



CLEARANCES FOR SUPPLY SERVICE DROPS

022169

Department: Electric T&D

Section: T&D Engineering and Technical Support

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Rev. #02: This document becomes effective on 10/6/2026. For a description of the changes, see Page 17.

Purpose and Scope

This document describes mandatory clearances for service supply drops for various types of installations. Service drops shall have the clearances indicated below and illustrated on Pages 4 and 5. All clearances are in accordance with [General Order \(G.O.\) 95](#) of the California Public Utilities Commission. Installations made, as shown in this document, will also comply with the California State Building Standards Electrical Code.

General Information

1. Vertical Clearance Above Rails: **Feet**
 - A. Crossing above railroad tracks without overhead trolley wire 25
 - B. Crossing above railroad tracks with overhead trolley wire
 - (1) Above rails where freight cars are transported 26
 - (2) Above rails where freight cars are not transported 23
 - (3) In all cases, the service drops must clear the trolley wires by ≥ 4
2. Vertical Clearance Above Public Thoroughfares ¹:
 - A. Above the center portion between points 12 feet horizontally from curbs 18
 - B. At curb line (from level of street, not sidewalk) 16
3. Vertical Clearances on Residential ² Private Property:
 - A. Over private roads and other areas accessible to agricultural equipment 15
 - For adequate clearance for agricultural equipment (if possible) 16
 - B. Over private driveways, lanes, or other areas (such as alleys and parking lots) accessible to vehicles used for industrial or commercial purposes 16
 - C. Over private driveways, lanes, or other private property areas accessible to vehicles used for residential purposes only. (Does not apply to driveways or lanes used by garbage trucks, delivery trucks, or similar commercial vehicles) 12
 - Exception: This clearance may be reduced for insulated services to not less than 10 feet.
 - D. Over areas accessible to pedestrians only 12
 - Exception: This clearance may be reduced for insulated services to not less than 8' 6".
4. Vertical Clearance Over Buildings, Bridges, or Other Structures:
 - A. Vertical clearance over building, bridges, or structures (conductors attached or unattached) that do not ordinarily support conductors and on which people can walk. For allowable reduction in clearances, see Table 1 on Page 2 8
 - B. Horizontal clearance of conductor at rest from buildings, bridges, or other structures (conductors not attached) upon which people may work 3

¹ Public thoroughfare means any way open or intended for general vehicular use. Thoroughfares in private communities of 10 or more residences shall be treated as public thoroughfares. This does not include private driveways or thoroughfares of gated/restricted communities not intended for general vehicular use.

² Residential includes mobile homes installed on foundation systems in locations other than mobile home parks [Title 25, ART.7 Sections 1333,1333.5].

Clearances for Supply Service Drops

5. Clearance Around Doors and Windows:

Service drops are not required to clear buildings any specified horizontal distance except that the service head, the service drop, and the open wires between the service head and the service drop shall have the following clearances from fire escapes, balconies, stairways, exits, doors, windows, and other openings, at any of which human contact might be expected:

- A. Wires which are less than 8 feet above or 3 feet below the level of surfaces of fire escapes, balconies, porches, stairways, and walkways shall have a horizontal clearance of not less than 3 feet from such surfaces.
- B. The clearance of wires from exits, doors, windows, fire escapes, and other openings shall have a radial clearance from the boundaries of such openings of not less than 3 feet. This clearance is illustrated in Figure 12 and Figure 13 on Page 7.

6. Clearance Between Service Drop Wires:

The minimum allowable radial clearance between service drop open wires (0-750 V) in span from the pole to building, and at the point of attachment to a building, is 3". Wire supports at a building should be spaced 8" where practicable.

7. Customer-Owned Service Poles:

- A. A service attachment structure or a service pole secured to a building shall conform to the clearance requirements of this document.
- B. A service pole detached from a building shall conform to [Document 025055](#).

- 8. Service drops should be arranged so as not to hamper or endanger workers and firefighters while performing their duties.

Table 1 Minimum Vertical Clearance Above Buildings (0-750 V)

Description	Weather-Resistant Covered Conductors (feet)	Insulated Conductors (G.O. 95, Rule 20, 9-G) (feet)
All Portions of Building, Including: Metallic or Non-Metallic Cornice; Decorative Appendage; Eaves, Roof, or Parapet Wall of the Building Served.	8	See Footnote ^{1, 2}
Metallic or Non-Metallic Non-Walkable Overhang or Patio Cover	8	See Footnote ^{1, 2}
Other Buildings on the Same Premises	8	2
Buildings on Other Premises	8	8 See Footnote ³

¹ Minimum clearance of 1/2".

² The point of attachment of the service drop for industrial and commercial premises is not to be more than 18" back of the front face of the building wall facing the pole line from which the service drop originates.

³ Reduce to 2 feet for non-metallic roofs when the roof slope exceeds 9" of rise per 12" of run.

Note: Insulated Conductors or cables, suitable, mean supply conductors which are surrounded by an insulating material (see GO 95 Rule 21.6), the dielectric strength of which is sufficient to withstand the maximum difference of potential at normal operating voltages of the circuit without breakdown or puncture. A weather-resistant covering of a supply conductor does not meet the requirements of this rule as to suitable insulation.

References:

Document

Methods of Attaching Services to Customer Premises	025202
Requirements for Customer-Owned Poles	025055
Electrical Clearances for 60kV, 70kV, 115kV, 230 kV and 500kV, Overhead Transmission Line	ES 470591

Clearances for Supply Service Drops

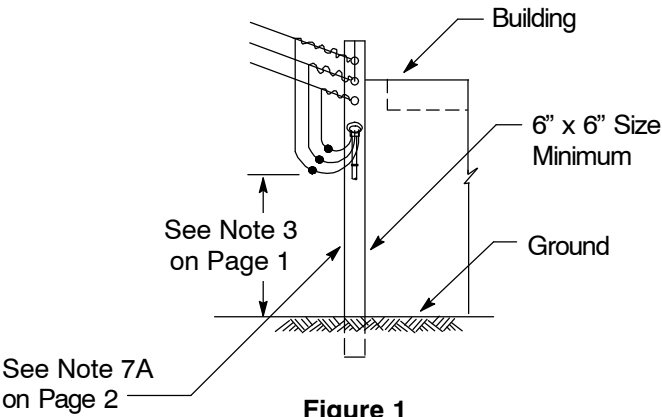


Figure 1
Service Attachment Structure or
Service Pole Secured to Building

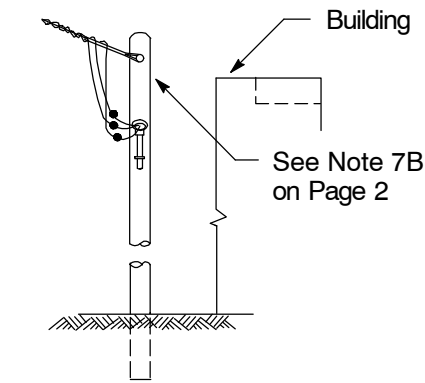


Figure 2
Service Pole Detached
From Building

Clearances for Supply Service Drops

Ground Clearances for Residential Installations

Notes

1. Elevation at the point of attachment shall be such that all required vertical clearances can be maintained with allowance for normal conductor sag.
2. 24" minimum clearance radially, if more than 15 feet from the point of building attachment of either service. If less than 15 feet, clearance may be 12" minimum.
3. 12 feet minimum distance from the surface of a private driveway.

