6-01-145 – Utility Reference Specification – Attachment of Gas Company Facilities on PPL Company Poles

Requirements for the Attachment of Gas Company Facilities on PPL Company Poles

Replaces: URS-3003
A-205194

Reference Notes for Drawings:

General

1. The owner of the gas company facilities must follow the proper attachment permit procedures as specified in the appropriate pole attachment agreement.

2. Any rearrangement of PPL or third party facilities necessary to accommodate the attachment of gas company facilities on PPL poles must be negotiated by the gas company with the existing facility owner and completed prior to making the attachment.

3. All new gas company cables and cabinets shall be marked at each pole in a manner such that the ownership of the facility can be determined by PPL personnel from ground level. Existing gas company cables and cabinets shall be marked when maintenance is performed on that facility.

4. Bolt ends must not project more than one inch beyond the nut.

Overhead Supply Line Conductor Attachments

5. Gas company overhead supply line conductors supported by insulators must be attached either directly to the pole surface or attached using metallic or fiberglass offset brackets. Offset brackets should only be used to provide the required horizontal clearance to buildings, signs, trees, and similar facilities, or to reduce the angle of the conductor. Offset brackets should not be used to avoid required vertical clearances.

6. The use of wood arms for any gas company attachments is not permitted for new installations, except with the prior approval of PPL engineering personnel for each specific attachment location.

Overhead Supply Line Conductor Position

7. All of the gas company overhead supply line conductors must be attached to the same side of the pole (preferably roadside) to facilitate pole replacements.

8. PPL prefers that the gas company overhead supply line conductor(s) be attached to the same side of the pole as the telephone cable(s). When there are no telephone cable(s) attached, the gas company line conductor(s) should be attached to the same side of the pole as the PPL secondary or neutral conductor.

9. The gas company overhead supply line conductor(s) must occupy a uniform position both on a pole and in-span. Gas company line conductor(s) must not cross the communication or PPL conductor in-span. This requirement does not apply to gas company vertical conductor(s) on a pole surface directed to test boxes or anodes.

Reference Notes for Drawings:

Clearance Requirements

10. Clearances between PPL electrical facilities, gas company facilities and communication cable facilities must be in accordance with the latest edition of the National Electrical Safety Code (NESC). Use Section 23 of the NESC to determine the clearances required at the pole and in-span. It specifies that the required 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.

11. The minimum vertical clearance on the pole between the lowest PPL electrical conductor and the highest gas company overhead supply line conductor should not be less than 16 inches.

12. The minimum vertical in-span clearance between the lowest PPL electrical conductor and the highest gas company overhead supply line conductor should not be less than 12 inches at maximum sag conditions.

13. The minimum vertical clearance on the pole between the lowest gas company overhead supply line conductor and the highest communication cable facility should not be less than 40 inches. Communication reinforcing straps on the pole should be considered when measuring the required vertical clearance.

14. The minimum vertical in-span clearance between the lowest gas company overhead supply line conductor and the highest communications cable facility should not be less than 30 inches at maximum sag conditions.

15. The gas company overhead supply conductor must maintain a minimum vertical clearance of 16 inches to any part of an ungrounded street light bracket. It cannot be attached in the space between the street light bracket and any supporting tie rods.

16. The minimum vertical clearance above surfaces at the low point in the span must be in accordance with the NESC, state, or local regulations, but in no case less than the values given below unless reviewed and approved by the PPL engineering personnel.

    a) 11 feet to ground over spaces accessible to pedestrians only.

    b) 16.0 feet to ground over spaces subject to truck traffic such as roads, streets, driveways, parking lots, and alleys.

    c) 18 feet to the traveled way and shoulders within the right-of-way of Pennsylvania state highways.

    d) 27 feet to the top of railroad tracks and to the traveled way and shoulders within the right-of-way of the Pennsylvania Turnpike.

Reference Notes for Drawings:

Clearance Requirements - continued

17. Any device (excluding wire connectors) mounted on a gas company overhead supply line conductor must be 15 inches minimum from the pole face at its' nearest point to assure adequate climbing space.

