

# **BILL OF QUANTITIES**

# MAIN SUMMARY OF COST

S.No	Description	Amount (Rs)
1	CIVIL & INTERIOR WORKS WORKS 3RD	
2	ELECTRICAL WORK	
3	HVAC WORK	
5	FURNITURE WORK	
	Total (A+B+C)	
6	SUPPLY AND INSTALATION EQIPMENT ITEMS COST (ELECTRICAL WORK)	
	GRAND TOTAL	

# **BILL OF QUANTITIES**

# SUMMARY OF COST

S.No	Description	Amount (Rs)
1	INTERIOR WORK	
2	FURNITURE WORK	
	TOTAL AMOUNT	

**BILL OF QUANTITIES** 

Sr.												
No	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)							
renova <b>2.</b> Cor Mock-ւ	<ul> <li>Note: 1. Area under renovation is in a runing office. Contractor will take care of the debris and labor movement during renovation. Rates shall accomodate the night labor and material shifting to and from site.</li> <li>Contractor to submit Shop drawings for approval of the Architect before fabrication). The rates include cost of all sampling and Mock-ups as desired by the Architect. All work shall be finished as per entire satisfaction of Owner/Architect with proper tools and practices while making good any damage to existing surface or equipment.</li> </ul>											
1	Dismantling existing works including removal of debris from site and its disposal as required by law and away from the site. Contractor to hand over all salvageable items to Owner's representative for further disposal. And follow complete all safety rules, complete in all respect.											
a.	Dismantling of Existing masonry wall any type and any height.											
b. c.	Dismantling of Existing ceiling any type and any height. as directed by engineer-in-charge. Dismantling of existing floor any type, as directed by											
d.	engineer-in-charge. Removing of any type of Doors with due care to not break, as directed by the Engineer-in-charge.											
e.	Dismantling of Existing Column Cladding any type and any height, as directed by engineer-in-charge.	job	1									
f.	Removal of glass partitions with due care to not break glass, as directed by engineer-in-charge.											
g.	Removal of wooden partitions, cabinets with due care to not break, as directed by engineer-in-charge.											
h.	Removal of old paint from Masonry wall, concrete member etc., as directed by engineer-in-charge.											
i.	Dismantling of masonry, concrete steps etc., as directed by engineer-in-charge.											
j.	Removal of electrical conduits, switch sockets, lights etc. from site with accessories, as directed by the Engineer-in- charge.											
k.	Dismantling of existing planters any type as directed by the Engineer-in-charge.											
2	<b>REPAIR WORK PLASTER:</b> - Providing and laying 1/2" thick 1:3 cement sand plaster on floor & wall, chipping, trenching for electrical wiring and conduits with scaffolding, leveling, curing etc. complete in all respect as per drawings or as directed by the engineer In charge. Note: Acrylic plaster mesh to be provided and fixed on the joints between, concrete and masonry and at every joints of electrical conduits and at every dismantling with chemical used as directed by the Engineer-In-Charge.	Sft	1150									
3	<b>PCC UNDER FLOOR (1:2:4):-</b> Providing and laying plain cement concrete having ratio (1:2:4) where required laid by using Ordinary Portland Cement (OPC), with approved quality sand including all form work as specified, leveling, compacting and curing etc. complete as per specifications, drawings and as directed by Engineer Incharge.	Cft	396									

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4	<b>GYPSUM BOARD DRY WALL (3" Thick) :-</b> Providing and fixing of Gypsum dry board wall with 2"x2"x1mm GI channel at 2' c/c vertically and 4' c/c horizontally clad with 12mm thick gypsum board sheet on both sides. inner gaps to be filled with mineral wool insulation, complete with cutting holes and installing back boxes, conduits, water supply pipes and other services, with all hardware accessories, and compound filling of joints with fabric tape complete in all respect, and specification or as directed by the Engineer-in-charge.	Sft	862								
5	<b>PLY WOOD PARTITION (3" Thick) :-</b> Provide and fixing of Ash ply wood partition with 1.1/2"×1.1/2" at 2' c/c vertically and horizontally wood frame, clad with 3/4" thick ash ply sheet on both side , inner gaps to be filled with mineral wool insulation, complete with cutting holes and installing back boxes, conduits, water supply pipes and other services, with all hardware accessories, including polish finish, as per drawing, complete in all respect, and specification or as directed by the Engineer-in-charge.	-	382								
6	<b>GYPSUM BOARD BOX :-</b> Providing and Fixing of gypsum board box with 2"x2"x1mm GI channel at 2' c/c vertically and 4' c/c horizontally cladding with 12mm thick gypsum board sheet on one side on existing wall and other surface. Provisions are to be made for fixing of light fittings, if any as per drawing, complete in all respect. and specification or as directed by the Engineer-in-charge.	Sft	89								
7	<b>MDF PARTITION:-</b> Providing and fixing low height partition made of 2"x2"x1mm GI channel at 2' c/c vertically and 4' c/c horizontally clad with 4mm+4mm & 1/2" MDF sheet on both sides where required in curves and groves as per drawing, complete with cutting holes and installing back boxes, conduits, water supply pipes and other services, with all hardware accessories, as per drawing, complete in all respect, and specification or as directed by the Engineer-in-charge.	Sft	163								

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Note: renova <b>2.</b> Cor Mock-u	<ul> <li>Note:- 1. Area under renovation is in a runing office. Contractor will take care of the debris and labor movement during renovation. Rates shall accomodate the night labor and material shifting to and from site.</li> <li>Contractor to submit Shop drawings for approval of the Architect before fabrication). The rates include cost of all sampling and Mock-ups as desired by the Architect. All work shall be finished as per entire satisfaction of Owner/Architect with proper tools and practices while making good any damage to existing surface or equipment.</li> </ul>										
8	<b>LOW HEIGHT PARTITION (OFFICERS TABLE):-</b> Providing and fixing low height partition made of 2"x2"x1mm GI channel at 2' c/c vertically and 4' c/c horizontally clad with 12mm thick gypsum board sheet on both sides with 2" x 4" solid ash wood frame and 8mm (3M) frosted glass fixed with wood frame, as per drawing with polish and paint finish, fixed to slab with bolt, complete in all respects. or as directed by the Engineer-Incharge.	Sft	45								
9	<b>GYPSUM BOARD PANELING :-</b> Providing & fixing of gypsum Board paneling, made of 1.5"×2"×1mm GI channel at 2' c/c vertically and 4' c/c horizontally cladding with 12mm thick gypsum board sheet on one side on existing wall and other surface. Provisions are to be made for fixing of light fittings, if any as per drawing, complete in all respect. and specification or as directed by the Engineer-in- charge.	S <del>ft</del>	100								
10	GYPSUM BOARD FALSE CEILING:- Providing and fixing of Gypsum Board false ceiling, at least 1/2 thick of imported Elephant Brand, with Metal suspension system consisting of galvanized steel channel, intermediate channel, splices, hangers, hanger adjustment clips with fabric tape on edge and including of painting, as per design and compound filling of joints with fabric tape, Provisions are to be made for fixing of A.C.Grills, light fittings as per consultants instructions, as per drawing, complete in all respect. (For payment exposed horizontal and vertical areas shall be measured) complete in all respects.	Sft	1439								
11	<b>PLY WOOD CEILING:-</b> Providing and fixing ply wood ceiling made of 2"x2" acacia wood frame, with 19mm thick ply sheet cladding, with Metal suspension system hangers, hanger adjustment clips, including polish finish, approved color, Provisions are to be made for fixing of A.C.Grills, light fittings as per drawing & consultants instructions including making holes and to assist in fixing, as per drawing, complete in all respect. and specification or as directed by the Engineer-in-charge.	Sft	299								

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	WOODEN PERGOLA CEILING: Providing and fixing of Pergola ceiling fixed in 2'x2' removable ash wood panels frame made of 1. 1/2"x 1.1/2" ash wood hung with Metal suspension system consisting of galvanized channel and hooks for lowering down with all hardware used. Pergola are of size (3"x3" & 1½" x 3") made in 3/4" th. ply wood joined with chamfered edge. 3/4" th Ply wood Light pelmet fixing of linear light, including polish finish as per drawings, all polished complete in all respect.	Sft	147								
13	<b>SOLID WOOD HANGING FRAME IN CEILING:</b> - Providing and fixing of wooden frame in ceiling of size $(1\frac{1}{2}$ " x 6", $1\frac{1}{2}$ " x 3") made in ash wood panels with 3/4" thick ply fixed with ceiling hung with Metal suspension system consisting of galvanized channel and hooks for lowering down with all hardware used including polish finish, complete with all hardware used. Provisions are to be made for fixing of A.C.Grills, light fittings as per consultants instructions including making wooden box for lights where required and to assist in fixing, as per drawing, complete in all respect.	Sft	210								
14	PORCELAIN TILE FLOOR:- Providing & laying laser cut imported Porcelain tiles 2' x 4' of Malaysian/Spanish or Equivalent make in approved color and shade laid with dry bond, including Leveling, washing and curing. complete in all respect. including jointing with epoxy Grout of approved color, including Leveling, washing and curing. complete in all respect. Market Tile Base Rate Rs. 3500/- Sqm Excl GST	Sft	1632								
15	<b>GRANITE/TILE CLADDING ON COLUMN:-</b> Providing & laying laser cut imported granite/Porcelain tiles 2' x 4' of Malaysian/Spanish or Equivalent make in approved color and shade laid with dry bond, including Leveling, washing and curing. complete in all respect. including jointing with epoxy Grout of approved color, including Leveling, washing and curing. complete in all respect. MARKET BASE RATE 1000/SFT Excl GST		244								

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16	BASE FLOOR PLASTER :- Providing and laying <sup>3</sup> / <sub>4</sub> " thick 1:4 cement sand plaster under floor, including chipping, leveling, curing etc. with steel finish complete in all respect as per drawings or as directed by the engineer In charge. (excluding back filling and pcc)	Sft	1632								
17	<b>12MM IMPORTED GLASS PARTITION :-</b> Providing and fixing of 12mm thick imported Guardian make glass partition with frosted sheet of approved design, 1-1/2" aluminum concealed ' U' channel, complete in all respect as per drawings and as approved by the Architect or as directed by the Engineer-in-Charge.	Sft	282								
18	GLASS DOORS :- Providing and fixing, 12 mm thick imported (Guardian) tempered glass door with 3M frosting including SS door handle 4' height, patch fitting, locks (Myco of Japan or approved equivalent) with imported best quality floor machine (EZ brand of Taiwan or approved equal) complete in all respects, or as directed by the engineer In charge (Full opening area measured)	Sft	115								
19	WOOD FRAME FOR GLASS DOOR :- Providing and fixing of 1-1/2" x 5" Ash wood frame fixed as per drawings, including polish with all surface preparation, complete in all respect. as approved by the Architect or as directed by the Engineer-in-charge	Rft	83								
20	WOODEN SLIDDING FLUSH DOOR:- Providing and fixing ash wood sliding flush door, made of 3/4"thick ash ply with 1/2" thick ash wood lipping, 1/2"x1/2" groove with 1/2" spacing, as per drawing, wooden panel supported at the top with sliding wheels running in galvanized steel track. Sliding channel to be fixed in wooden partition, including lock, handle, including polish finish, complete in all respects, or as directed by the engineer In charge (Full opening area measured)	Sft	30								

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21	WOODEN FLUSH DOOR :- Providing and fixing Ash ply wooden flush door made of 3/4"thick ash ply with 1/2" thick ash wood lipping, 1/2"x1/2" groove with 1/2" spacing, as per drawing and design and all wooden surfaces to be prepared for polish in approved colors and shades including magnetic door stoper, door closer, locks, phush plate, complete with: directed by the Consultant complete in all respects.	Sft	35								
22	<b>WOODEN DROP BOX FOR GLASS PARTITION:</b> - Provide and Fixing of 3" thick Imported Ply drop box till ceiling from roof made of 1/2" thick Ply, with 2"x2" thick wood frame, as per drawing, as directed by the engineer In charge.		166								
23	LOW HEIGHT CABINETS WITH DECO FINISH :- Provide and install 15" deep and 36" height cabinets made up of ¾ " thick white MDF lamination used for box & shutters, top corian finish with Kitchen Concealed hinges, magnetic catchers, locks, SS handles complete with all hardware used as per drawing ,complete in all respect. (Front area measured)	Sft	12								
24	WINDOW MARBLE SILL:- Providing and fixing of 3/4" thick factory grinded and polished Grade A, marble sill in windows, matching with tiles to be laid straight or in two levels for rain protection fixed with dry bond and grouted with white / coloured cement using imported pigments all as per drawing & specifications as approved by the Architect or as directed by the Engineer-in-charge MARKET BASE RATE 450/SFT Excl GST	Sft	25								
25	WINDOWS GRILL:- Provide & install Windows Grill, 1/2" dia MS pipe with 3/4"x3/4"x 16 gauge MS pipe outer frame structure welded together, fixed on inner side of existing windows, including enamel paint finish with three coats over a red oxide coat along with required coats of steel Putty Filling and preparation surface complete at any height at any floor, finished smooth as desired by Engineer-Incharge.	Sft	126								

