17.0. GENERAL

This Standard covers the engineering practices for application of poles used jointly by the Company's electric supply facilities, communications company facilities and other facilities.

If two or more entities must install overhead lines on the same street, it is usually in the public interest to install them on joint use poles. On the Company's system, the terms for this joint use are covered by agreements between the joint users. This Section covers the special requirements for such poles.

Depending on the geographic location of the poles, reference should be made to Electric System Bulletin #101, the applicable Joint Use or Joint Ownership Agreement, the applicable Administrative and Operating Procedures (AOPs) or Intercompany Operating Procedures (IOPs), and applicable Distribution Pole Attachment or Aerial License Agreements for details of ownership, division of costs, division of work responsibilities, rental or licensing fees, and other detailed terms and conditions.

17.1. POLES

17.1.10 General

Contact should be made with the telephone and CATV companies serving the area, to determine their requirement or possible short-term future need for pole space, before poles are installed. Poles should be installed to provide space for foreign or joint use only when there is an agreement with another entity to share use of the pole, in which the other entity agrees to rent or license space on the pole(s) or purchase an ownership interest in the pole(s).

The Company shall not accept the cost of added space without compensation, even when the costs are low. Future plans should be based on the Company needs only, unless there are written commitments from others to rent or license space or to purchase an ownership interest.

After each entity has identified its need for space, new poles shall be selected from the Allocated Space Tables located on Pages 17-100 and 17-101. Joint poles or poles with extra height should be used depending on how these poles meet needs for clearance of all the users that have agreed to rent or license space or to purchase an ownership interest.

The necessity of replacing jointly owned poles shall be mutually agreed on by the joint owners, in writing, in each specific case. Neither joint owner shall at any time change the location of or remove any jointly owned pole without the written consent of the other party.

17.1.20 Pole Strength

The class of pole (pole strength) can be determined from the calculations and Tables in Section 3-Guying for storm guys and Section 2-Poles/Hardware.

This calculation will need the cooperation of the communication facility owner(s) to determine present and future wind loads under heavy loading conditions.

As an alternate practice to installing stronger poles, the line may be guyed for transverse load every second or third pole.

17.2 GUYS

Each entity shall provide guys of sufficient strength to hold the unbalanced load of its own wires and attachments (See Section 3-Guying).

Joint anchors and rods shall be used whenever practical and in any case Distribution Design shall arrange the exact location of each anchor. Triple thimble eyes are the standard anchor rod eye nuts.

Supersedes 1/06 Issue – Text change.

17.3 CLIMBING SPACE

Adequate clearances for climbing shall be provided as shown on Page 7-127. Care shall be taken when installing services, street lights, risers, etc. so that full climbing space is available to line workers from all attaching entities.

17.4 CLEARANCES

Clearances between communication space and electric supply space attachments are shown on Page 17-102. Reference should also be made to Section 7-Clearances.

Communications messengers in the communication space shall have a vertical spacing of 12 inches (center-to-center) at the pole. To avoid a pole replacement, provided other NESC requirements are satisfied and the new attacher, adjacent attachers and the joint pole owner agree, PPL will allow a reduction in vertical spacing between communication messengers to not less than 6 inches at the pole. If the spacing of 12 inches at the pole between communication messengers can be achieved without pole replacement, then the spacing of 12 inches shall be maintained. Communications conductors, cables and equipment of one communication utility to those of another shall have at least 4" clearance (surface-to-surface) anywhere in the span.

17.5 LOCATION OF ATTACHMENTS

Cooperative effort is needed to avoid placing heavy communication equipment on power company poles with cable risers or equipment that will make climbing difficult. The appearance of individual poles and the whole pole line should also be considered.

Communication equipment, such as CATV, power supplies, telephone air dryers, telephone stands, etc., shall be installed on joint poles in accordance with Pages 17-105 thru 17-108 or special drawings approved by Standards Engineering.

In general, avoid placing risers for multiple entities on one pole. When this is not practical, install them per Section 18-Risers as well as Section 48-Risers of the Underground Construction Standards manual.

17.6 15kV MAXIMUM DISTRIBUTION WOOD POLE MOUNTED METERED POWER SUPPLY AND ANTENNA INSTALLATIONS

17.6.10 Application

This Section covers installation details for distribution wood pole mounted, metered, secondary service to power supplies and antenna communication equipment on poles with 15kV maximum voltage equipment on pole.

17.6.20 General

All installations shall be made in compliance with all applicable codes including the National Electrical Safety Code (NESC) and National Electrical Code (NEC), with local wiring inspector requirements and with applicable service requirements from the Company's tariffs and "Specifications for Electrical Installations" (ESB 750) book. The communication entity shall contact the Company office serving the area involved and also obtain agreement from all other affected pole occupants and/or owners. The communication entity shall submit all appropriate documentation in a timely fashion to allow for necessary engineering and construction to take place.

17.6.30 Location

Poles selected for communication mounted equipment shall be relatively "clean" poles, free of any other major equipment, and accessible by bucket truck throughout the year. Antennas shall not be installed on poles with airbreak or loadbreak switches, line reclosers, sectionalizers, capacitors, voltage regulators, transformers, primary or secondary risers, major communications or fire alarm equipment, other antennas, three or four-way primary junction poles and backyard poles.

Supersedes 7/15 Issue – Limited antenna installations to poles with 15kV maximum voltage equipment on pole in Section 17.6.10.

17.6.40 Division of Responsibility

A.) A rain tight weatherhead shall be mounted in a location suitable for the Company to form a driploop and to make secondary connections (See Pages 17-108 thru 17-109).

B.) Service entrance cables shall be #10 stranded copper, insulated THWN, THHN, or SE conductor suitable for outdoor use. The cable shall include two black insulated conductors and one white insulated conductor and shall extend a minimum of 24 inches beyond the weatherhead to form a driploop and to make secondary connections.

C.) Electric service conduit shall be 1inch PVC schedule 40, at a minimum, sunlight and weather resistant as well as direct and weather sealed to the meter socket enclosure. Conduit straps shall be placed at intervals not exceeding 30 inches.

D.) An approved meter socket shall be installed on the quarter of the pole away from vehicular traffic. The meter shall be a ringless socket sealable style with a safety arc shield and an approved single handle-operation bypass; use of an automatic bypass is not permitted. The meter socket shall be approved by an Authority of Higher Jurisdiction (AHJ) accepted organization concerned with product evaluation and carry the label of that agency.

E.) Bracket system, (Std. Item C39E or equivalent), for mounting the socket to the pole (See Page 17-107). Attach the bracket to the pole with galvanized lag screws and the socket to the bracket with stainless steel bolts, nuts and lock washers. In the event that a 120/208 V meter is installed, a 5th terminal is required.

F.) Disconnect and overcurrent protection shall be limited to a 30 A maximum service rating and should be located in a separate compartment from the meter socket.

G.) Grounding shall consist of #4 covered, soft drawn copper down ground (Std. Item W11F), and copper or bronze connectors, and copperclad 5/8 inch diameter x 8 foot length ground rod(s). An additional ground rod shall be installed if it is necessary to lower the resistance to earth. All equipment shall be bonded to the grounding system. The communication company shall leave enough grounding conductor coiled at the location of the weatherhead for final connection by the electric company to their aerial ground wire/system neutral conductor. This ground arrangement shall apply unless local requirements specify otherwise.

H.) A single power supply shall be located on the back side of the pole away from vehicular traffic with a maximum weight not to exceed 670 lbs. All mounting equipment shall be galvanized steel construction.

I.) If needed, an antenna shall be mounted via an approved method at the top of the distribution pole. The antenna maximum weight shall not exceed 110 lbs. and the maximum height shall be 104 inches including any mounting hardware. The minimum horizontal clearances between the antenna and any primary energized part up to 15kV shall be 12”.

J.) If needed, a cable shall be directly routed from the antenna to the power supply inside a 2 inch PVC conduit that is schedule 40 minimum as well as sunlight and weather resistant.

K.) If needed, fiber shall be directly routed from the power supply to the splice box inside a 2 inch PVC riser guard that is schedule 40 minimum as well as sunlight and weather resistant.

Following the municipal wiring inspector's approval of the construction by others, the Company shall provide all connections to the secondary supply conductors including the communication company's grounding conductor. The Company will also set the meter with a polycarbonate cover.

Note: All work performed in or above the "Communication Worker Safety Zone" shall be completed by an electrically qualified worker meeting NESC and OSHA requirements. Further detail can be referenced in ESB #750 or the Electric Service Information and Requirements documents.

17.7 ALL-DIELECTRIC FIBER OPTIC (ADFO) CABLE IN THE SUPPLY SPACE

17.7.10 General

This fiber section covers the installation of all-dielectric fiber optic (ADFO) communication cables in the supply space of distribution poles with supply line voltages of 34.5 kV or less. ADFO communication cables may be installed in the supply space of distribution poles only by attachers having an agreement allowing such attachments made prior to January 1, 2010.

The Company allows the installation of ADFO communication cables in the supply space of distribution poles. Such installations must comply with the requirements detailed below, with the NESC and with any applicable federal, state or local regulations.

Under the NESC, a communication cable may be installed in the supply space; however, such a cable is considered part of the supply space. This means that the Communication Worker Safety Zone requirements between this communications cable in the supply space and communication space attachments apply when a separate communication space is required on the pole. This also means that workers installing and maintaining this cable in the supply space must meet the more stringent worker training and equipment requirements for work in the supply space. These requirements come from the NESC and OSHA, as well as by state and local regulations.

17.7.20 Approved Installation

Per Company requirements, ADFO cable is the only type of fiber cables that may be installed in the supply space. An ADFO cable is entirely dielectric including being supported on a messenger that is entirely dielectric. The key distinguishing feature of this type of cable is that the entire cable assembly is dielectric. A cable assembly that contains any metallic component cannot be considered all-dielectric.

The other type of fiber cable, an effectively grounded cable, is a communication cable that is supported on a messenger and is effectively grounded throughout its length. In general, the Company shall not allow the installation of any communication cables with a metallic component in the supply space even if that cable is effectively grounded.

17.7.30 Location on Pole

The Company will designate the location on each pole for any communication cables installed in the supply space. In general, this cable shall be the next cable above the existing neutral or secondary cable. Where there are multiple communication cables in the supply space, to the extent practical, this location should be in the same relative position on adjacent poles.

Supersedes 7/07 Issue – Limit ADFO attachments to agreements made prior to January 1, 2010.

In general, an ADFO cable must be attached to the pole with a 12 inch minimum separation in any direction from the electric neutral or secondary cables and at least 30 inches of separation from any primary electric supply cable or other energized part (See pages 17-110 thru 17-118). A 12 inch vertical separation between the ADFO cable and the electric neutral or secondary cables at the pole is preferred. Where this is not possible, the owner of the communication cable may install an ADFO cable on an offset bracket to obtain a 12 inch minimum horizontal separation from the neutral or secondary cable. The bracket should be installed immediately above the neutral or secondary cable. Grounding of this bracket is not required.

17.7.40 Clearances

The NESC imposes no minimum clearance requirement between an ADFO cable and some classes of cables in the supply space. In particular, the NESC does not specify clearances between an ADFO cable in the supply space and any other cable in the supply space up to and including, the 15 kV class. The NESC also does not specify clearances between an ADFO cable and supply cables in the 23 kV or 34.5 kV classes where the cables are owned by the same entity. However, the NESC does specify clearance requirements between an ADFO cable and supply cables in the 23 kV or 34.5 kV classes where the cables are owned by different entities.

Where the NESC does not specify clearances, maintaining the ability of all parties to safely work on their cables is still a primary concern. Therefore, ADFO cables shall be installed with a minimum 12 inch separation at the pole, in any direction, from the electric neutral or secondary cables. To allow work on the communication cable without requiring the Company to cover its primary electric supply cables or other exposed parts, an ADFO cable in the supply space shall be installed with a 30 inch minimum separation in any direction from any primary cable or other exposed part at the pole.

Where the NESC specifies clearances, at a minimum those clearances shall be followed. This type of installation may be approved by Distribution Design based on a review of the specific proposed installation. If a request for this type of installation is received, consult Standards Engineering for specific applicable requirements.

17.7.50 Sag and Tension

An ADFO cable installed in the supply space should be sagged to approximately match the sag of the existing secondary or neutral cable with both cables at final sag condition at 60°F/15°C. The communication cable's owner shall provide the Company with appropriate sag and tension data for the cable used. The owner of the communication cable is responsible for costs associated with the additional space required to accommodate cables that do not follow this recommended practice.

17.7.60 Worker Qualifications

The installation, maintenance, modification and removal of cables or equipment in the supply space must be done by workers qualified to work in that space. The owner of the communication cable shall ensure that the workers installing its fiber in the supply space understand and meet the requirements of the NESC (Part 4) and OSHA (Parts 1910 and 1926), and that various states and localities each impose requirements on employers for the training, qualification, equipment and practices of workers in the supply space. The Company expects that the owner of the communication cable will assure compliance with all applicable NESC, OSHA, state and local requirements by the workers installing the communication cable(s) in the supply space and their employer.

17.8 WOOD DISTRIBUTION POLE MOUNTED SECURITY AND SURVEILLANCE CAMERAS

17.8.10 General

This Section covers installation details for wood distribution pole mounted security and surveillance cameras.

All third party use of PPL poles will be authorized by written agreement. Occupancy fees are routinely assessed for use of PPL facilities (e.g., poles), however, such fees may be waved for municipal or law enforcement short term (temporary) installations. Unless waived by PPL Security or Business Services, permanent installations including those of municipalities and law enforcement agencies are subject of occupancy fees. In addition to occupancy fees, the applicant (requestor) shall reimburse PPL for support services (e.g. field surveys, make ready work, etc.) and energy supply costs for such installations. Energy cost shall be per Company tariffs. Municipal franchise agreements and/or pole permits should be reviewed to determine municipal rights regarding use of Company facilities. Unless otherwise noted below, PPL's Telecommunication Attachment Department shall hold all Agreements, retain and invoice for appropriate occupancy and support service fees. Energy cost shall be managed and invoiced through Business Services.

NOTE: Many poles are jointly owned with the Telephone Company. PPL cannot unilaterally authorize use of joint owned poles, e.g., application must also be made to and authorization received from our joint pole owner.

17.8.20 Location on Pole

The security and surveillance cameras shall be installed at least 12 inches below the lowest communication cable.

