing complete as required. (Lighting Distribution Board)	3	each		
ii	6 Way TPN MCB DB Double Door in recessed wall including cutting of wall and making good the damages comprising 1no. 63 A 4P MCB + 63A FP RCCB (100mA) as incomers and 16 / 20A SP MCB's etc in outgoing complete as required. (Power Distribution Board)	3	each		
iii	4 Way TPN MCB DB Double Door in recessed wall including cutting of wall and making good the damages comprising 1no. 63 A 4P MCB + 63A FP RCCB (100mA) as incomers and 20A SP MCB's etc in outgoing complete as required. (AC Distribution Board)	2	each		
iv	12 Way SPN MCB DB Double Door in recessed wall including cutting of wall and making good the damages comprising 1no. 63 A DP MCB + 63A DP RCCB (100mA) as incomers and 10A SP MCB's etc in outgoing complete as required. (UPS DB for Computer Points)	3	each		
1.8	Supply installation testing and commissioning of 3 pin 20/25 A 3 pin metal clad industrial type plug and socket arrangement with plug top, cap and chain controlled by 1 no 32 A SP MCB. (1.5 TR AC's) <i>Note: Independent circuit for AC point is to be provided starting from Main Panel</i>	6	each		
1.9	Supply installation testing and commissioning of 3 pin 30A 3 pin metal clad industrial type plug and socket arrangement with plug top, cap and chain controlled by 1 no 32 A DP MCB. (For 2 TR AC's) <i>Note: Independent circuit for AC point is to be provided starting from Main Panel</i>	4	each		
1.10	Supply installation testing and commissioning of following 3 pin metal clad industrial type plug and socket arrangement with plug top, cap and chain controlled by 1 No MCB				
i	20 Amps. with 20 Amp. SP MCB.	4	no.		
ii	30 Amps. with 32 Amp. SP MCB.	3	no.		
1.11	4 way SPDB comprising 1 no 63 A Four Pole TPNMCB (for UPS).	1	no.		
1.12	4 way SPDB comprising of 2 nos 63A DP MCB (for UPS).	2	no.		
1.13	Providing and fixing of suitable size MS box fabricated with 16 G MS 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 of 5 mm bakelite on base connector strip and painting of box etc as required.	2	job		
	TOTAL OF PART -I				

PART-II : PANELS & CABLES

2.1	MAIN PANEL				
	Design, fabrication, loading, unloading at store, supply, installation, testing and commissioning of LT Panels fabricated out of 2mm thick for structural members (Load bearing members) and 1.6mm thick for door and covers (Non load bearing members) , CRCA sheet in cubicle compartmentalize free standing floor mounted, dust and vermin proof with reinforcement of suitable size angle iron, channel 'T' irons and / or flats wherever necessary, 16 gauge CRCA sheet steel shall be used for final distribution panels. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before painting as per specifications with 2 coats of zinc chromate primer and final approved shade of enamelled paint. 2 Nos. earthing terminals shall be provided for all distribution panels. Panels shall be suitable for 415V, 3-phase, 4-wire, 50Hz supply system.				
	Approval shall be taken for each panel before fabrication. Galvanized hardwares with zinc passivation shall be used in fabrication of panels.				
(i)	Main LT Panel	1	Each		
	Incomer (For PSPCL LT Supply and DG)				
	1No. 125A 4 Pole Moulded Case Circuit Breaker with built in Thermal based release unit with adjustable setting , Spreader Links, Phase Barriers, Extended Rotary handle and all accessories - 2sets				
	Multi function meter with inbuilt selector switch and 125/5 Amps 10 VA, CL 1.0 CTs. - 2 Set				
	Set of Phase indicating lamps. Each backed up with 2 Amps Control MCB-2 Set.				
	Changeover Switch:				
	125A, Changeover Switch For Dg Set Operation - 1no.				
	Bus Bars:				
	150A, 4P aluminium , colour coded bus bars suitable for 415V, 50Hz. (after deration)				
	Outgoings				
	11No. 63A 4 Pole Miniature Circuit Breaker with all accessories including for Power DB. Make L&T, Schnider..				
	4No. 40A 4 Pole Miniature Circuit Breaker with all accessories including for Lighting DB. Make L&T, Schnider..				

