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I. Policy Statement

It is the policy of the Imperial Valley telecommunications Authority ("IVTA") to provide a clear understanding of the construction requirements that need to be implemented during the design phase for any new building to be constructed on behalf of any of the IVTA member agencies. This should be deemed an "on site" policy which is the responsibly of the facility owner rather than IVTA or a Developer.

II. Definitions

- **Demarcation Point** – The Demarcation Point is that point at which operational control or ownership of communications facilities changes from one organizational entity to another. The Demarcation Point includes the network interconnections and equipment necessary to provide access to the network.
- **Site** – Location of member agencies demarcation point which can be at the agency's building, usually at the entrance facility or telecommunications room; or at a point outside the building at a communications pedestal or a fiber junction box located on a communications pole or other suitable location.

III. General Information

The goal of the IVTA is to provide a community wide system access to the Public Agencies in Imperial Valley. To continue providing the same level of service, for any new site that is built, a conduit and fiber optic cable need to be provided and place underground between the sites' Main Distribution Facility room and the nearest access point to the IVTA network backbone. The most desirable path/route to the access point is to be determined by the IVTA Network Administrator.

IV. Network Administrator Responsibility

The Network Administrator will require from the facility owner or with approval from the facility owner, from the contractor a preliminary conduit layout with respect to other infrastructure systems. After reviewing the proposed development the Network Administrator will determine the size and number of conduits and the type and size of fiber optic cable required to adequately serve the site needs. IVTA administrator will then make a recommendation as to the proper installation.

V. Facility responsibility

The facility owner and/or the contractor shall be responsible for furnishing all labor, materials and equipment necessary for: excavation, backfill, conduit placement, fiber optic cable placement, and manholes. All easements and permits are the responsibility of the facility owner and/or contractor. Upon completion of the project, the contractor needs to supply a diagram "as-built" showing the conduit routing paths on paper and electronic media. The Facility owner shall be responsible for any and all on going repair, maintenance or replacement of this system, except that IVTA shall be responsible for the demarcation switch, unless it is determined that the switch was damaged through the fault of the Facility owner.

Imperial Valley Telecommunications Authority

Technical specifications for the ON SITE installation of Fiber Optic Cable

1.0 Introduction

The Network Administrator for the Imperial Valley Telecommunications Authority (IVTA) requires the installation of single mode fiber optic cable to support data communication services for the IVTA Network. The fiber optic cable needs to be installed between the building Main Distribution Facility (MDF) and the nearest and most suitable access point to the IVTA network backbone.

The following specifications for the selection and installation of fiber-optic cable and associated hardware are intended to ensure a reliable and consistent fiber optic media infrastructure for the IVTA Network. **The selected path, cable, conduit assignment , fiber organizer, and fiber termination need to be reviewed and approved by the Network Administrator prior to installation.**

2.0 Fiber Cable Specifications

Fiber installed on IVTA Network sites must meet or exceed the following specifications.

2.1 Single mode Fiber

Installed cable shall be single mode, and graded index glass fiber. All materials in the cable are to be dielectric.

2.1.1 Performance

Installed fiber must meet or exceed the following performance specifications.

Fiber cable types	Wavelength (nm)	Max. Attn. (dB/Km)
Single mode, Outside plant	1,310 1,550	0.35 0.23

2.1.2 Cable Construction

Outside plant cable shall be used for all applications where cable is to be run in underground conduits. Outside plant cable shall meet at least the following specifications:

- Lose tube design.
- EIA/TIA –598-B color coding for fiber optic cable.
- Dry core
- Fiber strand count is site dependent

2.1.3 Recommended Suppliers

Any supplier that provides fiber optic cable that meets or exceeds the above performance specification will be considered.

3.0 Installation Standards

3.1 Underground Cable

Use 4 inch schedule 40 PVC conduit with 3 inner ducts. All fiber cable is to be protected with inner duct. After installation, inner ducts are to be permanently labeled as containing fiber optic cable. Instruction for labeling will be provided by the Network Administrator. All cable and inner duct are to be fully supported throughout its entire run.

3.1.1 Labeling

Each cable and inner duct is to be permanently labeled at each end with a unique cable number. In addition, labels shall be affixed to the cable/inner duct at every transition of a vault, hand hole, riser closet, or major pull box. Labels will be in the form of “IVTA-Location one-Location two- sequence number”. For example, cable number 123 from IDF01 to IDF02 would be labeled as "IVTA-IDF01-IDF02-123.

4.0 Termination Standards

Termination of the fiber will be at the discretion of the Network Administrator.

4.1 Fiber Organizers

Fiber cables are to be terminated in one of two types of enclosures. The Network Administrator may specify either wall-mounted or rack-mountable stand-alone units for installation.

4.2 Miscellaneous

At each end of the cable, sufficient slack shall be left to facilitate reasonable future relocation of the fiber and for splicing into the IVTA backbone. Slack for the inside end shall be 30 feet. Slack for the outside end shall be 75 feet. Fiber in the outside end should be stored in accordance with outside plant regulations.

5.0 Testing

5.1 Before Installation

Each individual fiber in a cable shall be tested with an OTDR for length and transmission anomalies while on the reel before installation.

5.2 After Installation

5.2.1. All fiber strands shall be tested end-to-end for bi-directional attenuation, 1310 nm/1550 nm for single mode fibers.

5.2.2. Tests must ensure that the measured link loss for each strand does not exceed the “worst case” allowable loss defined as the sum of the connector loss (based on the number of mated connector pairs at the EIA/TIA-568 B maximum allowable loss of 0.75 dB per mated pair) and the optical loss (based on the performance standard above, 2.1.1).

Upon completion of the project, the contractor will provide a diagram “as-built” showing the conduit routing paths and fiber designations on paper and electronic media.