

Wood Pole Installation

1. Scope

This standard covers the information necessary to install wood poles in average soil on the 26 kV primary distribution system. Requirements for pole embedment and installation instructions are included.

Wood poles in poor soils, as well as composite, steel, laminated and other non-wood poles, are outside the scope of this standard.

2. Application

This standard provides direction to Seattle City Light (SCL) crews and contractors for the installation of wood poles.

3. Requirements

3.1 Installation

The embedment hole dimensions are determined by the soil condition. Use Table 3.1a and/or SCL soil books to determine the soil condition at the pole location.

Table 3.1a. Soil Conditions

Soil Condition	Criteria
Average	No water
Poor	Sandy and water after 4 feet
Not average or poor	Bedrock, soft clay, water before 4 feet or slope greater than 30 degrees

A wood pole in average soil shall be installed as shown in Figure 3.1.

The embedment hole diameter shall be a minimum of 6 inches and a maximum of 18 inches greater than the diameter of the pole butt. The additional hole space is used for installation of backfill and proper tamping.



Figure 3.1. Pole Embedment Details

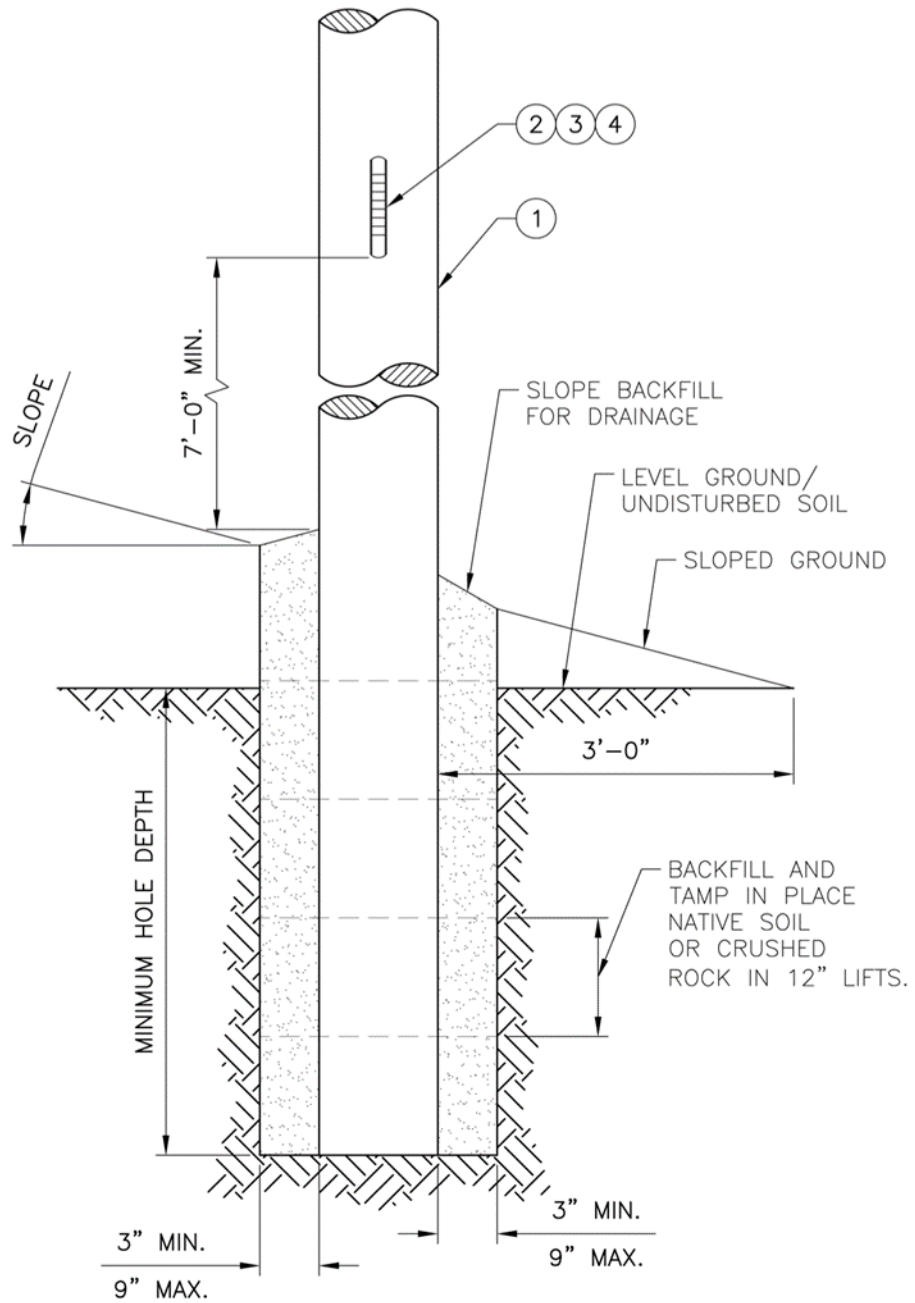


Table 3.1b provides the minimum hole depth required for the pole length, class, and ground slope up to 30 degrees.

