

Equipment for Service Installation

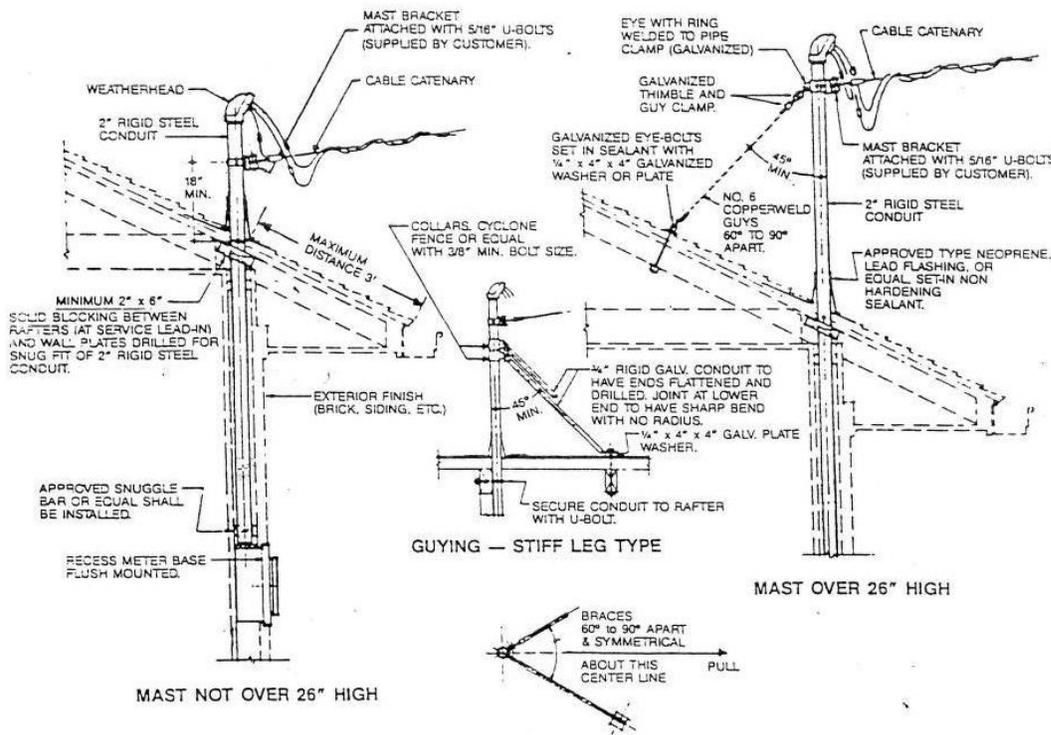
This chapter describes requirements for services that have secondary voltages provided from Seattle City Light's transformers in the right of way. Most single family residential services are served with secondary voltages as are many smaller commercial services.

Overhead Services

A: Service Masts

Details of service mast installations are diagrammed below. Note the labeled parts of the service entrance, such as mast, weatherhead, bracket, etc. They will be referred to throughout the chapter. Customer will provide all the equipment below except the meter, which plugs into the customer's meter base.