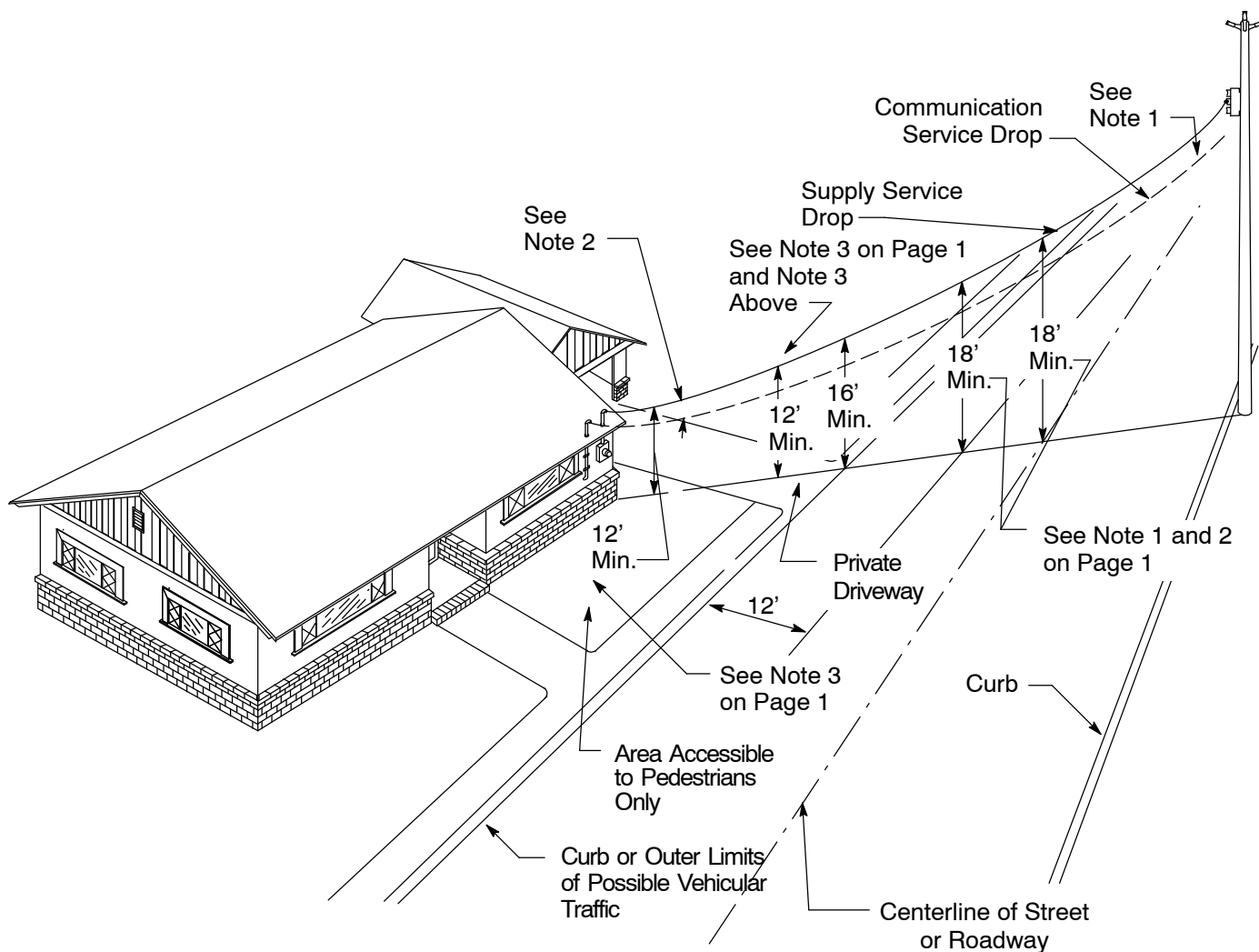


Figure 3
Ground Clearances for Supply Service Drops, 0–300 V Residential Installations
Required by the California Public Utilities Commission

Clearances for Supply Service Drops

Ground Clearance for Industrial and Commercial Installations

Notes

1. Elevation at the point of attachment shall be such that all required vertical clearances can be maintained with allowance for normal conductor sag.
2. 24" minimum clearance radially, if more than 15 feet from the point of building attachment of either service. If less than 15 feet, clearance may be 12" minimum.

