

Item Ref.	Description				
01.01	L.V. DISTRIBUTION BOARDS				
a)	Supply, Installation, Testing & Commissioning of following wall mounting surface type Main Distribution Board(MDB)/Distribution Board (DB's) made with 16 SWG sheet metal, dust protected, vermin proof housing coated with approved color having all the necessary switching and protections, as per specifications and drawings, complete in all respect.				
1	MDB				
2	SMDB				
3	DB-GF-AC				
4	DB-1F-AC				
5	DB-GF-IT				
6	DB-1F-IT				
7	DB-GF-LP				
8	DB-C				
9	DB-EXT				
10	DB-1F-LP				
b)	Supply, Installation, Testing & Commissioning of following 4-Pole Manual Change Over (600V) etc., in 16 SWG sheet metal steel enclosure with neutral and earth terminal strips, complete in all respects.				
1	160A, 4 POLE				
c)	Supply, Installation, Testing & Commissioning of following Isolator, complete in all respects.				
1	20A,TPN				
2	25A,SPN				
3	20A,SPN				

Item Ref.	Description				
Page 01.01					

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02.01	LOW VOLTAGE CABLES AND WIRES				
	Supplying, Laying, Termination and Commissioning of following Copper Conductor Cable in already laid PVC conduit / cable tray / trench as required, as per drawings and specifications.				
(a)	4 Core - CU/PVC/ PVC Cable (600/1000V)				
i	4 Core - 185 Sq.mm				
ii	4 Core - 95 Sq.mm				
(b)	1 Core PVC Cable (600/1000V)				
iii	1- Core - 25 Sq.mm				
iv	1- Core - 16 Sq.mm				
v	1- Core - 10 Sqmm				
(c)	4 Core - Flexible CU/PVC/ PVC Cable (600/1000V)				
i	4 Core - 16 Sq.mm				
(d)	1 Core PVC Cable As ECC				
i	1 core -95 Sq.mm (600/1000V)				
ii	1 core -50 Sq.mm (600/1000V)				
iii	1 core -16 Sq.mm (450/750V)				
iv	1 core -10 Sq.mm (450/750V)				

Item Ref.	Description				
Page 02.01					

Item Ref.	Description				
03.01	CONDUITS & PIPES				
a)	Supply & Installation of following PVC Conduit as race ways with all accessories recessed/ surface on wall / column / under floor for Power,Elv system etc. As per relevant specifications, complete in all respect.				
i	1-1/4" dia				
ii	1-1/2" dia				
iii	2" dia				
(b)	Providing and Laying of following size uPVC Class 'D' Pipe for Power Cables buried in ground / under roads / under floor as per specification. Including excavation for laying of pipe, bricks, warning tape, and backfilling with new and fresh soil etc., as shown on the drawing ,complete in all respect.				
i	6" dia Upvc				
ii	4" dia Upvc				
(c)	Providing and Laying of following size UPVC pipe of Class D for Telecommunication Cable (copper / optic fibre) . Buried in ground / under roads / under floor as per specification. Including excavation for laying of pipe, bricks, warning tape, and backfilling with new and fresh soil etc., as shown on the drawing, complete in all respect.				
i	4" dia Upvc				
(d)	Providing and Construction of Manhole Size 2'-6" x 2'-6" x 3'-0" deep, 6" thick, concrete 1:2:4 ratio with 2'-6" round heavy duty cast iron cover, 100% water proof, complete in all respect. (For Electrical cables).				
(d)	Providing and Construction of Handhole Size 2'-0" x 2'-0" x 3'-0" deep, 6" thick, concrete 1:2:4 ratio with 2'-0" round heavy duty cast iron cover, 100% water proof, complete in all respect. (For Electrical cables).				
(e)	Providing and Construction of Manhole Size 2' x 2' x 3' mm deep 6" thick concrete 1:2:4 ratio with 2' round heavy duty cast iron cover, 100% water proof, complete in all respect. (For Incoming Telecommunication cables).				

