

Secondary Service Drops

1. Scope

This standard covers the information necessary to install overhead secondary service drop conductors ("service drops") to buildings in the Seattle City Light (SCL) Looped Radial Distribution System.

2. Application

This standard provides direction to SCL engineers, crews, and approved contractors for the installation of service drops.

For installing secondary spans, see SCL 0130.10

For installing bridles for secondary service, see SCL 0130.20.

For LR bracket installation, see SCL 0100.11.

3. Requirements

3.1 Clearances

3.1.1. Vertical Clearances Between Service Conductor and Communication Cable

Vertical clearances between the service drop and communication drop, anywhere in the span to the building attachments, shall be per Table 3.1.1.

Table 3.1.1. Vertical Clearance between Service Conductor and Communication Cable

Location	Clearance, Minimum (in)
At pole attachments	40
In span or at building (including drip loop)	12

3.1.2. Vertical Clearances in the Span

The point of attachment at the pole or service entrance shall be high enough above the ground to meet the required minimum vertical clearances along service drop spans to ground, roadways, alleys, driveways, porches, balconies, windows, doors, or roofs as shown in Table 3.1.2. and Figure 3.1.2.

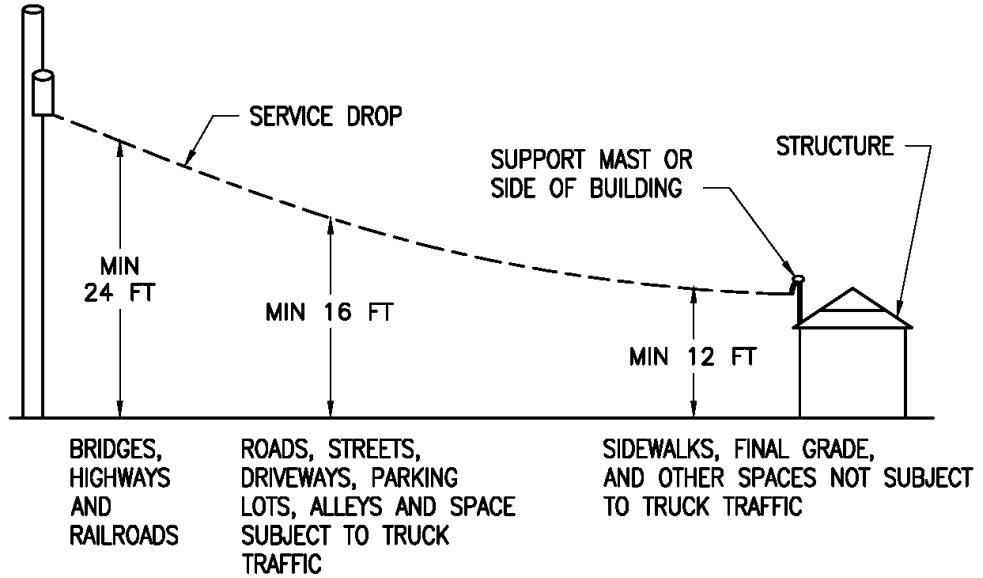




Table 3.1.2. Vertical Clearances in the Span

Location	Clearance, minimum (ft)
Above bridges, highways, and railroads	24
Above roads, streets, driveways, parking lots, alleys, and spaces subject to truck traffic	16
Above sidewalks, final grade, and space not subject to truck traffic	12