18. A vertical run of gas company cable attached to the pole surface should be covered with a suitable non-metallic material and must have the following clearance from through bolts or other metallic objects which are associated with PPL equipment:

    a) one-eighth of pole circumference, or

    b) two inches,

    Whichever value is greater.

19. Effectively grounded gas company facilities passing near a PPL structure without being attached thereto shall have a horizontal clearance, without wind, from any part of such structure of not less than five feet. Ungrounded gas company facilities shall have a vertical clearance, without wind, from any part of such structure of not less than five and one-half feet (per NESC Rule 234B).

Guying

20. The gas company, when attaching to PPL poles, must guy unbalanced loads imposed on the pole by dead ending or angles in the gas company overhead supply line conductor.

21. When a gas company overhead supply line conductor is being added to an unguyed pole to which PPL and possibly communication company facilities are also attached, the gas company must consult with PPL engineering personnel to determine the need for guying that the gas company must install.

22. The proposed gas company overhead supply line conductor should be installed with the proper tension so that its' final sag meets clearance requirements to existing electrical and communication facilities. There should not be more than one reduced tension span, maximum 100 feet in length, in consecutive spans without PPL approval.

23. All guying must be installed prior to the installation of the gas company overhead supply line conductors. Guy wires may be attached to PPL poles or anchor rods provided that the PPL facility has sufficient unused strength to support the proposed gas company overhead supply line conductors. The number of guy wires to one anchor rod may not exceed the number of eyes on the anchor rod plus one auxiliary eye attachment.

Reference Notes for Drawings:

Guying - continued

24. If PPL anchor rod cannot support an additional guy wire attachment, the gas company must make provisions to install another anchor rod at least 3 feet from the PPL anchor rod.

25. The spacing (center-to-center) between adjacent guying attachments on a PPL pole should not be less than 6 inches.

Underground Communication Cable Risers

26. The number of underground (UG) electric and gas company cable risers attached directly to the pole surface should be limited so that one side (180 degrees) of the pole is kept clear for climbing space and replacing the pole. UG gas company cable risers should be located on the same side of the pole as their overhead supply line conductors are attached.

27. Underground gas company cable risers should not be installed on poles supporting transmission circuits operating at 69 kV or 138 kV.

Rectifier Cabinet, Junction or Test Box Attachments

28. A rectifier cabinet with a power supply, a junction box, or a test box may be mounted directly on the pole in the unusable space (defined as that pole space less than 18 feet above ground level). Do not install any pole-mounted cabinets and service entrance equipment on:

    a) Junction poles (a pole where the PPL primary line runs in four or more directions).

    b) Poles that are 60 feet and greater in size or made of metal.

    c) Poles with transmission facilities (69 kV and 138 kV) attached.

    d) Poles with cabinets already installed by any communication company.

    e) Poles with cabinets containing controls such as fire alarm, police signal, or traffic signal controls.

    f) Poles with capacitor controls, regulator controls, recloser controls, air switch operating handles, or an existing electrical service entrance.

    g) Transformer poles that are not accessible to mechanized equipment.

    h) Poles with underground electric or communications riser conduit that are not accessible to mechanized equipment.

    i) Poles where the addition of this equipment will violate Item 26.

Reference Notes for Drawings:

Rectifier Cabinet, Junction or Test Box Attachments - continued

PPL must approve the pole chosen prior to the installation of all new cabinet/box installations to confirm that the pole is suitable.

29. Where a power supply is required, the service entrance cable, electric meter trough, service disconnecting equipment, grounding conductor and electrode are to be installed and maintained by the gas company in accordance with the latest revision of PPL's "Rules for Electric Meter and Service Installations".

30. Meter troughs, meter trough covers, and service conduit and hubs shall not be used for gas company facility grounds.

31. Pole-mounted cabinets/boxes may be metallic or plastic and no larger than 22" wide, 16-1/2" deep, 30" high. They must be mounted with externally accessible hardware. There must be only one cabinet installed on any one pole. Any metallic cabinet/box must be effectively grounded.