Figure 1: Service Installation Details – Recessed Service Entrance



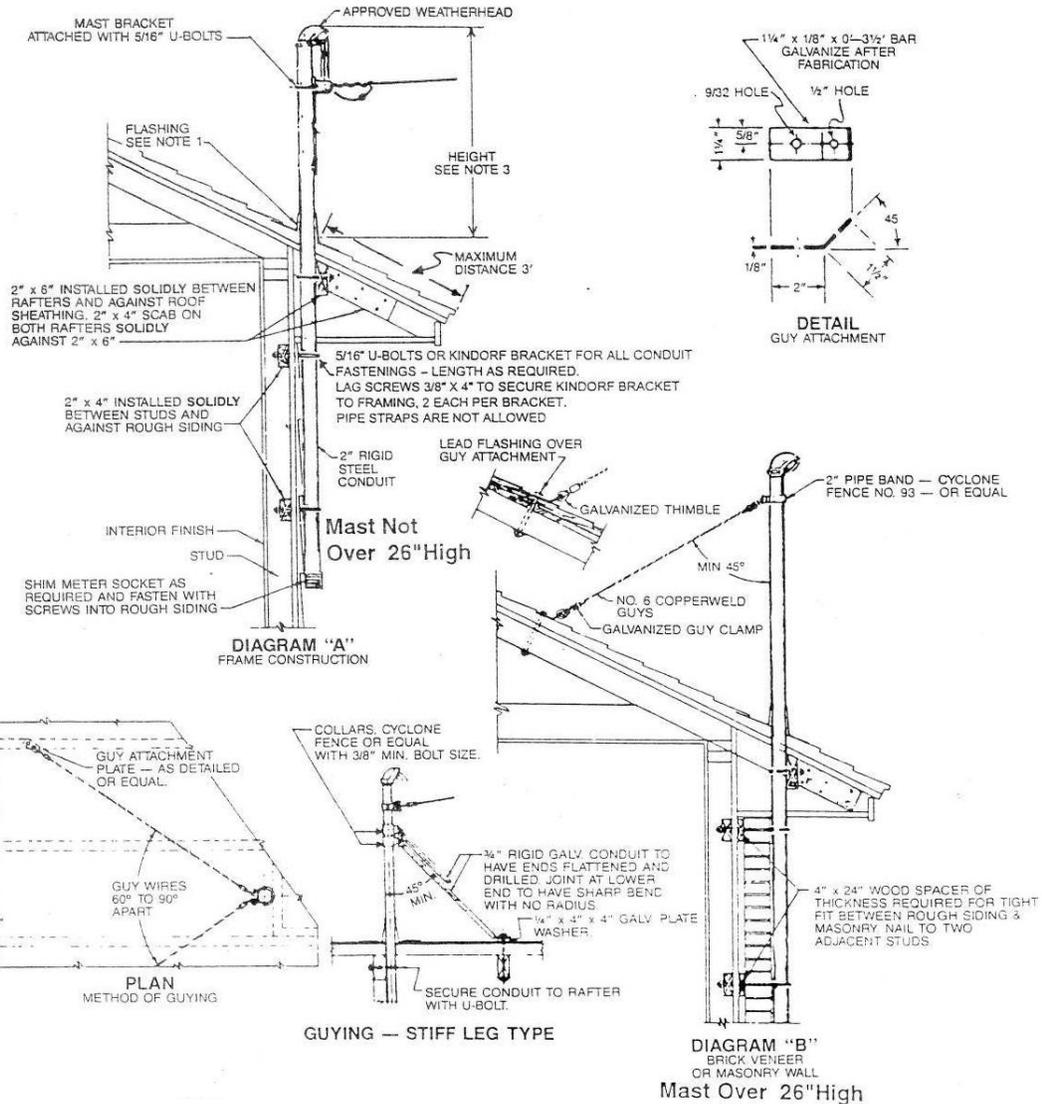
Notes:

1. Lead Flashing: Apply plastic non-hardening mastic between flashing and conduit and between flashing and roof. Neoprene type flashings may also be used.
2. Service mast may be installed inside building line provided mast conduit is braced or u-bolted in such a manner that no pressure will ever be exerted on flashing or meter base. Service mast must have two approved means of support above any coupling.
3. Roof line to point of attachment shall be not less than 18 inches. Service head shall be no more than 8 inches above point of attachment. Guys are required per detail where mast is over 26 inches high or service drop exceeds 100 feet.

Overhead Services

A: Service Masts (Continued)

Figure Two: Service Installation Details – Surface Mount Mast Strike



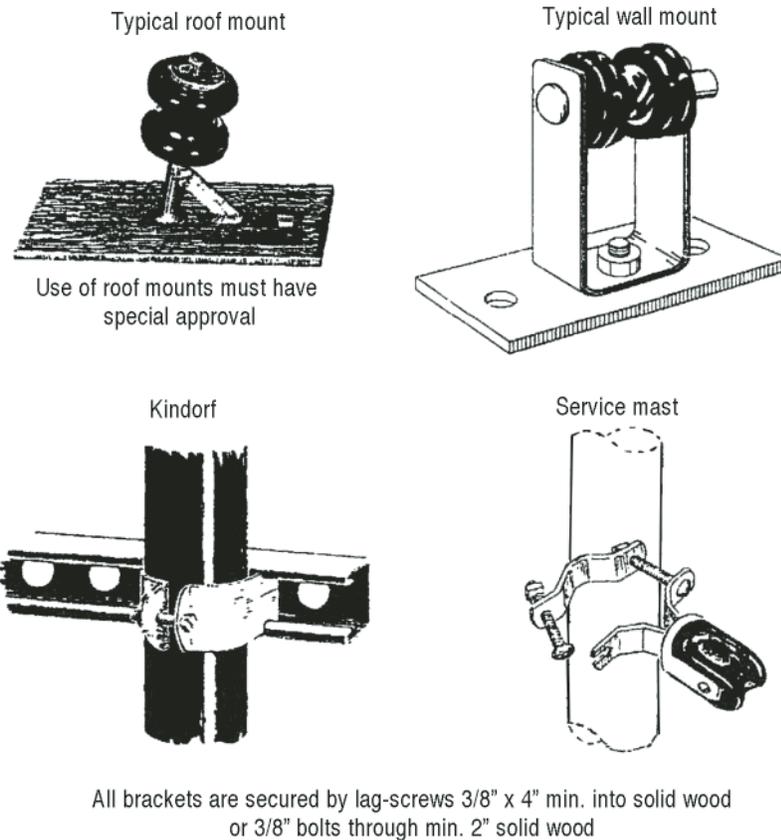
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B: Brackets