Figure 3.1.2. Vertical Clearances in the Spans



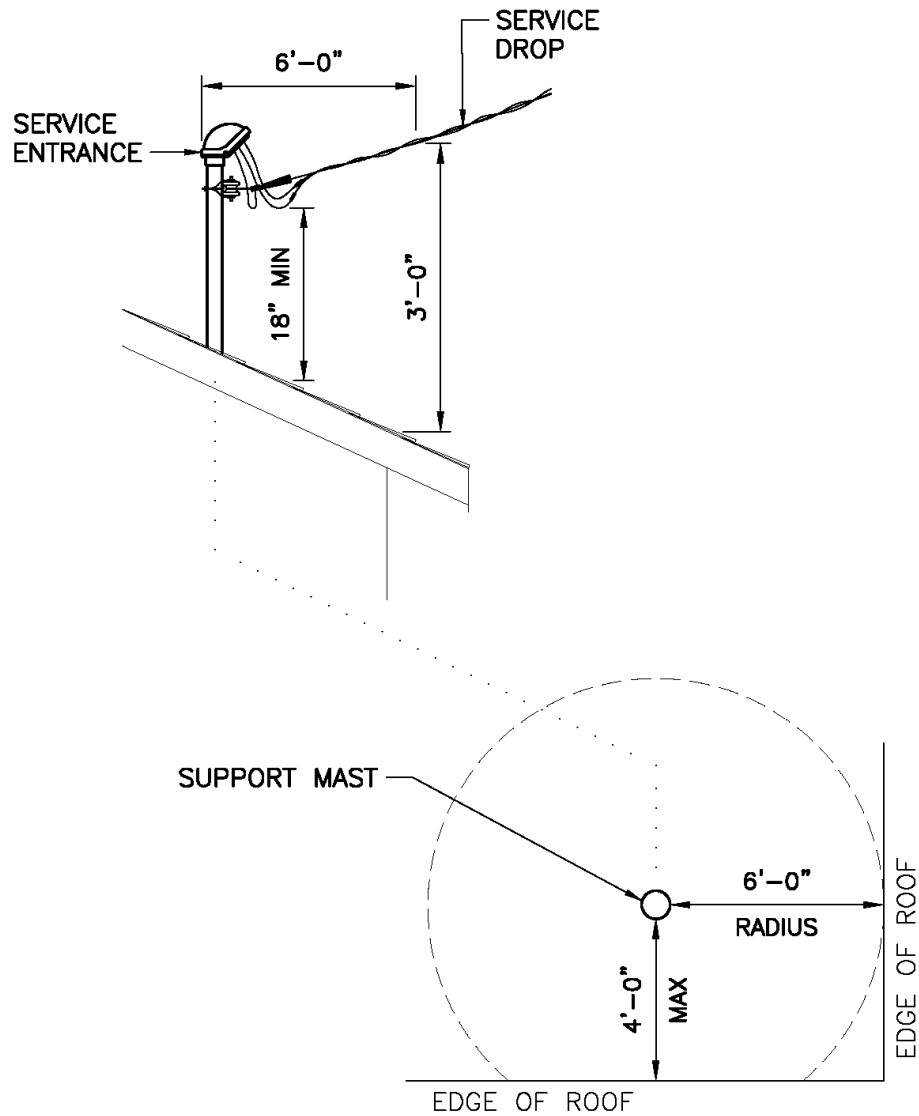
3.1.3. Clearances for Service Drop Terminations at the Support Mast on a Roof

Minimum required clearances for service drop terminations at the support mast on a roof are as shown in Table 3.1.3. and Figure 3.1.3.

Table 3.1.3. Clearances of Service Drops Terminating at the Support Mast on a Roof

Location	Clearance, minimum
Between the roof and the drip loop	18 in
Between the top of the weatherhead and the rigid clevis (strike)	8 in
Above the roof outside of a 6-ft radius from the service mast	3 ft

Figure 3.1.3. Clearances of Service Drops Terminating on a Support Mast, Profile View (left) and Plan View (right)



3.1.4. Clearances for Service Drops Terminating on the Side of a Building

Minimum required clearances for service drops terminating on the side of a building shall be as shown in Table 3.1.4 and figures 3.1.4a–c.

Table 3.1.4. Clearances of Service Drops Terminating on the Side of a Building

Location	Clearance, minimum
In all directions when not attached to, or passing by, structures up to the strike point on a building	5 ft
Below, and to the sides of, balconies, decks, or similar locations	3 ft
In all directions between windows and doors	3 ft
Exceptions:	
○ Where the service drop is above the top level of the window	
○ Where a window is designed not to open	
Above base of balconies, decks, or similar locations	11 ft
Horizontally from the building wall to which the service drop is attached	1 in