Bonding

32. If the gas company uses suspension strand to support overhead supply line conductors, then the gas company must also install and maintain an electrical bond between:

    a) Each gas company guy wire and gas company suspension strand.

    b) Gas company suspension strand and the PPL vertical grounding wire at a minimum of four locations per mile and with not more than 1,500 feet between bonding and locations (only on 4 kV, 12 kV, & 13 kV multi-grounded PPL lines).

    c) Use #6 AWG copper wire and suitable connectors to do the bonding.

33. Where there is an existing vertical ground wire connected to PPL's multi-grounded neutral system, the gas company shall connect the bond wire to the vertical ground wire keeping the bond wire as short as practical. Where there is no vertical ground wire, the gas company shall place a coiled length of bond wire connected to its' facilities and notify PPL to connect the bond wire to its' multi-grounded neutral system.

34. All gas company guy wires must be bonded to an effectively grounded gas company suspension strand, the PPL vertical ground wire, or to an adjacent PPL guy wire if no PPL vertical pole ground wire exists.

Reference Notes for Drawings:

Bonding – cont'd

35. On PPL lines which are not multi-grounded (normally 23 kV and higher voltage circuits), the gas company must ***not*** bond either its' guy wire or its' suspension strand to any PPL vertical pole ground wire unless specifically directed to do so by PPL engineering personnel. The gas company must install and maintain its' own grounding wire and grounding electrode (ground rod).

Separation of Facilities

36. The gas company must maintain a five foot minimum horizontal separation between the anode and:

    a) Their anchor rod when the attached guy wire is required to be bonded to the PPL vertical grounding wire.

    b) Any PPL anchor rod.

    c) Their grounding electrode (ground rod) for the service entrance equipment.

    d) Any PPL grounding electrode (ground rod).

    e) Any PPL underground bare neutral, bare metallic structure or bare grounds.

    f) A PPL pole surface.

37. The gas company must provide at least a five foot horizontal separation between its pipelines and anodes and a PPL grounding electrode (ground rod), or a gas company grounding electrode for its' service entrance equipment.

38. If a PPL anchor rod is less than ten feet from a gas company pipeline, PPL will install a guy insulator in the guy wire.

Emergency Electric Supply

39. Generators or other means of emergency electric supply to gas company facilities are prohibited unless specifically approved by PPL engineering personnel. Installations of emergency electric supply equipment must conform to the latest revision of PPL's "Rules for Electric Meter and Service Installations". The type of device to be used must ensure that there cannot be an interconnection between the emergency electric supply and the PPL electric system.

Reference Notes for Drawings:

Transmission Pole Attachment

40. The attachment of gas company facilities is not permitted on poles supporting transmission circuits operating at voltages greater than 138 kV.