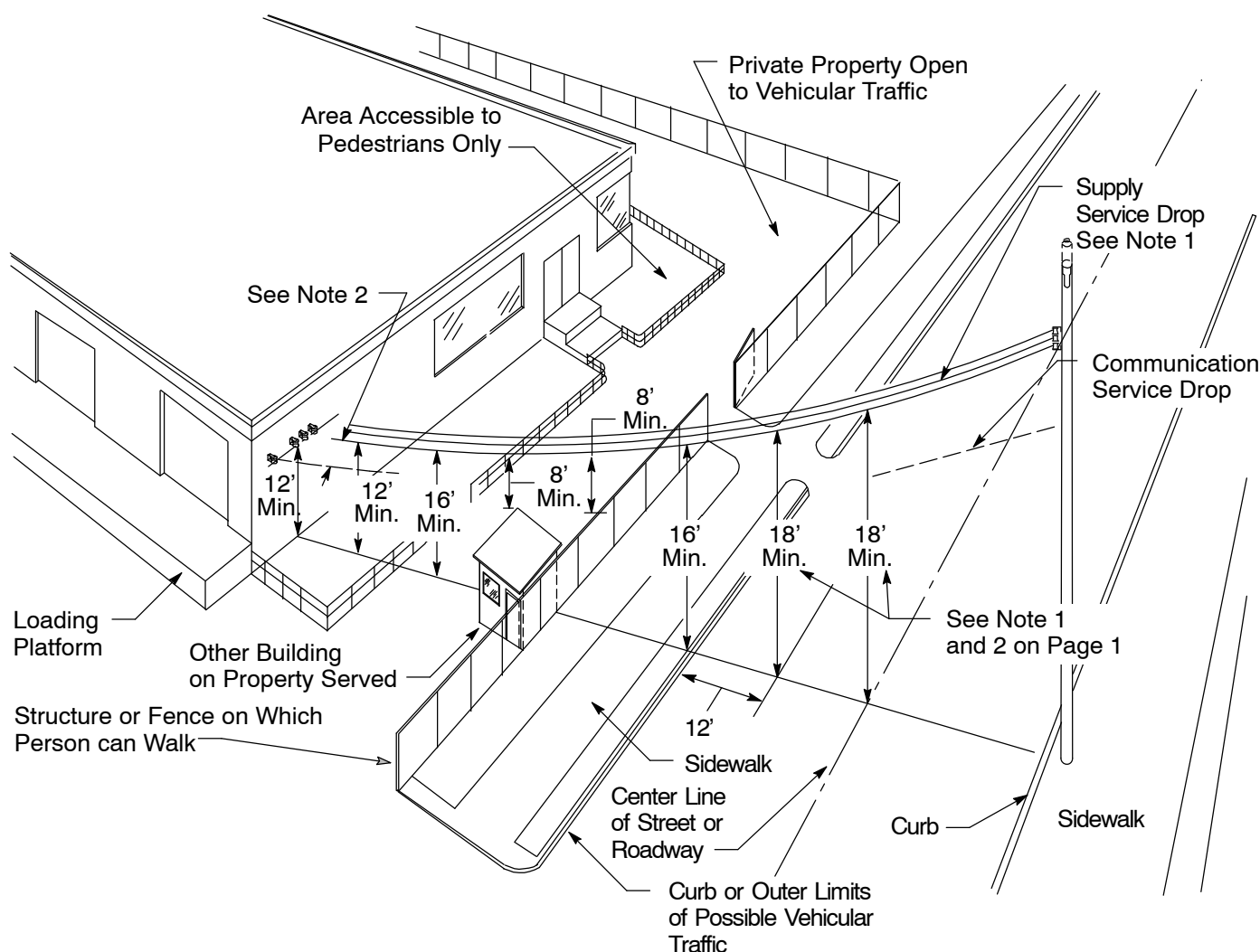


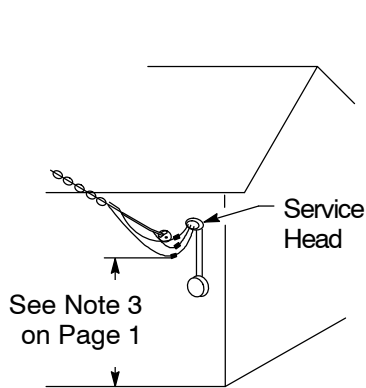
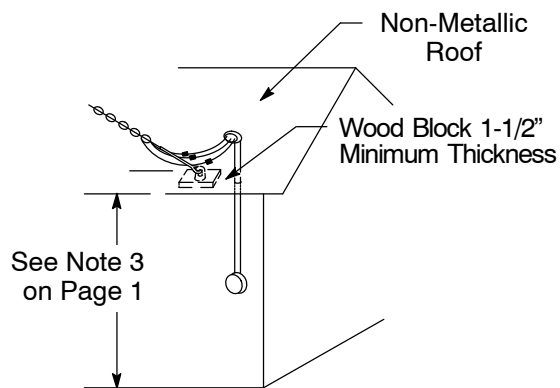
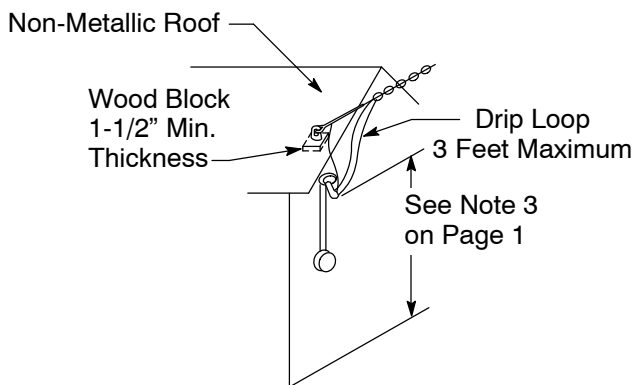
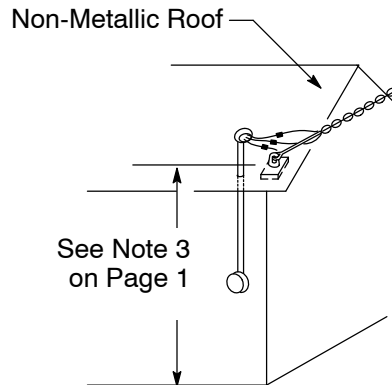
Figure 4
Ground Clearances for Supply Service Drops, 0-750 V
Industrial and Commercial Installations
Required by the California Public Utilities Commission

Clearances for Supply Service Drops

Clearances for 0–750 V Services to Residential Buildings**Notes**

1. It is recommended that supply and communication services not be located in the same vertical plane. See Figure 11 on Page 7 for recommended arrangement.
2. The service drop may be located above the service head, as in Figure 7 and Figure 9 (on Page 7), provided:
 - A It is impractical to terminate the service drop below the level of the service head; and
 - B The termination point of the service drop conductors is not located more than 24" from the service head.

The length of the open wiring (drip loop) between the point of service attachment and service head shall not exceed 3 feet.
3. Services shall not be attached directly to metal roofs. Service drop cable shall clear all metal roofs by 12" minimum.
4. PG&E will not attach services to risers of plastic material.
5. 24" minimum radial clearance, may be to reduced 12" minimum within 15 feet of point of attachment (see Note 1).
6. Periscope service 1-1/4" minimum galvanized rigid steel conduit or IMC, or 2" minimum rigid aluminum conduit (IPS dimensions) (See Note 4).

**Figure 5****Figure 6****Figure 7**
(See Note 2)**Figure 8**

Clearances for Supply Service Drops

Clearances for 0-750 V Services to Residential Buildings (continued)

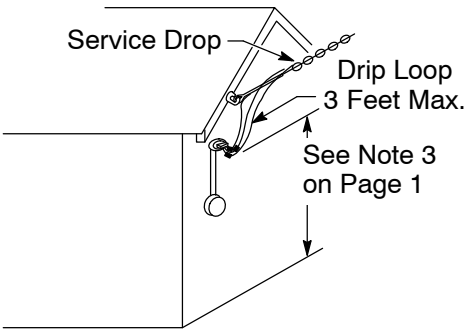


Figure 9
(See Note 2 on Page 6)

