



**Overhead Distribution General Information
Utility Reference Specification
Foreign Antenna General Requirements
and Installation
6-01-160**

0000-000-ST-6001
Custom ID: DCS 6-01
Revision: 11
Effective Date: 06/18/2018
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6-01-160 – Utility Reference Specification – Foreign Antenna General Requirements and Installation

Foreign Antenna General Requirements and Installation



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General Requirements

1. All proposed antenna owner equipment, mounted brackets(s) and mounting configurations must first be approved by PPL EU prior to initial installation.
2. Antenna shall not be installed on poles with existing telecommunication equipment cabinets unless approval is granted by both the telecommunication company and PPL EU.
3. Only one RF antenna is permitted per pole.
4. The maximum source power of any wireless transmitting device (excluding the antenna system) installed in the communication space on the pole (per 6-01-160-A) shall be 5.6 watts. The attacher shall provide the wireless device specifications that confirm the output power is less than 5.6 watts.
5. Antenna shall not be installed on any underground riser pole. Antenna shall not be installed on any pole that contains PPL EU owned pole mounted equipment (transformer, sectionalizing device, capacitor or voltage regulator).
6. Connections to the PPL EU system neutral or secondary phase conductors shall only be made by PPL EU.
7. All secondary service connections shall be located at least six feet from the antenna, as shown in drawing (6-01-160-A).
8. It is the antenna owners' responsibility to document and inform PPL EU of all RF exposure hazards and mitigation techniques related to the installation. An RF study shall be submitted and certified by a licensed professional engineer in the state of PA per antenna location in accordance with IEEE Std. C95.3, latest revision.
9. All material required (except the meter) for the installation of the antenna assembly, shall be supplied by the antenna owner.
10. All vertical runs shall be installed in appropriately sized nonmetallic conduit or U-guard such that they do not interfere with climbing or working space per NESC rules.
11. The ERP (Effective Radiated Power) of any wireless device installed above PPL facilities (per 6-01-160-B) shall meet the MPE (Maximum Permissible Exposure) limit for the General Population defined by FCC OET Bulletin 65, latest revision at a height of 5 feet above the highest PPL attachment on the pole. Appropriate RF signage shall be installed by antenna owner in accordance with FCC Standards, Part 15 of the FCC Code and IEEE C95.2, latest revisions.



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12. Antenna owner is responsible for placing a sign on the communication control cabinet indicating the following information. The sign shall be visible from the ground and weather and UV resistant.
 - a. Company Name
 - b. Type of Installation (ex: Small Cell Antenna)
 - c. Site ID Number
 - d. 24 HR Contact Phone Number
 - e. Uninterruptable Power Supply (UPS), when present
13. The communication control cabinet shall be equipped with one or two external indicator lights. One light will illuminate when the antenna is powered from the normal source. The other light will illuminate when the antenna is powered from the UPS, when present. The external indicator lights shall be mounted on the communication control box so that they are visible from ground level. They shall be clearly labeled "POWER" and "UPS".
14. The maximum height of the pole plus the antenna shall be 60 feet above ground. An existing pole location shall not increase greater than 10 feet of its existing height.
15. Information shall be provided to PPL by the antenna owner at each location for a pole loading study. Pole top extensions are not to be installed to achieve necessary clearance requirements. If a taller pole is needed, then the pole shall be replaced.
16. Antennas are only permitted in the power space on the pole (per 6-01-160-B) when there are only secondary (less than 600 V) wires attached.
17. Reference DCS 6-01-140, Requirements for the Attachment of Communication Cable Facilities on PPL Poles, for additional requirements related to communication attachments.
18. Wireless devices shall not cause any RF interference with electric supply automation equipment.

Location

19. Poles chosen for antenna attachments must be bucket truck accessible year round and approved by PPL EU prior to installation.
20. Antenna cannot be located in the space between the primary and secondary/neutral conductors. Antenna cannot be located above primary conductors.

Installation

21. All antenna feed lines shall be placed in non-conductive conduit or covered by a riser in accordance with NESC requirements.
22. Antennas, radio equipment and all associated cables must be grounded in accordance with NESC and NEC requirements. All grounds must be bonded to a ground rod at the base of the pole, not the neutral or any guy wires.