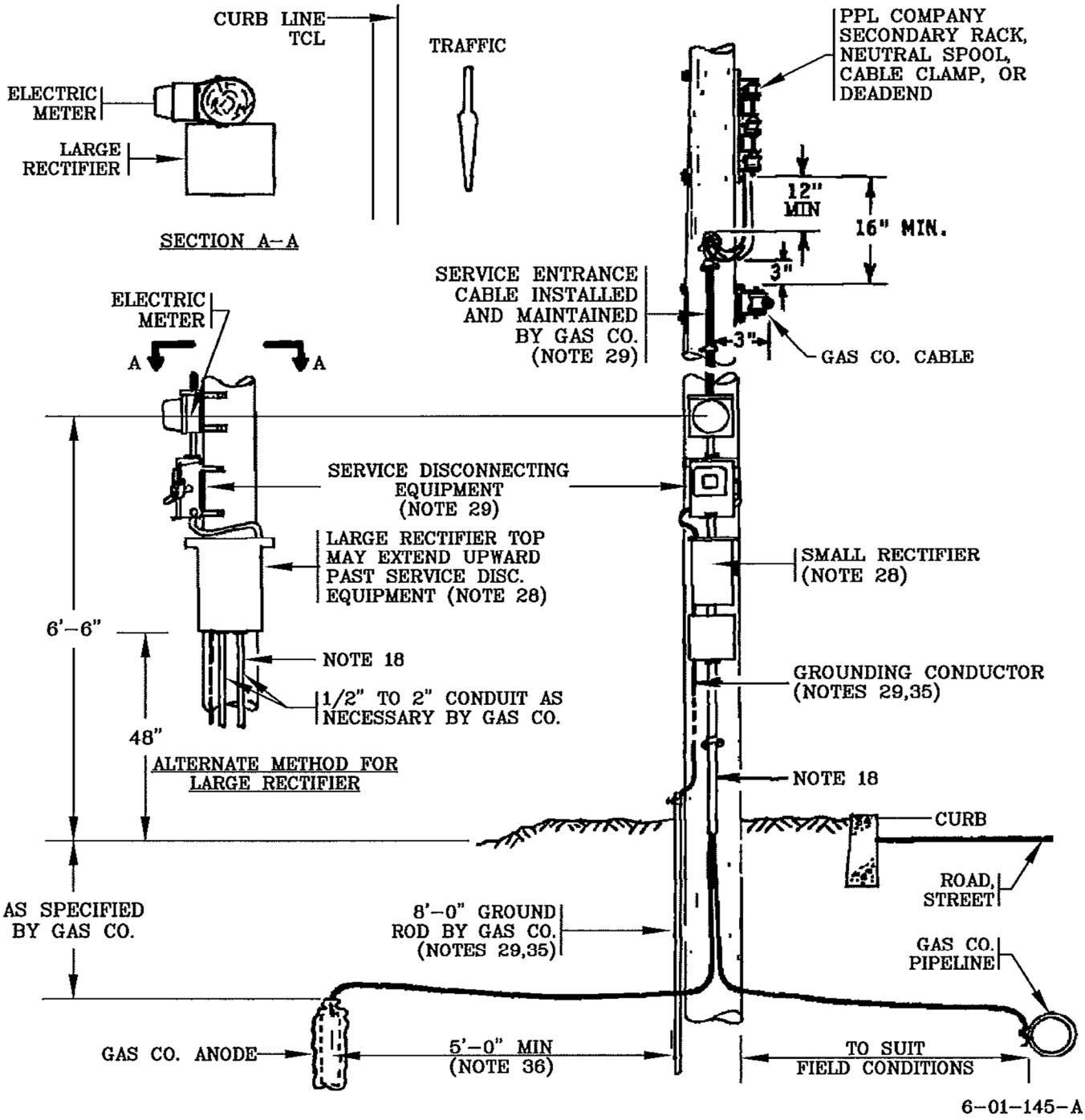
41. Transmission lines are normally located within private R/W easements that do not permit PPL to grant attachment rights to other companies. Encroachment rights on this private R/W easement must first be granted by the property owner and presented to PPL before PPL can grant the right to attach to its' transmission poles or structures.