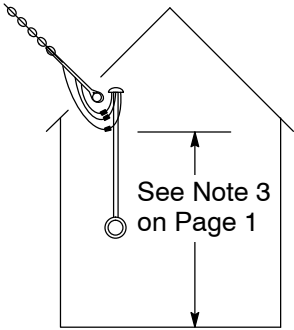


Figure 10

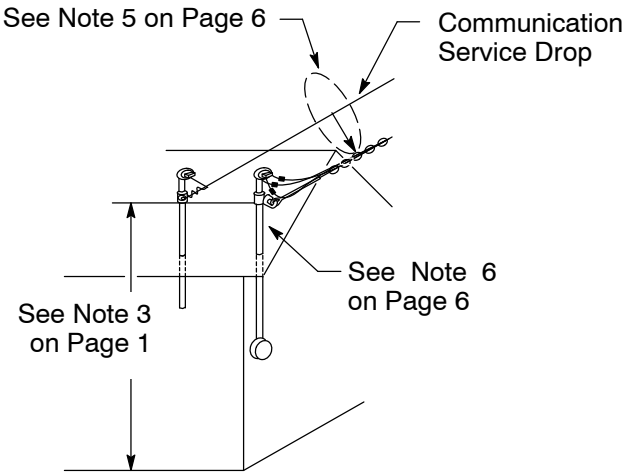


Figure 11

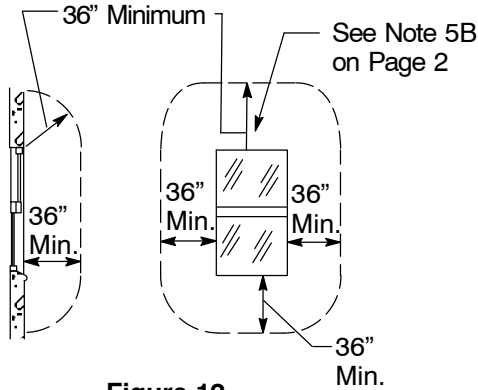


Figure 12
Clearance Around Windows

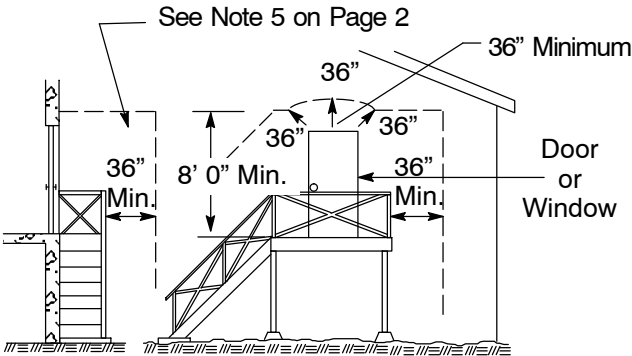
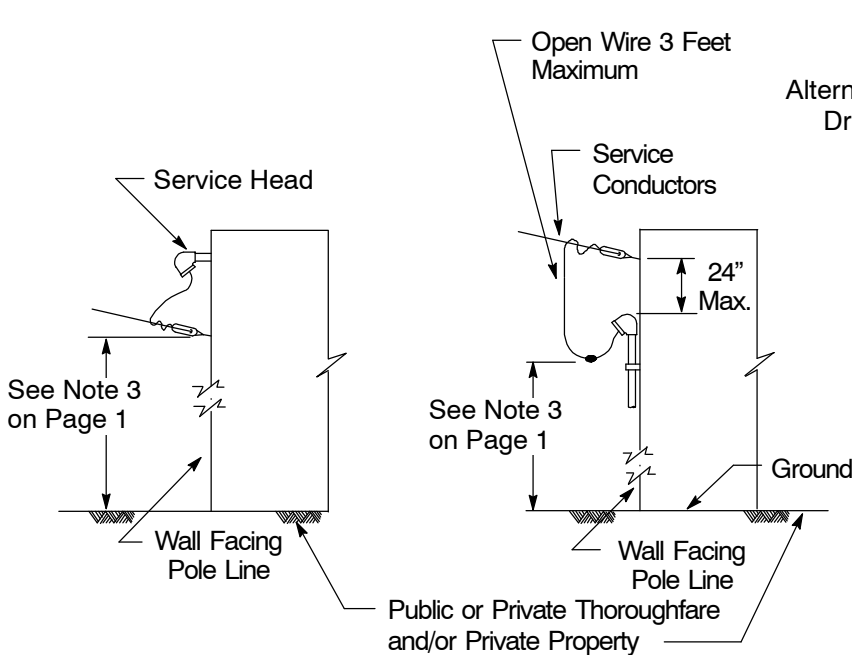
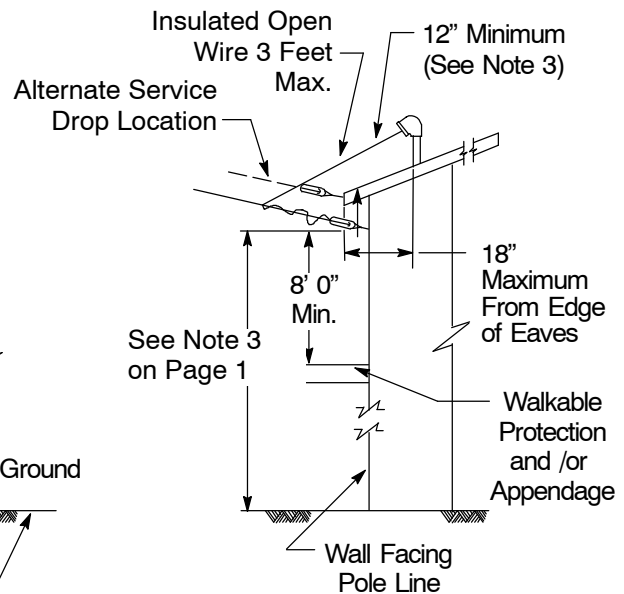


Figure 13
Clearance Around Doors

Clearances for Supply Service Drops

Basic Clearances for 0-750 V Services to Non-Residential Buildings With or Without Metal Covered Roofs**Notes**

1. Reduced clearances over roofs are permitted when service drop conductors are insulated (not weatherproof rated). See examples on Page 10 and Page 11.
2. 1-1/4" minimum galvanized rigid conduit or IMC, or 2" minimum rigid aluminum conduit (IPS dimensions) is required for all periscope attachment structures (Figure 20 and Figure 21 on Page 9). PG&E will not attach services to service entrance conduit of plastic material. Periscope (mast) height without bracing shall be limited to 30" above the roof in locations where the service drop must be installed through trees, or where trees or tree branches may strike or cause unplanned loading on the service drop.
3. Basic clearance for 0 – 750 V service drop conductors above eave, roof, or parapet wall of building served is 8' 0" minimum. However, the clearance of the insulated open wire service conductors (drip loops) above eave, roof, or parapet wall of building served may be reduced to 12" minimum provided the service head is located not more than 18" back from the outer edge of said eave, roof, or parapet wall (see Figure 16 on Page 8 and Figure 17 on Page 9).
4. The service drop may only be located above the service head, as shown in Figure 15, provided:
 - A It is impractical to terminate the service drop below the level of the service head; and
 - B The termination point of the service drop conductors is not located more than 24" from the service head. The length of the open wire "drip loop" shall not exceed 3 feet.

**Figure 14****Figure 15**
(See Note 4)**Figure 16**

Clearances for Supply Service Drops

Basic Clearances for 0-750 V Services to Non-Residential Buildings With or Without Metal Covered Roofs (continued)

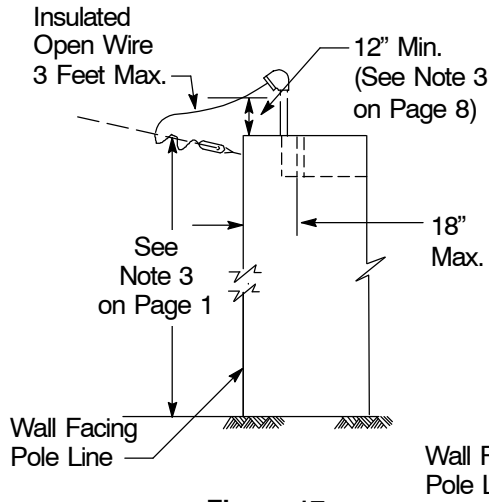


Figure 17

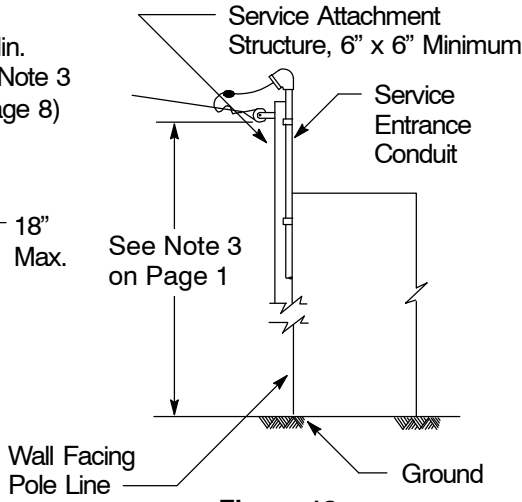


Figure 18

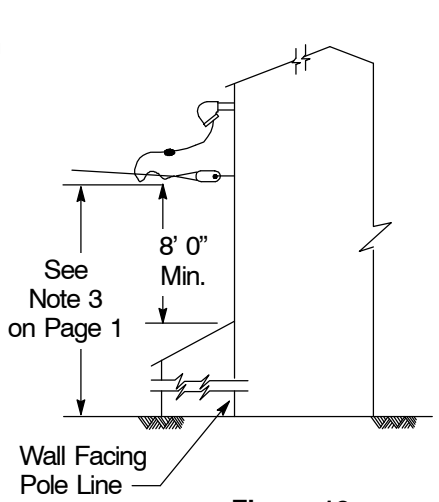


Figure 19
(See Note 1 on Page 8)

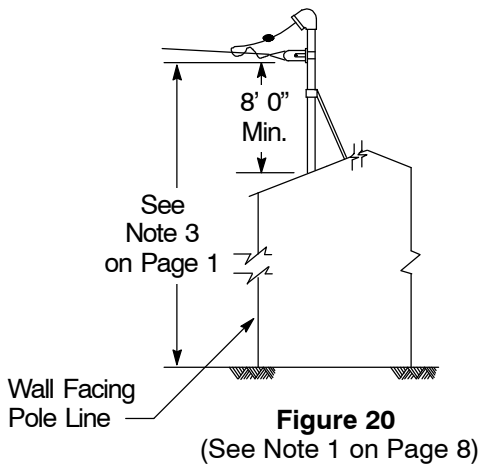


Figure 20
(See Note 1 on Page 8)

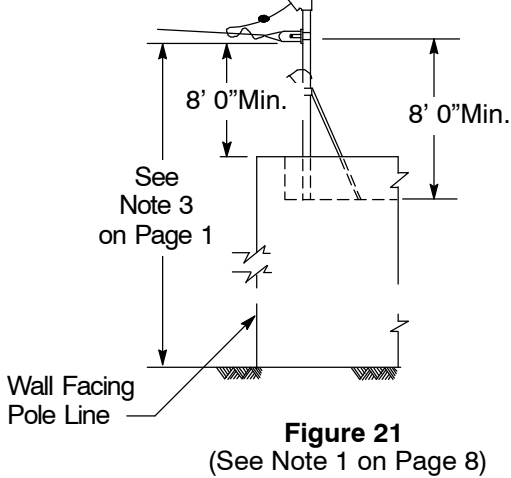


Figure 21
(See Note 1 on Page 8)

