

	DETAIL ESTIMATION	
No.	ITEM	
I	ELECTRICAL WORK	
1	HIGH VOLTAGE INCOMING	
2	TRANSFORMER WORK	
3	POWER SUPPLY TO MDB	
3,1	MDB PANEL SYSTEM	
3,2	GENERATOR STANDBY SYSTEM FOR MDB	
4	MAIN DISTRIBUTION WORK	
5	POWER SUPPLY FOR AIR-CON AND FAN	
6	LIGHTING AND SOCKET SYSTEM	
6,1	INTERNAL SYSTEM	
6,2	EXTERNAL SYSTEM	
7	FIRE ALARM SYSTEM WORK	
8	PUBLIC ADDRESS SYSTEM	
9	LIGHTNING PROTECTION	
10	TELEPHONE SYSTEM WORK	
	TOTAL(I)	
1	HIGH VOLTAGE INCOMING	
a	HV incoming point	
	HV Load Break Switch 24kV	24kV-630A
	Lightning 22kV	Cupper USA
	Concrete pole 18m	LT-18C
	Foundation for pole 18m	
	Support for connecting wiring	Hot dip galvanize
	Hanging Insulation pin	Polymer_USA
	Support for HV LBS	Hot dip galvanize
	Operating chair	Hot dip galvanize
	Support for connecting HV cable	Hot dip galvanize
	Ladder	Hot dip galvanize
	Earthing system	Hot dip galvanize
	Standing insulation 22kV	Hoang_lien_son , Vietnam
	Wiring for connecting	AC-70
	Warning table	
	Testing Fee for HV LBS and insulation	
	Transportation fee by crane car	
	Terminal and accessory	
b	HV cable	
	24KV XLPE/DSTA/PVC Cable 3C-120Sqmm	
	From HV Overhead line to in HV panel in substation	
	HV termination kit 3C-120Sqmm	Indoor
	HV termination kit 3C-120Sqmm	Outdoor
	Accessories for above	
	Testing Fee for HV cable only	
c	Authority fee and other	
	Fee for get agreement connecting point and capacity	
	By technical department and final sign Vice General Director PC	
	Fee for get agreement approved the substation design	
	By Technical Department and final by Vice General Director PC	
	Fee for working with Main technical of Power Company	
	Vice General Director PC	

	DETAIL ESTIMATION	
No.	ITEM	
	Design fee main substation by design company	
	Inspection by power company about 02 times	
	By technical, sell , dispatching ,.....department and Electrical branch Director	
	Fee to get the Digital WHM and working with Sell Department of Power Company	
	Including the support Owner make Sell Contract with Power Company	
	Power connecting fee with NINH GIANG Dispatching Control Department Power company	
	Miscellaneous material for above	
	MATERIAL TOTAL	
	LABOUR COST TOTAL	
	SUB - TOTAL(1)	
2	TRANSFORMER WORK	
	HV panel	CIF PRICE
	01 IMP, DS unit	24KV/20kAs
	HV panel	CIF PRICE
	01 GBC-B, SF6 CT, VT for WHM	24KV/20kAs
	HV panel	CIF PRICE
	01 DM-1A for Trans 2000kVA _with HV relay	24KV/20kAs
	HV sepam 1000+S20	
	UPS 2 kVA online for HV relay	
	Standing support frame for HV panel	
	Transportation Hai phong to Ha noi	
	24KV XLPE/DSTA/PVC Cable 3C-70Sqmm	
	From HV panel to Transfomer 2000 KVA	
	HV termination kit 3C-70Sqmm	Indoor
	HV termination kit 3C-70Sqmm	Outdoor
	Trunking w/cover	W300
	Accessories for above	
	Fixing material for above	
	Dry type Transformer 2000KVA 22KV/400-230V 3P, 4W	
	Indoor dry type IP 23 Al-Al windings	
	CIF price	
	Speacial terminal for connecting Al and Cu material	
	Installation at site	
	KWH meter box system	
	Water proof box	
	Steel pipe	
	KWH meter	
	Support for HV cable Primery side and Secondary side	
	PVC wire	95sqmm - 1C
	PVC wire	70sqmm - 1C
	PVC wire	50sqmm - 1C
	PVC wire	6sqmm - 1C
	Terminal for cable	
	Earth Terminal Panel	ET- Panel
	Earthing system for Safety in H.V system E-1	
	Earthing system for Neutron E-2	
	Earthing system for Safety LV E-3	
	Earthing Test Et	
	Excavation & Backfilling	