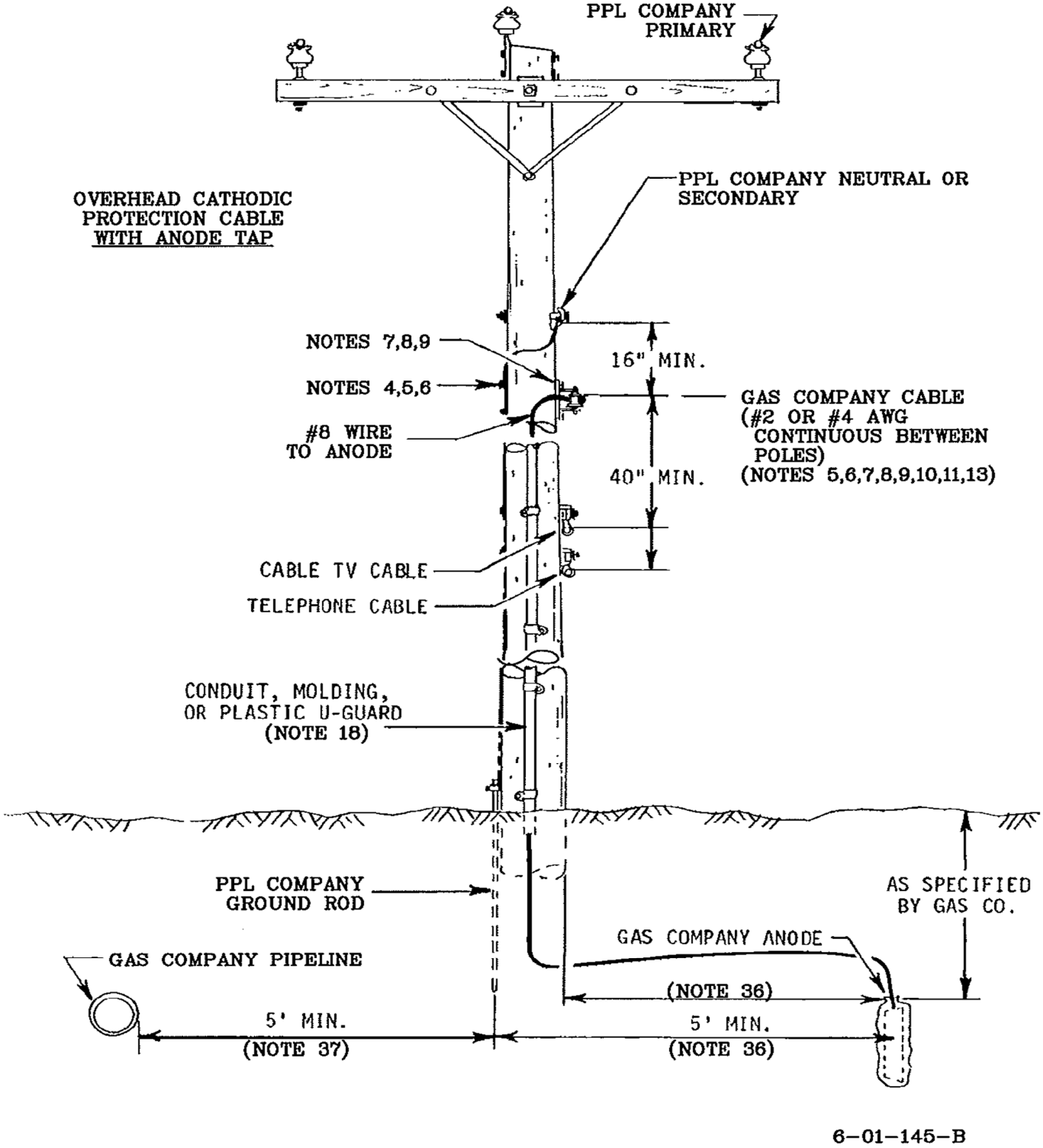
42. The attachment method for gas company facilities must first be reviewed by the local Transmission Maintenance Engineer and then by System Transmission Design, in accordance with PPL's existing Encroachment Guideline. Only after this review has been completed and approval granted can the attachment request be authorized.