Figure 3.1.4a. Clearances from Doors

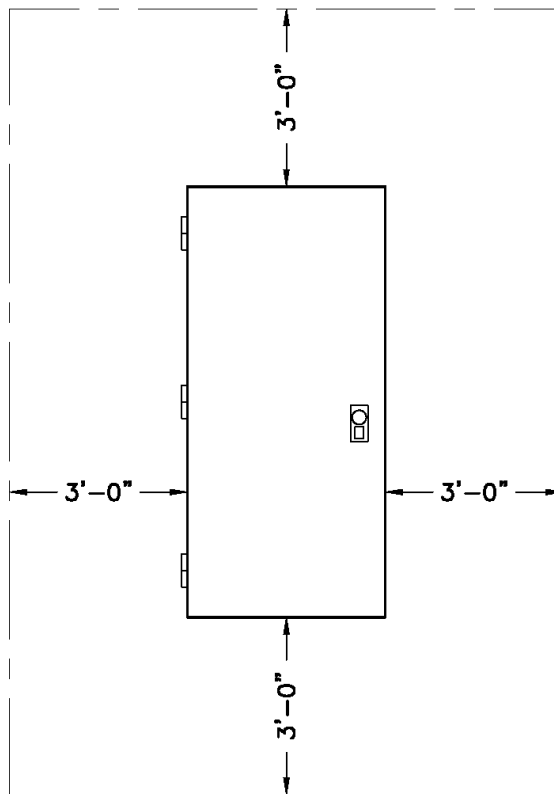


Figure 3.1.4b. Clearances from Windows (Operable)

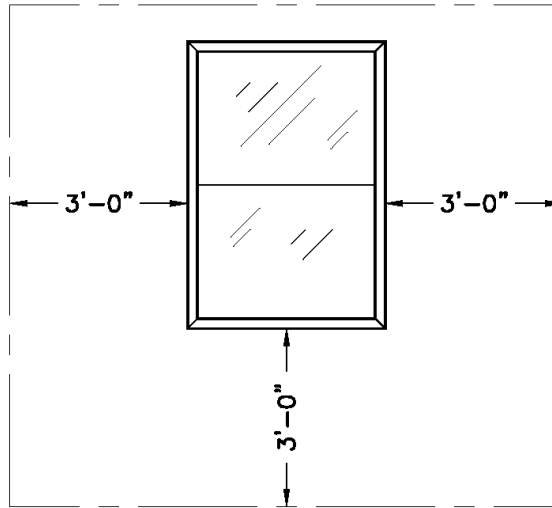
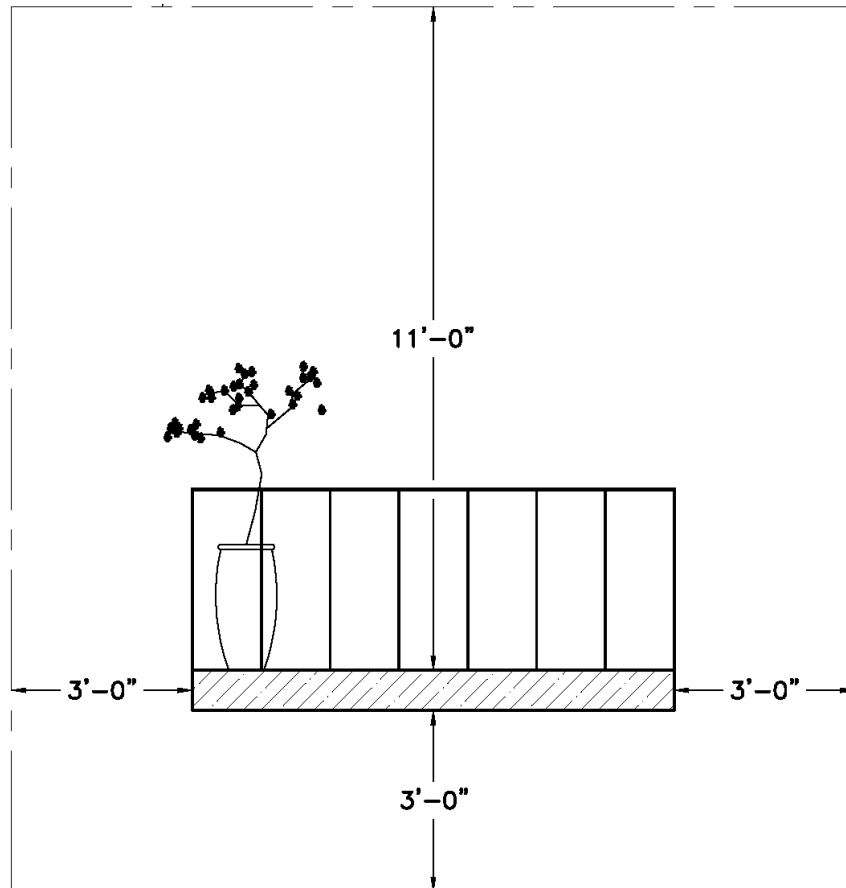


Figure 3.1.4c. Clearances from Balconies, Decks, or Similar Locations (ft)



3.2 Installation

Weatherheads shall be installed no higher than 20 ft above final grade.