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26	<b>EMULSION PAINT :</b> Providing and Painting of any surface with plastic emulsion/Acrylic paint of approved shade with three coats over a primer coat along with required coats of Putty Filling and preparation of plaster surface complete at any height at any floor, finished smooth as desired by Engineer-Incharge.		4550								
27	PAINT ON EXISTING CEILING: Providing and Painting of any surface with emulsion paint of approved shade with three coats over a primer coat along with required coats of Putty Filling and preparation of Plaster/Concrete/Metal surface complete at any height at any floor, finished smooth as desired by Engineer-Incharge	Sft	1750								
28	<b>PVC SKIRTING:-</b> Provide and fixing Pvc wooden texture skirting matching with floor color & grain, 3/4" thick and 4" height with all hardware used complete in all respect. <b>MARKET BASE RATE 200 / Rft Excl Gst</b>	Rft	326								
29	ROLLER BLIND:-         Providing and fixing of imported fabric Roller blinds         With all hardware and smooth operating imported         roller rods of approved shade and quality complete in         all respect.         (Market Base rate Rs.240 Per sft ) Excl GST		294								
30	<b>FACILITATION COUNTERS:-</b> Providing and Fixing Facilitation Counters, 3.1/2" thick top two levels with 24" & 6" vide, made up of 3/4" thick lamination board cladding with 12mm thick Corian fixed on top & front panel and 3/4" thick ply fixed on front panel, including polish finish approved manufacture specification, including drawer unit and all hardware used, as per manufactures specification complete in all respect as per drawings or as directed by architect, As Shown in picture. (Size 16'-0" x 24" x 2'-6" & 3'-6" )	job	1								

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31	SIGNAGE:- Providing and install Aluminum alloy modular signage, change able system complete with, Acrylic: CNC / Laser machine processed acrylic sheet for fine cutting • Printing: Digital UV LED printing on acrylic / Board									
31.1	6"x 12" Classic Signage	No	2							
	MAIN LOGO: Providing and install main logo, made up of 8mm thick acrylic logo with laser cutting including paint finish, UV' LED printing on face for actual colour Fixing with double Adhesive Tape tape / screws as per manufacture specifications, as approved by the Architect or as directed by the Engineer-in-Charge.	No	2							
33	<b>3D LETTERING:-</b> Providing and install acrylic 3D letters, made up of 8mm thick acrylic letters with laser cutting including paint finish for actual colour Fixing with double Adhesive Tape tape / screws as per manufacture specifications, as approved by the Architect or as directed by the Engineer-in-Charge.									
33.1	BUSNISS CENTER	job	2							
33.2	INSPECTION	job	1							
33.3	INCORPORATION	job	1							
	Total Amount									

FURNITURE WORKS Qty Sr # Description **Specifications** Dimensions Shape Unit Rate Amount Providing & supplying table Unit Top to be made of 25 mm thick (imported) melamine laminated particle board, all edges to be covered with 2 mm thick pvc edging, base (4'-6"X 2'-6"X with MS powder coated finished frame with 2'-6") side rack having 03 drawer & shelves with 1 OFFICER TABLE Side Rack : No 3 all cable management system complete as (4'-6"X 1'-6"X per manufactures specification or as 2'-4") directed by architect, As Shown in picture. Provide and supplying OHC made up of 15" deep and 14" high to be made of imported 3/4" th. melamine laminated particle board, all edges to be covered with 2 mm thick pvc edging, used for box and shutter approved color with pvc edge 4'-0''X 1'-3''X OVER HEAD lipping, including imported Kitchen 2 3 No CABINET Concealed hinges, magnetic catchers, 1'-2'' locks, SS handles complete with all hardware used as per drawing, fixed in the patrition, complete in all respect. Installation detail will be coordinated with Partition.

FURN	ITURE WORKS							
Sr #	Description	Specifications	Dimensions	Shape	Unit	Qty	Rate	Amount
3	HIGH BACK REVOLVING CHAIR	Providing and supplying revolving chair with cushioned Seat and Back, frame as per manufacturer's specs, approved color and sample, Having 5-star revolving adjustable threaded pedestal, durable & load bearing castor wheels. complete as per manufactures specification or as directed by architect, As Shown in picture.		Director-J	No	3		
4	VISITOR CHAIR	Providing & supplying wooden chair leatherette top with master molty foam, oak wood frame and legs with Jacobean finish semi glazed complete as per manufactures specification or as directed by architect, As Shown in picture.		Austin WG Chair CH WG 06	No	6		
5	COAT HANGER	Providing and supplying Ash wood frame, hanger and legs in teak finish semi glazed. as per manufactures specification or as directed by architect, as shown in picture.		T A	No	3		

FURN	TURE WORKS							
Sr #	Description	Specifications	Dimensions	Shape	Unit	Qty	Rate	Amount
6	WORK STATION SINGLE UNIT	Providing and making workstation, made up of 3/4" thick imported melamine laminated particle board top with pvc edge liping (as per drawing) approved color and sample, table top wire Grommete, side rack with drawers, front and side glass partition, 12mm frosted with brackets, Imported Hardware used, complete with all electric switches and wire management system as per manufactures specification or as directed by architect, As Shown in picture.	4'-0"X 2'-0"X 2'-6" Side Rack 2'-6"x 1'-3"x2'-6"		No	3		
7	OVER HEAD CABINET FIXED ON WALL	Provide and supplying OHC made up of 15" deep and 24" high to be made of 25 mm thick (imported) 3/4" melamine laminated particle board, all edges to be covered with 2 mm thick pvc edging, used for box and shutter approved color with pvc edge lipping, including imported Kitchen Concealed hinges, magnetic catchers, locks, SS handles complete with all hardware used as per drawing ,complete in all respect.	4'-0''X 1'-3''X 1'-2''		No	3		

FURN	ITURE WORKS							
Sr #	Description	Specifications	Dimensions	Shape	Unit	Qty	Rate	Amount
8	MEDIUM BACK	Providing and supplying revolving chair with cushioned Seat and Back, frame as per manufacturer's specs, approved color and sample, Having 5-star revolving adjustable threaded pedestal, durable & load bearing castor wheels. complete as per manufactures specification or as directed by architect, As Shown in picture.		Director-J	No	3		
9	MEDIUM BACK REVOLVING CHAIR FOR COUNTER	Providing and supplying revolving chair with cushioned Seat and Back, frame as per manufacturer's specs, approved color and sample, Having 5-star revolving adjustable threaded pedestal, durable & load bearing castor wheels. complete as per manufactures specification or as directed by architect, As Shown in picture.		Director-J	No	3		
10	MEETING TABLE	Providing & supplying meeting table Top to be made of 25 mm thick (imported) melamine laminated particle board, all edges to be covered with 2 mm thick pvc edging, base with MS powder coated finished frame with all cable management system complete as per manufactures specification or as directed by architect, As Shown in picture.			No	1		

FURN	ITURE WORKS							
Sr #	Description	Specifications	Dimensions	Shape	Unit	Qty	Rate	Amount
11	CHAIR	Providing & supplying chair with S.S legs and frame and PU seat and back, finish as per approved color and sample as shown in picture or equivalent as per manufacturer's specification, or as directed by architect,			No	4		
12	VISITOR CHAIR	Providing & supplying chair with Oak wood legs and frame, seat and back cushion of 1st quality molty foam, covered with fabric finish as per approved color and sample as shown picture design or equivalent as per manufacturer's specification, or as directed by architect,			No	11		
13	SELF SERVICE COUNTERS	Provide and supplying Self service Counters 3'-6" high made up of 30"x18" x 3" thick top shelf with corain coating, 24"x12"x1.5" thick base with corian coating, 3"x3" MS powder coated hollow pipe support connected with base with 1/4" powder coated ms plate, 18"x9"x24" tile clad on 3/4" thick MDF box for CPU and other accessories complete as picture and manufacturer's specifications.			No	10		

FURNITURE WORKS								
Sr #	Description	Specifications	Dimensions	Shape	Unit	Qty	Rate	Amount
14	SELF SERVICE COUNTER TABLE (8 PERSON)	Providing & supplying seif service counter table Top to be made of 19 mm thick (imported) MDF board with corianfinish, with 3/4" x3/4" 16 gauge MS powder coated finished frame with 6"x12"x30" tile clad on 3/4" thick MDF box for CPU and other accessories complete as picture and drawing. including cable management system, complete as per drawing & manufactures specification or as directed by architect,	7'-0''x 7-0'' as per drawing		No	1		
15	STOOL CHAIR	Providing & supplying with cushioned seat fitted in SS frame and base height adjustment mechanism sizes as per manufacturer's specifications complete per Picture or as directed by architect.			No	18		
16	RACK	Providing & supplying pamphlet rack made up of powder coated MS 1" pipe frame with laminated shelves, PVC Edge lipping, approved color, and shape, as per picture and Quality as per manufactures specification or as directed by site incharge	19"x15"x 8'-10"		No	3		
	TOTAL AMOUNT							

Item / Work	Manufacturer	Suppliers / Representatives
Termite	Chemical FMC Bi Flex	CHEMICAL FMC BI FLEX E: 99 Ghalib Rd, Eden Cottages I Block E 1 Gulberg III, Lahore, Punjab Phone: (042) 111 222 362
Gypsum board Ceiling	Elephant or equivalent	
Aluminum	Alcop, Chawla Aluminum, Prime Aluminum, Gulf Extrusion	CHAWLA ALUMINUM, 44 College Road, Block 1 Sector C-1 Block 1 Twp Sector C 1 Township, Lahore, Cell : 0300-8016410
BRICK	A Class Lahore bricks	
Water Proofing chemicals	Sika, or Equivalent,	Engr. Gohar Zaman Mob: 0300-8430243
Paint / Polish	ICI, Nippon, Jotun	
Deco Paint		
Crushed Stone Aggregate	Margala	
Sand	Ravi sand	
Cement	Fauji Cement & Bestway Cement,	
Tiles	White Horse Ceramics by PPL, Benitoz, RAK or equivalent	PRISM PREMIUM LOSUNGENGT Road near DHA ii, RawalpindiMob: 0300-8569646 <b>BENITOZ</b> DD/91, opp, PSO pump ojri camp MurreeRoad RawalpindiCell: 051-4575956 <b>RAK CREMIC</b> Plot no 19, sanitary 1-11/3 Islamabad,Metro Cash & CarryCell: 0321-9460056
Tile Grout	EPOXYGROUT	(Mr. Kibriya) Lhr GMob: 0300-9473267
Glass Non specifics use	Guardian or equivalent	
Glass Processing	Green Tech, Gunj Glass, Al Fateh or equivalent	
Frosting Sheet	3M or equivalent	
Roller Blind	High Collection Window Blinds Awan Interior, sultania interior or equivalent or equivalent	Office No 16, Ground Floor, Gulberg Arcade, Main Market (268.70 km) 54660 Lahore, Punjab, Pakistan sultania interior: 308 0013363

Anti-shatter film	3M or equivalent	
LAMINATION	AL Noor or equivalent	NAEEM TRADERS Head Office 22 Cooper Road, Lahore
PLY WOOD	Partex or equivalent	NAEEM TRADERS Head Office 22 Cooper Road, Lahore
Corian	DUPONT (Imported ), LG or equivalent	SHAZE Roshan center, Jinnah Avenue Blue Area, Islamabad, Pakistan Mobile # 0300-5557300 NAEEM TRADERS Head Office 22 Cooper Road, Lahore
Granite		
Marble		
Signage	Australian or equivalent	SIGNSCAPESIGNSCAPE 205, Korang Road, I-10/3 Industrial Area, Islamabad – 44000, Pakistan. Tel: 051-2803098-9 Cell: 0345-5566402 www.signscape.pk
FURNITURE	<ol> <li>Interwood Mobel (pvt) Itd,</li> <li>TORCH</li> <li>WORK SPACE</li> <li>OFFICE FIRST or equivalent</li> </ol>	INTERWOOD MOBEL (PVT) LTD, 7, Babar Block New Garden Town, Lahore, Punjab 54600 Phone: (042) 35831800 TORCH Office Furniture Systems Factory 113/16, Quaid-e-Azam Industrial Estate Kot Lakhpat, Lahore, Punjab 54000 CELL: 0300 8493822 Workspace Office Furniture 59-U, Aibak Block Garden Town, Lahore, Punjab 54000 Phone: 0311 1281111 OFFICE FIRST Unit 7&8, Umer building, 76 west, Main Jinnah Avenue, 6 Blue Area, 6 7/3 Blue Area, Islamabad Phone: (051) 2344460