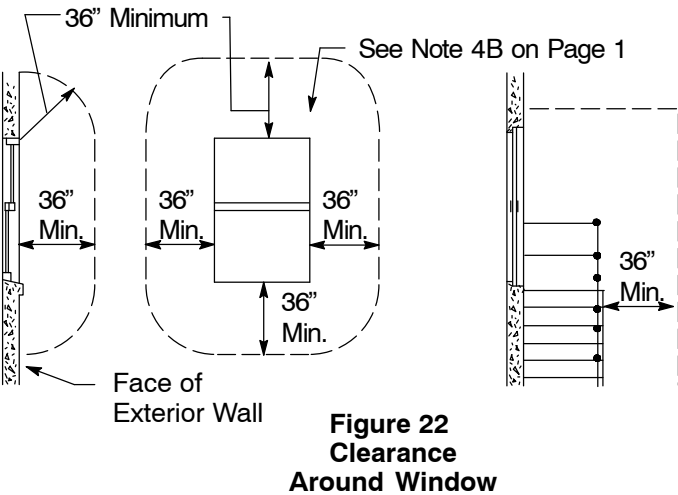


Figure 22
Clearance
Around Window

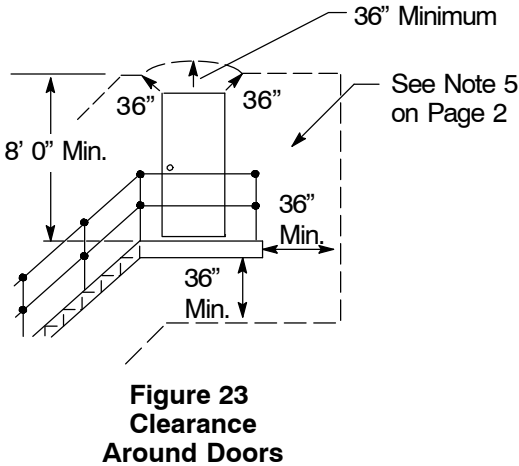
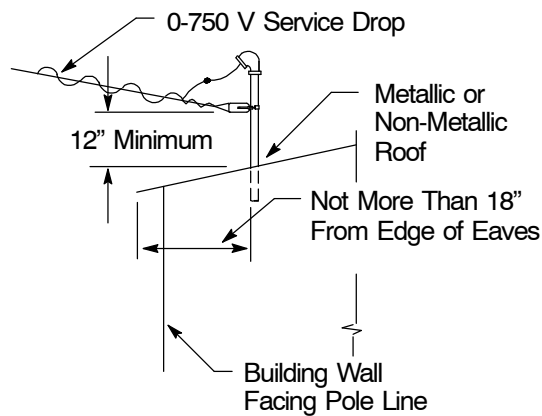
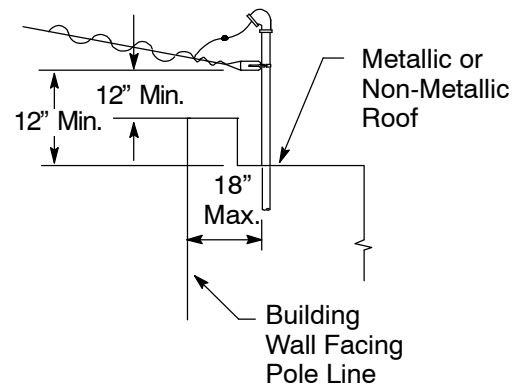
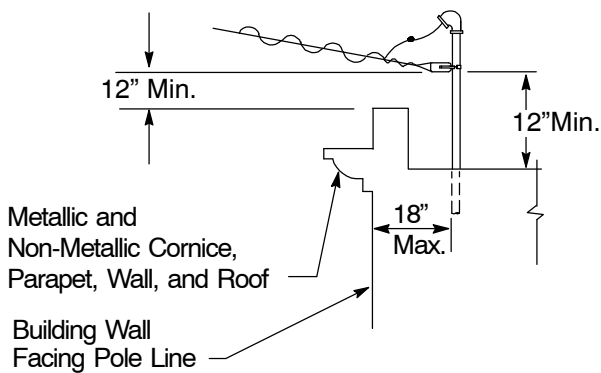
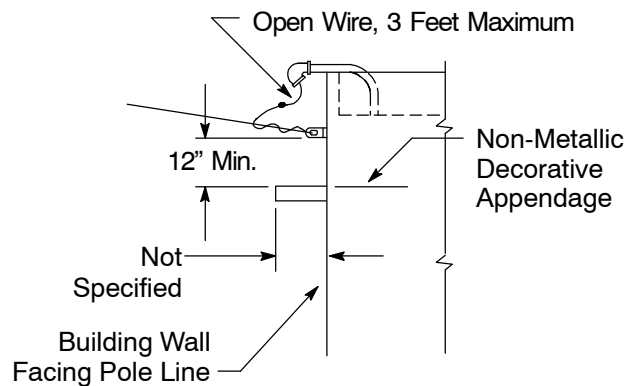


Figure 23
Clearance
Around Doors

Clearances for Supply Service Drops

Reduced Clearances for 0-750 V Services to Non-Residential Buildings Using Service Drop Cable or Equally Insulated Open Wire Service Conductors**Notes**

1. Reduced clearances shown on this page are permitted only when Type N-SD service drop cable or equally insulated open wire service conductors are used. Weatherproof rated conductors may not be used in these reduced clearance applications except those that are light gray colored, which now have equal insulation.
2. For clearance from the service drop to ground, see Pages 4 and 5.
3. For clearance from fire escapes, exits, windows, doors, and other points at which human contact might be expected, see Pages 8 and 9.
4. 1-1/4" minimum rigid steel conduit or 2" minimum rigid aluminum conduit (IPS dimensions) is required for all periscope attachment structures (see Figure 24, Figure 25, and Figure 26, Figure 27, on this page; Figure 30 on Page 11; and Figure 31 on Page 12). PG&E will not attach services to service entrance conduit of plastic material. Periscope (mast) height without bracing shall be limited to 30" above the roof in locations where the service drop must be installed through trees, or where trees or tree branches may strike or cause unplanned loading on the service drop.

**Figure 24****Figure 25****Figure 26****Figure 27**

Clearances for Supply Service Drops

Reduced Clearances for 0-750 V Services to Non-Residential Buildings Using Service Drop Cable or Equally Insulated Open Wire Service Conductors (continued)

