

AMI Collector Antennas



1. Scope

This standard covers the requirements for the installation of advanced metering infrastructure collector antennas (“AMI collectors”) on Seattle City Light (SCL) wood poles.

Installation on transmission structures, as well as on composite, steel, or laminated wood poles are outside the scope of this standard.

2. Application

This standard provides information to SCL engineers, crews, and approved contractors for the installation of pole top AMI collectors within the SCL service territory. For installation of AMI repeaters see SCL 0095.17.

3. Requirements

3.1 Codes, Permits, and Approvals

All necessary permits shall be obtained by the wireless unit owner.

All installations shall meet or exceed all applicable structural, clearance, and provision of the latest revision of the National Electrical Safety Code (NESC), as well as SCL construction standards. In case of conflict, the most stringent requirement will prevail.

All proposed installations, modifications, or relocations shall be reviewed and have prior approval by the SCL Joint Use engineering unit.

Standards Coordinator
Ponet Neuansourinh

Standards Supervisor
John Shipek

Unit Director
Andrew Strong

Prior to submitting for permit, the antenna owners shall provide a Non-Ionizing Electromagnetic Radiation (NIER) report to SCL Joint Use for review and approval. See SCL 0095.06.

3.2 Service Voltage and Connection

Where single-phase service is required, the service voltage shall be 120/240 V.

All service connections shall be made using a parallel connector clamp.

All antennas requiring electric service shall have an external service disconnect installed. See SCL 0094.01. The service disconnect shall isolate all electric services including any battery backups.

SCL shall make every reasonable effort to notify equipment owners of outages 24 hours in advance when possible. However, SCL reserves the right to disconnect power to installations without prior notice when necessary.

3.3 Grounding and Bonding

All conductive parts of the installation on the pole shall be bonded together and grounded to the SCL system neutral conductor.

A copper ground wire, #4 AWG minimum size, shall be installed from equipment to the pole ground using an irreversible connection. See figures 3.8a and 3.8b.

Where a pole ground does not exist, one shall be installed at the base of the pole. This installation shall meet or exceed the requirements of SCL 0451.01.

3.4 Conduit Risers

All conduit risers shall be installed on standoff brackets. See SCL 0224.34 and SCL 0126.04.

3.5 Equipment Mounting

All AMI-related materials and equipment shall be provided by the antenna owner. This includes any specialized tools or training.

These materials shall meet or exceed SCL specifications where SCL specifications exist.

Communications enclosures shall comply with the size limits described in SCL 0094.01.

AMI collectors shall not be installed on corner poles or poles with transformers, capacitors, primary cable terminations, primary switches, or primary metering equipment.

3.6 Labeling

Communications enclosures shall be clearly marked and visible from the ground with an identification (ID) tag per SCL 0095.08 or as approved by Joint Use. The tag shall be placed per figures 3.8a and 3.8b.

3.7 Installation and Maintenance

SCL or its authorized agent shall assist with installation and maintenance of all equipment, antennas and feed lines located in and above the supply space per pole agreement contract or at the applicant's expense.

3.8 Clearances

The lowest point of the equipment enclosure on the street side of the pole shall be 15 ft-6 in above final grade. All antennas mounted on utility poles above the primary conductor shall have a minimum clearance of 7 ft between the bottom of the lowest antenna crossarm to the top of the primary conductor. See Figure 3.8b.

All antennas mounted on utility poles above the secondary conductor shall have a minimum clearance of 1 ft between the secondary conductor and the top of the feedline conduit or drip loop. See Figure 3.8a.