# ELECTRICAL & ALLIED WORKS BILL OF QUANTITIES



### SUMMARY OF COST

Electrical Wo	orks				
	1.0	Vol-1 Electrical Works		Rs.	
				_	
			Total Rs.		
HVAC Works					
	1.0	Vol-1 HVAC Works		Rs.	
			Total Rs.		
		LATION EQUIPMENT ITEM	<u>IS COST</u>		
(ELECTRICAL	WORK	2			
	1.0	EQIPMENT ITEMS COST		Rs.	
			Total Rs.		
			Total Rs. (Elec+HVAC+Owner's Supply		

Signed & Stamped Of Contractor

# INTERIOR RENOVATION OF SECP BUSINESS CENTER 3RD FLOOR, ASSOCIATED HOUSE, EGERTON ROAD, LAHORE ENGINEER'S ESTIMATE SUMMARY OF COST (ELECTRICAL WORKS)

### <u>Vol-1</u>

0.1	INVERTER (INSTALLATION)	Rs.
1.0	LT SWITCHGEAR	Rs.
2.0	CIRCUIT POINT WIRING	Rs.
3.0	POWER CABLES AND CONDUITS	Rs.
4.0	FITTING FIXTURES AND FANS	Rs.
5.0	TELECOMMUNICATION SYSTEM	Rs.
6.0	FIRE ALARM SYSTEM (CONVENTIONAL)	Rs.
7.0	CC TV SYSTEM (IP BASED)	Rs.
8.0	EARTHING SYSTEM	Rs.
9.0	ACCESS CONTROL SYSTEM (OFFLINE)	Rs.
10.0	WI-FI NETWORKING SYSTEM (Owner's Su	Rs.
11.0	MISCELLANEOUS ITEMS	Rs.

Total Rs.

Signed & Stamped Of Contractor

Vol-1	
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	Description	Qty	Unit	Rate	Amount
0.1	INVERTER (INSTALLATION)				
	Installation at designated location, connection of cables,				
	and commissioning of owner's supplied Inverter (UPS)				
	with Dry Batteries Bank of following size:				
	UPS "5 KVA", (1-Phase-In; 1-Phase Out 230V) with 15				
а		1	Set		
	minutes back-up time with battery module cabinet				
	LT SWITCHGEARS				
	Distribution Boards:				
	Supply installation and commissioning of recessed wall				
	mounting/slab mounted key tagged type Distribution				
	Boards fabricated from 16 SWG sheet steel with				
	electrostatic paint of approved colour and with back box, comprising of incoming 3 phase moulded case circuit				
	breakers or earth leakage circuit breakers (as specified)				
	and outgoing single phase Miniature circuit breakers				
	(having magnetic & thermal trip devices) as given below,				
	complete with internal wiring earthing , neutral link,				
	termination blocks and cable chamber at the top of				
	incoming 3 phase moulded case circuit breakers or earth				
	leakage circuit breakers (as specified) and outgoing single				
	phase Miniature circuit breakers (having magnetic &				
	thermal trip devices) as given below, complete with				
	internal wiring earthing, neutral link, termination blocks and cable chamber at the top of the DB.				
	Each D.B. shall have Digital Voltmeter, Voltmeter /				
	Selector switch, LED Phase indication lights & control				
	fuses on incoming. All breakers & instrumentation and				
	other materials shall be as listed in Annexure "A" it shall				
	be manufactured by any one of the manufacturers as				
	mentioned in Annexure "A" and conforming to single line				
	diagram.				
i	Distribution Board DBL-3F				
	Incoming:				
	1-75 ATP MCCB (RC=>10 KA)				
	03- Phase Indication Light				
	01 - Voltmeter 0 - 500V (Smart Control) with Volt				
	selector switch Raahim Associate	5		l	

S. No.	Description	Qty	Unit	Rate	Amount
	01 - Amperemeter 0 - 75A (Smart Control) with Ampere				
	selector switch				
	03 - 75/5A Air Cooled Ring Type CT's having accuracy				
	class of 0.5				
	01 - Energy Analyzer make (Smart Control)				
	01 - Surge Protective Device (SPD) Class-2 70KA with HRC				
	fuses and base make ABB / Phoenix.				
	Outgoing:				
	2-30 ATP MCCB (RC=>10 KA)				
	1-32 ADP MCB (RC=>10 KA)				
	9-10 ASP MCB (RC=>6 KA)				
	3- MCB Single Pole - Spaces For Futures	1	Nos		
ii	Distribution Board DBP-3F				
	Incoming:				
	1-30 ATP MCCB (RC=>10 KA)				
	03- Phase Indication Light				
	01 - Voltmeter 0 - 500V (Smart Control) with Volt				
	selector switch				
	Outgoing:				
	18-10/16 ASP MCB (RC=>6 KA)	1	Nee		
	3- MCB Single Pole - Spaces For Futures	1	Nos		
iii	Distribution Board DBAC-3F				
	Incoming:				
	1-30 ATP MCCB (RC=>10 KA)				
	03- Phase Indication Light				
	01 - Voltmeter 0 - 500V (Smart Control) with Volt				
	selector switch				
	Outgoing:				
	9-20 ASP MCB (RC=>6 KA)				
	3- MCB Single Pole - Spaces For Futures	1	Nos		
iv	Distribution Board DBU-3F				
	Incoming:				
	1-32 ADP MCB (RC=>10 KA)				
	01- Phase Indication Light				
	01 - Voltmeter 0 - 230V (Smart Control)				
	02 - 32A 3 Pin Industrial Power Socket				
	01 - 32A Double Pole Changeover				
	Outgoing:				
	9-16 ASP MCB (RC=>6 KA)				
	,				

### Vol-1

S. No.	Description	Qty	Unit	Rate	Amount
	SUB TOTA	L SECT	TION (1.	0)	
2.0	CIRCUIT POINT WIRING				
2.01	<b>Note:-</b> For list of approved manufacturer's see Annexure "A". Supply and wiring of light circuit from <b>DB to switchboard</b> / <b>Presence Detector (PD)</b> with 2x2.5mmsq single core insulated 300/500 volt grade cables(P+N) and 2.5mmsq cable as protective conductor (PC) in & including PVC conduit installed/ recessed in walls / R.C.C. Slab, on ceiling or as required as per site conditions. Complete with all conduit accessories junction boxes, pull boxes as required complete in all respects as per specifications and drawings.	7	Each		
2.02	Same as item # 2.01, circuit point wiring from <b>switch</b> board to switch board (Loop Circuit).	2	Each		
2.03	Supply and wiring of first light / Exhaust fan point consisting of <b>one point controlled by one switch</b> with 2x1.5mmsq (P+N) PVC insulated 300/500 volt grade wire in and including PVC conduits recessed in walls/R.C.C. slab, on ceilings or as required including all conduit accessories junction boxes, pull boxes, pull wire, 2.5mm2 cable as CPC complete with 10 Amp. single way switch make as approved by consultant (annexure-A) installed on & including 16 SWG sheet steel boards duly powder coated paint with earth bolt recessed in wall/column complete in all respects as per drawing & specifications.	13	Each		
2.04	Same as item No. 2.03 above but <b>point to point</b> wiring.	13 32	Each Each		
2.05	Supply and wiring of first light / wall / Exhaust fan point / Occupancy Sensor with 2x2.5mm2 (P+N) PVC insulated 300/500 volt grade wire from <b>distribution board breaker</b> in and including PVC conduits recessed in walls/R.C.C. slab, or installed on ceilings including all conduit accessories junction boxes, pull boxes, pull wire, 2.5mm2 cable as PC,complete in all respects as per drawing & specifications.	1	Each		
2.06	Same as item No. 2.05 above but <b>point to point</b> wiring.	5	Each		
	Raahim Associate:	2			l

<u>Vol-1</u>					
S. No.	Description	Qty	Unit	Rate	Amount
2.07	Same as item No. 2.03 above but wiring of ceiling fan point including cost of M.S. fan hook box and fan dimmer make as approved by consultant (annexure-A) fitted on plastic plates installed on 16 SWG sheet steel boards recessed in wall/column.		Each		
2.08	Supply and wiring of first 2 pin 5/10 Amps socket outlet point make as approved by consultant (annexure-A) from <b>nearest switch board</b> with single core 2x1.5mmsq PVC insulated 300/500 volt grade cable in & including PVC conduit recessed in walls/R.C.C. slab, or on surface of ceiling including all conduits accessories, junction boxes, pull boxes etc. 2.5mm2 cable as PC ; & including 16 SWG sheet steel board recessed in walls complete in all respects and as per specifications & drawings.				
		1	Each		
2.09	Supply and Wiring of one 15A power sockets outlet with 2x 4mmsq single core cables (P+N) and 2.5 mmsq as CPC from <b>DB to point</b> including cost of one Nos. 15A 3 pin switch socket outlet make as approved by consultant (annexure-A) installed on & including 16 SWG sheet steel boards recessed in walls /columns, Complete in all respects.		Each		
2.10	Same as item No.2.09 above but loop wiring of 15A power sockets outlet with 2x 4mmsq single core cables (P+N) and 2.5 mmsq as CPC from <b>point to point</b> including cost of one Nos. 15A 3 pin switch socket outlet with make as approved by consultant (annexure-A) installed on & including 16 SWG sheet steel boards recessed in walls /columns, Complete in all respects.		Each		
2.11	Supply and Wiring of one 5A light sockets outlet with 2x 2.5mmsq single core cables (P+N) and 2.5 mmsq as CPC from <b>DB to point</b> including cost of one Nos. 5A 3 pin switch socket outlet with make as approved by consultant (annexure-A) installed on & including 16 SWG sheet steel boards recessed in walls /columns, Complete in all respects.		Each		

<u>Vol-1</u>					
S. No.	Description	Qty	Unit	Rate	Amount
2.12	Same as item No.2.11 above but loop wiring of 5A power sockets outlet with 2x 2.5mmsq single core cables (P+N) and 2.5 mmsq as CPC from <b>point to point</b> including cost of one Nos. 5A 3 pin switch socket outlet with make as approved by consultant (annexure-A) installed on & including 16 SWG sheet steel boards recessed in walls /columns, Complete in all respects.	27	Each		
2.13	Supply and Wiring of one 13A light sockets outlet with 2x 4mmsq single core cables (P+N) and 2.5 mmsq as CPC from <b>DB to point</b> including cost of one Nos. 13A 3 pin switch socket outlet with make as approved by consultant (annexure-A) installed on & including 16 SWG sheet steel boards recessed in walls /columns, Complete in all respects.	7	Each		
2.14	Same as item No.2.13 above but loop wiring of 13A power sockets outlet with 2x4mmsq single core cables (P+N) and 2.5 mmsq as CPC from <b>point to point</b> including cost of one Nos. 13A 3 pin switch socket outlet with make as approved by consultant (annexure-A) installed on & including 16 SWG sheet steel boards recessed in walls /columns, Complete in all respects.	54	Each		
2.15	Wiring for Group Control emergency & Exit Light Fixtures from DB to first light point with 3X2.5 Sq.mm (P+N+E) 60 minutes Fire Rated cable in 25mm dia PVC Conduit as exposed / concealed shown on drawings. Complete in all respects.	1	Each		
2.16	Supply & installation of flexible connection between light point above false ceiling to light fitting in false ceiling with 3 core 40/.076 flexible cable in & including corrugated PVC flexible pipe, 15A Bakelite connector & pipe accessories etc as required.	30	Each		
	SUB TOTA	L SECT	TION (2.	) ()	
		- 5201		-,	
3.0	POWER CABLES AND CONDUITS				