17.8.30 Division of Responsibility

A.) A rain tight weatherhead shall be mounted in a location suitable for the Company to form a driploop and to make secondary connections (See Page 17-118).

B.) Service entrance cables shall be #10 stranded copper, insulated THWN, THHN, or SE conductor suitable for outdoor use. The cable shall include two black insulated conductors and one white insulated conductor and shall extend a minimum of 24 inches beyond the weatherhead to form a driploop and to make secondary connections.

C.) Electric service conduit shall be 1inch PVC schedule 40, at a minimum, sunlight and weather resistant as well as direct and weather sealed to the meter socket enclosure. Conduit straps shall not be placed at intervals exceeding 30 inches.

D.) An approved meter socket shall be installed on the quarter of the pole away from vehicular traffic. The meter shall be a ringless socket sealable style with a safety arc shield and an approved single handle-operation bypass; use of an automatic bypass is not permitted. The meter socket shall be approved by an Authority of Higher Jurisdiction (AHJ) accepted organization concerned with product evaluation and carry the label of that agency.

E.) Bracket system, (Std. Item C39E or equivalent), for mounting the socket to the pole (See Page 17-107). Attach the bracket to the pole with galvanized lag screws and the socket to the bracket with stainless steel bolts, nuts and lock washers. In the event that a 120/208 V meter is installed, a 5th terminal is required.

New construction standard for pole mounted security and surveillance cameras.

F.) Disconnect and overcurrent protection shall be limited to a 30 A maximum service rating and may be located in a separate compartment from the meter socket.

G.) Grounding shall consist of #4 covered, soft drawn copper down ground (Std. Item W11F), and copper or bronze connectors, and copperclad 5/8 inch diameter x 8 foot length ground rod(s). An additional ground rod shall be installed if it is necessary to lower the resistance to earth. All equipment shall be bonded to the grounding system. The owner of the Security or Surveillance camera shall leave enough grounding conductor coiled at the location of the weatherhead for final connection by the electric company to their aerial ground wire/system neutral conductor. This ground arrangement shall apply unless local requirements specify otherwise.

H.) A single power supply shall be located on the back side of the pole away from vehicular traffic with a maximum weight not to exceed 670 lbs. All mounting equipment shall be galvanized steel construction.

17.8.40 Law Enforcement Requests For Criminal or Investigational Surveillance

The Company supports all efforts related to national security (homeland security) and Law enforcement investigations. All such requests shall be directed to PPL Corporate Security. Due to confidentiality requirement of these requests, Corporate Security will be responsible arranging PPL support services and for maintaining all records associated with law enforcement requests and the subsequent installation of these technical surveillance devices.

17.8.50 Other Municipal Requests

The Company supports municipal public service efforts (e.g. traffic control, building/parking lot security, etc.). Consistent with existing franchise agreements and PPL operational needs, PPL will authorize municipal camera installations. All such requests shall be directed to Business Services.

RHODE ISLAND						
Pole Length (Feet)	**Ownership Percentage (Elec./Tel.)**	**Normal Setting Depth (Ft-Inches)**	**Tel. Space Allocation (Ft-Inches)**	**Licensee Space Allocation (Ft-Inches)**	**Municipal Space Allocation (Ft–Inches)**	**Electric Space Allocation (Ft-Inches)**
35	35/35	6’-0”	2’-6”	1’-0”	1’-0”	60”
40	40/40	6’-0”	2’-6”	1’-0”	1’-0”	78”
45	45/45	6’-6”	2’-6”	1’-0”	1’-0”	105”
50	50/50	7’-0”	2’-6”	1’-0”	1’-0”	132”
55	55/55	7’-6”	2’-6”	1’-0”	1’-0”	159”
60	60/60	8’-0”	2’-6”	1’-0”	1’-0”	186”

See notes on page 17-100A and diagram on page 17-101.

NOTES:

1. 45/40 indicates a 45 foot pole where the communication company pays for and occupies the space as if it were a 40 foot joint pole. 40/45 indicates a 45 foot pole where the Company pays for and occupies the space as if it were a 40 foot joint pole.

2. These space allocations are based on wood poles with embedment depths of 2 ft plus 10% of the pole length. Space allocation may need to be adjusted when other embedment depths are used, Not used in this edition.

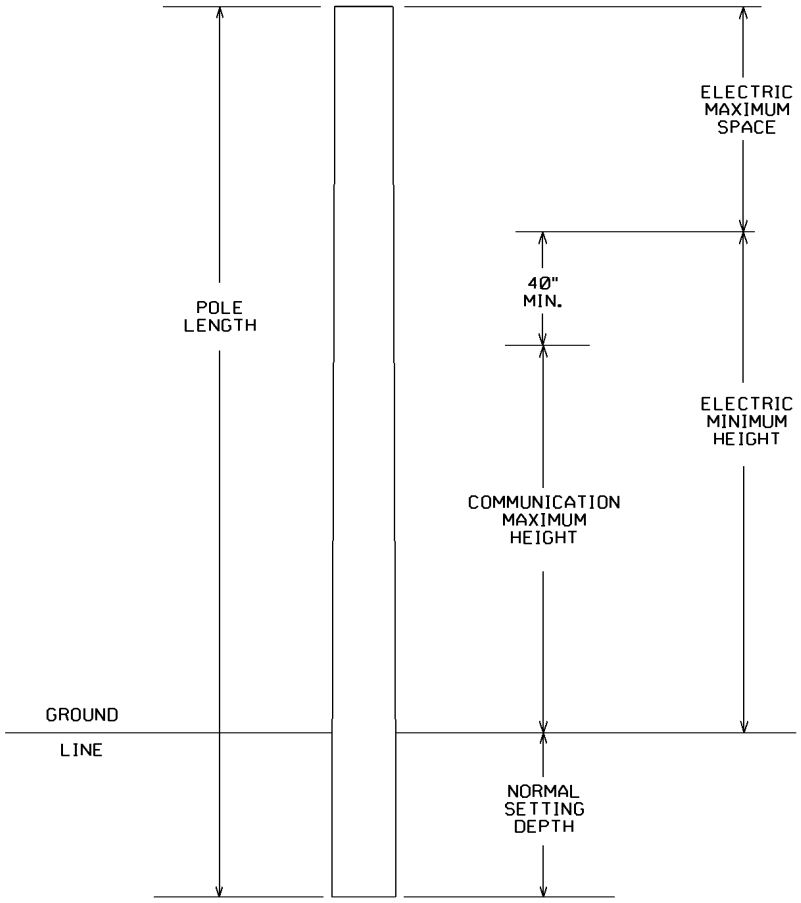
3. Electric Maximum Space does not include 8" at the top of the pole that is considered unusable. Electric Minimum Height reflects Electric Maximum Space and the 8" unusable pole top.

4. To minimize pole replacements each party shall rearrange its attachments on existing poles to provide space for the other party, within the limits of each company's construction standards, regardless of allocated space shown.

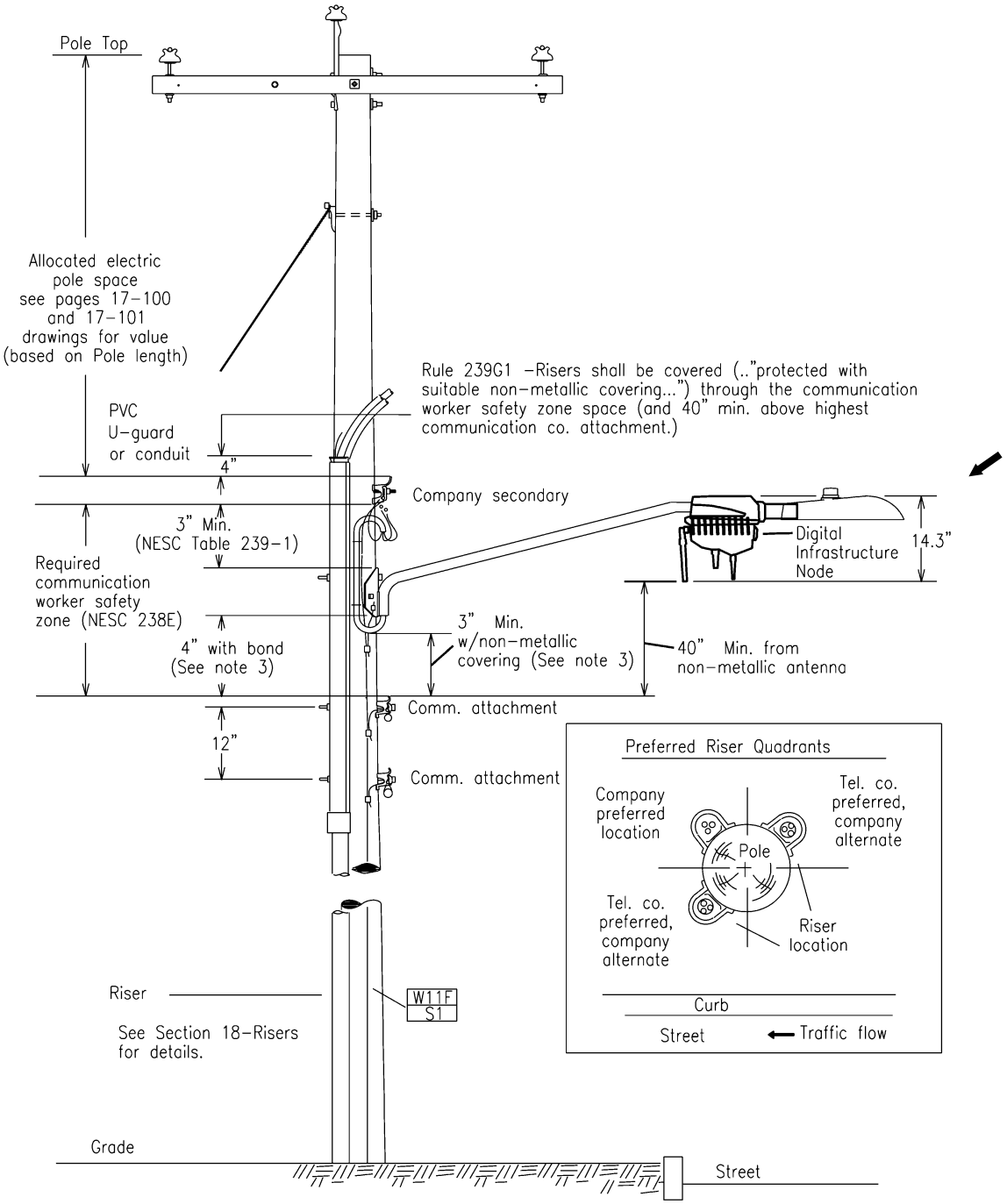
5. Generally, to meet in-span ground clearance requirements, communication companies must install their cables on the pole at least 18 feet above ground. If the communication cable can be installed on the pole at less than 18 feet above ground clearance (for example, 15 feet required in rear lots), the extra pole space is divided equally between the joint owners 1-½ feet to each. If ground clearance forces telephone companies upwards (say a 3 foot high knoll), each company may be required to give up equal space (1-½ feet) or use a 5 foot higher pole.

Supersedes 7/19 Issue – Revised the Rhode Island Space Allocation Table to reflect the current agreement between PPL and Verizon for these jurisdictions.

JOINT POLE SPACE ALLOCATION



BLANK



Notes:

1. Related NESC References:

   - Preferred Levels: Supply conductors should be carried at the higher level. (NESC Rule 220B1).
   - Vertical runs of supply conductors shall have a clearance of 2" from communication messengers, cables, attachment bolts and hardware, except ground wires may have a clearance of 1" from messengers, cables, attachment bolts and hardware. (NESC Rule 239G5).

Supersedes 7/10 Issue – Added information on clearances for streetlight bracket mounted communication equipment.

- Within 8' of the ground, all vertical conductors and cables shall be appropriately guarded. Supply conductors shall be in metallic conduits and ground wires shall be guarded using ground wire molding. (NESC Rule 239D).

2. Minimum Attachment Heights: See Section 7 – Clearances for information about clearances above ground and minimum attachment heights.

3. Outdoor Lighting and Communications:

- For new pole installations and new streetlight installations on existing poles:
  - Streetlight brackets shall be bonded to the secondary or system neutral and drip loops shall be covered with non-metallic flexible conduit.
  - Vertical clearance between the grounded streetlight bracket and the communication messengers, cables, attachment bolts or hardware shall be at least 4".
  - Vertical clearance between the drip loop, covered with non-metallic flexible conduit, and the communication messengers, cables, attachment bolts or hardware shall be at least 3".

- For new communication facilities on or after February 1, 2017 on existing poles:
  - If the streetlight bracket is not bonded to the secondary or system neutral, maintain 40" vertical clearance between the streetlight bracket and the communication messengers, cables, attachment bolts and hardware. If the streetlight bracket is bonded to the system neutral, vertical clearance between the streetlight bracket and the communication messengers, cables, attachment bolts or hardware may be reduced to 4".
  - If the drip loop is not covered with non-metallic flexible conduit, maintain 12" vertical clearance between the drip loop and the communication messengers, cables, attachment bolts and hardware. If the drip loop is covered with non-metallic flexible conduit, vertical clearance between the drip loop and the communication messengers, cables, attachment bolts or hardware may be reduced to 3".