Figure 3.8a AMI Collector Above Secondary Conductor

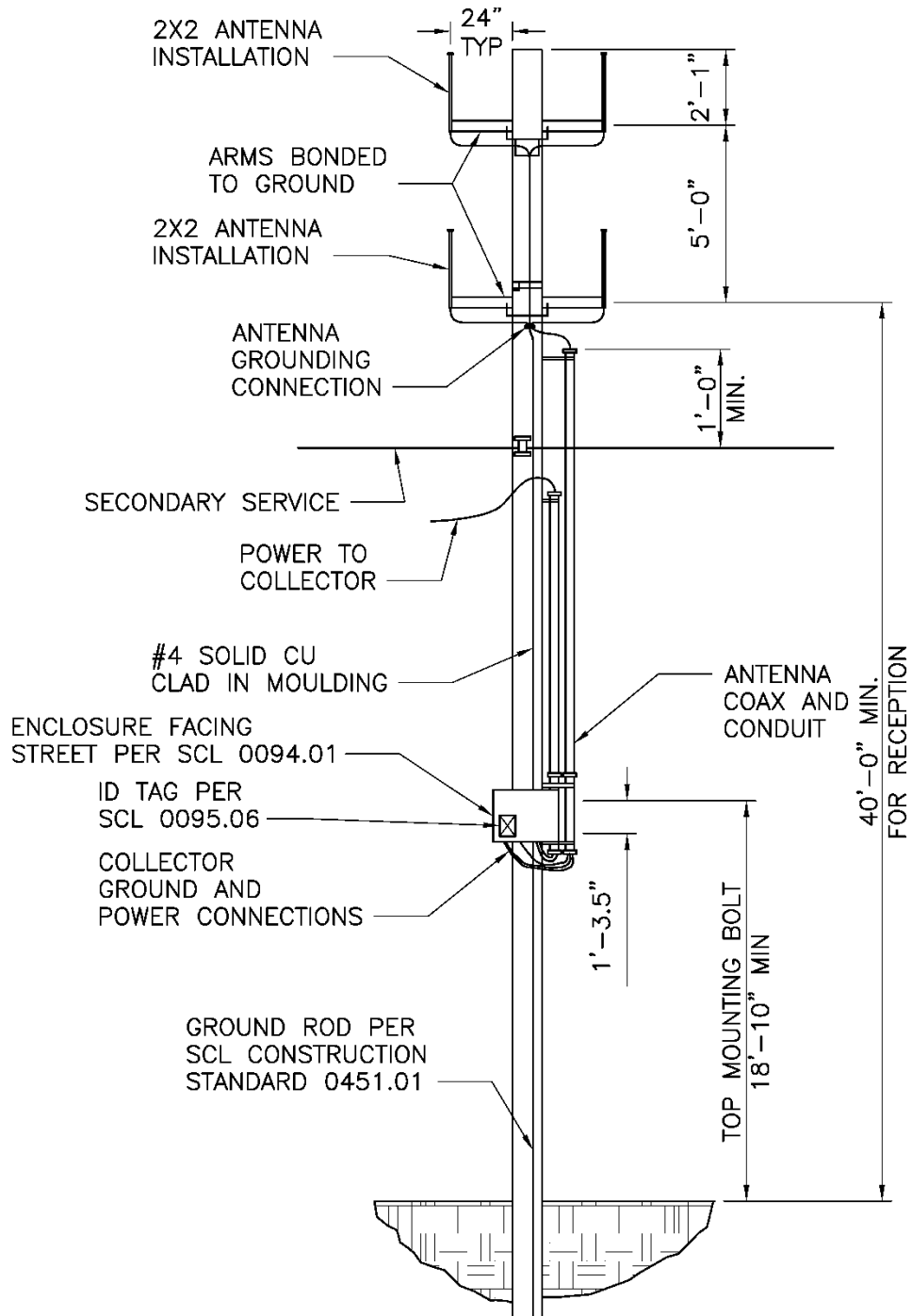
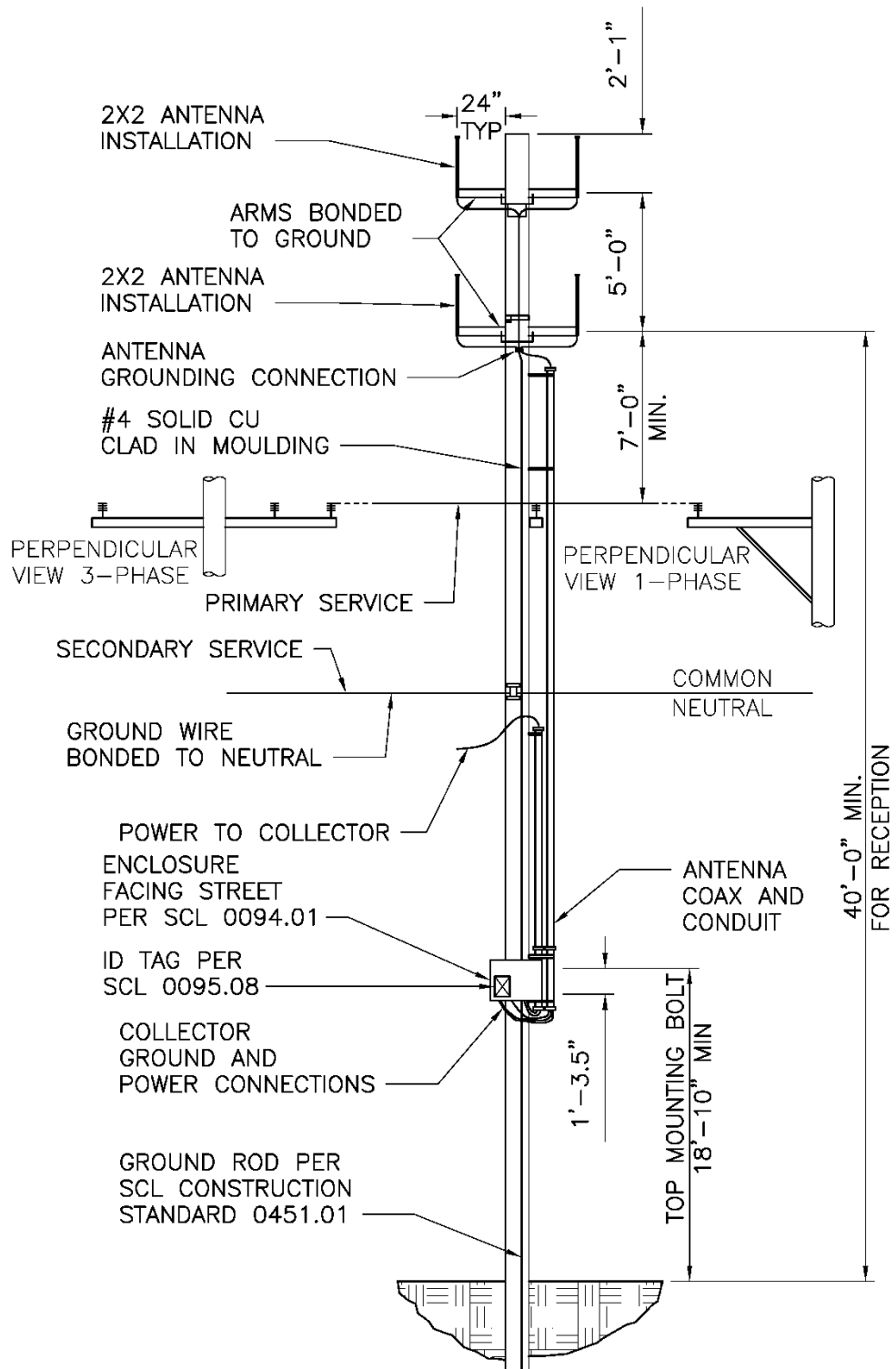