Vol-1	ICAL & ALLIED WORKS				
S. No.	Description	Qty	Unit	Rate	Amount
3.01	Supply at site, installation, testing and commissioning of				
	PVC insulated PVC sheathed non armoured copper				
	conductor (99.9% Pure) power cable 600 / 1000 Volt				
	grade manufactured by any one of the manufacturers as				
	mentioned in Annexure in preinstalled cable tray /				
	trenches cables to be installed as per routes shown on				
	drawings including cost of all necessary materials,				
	connections of cables and identification tags at both				
	ends, cables lugs properly crimped at both ends for the				
	following sizes complete in all respects. Actual length of				
	cables to be installed shall be practically measured at site				
	by the Contractor, duly authenticated by the employers				
	electrical engineer before placing the order with the				
	manufacturer, however, approximate length of cables are				
	shown herewith. Payments shall be made as per actual				
	length installed.				
3 01 Δ	2 Core Cable PVC/PVC				
5.01 A					
i	2 core 10mm.sq	5	Rm		
'	2 core rommisq	J	NIII		
3 01 B	4 Core Cable PVC/PVC				
J.01 D					
i	4 core 10mm.sq.	10	Rm		
1	4 core ionni.sq.	10	NIII		
ii	4 core 16mm.sq.	5	Rm		
	4 core rommisq.	J	1XIII		
iii	4 core 25mm.sq.	25	Rm		
		25			
3 01 D	Circuit Protective Conductor (CPC)				
5.01 D					
i	1 core 6mm sq. PVC insulated colour Green/Yellow.	25	Rm		
•		25	1.111		
ii	1 core 10mm sq. PVC insulated colour Green/Yellow.	10	Rm		
iii	1 core 16mm sq. PVC insulated colour Green/Yellow.	50	Rm		
2 0 2 4	DVC Conduit and Assessming				
3.02 A	P.V.C. Conduit and Accessories				
	Supply at site, installation of PVC / UPVC conduit heavy				
	duty make Shavyl, Plasco / Beta Pipes to be installed on				
	RCC slabs, walls, floor, columns above false ceiling or as				
	required as per site conditions including cost of all PVC				
	conduit accessories, steel pull wires, complete in all				
	respects.				
	Raahim Associates MEP Consultant Ar				

### <u>Vol-1</u>

S. No.	Description	Qty	Unit	Rate	Amount
	1 1/2" dia DVC conduit (Class D)	F.0	Dt		
i	1-1/2" dia. PVC conduit. (Class D)	50	Rft		
ii	2" dia. PVC conduit. (Class D)	50	Rft		
	, , , , , , , , , , , , , , , , , , ,				
2 02 0	Devider Costed Colling Suprended / University Coble				
3.02 B	<u>Powder</u> <u>Coated</u> <u>Ceiling</u> <u>Suspended</u> / <u>Horizontal</u> <u>Cable</u> <u>Tray in Corridor</u>				
	Fabrication, supply at site and installation of perforated				
	cable tray made of M.S. sheet 14 SWG 8 ft. to 10 ft. long				
	with sides 3" high with cover of cable tray made of 18				
	SWG M.S sheet to be installed on wall, or in vertical, or				
	above false ceiling in horizontal position or as shown on				
	drawing, including cost of the following:-				
	-2 M.S threaded hanging rod 1/2" dia. Length 12" or as				
	required as per site.				
	-M.S strip 2" wide x 1/4" thick.				
	-Hilti rawal bolts as per required quantity & size.				
	-2 coats of antirust paint.				
	-2 coats of enamel paint (Oven hot) or powder coating of				
	approved colour with Black Color/approved by the				
	consultant.				
	-Complete hanging system shall be installed at every 36".				
	The above mentioned cable tray shall be complete in all				
	respects including cost of all accessories / materials.				
	Cable tray shall be of the following sizes.				
а	9" X 3" Cable Tray 14 SWG & Cover 18 SWG	25	Rft		
b	12" X 3" Cable Tray 14 SWG & Cover 18 SWG	15	Rft		
	SUB TOTA	L SECT	TION (3.	0)	
4.0	FITTING FIXTURES AND FANS				
4.01	Providing , installation , testing and commissioning of the				
-	following lighting fixture including all accessories like				
	electronic ballast, drivery circuitry , lamps, mountings				
	etc. Complete in all respects , make as approved by				
	consultant (annexure-A).				
	General Technical Specifications include color temperature				
	ranging from 2700K to 4500K, lumen efficacy of 80 lm/W				
	(Lumen/Watt) and operational power factor of 0.9				
	l		I I	l	I

Vol-1	ICAL & ALLIED WORKS				
S. No.	Description	Qty	Unit	Rate	Amount
İ	Supply and installation of Ceiling suspended hanging light with <b>1x12/15 Watt</b> LED Lamp installed complete hanging arrangement, complete in all respects.	8	Each		
ii	Supply & Installation of self contained Non maintained "EXIT LIGHT" No. CFS-EXT 300 make Alco/ Honeywell Esser or approved by the consultant with Fluorescent lamp NICAD batteries for 3 hours back up.	3	Each		
iii	Supply & Installation of dual head <b>"Emergency Light"</b> No. CFS-EMG 300 battery operated (2xHLD Lamp) make Alco / Honeywell or approved by the consultant.	6	Each		
iv	Supply and installation of <b>Ultra sonic rodent repeller</b> complete in all respects.	5	Each		
v	Supply and installation of <b>rope light</b> complete in all respects.	50	Rft		
vi	Providing and fixing of <b>1x18 Watt</b> LED Downlight SMD type complete in all respects.	20	Each		
vii	Providing and fixing of <b>1x24 Watt</b> LED Downlight SMD type complete in all respects.	2	Each		
viii	Providing and fixing of <b>1x36/45 Watt</b> 2'x2' LED panel with complete hanging / fixing arrangement complete in all respects.		Each		
ix	Providing & fixing of 1x5 Watt LED Down LOGO light 45 angle move, complete in all respects.	4	Each		
x	Providing and fixing of <b>1x9 Watt</b> LED Downlight COB type complete in all respects.	12	Each		
	SUB TOTA	L SECT	TION (4.	) 0)	
5.0	TELECOMMUNICATION SYSTEM: TELEPHONE ,DATA & MATV				
5.01	Supply & Laying of 1" dia PVC pipe to be laid under floor including floor cutting as required as per drawings & specifications for Telecommunication system	1313	Rft		
I	Raahim Associate		•		•

# Vol-1

Vol-1	Description	04.1	11++++	Data	Americat
S. No.	Description	Qty	Unit	Rate	Amount
5.02	Supply & Installation of adjustable 12 SWG die cast aluminum 12"x12"x4" <u>Floor boxes</u> having base box of 16 SWG G.I. sheet with 3 sets of 15A PVC connectors, including floor cutting as required as per drawings for following outlets. i) 1-Telephone & Computer outlet. ii) 2-13 Amps 3 Pin Flat Pin Switch Socket Outlet iii) 1-5 Amp 3 pin Round Pin Switch socket outlets.		Each		
5.03	<ul> <li>Supply &amp; Installation of 12 SWG die cast aluminum 18"x12"x4" <u>Technology</u> <u>Boxes</u> having base box of 16</li> <li>SWG G.I. sheet with 3 sets of 15A PVC connectors, including cutting as required as per drawings for following outlets.</li> <li>i) 1-Telephone &amp; Computer outlet.</li> <li>ii) 2-13 Amps 3 Pin Flat Pin Switch Socket Outlet</li> <li>iii) 2-5 Amp 3 pin Round Pin Switch socket outlets.</li> </ul>		Each		
5.04	Supply and installation of <b>RJ-11</b> Telephone outlet on single/double port face plate to be installed on M.S back box in floor/tech box/wall, with all accessories including face plate and I/O ,complete in all respect.		Each		
5.05	Supply and installation of <b>RJ-45</b> Computer (Data) outlet on single/ double port face plate , to be installed on M.S back box in floor/tech boxes/wall with all accessories including face plate and I/O ,complete in all respect.		Each		
5.06	Supply, Installation & connecting of <b>4 pair UTP CAT-6</b> cable from each telephone to telephone junction box for telephone system to be drawn in given prelaid PVC pipe complete in all respects.		Rft		
5.07	Supply, Installation & connecting of <b>4 pair UTP CAT-6</b> cable from each computer to computer junction box for computer networking to be drawn in given prelaid PVC pipe complete in all respects.		Rft		
5.08	Supply, Installation & connecting of <b>4 pair STP CAT-6</b> cable from each networking switch to main server rack as secondary backbone to be drawn in given prelaid PVC pipe complete in all respects.		Rft		
	Installation of <b>owner's supplied</b> Network Switch with all necessary accessories, complete in all respects.		Each		
I	48 Ports Raahim Associate	s 1	Each	Į	I

Vol-1	ICAL & ALLIED WORKS				
S. No.	Description	Qty	Unit	Rate	Amount
5.10	Supply at site, installation, testing and commissioning of Cat-6 patch panels (meeting or exceeding relevant ANSI/TIA standards),input / output RJ-45 connectors suitable for Cat 6 cables patch guides along with cable managers for under mentioned nodes, including cost of power bus bar, IDC connectors, all necessary accessories / materials, whether mentioned or not but are required for proper functioning shall be deemed to be included in the cost of this item, complete in all respects make CISCO/or approved equivalent. Patch panel shall be installed after obtaining necessary permission from the computer specialist of the Client.				
i	48 Ports	1	Each		
5.11	Supply at site, installation, testing and commissioning of data cabinet of following approximate size (Size probably 32"x32"x88") make Tesco/HP/IBM/CISCO made of M.S sheet, powder coated, having lockable glass door at front, 4 exhaust fans on top, suitable for above mentioned data switches, consisting of the ports to be terminated on modular data cabinet, including cost of all necessary accessories / materials for passive equipment. The data cabinet and all passive equipment shall be complete in all respects including cost of all necessary materials / accessories. Patch panel shall be installed after obtaining necessary permission from the computer specialist of the Client.				
i	Same as above but for 27 U data Cabinet	1	Each		
5.12	Supply and installation of <b>Patch Cord</b> , to be installed on specified location as per advised by architect / engineer's incharge:-				
i ii	Cat-6 Patch Cord (1 Mtr) Cat-6 Patch Cord (3 Mtr)	40 5	Nos Nos		
5.13	Supply, installation, testing and commissioning of rack mounted Power Distribution Unit (PDU) of following sizes, to be installed on specified location as per advised by architect / engineer's incharge:-				

Vol-1	ICAL & ALLIED WORKS				
S. No.	Description	Qty	Unit	Rate	Amount
i	Single Cord (1x16A/20A) PDU (2.5 kW) with minimum 10 extensions (meeting or exceeding relevant IEC/ANSI standard)		Nos		
5.14	Supply and installation of HDMI cable of following sizes, to be installed on specified location as per advised by architect / engineer's incharge:-				
i	HDMI Cable (10 Mtr)	2	No.		
5.15	Supply and installation of VGA cable of following sizes, to be installed on specified location as per advised by architect / engineer's incharge:-				
i	VGA Cable	1	No.		
5.16	Supply, Installation & Connecting up of Telephone cables 0.6mm solid conductor, polyethylene insulated, 2 insulated conductors twisted together and PVC sheathed of following pairs:				
i	30 Pairs cable	100	Rft		
5.17	Supply at site, installation, testing and commissioning of telephone distribution boards with following telephone points to be terminated, complete in all respects:				
i	Telephone DB (30 pair)	1	Each		
5.18	Supply, installation of junction box 16 SWG to be concealed in wall with 2 coats of antirust paint, earthing terminal, complete in all respects.				
	i) Telephone Junction Box Size: 4"x7"x4" . ii) Computer Junction Box Size: 4"x7"x4".	1 1	Each Each		
		Ŧ	Lacii		
5.19	Supply & Installation of "MATV points wiring with all accessories CAT-6 UTP Cable in 1" dia PVC conduit from splitter (MATV- Floor Junction Box) to MATV outlet board complete in all respect.		Each		
5.20	Supply & Installation of "MATV points wiring with all accessories RG-6 Cable in 1" dia PVC conduit from splitter (MATV- Floor Junction Box) to MATV outlet board complete in all respect.		Each		
5.21	Supply and installation of (1 to 4)Way MATV splitter with HDTV booster complete in all respects.	1	Each		
		Т	Latii		