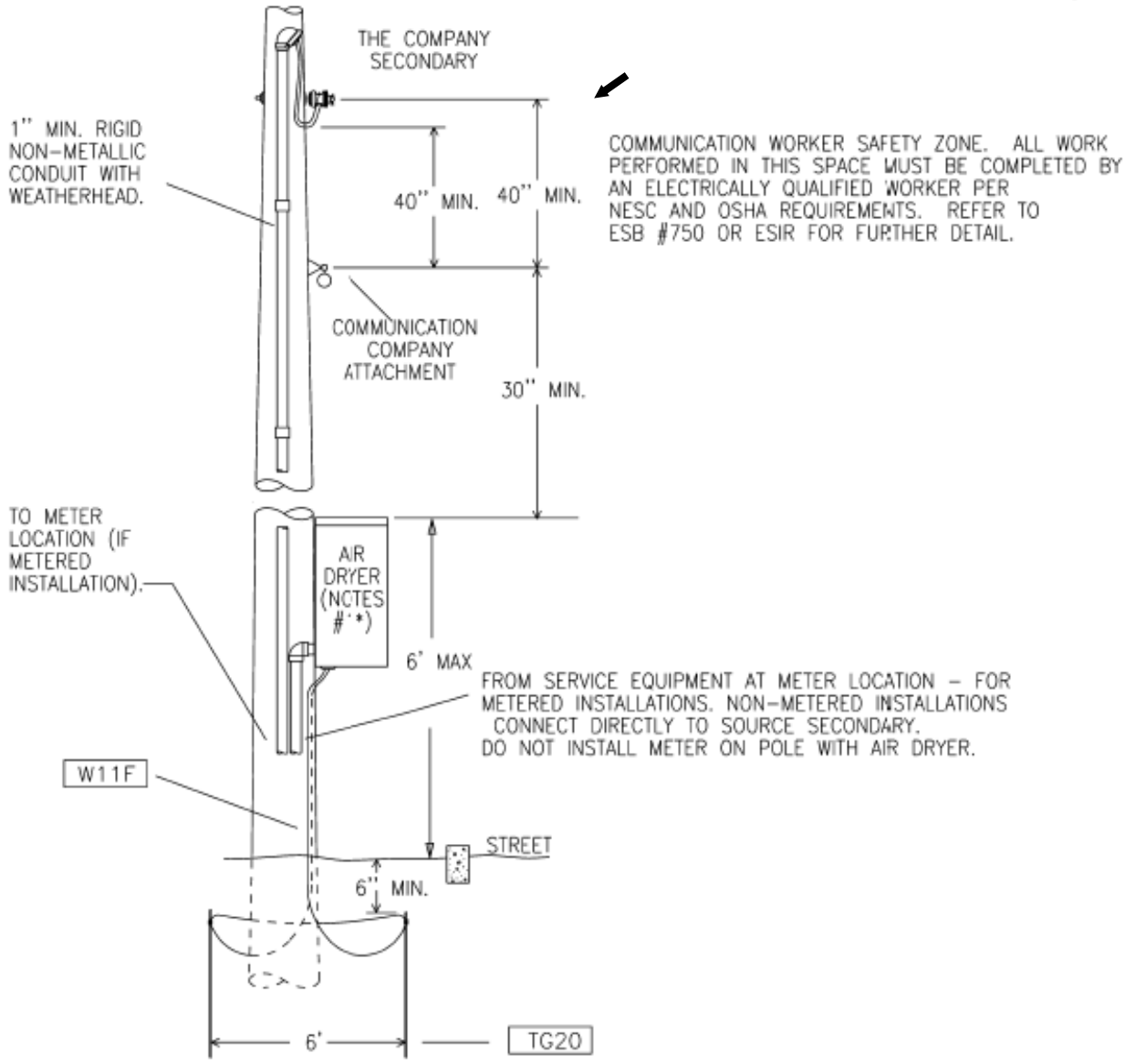
- For existing communication facilities installed prior to February 1, 2017 on existing poles:
  - If the streetlight bracket is not bonded to the secondary or system neutral, maintain 20" vertical clearance between the streetlight bracket and the communication messengers, cables, attachment bolts and hardware. If the streetlight bracket is bonded to the system neutral, vertical clearance between the streetlight bracket and the communication messengers, cables, attachment bolts or hardware may be reduced to 4".
  - If the drip loop is not covered with non-metallic flexible conduit, maintain 12" vertical clearance between the drip loop and the communication messengers, cables, attachment bolts and hardware. If the drip loop is covered with non-metallic flexible conduit, vertical clearance between the drip loop and the communication messengers, cables, attachment bolts or hardware may be reduced to 3".

- Streetlights should be mounted in the Communication Worker Safety Zone (CWSZ) between the supply and communication spaces on the pole. Streetlights may be mounted between communication messengers and cables only where streetlights mounted in the CWSZ cannot provide adequate illumination. When such installations must be made:
  - The streetlight bracket shall be grounded and the vertical clearance between the grounded streetlight bracket and the communication messengers, cables, attachment bolts or hardware above and below the streetlight shall be at least 4".
  - The drip loop shall be covered with non-metallic flexible conduit and the vertical clearance between the covered drip loop and the communication messengers, cables, attachment bolts or hardware shall be at least 3".
  - A CWSZ shall be established between (i) the communication attachment above the streetlight and (ii) the electric primary, neutral and secondary wires.

- See Section 19 – Lighting - OH for additional notes regarding outdoor lighting on joint use poles, including: bracket location and restraint and protection of supply conductors.

Supersedes 7/10 Issue – Updated Note 3.

THIS PAGE LEFT INTENTIONALLY BLANK.

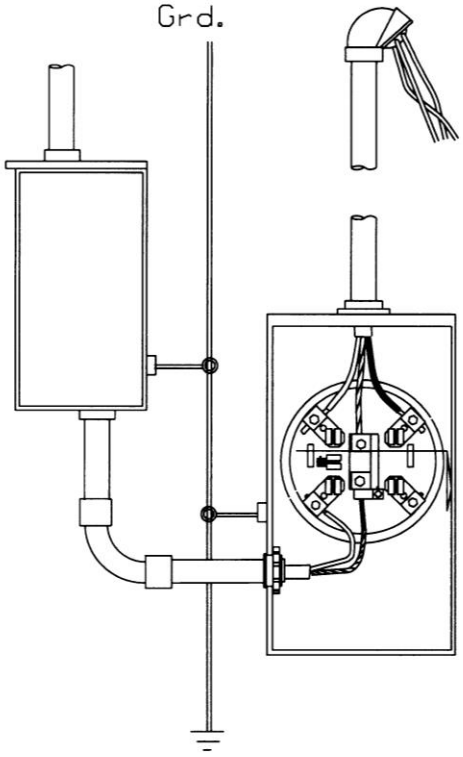


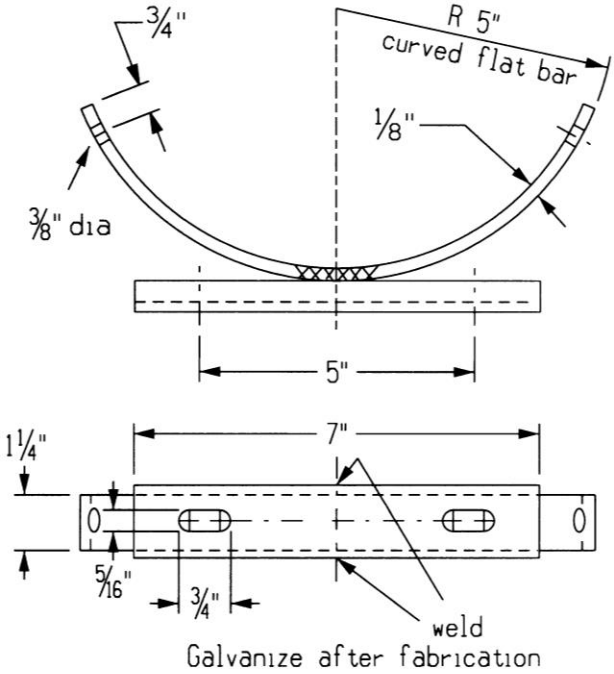
NOTE:

1. AIR DRYER AND ATTACHMENTS (CONDUIT, SUPPLY CONDUCTOR AND GROUNDING) SHALL BE FURNISHED AND INSTALLED BY COMMUNICATION COMPANY.
2. AVOID DRYER INSTALLATION ON POLES REQUIRING REPEATED CLIMBING, JUNCTION POLES, OR POLE USED FOR OTHER EQUIPMENT. BILLING METERINGEQUIPMENT SHALL NOT BE LOCATED ON THE SAME POLE.
3. THE SUPPLY CONDUCTOR (FURNISHED BY COMMUNICATION COMPANY) SHALL BE 600V TW CABLE LONG ENOUGH TO EXTEND 3' ABOVE THE COMPANY SECONDARY.
4. COMMUNICATION CO. TO PROVIDE NEC APPROVED SERVICE EQUIPMENT IF FLATE RATE BILLED. IF METERED, SERVICE EQUIPMENT TO BE LOCATED AT METER LOCATION. SEE ESB #750 FIGURE 29, OR INFORMATION AND REQUIREMENTS FOR ELECTRIC SERVICE FIGURE 904 DEPENDING ON LOCATION.

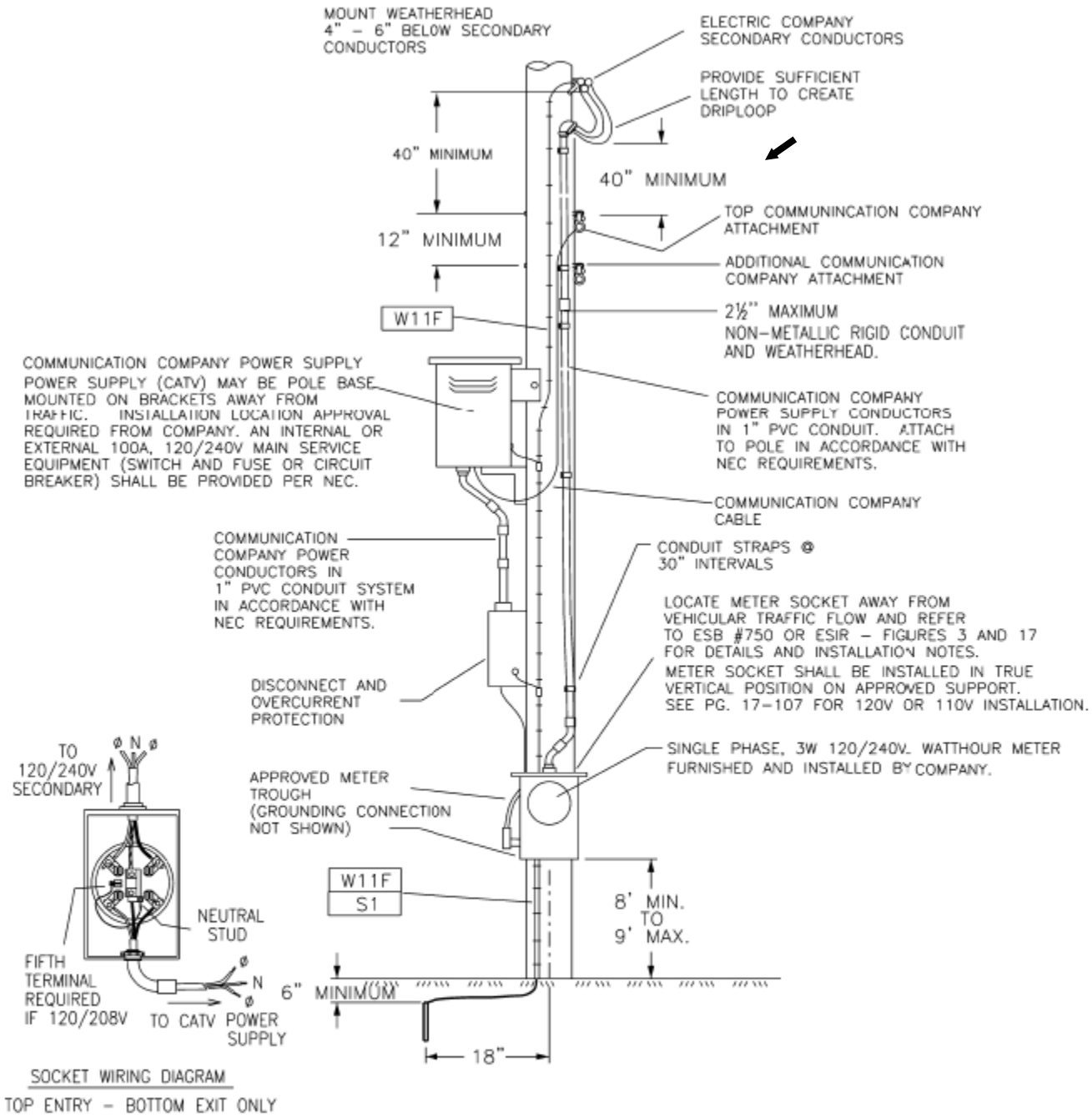
.

COMMUNICATION CO. AIR DRYER INSTALLATION ON JOINTLY OWNED POLES			
ppl	OVERHEAD CONSTRUCTION STANDARD	PAGE NUMBER	ISSUE
		17-105	7/22





METER SOCKET BRACKET AND CONNECTIONS FOR POLE MOUNTED METER INSTALLATIONS			
ISSUE	**PAGE NUMBER**	**OVERHEAD CONSTRUCTION STANDARD**	ppl
1/06	**17-107**		

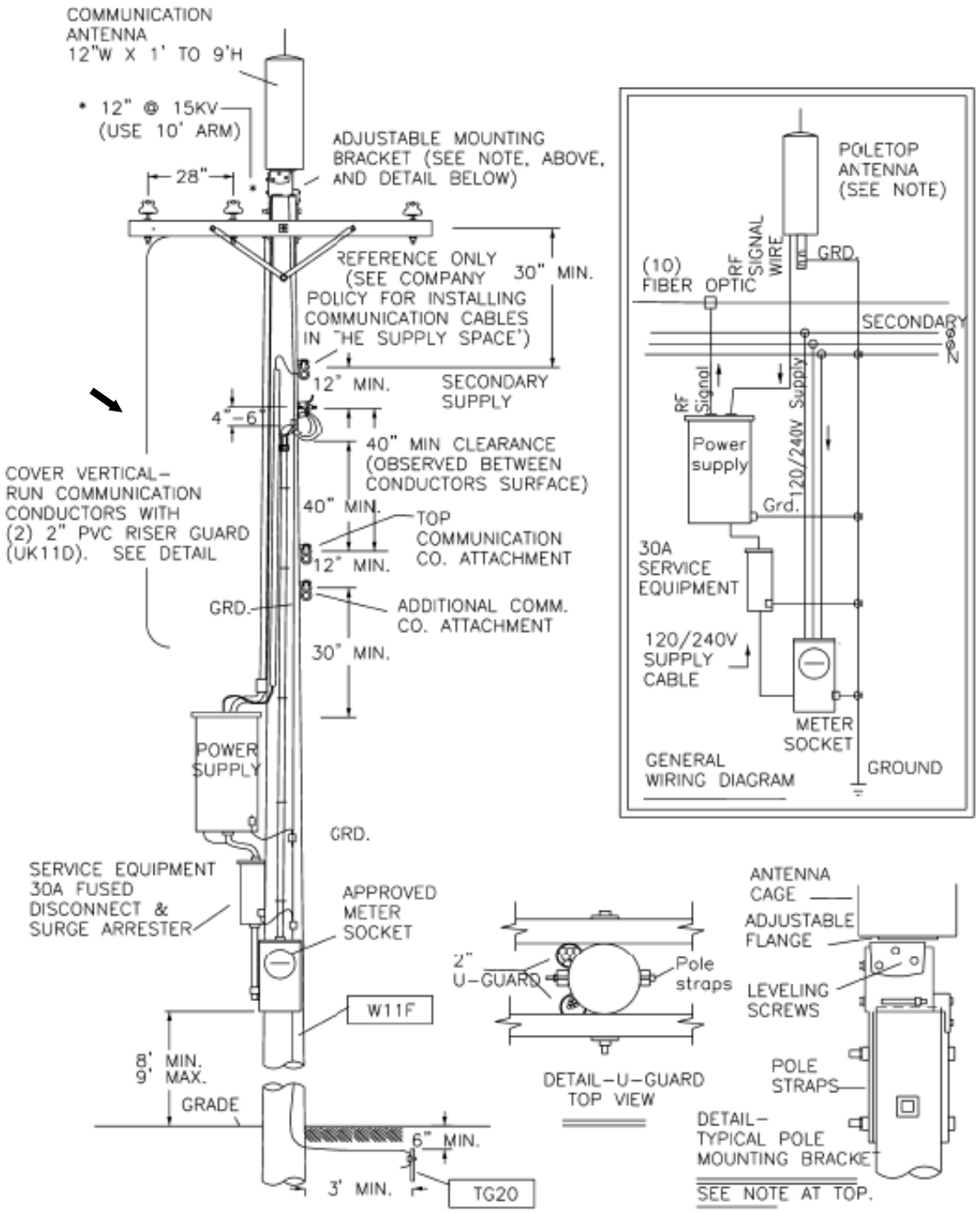


NOTES:

1. ALL NEW OR REPLACEMENT POWER SUPPLIES ARE TO BE METERED. COMM. CO. POWER SUPPLY INSTALLATIONS SHOULD BE AVOIDED ON POLES WITH OTHER EQUIPMENT. POLES SHALL BE ACCESSIBLE BY BUCKET AND THE PROPOSED INSTALLATION SHALL BE FIELD REVIEWED AND APPROVED BY THE COMPANY AND ANY JOIINT POLE OWNERS PRIOR TO WORK.
2. COMM. CO. SHALL FURNISH, INSTALL OWN AND MAINTAIN ALL MATERIAL AND EQUIPMENT SHOWN ABOVE EXCEPT AS NOTED. REFER TO ESB #750 OR ELECTRIC SERVICE INFORMATION REQUIREMENTS (ESIR) FIGURE 923 DEPENDING ON LOCATION.

Designer	Drawing	Date
MPR	od17138	11/15/21

35 KV MAX. DISTRIBUTION WOOD POLE MOUNTED METER POWER SUPPLY INSTALLATION



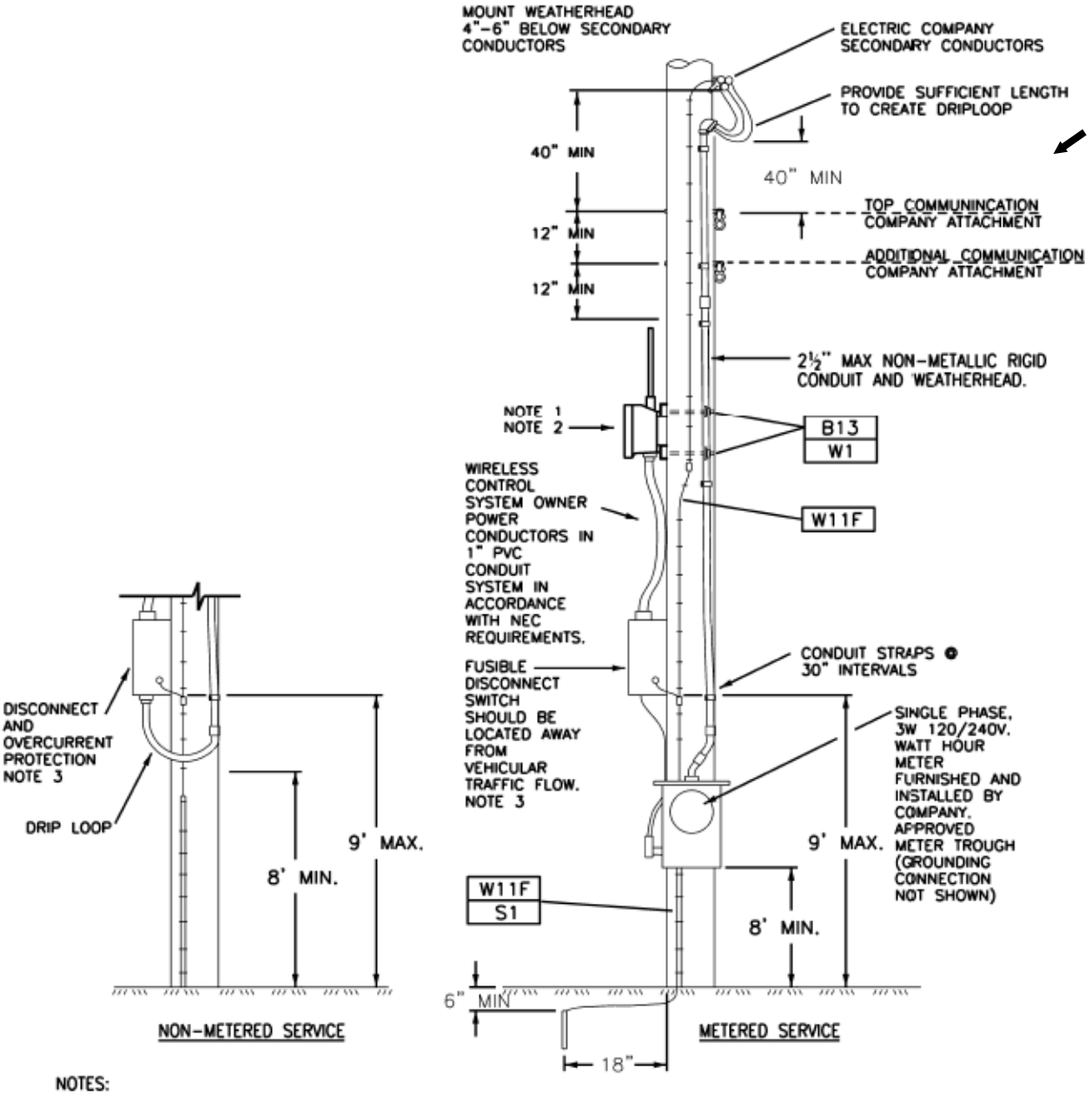
Supersedes 7/07 Issue – Corrected drip loop clearance requirement.

Notes:

1. This arrangement is representative of a typical installation. Similar wireless pole top equipment may be accommodated while maintining the specified clearance requirements. Relocating existing facilities, pole replacement, or installing alternate equipment shall be considered when required.
2. ADFO communication cables may be installed in the supply space of distribution poles only by attachers having an agreement allowing such attachments made prior to January 1, 2010.

15 KV MAX. DISTRIBUTION WOOD POLE MOUNTED ANTENNA INSTALLATION			
ISSUE	**PAGE NUMBER**	**OVERHEAD CONSTRUCTION STANDARD**	ppl
7/22	**17-109**		

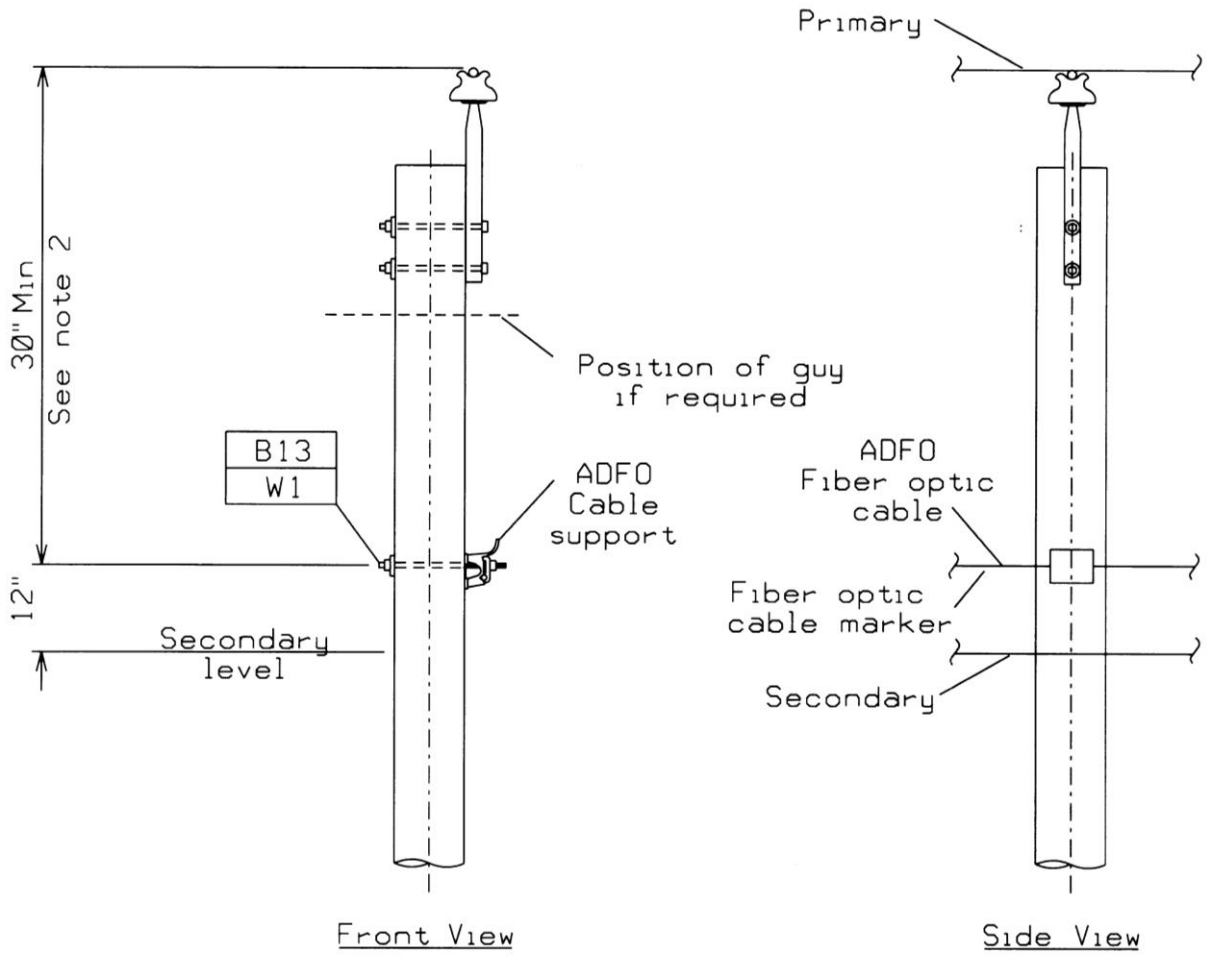
Supersedes 7/21 Issue – Corrected drip loop clearance requirement.



NOTES:

1. CONNECTED GRID ROUTER INSTALLATIONS SHOULD BE AVOIDED ON POLES WITH OTHER EQUIPMENT. POLES SHALL BE ACCESSIBLE BY BUCKET AND THE PROPOSED INSTALLATION SHALL BE FIELD REVIEWED AND APPROVED BY THE COMPANY AND ANY JOINT POLE OWNERS PRIOR TO WORK.
2. WIRELESS CONTROL SYSTEM OWNER SHALL FURNISH, INSTALL OWN AND MAINTAIN ALL MATERIAL AND EQUIPMENT SHOWN ABOVE EXCEPT AS NOTED. REFER TO ESB#750 OR ELECTRIC SERVICE INFORMATION REQUIREMENTS (ESIR) FIGURE 923.
3. LOCATE METER SOCKET AWAY FROM VEHICULAR TRAFFIC FLOW AND REFER TO ESB #750 OR ESIR – FIGURES 3 AND 17 FOR DETAILS AND INSTALLATION NOTES. METER SOCKET SHALL BE INSTALLED IN TRUE
APPROVED SUPPORT. SEE PG. 17-107 FOR 120V OR 110V INSTALLATION.

This page left intentionally blank.

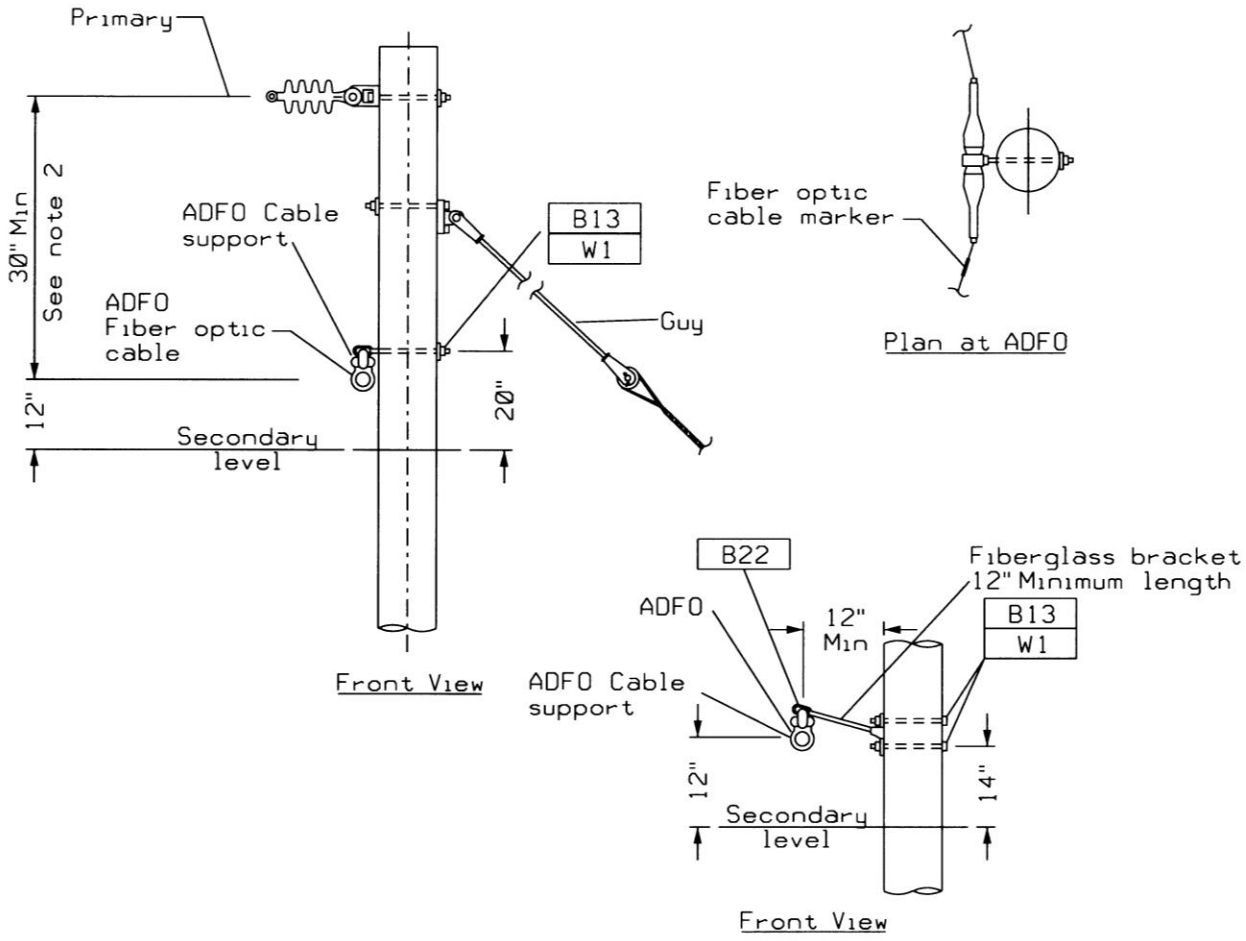


Notes:

1. Maximum line angle for ADFO = 20 degrees.
2. Distance between primary wire and ADFO cable shall be a minimum of 30 inches in any direction.
3. ADFO communication cables may be installed in the supply space of distribution poles only by attachers having an agreement allowing such attachments made prior to January 1, 2010.