SCL-approved service brackets shall be furnished and installed by the customer. Brackets and their attachments need to be capable of withstanding the tension of the service wires. The point of attachment shall not be higher than 20 feet above grade.

**Diagram 6-3:
Installation Brackets**



BRACKET BOLTS AND SCREWS Service brackets and channel brackets shall be installed with lag screws 3/8" x 4" or larger and anchored in solid material.

- a. The distance between weatherheads served from the same service drop must not exceed 24 inches.
- b. The distance from the service bracket to the weatherhead(s) shall not exceed 24 inches.

BRACKETS ON MASTS Where service brackets are attached to a service mast, the mast must be 2 inches or larger rigid steel conduit and must be located within three feet of the roof edge.

EXCESS WIRE FOR CONNECTION Service entrance conductors sets shall have a minimum of 18 inches of wire extending from the weatherhead. Multiple service entrance conductors shall have a minimum of 30 inches of wire extended.

C: Poles

Service poles are poles that serve only one customer.

Seattle City Light (SCL) may require a service pole on the customer's property where:

- The distance from SCL's distribution pole to the customer's point of service attachment is greater than 150 feet.
- A clear, direct route without trespass is not available for the service drop from the distribution pole to the customer's point of service attachment.
- The applicable code authority requires a service pole.

SERVICE POLE CHARGES SCL will install poles and anchors as called for in the previous section. The customer will be billed a service charge according to Installation Charges Policy 500 P III-417, "Service Poles and Anchors on Private Property."

EASEMENT If more than one customer is served from a pole on private property, an easement will be required to allow Seattle City Light to maintain the system.

POLE ACCESS IN NEW CONSTRUCTION Seattle City Light must have a 12-foot access road to set a pole on private property. If this space is not available, services will be undergrounded to the existing SCL designated facility.

MAINTENANCE SCL will maintain all poles and anchors that we install. If the customer is the owner of the pole, the customer shall pay SCL to maintain and replace it as needed. The Utility will not maintain existing poles that have been installed by the customers in mobile home parks.

TEMPORARY POSTS For temporary post specifications see Chapter 4, "Temporary Service."

Underground Services

A. Trenches

Customer Responsibility on Private Property

All trenching, backfilling, and restoration on private property must be done by the customer at their expense. All installations must be inspected and approved by Seattle City Light before backfilling.

Customer Responsibility in the Public Right-of-Way

CONTRACTOR INSTALLED UNDERGROUND SERVICE

- If customers elect to perform the work in the right-of-way, they may obtain their own permits, pay permit and inspection fees and do the trenching, conduit installation, backfilling and restoration. If SCL performs this work, the customer will be billed in accordance with installation Charge Policy 500 P III-417.
- When customers elect to do the work in the right-of-way, they shall install the conduit run from the meter base to the first ten feet of conduit on the pole, or into the handhole/vault designated by SCL. Customers shall not enter energized facilities. SCL will determine the specifications for conduit installation.

PERMITS Customers are responsible for acquiring all local jurisdictional permits and pass required inspections.

TEMPORARY SERVICE TRENCHES For temporary service, the customer must install a conduit riser at the temporary panel location and trench to a Utility-designated termination point: service stub, handhole, pole, vault, property line, or service pole.

TRENCH SPECIFICATIONS Service trenches are shown in Diagram 6-4. For more information, please see SCL Standard Construction Guideline [0224.05 "Requirements for Underground Services on Private Property"](#)

B. Conduit, Bends, Handholes

CONDUIT SPECIFICATIONS The customer should contact their Electrical Service Representative or Electric Service Engineer for the conduit size and type and for the number of bends that will be accepted in the conduit run.

