

**SCOPE OF WORK**

The Scope of work is for Replacement of old Telephone JB's with krone terminals , Electrical supply wirings , UG cable laying , Telephone cable laying and wiring, Sockets and switches for computer points etc in New Administrative Bldg and various Bldg's in Willingdon island. Detailed scope of work is as below.

1. Supply, Installation Testing and Commissioning (SITC) of 6 nos. Telephone JB's with suitable krone terminals and connecting the existing cables/wires etc. and maintaining proper connectivity ..
2. Electrical supply wiring with various sizes of FRLS copper wires , Capping and casing etc, for various applications such Computer power points , power points , telephones etc..
3. SITC of Plug and sockets for computer points , Telephone sockets etc.
4. Supply and laying of 50/20 pair telephone,
5. Laying of 4CX16 Sqmm , armoured for taking main supply to DB,s etc through top of ceiling , clamping along wall etc.

**The bidder shall visit the site, ascertain the site conditions and scope before bidding.**

**1. TECHNICAL SPECIFICATIONS OF ELECTRICAL WORKS**

**1.1**

In addition to the above, the scope intends to cover but not restrict to the following activities, services and works.

- (i) Complete design and engineering of all the systems, sub-systems, equipment, material and services.
- (ii) In addition to the requirements indicated in Technical Specifications, all the requirements as stated in relevant regulations stipulated for successful commissioning of the installation also be considered as part of this specification and Contractor is bound to compliance of the same.
- (iii) The Contractor shall be responsible for the overall management and supervision of works. He shall provide experienced, skilled, knowledgeable and competent personnel for all phases of the project, so as to provide the Employer with a high quality system.

**1.2 Testing and commissioning**

The scope includes testing and commissioning of all equipment, sub-systems and systems of the project and putting them into successful commercial operation. The scope shall include but not limited to the requirements given elsewhere in the specification. The Contractor shall be

responsible for providing all necessary testing and commissioning personal, tools and plant, test equipment, etc.

The Contractor shall identify all interface issues with Employer and other agencies, and shall be responsible for each interfacing, coordination and exchange of all necessary information.

### **COMPLIANCE OF ELECTRICITY ACT, REGULATIONS, ETC.**

Contractor is required to follow statutory regulations stipulated in Electricity Act 2003, Indian telegraph act 1889, Electricity (Supply) Act 1948, Indian Electricity Rules 1956, CEA (Regulation relating to safety of electrical installation) Regulation 2010, with all amendments till date and other local rules and regulation referred in this specifications.

The Contractor shall comply with all the statutory rules and regulations prevailing in the state of Kerala including those related to safety of equipment and human beings.

The successful Contractor (individual) or any of the partner of joint venture who has qualified, should obtain at least "B" class electrical license from Electrical inspectorate of Govt. of Kerala/GoI/ any other state/ Union territory etc, before award of contract and to be kept valid till such time all the erected work as per scope of the award is taken over by the Employer.

The Contractor shall do complete coordination with all local and statutory agencies for execution of complete works including obtaining clearance for energizing of the HT system upon completion of entire works.

The Contractor shall obtain approvals & clearances and right of way from all agencies involved. All cable routes shall generally be routed through public land/ along the road.

The Contractor shall be responsible for transportation to site all the materials to be provided by the Contractor as well as proper storage and preservation of the same at his own cost, till such time the erected installation is taken over by the Employer.

- a) Chipping, grouting, etc as recommended shall be done for completion and installation work on the finished floor, wall, roof, etc. It is the responsibility of the contractor to supply all necessary materials and to bring the disturbed surface to the original finish. Touch painting of scratches found on equipment, other painted metallic surfaces, galvanized, etc. associated with this work is also included in the scope of contractor without any extra cost. Base steel structures shall be painted with 2 coats of epoxy primer and 2 coats of epoxy paint.