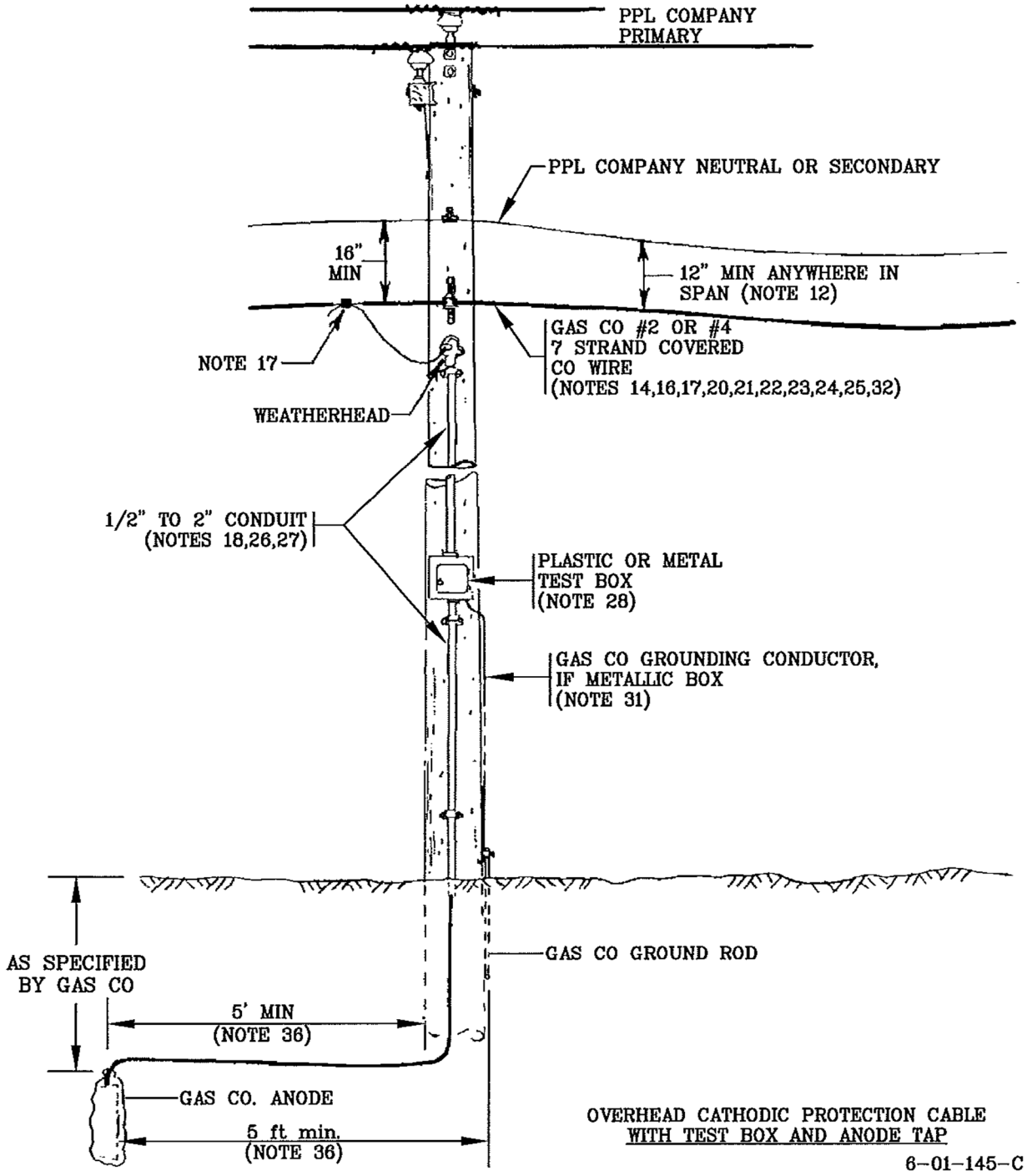
43. Attachment personnel can authorize cable or guying attachments to transmission poles without additional follow-up if the poles are located on public R/W and already have electric distribution line facilities attached. The gas company overhead supply line conductor or guying attachments must be located below the electric distribution line facilities.

44. If there are no electric distribution line facilities attached to the transmission poles, the proposed attachment height must be reviewed and approved by the Transmission Maintenance Engineer.

45. PPL plans to replace its' 69 kV and 138 kV wood poles with metal poles once they have been condemned. Attachers must be prepared to change their method of attachment as specified in Item 42.