Figure 3.8b. AMI Collector Above Primary Conductor



4. Construction Notes

Refer to the manufacturer's installation guide and data sheet listed in the Sources section for additional information.

Contact the SCL Design Engineer for concerns regarding the following:

- Avian and wildlife protection
- Clearances
- Site-specific conflicts

5. References

SCL Construction Standard 0093.04; "Attachments on Wood Poles"

SCL Construction Standard 0094.01; "Communications Enclosures on Wood Poles"

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

SCL Construction Standard 0095.08; "Wireless Communication Antennas Tags"

SCL Construction Standard 0095.17; "AMI Repeater Antennas"

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 Construction Guideline D9-52; "15/26 kV Distribution Crossarm Details"

6. Sources

Babino, Gianni; SCL Joint Use Wireless Engineer and subject matter expert for 0095.10 (gianni.babino@seattle.gov)

C7500-Series Gridstream RF Collection Data Sheet; Landis+Gyr, 98-1393, Rev. AB.

C7500-Series Gridstream RF Collector Installation and User's Guide; Landis+Gyr, 98-1392, Rev. AB.

National Electrical Safety Code (NESC), C2-2017 Edition; Institute of Electrical and Electronics Engineers (IEEE), Inc., New York, NY, 2016

Neuansourinh, Ponet; SCL Standard Engineer, originator, and subject matter expert for 0095.10 (ponet.neuansourinh@seattle.gov)

NFPA 70; National Electric Code (NEC); 2014 Edition, National Fire Protection Association, Quincy, MA, 2008

Taggart, Ryan; SCL Engineering Specialist and subject matter expert for 0095.10 (ryan.taggart@seattle.gov)