	DETAIL ESTIMATION	
No.	ITEM	
	PVC Flexible pipe	D50
	PVC pipe	D32
	Accessories for above	
	Fixing material for above	
	Testing Fee	
	Miscellaneous material for above	
	MATERIAL TOTAL	
	LABOUR COST TOTAL	
	SUB - TOTAL(2)	
3	POWER SUPPLY TO MDB	
3,1	MDB PANEL SYSTEM	
	Main distribution panel 380-220V	MDB-1 (380/220)
	Main ACB(Fixed Type)	4000AF/4000AT,4P,100KA
	Main ACB(Fixed Type)	1600AF/1600AT,4P,65KA
	Mechanical Interlock	
	Branch MCCB	800AF/700AT,3P,42KA
	Branch MCCB	400AF/400AT,3P,25KA
	Branch MCCB	225AF/255AT,3P,25KA
	Branch MCCB	225AF/175AT,3P,25KA
	Branch MCCB	225AF/125AT,3P,25KA
	Branch MCCB	100AF/100AT,3P,25KA
	Branch MCCB	100AF/75AT,3P,25KA
	Branch MCCB	100AF/50AT,3P,25KA
	Branch MCCB	100AF/40AT,3P,25KA
	Branch MCCB	100AF/20AT,3P,25KA
	Contactor	3P,125A,Coil 220VAC
	Contactor	3P,9A,Coil 220VAC
	Mechanical Interlock	
	Branch MCCB For Contactor	100AF/100AT,3P,25KA
	Contactor For Contactor	3P,100,Coil 220VAC
	Capacitor Bank	3P,50KVA,440VAC
	Reactor	3P,3KVA,440VAC
	APFC	12 Steps
	Over/Under Voltage Relay	
	Timer On Delay	
	Timer Off Delay	
	UPS	1P2W,1000VA,220VAC
	Amp-Meter & Selector	0-4000A
	Volt-Meter & Selector	0-500V
	MCT	4000/5A,Class 0.5,15VA
	Auxiliary Relay	
	Push Button With Lamp	
	Pilot Lamp	
	Push Button	
	2 Position Switch	
	3 Position Switch	
	Buzzer	
	ACB Switch	
	Exhaust Fan	

	DETAIL ESTIMATION	
No.	ITEM	
	Indicator lamp	220/6.3V, 1.5W
	Fuse & holder	6A/5KA
	Cable & accessories for control diagram	
	Busbars	4000A,3P+N+E
	Metal enclosure	2200Hx7200Wx1425Dx2,0'
	Transportation Fee	
	Labour cost	
	Testing Mian ACB,O/UVR,APFC & A Sample Capacitor	
	Fixing and support materials for above	
	Concrete Foundation for transformer 3000Lx2100Wx350H	
	Steel fence for transformer yard with door H=2000	
	Concrete floor for Substation	
	Straight Bus duct (feeder) 3200A, 3P4W Cu-AL, 100%E	
	Vertical Elbow	
	Horizontal Elbow	
	Flanged end to panel	
	Hanger bar & hanger rod	
	Flanged End to Transfomer	
	Flexible link	
	U steel bar and round steel bar for standsing support	
	<i>Form LV side of Transfomer 2000 to MDB-1 Panel</i>	
	Fixing material for above	
	Excavation & Backfilling	
	Painting fee , silicon for completed, pate for closing	
	Testing Fee by testing Power Company	
	Testing Fee	
	Miscellaneous material for above	
	MATERIAL TOTAL	
	LABOUR COST TOTAL	
	SUB - TOTAL(3,1)	
	Generator 2000KVA 3P 4W 380-220V 1500rpm	
	Continuously 2000 kVA	
	Standby 2200 kVA	
	Battery 24DC, Rack and Cable	
	Auto Battery charger 10A	
	Silencer	
	Silence protect cover 85 ±3dbA	
	Chimney F260 t=2.0 Stainless steel	
	Chimney F400 t=2.0 Stainless steel	
	Support for chimney	
	Lover for inlet genset	
	Stainlesssteel Oil Tank 7000 liters	
	Fuel for 08 hour running 100 % load	3792 liter
	Fuel for cooling the injector engine	3000 liter
	Oil for generator (the first time)	
	Transportation Oil for generator (the first time)	
	Oil Piping for generator	
	ATS panel 4P 2500A	
	XLPE/PVC Cable	325sqmm-1C