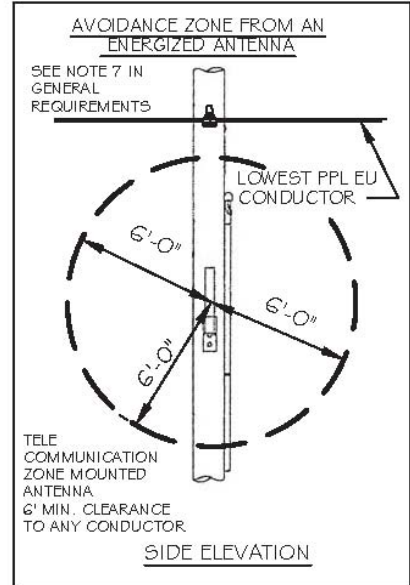
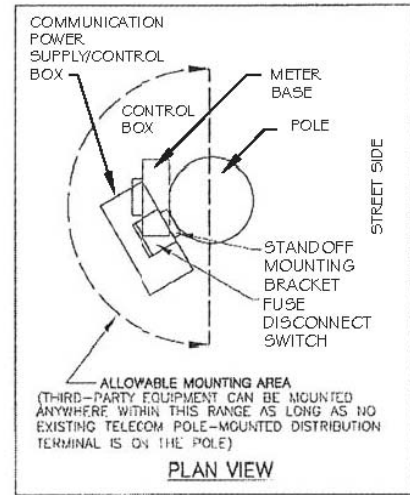
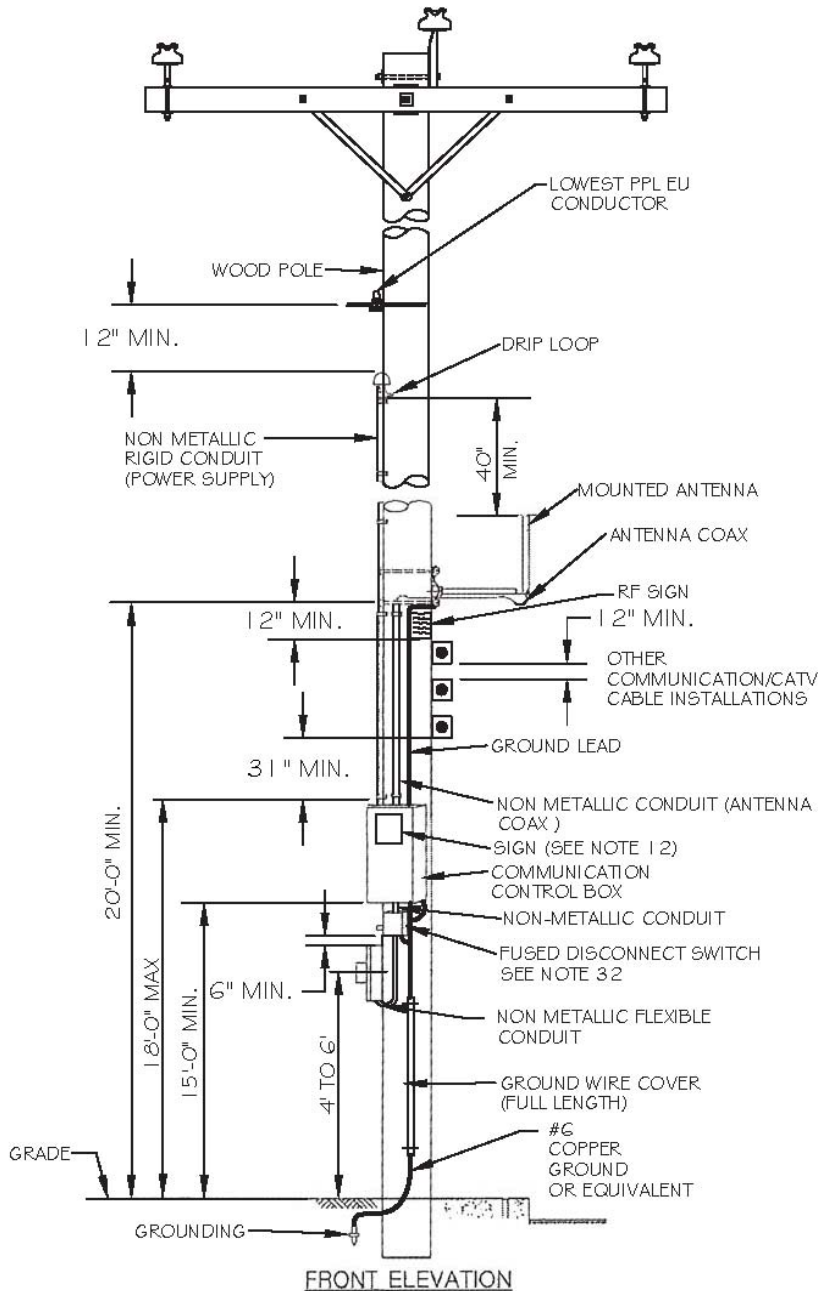