OVERHEAD CATHODIC PROTECTION CABLE WITH TEST BOX AND ANODE TAP

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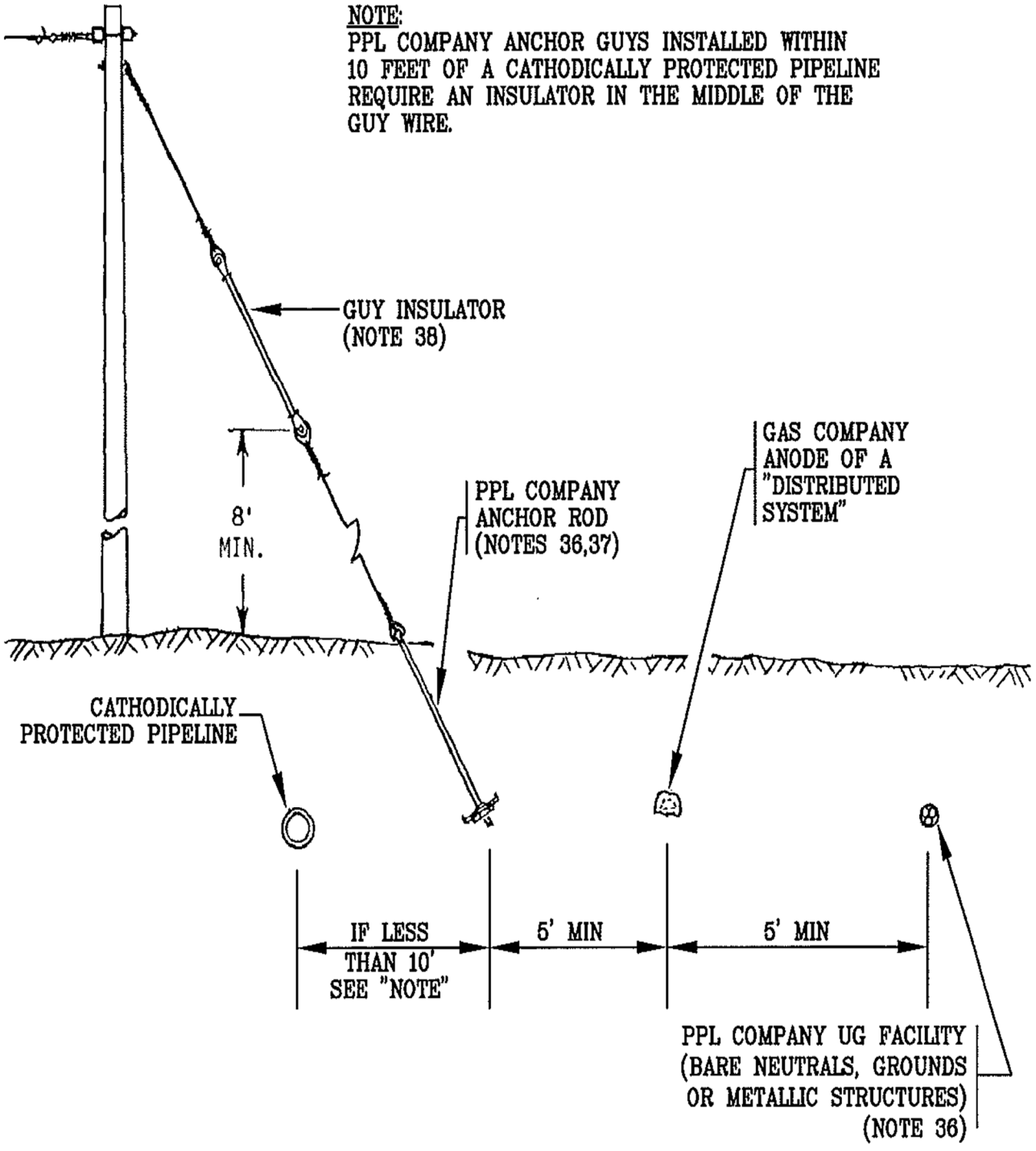