The customer shall furnish and install all required service entrance equipment up to the point of connection or demarcation per WAC 296-46B-230.

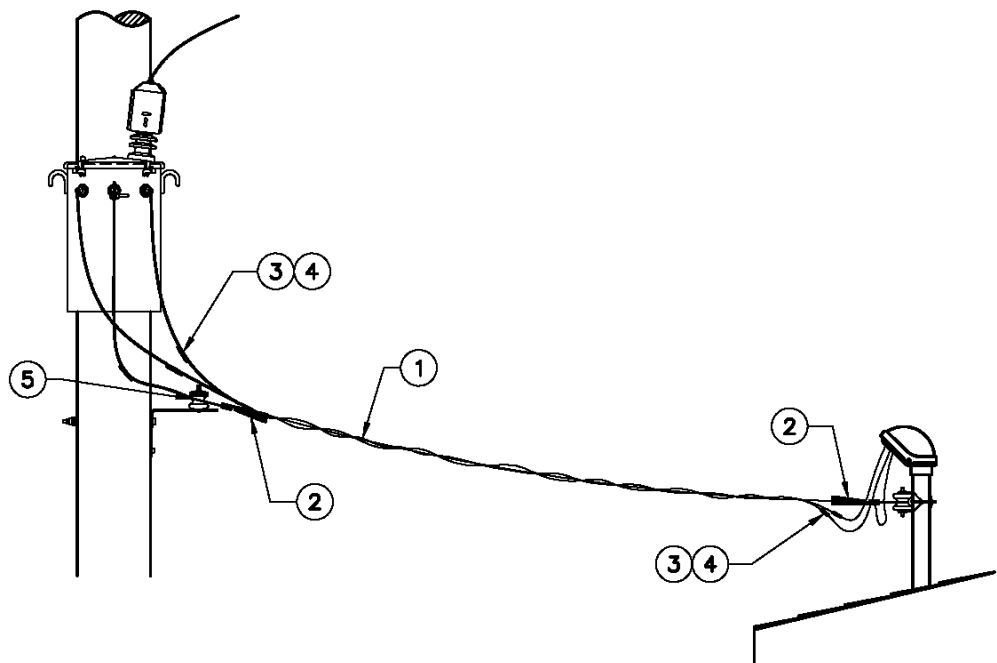
Only one service drop shall be allowed per service mast.

Service drops shall be installed as shown in Figure 3.2a.

Service drops shall be cleared and maintained, free of obstruction, by the customer.

Only power service drop conductors shall be permitted to be attached to a service mast.

Figure. 3.2a. Service Drop Installation Details



Guying or bracing of the roof support mast is required if the mast exceeds 26 inches above the roof line or if the service drop is longer than 100 ft. See WAC 296-46B-230 for installation details.

The roof support mast shall be located no greater than 4 ft from the nearest roof edge.

Communication service drops shall not be permitted on the service mast (above or below roof).

For multiple service connections at the service entrance or at the pole, multi-tap insulated connectors shall be used as follows:

- Three (3) multi-tap connectors for triplex
- Four (4) multi-tap connectors for quadruplex

Figure 3.2b. Multi-Tap Insulated Connector, Stock. Nos. 013661 or 013662



4. Construction Notes

For variances, pole guying, and clearances over structures and objects not listed in this standard, such as swimming pools and trolley conductors, consult with an SCL engineer.

Run continuous service conductor if possible.

Do not string service conductor to buildings at a tension that requires the use of automatic or straight-line clamps.

5. Material Lists

Table 5a. Service Conductors, Overhead

Fig	Compatible Unit	ID	Quantity						
3.2a	Wire, 350 kcmil Quadruplex Service	CNDOSVC1-350QP	-----						
3.2a	Wire, 4/0 Triplex Service	CNDOSVC1-4/0TP	-----						
3.2a	Wire, 4/0 Quadruplex Service	CNDOSVC1-4/0QP	-----						
3.2a	Wire, 1/0 Triplex Service	CNDOSVC1-1/0TP	-----						
3.2a	Wire, 1/0 Quadruplex Service	CNDOSVC1-1/0QP	-----						
3.2a	Wire, #2 AWG Triplex Service	CNDOSVC1-#2TP	-----						
3.2a	Wire, #2 AWG Quadruplex Service	CNDOSVC1-#2QP	-----						