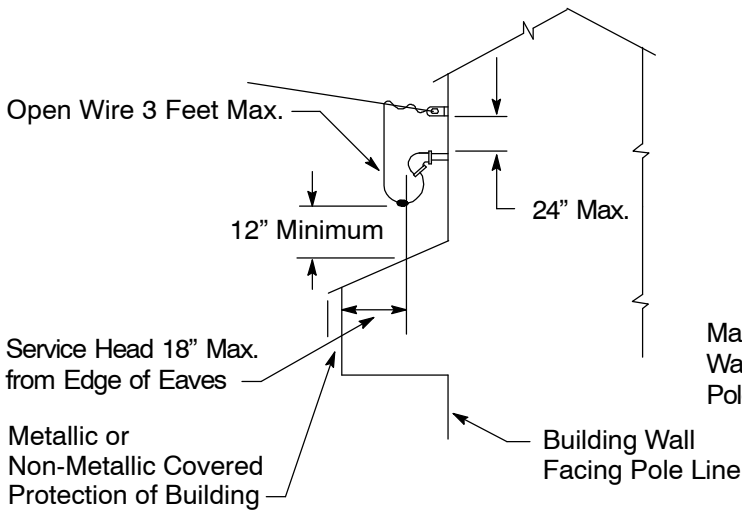


Figure 28

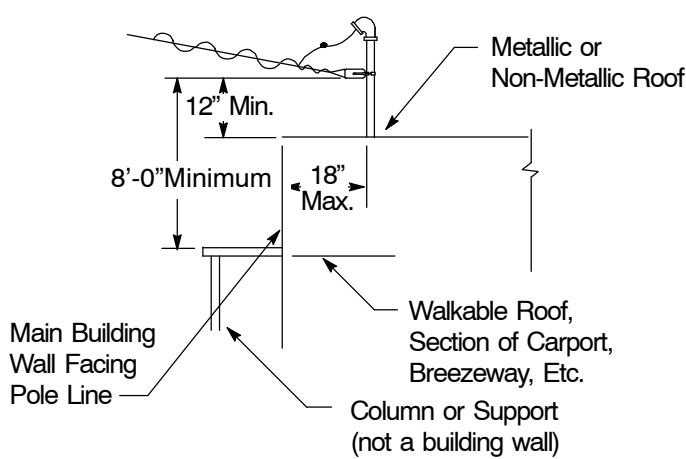


Figure 29

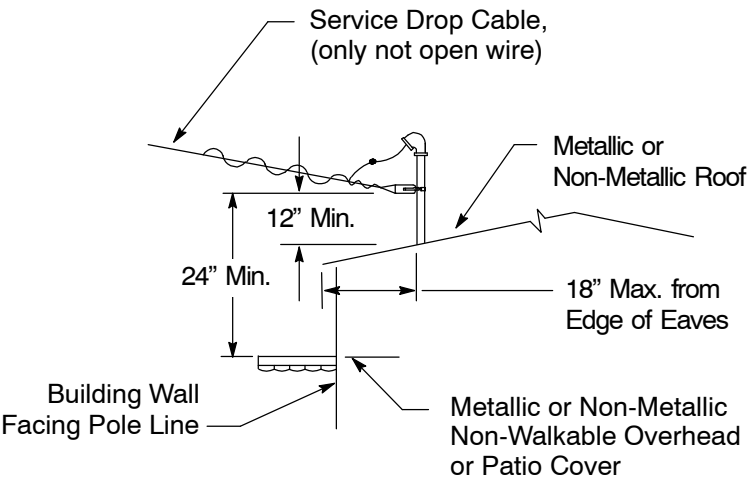


Figure 30

Clearances for Supply Service Drops

Minimum Clearances Between 0-750 V Supply Service Drops and Other Conductors Not Supported On the Same Pole**Notes**

1. Trolley contact conductors = 2 feet clearance.

2. Communication conductors:

A Service drops = 2 feet clearance.

May be reduced to 1 foot if within 15 feet of point of attachment of either service to building.

B Cable leads = 4 feet clearance.

May be reduced where service is above a communication cable if the point of crossing is 6 feet or more from any pole which does not support both conductors involved, but no portion of a supply service drop shall be within the shaded area illustrated (measured in a vertical plane).

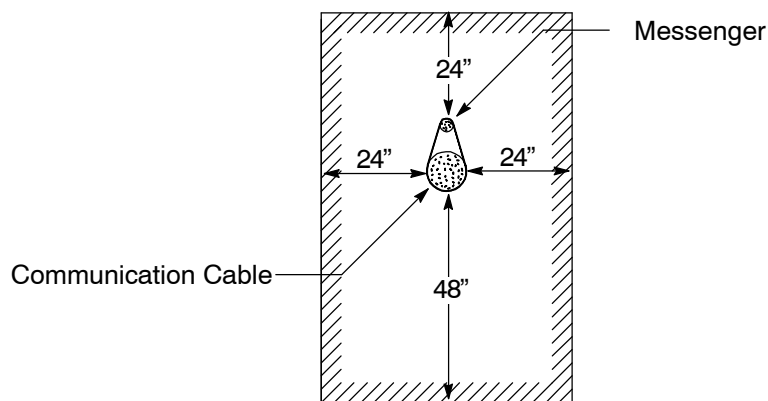


Figure 31
(See Note 2B)

C Open wire leads = 4 feet clearance.

May be reduced to 2 feet provided crossing is 6 feet or more from any pole which supports any conductor involved.

3. Supply conductors:

A Service drops 0-750 V = 2 feet clearance.

B Line conductors:

1 0-750 V = 2 feet clearance.

This clearance also applies to supply cables, of any voltage, which have grounded metal sheaths or shields.

2 750-20,000 V = 6 feet clearance.

3 20,000-22,500 V = 6 feet clearance.

4 For higher voltages, refer to ES 470591 and reach out to transmission design for a clearance check.

4. For conductors supported on the same pole, see Page 13 through Page 16.

Clearances for Supply Service Drops

Minimum Clearance Between 0-750 V Supply Service Drops and Communication Conductors in Open Wire Supported on the Same Poles

Notes

1. The basic vertical clearance between 0-750 V supply conductors and open wire communication conductors is 4 feet. Clearances to supply service drops may be reduced as shown below except that no reduction below 4 feet is permitted within 6 feet of any pole that does not support all conductors involved.
2. In Figure 32 and Figure 33: Dimension D may be less than 48" if C is 25" or more, but shall not be less than 24". If C is less than 25" (15" minimum), then D must be 48" or more.
3. See Table 2 for reduced clearances B, as applied at various distances A, from center of pole to crossing.

Table 2 Dimension and Data for Clearances

Dimension A (feet)	Dimension B Minimum (inches)	
	From Police and Fire Alarm Line Conductors	From Other Communication Line Conductors
0 to 5	6	12
5 Plus to 10	9	18
10 Plus to 15	15	24
15 Plus to 20	21	24
20 Plus	24	24

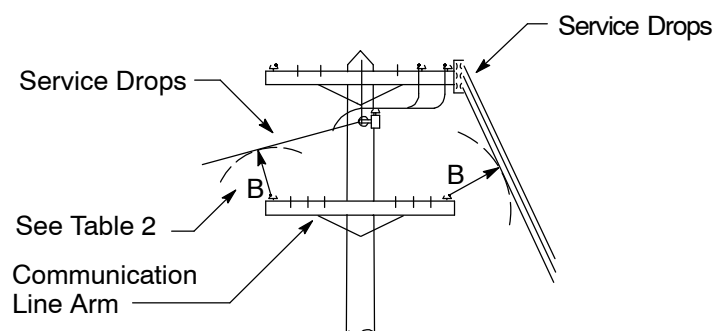
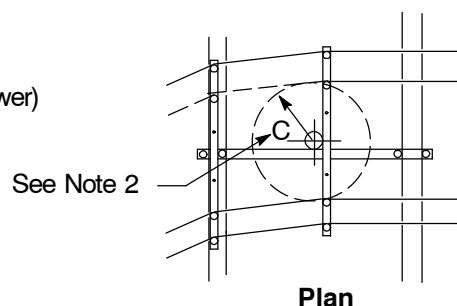
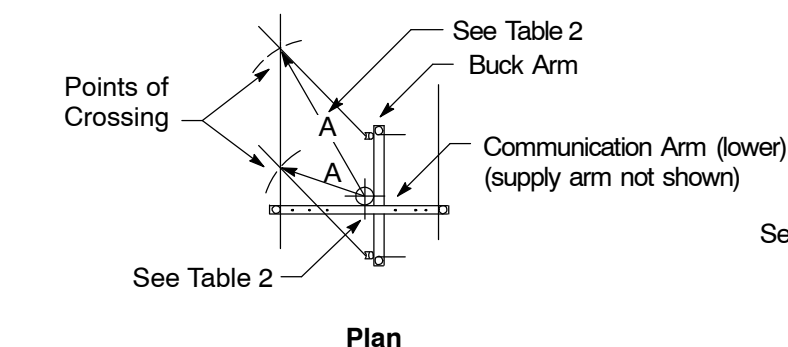


