

Start Right Smart Guide

Commercial Network Construction
Servicing Guidelines

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Thank you for choosing TELUS as your communications partner for your commercial building project. The purpose of this document is to inform developers and trades professionals with the components of a typical network installation to a commercial building using the latest communications access technologies.

To ensure TELUS has the necessary information to secure an adequate vertical/horizontal support structure system and sufficient termination space, please provide the site-specific details of your building layout via the '**Contact Us**' section found on telus.com/build or input your details on the New Building Entrance Form and email it to 4DEV@telus.com.

TELUS Responsibilities

TELUS will provide, install, connect and maintain the fibre and/or copper entrance cables, and if the fibre is GPON capable, we will include all the applicable distribution and termination equipment necessary for the project.

Owner/Developer Responsibilities

All components will be placed in locations mutually agreed upon between TELUS and the building Owner/Developer.

Prior to the design, construction, and installation of facilities within the premises of the commercial building, TELUS will request permission to register a communications right-of-way in the form of an easement over the property.

The Owner/Developer is responsible for:

- All private property conduit routes and pedestals*. Conduit is required between all electrical rooms where TELUS equipment will be located including the main and secondary electrical rooms and the individual suites.
- The developer is typically responsible for tie, riser and suite cable, but should contact TELUS for partnership and marketing cost-sharing opportunities in either of the following ways:

On-line: telus.com/build 'Contact Us' section

Email: 4DEV@telus.com

Phone: 1-855-432-3488, or 310-4DEV (8:00 am – 4:30 pm PST, Monday – Friday)

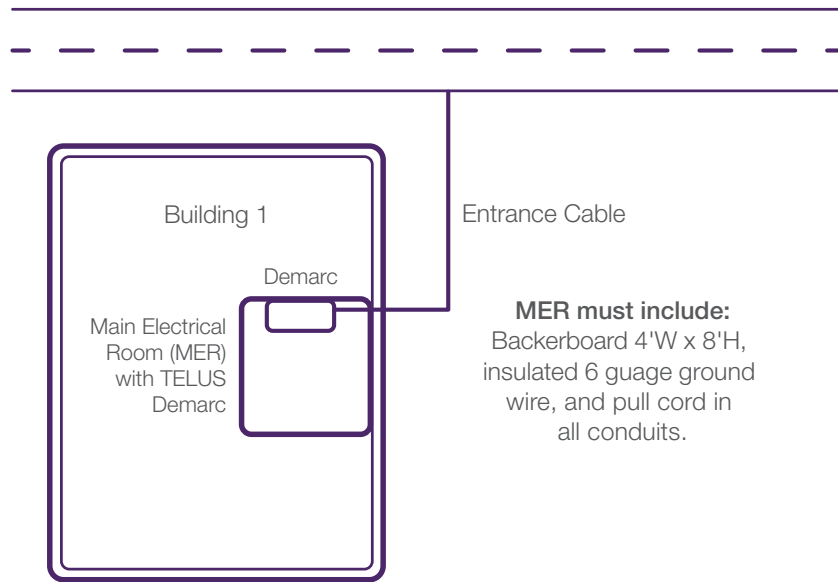
Building Entrance Cable

Access requirements to the building are either Aerial or Underground. Points to consider:

- Aerial access would require building attachment and weather head capabilities.
- Underground (UG) access would require ducts from the property line to inside the main electrical room of the commercial building;
 - Typically the requirement in B.C. is two 100 mm (4") ducts, and a single 100 mm (4") duct in Alberta.
 - Conduit specification – Diameter Rigid Type DB2 PVC duct from the building termination to the property line: CSA C22.3 #7-94 Section 3.4.2.
- Conduit runs are to be limited to two 90 degree sweep bends or a maximum of 100 m (328 feet) without the use of a pull box. If a pull box is required, it shall follow the Canadian Electrical Code (CEC) for installation.
- Understanding that room sizes vary, the preferred size backboard for the Main Electrical Room (MER) should be 4'W x 8'H x ¾" D backboard where feasible, with an insulated 6 gauge ground wire, and a pull cord within, in all conduits.