Supersedes 7/10 Issue – Corrected note numbering to match drawing.

SINGLE PHASE ANGLE WITH ADFO FIBER OPTIC CABLE BETWEEN PRIMARY AND SECONDARY			
ppl	OVERHEAD CONSTRUCTION STANDARD	PAGE NUMBER	ISSUE
		17- 110	7/19

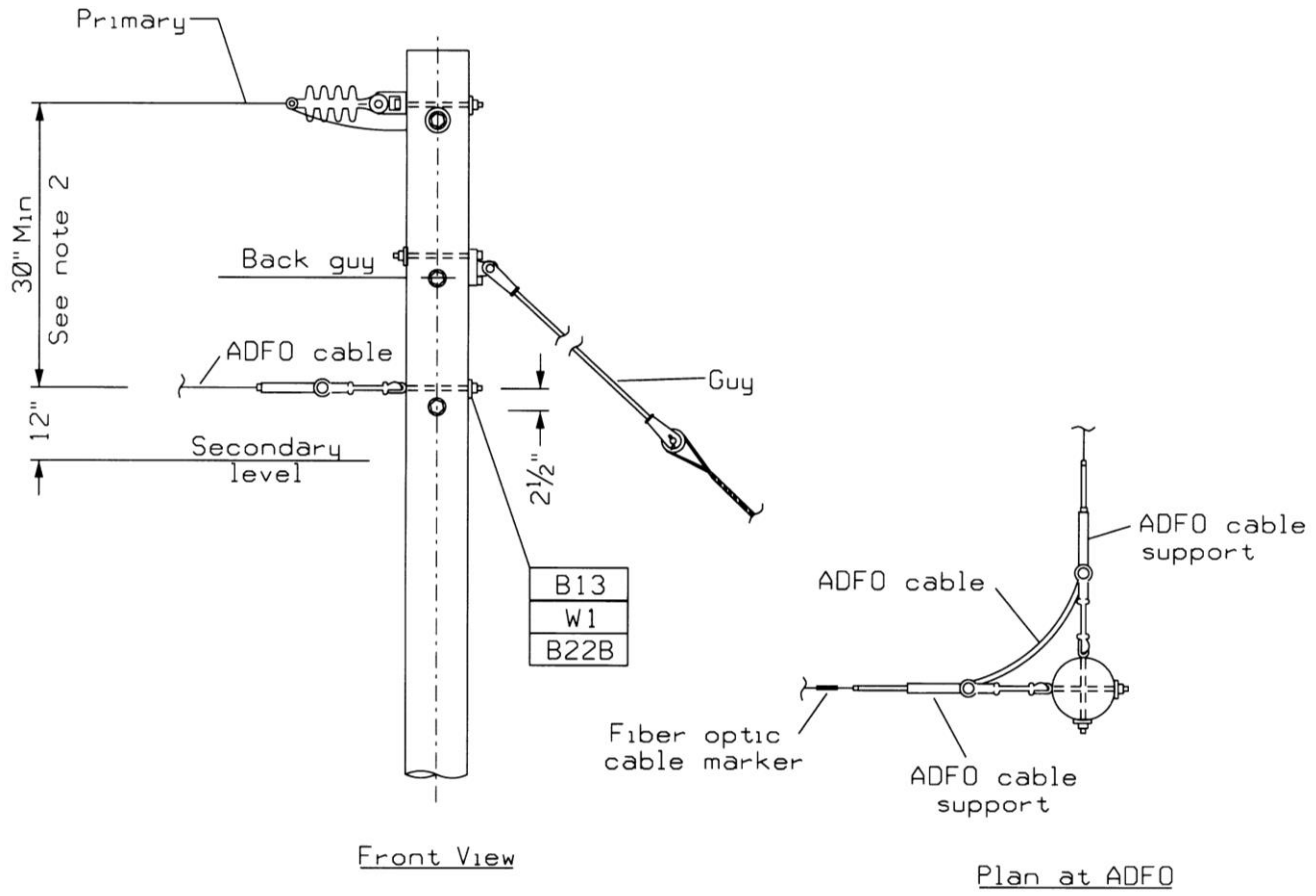


Notes:

1. Maximum line angle for ADFO = 30 degrees.
2. Distance between primary wire and ADFO cable shall be a minimum of 30 inches in any direction.
3. Item 5, fiberglass bracket, is for use on tangent and angle structures only. Not for use on deadends.
4. ADFO communication cables may be installed in the supply space of distribution poles only by attachers having an agreement allowing such attachments made prior to January 1, 2010.

Supersedes 7/10 Issue – Corrected note numbering to match drawing.

SINGLE PHASE ANGLE WITH ALL DIELECTRIC FIBER OPTIC (ADFO) CABLE BETWEEN PRIMARY AND SECONDARY ATTACHMENTS			
ISSUE	**PAGE NUMBER**		
7/19	**17-111**	**OVERHEAD CONSTRUCTION STANDARD**	ppl

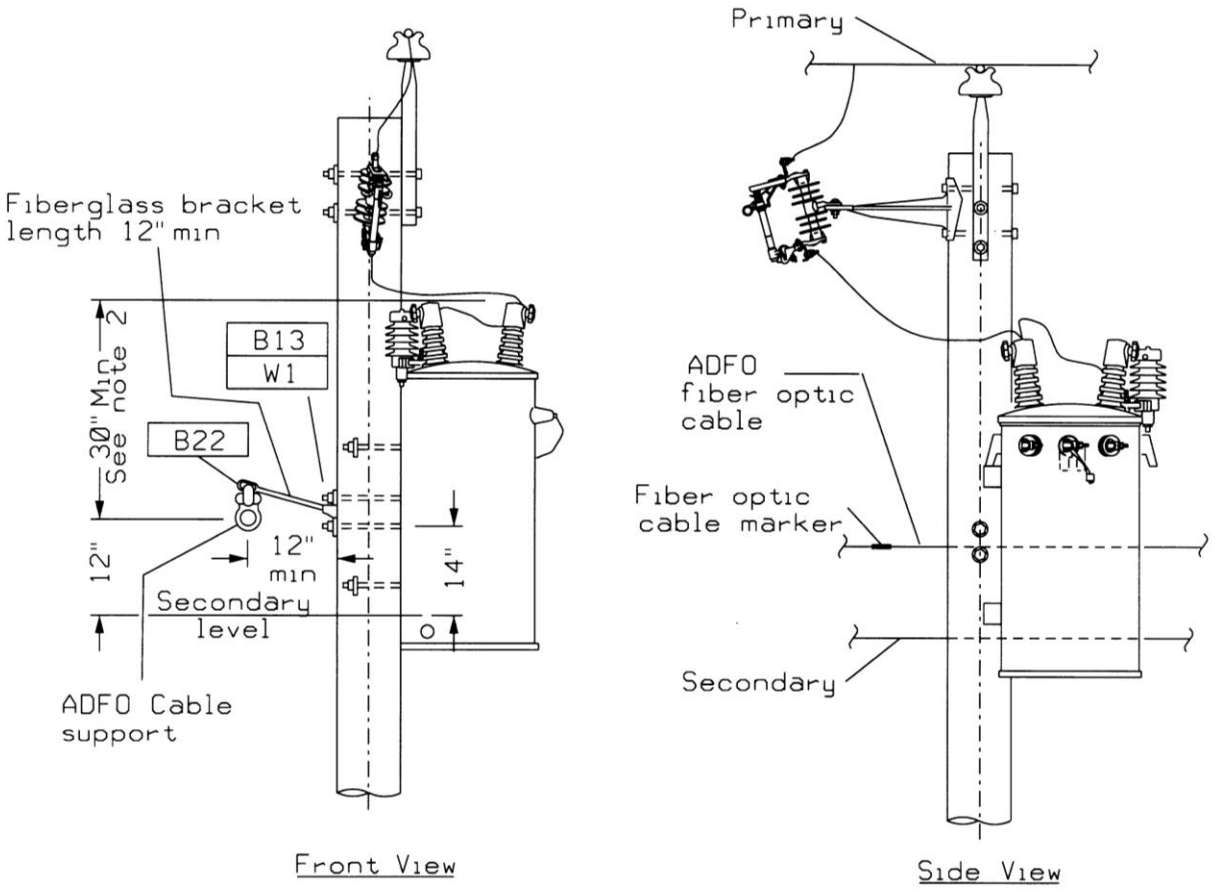


Supersedes 7/10 Issue – Corrected note numbering to match drawing.

Notes:

1. Maximum line angle for ADFO = 90 degrees.
2. Distance between primary wire and ADFO cable shall be a minimum of 30 inches in any direction.
3. ADFO communication cables may be installed in the supply space of distribution poles only by attachers having an agreement allowing such attachments made prior to January 1, 2010.

SINGLE PHASE CORNER DEADEND WITH ALL DIELECTRIC FIBER OPTIC CABLE BETWEEN PRIMARY AND SECONDARY ATTACHMENTS			
ppl	OVERHEAD CONSTRUCTION STANDARD	PAGE NUMBER	ISSUE
		17-112	7/19

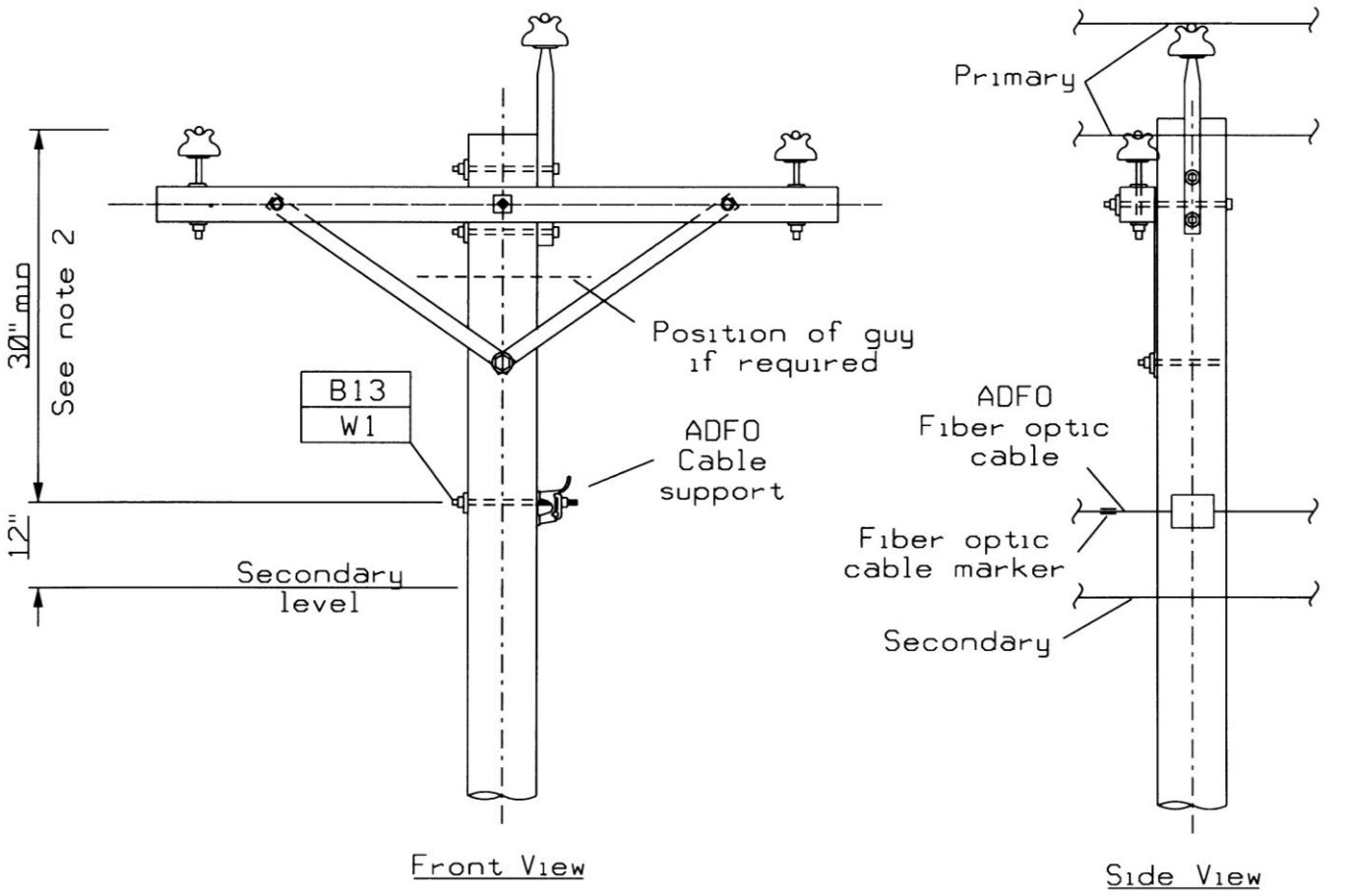


Notes:

1. Maximum line angle for ADFO = 30 degrees.
2. Distance between primary wire and ADFO cable shall be a minimum of 30 inches in any direction.
3. ADFO communication cables may be installed in the supply space of distribution poles only by attachers having an agreement allowing such attachments made prior to January 1, 2010.