2.2	Supply, Installation, testing & commissioning of PVC insulated PVC sheathed armoured cable of 1100 V (IS 1554 Part 1) and fixing of cable on wall with suitable size of clamps /saddles or laid in floor/recess wall including cutting of wall /floor and making good the damages etc complete as required of following sizes (ISI marked)				
i	4C x 10 sq mm A2XFY (for Street Light) etc. (In conduit clamped on boundary wall / direct burried in ground)	325	Mtr.		
ii	4C x 16 sq mm A2XFY (for Lift) etc.	115	Mtr.		
iii	3.5C x 50 sq mm A2XFY (As main power cable)	50	Mtr.		
iv	3C x 6.0 sq mm 2XWY (for UPS DB) etc.copper conductor	60	Mtr.		
v	3C x2.5 sq mm copper conductor armoured for ACS	140	Mtr.		
2.3	Supply and making End Termination with brass compression gland and aluminium lug/ferruls for following sizes and making necessary connection etc complete as required of the following sizes::				
i	4C x 10 sq mm A2XFY (for Street Light) etc.	42	Each		
ii	4C x 16 sq mm A2XFY (for Lift) etc.	2	Each		
iii	3.5C x 50 sq. mm (A2XFY)	4	Each		
iv	3C x 6.0 sq mm 2XWY (for UPS DB) etc.	4	Each		
iv	3C x2.5 sq mm copper conductor	12	Each		
2.4	Providing and fixing 16 G MS sheet adpater box and also base frame for installation of MCB DBs plug and socket arrangements and to cover cables in system room including painting etc complete as required. (for UPS input/output distribution)	1	no.		
2.5	DOUBLE WALLED CORROGATED (DWC) HDPE PIPE				
	Supply and erection of double walled corrugated (DWC) HDPE pipe to be laid 1 Meter below ground level including excavation (making necessary trench) placing the pipe in position and back filling with excavated soil etc. of following sizes as required by the Engineer - In - Charge.				
i	Double walled corrugated (DWC) HDPE pipe 180/152 mm (outer/inner dia) For MV Cables.	50	Metre		
ii	Double walled corrugated (DWC) HDPE pipe 63/51 mm (outer/inner dia) For LV Cables.	50	Metre		
	TOTAL OF PART -II				
PART-III : EARTHING					
3.1	Supply and fix GI plate earth station with 600X600X6mm GI plate including all accessories such as watering pipe and funnel and providing masonry enclosure at top with cover plate i.e excavation of pit, supplying and filling of salt charcoal, refilling of pit etc complete as required as per IS 3043-1987. (For Main LT Panel & Distribution Boards)	2	set		
3.2	EARTH TAPES / WIRES Providing & fixing 32 x 6mm GI strip in surface or in recess for connection as required.	60	Metre		
3.3	EARTH TAPES / WIRES Providing and fixing of 8 SWG GI earth wire in the recess for loop earthing etc. as required.	20	Metre		
3.4	Providing, Fixing & Laying of 8 SWG GI earth wire on surface or in recess for loop earthing etc. as required. (For Distribution Board and Street Lighting)	400	mtr.		
	TOTAL OF PART -III				
PART-IV : AC PROVISIONING (COPPER PIPE, WIRING ETC)					
4.1	Supply, Installation, testing & commissioning of refrigeration pipe including cutting of wall & fixing with suitable saddles or clamps, providing suitable sizes of sleeves for passing refrigerant pipe from indoor to outdoor unit including making neccessary arrangement etc. complete as required.				
i	Hi Wall Split AC (1.0 & 1.5TR), copper pipe size (1/2" & 1/4")	60	mtr.		
ii	HWS / Cassette AC (2.0TR & 3.0TR) copper pipe size (5/8" & 3/8")	14	mtr		
4.2	Supplying & laying recessed in wall Rigid ISI Mark PVC drain pipe of size 20mm dia complete with fittings, U traps etc. & as specified to the nearest toilet / drain point under floor or in recessed walls for AC drains including cutting of walls, bends & Tees. making good the damages etc. wherever required. (Make: Diplast/Supreme)	90.00	mtr		
4.3	Supply & laying of 4 core 2.5sq.mm. FRLS copper flexible cable for HWS / Cassette AC, Make - FINOLEX / POLYCAB / HAVELLS / PYEMEN / ECKO	20	mtr		
4.4	Supply & laying of 3 core 2.5sq.mm. FRLS copper flexible cable for HWS AC, Make - FINOLEX / POLYCAB / HAVELLS / PYEMEN / ECKO	120	mtr		
	TOTAL OF PART - IV				