Item Ref.	Description								
				Page 03.01					

Item Ref.	Description				
04.01	WIRING ACCESSORIES				
a)	Supply,Installation,Testing and Commissioning of following 10Amps, One / Two /Three/Four gang type & Dimmer Switches, Sockets including 16 SWG Sheet Steel powder coated back Boxes, recessed in wall, complete in all respects.				
i	One gang switch 10A				
ii	Two gang switch 10A				
iii	Three gang switch 10A				
iv	Four gang switch 10A				
v	One gang dimmer with 10A switch				
vi	Two gang dimmer with 10A switch				
vii	13A, 3Pin Unversal switched socket outlet				
viii	13A, 3Pin Flat Simplex switched socket outlet				
xi	13A, 3Pin Flat Duplex switched socket outlet				
x	15A 3 Pin switch socket outlet				
xi	16A,3Pin Industrial socket				
xii	63A,5Pin Industrial socket				

Item Ref.	Description									
					Page 04.01					

Item Ref.	Description				
05.01	LIGHT FIXTURES & FANS				
a)	Supply, Installation, Testing and Commissioning of following Light Fixtures complete with starters, Electronic ballast (mention otherwise), lamps, drivers, mounting accessories etc., complete in all respects. Lighting fixtures Sample must be submitted to consultant for approval, (For complete detail references of Light Fixtures, please refer to Light Fixture Schedules).				
i	Recessed ceiling mounted Fluorescent light fixture with M2 Louver (IP-20) and 4x18W T8 (F1 Type)				
ii	Recessed ceiling mounted Fluorescent light fixture with M2 Louver (IP-20) and 2x36W T8 (F2 Type)				
iii	Surface wall mounted Batten Fluorescent light fixture with Acrylic Diffuser (IP-20) and 1x36W T8 (F3 Type)				
iv	Recessed ceiling mounted Down Light fixture with Glass cover (IP-44) and 1x14W CFL (D1 Type)				
v	Recessed ceiling mounted Down Light fixture with Glass cover (IP-44) and 1x18W CFL (D2 Type)				
vi	Surface ceiling mounted Down Light fixture (IP-54) and 1x18W CFL (D3 Type)				
vii	Surface wall mounted Bulkhead Light fixture (IP-54) and 1x18W CFL (W1 Type)				
viii	Recessed wall mounted Asymmetric step light fixture with Polycarbonate Diffuser (IP-67) and 4W LED (W2 Type)				
b)	Supply, Installation, Testing and Commissioning of following Items including all connecting accessories as per drawings, specifications, complete in all respects.				
i	56" Dia Ceiling Fan with Fan Hook M.S.Box with colour coated				
ii	9" Dia Exhaust Fan				

Item Ref.	Description				
					Page 05.01

Item Ref.	Description				
06.01	WIRING FOR LIGHTS,FANS & SOCKETS				
a)	Supply, Installation, Testing & Commissioning of Circuit Wiring from DB to Switch board including wiring between switch on the same circuit with 2x2.5 sq.mm. + 1x2.5 sq.mm. as ECC single core PVC insulated wires in 20 mm dia. PVC conduit surface / recessed in wall, column, ceiling, etc., complete with all conduit accessories as per specification.				
b)	Supply, Installation, Testing & Commissioning of Wiring for light point from Switch Board to Point with 3x1.5 sq.mm. wires in 20 mm or appropriate dia PVC conduit, complete in all respect.				
c)	Supply, Installation, Testing & Commissioning of Wiring from Light Point to Light Point with 3x1.5 sq.mm. wires in 20 mm or appropriate dia PVC conduit, complete in all respect.				
d)	Supply, Installation, Testing & Commissioning of Wiring for Ceiling /Exhaust fan point from Switch Board to Point with 3x1.5 sq.mm. wires in 20 mm or appropriate dia PVC conduit, complete in all respect.				
e)	Supply, Installation and Commissioning of Wiring for 3Pin, 13 A,universal Socket Outlet with 2 x 2.5 sq.mm + 1 x 2.5 sq.mm single core PVC insulated wires in 20 mm dia. PVC conduit surface / recessed in wall, column, ceiling, etc., complete with all conduit accessories as per specification.				
	i DB to Outlet				
	ii Outlet to Outlet				
f)	Supply, Installation, Testing & Commissioning of Wiring for 13A 2 pin + E, Socket Outlet with 2 x 4 sq.mm. + 1 x 4 Sqmm as ECC single core PVC installed wire in 20 mm dia. PVC conduit surface / recessed in wall, column, ceiling, etc., complete with all conduit accessories as per specification.				
	i DB to Outlet				
	ii Outlet to Outlet				