Supersedes 7/10 Issue – Corrected note numbering to match drawing.

SINGLE PHASE TANGENT WITH TRANSFORMER AND ALL DIELECTRIC FIBER OPTIC (ADFO) CABLE BETWEEN PRIMARY AND SECONDARY ATTACHMENTS			
ISSUE	**PAGE NUMBER**		
7/19	**17-113**	**OVERHEAD CONSTRUCTION STANDARD**	ppl

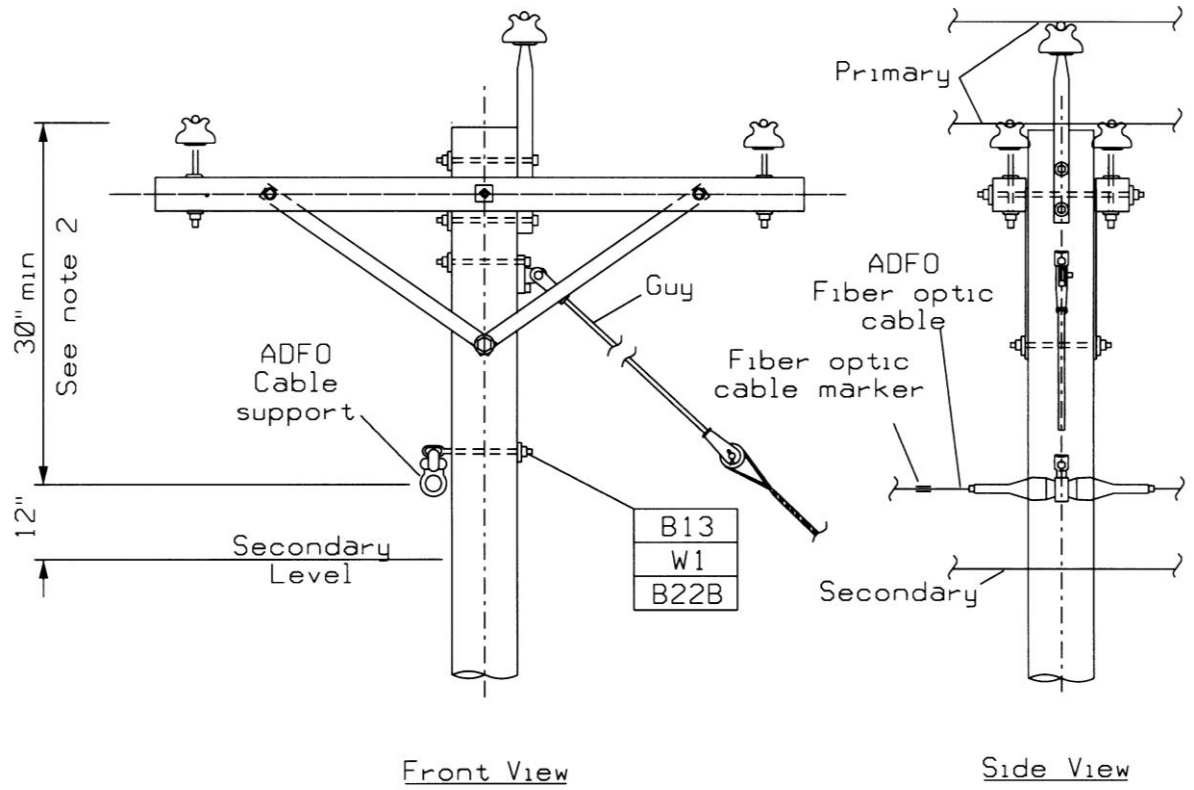


Supersedes 7/10 Issue – Corrected note numbering to match drawing.

Notes:

1. Maximum line angle for ADFO = 20 degrees.
2. Distance between primary wire and ADFO cable shall be a minimum of 30 inches in any direction.
3. ADFO communication cables may be installed in the supply space of distribution poles only by attachers having an agreement allowing such attachments made prior to January 1, 2010.

THREE PHASE TANGENT SINGLE CROSSARM WITH ALL DIELECTRIC FIBER OPTIC (ADFO) CABLE BETWEEN PRIMARY AND SECONDARY ATTACHMENTS			
ppl	OVERHEAD CONSTRUCTION STANDARD	PAGE NUMBER	ISSUE
		17-114	7/19

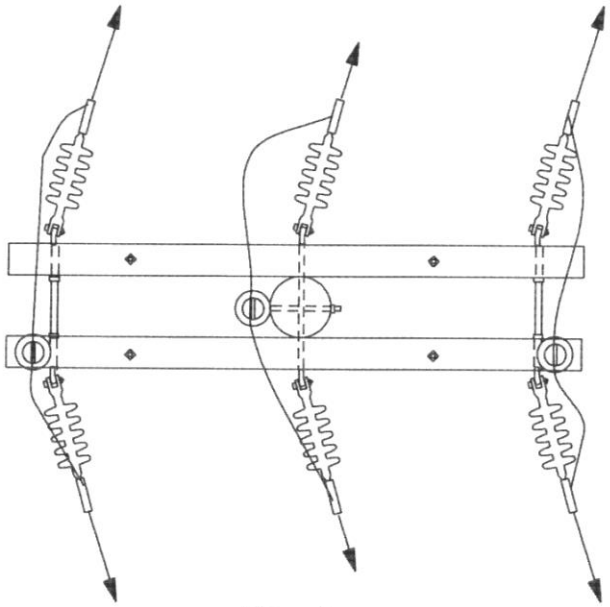


Notes:

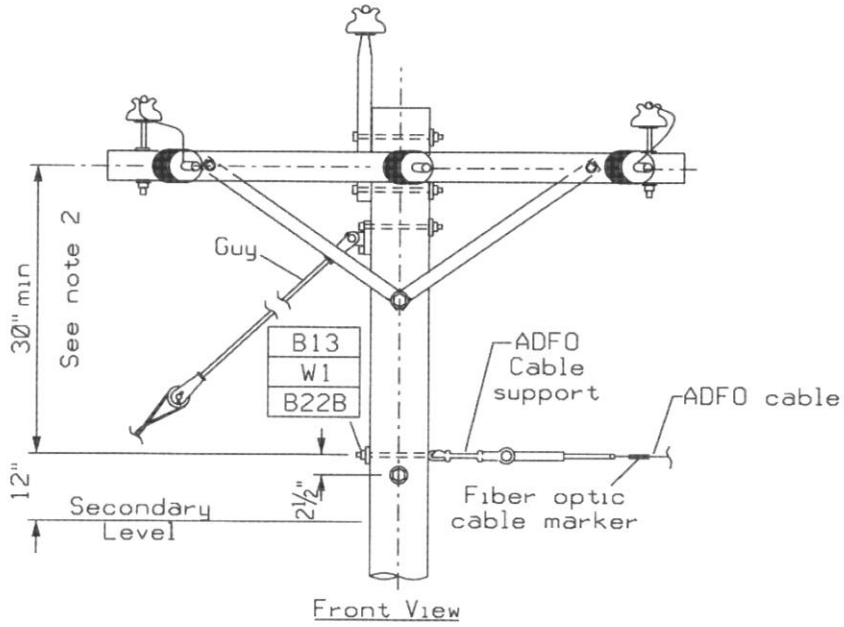
1. Maximum line angle for ADFO = 30 degrees.
2. Distance between primary wire and ADFO cable shall be a minimum of 30 inches in any direction.
3. ADFO communication cables may be installed in the supply space of distribution poles only by attachers having an agreement allowing such attachments made prior to January 1, 2010.

Supersedes 7/10 Issue – Corrected note numbering to match drawing.

THREE PHASE ANGLE DOUBLE CROSSARM WITH ALL DIELECTRIC FIBER OPTIC CABLE (ADFO) BETWEEN PRIMARY AND SECONDARY ATTACHMENTS			
ISSUE	**PAGE NUMBER**	**OVERHEAD CONSTRUCTION STANDARD**	ppl
7/19	**17-115**		



Plan View

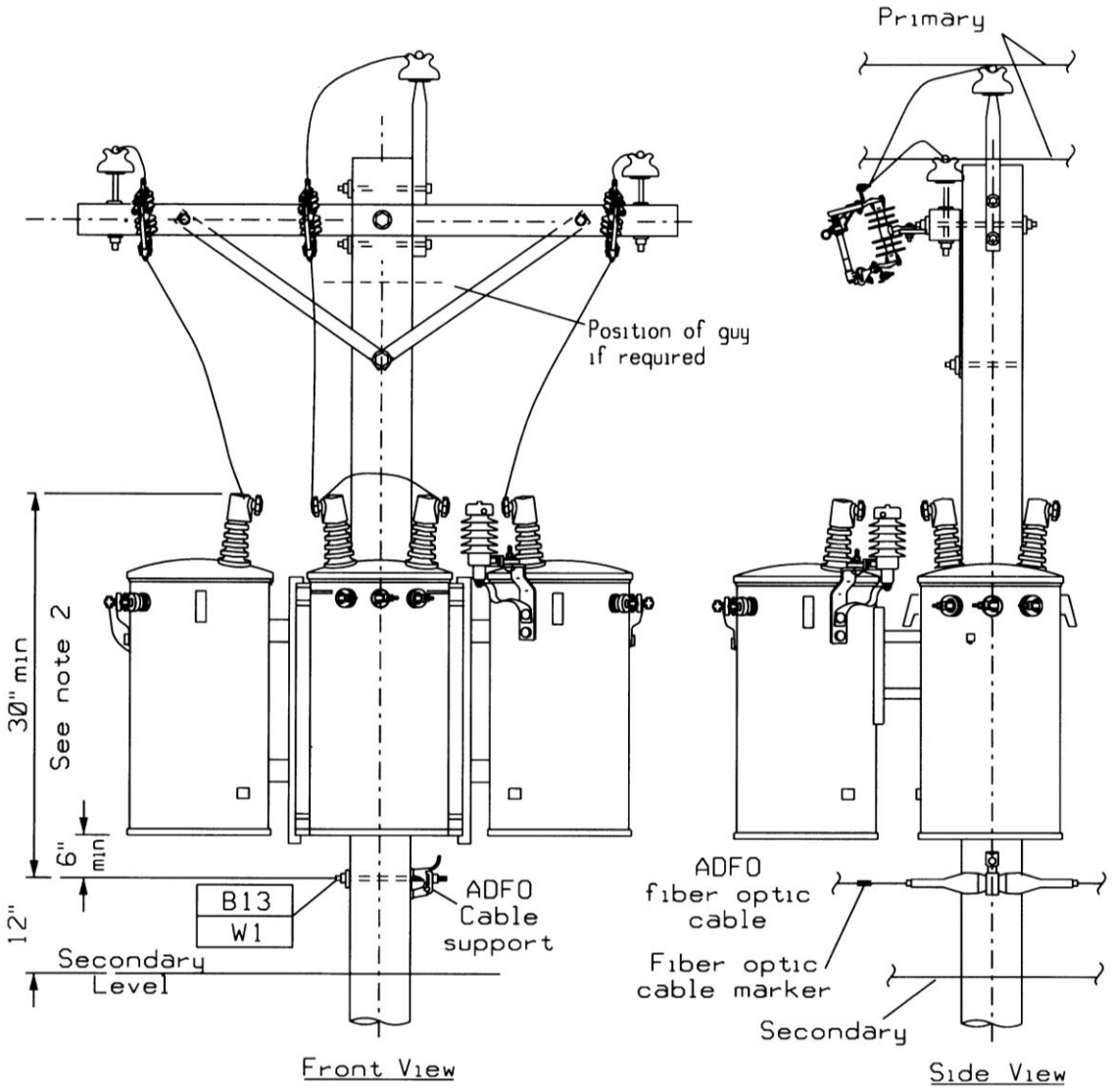


Front View

Notes:

1. Maximum line angle for ADFO = 30 degrees.
2. Distance between primary wire and ADFO cable shall be a minimum of 30 inches in any direction.
3. *ADFO communication cables may be installed in the supply space of distribution poles only by* attachers having an agreement allowing such attachments made prior to January 1, 2010.

