Strand-Mount Antennas, Wi-Fi Hotspot

1. Scope

This standard covers the requirements for the installation of strand-mount Wi-Fi hotspot antennas (Wi-Fi hotspots) on Seattle City Light (SCL) owned and co-owned wood poles.

For the installation of strand-mount antennas other than Wi-Fi hotspots, see SCL 0095.30.

2. Application

This standard is intended for use by:

- Customers who design installations of strand-mount Wi-Fi hotspots
- SCL engineers who review and approve strand-mount Wi-Fi hotspots

For additional information, terms, and definitions regarding customer requirements for utility pole attachments and related construction standards, see SCL 0093.04.

For any questions regarding the requirements specified in this standard, contact SCL Joint Use Engineering.

3. Requirements

3.1 General

Customers shall submit a Non-Ionizing Electromagnetic Radiation (NIER) report for each wireless facility site to SCL Joint Use for approval. See SCL 0095.06 for NIER report requirements.

Any upgrade, modification, or facility change-outs shall require:

- A new NEIR report and approval by SCL Joint Use
- A new application, review, and approval by SCL Joint Use

Only one strand-mount Wi-Fi hotspot shall be allowed in each span.

Installation shall not be located on poles identified as “bad order.” A “bad order” pole is any pole identified and labeled to be replaced within a year. See SCL 0117.23.

Installation shall not be installed directly below pole-mounted streetlight fixtures, as this may interfere with the intended illumination pattern.

The customer shall ensure the supporting poles are appropriately sized and have sufficient structural strength to accommodate the additional material load per the National Electrical Safety Code (NESC).

3.2 Grounding and Bonding

All conductive parts of strand-mount Wi-Fi hotspots shall be bonded together and grounded to the pole ground. See NESC 092C3a and b.

3.3 Equipment Mounting

Strand-mount Wi-Fi hotspots shall be installed as aesthetically as is reasonably possible and with good workmanship principles so as to not interfere with climbing and maintenance of the pole by all parties.

Communications brackets may be used with SCL Joint Use Engineering approval to optimize pole attachments, as long as minimum clearances are maintained. See Section 3.5. See SCL 0093.06 for information on installing communications brackets on a pole.

3.4 Identification and Information Tags

An owner Identification (ID) tag shall be installed per SCL 0093.12.

Information tags, such as an RF Notice tag, are required only when the Wi-Fi hotspot exceeds the maximum permissible exposure (MPE) limit for the general population, as stated in the NIER report.

3.5 Clearances

Strand-mount Wi-Fi hotspots shall be installed to meet the clearance requirements shown in Figure 3.5.

There shall be a nominal 3 ft of clearance between the closest component of the strand-mount hotspot and the pole face.