	DETAIL ESTIMATION	
No.	ITEM	
	PVC wire	150sqmm - 1C
	Termination for cable	
	Support for LV cable inside the Cabinet of Genset	
	PVC Flexible pipe	D150
	Accessories for above	
	Fixing material for above	
	Excavation & Backfilling	800W x 1000D
	Miscellaneous material for above	
	MATERIAL TOTAL	
	LABOUR COST TOTAL	
	#REF!	
4	MAIN DISTRIBUTION WORK	
	Lighting panel	LP-FAC-1
	01 enclosure 2000H x 800W x 400D	
	01 Main MCCB 3P 100A	
	01 ZCT , EF for alram only	
	36 MCB 2P 20A	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Lighting panel	LP-FAC-2
	01 enclosure 2000H x 800W x 400D	
	01 Main MCCB 3P 100A	
	01 ZCT , EF for alram only	
	36 MCB 2P 20A	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Lighting panel	LP-FAC-3
	01 enclosure 2000H x 800W x 400D	
	01 Main MCCB 3P 100A	
	01 ZCT , EF for alram only	
	36 MCB 2P 20A	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Lighting panel	LP-FAC-4
	01 enclosure 2000H x 800W x 400D	
	01 Main MCCB 3P 100A	
	01 ZCT , EF for alram only	
	40 MCB 2P 20A	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Lighting panel	LP-FAC-5

	DETAIL ESTIMATION	
No.	ITEM	
	01 enclosure 2000H x 800W x 400D	
	01 Main MCCB 3P 100A	
	01 ZCT , EF for alram only	
	36 MCB 2P 20A	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Lighting panel	LP-FAC-6
	01 enclosure 2000H x 800W x 400D	
	01 Main MCCB 3P 100A	
	01 ZCT , EF for alram only	
	40 MCB 2P 20A	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Lighting panel	MAC-FAC-1
	01 enclosure 2000H x 800W x 400D	
	01 Main MCCB 3P 500A	
	4 MCCB 3P 125A	
	4 MCB 3P 20A	
	04 MC 3P 125A	
	08 push button with lamp	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Lighting panel	MAC-FAC-2
	01 enclosure 2000H x 800W x 400D	
	01 Main MCCB 3P 500A	
	4 MCCB 3P 125A	
	4 MCB 3P 20A	
	04 MC 3P 125A	
	08 push button with lamp	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Lighting panel	MAC-FAC-3
	01 enclosure 2000H x 800W x 400D	
	01 Main MCCB 3P 500A	
	4 MCCB 3P 125A	
	4 MCB 3P 20A	
	04 MC 3P 125A	
	08 push button with lamp	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Lighting panel	MAC-FAC-4

	DETAIL ESTIMATION	
No.	ITEM	
	01 enclosure 2000H x 800W x 400D	
	01 Main MCCB 3P 500A	
	4 MCCB 3P 125A	
	4 MCB 3P 20A	
	04 MC 3P 125A	
	08 push button with lamp	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Distribution panel	DB-OFF-1
	01 enclosure 3000H x 800W x 250D	
	01 Main MCCB 3P 200A	
	10 MCB 2P 20A	
	10 MCB 3P 20A	
	01 MC 3P 20A	
	02 push button with lamp	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Distribution panel	P-SER
	01 enclosure 800H x 600W x 250D	
	01 Main ELCB 3P 100A	
	05 MCB 2P 20A	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Down transformer 10 KVA 380/172V-100V (3P.4W)	
	Distribution panel	DB-OFF-2
	01 enclosure 3000H x 800W x 250D	
	01 Main MCCB 3P 200A	
	10 MCB 2P 20A	
	10 MCB 3P 20A	
	01 MC 3P 20A	
	02 push button with lamp	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Lighting panel	LP-LOC
	01 enclosure 3000H x 800W x 250D	
	01 Main MCCB 3P 125A	
	10 MCB 2P 20A	
	26 MCB 3P 20A	
	02 MC 3P 20A	
	04 push button with lamp	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	