PART-V : TELEPHONE , TV, CCTV & SMOKE DETECTOR WIRING					
5.1	Supply & Wiring for telephone points / headphone points with 0.6 mm dia (2 pair) insulated annealed tinned electrolatic 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 / headphone socket outlet (as per drawing) and making necessary connections etc. complete as reqd. (Make: Dglink/KEI/Finox)	20	no.		
5.2	Supply & Wiring for TV points with coaxial cable as required 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 TV socket outlet (as per drawing) and making necessary connections etc. complete as reqd.	8	no.		
5.3	Supply, installation and testing & commissioning of Tag Block 20 pair for telephone connections Make krone	1	no.		
5.4	Providing, Laying, testing & commissioning of 20 pair telephone cable from outside govt. / bsnl DB to Rack for lease line.	10	Meter		
5.5	Supply and drawing following pair 0.6mm dia (2 pair) FRLS PVC insulated annealed copper conductor, unarmoured telephone cable in the existing surface / rcessed steel / PVC conduit as required (for Telephone points & Headphone points)	100	Meter		
TOTAL OF PART - V					
PART-VI : NETWORKING					
6.1	Data cabling work for computer networking starting from mounting rack at system room with UTP CAT-6e LAN Data cable in 2mm thick 25 mm dia ISI mark PVC conduit with accessories such as bends, Tees, junction boxes including providing and fixing cat-6 I/O plates and SMB complete with all networking accessories etc complete as reqd. (Make: D-Link/MOLEX/AMP/COMMScope). Note: Only One Data Points to be provided in One Table/Counter. Extra points not to be paid if provided. Maximum 6 no. data cable must be run in one pvc pipe.	15	No		
6.2	Supply, installation, testing and commissioning of 24-port Patch Panel (Computer Lab)	1.00	no.		
6.3	Supply, installation, testing and commissioning of 12-port Patch Panel (Conference Room)	2.00	no.		
6.4	Supply and installation, testing and commissioning of mounted rack 15U height made of powder coated MS sheet	1.00	no.		
6.5	Supply Fixing and commissioning of Patch cable cat 6 of complete with 2 nos of connectors etc complete as required.(factory manufactured)				
i	(a) 1 meter long	15	No		
ii	(b) 2 meter long	3	No		
6.6	Supply and laying of CAT 6 cable in PVC conduit of suitable size with connectors as required., complete in all respects.	300.00	mtr		
TOTAL OF PART - VI					
PART-VII : SITC OF FANS & FIXTURES					
7.1	SITC following LED fixtures directly on ceiling / wall / Pole including making necessary connections etc. complete as required.				
i	SITC of 18 /20 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 Slimline Ultra LED Tube light or equivalent of Wipro / Bajaj.	154	no.		
ii	15 watt surface mounted LED down light CAT No: DN-192-1000 or equivalent of Wipro / Bajaj / Philips	85	no.		
iii	Wipro Batten with 10W LED (Mirror Light) Cat No.: LL20-111-XXX-65NE3 or equivalent of Wipro / Bajaj / Philips	6	no.		
iv	Wipro Post Top Light LED Cat No.: Havells 25 W Ruby Mini Post Top LED Lamp 6000 K or equivalent of Wipro / Bajaj / Philips	2	no.		
v	Wipro Street Light LED, 40W Cat No. LR02-501-XXX-57-XX or equivalent of Wipro / Bajaj / Philips	14	no.		
vi	SITC of Exhaust Fan 12inch dia, metal body of CROMPTON / BAJAJ /KHAITAN	14	no.		
vii	Supply of 450 mm sweep metal body wall fan complete as reqd. Model turbo 180, USHA Make or equivalent of Crompton/Havells/Bajaj.(M/s Crompton Hi-Flo or equivalent of Khaitan / Bajaj	4	no.		
viii	Crompton1200mm Ceiling Fan White Model Briz Air	80	no.		
TOTAL OF PART -VII					
PART-VIII : EXTERNAL LIGHTING					