<u>Vol-1</u>	ICAL & ALLIED WORKS				
S. No.	Description	Qty	Unit	Rate	Amount
5.22	Supply, installation of television junction box 16 SWG to be concealed in wall with 2 coats of antirust paint, earthing terminal, complete in all respects.				
	i)TV Junction Box Size: 4"x7"x4" deep	1	Each		
5.23	Fluke testing of Telecommunication nodes complete in all respects.	64	Point		
	SUB TOTA	L SECT	TON (5.	0)	
6.0	FIRE ALARM SYSTEM (CONVENTIONAL)				
0.0	<u>Note:- The contractor shall provide warranty of parts &amp;</u>				
	service for one year, from authorized Distributor in				
	Pakistan. Supply & Installation of fire Alarm system				
	conforming to EN-54 & NFPA-72 comprising of following				
	components / equipment				
6.01	Supply, installation and connecting of non-addressable				
0.01					
	manual call stations press glass type with test dey,				
	suitable for surface or flush mounting make from any one				
	of the manufacturers as specified in Annexure "A"				
	complete in all respects and conforming to general	1	Each		
	specifications.	Т	Each		
c 02	County installation and countration of clasteric classes				
6.02	Supply, installation and connecting of electronic alarm				
	sounders ,complete in all respects and conforming to	1	Each		
	general specifications.	Т	Lacii		
(;)	Same as above but outdoor booter for fire alarm of high				
(i)	Same as above but outdoor hooter for fire alarm of high	1	Each		
	pitch as approved by the consultant	1	Lach		
c 02	Complex installation and compating of your addressed				
6.03	Supply, installation and connecting of non-addressable				
	optical smoke detectors, complete in all respects and	o	Each		
	conforming to general specifications.	8	Each		
6.04	Same as above 6.03 but heat detector rate of		Fach		
	temperature rise type ,complete in all respects .	1	Each		
<b>-</b>					
6.05	Supply, installation and connecting of non-addressable				
	fire alarm of following mentioned channel / zone.				
	Separate bell alarming in each zone indication of point 48				
	to 72 hours power backup. Short/open circuit indications				
	LED display / power fault, zone isolated test, complete in				
	all respects and conforming to general specifications				
	FACP to be installed at appropriate place as mentioned in				
	drawings.				
		1	Fach		
	i) FACP 2- Zone	1	Each		l
	Raahim Associate	5			

Raahim Associates MEP Consultant And Contract Management Co.

<u>Vol-1</u>					
S. No.	Description	Qty	Unit	Rate	Amount
6.06	Supply and wiring of Smoke / Heat detector and manual call point 60 min Fire Rated Fire Alarm (FA) 1x2 core (1.23mm2) cable in and excluding cost of 1" dia PVC conduit with all installing accessories, complete in all respect as per drawings and specification.		Nos		
6.07	Supply at site of PVC conduit heavy duty, to be installed on RCC slabs, walls, floor or as required as per site conditions including cost of all PVC conduit accessories, steel pull wires, complete in all respects.				
	i) 1" dia. PVC conduit.	300	Rft.		
6.08	Testing and Commissioning of fire alarm system as per NFPA-72.	1	Job 7 <b>10N (6.</b>	0)	
				- /	
7.0	CC TV SYSTEM (IP BASED)				
7.01	Wiring for each IP Based POE CCTV Cameras to be installed on walls / slabs or on false ceiling with cable CAT- 6 UTP Cable cable in 1" dia PVC conduit ( <b>excluding</b> cost of pipe) make Plasco / Beta Pipes, complete in all respects.		Each		
7.02	Supply at site, installation, testing & commissioning of Full HD <b>Indoor Box Type</b> IP Based POE CCTV, Day and Night Type with minimum 2MP resolution pieces IR LED, Vandal proof Body, with at least 20-30 meters IR visibility, Indoor type, including mounting bracket, all fixing and mounting accessories, complete in all respects, including cost of all required accessories / materials.				
		5	Each		

S. No.	Description	Qty	Unit	Rate	Amount
7.04	Supply at site, installation, testing & commissioning of <b>8</b> <b>channel NVR</b> with 512 MBPs network support,4K Video Out on HDMI,12 MP max camera support, Event Trigger				
	(alarm input, video loss), Online 2x Gigabit Ethernet Network Facility,IP Filtering,GUI Interfacae, Built In				
	Software including cost of 16 terabyte Hard Disk & KVM Switch, all necessary hardware and software accessories				
	and materials, required for NVR, complete in all respects.				
		1	Each		
7.05	Supply at site, installation, tagging, connections, testing and commissioning of <b>following Ports Data Networking</b> <b>POE switch Layer-2 type</b> , consisting of following <b>Data</b> points to be terminated on modular patch panel, including cost of power bus bar, IDC connectors, all				
	necessary accessories / materials, whether mentioned or not but are required for proper functioning shall be deemed to be included in the cost of this item, complete in all respects make CISCO/or approved equivalent.				
i	8 Port Data Networking POE switch Layer-2 type	1	Nos.		
7.06	Supply at site, installation, tagging and connections of <b>following port Data Patch panels</b> , installed in Data Rack or as per site. Including cost of all accessories and materials required make 3COM/Eqv, Complete in all respect.				
i	8 Port Data Patch panels	1	Nos.		
7.07	Supply, installation of Patch cords of following sizes:				
ii	1 Meter long	8	Nos.		
ii	3 Meter Long	8	Nos.		
7.08	Supply at site, installation, testing & commissioning of coloured CCTV monitor LCD 32", including cost of all necessary accessories and materials (like bracket and mounting arrangements), complete in all respect.				
	mounting arrangements, complete in air respect.	1	Each		
7.09	Supply and fabrication of close circuit junction boxes 16 SWG to be concealed in wall with 2 coats of antirust paint, earthing terminal, complete in all respects.				
	i)Junction boxes of appropriate size 4"x7".	1	Each		

# **ELECTRICAL & ALLIED WORKS**

Vol-1	ICAL & ALLIED WORKS				
S. No.	Description	Qty	Unit	Rate	Amount
7.10	Supply at site of PVC conduit heavy duty to be installed on RCC slabs, walls, floor or as required as per site conditions including cost of all PVC conduit accessories, steel pull wires, complete in all respects.				
	i) 1" dia. PVC conduit.	396	Rft.		
	Note:-				
	Above mentoned system should be complete in all				
	respect for proper functioning including cost of items mentioned or not.				
	SUB TOTA	L SECT	 TION (7.	 <i>0</i> )	
	EARTHING SYSTEM				
8.01	Providing and installation of Earthing Veractor Cone / Spike Size 2" thick, 12" long as shown in drawings or ¾" dia & 10 ft long copper rod as earth electrode 100 ft or upto the water level, below ground level including cost of boring and lowering the rod (100ft / upto the water level) down, complete with clamp and <b>2x16mm2</b> stranded copper conductor from rod to ground surface in <b>1-1/2"</b> dia G.I.pipe (EL Class) with watering cap, Man-hole with cover as per detail shown in drawings. all earth work should be done according to the advise of electrical consultant.		Each		
8.02	Supply and installation and looping with 70mm2 copper terminal Earth braids (flexible fishnet bonding straps) along with with necessary accessories duly installed on cable tray.		Nos		
8.03	Supply and installation of Earth connecting points comprising of 2"x9"x½" (Width x Length x Thickness) copper plate with brass nuts & bolts fitted on M.S. bracket installed on walls / columns.		Each		
8.04	Supply & Installation of following sizes of PVC insulated green color single core copper conductor cables to be drawn in given PVC / M.S. conduits or laid in cable trays or installed on vertical surfaces complete with cable lugs, ties, P.G. clamps markers and accessories as required complete in all respects.				
i	16mm2	80	Rm		
0.00	SUB TOTA	L SECT	TION (8.	0)	
9.00	ACCESS CONTROL SYSTEM (OFFLINE)				

# **ELECTRICAL & ALLIED WORKS**

<u>Vol-1</u>					
5. No.	Description	Qty	Unit	Rate	Amount
9.01	Wiring for each Node/Gateway to be installed on walls/ceiling etc with 4 pair Cat. 6, UTP cable pure copper conductor in and 2x1.5mmsq PVC Cables and including cost of 2x1" dia PVC conduit recessed in walls, columns, slabs, floors or above false ceiling with all necessary fixing accessories as required as per site condition, including cost of all PVC conduit accessories, pull boxes, steel pull wires, powder coated, including cost of all necessary accessories and materials, complete in all respects. Supply at site, installation, testing and commissioning of following Magnetic Finger Print / Keypad Bolt Lock with holder, tubular latch mortise, strike plate and box, batteries and battery holder Finger Print Sensor, at low voltage DC supply, with mounting base suitable for interior and exterior environment with Door Interface	5	Nos.		
a)	Unit (DIU), and fixing accessories, complete in all respects make DIY 3398/Approved equivalent. Single Door	5	Nos.		
·	<b>Note:-</b> Above mentoned system should be complete in all respect for proper functioning including cost of items mentioned or not.				
	SUB TOTA	L SECT	TION (9.	0)	
10.0	WI-FI NETWORKING SYSTEM (Owner's Supplied)				
	Wiring for each POE Wi-Fi Access points to be installed on walls / slabs or on false ceiling with cable CAT-6 UTP Cable cable in 1" dia PVC conduit ( <b>including</b> cost of pipe) make Plasco / Beta Pipes, complete in all respects. Only Installation of Owner's Supplied Wifi Point, complete	1	Each		
	to the satisfaction of engineer-incharge. <b>Note:-</b> Above mentoned system should be complete in all respect for proper functioning including cost of items mentioned or not.	1	No.		

#### **ELECTRICAL & ALLIED WORKS**

#### Vol-1

S. No.	Description	Qty	Unit	Rate	Amount
	SUB TOTA	L SECT	ION (10.	.0)	
11.0	MISCELLANEOUS ITEMS				
11.01	Supply and installation of Fire fighting equipment for criterial and non critical areas complete in all respects.				
i	Dry Powder Fire Balls	2	Each		
ii	5kg Carbon Dioxide Fire Extinguishers	2	Each		
11.02	Dismentleing of old items as far as electrical items are concerned and handing them over to the client as where is basis.		Job		
	SUB TOTA	L SECT	ION (11	.0)	
	Total Carried Over to Sum	nary o	f Costs	Rs.	

#### Note:

It should be clearly understood by the contractor / bidder that the above mentioned items shall be complete in all respects, including cost of necessary materials / accessories whether mentioned or not but are required for proper functioning of the system shall be deemed to be included in the cost of each above mentioned items, no extra charge shall be paid or claimed by the contractor / bidder.

Signed & Stamped Of Contractor

### INTERIOR RENOVATION OF SECP BUSINESS CENTER 3RD FLOOR, ASSOCIATED HOUSE, EGERTON ROAD, LAHORE BILL OF QUANTITIES

### SUMMARY OF COST (EQUIPMENT ITEMS COST)

Vol-2

0.1	INVERTER (SUPPLY)	Rs.
1.0	ALL IN ONE / KISOK PC	Rs.
2.0	QUE MANAGEMENT / SELF SERVICE KISOK SYSTEM	Rs.
3.0	NETWORK SWITCHES (SUPPLY)	Rs.

Total Rs.

Signed & Stamped Of Contractor

#### INTERIOR RENOVATION OF SECP BUSINESS CENTER 3RD FLOOR, ASSOCIATED HOUSE, EGERTON ROAD, LAHORE BILL OF QUANTITIES

## **ELECTRICAL & ALLIED WORKS (EQUIPMENT ITEMS)**

ol-2					
No.	Description	Qty	Unit	Rate	Amount
).1	INVERTER (SUPPLY)				
	Supply at designated location/site, testing and				
	commisioning of Online-Inverter (UPS) with Dry				
	Batteries Bank (as specified below) suitable for operation				
	at 50° C (Max) manufactured by any one of the				
	manufacturers as specified assembled in accordance				
	with their provided drawings, energized by the in coming				
	main supply, battery charger, set of spare Copper				
	battery thimble, radio interference suppressors,				
	voltmeter displays and other allied safeties.				
	Suitable for 400 / 230 volts, 50 cycles/second, including				
	cost of all necessary material / accessories, conforming				
	to technical specifications mentioned below.				
	Technical Specification of Inverter:				
	Prime Rating:				
-	On-Line, Normal and Bypass AC inputs, Interface Port				
	Output:				
	Efficiency at Full Load :>92%				
	Load Power Factor: >0.9				
	Output Voltage Distortion :Less than 2% Output Frequency:50Hz				
	Output Frequency.5062 Output Voltage Regulation: +-1%				
	Waveform Type :True Sine wave				
	Efficiency at full load: =(should not less than) >90%				
	Bypass :Internal Bypass (Automatic and Manual)				
	Input:				
	Total Harmonic Distortion Index < 3%				
	Bypass :Internal Bypass (Automatic and Manual)				
	Input:				
	Batteries & Runtime				
	Battery Type :Maintenance-free sealed deep discharged				
	GEL Type battery				
	Control panel				
	LED status display				
	Alarm when on battery : distinctive low battery alarm :				
	overload continuous tone alarm				
	Emergency Power Off (EPO) :Yes Rack Height :6U				
	Surge Protection & Filtering				
-		Minim	um 2 Ye	ar	
	UPS "5 KVA", (1-Phase-In; 1-Phase Out 230V) with 15	_			
a)	minutes back-up time with battery module cabinet.	1	Set		
0.5					
00	ALL IN ONE / KISOK PC Raahim Associ	otos			

Raahim Associates MEP Consultant And Contract Management Co.

