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## Riser Extensions

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### 1. Scope

This standard covers the installation of primary and secondary riser extensions on Seattle City Light (SCL) distribution system wood poles. Instructions for installing the riser to the pole are included, along with requirements for spacing and hardware.

Riser extensions are to be used in conjunction with steel conduit risers. Steel conduit risers are covered in SCL 0224.34.

Primary pole terminations are covered in SCL 0126.01.

Streetlight pole terminations are covered in SCL 1714.50.

Composite, steel, laminated, and other non-wood poles are outside the scope of this standard.

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### 2. Application

This standard provides direction to SCL engineers, crews and contractors who specify or install PVC riser extensions on SCL distribution system wood poles.

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### 3. Requirements

#### 3.1 Riser Extension

Riser extensions come in two types: without a service entrance cap and with a service entrance cap.

Riser extensions without a service entrance cap shall be used when the conduit is terminated at a bottomless handhole or when conductors are directly buried. All other installations shall use a service entrance cap.

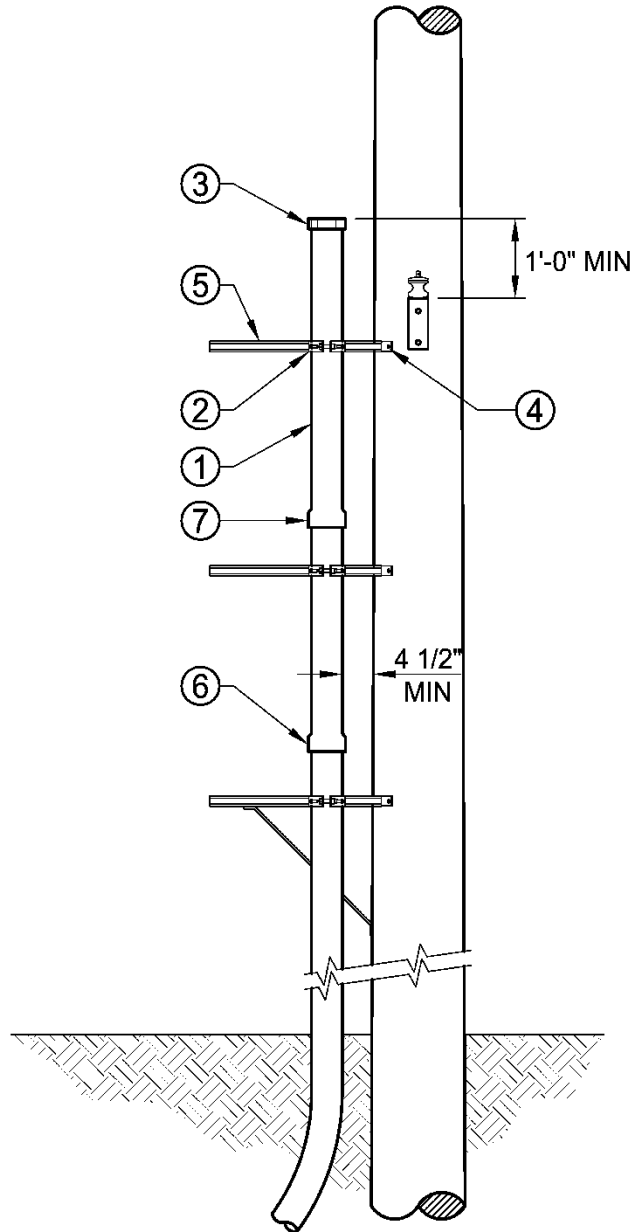
Riser extensions without a service entrance cap shall be constructed as shown in figures 3.1a. and 3.1b.

Riser extensions with a service entrance cap shall be constructed as shown in Figure 3.1c.