8.1	3 - STEPPED STEEL TUBULAR POLE				
A	Supply and erection of 3-stepped steel tubular swaged and welded pole of suitable length conforming to IS. 2713-1969 (Part I to III) / 1980 to be fixed up to a required planting depth below ground level in a hole of excavation about 45 cm dia., and suitable depth to be filled in up to 15cm below G/L with 1:2:4 cement concrete mixture and having 1:2:4 cement concrete muff of dia. 450mm, 80cm long aboveground level sufficient to completely flush a MCB distribution board SPN 4 way (double door) with hinged, water tight cover with locking arrangement, having one single pole MCB of required capacity fixed on din bar. The outer surface of the plinth to be finished with pure cement including painting of pole with two coats approved aluminium paint as required.				
i	Overall length 8 meter with planting depth 1.5 meter, length of section 4.5 meter, 1.75 meter and 1.75 meter (Bottom, Middle & Top respectively), Outer dia and thickness of sections 127mm x 4.5mm, 101.1mm x 3.65mm and 76.1mm x 3.25 mm (Bottom, Middle and Top respectively) with approximate weight 84 kg and base plate weight 12 kg. of size 12mm thick about 30cm dia.	14	Each		
8.2	SINGLE PIPE BRACKET FOR 3 STEPPED STEEL TUBULAR				
	Supply and erection of G.I. pipe 50mm dia (Medium Class) single arm bracket 1.5 Mtr. long, each arm welded with MS canopy 80 mm inner dia., outer dia 89.5mm (medium), 450mm long, suitable for three stepped steel tubular swaged and welded pole with top outer section dia. 76.1mm. The MS canopy should have 3nos. holes for fixing the bracket at the top end of the pole with the help of 3nos. 1/2" X 1-1/2" size nut bolts of full thread. The bracket should have MS round sheet 3mm thick 90mm dia welded with MS ring of 90mm dia and 50mm long, 1.62mm thick for covering the top end of the canopy. The MS canopy and GI bracket should be welded at tentative angle 105° (105 Degree) inclination with MS sheet 5mm thick triangular in shape having dimensions 225 x 150 x 5 mm thick with two coats of an approved aluminium paint as required by the Engineer-in-Charge.				
i	Single Arm Bracket 1.5 Meter Long for steel Tubular Pole (8.5 to 11 Meter)	14	Each		
8.3	GALVANISED IRON PIPES				
	Supply and erection of G.I. pipes for wiring purposes including bends, etc. and painting as per PWD General Specification 2010				
ii	Galvanised iron pipe 40mm dia (A-Class) flushed in the muff of the pole for cable entry & exit (The length should be approx 2 x 1 meter per piece/pole).	20	Metre		
8.4	Supply and erection of copper wire 2 x 1.5 sq mm FRLS, PVC insulated from pole terminal box to light fixture	125	RM		
8.5	4 Terminals Set of 40A rating 4 Way	14	Each		
8.6	HOT DIPPED GALVANISED CABLE TRAY				
A	Supply and installation following size of perforated Hot Dip Galvanised Iron Cable tray (Galvanisation thickness not less than 50microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including GI bolts and nuts etc as required.				
i	150mm (width) x 50mm (depth) x 1.6mm (thickness)	10	RM		
	TOTAL OF PART -VIII				

	SUMMARY				
	TOTAL OF PART I - VI (A)			A	
	TOTAL OF PART - VII (B) - Fixtures & Fans			B	
	TOTAL OF PART - VIII ('C) - Street Lighting Poles & accessories			C	
	TOTAL (A+B- C)				

IN WORDS:

Signature of Contractor with Stamp