THREE PHASE DEADEND DOUBLE CROSSARM WITH ALL DIELECTRIC FIBER OPTIC (ADFO) CABLE BETWEEN PRIMARY AND SECONDARY ATTACHMENTS			
ppl	OVERHEAD CONSTRUCTION STANDARD	PAGE NUMBER	ISSUE
		17-116	7/19

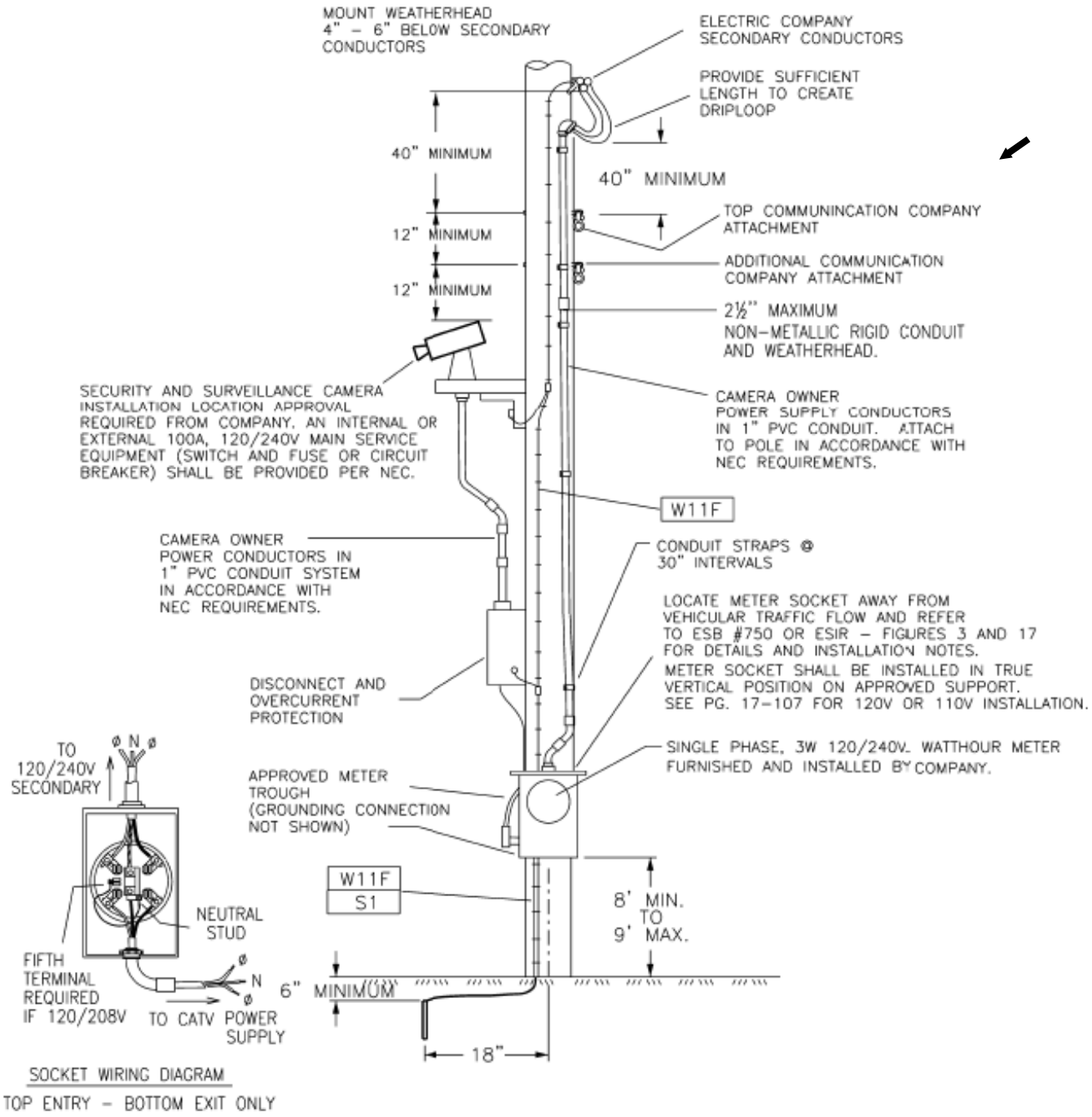


Supersedes 7/10 Issue – Corrected note numbering to match drawing.

Notes:

1. Maximum line angle for ADFO = 20 degrees.
2. Distance between primary wire and ADFO cable shall be a minimum of 30 inches in any direction.
3. ADFO communication cables may be installed in the supply space of distribution poles only by attachers having an agreement allowing such attachments made prior to January 1, 2010.

THREE PHASE TANGENT WITH TRANSFORMERS AND ALL DIELECTRIC FIBER OPTIC (ADFO) CABLE BETWEEN PRIMARY AND SECONDARY ATTACHMENTS			
ISSUE	**PAGE NUMBER**		
7/19	**17-117**	**OVERHEAD CONSTRUCTION STANDARD**	ppl



NOTES:

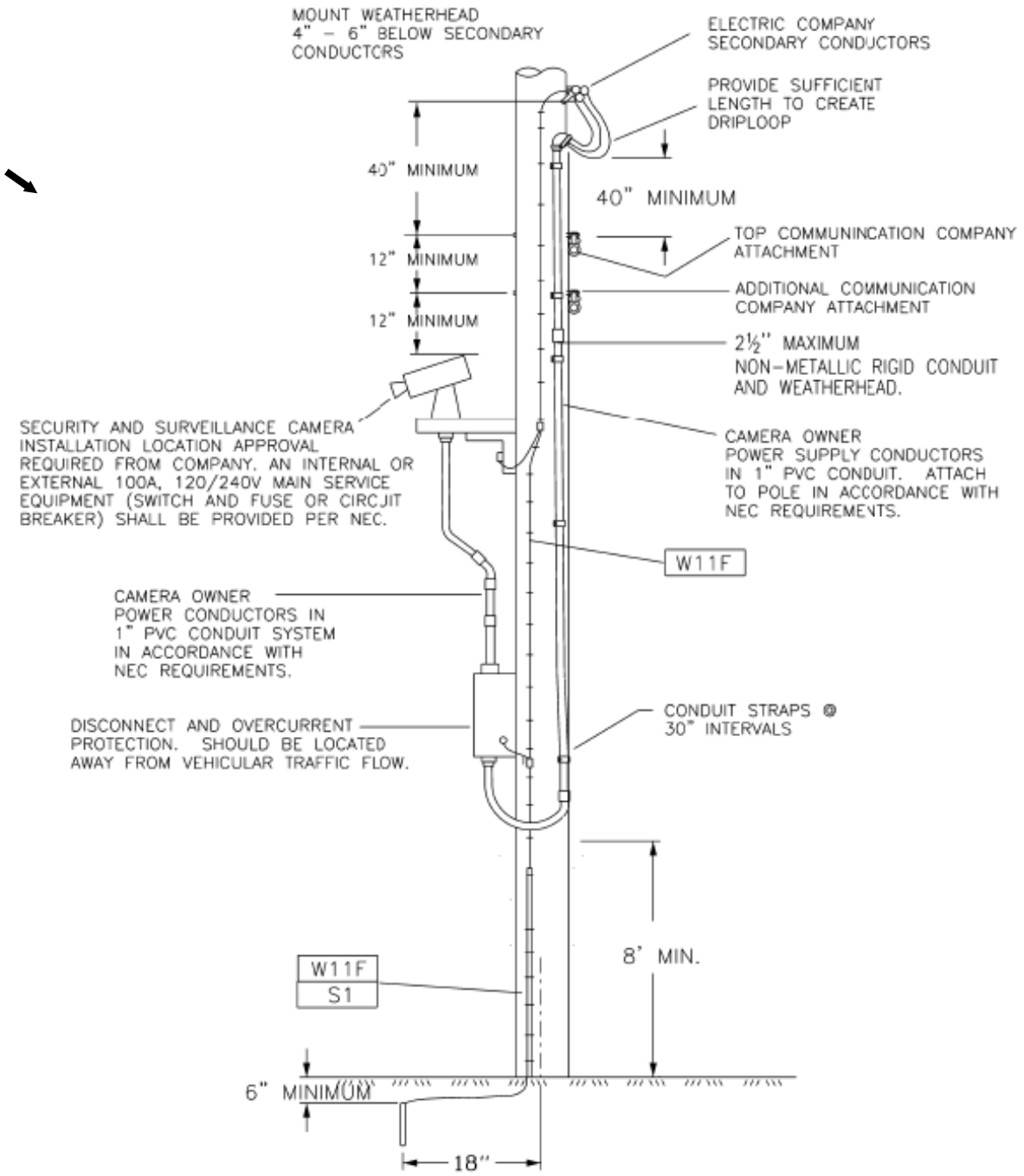
1. CAMERA POWER SUPPLY INSTALLATIONS SHOULD BE AVOIDED ON POLES WITH OTHER EQUIPMENT. POLES SHALL BE ACCESSIBLE BY BUCKET AND THE PROPOSED INSTALLATION SHALL BE FIELD REVIEWED AND APPROVED BY THE COMPANY AND ANY JOIINT POLE OWNERS PRIOR TO WORK.

2. CAMERA OWNER SHALL FURNISH, INSTALL OWN AND MAINTAIN ALL MATERIAL AND EQUIPMENT SHOWN ABOVE EXCEPT AS NOTED. REFER TO ESB #750 OR ELECTRIC SERVICE INFORMATION REQUIREMENTS (ESIR) FIGURE 923 DEPENDING ON LOCATION.

Designer	Drawing	Date
MPR	od17118	11/15/21

DISTRIBUTION WOOD POLE MOUNTED SECURITY OR SURVEILLANCE CAMERA METERED SERVICE

		PAGE NUMBER	ISSUE
ppl	OVERHEAD CONSTRUCTION STANDARD	17- 118	7/22



NOTES:

1. CAMERA POWER SUPPLY INSTALLATIONS SHOULD BE AVOIDED ON POLES WITH OTHER EQUIPMENT. POLES SHALL BE ACCESSIBLE BY BUCKET AND THE PROPOSED INSTALLATION SHALL BE FIELD REVIEWED AND APPROVED BY THE COMPANY AND ANY JOIINT POLE OWNERS PRIOR TO WORK.

2. CAMERA OWNER SHALL FURNISH, INSTA_L OWN AND MAINTAIN ALL MATERIAL AND EQUIPMENT SHOWN ABOVE EXCEPT AS NOTED. REFER TO ESB #750 OR ELECTRIC SERVICE INFORMATION REQUIREMENTS (ESIR) FIGURE 923 DEPENDING ON LOCATION.

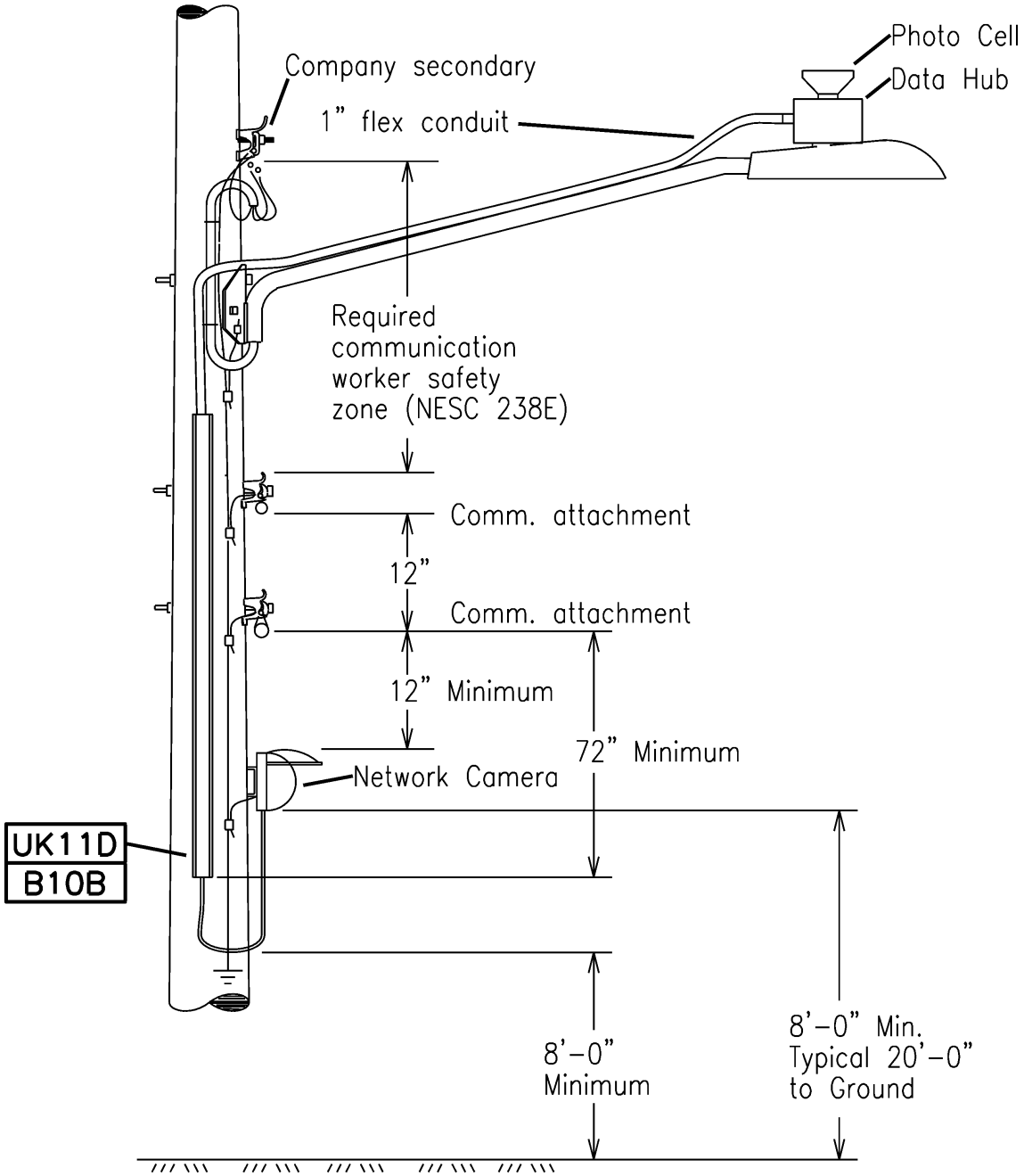
Designer	Drawing	Date
MPR	cd17119	11/15/21