Figure 32
0-750 V Service Drops From
Line or Buck Arms

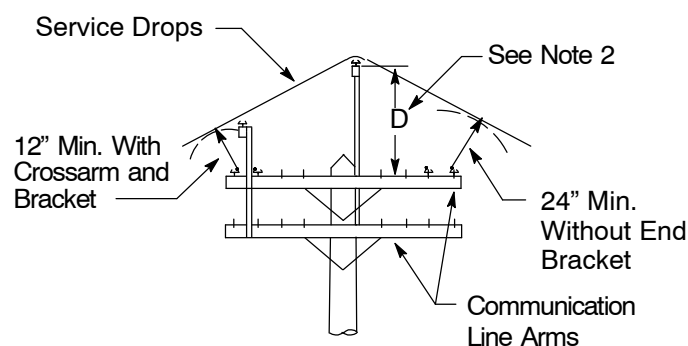
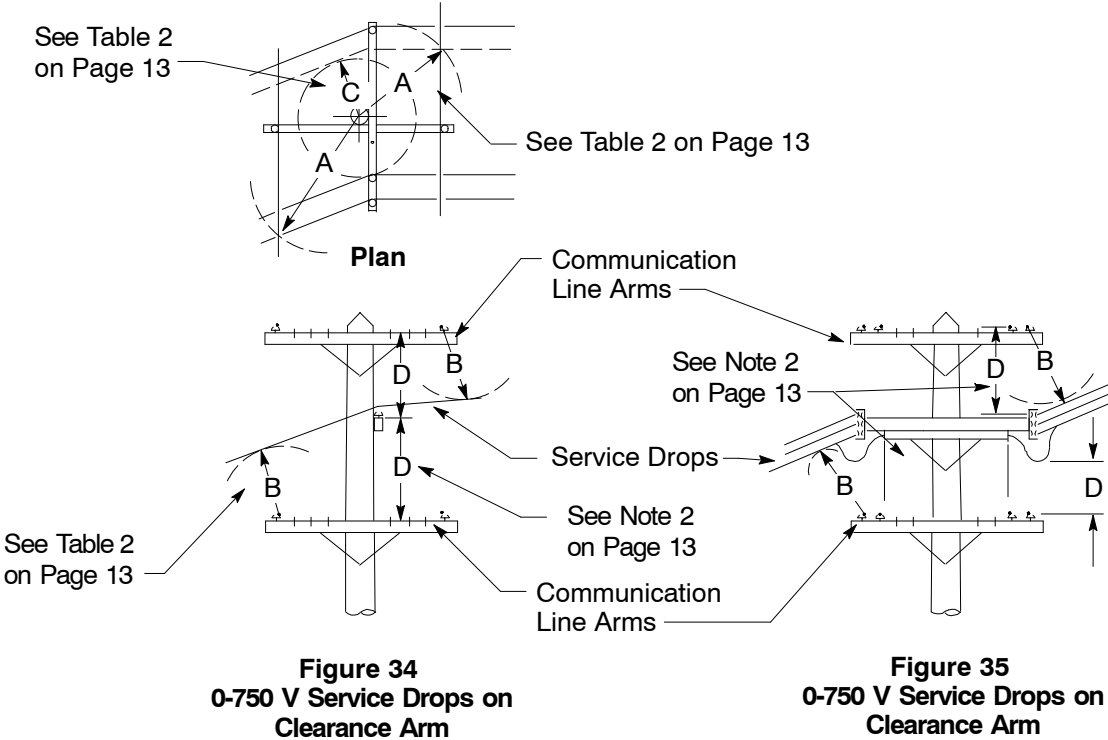


Figure 33
0-750 V Service Drops
on Pole Top Extension

Clearances for Supply Service Drops

Minimum Clearance Between 0-750 V Supply Service Drops and Communication Conductors in Open Wire Supported on the Same Poles (continued)



Clearances for Supply Service Drops

Minimum Clearance Between 0-750 V Supply Service Drops and Communication Conductors in Cable Supported on the Same Poles

Notes:

1. The basic vertical clearance between 0-750 V supply conductors and a communication cable is 4 feet (Dimension E) if the cable is attached to a crossarm 15" or more from the center of the pole, or if the cable is attached to a pole with a guard arm above. If attached to a pole without a guard arm, Dimension E must be 6 feet minimum.
2. In Figure 38, Figure 39, and Figure 40, Dimension D may be less than 48" if C is 25" or more, but shall not be less than 24". If C is less than 25" (15" minimum), then D must be 48" or more.
3. Supply service drops may cross above or below communication cables provided no portion of the service drop conductors are within the shaded area shown. These dimensions apply whether the cable is attached to a crossarm or to a pole.