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23. Clearances between PPL electrical facilities and communication facilities must be in accordance with the latest edition of the NESC and PPL specifications. Vertical clearances must be measured surface-to-surface, not center-to-center. Diagonal measurements do not apply to electrical clearances. Additional vertical clearance may be needed on the pole to achieve the required in-span clearances.
24. All enclosures must be attached directly to the pole surface. The maximum size pole-mounted cabinet or equipment case allowed is 31 inches wide x 19 inches deep x 38 inches high. Cabinets must be mounted using externally accessible hardware. There must be only one cabinet installed on any one pole.
25. Antennas must be attached directly to the pole surface or attached using metallic or fiberglass offset brackets. Antennas shall not be attached to an existing pole-top extension. Offset brackets should only be used to provide the required horizontal clearance to buildings, signs, trees and similar facilities. Offset brackets cannot be used to avoid required vertical clearances. No equipment shall extend beyond 48 inches of the pole surface.
26. Bolt ends must not project more than one inch beyond the nut.
27. Any box or enclosures that require a 120/240 volt service will require a disconnect switch or circuit breaker (CB) for the connection of PPL service entrance wires. The disconnect switch or CB must be separately mounted at an accessible location from ground. The switch may be locked, but PPL may remove the lock in an emergency situation. All metal boxes and enclosures must be effectively grounded.
28. The service entrance CB or switch must be rated for the service provided and have a minimum fault interrupting rating of 10,000 RMS amps symmetrical.
29. A meter base will have to be installed for any 120/240 volt service to telecommunication equipment, unless PPL agrees to a monthly unmetered usage fee. A safety disconnect switch is required for unmetered service to an antenna.
30. If a meter base is needed, the base and the disconnect switch must be installed and effectively grounded in accordance with the latest revision of [PPL's Rules for Electric Meter and Service Installations](#).
31. There shall be no power sources installed on PPL facilities, with the only exception being a battery powered UPS.
32. If a back-up power supply is present to power the wireless antenna separately from the supply provided by PPL through its metered service, then it needs to be labeled as such and a separate means of disconnect provided. This shall be clearly labeled to ensure that all power sources to the antenna can be turned off, and locked out, to protect personnel from RF exposure when the restricted approach distances must be encroached upon to perform work on or near the equipment.

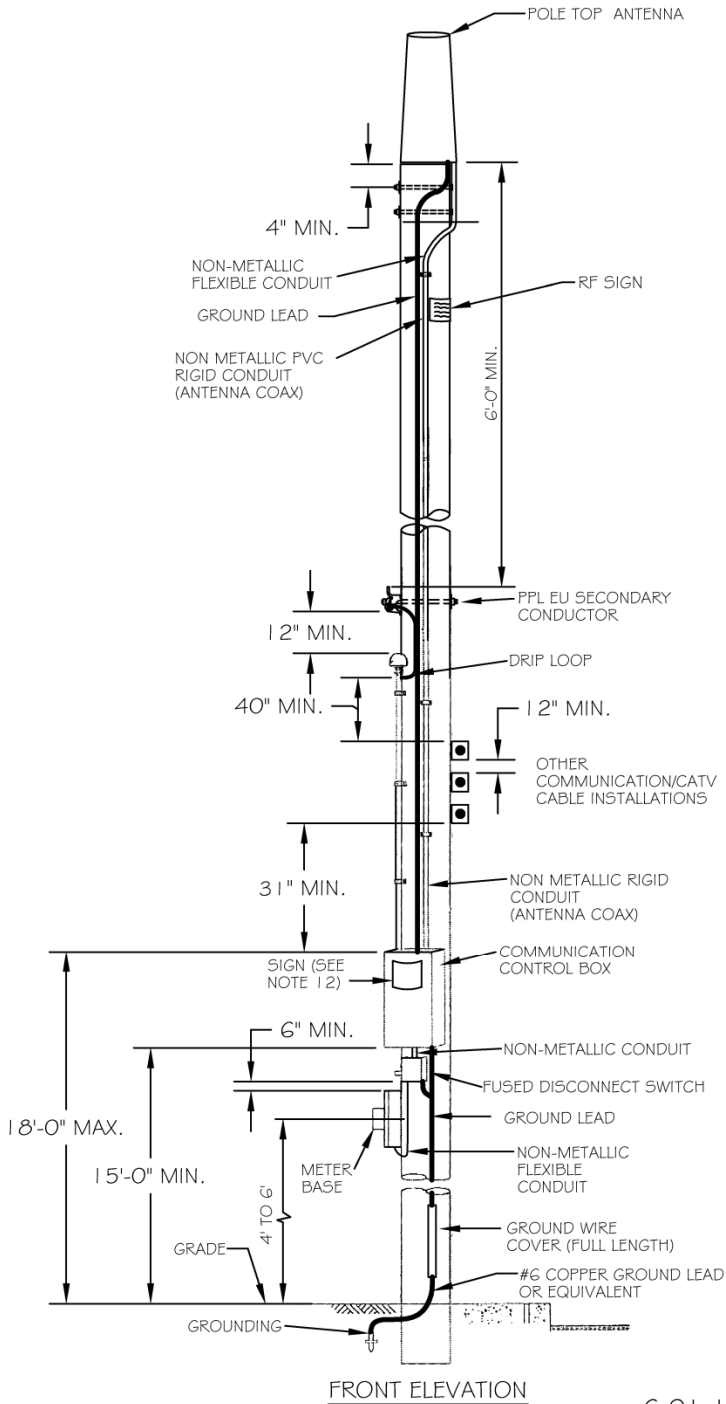
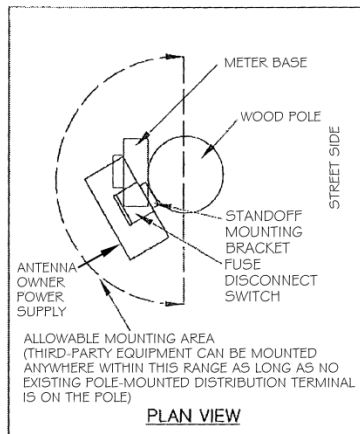
**Foreign Antenna Mounted Within
Telecommunication Zone**