Item Ref.	Description				
Page 06.01					

Item Ref.	Description				
g)	Supply, Installation and Commissioning of Wiring for 3 Pin, 15A Socket Outlet /CCTV Rack/Projector/12U Rack with 2 x 4 sq.mm. + 1 x 4 Sq.mm as ECC single core PVC insulated wires in 20 mm dia. PVC conduit surface / recessed in wall, column, ceiling, etc., with all conduit accessories as per drawings and specifications.				
h)	Supply, Installation and Commissioning of Wiring for 3 Pin, 20A Industrial Socket Outlet /42U Rack 2x 6 sq.mm. + 1 x 6 Sqmm as ECC single core PVC insulated wires in 25 mm dia. PVC conduit surface / recessed in wall, column, ceiling, etc., with all conduit accessories as per drawings and specifications.				
i)	Supply, Installation and Commissioning of Wiring for 5 Pin, 63A Industrial Socket Outlet 4x 16 sq.mm. + 1 x 16 Sqmm as ECC single core PVC insulated wires in 50 mm dia. PVC conduit surface / recessed in wall, column, ceiling, etc., with all conduit accessories as per specification.				
j)	Supply, Installation and Commissioning of Wiring for A/C Split unit with 2 x 4 sq.mm. + 1 x 4 Sq.mm as ECC single core PVC insulated wires in 20 mm dia. PVC conduit surface / recessed in wall, column, ceiling, etc., with all conduit accessories as per specification.				
k)	Supply, Installation, Testing & Commissioning of Wiring for Isolator Switch 20A TPN for pump with 4 x 4 sq.mm. + 1 x 4 Sqmm as ECC single core PVC installed wire in 20 mm dia. PVC conduit surface / recessed in wall, column, ceiling, etc., complete with all conduit accessories as per specification.				

Item Ref.	Description				
					Page 06.02

Item Ref.	Description				
07.01	VOICE, DATA COMMUNICATION & CCTV CABLING SYSTEMS(Passive Equipment Only)				
a)	Providing, Installation, Testing & Commissioning of following Data / Voice Cabinets, for patch panel, Fibre panels, adapter, PDU's,Fans and space for active switches as it may require to accomodate complete the entire passive & active network as per the single line diagram drawing and specification, complete in all respect.				
i	42 U MDF Rack with Standard portions				
ii	12U Data Rack in Data Room.				
b)	Providing, Fixing, Testing & Commissioning of CAT-6, 4 Pair RJ -45 Single Outlet (for Voice) Face Plate with I/O - Shutter type, labels with 16 SWG back box, complete in all respect.				
c)	Providing, Fixing, Testing & Commissioning of 4 Pair RJ -45 Simplex Outlet (for Data) with I/O - Shutter type with 16 SWG back box, complete in all respect.				
d)	Providing, Fixing, Testing & Commissioning of CAT-6, 4 Pair RJ -45 Dual Outlet (for Voice & Data) Face Plate with I/O - Shutter type, labels with 16 SWG back box, complete in all respect.				
e)	Providing, Laying, Testing & Commissioning of following Communication Cables in already laid cable trays /PVC conduit as per drawing and specification.				
i	CAT- 5, 25 Pair UTP Cable from MDF to each IDF's in already laid cable tray/Conduits with all necessary accessories, complete in all respect.				
ii	CAT- 6, 4 Pair UTP Cable from IDF to Outlet in 25 mm dia PVC Conduits with all necessary accessories, complete in all respect.				
f)	Providing,Installation, Testing & Commissioning of 24 Port RJ 45 type CAT-6 UTP Patch Panels, equipped with 24xRJ-45 UTP jack including with all necessary accessories, complete in all respect.				

Item Ref.	Description				
Page 07.01					

Item Ref.	Description				
g)	Providing,Installation, Testing & Commissioning of Fiber Optic Patch Panels to accomodate 12 Core Multimode Fiber Optic Cables from Data Room to each IDF, complete with all necessary accessories i.e,connectors, complete in all respect.				
h)	Providing, Installation, Testing & Commissioning of 19" Front/Rear (as required) Cable Organizer between patch panels and active equipment to provide patch cable management including with all necessary accessories, complete in all respect.				
j)	Providing, Installation, Testing & Commissioning of CAT-6 UTP (RJ-45 to RJ-45) for the above Patch Panels including with all necessary accessories, complete in all respect.				
i	CAT-6 (1m) Long Patch Cord.				
ii	CAT-6 (2m) Long Patch Cord.				
k)	Providing, Laying, Testing & Commissioning of Multi Mode 50/125 - Micron- 06 Core Indoor Fibre Optic Cable, OM3 from Data Room (Data 42U Rack)to each IDF,in already laid appropriate size of Pvc conduit / cable tray , complete with all termination accessories as per specification.				
l)	Providing, Laying, Testing & Commissioning of 1500 Pair Wiring IDC 110 19" cross connect block with mounting 19"Frame including arrestors and pair to pair (2 m) patch cords with all necessary accessories, complete in all respect.(It may sagrigate as 300 pair for incoming PTCL & 600 x600 Pair each Extention & Distribution)				
i	50 Pair of Floor Distribution				
ii	100 Pair of Floor Distribution				
m)	Providing,Installation,Testing & Commissioning of Patch Cord LC to LC type F.O.Patch cord (1m), complete in all respect.				