Table 3.1b. Pole Depth for Average Soil Conditions

Grade of Construction	Pole Length (ft)	Pole Class	Minimum Hole Depth (ft)
B and C	40	3	7.0
B and C	40	1	7.0
B and C	45	1	7.0
B and C	50	3	7.0
B and C	50	1	7.0
B and C	50	H1	8.0
B and C	55	1	7.5
B and C	55	H1	8.5
B and C	60	1	8.0
B and C	60	H1	9.0
B and C	65	1	8.5
B and C	65	H1	9.5
B and C	70	1	9.0
B and C	70	H1	10.0

3.2 Backfill

The base for average soil conditions shall be compacted native soil. The backfill around the pole shall be compacted native soil, well graded 3/4" minus or Controlled Low Strength Material (CLSM) placed in 12 inch maximum lifts. An additional 2 inches of backfill shall be placed around and sloping away from the pole at the ground line for water drainage.

3.3 Sloped Ground

Use Table 3.1b for embedment hole depths in sloped ground. The minimum hole depth starts at level ground. Level ground is the depth where the sloped ground on the low side of the pole is 3 feet from the pole as shown in Figure 3.1. If the slope is greater than 30 degrees, contact SCL Engineering.

3.4 Grounding

Install pole grounds as specified in SCL 0451.01.

3.5 Identification

Install the pole number tag using two nails, locating the bottom of the tag at a minimum of 7 feet above grade. The tag shall be located on the street side of the pole or if there is no street, on the most visible side of the pole.

4. Construction Notes

1. If soil condition is not average, contact SCL Engineering.
2. Use appropriate size auger to obtain the proper diameter hole.
3. Use extension rod to reach the proper hole depth.

5. Material Lists

Table 5a. Douglas-Fir Poles

Item #	Description	ID
1	Poles, Douglas-Fir - 40 ft Class 3	POLEDF40CL3
1	Poles, Douglas-Fir - 40 ft Class 1	POLEDF40CL1
1	Poles, Douglas-Fir - 45 ft Class 1	POLEDF45CL1
1	Poles, Douglas-Fir - 50 ft Class 3	POLEDF50CL3
1	Poles, Douglas-Fir - 50 ft Class 1	POLEDF50CL1
1	Poles, Douglas-Fir - 50 ft Class H1	POLEDF50CLH1
1	Poles, Douglas-Fir - 55 ft Class 1	POLEDF55CL1
1	Poles, Douglas-Fir - 55 ft Class H1	POLEDF55CLH1
1	Poles, Douglas-Fir - 60 ft Class 1	POLEDF60CL1
1	Poles, Douglas-Fir - 60 ft Class H1	POLEDF60CLH1
1	Poles, Douglas-Fir - 65 ft Class 1	POLEDF65CL1
1	Poles, Douglas-Fir - 65 ft Class H1	POLEDF65CLH1
1	Poles, Douglas-Fir - 70 ft Class 1	POLEDF70CL1
1	Poles, Douglas-Fir - 70 ft Class H1	POLEDF70CLH1

Table 5b. Western Redcedar Poles

Item #	Description	ID
1	Poles, Western Redcedar - 40 ft Class 3	POLEWRC40CL3
1	Poles, Western Redcedar - 40 ft Class 1	POLEWRC40CL1
1	Poles, Western Redcedar - 50 ft Class 3	POLEWRC50CL3
1	Poles, Western Redcedar - 50 ft Class 1	POLEWRC50CL1
1	Poles, Western Redcedar - 55 ft Class 1	POLEWRC55CL1
1	Poles, Western Redcedar - 60 ft Class 1	POLEWRC60CL1

Table 5c. Pole Number Tags

Fig	Compatible Unit	ID	Qty
3.1	Pole Tag	PL-#TAG	
Item #	Material Description	ID	
2	Holder, Number Tag	013072	1
3	Assembled Set, Number Tags	013073	1
4	Nail	782415	2

6. References

- SCL Construction Standard 0451.01; "Pole Grounds"
- SCL Northern Area Soils Map Book; 2015
- SCL Southern Area Soils Map Book; 2015

7. Sources

Lu, Curtis; SCL Standards Engineer and originator of 0100.07 (curtis.lu@seattle.gov)

Hall, Alan; SCL Engineer and subject matter expert for 0100.07 (alan.hall@seattle.gov)

SCL Design Standard 9105.26; "Distribution Pole Embedment Requirements"

SCL Construction Guideline D3-3; "Pole Setting Depth 26.4 kV Looped Radial System"
(canceled)