	DETAIL ESTIMATION	
No.	ITEM	
	Lighting panel	LP-CAN
	01 enclosure 3000H x 800W x 400D	
	01 Main MCCB 3P 100A	
	16 MCB 2P 20A	
	04 MCB 3P 20A	
	02 MC 3P 20A	
	04 push button with lamp	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	Distribution panel	M-CAN
	01 enclosure 3000H x 800W x 400D	
	01 Main MCCB 3P 300A	
	40 MCB 2P 20A	
	08 MCB 2P 30A	
	08 MC 3P 20A	
	04 push button with lamp	
	Fuse and indicated lamp	
	Bus bar support 3P+N	
	Copper bar	
	Accessories	
	For Lighting,fan and kitchen equipment	
	Fire Fighting panel	DB-FF-1
	For Elec Fire Fighting and Water pump	
	Lighting panel	LP-GH-1
	For Guard house 1	
	Lighting panel	LP-GH-2
	For Guard house 2	
	Lighting panel	LP-BALL
	For mini football area	
	Lighting panel	LP-PA
	For parking and badminton , water treatment area	
	Compressor panel	DB-COM-A
	Compressor panel	DB-COM-B
	Drain pump panel	P1-PIT
	Production panel (For Production Machine)	
	Main feeder (For Production Machine)	
	Cable ladder and trunking (For Production Machine)	
	Production panel (For Compressor room A,B)	
	Main feeder (For Compressor room A,B)	
	Cable ladder and trunking (For Compressor room A,B)	
	Suport and Fixing material for above	
	XLPE/PVC Cable	35sqmm - 4C
	PVC wire	10sqmm - 1C
	For LP-FAC-1 panel from MDB-1	
	XLPE/PVC Cable	35sqmm - 4C
	PVC wire	10sqmm - 1C
	For LP-FAC-2 panel from MDB-1	
	XLPE/PVC Cable	35sqmm - 4C
	PVC wire	10sqmm - 1C

	DETAIL ESTIMATION	
No.	ITEM	
	For LP-FAC-3 panel from MDB-1	
	XLPE/PVC Cable	35sqmm - 4C
	PVC wire	10sqmm - 1C
	For LP-FAC-3 panel from MDB-1	
	XLPE/PVC Cable	35sqmm - 4C
	PVC wire	10sqmm - 1C
	For LP-FAC-4 panel from MDB-1	
	XLPE/PVC Cable	35sqmm - 4C
	PVC wire	10sqmm - 1C
	For LP-FAC-5 panel from MDB-1	
	XLPE/PVC Cable	50sqmm - 4C
	PVC wire	10sqmm - 1C
	For LP-CAN panel from MDB-1	
	XLPE/PVC Cable	120sqmm-1C
	PVC wire	25sqmm - 1C
	For M-CAN panel From MDB-1	
	XLPE/PVC Cable	25sqmm - 4C
	PVC wire	10sqmm - 1C
	For LP-LOC panel from MDB-1	
	XLPE/PVC Cable	95sqmm-4C
	PVC wire	10sqmm - 1C
	For DB-OFF-1 panel from MDB-1	
	XLPE/PVC Cable	35sqmm - 4C
	PVC wire	10sqmm - 1C
	For DB-GH-1 panel from MDB-1	
	XLPE/PVC Cable	25sqmm - 4C
	PVC wire	10sqmm - 1C
	For DB-GH-2 panel from DB-GH-1	
	XLPE/PVC Cable	10sqmm - 4C
	PVC wire	6sqmm - 1C
	For P1-PIT panel from MDB-1	
	XLPE/PVC Cable	10sqmm - 4C
	PVC wire	6sqmm - 1C
	For LP-BALL panel from LP-CAN	
	XLPE/PVC Cable	6sqmm - 4C
	PVC wire	4sqmm - 1C
	For DB-PA FROM DB-LOC	
	XLPE/PVC Cable	240sqmm-1C
	PVC wire	25sqmm - 1C
	For M-AC-1 panel From MDB-1	
	XLPE/PVC Cable	240sqmm-1C
	PVC wire	25sqmm - 1C
	For M-AC-2 panel From MDB-1	
	XLPE/PVC Cable	240sqmm-1C
	PVC wire	25sqmm - 1C
	For M-AC-3 panel From MDB-1	
	XLPE/PVC Cable	240sqmm-1C
	PVC wire	25sqmm - 1C
	For M-AC-4 panel From MDB-1	
	XLPE/PVC Cable	95sqmm-4C
	PVC wire	10sqmm - 1C