## **1.4 GENERAL SPECIFICATIONS FOR WIRING**

All the switches , plugs etc. shall be of modular type with plates, cover etc. complete. All cables shall be Fire Retardant PVC insulated copper conductor multi stranded cable . Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm Fire Retardant PVC insulated copper conductor multi stranded cable in surface / concealed medium class Capping and casing, with Modular type switch, modular plates , suitable size M.S. box and earthing the point with 1.5 sq.mm. FRLS PVC insulated multi stranded core cable etc as required All inter connections shall be provided as follows:

- A. The following shall be deemed to be included in the wiring.
  - a. Modular Switch, plates, cover , connector etc as required.
  - b. Earth wire from the distribution boards to all current carrying apparatus through switch boards, M. S. Boxes etc.
  - c. All metal blocks, boards, covers and M. S. Boxes, recessed or surface mounted including those required for mounting fan regulators but excluding those for fixing the distribution switch boards.
  - d. All fixing accessories such as clips, nails, screws, phil plug, rawl plug etc. as required.
  - e. Wiring for Plug & sockets/power points for AC etc. from the DB's etc. with PVC capping and casing etc. in complete.
  - f. Looping in the same switch board and inter connections between points on the same circuit.
- B. All points in the distribution system shall be measured under point wiring irrespective of length of circuit from the respective switches to the Plug points/ceiling rose/connector etc.
- C. In the case of plug points the point length shall be measured from the DB to individual plug socket.
- D. Power wiring shall be kept separate and distinct from lighting and fan wiring. All conductors shall run as far as possible along the walls and ceiling so as to be easily accessible and capable of being thoroughly inspected except for concealed system. In all types of wiring due consideration shall be given for neatness, good appearance and safety. The balancing of circuits in 3 wires on poly phase installation shall be arranged to the satisfaction of Engineer-in-charge. In large/important rooms light fans and socket outlet points shall be distributed over more than one circuit as directed by the Engineer-in-charge.
- E. All Civil works connected with this contract like plastering, grouting, making holes for providing fans, making good any damages caused etc shall be done by the contractor. The wall/ ceiling etc shall be re plastered by providing original surface coating using putty, paints etc as required. No additional cost shall be given for repairing/resurfacing the wall, ceilings etc.
- F. For power points the Metal clad sockets will be supplied by C.P.T and connections shall be given by the contractor.
- G. The plug sockets shall be earthed continuously using separate multi stranded Cu wire .

#### **1.4 TELEPHONE WIRING**

This work involves supply and laying of suitable telephone cables etc. as per schedule of work from the gate office to the new security building , internal wiring inside the new building, fixing, termination and commissioning of krone module junction box.

- (i) Works includes laying of telephone cables through separate Capping and casing g (where ever necessary in PVC Pipes) system as per the direction of Engineer-in-charge (EIC) and termination at work stations, cabins and other locations as indicated in the drawing and also as per the direction of EIC. The contractor will ensure that each and every point is identified (with identification tags) and tested for connecting existing system. The providing of telephone sockets etc. includes wiring for telephone points with 2 pair telephone cable (4Cx0.6Sqmm) tinned Cu

conductor PVC insulated PVC sheathed telephone wire of required length complete with accessories up to and including RJ11 telephone socket outlets. After completion of the telephone wiring works, a thorough check is to be carried out to ascertain the entire cable connectivity from the main exchange at ground floor at Administrative building to the individual telephones provided at the different locations, so as to ensure the smooth functioning of the complete EPABX system.

- (ii) Supply and laying of Pair jelly filled PVC insulated or as mentioned in BOQ , unarmoured telephone cable, through Capping & casing etc.
- (iii) Supply, fixing and commissioning of Telephone socket with modular base and cover with all accessories complete including telephone cables (2pair).
- (iv) Supply, fixing and commissioning of PVC Junction box with at least 10 Pair Krone modules including termination of telephone cable to the existing EPABX system.

Approved makes

	Item	Makes
1	PVC CONDUIT PIPES / CASING & CAPPING	BALCO/ ATUL/ GEO/ CLIPSAL/ PRECISION/ AVONPLAST/ KONSEAL
2	TELEPHONE JB	HENSEL/CAPE OR EQUIVALENT
3	WIRING CABLE	FINOLEX/ QFLEX/ RR KABEL/ RPG CABLES/ LAPP KABEL/ V-GUARD/ HAVELLS/ L&T/ RALLISON /KEI/PRIMECABLE
4	INSTRUMENTATION / TELEPHONE CABLES	TRACO / HINDUSTAN CABLES / DELTON / FINOLEX / USHA BELTRON / PRIMECAB / VIDYA
5	MODULAR SWITCHES/ PLUG SOCKETS/ TELEPHONE SOCKETS	ANCHOR/ MK/ LEADER / CRABTREE/SIEMENS/ FINOLEX/LEGRAND/ABB / INDOASIAN

\*Makes of items not mentioned if any shall be get approved from Engineer in charge before executing the work.