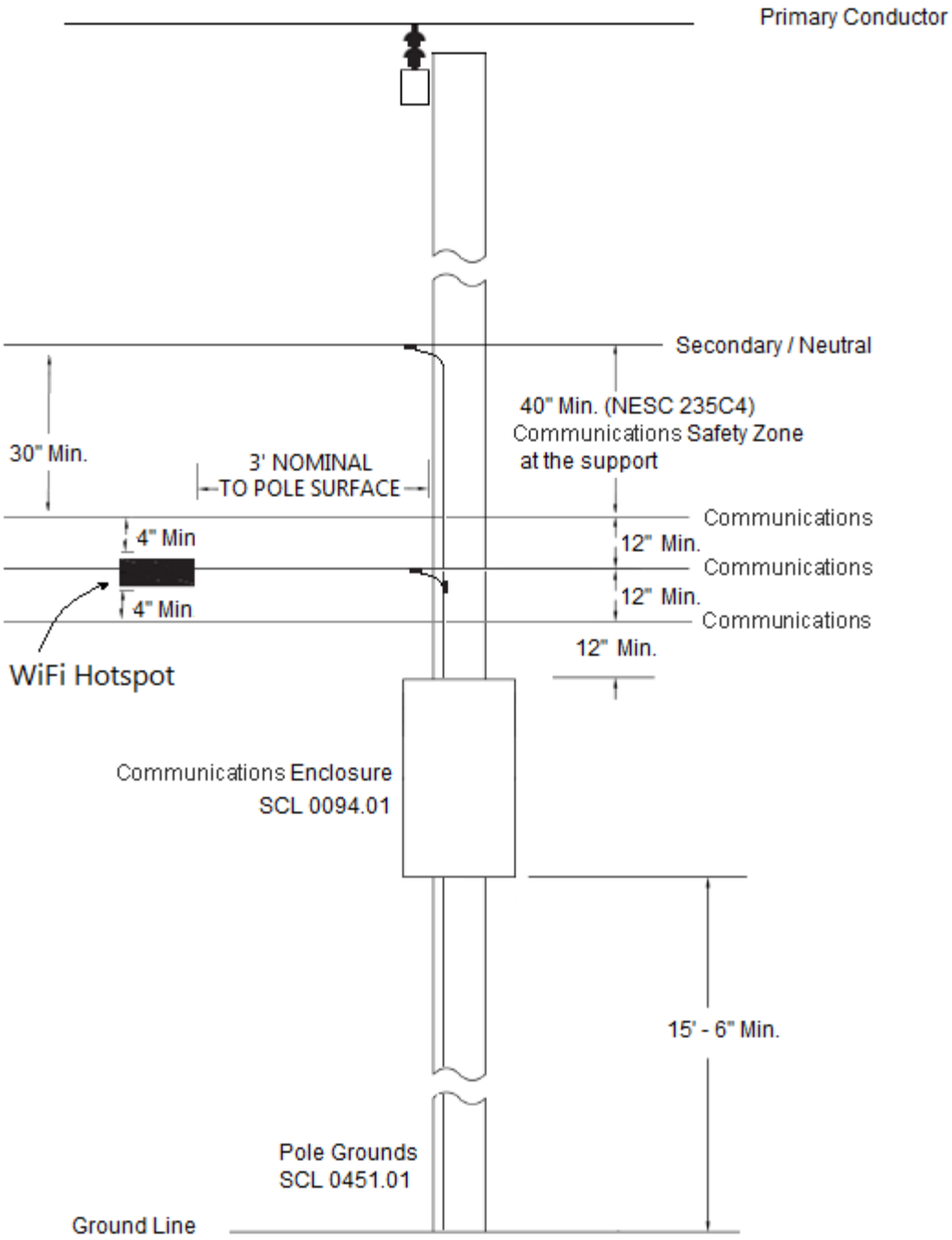
Anywhere in the span, vertical clearances shall be:

- A minimum of 30 inches from the secondary service or system neutral.
- A minimum of 10 ft from the primary conductor (4 kV–26 kV).
- A minimum vertical 4 inches from any other communication cable, messenger, and strand-mount equipment. If this clearance cannot be obtained, a written letter of agreement between the parties shall be delivered to the pole owner(s) prior to installation for approval.

At the support, vertical clearances shall be:

- A minimum of 12 inches between communication pole attachments.
- A minimum of 40 inches between the secondary service or system neutral to the highest communication pole attachment.

Figure 3.5. Strand-Mount Wi-Fi Hotspot Clearances



3.6 Inspection

SCL Joint Use reserves the right to inspect all installations at any time and notify customers of unsafe work conditions or construction that is not compliant with SCL standards or NESC requirements.

4. References

National Electrical Safety Code (NESC), C2-2017 Edition; Institute of Electrical and Electronics Engineers (IEEE) Inc., New York, NY

NFPA-70, National Electric Code (NEC), Fourteenth Edition, National Fire Protection Association, Quincy, MA, 2017

SCL Construction Standard 0093.04; “Attachments on Wood Poles”

SCL Construction Standard 0093.06; “Communications Bracket Installation”

SCL Construction Standard 0093.12; “Pole Attachments, Identification and Tagging”

SCL Construction Standards 0094.01; “Communications Enclosures on SCL Wood Poles”

SCL Construction Standard 0095.06; “Non-Ionizing Electromagnetic Radiation (NIER) Report Requirements”

SCL Construction Standard 0095.30; “Strand-Mount Antennas, All Except Wi-Fi Hotspot”

SCL Construction Standard 0451.01; “Grounding Electrodes for Distribution Poles”

SCL Work Practice 0117.23; “Wood Pole Condition and Treatment Tag Interpretation”

5. Sources

City of Seattle Standard Specifications for Road, Bridge and Municipal Construction; 2017 edition

Lee, Christopher; SCL Joint Use Engineer and subject matter expert for 0095.35

Neuansourinh, Ponet; SCL Standard Engineer, originator and subject matter expert for 0095.35