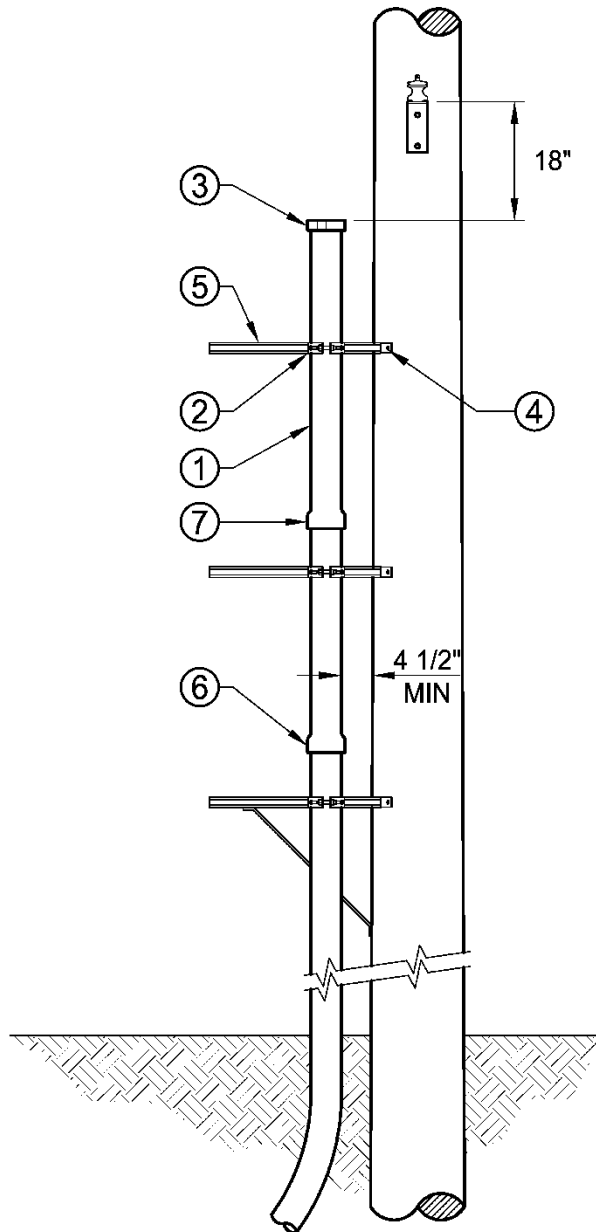
Schedule 40 PVC conduit shall be used for riser extensions. PVC conduit shall be installed above the first 10 ft of the steel riser, and extending to 1 ft above the system neutral for primary conductors, or extending to 18 inches below the system neutral for secondary conductors.



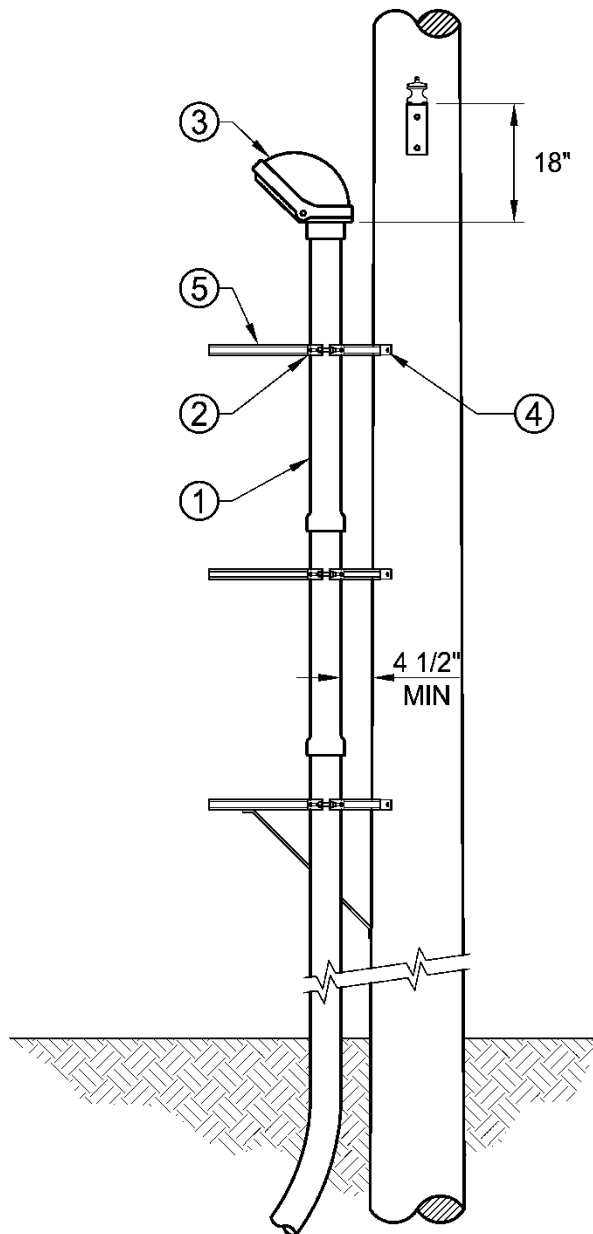
**Figure 3.1a. Primary Riser Extension Without Service Entrance Cap**



**Figure 3.1b. Secondary Riser Extension Without Service Entrance Cap**



**Figure 3.1c. Secondary Riser Extension with Service Entrance Cap**



### 3.2 Bracket

One riser bracket shall be used per conduit section. If there are already brackets on the pole, new riser conduits shall be attached to the existing brackets.