	DETAIL ESTIMATION	
No.	ITEM	
	For DB-COM-B panel from MDB-1	
	XLPE/PVC Cable	120sqmm-1C
	PVC wire	10sqmm - 1C
	For DB-COM-A panel from MDB-1	
	XLPE/PVC Cable	10sqmm - 4C
	PVC wire	6sqmm - 1C
	For P-SER panel from DB-OFF-1	
	Termination for cable	
	Suport and Fixing material for above	
	Cable ladder	W1000*H100
	Cable ladder	W800*H100
	Cable ladder	W500*H100
	Cable ladder	W300*H100
	Cable ladder	W500H100 c/w cover
	Cable ladder	W300H100 c/w cover
	Galvanized cable duct	W300H100 c/w cover
	Cable ladder	T1000
	Cable ladder	T1000
	Cable ladder	T500
	Cable ladder	L500
	Cable ladder	T300
	Cable ladder	L300
	Accessories for cable ladder	
	Support material for cable ladder	
	Fixing material for cable ladder	
	PVC Flexible pipe	D80
	PVC Flexible pipe	D50
	PVC pipe	D32
	Accessories for above	
	Fixing material for above	
	Manhole	W1000xL1000xD1000
	Excavation & backfill	600Wx1000D
	Concrete protection	
	For pipe under the road	
	Painting fee , silicon for completed, pate for closing	
	Miscellaneous material for above	
	MATERIAL TOTAL	
	LABOUR COST	
	SUB - TOTAL(4)	
5	POWER SUPPLY FOR AIR-CON AND FAN	
	XLPE/PVC Cable	35sqmm - 4C
	PVC wire	10sqmm - 1C
	For M-AC panel from Outdoor unit AC factor (10 sets)	
	XLPE/PVC Cable	16sqmm-4C
	PVC wire	4sqmm - 1C
	For M-CAN panel from Outdoor unit AC factor (07 sets)	
	XLPE/PVC Cable	35sqmm - 4C
	For 04 COMPRESSOR	
	Control box for AC panel in Canteen	

	DETAIL ESTIMATION	
No.	ITEM	
	PVC/ PVC Cable	6sqmm-4C
	PVC/ PVC Cable	4 sqmm-4C
	PVC/ PVC Cable	2.5 sqmm-4C
	PVC/ PVC Cable	4sqmm-3C
	PVC/ PVC Cable	2.5 sqmm-3C
	PVC wire	25sqmm-1C
	PVC wire	6sqmm - 1C
	PVC wire	2.5sqmm-1C
	Termination for cable	
	Switch w/cover and pilot lamp	1-way/ 220V-16A
	Receptacle 15A-220V 2P+E for fan	
	Plug	2P+1E 15A
	Concealed box	100x50x38
	Isolator switch for fan	3P-30A
	Pull box	100x100x50
	PVC Flexible pipe	D50
	PVC pipe	D32
	PVC pipe 25 mm	
	Accessories for above	
	Fixing material for above	
	Painting fee	
	Miscellaneous material for above	
	MATERIAL TOTAL	
	LABOUR COST	
	SUB - TOTAL(5)	
6,1	INTERNAL SYSTEM	
	Fluorescent lighting louver type	HF32w-3
	Without lamps	
	Fluorescent lighting V-shape	HF32w-2
	Without lamps	
	Fluorescent lighting V-shape	HF32w-1
	Without lamps	
	Fluorescent lighting Reflector	HF32w-2
	Without lamps	
	Fluorescent lighting Reflector	HF32w-1
	Without lamps	
	Fluorescent lighting water proof	HF32w-2
	Without lamps	
	Fluorescent lighting water proof	HF32w-1
	Without lamps	
	Fluorescent lamp	HF 32
	Import from Indonesia	
	Fluorescent lighting explosion proof	FL36w-1
	Down light	26W
	For mini score ground	
	Galvanize lighting pole H=7 (m)	
	with MH lamp 250W & Single arm	
	Lingting MH lamp 250W	
	Concrete foundation & steel frame	

