

Part 1 General

1.1 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for communications equipment and include product characteristics, performance criteria, physical size, finish and limitations.

1.2 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

Part 2 Products

2.1 TELEPHONE WIRE

- .1 Heavy duty drop wire: solid hard drawn copper, lead coated, brass plated conductors with styrene butadiene rubber insulation, neoprene jacket twisted in to [pair] [triple], designed to connect open wire line to cable terminals.
- .2 Service wire: 4 No. 22 AWG solid annealed copper conductors with polyethylene insulation, spiral four lay-up, inner jacket polyvinyl chloride, close serving of flat galvanized steel wire armour, outer jacket of polyvinyl chloride designed for buried service connections.
- .3 Underground wire: 2 No.19 AWG solid annealed copper conductors laid parallel, polyethylene insulation, close serving of flat galvanized steel wire armour, jacket of polyvinyl chloride designed for buried service connections.
- .4 Ground wire: 1 No. 6 AWG solid strande annealed copper conductor with polyvinyl chloride insulation designed for ground connections to protect cable terminals and protectors.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for communications equipment installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.

2. Inform Departmental Representative of unacceptable conditions immediately upon discovery.
3. Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION

1. Install telephone wires on pole line by:
 1. Stringing conductors over cross arms.
 2. Fasten conductors to insulators on first pole.
 3. Tighten conductors to achieve correct sag.
 4. Fasten conductors progressively to insulators on poles until last pole in run is reached.
2. Install telephone drop wires from pole lines to buildings using drop wire hooks and cable clamps at pole and at building.
3. Install aerial armoured cables on pole lines by:
 1. Anchoring cable to first pole.
 2. Stringing cable along pole line.
 3. Tightening cable to achieve correct sag using wire rope sockets to protect outer sheath.
 4. Anchoring cable progressively to each pole until last pole is reached.
4. Install armoured cables by direct burial using:
 1. Cable plow.
 2. Trench.
5. Install armoured cables in ducts using wire rope sockets to protect outer sheath.
6. Install telephone service wire between pedestal terminals and building by direct burial in trench.
7. Install telephone ground wires from pedestals and protectors.
8. Coordinate installation with TELUS.

3.3 CLEANING

1. Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
1. Leave Work area clean at end of each day.
2. Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.4 PROTECTION

1. Protect installed products and components from damage during construction.

- .2 Repair damage to adjacent materials caused by communications equipment installation.
- 3.5 Comply to Treasury Board Information technology Standard for wiring as described in the TBITS 6.9 documents (TBITS 6.9 – Profile for the Telecommunications Wiring System in Government Owned and Leased Buildings – Technical Specifications).

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 American National Standards Institute/Telecommunications Industry Association (ANSI/TIA)
 - .1 ANSI/TIA-568-C.0-1-2010, Generic Telecommunications Cabling for Customer Premises.
 - .2 ANSI/TIA-568-C.1-2009, Commercial Building Telecommunications Cabling Standard.
 - .3 ANSI/TIA-568-C.3-2008, Optical Fiber Cabling Components Standard.
 - .4 ANSI/TIA-569-B-2004, Commercial Building Standard for Telecommunications Pathways and Spaces.
- .2 CSA International
 - .1 CSA C22.2 No.214-08, Communications Cables (Bi-national standard, with UL 444).

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for connectors and conductors and include product characteristics, performance criteria, physical size, finish and limitations.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

Part 2 Products

2.1 DESIGN REQUIREMENTS

- .1 Entrance facility: to ANSI/TIA-568-C.0-1, ANSI/TIA-568-C.1, ANSI/TIA-568-C.3, ANSI/TIA-569-B and CSA C22.2 No.214.

2.2 UNDERGROUND TELEPHONE CABLE TERMINALS

- .1 Buried cable terminal for buried cables: base plate, cylindrical weatherproof housing, approximately 305 x 460 mm, terminal strips with binding posts and connectors.

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2. Cable terminals for buried cables at reel ends: basic terminal designed to be driven into ground, weatherproof cover approximately 1015 mm from base to top, 2 pair terminal blocks as required, ground clamps and adhesive "ATTENTION" signs and numerals to identify cable circuits.

Part 3

Execution

EXAMINATION

3.1

1. Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for connectors and conductors installation in accordance with manufacturer's written instructions.

1. Visually inspect substrate in presence of Departmental Representative.
2. Inform Departmental Representative of unacceptable conditions immediately upon discovery.
3. Proceed with installation only after unacceptable conditions have been remedied [and after receipt of written approval to proceed from Departmental Representative.

3.2

INSTALLATION

1. Install drop cable terminals outside in accordance with manufacturer's instructions. Connect drop cable conductors to terminals and run ground conductor from ground terminal to building electrical system ground.
2. Install buried cable terminals. Connect conductors in accordance with manufacturer's instructions. Replace weatherproof housing.

3. Drive Z wire terminals into ground until base is flush with ground surface. Install cable, fasten to ground clamps and connect to terminal blocks in accordance with manufacturer's instructions.

4. Install coaxial cable terminals in accordance with manufacturer's instructions.
5. Install optical fibre terminals in accordance with manufacturer's instructions.

3.3

INSTALLATION OF TELEPHONE CABLES ENTRANCE

1. Colour match conductors on terminal strips to telephone authority standard.
2. Use appropriate tool for connecting conductors to terminals.

3.4

CLEANING

1. Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
1.1 Leave Work area clean at end of each day.
2. Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.5 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by connectors and conductors installation.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 CSA International
 - .1 CSA C83-96(R2011), Communication and Power Line Hardware.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Co-ordination with telephone and telecommunication authorities:
 - .1 Co-ordinate with telephone authority to ensure availability of service.
 - .2 Co-ordinate with other telecommunication provider for tenant-provided telecommunication systems and other entrance facilities.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for voice communications equipment and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

Part 2 Products

2.1 DESCRIPTION

- .1 Incoming telephone service facilities from property line to main terminal in concrete encased underground duct, direct buried.

2.2 MATERIALS

- .1 Manholes and duct banks: in accordance with Section 33 76 73 - Concrete Encased Duct Banks.
- .2 Pole lines and hardware: in accordance with Section 33 71 16.01 - Electrical Pole Lines and Hardware.
- .3 Grounding: in accordance with Section 26 05 28 - Grounding - Secondary.

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Part 3	
Execution	
4.	Communication terminals and connectors: in accordance with Section 27 11 20 - Terminals and Connectors for Communications Conductors - Entrance facility.
5.	Overhead service mast.
6.	Communication line hardware to CSA C83.

3.1 EXAMINATION

1.	Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for voice communications equipment installation in accordance with manufacturer's written instructions.
1.	Visually inspect substrate in presence of Departmental Representative.
2.	Inform Departmental Representative of unacceptable conditions immediately upon discovery.
3.	Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION

1.	Install telephone service facilities.
2.	Install 19 mm thick plywood backboard in each telecommunication cabinet.
3.	Install grounding facilities and make connections.
4.	Connect owners conduits to those of telephone company or telecommunication provider at property line.
5.	Install mast on building for overhead service.

3.3 CLEANING

1.	Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
1.	Leave Work area clean at end of each day.
2.	Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

3.4 PROTECTION

1.	Protect installed products and components from damage during construction.
2.	Repair damage to adjacent materials caused by voice communications switching and routing equipment installation.

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VOICE COMMUNICATIONS SWITCHING AND ROUTING
EQUIPMENT
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