If longer brackets are required than what is already on the pole. Existing brackets shall be replaced with brackets of appropriate length.

Brackets for PVC risers shall be unbraced. The bracket at the first 10 ft supporting the steel risers shall be braced.

### 3.3 Installation

An end bell shall be installed at the top of each riser without a service entrance cap.

PVC cement shall be used when joining conduit.

Couplers and adapters shall be used when joining 5-in PVC conduit.

### 4. Construction Notes

If there are existing risers on the pole, verify that the highest voltage conduits are located closest to the pole. Refer to the "Orientation and Arrangement" section of SCL 0224.34 for more detail.

### 5. Material Lists

**Table 5a. Riser Extensions without Service Entrance Cap**

Fig	Compatible Unit	ID	Quantity			
3.1a, 3.1b	Riser extension, 2 in	DPVC-RISEREXT2				
3.1a, 3.1b	Riser extension, 3 in	DPVC-RISEREXT3				
3.1a, 3.1b	Riser extension, 4 in	DPVC-RISEREXT4				
3.1a, 3.1b	Riser extension, 5 in	DPVC-RISEREXT5				
#	Material Description	ID				
1	Conduit, PVC, Sch 40, 2 in (ft)	734530	-	-	-	30
1	Conduit, PVC, Sch 40, 3 in (ft)	734532	-	-	30	-
1	Conduit, PVC, Sch 40, 4 in (ft)	734523	-	30	-	-
1	Conduit, PVC, Sch 40, 5 in (ft)	734524	30	-	-	-
2	Strap, strut pipe/conduit, 2 in	689764	-	-	-	2
2	Strap, strut pipe/conduit, 3 in	689768	-	-	2	-
2	Strap, strut pipe/conduit, 4 in	689772		2	-	-
2	Strap, strut pipe/conduit, 5 in	689774	2	-	-	-
3	End bell, PVC, 2 in	734944	-	-	-	1
3	End bell, PVC, 3 in	734946	-	-	1	-
3	End bell, PVC, 4 in	734948	-	1	-	-
3	End bell, PVC, 5 in	734949	1	-	-	-
n/a	Cement, PVC	726680	1	1	1	1
4	Bolt, lag, 1/2 in x 4 in	785261	4	4	4	4
5	Bracket, pole riser, without brace, 18 in	686790	2	2	2	2
6	Adapter, female, IPS	734536	1	-	-	-
7	Coupling, PVC	734522	2	-	-	-

**Table 5b. Riser Extensions with Service Entrance Cap**

Fig	Compatible Unit	ID	Quantity		
3.1c	Riser extension, 2 in	DPVC- RISEREXT2C			
3.1c	Riser extension, 3 in	DPVC- RISEREXT3C			
3.1c	Riser extension, 4 in	DPVC- RISEREXT4C			
#	Material Description	ID			
1	Conduit, PVC, Sch 40, 2 in (ft)	734530	-	-	20
1	Conduit, PVC, Sch 40, 3 in (ft)	734532	-	20	-
1	Conduit, PVC, Sch 40, 4 in (ft)	734523	20	-	-
2	Strap, strut pipe/conduit, 2 in	689764	-	-	2
2	Strap, strut pipe/conduit, 3 in	689768	-	2	-
2	Strap, strut pipe/conduit, 4 in	689772	2	-	-
3	Service entrance cap, 2 in	013575	-	-	1
3	Service entrance cap, 3 in	013577	-	1	-
3	Service entrance cap, 4 in	013579	1	-	-
n/a	Cement, PVC	726680	1	1	1
4	Bolt, lag, 1/2 in x 4 in	785261	4	4	4
5	Bracket, pole riser, without brace, 18 in	686790	2	2	2

**6. References**

**SCL Construction Standard 0224.34;** “Steel Conduit Risers”

**SCL Construction Standard 1714.50;** “Underground Streetlight Systems”

**7. Sources**

**Lu, Curtis;** SCL Standards Engineer and originator of 0126.04 (curtis.lu@seattle.gov)