## **ELECTRICAL & ALLIED WORKS (EQUIPMENT ITEMS)**

					Г
No.	Description	Qty	Unit	Rate	Amount
04					
.01	Supply, Installation, Testing and Commisioning of "All in				
	one PC" with following mentioned specifications				
	complete in all respects: Processor Generation: 9th Generation or above				
i ii	Processor specifications: Core i5, 6C/6T/9MB, 2.2Ghz				
11	base upto 3.7Ghz Turbo (Or Better)				
iii	Processor specifications: Core i5, 6C/6T/9MB, 2.2Ghz				
	base upto 3.7Ghz Turbo (Or Better)				
iv	Memory: Single DIMM 8GB DDR4 latest specs/ speed				
	(2666 or more) and Upgradable to 16GB				
v	Hard Disk: 512GB PCIe NVMe – M2 Internal SSD				
vi	Display: 23 inches or more, Full HD (1920x1080),				
	Antiglare				
vii	Wireless: 802.11ac (wave-2) MU-MIMO				
/iii	Sound: Integrated, 3.5 mm audio/ combo jack				
х	Camera: Integrated HD minimum 720p				
x	Keyboard: Included (Wired) with Universal English				
	language.				
xi	Mouse: Included (Wired) with optical tracking.				
xii	Interface: Minimum 1x USB2.0 ports, 4xUSB3.1, 1x HDMI				
	Integrated GbE				
ciii	Operating System: With Windows 10				
kiv	Warranty: 1 year Standard warranty	18	Each		
0.0	SUB TOTA	AL SECT	'ION (1.0	<i>)</i> )	
.00	QUE MANAGEMENT / SELF SERVICE KISOK SYSTEM				
01	Supply and Wiring of Queue Management system using				
.01					
	PVC insulated,CPT Type STP Cat-6 cable make				
	PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser				
	PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at				
	PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser				
	PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl;		Rft		
	PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's		Rft		
02	PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's		Rft		
.02	PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's specifications.		Rft		
.02	PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's specifications. Supply installation, testing & commissioning of		Rft		
.02	PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's specifications. Supply installation, testing & commissioning of kisok devices touch button with ticket printer etc make		Rft Nos		
02	PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's specifications. Supply installation, testing & commissioning of kisok devices touch button with ticket printer etc make Qnet as approved by electrical consultant, complete in	280			
	PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's specifications. Supply installation, testing & commissioning of kisok devices touch button with ticket printer etc make Qnet as approved by electrical consultant, complete in	280			
	<ul> <li>PVC insulated,CPT Type STP Cat-6 cable make</li> <li>VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser</li> <li>unit to each Q Matic Display unit and to control switch at</li> <li>each teller's station in 1" dia heavy duty PVC conduitl;</li> <li>complete as per the owner supplied equipment's</li> <li>specifications.</li> <li>Supply installation, testing &amp; commissioning of</li> <li>kisok devices touch button with ticket printer etc make</li> <li>Qnet as approved by electrical consultant, complete in</li> <li>all respects.</li> <li>Supply, installation, testing &amp; commissioning of</li> <li>main display panels make Qnet as approved by</li> </ul>	280			
	<ul> <li>PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's specifications.</li> <li>Supply installation, testing &amp; commissioning of kisok devices touch button with ticket printer etc make Qnet as approved by electrical consultant, complete in all respects.</li> <li>Supply, installation, testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, approved by electrical consultant, complete in all respects.</li> </ul>	280	Nos		
	<ul> <li>PVC insulated,CPT Type STP Cat-6 cable make</li> <li>VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser</li> <li>unit to each Q Matic Display unit and to control switch at</li> <li>each teller's station in 1" dia heavy duty PVC conduitl;</li> <li>complete as per the owner supplied equipment's</li> <li>specifications.</li> <li>Supply installation, testing &amp; commissioning of</li> <li>kisok devices touch button with ticket printer etc make</li> <li>Qnet as approved by electrical consultant, complete in</li> <li>all respects.</li> <li>Supply, installation, testing &amp; commissioning of</li> <li>main display panels make Qnet as approved by</li> </ul>	280			
.02	<ul> <li>PVC insulated,CPT Type STP Cat-6 cable make</li> <li>VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser</li> <li>unit to each Q Matic Display unit and to control switch at</li> <li>each teller's station in 1" dia heavy duty PVC conduitl;</li> <li>complete as per the owner supplied equipment's</li> <li>specifications.</li> <li>Supply installation, testing &amp; commissioning of</li> <li>kisok devices touch button with ticket printer etc make</li> <li>Qnet as approved by electrical consultant, complete in</li> <li>all respects.</li> <li>Supply, installation, testing &amp; commissioning of</li> <li>main display panels make Qnet as approved by</li> <li>electrical consultant, complete in all respects.with 42</li> <li>inches screen.</li> </ul>	280	Nos		
02	<ul> <li>PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's specifications.</li> <li>Supply installation, testing &amp; commissioning of kisok devices touch button with ticket printer etc make Qnet as approved by electrical consultant, complete in all respects.</li> <li>Supply, installation, testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, approved by electrical consultant, supply electrical consultant, complete in all respects.</li> <li>Supply, installation, testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, complete in all respects.</li> <li>Supply, installation testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, complete in all respects.</li> <li>Supply, installation testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, complete in all respects.</li> </ul>	280 1 1	Nos		
.02	<ul> <li>PVC insulated,CPT Type STP Cat-6 cable make</li> <li>VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser</li> <li>unit to each Q Matic Display unit and to control switch at</li> <li>each teller's station in 1" dia heavy duty PVC conduitl;</li> <li>complete as per the owner supplied equipment's</li> <li>specifications.</li> <li>Supply installation, testing &amp; commissioning of</li> <li>kisok devices touch button with ticket printer etc make</li> <li>Qnet as approved by electrical consultant, complete in</li> <li>all respects.</li> <li>Supply, installation, testing &amp; commissioning of</li> <li>main display panels make Qnet as approved by</li> <li>electrical consultant, complete in all respects.with 42</li> <li>inches screen.</li> <li>Supply, installation testing &amp; commissioning of</li> <li>counter display panels make Qnet as approved by</li> </ul>	280 1 1	Nos		
.02	<ul> <li>PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's specifications.</li> <li>Supply installation, testing &amp; commissioning of kisok devices touch button with ticket printer etc make Qnet as approved by electrical consultant, complete in all respects.</li> <li>Supply, installation, testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, approved by electrical consultant, supply electrical consultant, complete in all respects.</li> <li>Supply, installation, testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, complete in all respects.</li> <li>Supply, installation testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, complete in all respects.</li> <li>Supply, installation testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, complete in all respects.</li> </ul>	280 1 1	Nos		
.02	<ul> <li>PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's specifications.</li> <li>Supply installation, testing &amp; commissioning of kisok devices touch button with ticket printer etc make Qnet as approved by electrical consultant, complete in all respects.</li> <li>Supply, installation, testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, the string screen.</li> <li>Supply, installation testing &amp; commissioning of counter display panels make Qnet as approved by electrical consultant, complete in all respects.</li> </ul>	280 1 1	Nos		
.02	<ul> <li>PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's specifications.</li> <li>Supply installation, testing &amp; commissioning of kisok devices touch button with ticket printer etc make Qnet as approved by electrical consultant, complete in all respects.</li> <li>Supply, installation, testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, with 42 inches screen.</li> <li>Supply, installation testing &amp; commissioning of counter display panels make Qnet as approved by electrical consultant, screen.</li> <li>Supply, installation testing &amp; commissioning of counter display panels make Qnet as approved by electrical consultant, complete in all respects.</li> </ul>	280 1 1 3	Nos		
02	<ul> <li>PVC insulated,CPT Type STP Cat-6 cable make VeniluxInc/Clipsal Cat-6 cables from Q-matic dispenser unit to each Q Matic Display unit and to control switch at each teller's station in 1" dia heavy duty PVC conduitl; complete as per the owner supplied equipment's specifications.</li> <li>Supply installation, testing &amp; commissioning of kisok devices touch button with ticket printer etc make Qnet as approved by electrical consultant, complete in all respects.</li> <li>Supply, installation, testing &amp; commissioning of main display panels make Qnet as approved by electrical consultant, the string screen.</li> <li>Supply, installation testing &amp; commissioning of counter display panels make Qnet as approved by electrical consultant, complete in all respects.</li> </ul>	280 1 1 3	Nos		

# ELECTRICAL & ALLIED WORKS (EQUIPMENT ITEMS)

Vol-2	RICAL & ALLIED WORKS (EQUIPMENT TEMS)				
S. No.	Description	Qty	Unit	Rate	Amount
2.05	Supply installation & commissioning of main server devices including software package ,necessary power feeeding devices Qnet or as approved by electrical consultant, including amplifier with 2 speakers, mini PC player, complete in all respects.	1	dol		
2.06	Supply at site of PVC conduit heavy duty make Plasco / Beta Pipes, to be installed on RCC slabs, walls, floor or as required as per site conditions including cost of all PVC conduit accessories, steel pull wires, complete in all respects.				
	i) 1" dia. PVC conduit.	336	Rft		
2.07	Programming, testing, commissioning of complete system in the presence of site engineer. And training of staff. Note:- Above mentoned system should be complete in all respect for proper functioning including cost of items	1	doſ		
	mentioned or not. SUB TOTA	N SECT	10N (2	ก)	
3.00	NETWORK SWITCHES (SUPPLY)	L SLCT	1014 (2.)	<i>.,</i>	
3.01	Supply at site of <b>networking switch</b> for under mentioned nodes, consisting of following <b>Gigabit Data</b> points to be terminated on modular patch panel, including cost of power bus bar, IDC connectors, all necessary accessories / materials, whether mentioned or not but are required for proper functioning shall be deemed to be included in the cost of this item, complete in all respects make CISCO/Rukus or approved equivalent. (Layer-2)				
i	48 Ports	1	Each		
	SUB TOTA		-		
	Total Carried Over to Sum	mary o	f Costs	Rs.	

Note:

# **ELECTRICAL & ALLIED WORKS (EQUIPMENT ITEMS)**

2 o. Description		Unit	Rate	Amount
It should be clearly understood by the contractor /		-	-	
bidder that the above mentioned items shall be				
complete in all respects, including cost of necessary				
materials / accessories whether mentioned or not but				
are required for proper functioning of the system shall				
be deemed to be included in the cost of each above				
mentioned items, no extra charge shall be paid or				
	It should be clearly understood by the contractor / bidder that the above mentioned items shall be complete in all respects, including cost of necessary materials / accessories whether mentioned or not but are required for proper functioning of the system shall be deemed to be included in the cost of each above	It should be clearly understood by the contractor / bidder that the above mentioned items shall be complete in all respects, including cost of necessary materials / accessories whether mentioned or not but are required for proper functioning of the system shall be deemed to be included in the cost of each above	It should be clearly understood by the contractor / bidder that the above mentioned items shall be complete in all respects, including cost of necessary materials / accessories whether mentioned or not but are required for proper functioning of the system shall be deemed to be included in the cost of each above	It should be clearly understood by the contractor / bidder that the above mentioned items shall be complete in all respects, including cost of necessary materials / accessories whether mentioned or not but are required for proper functioning of the system shall be deemed to be included in the cost of each above

Signed & Stamped Of Contractor

claimed by the contractor / bidder.

