

Communications Enclosures on Wood Poles



1. Scope

This standard covers requirements for the installation of communications enclosures and associated equipment on wood poles.

Meter installations are outside the scope of this standard.

2. Application

This standard is for SCL engineers, customers, crews, and approved contractors who design and install communications enclosures on wood poles.

3. Requirements

3.1 Customer Responsibility

The customer shall be responsible for:

- Obtaining an approved permit sticker from the Authority Having Jurisdiction (AHJ), such as the Seattle Department of Construction and Inspection (SDCI), along with an emergency contact phone number.
- Installing all conduit up to the communications space or to their communications cable attachment.

- Providing an equipment bag containing materials to be installed by SCL crews above the communications space. The materials (conduit, weatherhead, and its mounting hardware) shall be capable of extending up to 18 inches below the lowest SCL secondary bracket. Equipment bag shall be secured at the location and made accessible to crews providing electrical service connection.
- Providing pre-wired coil of service wire capable of extending 3 ft beyond the weatherhead for SCL final connection.

In addition, customer shall be responsible for any mitigation when required by the Authority Having Jurisdiction.

3.2 City Light Responsibility

After final approval by SCL Joint Use Engineering, SCL crews or its approved contractor shall be responsible for:

- Installing conduit and weatherhead provided in equipment bag
- Electrical connection at the drip loop for secondary service power
- If electric service is required, fusing the service at the weatherhead as specified by the SCL Engineer

SCL will make every reasonable effort to notify the antenna owner of outages 24 hours in advance when possible. However, SCL reserves the right to disconnect power to the installation without prior notice when necessary.

3.3 Codes, Permits, and Approvals

All equipment and installation must be reviewed and approved by SCL Joint Use Engineering.

All installations shall meet or exceed all applicable structural, clearance, and power requirements of the latest revision of the National Electrical Safety Code (NESC), as well as SCL construction standards. In case of conflict, the most stringent requirements will prevail. This may result in a pole replacement to accommodate the installation of the enclosure and its related equipment and/or attachments.

Communications enclosures shall not be allowed on poles with the following configurations:

- Switches
- Deadends, with Joint Use approval
- Three-phase and open-delta transformer banks
- Terminations
- Corners

Setting additional poles in lead with an existing pole line to accommodate communications enclosures or equipment is not allowed.

All electrical service and its equipment to provide power to the enclosure shall meet all applicable requirements of the National Electrical Code (NEC), including passing inspection by the Authority Having Jurisdiction.

Permits and applications for all proposed work including installations, modifications, and relocations shall be obtained by the communications enclosure customer and shall be reviewed and approved by SCL Joint Use Engineering.

3.4 Equipment

Only one communications enclosure shall be allowed on each pole.

The maximum allowable size for pole mounted enclosures shall be 20 in W by 48 in H by 20 in D.

Communications enclosures, including all equipment, shall have a maximum weight of 750 lb.

3.5 Electric Service Requirements

If communications enclosure requires electric service:

- Customers shall have an active flat-rate pricing contract with Joint Use Engineering.
- Communications enclosures shall have an external service disconnect switch accessible to SCL lineworkers that is capable of isolating all electric service, including battery backups and generators.
- Only single-phase, 120 Vac, 2-wire service will be provided.
- Service fuses shall be required at each service installation. See SCL 0094.17 for fuse requirements and SCL service entrance rating options.

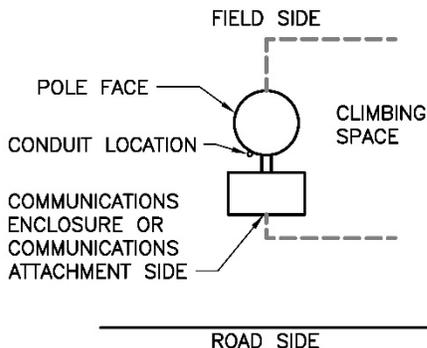
3.6 Conduit Installation

All conduits 2-in nominal diameter and over shall be installed on standoff brackets. Standoff bracket and conduit riser installation shall conform to SCL 0224.34 and SCL 0126.04 with a minimum 4-1/2-inch space between the pole and the closest part of the conduit.

Conduit less than 2-in nominal diameter shall be installed on the surface of the pole in the quadrant between the pole face and the communications attachment side. Only one surface-mounted conduit is allowed per pole as shown in Figure 3.6.

The electric service conduit shall be fed continuously into the enclosure and shall be of sufficient length to reach the SCL secondary service point.

Figure 3.6. Conduit on Pole Surface, Plan View



3.7 Clearances

The location of the enclosure shall meet the clearance requirements as shown in Figure 3.8:

- Enclosures shall have a minimum clearance of 15 ft-6 in above ground line.
- A minimum clearance of 40 inches below lowest SCL secondary hardware or conductor, including secondary drip loops.
- A minimum clearance of 12 inches below any communications attachment.
- A minimum clearance of 12 inches above the service disconnect switch, if installed separately.

In addition, a minimum clearance of 4-1/2 inches shall exist between the enclosure and the pole.