Item Ref.	Description				
Page 07.02					

Item Ref.	Description				
n)	Installation, Testing & Commissioning by Manufacturer Authorised Agent / Dealer and handing over complete Voice & Data System to Owner with Providing Training voice data fuke & OTDR Testing,as build drawing,Rack layouts and certification's Principal, complete equipment's Manual and Warranty Documents to Owners representative.				

Item Ref.	Description				
					Page 07.03

Item Ref.	Description				
08.01	<p>CCTV SYSTEM</p> <p>a) Providing, Installation testing and commissioning of 1/3" CCD cameras with wall mounted bracket, High resolution 740 TVL (Colour) with verifocal lens of 3-8mm on O Lux , day night wide dynamic range and auto focus zoom, fl. 0-360, CS mount type complete with all respect and fixing accessories as per specification and drawings.</p> <p>b) Providing Installation, Testing & Commissioning of Indoor False Ceiling Mounted,1/3" Dome type Camera High resolution complete with all respect and fixing accessories as per specification and drawings,complete in all respect.</p> <p>c) Providing, installation, testing & commissioning of variable speed desktop keyboard with all fixing accessories complete in all respect.</p> <p>d) Providing, Wiring and Testing of CCTV Cameras points with RG-06, 75 ohms coaxial cable in 25mm dia PVC conduit, recessed / surface in wall and ceiling, complete in all respects.</p> <p>f) Providing, installation, testing & commissioning of 32" LCD TV, with VGA splitter and co-axial cable input, including all mounting accessories etc. complete in all respects</p> <p>g) Providing, installation, testing & commissioning of 12-channel Digital Video Recorder (DVR), PAL system based with 1 month recording, as per specification.</p> <p>h) Installation, Testing & Commissioning, Programming by Manufacturer Authorised Agent / Dealer and handing over complete CCTV System to Owner with providing training, SOP, complete equipment's manual and warranty documents to owners representative.</p>				

Item Ref.	Description				
Page 08.01					

Item Ref.	Description				
<p>9.01</p> <p>a)</p> <p>i</p> <p>b)</p> <p>i</p> <p>c)</p> <p>i</p>	<p>EARTHING SYSTEM</p> <p>Supply, installation, testing and commissioning of following items for complete earthing system including all connecting accessories as per drawings & specifications complete in all respect.</p> <p>Earth pit with Rod type earth electrode, 3/4" dia and 10' long copper rod .</p> <p>Supply, installation, testing and commissioning of following items for complete clean earthing system including all connecting accessories as per drawings & specifications complete in all respect.</p> <p>Earth pit with Rod type earth electrode, 3/4" dia and 10' long copper rod .</p> <p>Supply, installation, testing and commissioning of following size of PVC insulated Cu.Conductor cable as earth continuity conductor (ECC) in 1-1/2" dia upvc conduit, complete in all respect.</p> <p>70 sq.mm</p>				

Item Ref.	Description				
Page 09.01					

Item Ref.	Description				
10.01	<p>DIESEL GENERATOR SET</p> <p>a) Supply, Installation, Testing & Commissioning of 100 kVA (Prime Power Rated) 3 phase- 4 wire- 415V Diesel Generator set with Canopy and Electronic Governor, AMF, an advanced LCD Display control panel (Programmable), as per specification. Including transportation up to site and safety store.Exhaust piping, ducting, critical silencer with elbow, also inclusive of Power cable end termination, with the approval of engineer. complete in all respect.</p> <p>b) Prepare RCC base for the above Generator (as per recommendation of manufacturer & specification), with the approval of engineer, complete in all respect.</p> <p>c) Getting necessary Approval/ NOC's for Installation of the above Generator from concerned Authorities (Electric Inspector),expenses etc.All official fees/expenses shall be paid by client.</p> <p>d) Supply and Handing Over to Client Representative of Standard Spare Parts as recommended by the manufacturer for the operation of 1000 hours for the Generator Set. (Itemized list of Spares to be provided as per specification).</p> <p>e) Providing, Installation, Testing & Commissioning of Control Cabling with appropriate sized (multicore) cable as per manufacturer recommendation, between Generator to Manual changeover switch & SMDB including terminations and all mounting accessories etc.,complete in all respects.</p>				

Item Ref.	Description				

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11.01	UPS SYSTEM a) Providing, Installation, Testing and Commissioning of UPS rating 30kVA 3 Phase in,3 Phase out, input power factor with batteries and all accessories as per specification & drawing,complete in all respect.				

Item Ref.	Description									
					Page 11.01					