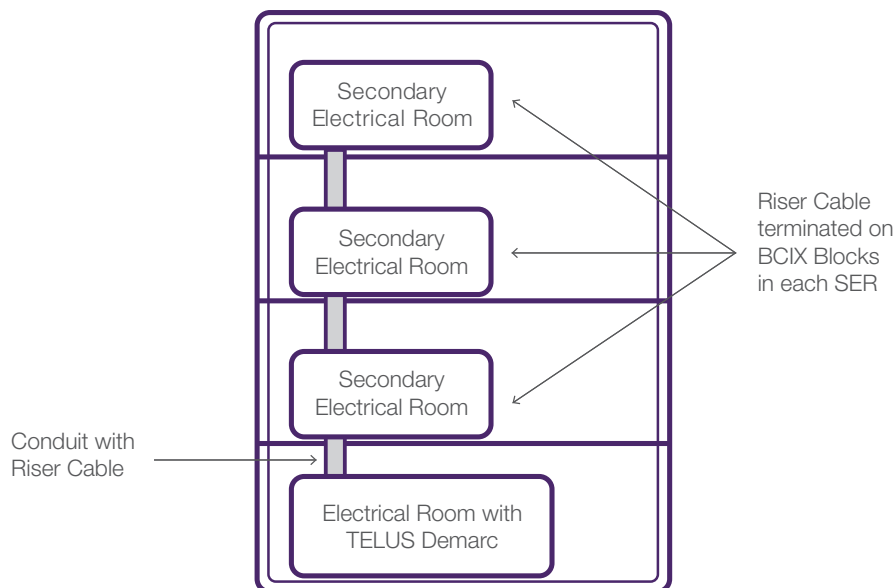
Figure 1: Building Entrance Cable



Riser Cables

All riser pairs will be terminated on a 2'W x 2'H x $\frac{3}{4}$ "D backboard locked in a Secondary Electrical Room/Closet (SER) on each floor of the building with a backboard included. This is necessary to provide security for customer lines and riser facilities. The riser will be sized to a minimum of 25 copper pairs (26 gauge) in each SER. All riser pairs will be terminated in the Main Electrical Room (MER) on BIX connectors that are mounted on plywood backboards. On each floor within the riser SER, the full allocated complement of pairs will also be terminated on BIX connectors. To comply with Canadian Standards Association (CSA) fire retardant requirements, all riser cables will be air core, colour-coded, PVC jacketed, and aluminum-shielded with a CMR (FT-4) minimum rating. Protection devices are not required on riser cable pairs, provided the riser cables remain within the building they are serving or are underground if serving secondary buildings.