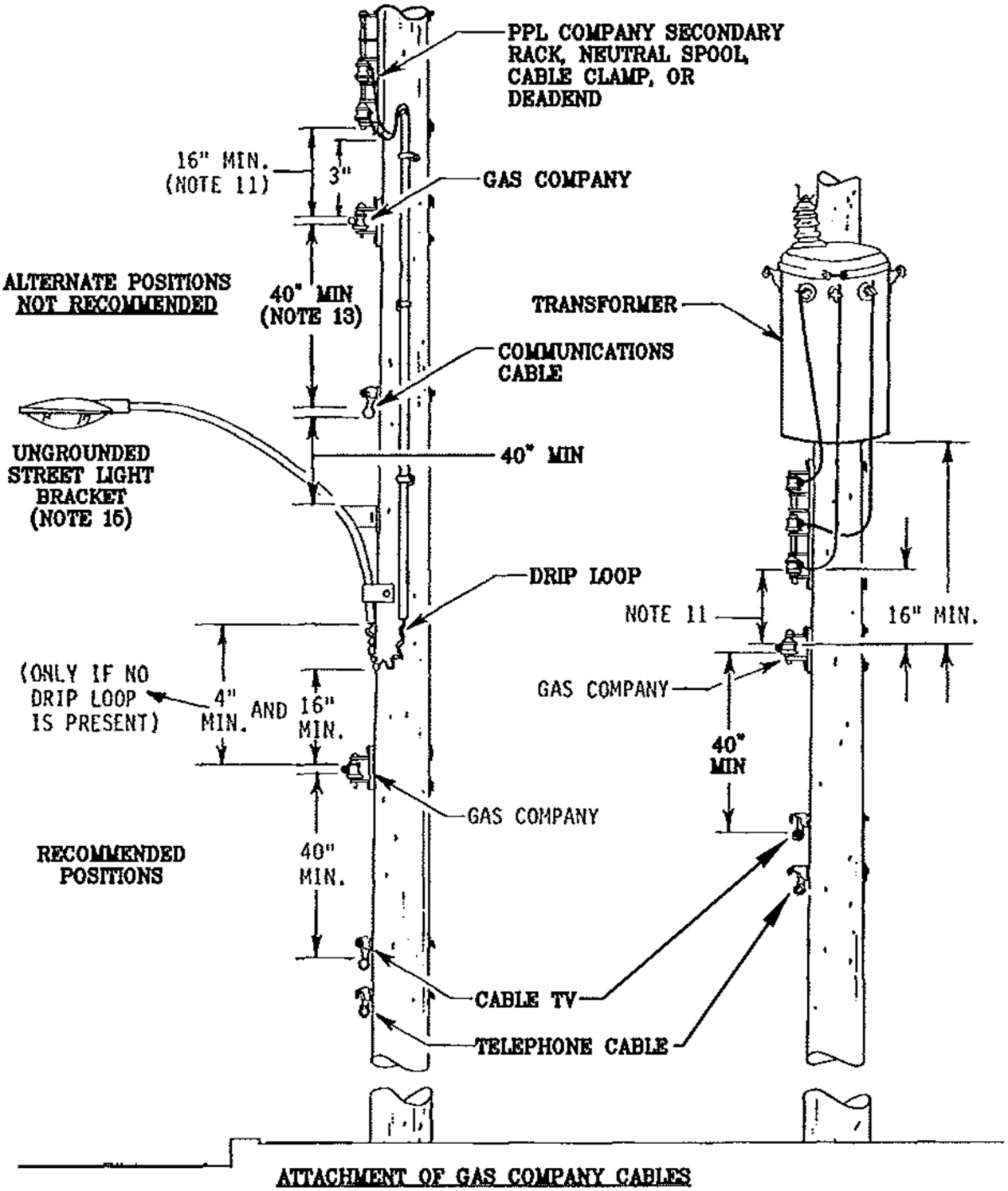

ATTACHMENT OF GAS COMPANY CABLES

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