	DETAIL ESTIMATION	
No.	ITEM	
	<i>For badminton court</i>	
	Galvanize lighting pole H=7 (m)	
	with MH lamp 250W & Single arm	
	Lingting MH lamp 250W	
	Concrete foundation & steel frame	
	Emergency lighting wall type	
	Emergency lighting ceiling type	
	Exit lighting	
	Support and fixing materials for lighting	
	Receptacle 15A-220V 2P+E duplex wall mounted type	
	Receptacle 15A-220V 2P+E duplex water proof type	
	Receptacle 15A-220V 2P+E floor mounted type	
	Receptacle 15A-220V 2P+E for Emergency	
	Receptacle 15A-220V 2P+E for shutter door	
	Plug	2P+1E 15A
	Socket outlet board for folk lift charger	
	Wire trunking with plastic cover 150x 50x1.5	
	Wire trunking with plastic cover 100x 50x1.5	
	<i>For lighting in Production area (39 line)</i>	
	<i>For lighting in MDB, ompressor</i>	
	<i>For lighting for loading yard</i>	
	Accessories for above	
	Fixing material for above	
	Switch 220V-10A 1Px2	Weather proof
	Switch 220V-10A 1Px1	
	Switch 220V-10A 1Px1	3WX1
	Switch 220V-10A 1Px2	
	Switch 220V-10A 1Px3	
	Switch 220V-10A 1Px2	3WX2
	Switch 220V-10A 1Px3	PLX1
	Switch 220V-10A 1Px5	3WX2
	Switch 220V-10A 1Px6	3WX2
	Switch w/water proof cover	1-way/ 220V-16A
	PVC wire	2.5sqmm-1C
	PVC wire	4sqmm - 1C
	PVC/ PVC Cable	2.5 sqmm-3C
	PVC/ PVC Cable	4sqmm-3C
	PVC/ PVC Cable	6sqmm-4C
	Terminal for cable	
	Concealed box	100x50x38
	Exposed box	100x50x38
	Concealed box	100x100x50
	Pull box	100x100x50
	Pull box	80x80x50
	PVC pipe 32 mm	
	PVC pipe 25 mm	
	PVC pipe 20 mm	
	Accessories for above	
	Fixing material for above	
	Painting fee	
	Miscellaneous material	

	DETAIL ESTIMATION	
No.	ITEM	
	MATERIAL TOTAL	
	LABOUR COST	
	SUB - TOTAL(6,1)	
6,2	EXTERNAL SYSTEM	
	Galvanize lighting pole H=7 (m)	
	with Sodium lamp 250W & Single arm	
	Sodium lamp 250W & Single arm	
	Concrete foundation & steel frame	
	Photoelectric switch	220v-3A
	Isolator	2P 20A
	Fluorescent lighting V-shape	FL40w-2
	Fluorescent lighting V-shape	FL40w-1
	Fluorescent lighting water proof	FL40w-1
	Support and fixing materials for lighting	
	Switch w/cover	1-way/ 220V-16A
	PVC/ PVC Cable	2.5 sqmm-3C
	PVC/ PVC Cable	6sqmm-3C
	Terminal for cable	
	Concealed box	100x50x38
	PVC Flexible pipe	D50
	PVC pipe	D32
	PVC pipe 25 mm	
	Accessories for above	
	Fixing material for above	
	Accessories for above	
	Excavation & backfill	400Wx600D
	Miscellaneous material	
	MATERIAL TOTAL	
	LABOUR COST	
	SUB - TOTAL(6,2)	
7	FIRE ALARM SYSTEM WORK	
	Fire alarm control panel	30 zone
	Fire alarm annunciator	30 zone
	Smoke detector	
	Heat detector	
	Smoke detector Beam type	
	Combination box (w/bell,lamp,push button)	
	Cubic panel with fire fighting system	
	Indoor type H(1600)xD(250)xW(600)	
	Cubic panel with fire fighting system	
	Cubic panel for Fire Alarm Annunciator and terminal	
	H(3000)xD(225)xW(600)	
	Install in office	
	Cubic panel for Fire alarm control panel and terminal	
	H(2000)xD(225)xW(800)	
	Install in Guard house No1	
	Including Remote control the fire fighting pump	