Electrical BOQ

LIST OF APPROVED MANUFACTURERS (M)					
		Manufacturers /			
Sr #	Particulars	Vendors	Origin	Landline	Mobile / Cell
1	LT / HT PANELS & DB's / Street P	Poles			
i	Quality Switchgear Pvt Ltd.	Quality Switchgear	Pakistan	042- 111-786-774	0300-8404301
ii	Bilal Engineering	Bilal Engineering	Pakistan	042-37523812	0331-4999119
iii	AL-Rehman Switchgear	AL-Rehman Switchgear	Pakistan	-	0322-4466011
iv	Tariq Electric	Tariq Electric	Pakistan	042-3-6522861	0300-8492515
V	South Asian Electric Concern	South Asian Electric	Pakistan	042-3-6530000	0300-8477067
vi	РЕМРАК	PEMPAK	Pakistan	111-736-725	0345-844229
2	<u>CIRCUIT BREAKERS</u>				
a)	ACBs/TP MCCBS				
i)	L.S	Sheikh Waliyat & Sons	Korea	021-3-2624011	0307-5553960
ii)	Terasaki	Jubliee Corporation	Japan	042-111-000-520	0300-8548550
iii)	Legrand	Shahid International	EU	042-37670980-1-4	0321-8472264
b)	<u>SP MCBS / ELCBS</u>				
i)	LS	Sheikh Waliyat & Sons	Korea	021-3-2624011	0307-5553960
ii)	Terasaki	Jubliee Corporation	Japan	042-111-000-520	0300-8548550
iii)	Legrand	Shahid International	EU	042-37670980-1-4	0321-8472264
3	<u>CONTACTORS</u>				
i)	Terasaki	Jubliee Corporation	Japan	042-111-000-520	0300-8548550
ii)	L.S	Sheikh Waliyat & Sons	Korea	021-3-2624011	0307-5553960
iii)	Lovato	Jubliee Corporation	EU	042-111-000-520	0300-8548550
4	SELECTOR SWITCHES				
i)	GGT	E-Links	EU		0321 4404025
ii)	KRAUS & NAIMER	E-Links	EU		0321 4404025
5	VOLTMETER, AMPEREMETERS, I	FREQUENCY METERS, ENER	GY ANALYZER	<u>RS / ENERGY METERS</u>	
i)	Smart Controller	Index Technology	UK	042-38939166	0300-8184203
ii)	Lovato	Jubliee Corporation	Italy	042-111-000-520	0300-8548550
6	INDICATION LIGHTS				
i)	Telemechanique / Schneider	Schneider Pakistan	EU	042-35912571	
ii)	GGT	E-Links	EU		0321 4404025
7	<u>SWITCHES &amp; SOCKETS</u>				
i)	Clipsal Vivace Series	Clipsal Pakistan	China		0322-2880057
ii)	Legrand	Shahid International	EU	042-37670980	0321-8472264

iii)	Orange Switches	Orange Electric			0322-4834937
8	LT CABLES				
i)	Coppergat Cables	Coppergat Cables	Pakistan	111 222 425	0300-8453646
íi)	Fast Cables	Fast Cables	Pakistan	042-35742391	0320-8080046
iii)	Newage Cables	Newage Cables	Pakistan	042 111 777 300	0333-4748210
iv)	Golden Star Cables	Golden Star Cables	Pakistan		0321-4044297
,					
9	EARTHING CONDUCTORS				
i)	Coppergat Cables	Coppergat Cables	Pakistan	111 222 425	0300-8453646
ii)	Fast Cables	Fast Cables	Pakistan	042-35742391	0320-8080046
iii)	Newage Cables	Newage Cables	Pakistan	042 111 777 300	0333-4748210
iv)	Golden Star Cables	Golden Star Cables	Pakistan		0321-4044297
10	PVC CONDUIT & ACCESSORIES				
i)	PLASCO PIPE	PLASCO PIPE	Pakistan	053-3589621	0321 4113938
ii)	BETA PIPES	BETA PIPES	Pakistan	042-8880161	0521 4115956
11)	DETA PIPES	DETA PIPES	Pakistan	042-0000101	
11	LIGHTING FIXTURES				
i)	VLUX	Index Technologies	China	042-35857072	0300-8184203
ii)	Philips Pakistan.	Philips Pakistan	China	021-111786777	
iii)	Greenlights	Green LED	China		0334-4552505
iv)	Opple Lights				0301-2440368
v	Osram				
12	FANS				
i)	Lahore Fan	Lahore Fan	Pakistan	042-35113741	
ii)	Royal Fans	Royal Fans	Pakistan	042 - 35761308	
13	TELEPHONE CABLES				
i)	Ventilux	Index Technologies	UK	042-38939166	0300-8184203
ii)	ELAN Cabels	Index Technologies	USA		0300-8184203
iii)	Clipsal	Clipsal Pakistan	Australia		0322-2880041
14 ;)	<u>Data Cables (CAT-6 UTP)</u>	Indox Technol!			0200 0404202
i)	Ventilux	Index Technologies	UK		0300-8184203
ii)	ELAN Cabels	Index Technologies	EU		0300-8184203
15	<u>Co-Axial Cables (RG-6/7)</u>				
i)	Ventilux	Index Technologies	UK		0300-8184203
ii)	ELAN Cabels	Index Technologies	EU		0300-8184203
iii)	3M	ESP Solutions	USA		0333-4666986
16	<u>TELEPHONE,JUNCTION BOXES</u> <u>&amp; PATCH PANELS</u>				
i)	TESCO	Index Technology			0300-8184203
í)	3M	ESP Solutions	USA		0333-4666986
•					
17					

### 17 **TELEPHONE OUTLETS**

i) ii)	CLIPSAL (Vivace Series - White) Legrand	Clipsal Pakistan Shahid International	China EU	042-37221618 042-37670980-1-4	0322-2880041 0321-8472264
iii)	Orange Switches	Orange Electric			0322-4834937
18	FIRE ALARM SYSTEM				
i)	DETNOV	Index Technology	Spain		0300-8184203
ii)	ALCO (fire & security)	Index Technology	USA		0300-8184203
iii)	EATON	C-Xor Engineering	UK		0300 8477751
19	<u>CC TV SYSTEM</u>				
i)	SAMSUNG	Vital International	Korea	042-35290613	0306-6831111
ii)	ALCO	Index Technology	USA	042-35872817	0300-8184203
20	PUBLIC ADDRESS SYSTEM				
i)	ТОА	Index Technology	Japan		0300-8184203
ii)	ITC	Index Technology	China		0300-8184203
21	<u>Cable Trunking / Ladders</u>				
i	QUALITY SWITCHGEAR PVT LTD	Quality Switchgear	Pakistan	042- 111-786-774	0300-8404301
ii)	AL-Rehman Swgr	AL-Rehman Switchgear	Pakistan	-	0322-4466011
iii)	South Asian Electric	South Asian Electric	Pakistan	042-3-6530000	0322-8450362
22	<u>Bus Tie Duct / BTD</u>				
i)	Pogillano	Jubliee Corporation	EU	042-111-000-520	0300-8548550
ii)	Power Bar	GS Engineering	Ireland		0323-440522
v)	Power Plug	C-Xor Engineering	Malaysia		0300 8477751
	Early Stroamor Emission Lighton	ning Brotostion Customer			
23	Early Streamer Emission Lighten	ning Protection Systems:			
23 i)	Application Tech	C-Xor Engineering	Spain		0300 8477751
			Spain Turkey		0300 8477751 0300-8184203
i)	Application Tech	C-Xor Engineering			
i) ii)	Application Tech D-Tech	C-Xor Engineering Index Technology	Turkey		0300-8184203
i) ii) iii)	Application Tech D-Tech LPI	C-Xor Engineering Index Technology	Turkey		0300-8184203
i) ii) iii)	Application Tech D-Tech LPI <u>MV Switchgear</u>	C-Xor Engineering Index Technology	Turkey		0300-8184203
i) ii) iii) 24	Application Tech D-Tech LPI <u>MV Switchgear</u> <u>Ring Main Unit / LBS</u>	C-Xor Engineering Index Technology Britlite Pakistan	Turkey Australia	042-37636408	0300-8184203 0320-1214321
i) ii) iii) 24 i)	Application Tech D-Tech LPI <u>MV Switchgear</u> <u>Ring Main Unit / LBS</u> ABB	C-Xor Engineering Index Technology Britlite Pakistan ABB	Turkey Australia EU	042-37636408	0300-8184203 0320-1214321
i) ii) iii) 24 i) ii)	Application Tech D-Tech LPI <u>MV Switchgear</u> <u>Ring Main Unit / LBS</u> ABB Siemens	C-Xor Engineering Index Technology Britlite Pakistan ABB	Turkey Australia EU	042-37636408	0300-8184203 0320-1214321
i) ii) iii) 24 i) ii) 25	Application Tech D-Tech LPI <u>MV Switchgear</u> <u>Ring Main Unit / LBS</u> ABB Siemens <u>Transformers (Dry Type)</u>	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens	Turkey Australia EU EU	042-37636408 042-111-000-520	0300-8184203 0320-1214321 0303-4443327
i) ii) iii) 24 i) ii) 25 i)	Application Tech D-Tech LPI <b>MV Switchgear</b> <b><u>Ring Main Unit / LBS</u> ABB Siemens <u>Transformers (Dry Type)</u> Trafo Elettro TMS</b>	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens C-Xor Engineering	Turkey Australia EU EU EU		0300-8184203 0320-1214321 0303-4443327 0300 8477751
i) ii) 24 i) ii) 25 i) ii) 26	Application Tech D-Tech LPI <u>MV Switchgear</u> <u>Ring Main Unit / LBS</u> ABB Siemens <u>Transformers (Dry Type)</u> Trafo Elettro TMS <u>Oil Type</u>	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens C-Xor Engineering Jubliee Corporation	Turkey Australia EU EU EU		0300-8184203 0320-1214321 0303-4443327 0300 8477751
i) ii) 24 i) ii) 25 i) ii)	Application Tech D-Tech LPI <b>MV Switchgear</b> <b><u>Ring Main Unit / LBS</u> ABB Siemens <u>Transformers (Dry Type)</u> Trafo Elettro TMS</b>	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens C-Xor Engineering	Turkey Australia EU EU EU EU	042-111-000-520	0300-8184203 0320-1214321 0303-4443327 0300 8477751
i) ii) 24 i) ii) 25 i) ii) 26 i)	Application Tech D-Tech LPI <u>MV Switchgear</u> <u>Ring Main Unit / LBS</u> ABB Siemens <u>Transformers (Dry Type)</u> Trafo Elettro TMS <u>Oil Type</u> Pak Electron Limited (PEL)	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens C-Xor Engineering Jubliee Corporation Pak Electron Limited (PEL)	Turkey Australia EU EU EU EU Pakistan	042-111-000-520 042-35920153	0300-8184203 0320-1214321 0303-4443327 0300 8477751
i) ii) 24 i) ii) 25 i) ii) 26 i) ii)	Application Tech D-Tech LPI <u>MV Switchgear</u> <u>Ring Main Unit / LBS</u> ABB Siemens <u>Transformers (Dry Type)</u> Trafo Elettro TMS <u>Oil Type</u> Pak Electron Limited (PEL) ELMETEC	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens C-Xor Engineering Jubliee Corporation Pak Electron Limited (PEL) ELMETEC	Turkey Australia EU EU EU Pakistan Pakistan	042-111-000-520 042-35920153	0300-8184203 0320-1214321 0303-4443327 0300 8477751 0300-8548550
i) ii) 24 i) ii) 25 i) ii) 26 i) ii) ii)	Application Tech D-Tech LPI <u>MV Switchgear</u> <u>Ring Main Unit / LBS</u> ABB Siemens <u>Transformers (Dry Type)</u> Trafo Elettro TMS <u>Oil Type</u> Pak Electron Limited (PEL) ELMETEC Hammad Engineering	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens C-Xor Engineering Jubliee Corporation Pak Electron Limited (PEL) ELMETEC Hammad Engineering	Turkey Australia EU EU EU EU Pakistan Pakistan Pakistan	042-111-000-520 042-35920153 042-35457311	0300-8184203 0320-1214321 0303-4443327 0300 8477751 0300-8548550
i) ii) 24 i) ii) 25 i) ii) 26 i) iii) iii) iii)	Application Tech D-Tech LPI <u>MV Switchgear</u> <u>Ring Main Unit / LBS</u> ABB Siemens <u>Transformers (Dry Type)</u> Trafo Elettro TMS <u>Oil Type</u> Pak Electron Limited (PEL) ELMETEC Hammad Engineering Transfo Power	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens C-Xor Engineering Jubliee Corporation Pak Electron Limited (PEL) ELMETEC Hammad Engineering	Turkey Australia EU EU EU EU Pakistan Pakistan Pakistan	042-111-000-520 042-35920153 042-35457311	0300-8184203 0320-1214321 0303-4443327 0300 8477751 0300-8548550
<ul> <li>i)</li> <li>ii)</li> <li>24</li> <li>i)</li> <li>ii)</li> <li>25</li> <li>i)</li> <li>ii)</li> <li>26</li> <li>i)</li> <li>ii)</li> <li>iii)</li> <li>iii)</li> <li>iv)</li> <li>27</li> </ul>	Application Tech D-Tech LPI <u>MV Switchgear</u> <u>Ring Main Unit / LBS</u> ABB Siemens <u>Transformers (Dry Type)</u> Trafo Elettro TMS <u>Oil Type</u> Pak Electron Limited (PEL) ELMETEC Hammad Engineering Transfo Power <u>Generator</u>	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens C-Xor Engineering Jubliee Corporation Pak Electron Limited (PEL) ELMETEC Hammad Engineering Transfo Power	Turkey Australia EU EU EU Pakistan Pakistan Pakistan Pakistan	042-111-000-520 042-35920153 042-35457311	0300-8184203 0320-1214321 0303-4443327 0300 8477751 0300-8548550 0302-4712772
<ul> <li>i)</li> <li>ii)</li> <li>iii)</li> <li>24</li> <li>i)</li> <li>ii)</li> <li>25</li> <li>i)</li> <li>ii)</li> <li>26</li> <li>i)</li> <li>ii)</li> <li>iii)</li> <li>iv)</li> <li>27</li> <li>i)</li> <li>ii)</li> <li>iii)</li> <li>iii)</li> </ul>	Application Tech D-Tech LPI <u>MV Switchgear</u> <u>Ring Main Unit / LBS</u> ABB Siemens <u>Transformers (Dry Type)</u> Trafo Elettro TMS <u>Oil Type</u> Pak Electron Limited (PEL) ELMETEC Hammad Engineering Transfo Power <u>Generator</u>	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens C-Xor Engineering Jubliee Corporation Pak Electron Limited (PEL) ELMETEC Hammad Engineering Transfo Power Innovative Engergy Sol KAN Engineering Services	Turkey Australia EU EU EU EU Pakistan Pakistan Pakistan	042-111-000-520 042-35920153 042-35457311	0300-8184203 0320-1214321 0303-4443327 0300 8477751 0300-8548550 0302-4712772 0302-4712772
<ul> <li>i)</li> <li>ii)</li> <li>iii)</li> <li>24</li> <li>i)</li> <li>ii)</li> <li>25</li> <li>i)</li> <li>ii)</li> <li>iii)</li> <li>iii)</li> <li>iv)</li> <li>27</li> <li>i)</li> <li>iii)</li> <li>iii)</li> <li>iii)</li> <li>iii)</li> <li>iii)</li> </ul>	Application Tech D-Tech LPI MV Switchgear Ring Main Unit / LBS ABB Siemens Transformers (Dry Type) Trafo Elettro TMS Oil Type Pak Electron Limited (PEL) ELMETEC Hammad Engineering Transfo Power Generator Cummins Scania Mitsubishi	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens C-Xor Engineering Jubliee Corporation Pak Electron Limited (PEL) ELMETEC Hammad Engineering Transfo Power Innovative Engergy Sol KAN Engineering Services Masco Energy	Turkey Australia EU EU EU Pakistan Pakistan Pakistan Pakistan EU Japan	042-111-000-520 042-35920153 042-35457311	0300-8184203 0320-1214321 0303-4443327 0300 8477751 0300-8548550 0302-4712772 0302-4712772 0333-0525552 0301-8402312 0300-7834336
<ul> <li>i)</li> <li>ii)</li> <li>iii)</li> <li>24</li> <li>i)</li> <li>ii)</li> <li>25</li> <li>i)</li> <li>ii)</li> <li>26</li> <li>i)</li> <li>ii)</li> <li>iii)</li> <li>iv)</li> <li>27</li> <li>i)</li> <li>ii)</li> <li>iii)</li> <li>iii)</li> </ul>	Application Tech D-Tech LPI MV Switchgear Ring Main Unit / LBS ABB Siemens Transformers (Dry Type) Trafo Elettro TMS Oil Type Pak Electron Limited (PEL) ELMETEC Hammad Engineering Transfo Power Generator Cummins Scania	C-Xor Engineering Index Technology Britlite Pakistan ABB Siemens C-Xor Engineering Jubliee Corporation Pak Electron Limited (PEL) ELMETEC Hammad Engineering Transfo Power Innovative Engergy Sol KAN Engineering Services	Turkey Australia EU EU EU Pakistan Pakistan Pakistan Pakistan	042-111-000-520 042-35920153 042-35457311	0300-8184203 0320-1214321 0303-4443327 0300 8477751 0300-8548550 0302-4712772 0302-4712772