Figure 2: Riser Cables

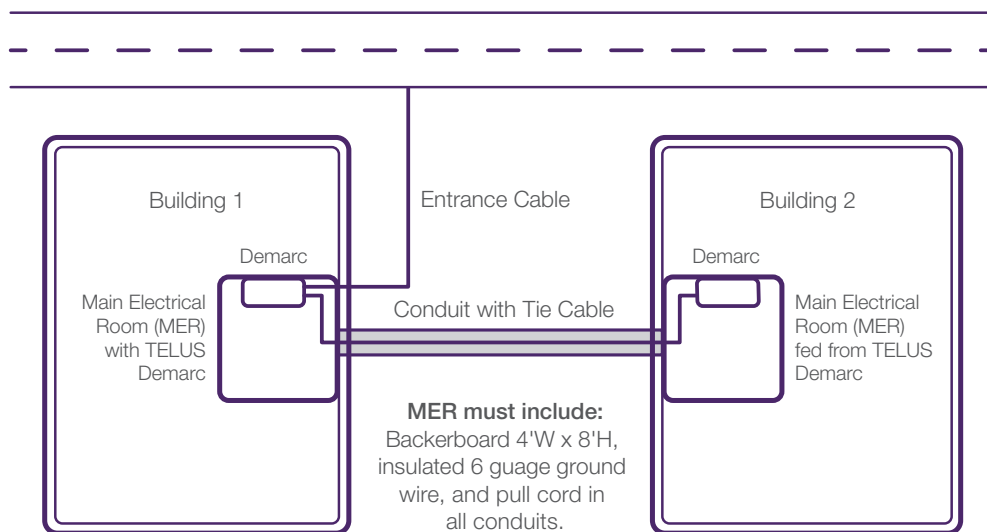


Tie Cables

The tie cable will be placed between the TELUS demarcation point in the main electrical room (MER) and the customer termination area in order to complete the telecommunications circuit. The customer termination area may include a secondary building or a horizontal secondary electrical room (SER) within the same building. The tie cable will be sized to a minimum of 25 copper pairs (26 gauge). It will be terminated in the MER or SER on BIX connectors that are mounted on plywood backboards.

Circuit protection should be provided on both ends of each pair within the tie cable regardless of whether it is installed above ground, in an underground duct, or if it is directly buried.**

Figure 3: Conduit with Tie Cable

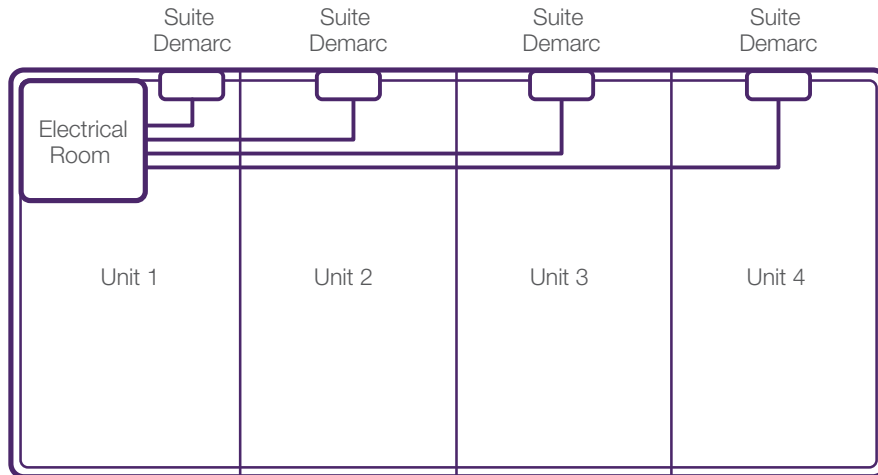


Suite Demarcation

A copper and fibre drop is required for demarcation to the suite. Here are the requirements from the main/secondary electrical room to the suite demarcation point:

- 1 dual fibre drop that is rugged 4.8 mm in diameter, bend insensitive, and single mode
- 1 CAT5e preferably CAT6
- Placement of a 4'W x 4'H x 3/4"D backboard
- 1 conduit specific to TELUS. The conduit should be minimum 25 mm (1") installed between the suite and the serving fibre termination location. The conduit should be limited to two 90 degree sweep bends without the use of a pull box and must include a pull cord.

Figure 4: Suite Demarcation Requirements



Suite Demarc: 4 ft. x 4 ft. backboard at the conduit termination within the suite. This is the area where TELUS fibre can connect to future tenant communications lines. Typically this is near the electrical panel.

Conduit: a dedicated TELUS only home run of minimum 25 mm (1") EMT or rigid PVC conduit to each suite demarc. A pull string in each conduit.

TELUS is committed to providing our commercial developer partners with a seamless build experience that will enable your property with the latest communication access technologies available. We look forward to working with you to help make your property future friendly.



Developer Relationship Management

4DEV@telus.com | 310-4DEV (4338)

You can reach us by email at 4DEV@telus.com or by phone at **310-4DEV (4338)** 8:00 a.m. to 4:30 p.m. (PST) Monday through Friday. Please visit us at telus.com/build for additional information.