	DETAIL ESTIMATION	
No.	ITEM	
	Terminal box	TB
	For TEL, PA,FA connecting	
	PVC/ PVC Cable	1.25sqmm-20C
	PVC/ PVC Cable	1.25sqmm-10C
	PVC/ PVC Cable	1.25sqmm- 3C
	PVC pipe	D25
	PVC pipe	D32
	PVC flexible pipe	D50
	Accessories for above	
	Fixing material for above	
	Pull box	100x100x50
	Trunking	W100xH50
	Accessories for trunking	
	Consider for FA, TEL, LAN ,PA system	
	Support material for trunking	
	Fixing material for trunking	
	Manhole cover by concrete	W1000xL1000xD1000
	Excavation & backfill	600Wx1000D
	Application Fee for Fire Police	
	Testing and inspection fee for fire Police	
	Connecting &Testing all F.A System	
	Miscellaneous material for above	
	MATERIAL TOTAL	
	LABOUR COST	
	SUB - TOTAL(7)	
8	PUBLIC ADDRESS SYSTEM	
	Program timer	TT-104B
	Paging microphone	PM-120
	Pre-amplifier panel	PP-025B
	Zone selector	SS-014B
	Junction panel	JP-034
	Power Amplifier	PA-3640B
	Voice announcerment board	EV-200
	Compact flash card	CF-32
	Battery bac Up for PA system	
	Public address cabinet panel	
	Horn speaker	10W
	Ceiling speaker	6W
	Antenuator	
	Support and Fixing material for above	
	PVC/ PVC Cable	1.25sqmm- 19C
	Coaxial Cable	0.75sqmm- 3C
	PVC/ PVC Cable	1.25sqmm- 3C
	Termination for cable	
	PVC pipe	D25
	Accessories for above	
	Fixing material for above	
	Trunking	W100xH50
	PVC Pull Box	100x100x50

	DETAIL ESTIMATION	
No.	ITEM	
	Out let box (concealed) 100x50x38	
	Program and testing fee	
	Miscellaneous material	
	MATERIAL TOTAL	
	LABOUR COST TOTAL	
	SUB - TOTAL(8)	
9	LIGHTNING PROTECTION	
	Lightning arester Rp=102m	Ingesco PDC 6.3
	For factory area	
	Lightning arester Rp=102m	Ingesco PDC 6.3
	For factory canteen and utility	
	Galvanize lighting pole H=6 (m)	
	Support and fixing materials for above	
	Earth Terminal Panel	ET- Panel
	Earthing system for lightning	
	Earthing Test Et	
	PVC wire	70sqmm - 1C
	PVC wire	6sqmm - 1C
	Terminal for cable	
	Concealed box	100x50x38
	PVC Flexible pipe	D50
	PVC pipe	D32
	Accessories for above	
	Fixing material for above	
	Excavation & backfill	400Wx600D
	Testing fee	
	Miscellaneous material	
	MATERIAL TOTAL	
	LABOUR COST	
	SUB - TOTAL(9)	
10	TELEPHONE SYSTEM WORK	
	Main equipment for LAN (sever, rack, hub)	
	PABX 10 Coline/ 104 Extention	KX-TDA200
	Telephone hand set	
	Telephone cable 0.5mm- 2P	
	LAN cable	
	Tel & LAN outlet wall type	
	Tel & LAN outlet floor mounted type	
	Terminal box	TB
	For TEL, PA,FA connecting	
	Out let box (concealed) 100x50x38	
	Out let box (concealed) 100x100x50 for floor TEL&LAN	
	PVC pipe	D25
	PVC flexible pipe	D50
	Accessories for above	
	Fixing material for above	

	DETAIL ESTIMATION	
No.	ITEM	
	Trunking	W100xH50
	Manhole	
	Manhole	W600xL600xD600
	Excavation & backfill	600Wx1000D
	Concrete protection	
	For pipe under the road	
	Miscellaneous material	
	MATERIAL TOTAL	
	LABOUR COST	
	SUB - TOTAL(10)	