#	Material Description	ID	↓	↓	↓	↓	↓	↓	↓
1	#2 AWG quadruplex	600734	1	-	-	-	-	-	-
1	#2 AWG triplex	600672	-	1	-	-	-	-	-
1	1/0 quadruplex	600735	-	-	1	-	-	-	-
1	1/0 triplex	600664	-	-	-	1	-	-	-
1	4/0 quadruplex	600738	-	-	-	-	1	-	-
1	4/0 triplex	600669	-	-	-	-	-	1	-
1	350 kcmil quadruplex	600741	-	-	-	-	-	-	1

Table 5b. Service Connectors, Overhead

Fig	Compatible Unit	ID	Quantity						
3.2a	Connectors, 350 kcmil Quadruplex Service	CNDOSVC1-350QPC	-----						
3.2a	Connectors, 4/0 Triplex Service	CNDOSVC1-4/0TPC	-----						
3.2a	Connectors, 4/0 Quadruplex Service	CNDOSVC1-4/0QPC	-----						
3.2a	Connectors, 1/0 Triplex Service	CNDOSVC1-1/0TPC	-----						
3.2a	Connectors 1/0 Quadruplex Service	CNDOSVC1-1/0QPC	-----						
3.2a	Connectors, #2 AWG Triplex Service	CNDOSVC1-#2TPC	-----						
3.2a	Connectors, #2 AWG Quadruplex Service	CNDOSVC1-#2QPC	-----						
			↓	↓	↓	↓	↓	↓	↓
#	Material Description	ID							
2	Neutral service wedge clamp, #6 AWG-#2 AWG	581340	2	2	-	-	-	-	-
2	Neutral service wedge clamp, #4 AWG-1/0	581342	-	-	2	2	2	2	2
2	Neutral service wedge clamp, 2/0-4/0	581344	-	-	-	-	2	2	2
3	Connector, comp., bare, #4 AWG-4/0	650104	4	3	4	3	-	2	-
3	Connector, comp., insulated, yellow-yellow	650569	-	-	-	3	-	-	-
3	Connector, comp., insulated, yellow-red	650565	-	3	4	-	-	-	-
3	Connector, comp., insulated, red-red	650564	4	-	-	-	-	-	-
4	Connector, comp., bare, 4/0-477 kcmil	650138	-	-	-	-	8	4	8
5	Connector, 2-bolt, bronze, clamp, 1/0-4/0 str.	669380	2	2	2	2	2	2	2

Table 5c. Service Connectors, Multi-Tap

Fig	Compatible Unit	ID	Quantity			
3.2b	Conn., Multi-Tap, #2 AWG–350 kcmil, 4-Position, TP	JMULT3-1K-4OH	—			
3.2b	Conn., Multi-Tap, #2 AWG–350 kcmil, 4-Position, QP	JMULT4-1K-4OH	—			
3.2b	Conn., Multi-Tap, #2 AWG–350 kcmil, 6-Position, TP	JMULT3-1K-6OH	—			
3.2b	Conn., Multi-Tap, #2 AWG–350 kcmil, 6-Position, QP	JMULT4-1K-6OH	—			

#	Material Description	ID				
3	Conn., multi-tap, #2 AWG–350 kcmil, 4-position	013661	–	–	4	3
3	Conn., multi-tap, #2 AWG–350 kcmil, 6-position	013662	4	3	–	–

6. References

- SCL Construction Standard 0100.11**; “LR Bracket Installation”
- SCL Construction Standard 0130.10**; “Secondary Service Span”
- SCL Construction Standard 0130.20**; “Secondary Service Bridle”
- WAC 296-46B-230**; Wiring and protection–Services

7. Sources

- IEEE C2-2017**; National Electric Safety Code (NESC); 2017
- NFPA-70, National Electric Code (NEC) Article 230**, Fourteenth Edition, National Fire Protection Association, Quincy, MA, 2017
- Washington Administrative Code (WAC) 296-307-36609**; “What Requirements Apply to Conductors”
- Washington Administrative Code (WAC) 468-34-209**; “Vertical Clearance”
- Revised Code of Washington (RCW) 19.29.010**; “Inspections–Notice to repair and change–Disconnection–Entry–Concealment–Accessibility–Connection to utility–Permits, fees–Limitation–Waiver of provisions during state of emergency”
- Neuansourinh, Ponet**; SCL Standards Engineer, subject matter expert, and originator of 0130.30 (ponet.neuansourinh@seattle.gov)
- Lu, Curtis**; SCL Standards Engineer and subject matter expert for 0130.30 (curtis.lu@seattle.gov)