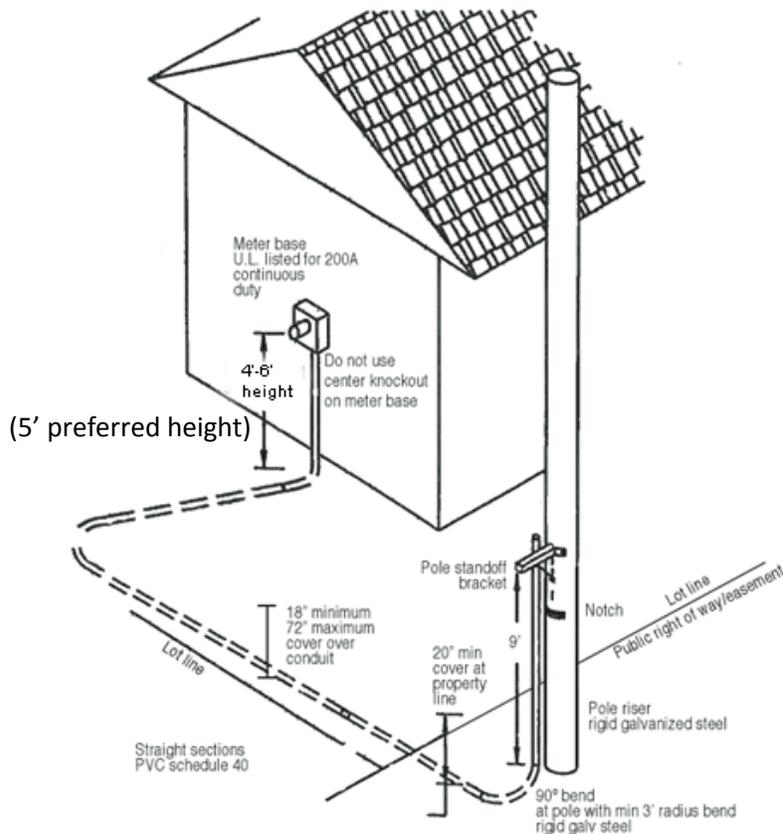
OBSTRUCTIONS Conduits must be clean, unobstructed and have a pulling handline installed. The customer shall mandrel the conduits after they have been installed. If Seattle City Light's crew is not able to install conductors in customer-installed conduits, you will be required to make the necessary corrections and will be billed for any additional costs incurred by SCL. SCL will provide information concerning mandrel design and the monitoring process. See Construction Guideline [U2-11.40/NDK-40 "Mandreling and Cleaning of Ducts and Conduits"](#)

CONDUIT OVER 150 FEET If any conduit run is over 150 feet long, a pulling handhole may be required. SCL will determine handhole sizes and locations.

BENDS In general, there will be no more than 270 degrees of bends, the equivalent of three 90° bends in a conduit run under 150 feet. In the network area the limit is 180° of bends. Rigid galvanized steel bends shall be used. Exceptions to this rule will be at SCL's option.

For primary conductors the minimum radius of a bend is 3 feet of rigid steel, and for secondary conductors, the minimum radius of a bend is 3 feet. In the Network area the conduit bend radius is to be 4 feet for both primary and secondary runs.

**Diagram 6-4:
Underground Residential Service from a Seattle City Light Utility Pole**



IMPORTANT:

Call SCL before you begin work so we can approve your meter location and give you the specific requirements for your project.

For more information, refer to SCL Construction Standard 0214.00 ["Clearances between SCL Underground Structures and Other Utility Structures in Public Rights-Of-Way"](#)

Conduit for Secondary Service

The customer must contact SCL for information concerning the size, location, and arrangement of conduits entering the service terminal box or current transformer enclosure.

Conduit Sizing for Current Transformer Meter Installations

For information concerning the types and sizes of conduit appropriate for connections between meters and current transformer enclosures, please refer to Chapter 11, "Metering."

C. Conductors

SIZE OF SERVICE ENTRANCE CONDUCTORS The following table, Table 6-1, lists the sizes of underground service entrance cable that are accepted by SCL.

Table 6-1: Service entrance conductor wire sizes	
Aluminum (stranded)	Copper (stranded)
1/0 AWG (outside Network only)	#4 AWG
4/0 AWG	#2 AWG
350 kcmil	2/0 AWG
400 kcmil (outside Network only)	4/0 AWG
500 kcmil	350 kcmil
600 kcmil (outside Network only)	500 kcmil
750 kcmil	600 kcmil (outside Network only)
	750 kcmil

Service entrance conductors larger than 750 kcmil shall not be used.

Please note that an oxide inhibitor must be used with aluminum conductors.

COST OF UTILITY CONDUCTORS The cost of service conductors shall be charged in accordance with the Installation Charges Policy.

Network: Secondary Underground Service for Residential Structures

In areas where an underground network distribution system currently exists, SCL must be contacted for details. For requirements applicable to residential structures in the First Hill and University District network areas, please see Chapter 8, "Primary & Secondary Services in Network Areas."