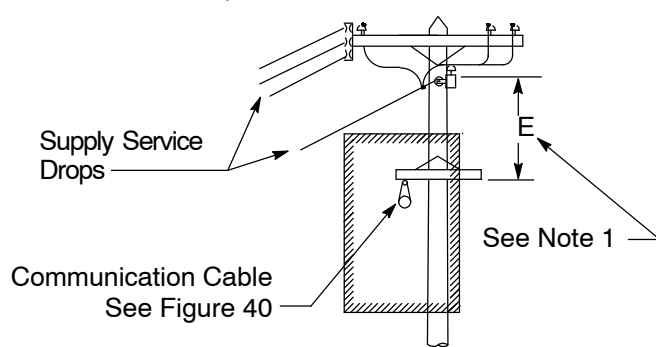


Figure 36
0-750 V Service Drops
from Line or Buck Arm

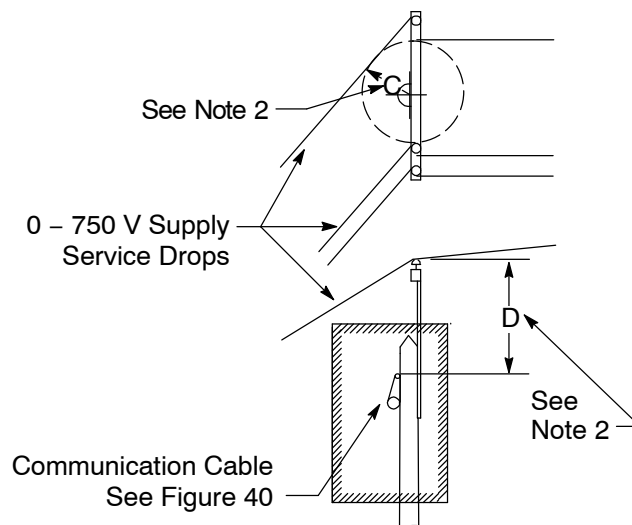


Figure 37
0-750 V Service Drops on
Pole Top Extension

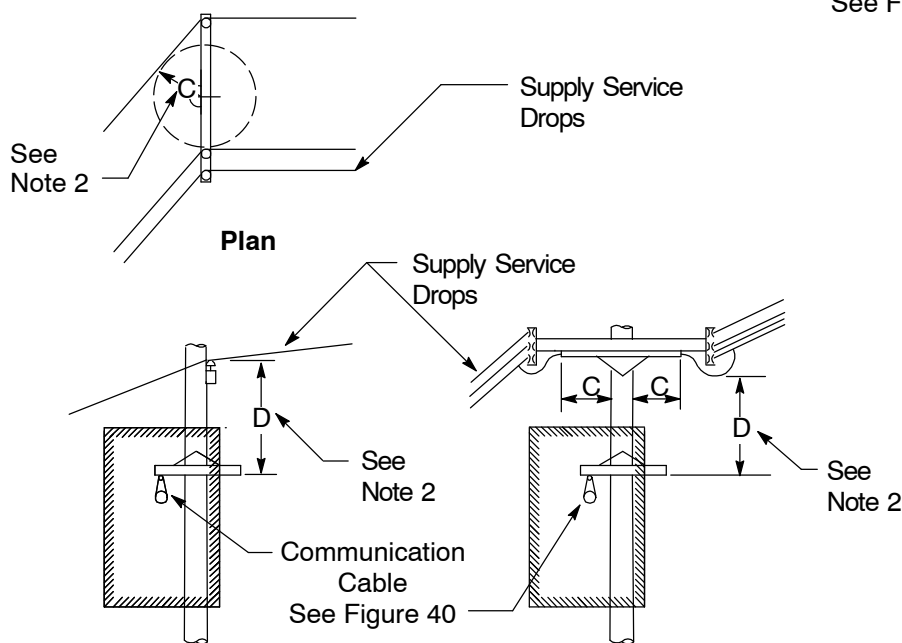


Figure 38
0-750 V Service Drops on
Clearance Arm

Figure 39
0-750 V Service Drops on
Clearance Arm

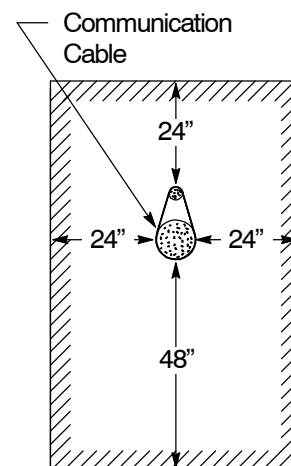


Figure 40
Communication Cable and Messenger
(See Note 3)

Clearances for Supply Service Drops

Minimum Clearances Between 0-750 V Supply Service Drops and Other 0-750 V Supply Conductors Supported on the Same Poles**Notes**

1. At no point shall any service drop conductor be less than 15" from the center of a pole.
2. The basic vertical clearance between 0-750 V supply conductors at different levels is 24". Clearances between supply service drops and 0-750 V supply line conductors may be reduced as follows (illustrated below):
 - A. The clearance between service drops and the line conductors of the circuit to which they are connected shall be at least 6" at the point of crossing.
 - B. The clearance between service drops and the line conductors of other circuits (including trolley feeders and streetlight circuits) shall be at least 12" at the point of crossing.
3. The clearances of 6" and 12" are basic clearances and shall not be reduced more than 10% under extreme conditions. If the point at which the minimum clearance occurs is more than 5 feet from the supporting pole, it will be necessary to construct using greater clearances than specified above in order to maintain the required clearances under all conditions.

0 - 750 V Supply

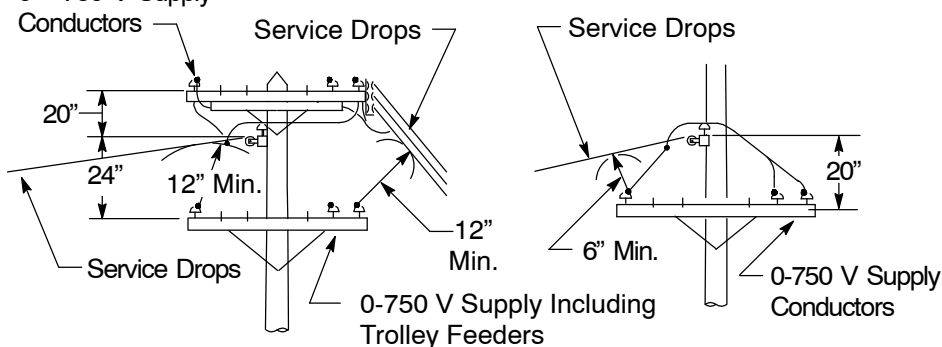


Figure 41
0-750 V Service Drops
From Line or Buck Arm

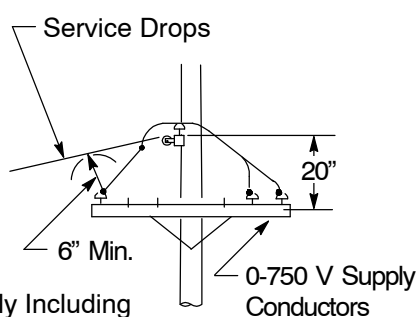


Figure 42
0-750 V Service Drops
From Related Buck Arm
Above Line Arm

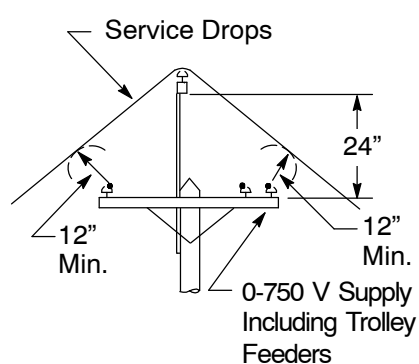


Figure 43
0-750 V Service Drops
on Pole Top Extension

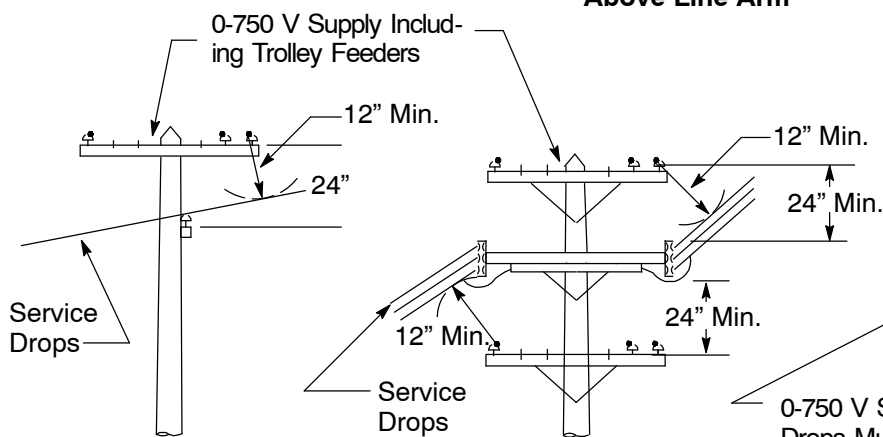


Figure 44
0-750 V Service Drops on Clearance Arm
Above or Below 0-750 V Line Conductors

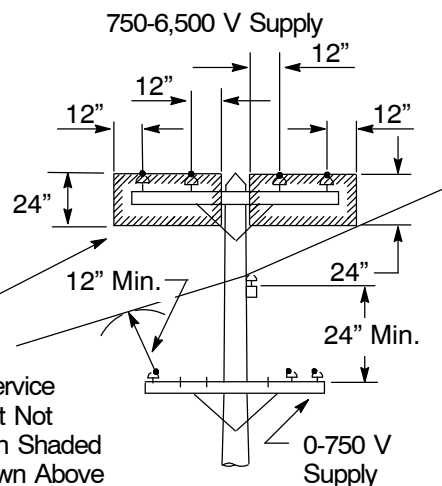


Figure 45
Service Drops on Clearance Arm
Below 0-6,500 V Line Conductors

Clearances for Supply Service Drops

Revision Notes

Revision 02 had the following changes:

1. Revised Footnote 1, and Footnote 2 (Removed Section 1322), on Page 1.
2. Added ES 470591 to Reference Section.
3. Revised Table 1, on Page 2. Revised Footnote 3, G.O. 95, Rule 20, 8–G, corrected to G.O. 95, Rule 20, 9–G. Added Note after Table 1. Corrected table title.
4. Added Note 8, on Page 2:
Service drops should be arranged so as not to hamper or endanger workers and firefighters while performing their duties.
5. Corrected Dimension 12” Maximum to 12” Minimum in Figure 27, on Page 10.
Revised Note 3.B.4, deleted 3.B.5, on Page 12.
6. Corrected Page Title to “***Minimum Clearances Between 0-750 V Supply Service Drops and Other 0–750V Supply Conductors Supported on the Same Poles,***” on Page 16.