27 Generator Control Modules

i) ii)	Sices Deep Sea	Hub Engineering Pyramid Automation	EU UK		0301-6020372 0333-4561619
28	Occupancy Sensor				
20 i)	Ventilux	Index Technology	UK		0300-8184203
ii)	Clipsal/Schneider Electric	Clipsal Pakistan	UK		0333-5386439
29	<u>Wifi Router</u>				
i)	Ruckus	Netsoft	Australia		0321-8480227
, ii)	Huawei	CMC	China		0330-7470125
30	<b>GPON Primary Infrastructure</b>				
i)	Ruckus	Netsoft	Australia		0321-8480227
ii)	Huawei	CMC	China		0330-7470125
31	Lifts/Escalator/Dump Waiters				
i)	Fuji	Innovative Energy Sol.	Japan		0300-8504838
ii)	Sanyo	DWP Technologies	Japan		0302-8445225
iii)	OTIS	Royal Systems			0300-8548002
iv)	Euksali	Mesi Group	Turkey		0300-8446992
v)	Mitsubishi				
32	<u>PFI Relay</u>				
i)	Klemsan	E-Links	Turkey		0321 4404025
ii)	Nokian	Jubliee Corporation	Finland	042-111-000-520	0300-8548550
33	<u>Terminal Blocks</u>				
i)	Klemsan	E-Links	Turkey		0321 4404025
ii)	Onka	E-Links	Turkey		0321 4404025
34	PFI Capacitors				
			Czech		0321 4404025
i)	ZEZ	E-Links	Republic		
ii) ,	Groupo Energia	E-Links	Italy		0321 4404025
iii)	Nokian	Jubliee Corporation	Finland	042-111-000-520	0300-8548550
iv)	Shizuki	Sheikh Waliyat & Sons	Thailand	021-3-2624011	0307-5553960
35	Current Transformers				
i)	Revalco	Jubliee Corporation	Italy / EU	042-111-000-520	0300-8548550
ii)	Hubit	E-Links	UK		0321 4404025
iii)	Effan	E-Links	Germany		0321 4404025
iv)	Metelex Pakistan	Metelex Pakistan	Pakistan		0302-4712772
36	Access Control/Door Locks				
i)	Salto	ESP Solutions	UK		0333-4666986
ii)	Ventilock				
37	Inverter_				
i)	APC by Schneider	Innovative Energy Sol.	EU		0300-8504838
ii)	Emerson / Liebert	CMC	USA		0330-7470125
iii)	ABB	CXOR	China		0300-8431263
38	<u>Qmatic System</u>				
i)	Qnet	Matrix Sol.			0321-5022100
ii)	S Tech		Sweden		

### INTERIOR RENOVATION OF SECP BUSINESS CENTER 3RD FLOOR, ASSOCIATED HOUSE, EGERTON ROAD, LAHORE BILL OF QUANTITIES

#### HVAC Works Vol-2

S. No.	Description	Qty	Unit	Rate	Amount
1.00	HVAC SYSTEMS.				
1 01	Supply, Installation, Testing & commissioning of below mentioned <b>Inverter type (Heat &amp; Cool)</b> air- conditioning units complete in all respect ready to operate with vibration isolator, piping work, complete in all respect. (Any other fault persist in AC's will be charged extra on actual market rate) <b>make Gree / Haier / PEL.</b>				
i)	Cassette Type Ac (1.5 ton) Net Capacity @ 45 deg Celcius Ambient	2	Nos		
ii)	Cassette Type Ac (2 ton) Net Capacity @ 45 deg Celcius Ambient	3	Nos		
iii)	Cassette Type Ac (3 ton) Net Capacity @ 45 deg Celcius Ambient	1	Nos		
1.02	Supply, chieseling, cutting, Laying and installation of refrigerant piping (Liquid + Gas of appropriate size) <b>make Muller / approved equiavlent</b> Pipe of 22 gauge with expanded rubber foam insulation (make Aeroflex-USA) protected with gray fiber tape duly wrapped with wet glue fabric. It includes the necessay "gas charging" if required, it also includes the necessay control wiring from inner unit to condenser unit.				
i) ::)	Cassette Type Ac (1.5 ton)	130	Rft		
ii) iii)	Cassette Type Ac (2 ton) Cassette Type Ac (3 ton)	195 65	Rft Rft		
1.03	<u>Note :</u> <u>Sizes &amp; Lengths of refrigerant pipes with amount</u> <u>required for refrigerant will be verified by the</u> <u>contractor</u> Supply & installation of UP Scheduled drain Piping system condensate drain from indoor unit to nearest				
	drain point complete with traps, fittings, etc., as shown on drawings.				
	Pipe Make: Beta, Plasco i)Pipe Size: 3/4" dia	400	RFT		

# HVAC Works

### <u>Vol-2</u>

S. No.	Description	Qty	Unit	Rate	Amount
	<u>Note :</u> Actual Lengths should be verified by the contractor.				
1.04	Supply and wiring of 1/1.5/2/2.5 Ton Split AC units with 3 x 4mm2 PVC Insulated Cu.Cond Cable (P+N+CPC) from DB MCB to AC in including the cost of 1" dia PVC/UPVC conduit with all necessary conduiting accessories and 20 Amps Power plug complete in all respects.	F	Each		
1.04 a	Supply and wiring of 3/4 Ton Split AC units with 4 x 4mm2 PVC Insulated Cu.Cond Cable (3P+N) + 2.5mm2 as CPC from DB MCB to AC in including the cost of 1" dia PVC/UPVC conduit with all necessary conduiting accessories and 20 Amps Power plug	5	Each		
	complete in all respects.	1	Each		
1.05	Fabrication, supply at site and installation of perforated cable tray made of M.S. sheet 14 SWG 8 ft. to 10 ft. long with sides 3" high with cover of cable tray made of 18 SWG M.S sheet to be installed on wall, or in vertical, or above false ceiling in horizontal position or as shown on drawing, including cost of the following:- -2 M.S threaded hanging rod 1/2" dia. Length 12" or as required as per site. -M.S strip 2" wide x 1/4" thick. -Hilti rawal bolts as per required quantity & size.				
	<ul> <li>-2 coats of antirust paint.</li> <li>-2 coats of enamel paint (Oven hot) or powder coating of approved colour with Black Color/approved by the consultant.</li> <li>-Complete hanging system shall be installed at every 36".</li> <li>The above mentioned cable tray shall be complete in all respects including cost of all accessories / materials. Cable tray shall be of the following sizes.</li> </ul>				
a	6" X 3" Cable Tray 14 SWG & Cover 18 SWG	100	Rft		
b	9" X 3" Cable Tray 14 SWG & Cover 18 SWG	75	Rft		
	SUB TOT				
	Total Carried Over to	Rs.			

#### **HVAC Works**

S. No. Description Qty Unit Rate Amount
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Note:

It should be clearly understood by the contractor / bidder that the above mentioned items shall be complete in all respects, including cost of necessary materials / accessories whether mentioned or not but are required for proper functioning of the system shall be deemed to be included in the cost of each above mentioned items, no extra charge shall be paid or claimed by the contractor / bidder.

Signed & Stamped Of Contractor

LIST OF APPROVED MANUFACTURERS (M)					
Sr #	Particulars	Manufacturers / Vendors	Origin	Landline	Mobile / Cell
1	SPLIT AIR CONDITIONING UNITS				
i	Haier		China		0300-8486948
ii	Gree		China		0301-5703901
iii	Samsung		Korea		
2	<u>REFRIGERANT PIPING (LIQUID + G</u>	<u>(AS)</u>			

i Muller

Imported