FOR INSTALLATION DETAILS WITH UPS, SEE 6-01-160-C

6-01-160-A

**Foreign Antenna Mounted
Above Power Space
(Secondary Pole - less than 600 V)**

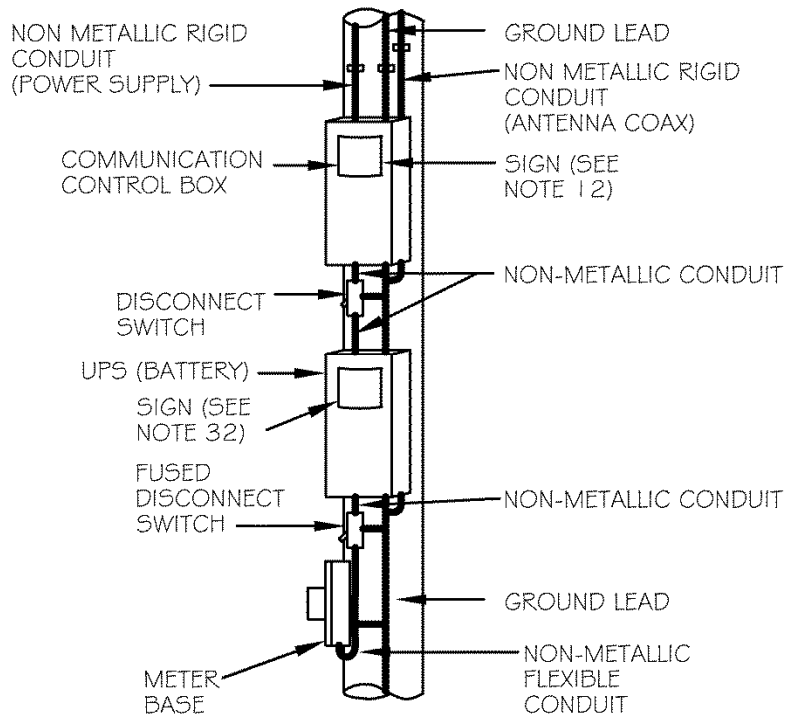


FOR INSTALLATION
DETAILS WITH
UPS, SEE 6-01-160-C

6-01-160-B

Installation with a UPS

INSTALLATION WITH UPS
SEE NOTE 32



FRONT ELEVATION

6-01-160-C

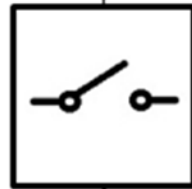
Note: For clearance requirements, reference 6-01-160-A or B.

Electrical Sequence of Antenna Supply Equipment

With UPS



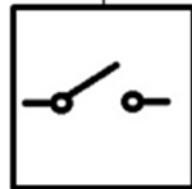
Antenna
Control
Box



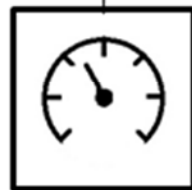
Safety
Disconnect
Switch



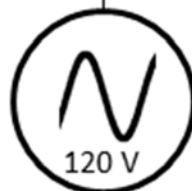
UPS
(Battery)



Fused
Disconnect
Switch

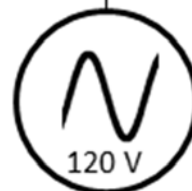
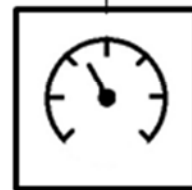
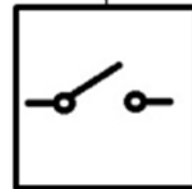
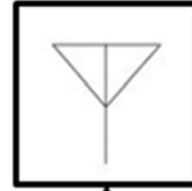


PPL Meter



Source
from PPL

Without UPS



6-01-160-D