3.8 Equipment Mounting

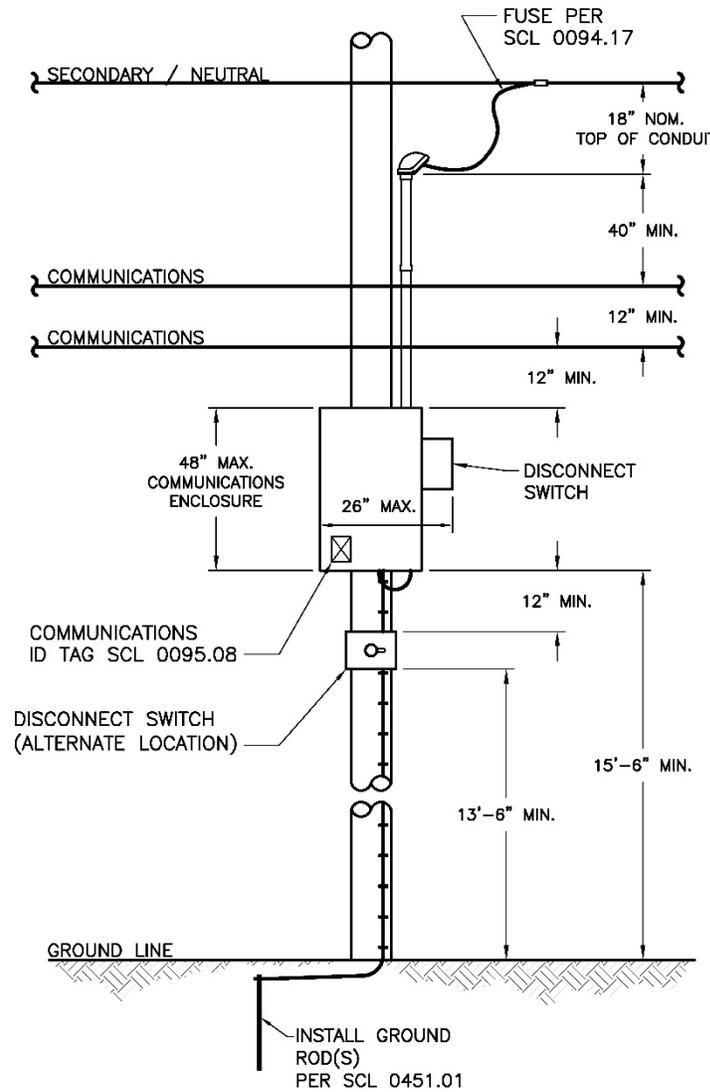
All communications enclosures shall be located on the pole below the communications attachments.

Communications enclosures shall be located on the communications attachment side of the pole. Any deviations require the approval of SCL Joint Use Engineering.

The disconnect switch can be located on the communications enclosure, on the same side as the service conduit, or on the pole 1 ft below the communications enclosure with the approval of SCL Joint Use Engineering.

Communications enclosures shall be located on the pole as shown in figures 3.6 and 3.8.

Figure 3.8. Communications Enclosure Attachment on an SCL Wood Pole



3.9 Grounding and Bonding

All conductive equipment attached to the pole shall be effectively grounded and bonded per the National Electrical Safety Code (NESC). A copper-clad ground wire, #4 AWG minimum, shall be installed from conductive equipment to pole ground using an irreversible connection.

In cases where a pole ground rod and ground wire are not present, the Customer shall install them to meet or exceed the requirements of SCL 0451.01.

In cases where SCL and communications ground rods are present, all ground rods shall be bonded together using #4 AWG copper wire.

3.10 Identification

Identification of attachments is necessary to assist in repair of third-party cables, communications cabinets, conduit risers, and other pole attachments.

All communications attachments and enclosures shall have identification tags as specified in SCL 0093.12 and 0095.08.

Identification tags shall be displayed on the exterior of the enclosure, in a location that is clearly visible from the ground. See Figure 3.8.

3.11 Ownership Rights

SCL shall maintain all ownership rights of any pole approved for installation and may require that equipment be removed or relocated if it is deemed necessary for SCL business purposes.

4. References

- SCL Construction Standard 0093.04**; "Pole Attachments, Customer Requirements"
- SCL Construction Standard 0093.12**; "Pole Attachments, Identification and Tagging"
- SCL Construction Standard 0094.17**; "Fusing Schedule, Wireless and Wireline Communications Systems"
- SCL Construction Standard 0095.08**, "Wireless Communications Antenna Tags"
- SCL Construction Standard 0126.04**; "Riser Extensions"
- SCL Construction Standard 0224.34**; "Steel Conduit Risers"
- SCL Construction Standard 0451.01**; "Grounding Electrodes for Distribution Poles"
- SCL Material Standard 6855.55**; "Fuse, Rejection-Type, Fast-Acting, Current-Limiting, 600 V"

5. Sources

- Crume, Stephen**; SCL Joint Use Manager and subject matter expert for 0094.01
- Lu, Curtis**; SCL Standards Engineer and subject matter expert for 0094.01
- National Electric Code (NEC)**, NFPA-70; 2011 Edition, National Fire Protection Association, Quincy, MA, 2010
- National Electrical Safety Code (NESC)**, C2-2012 Edition; Institute of Electrical and Electronics Engineers (IEEE), Inc., New York, NY, 2011
- Neuansourinh, Ponet**; SCL Standards Engineer and subject matter expert of 0094.01
- Pollock, Stuart**; SCL Joint Use Engineer and subject matter expert for 0094.01
- Winchester, Hillary**; SCL Joint Use Engineer and subject matter expert for 0094.01