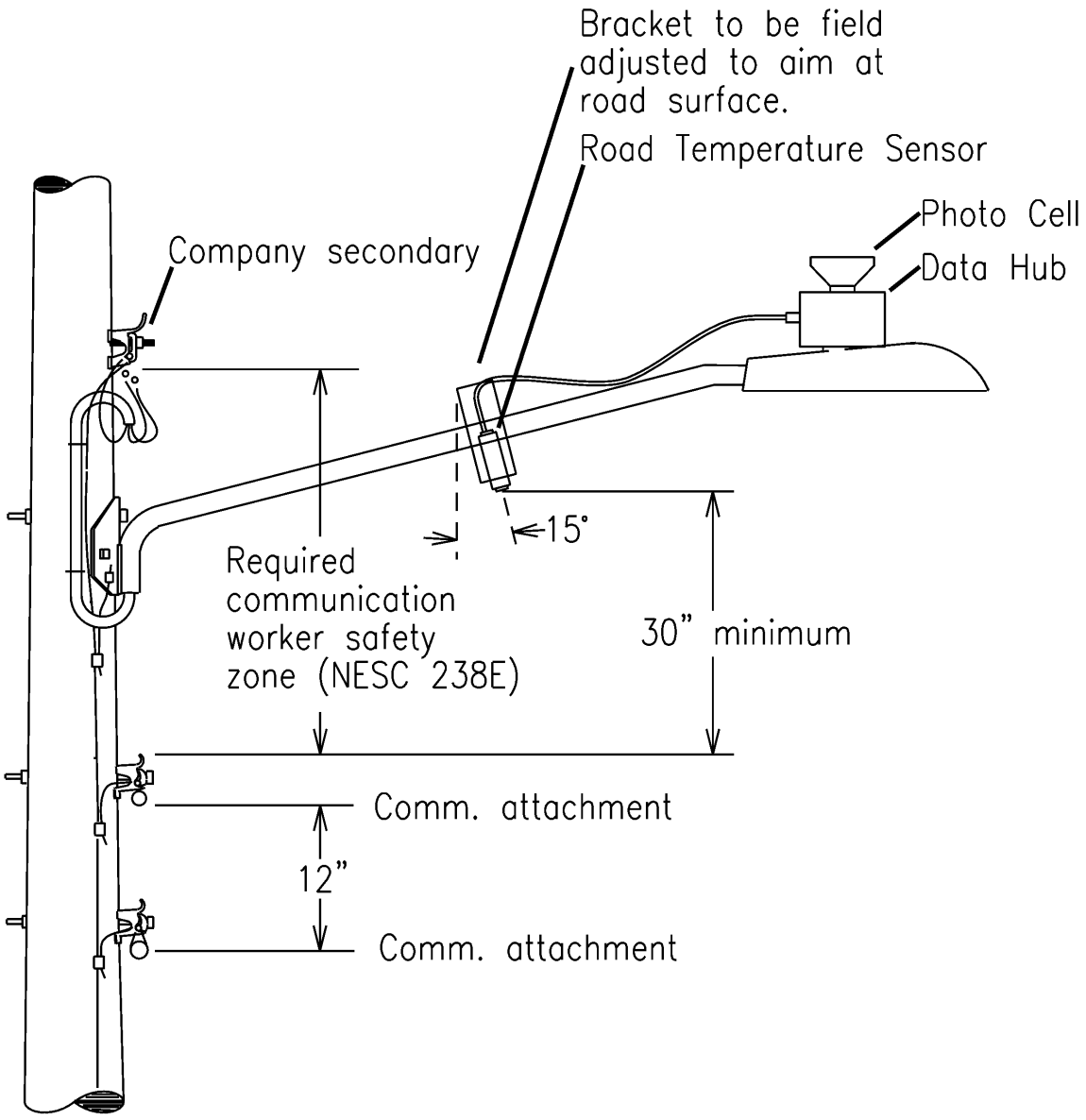
Supersedes 7/07 Issue – Corrected drip loop clearance requirement.

DISTRIBUTION WOOD POLE MOUNTED SECURITY OR SURVEILLANCE CAMERA NON-METERED SERVICE

ISSUE	PAGE NUMBER		
7/22	17-119	OVERHEAD CONSTRUCTION STANDARD	ppl

New construction drawing.

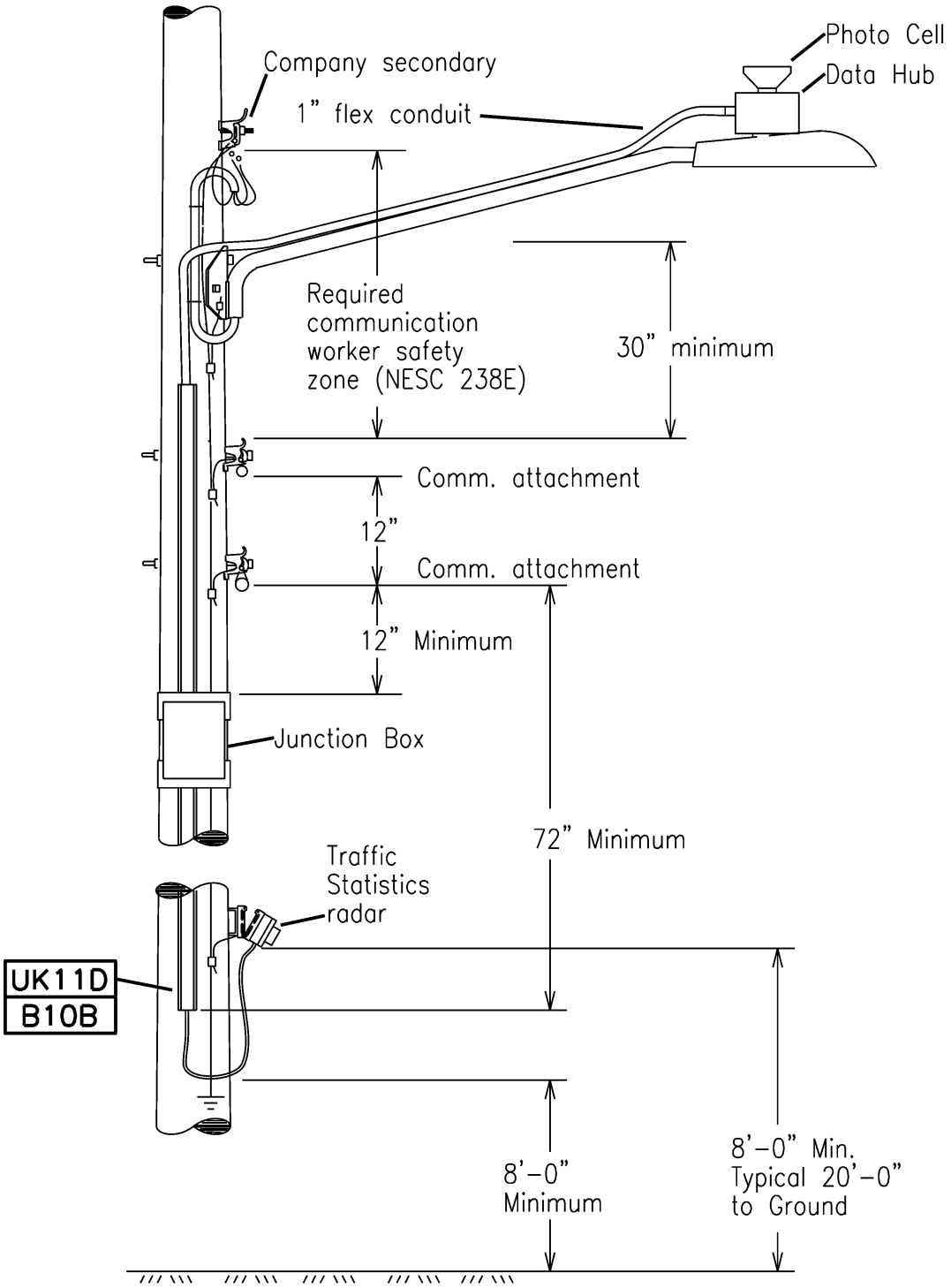


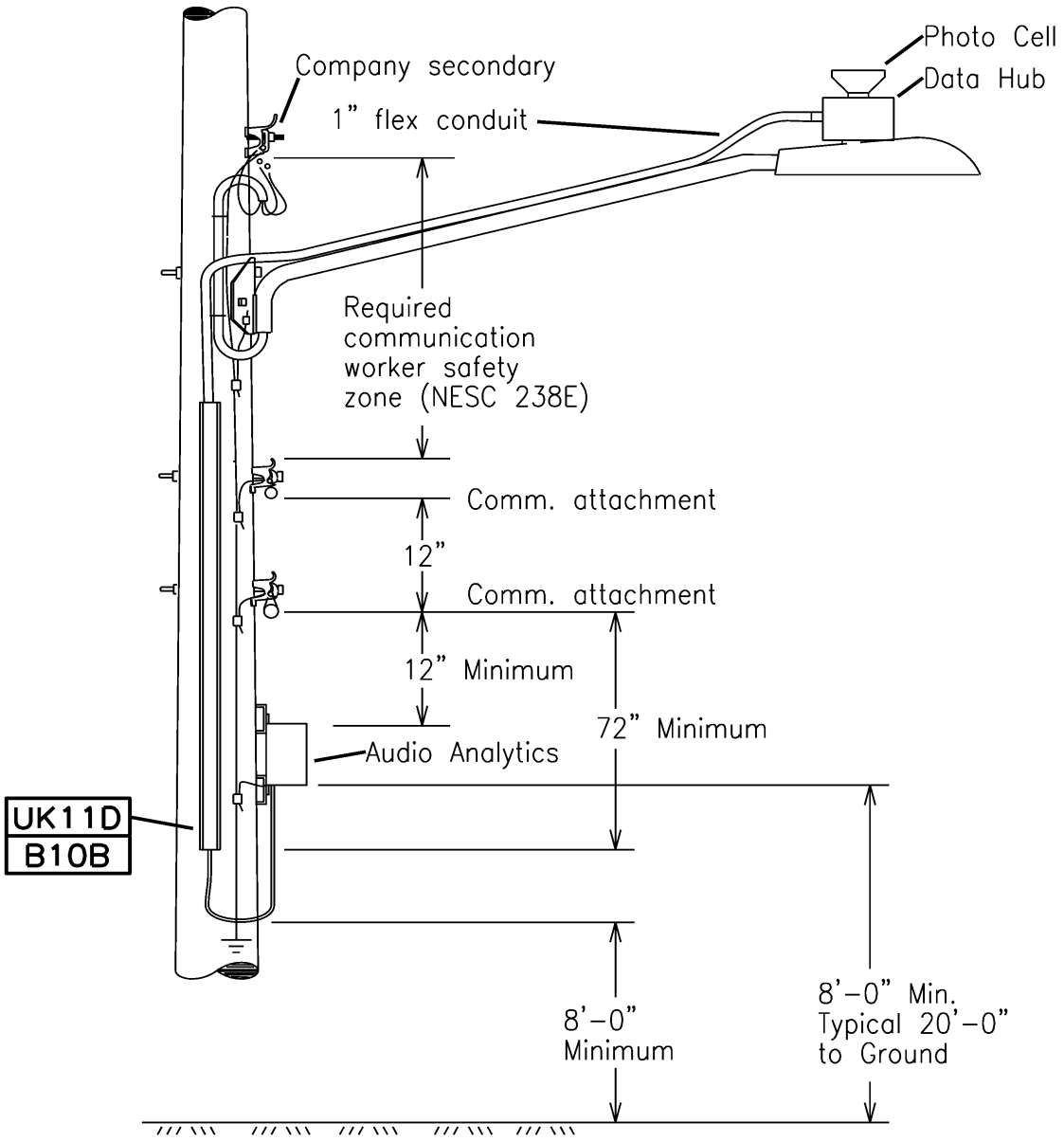


New construction drawing.

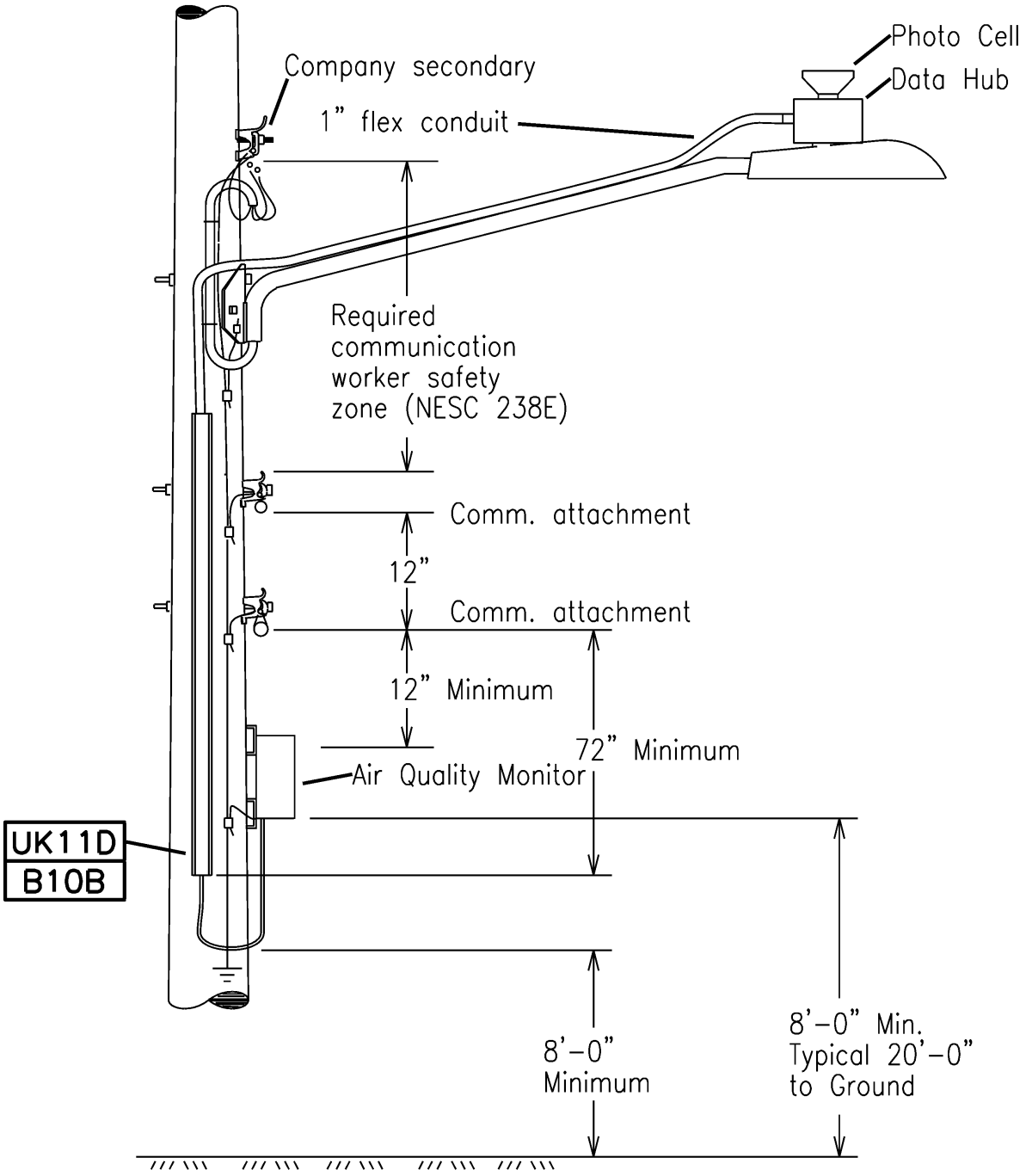
5-15kV DISTRIBUTION WOOD POLE MOUNTED COMMUNICATION EQUIPMENT – SMART CITY DATA HUB CONNECTED TEMPERATURE SENSOR			
ISSUE	**PAGE NUMBER**	**OVERHEAD CONSTRUCTION STANDARD**	ppl
7/20	**17-123**		

New construction drawing.



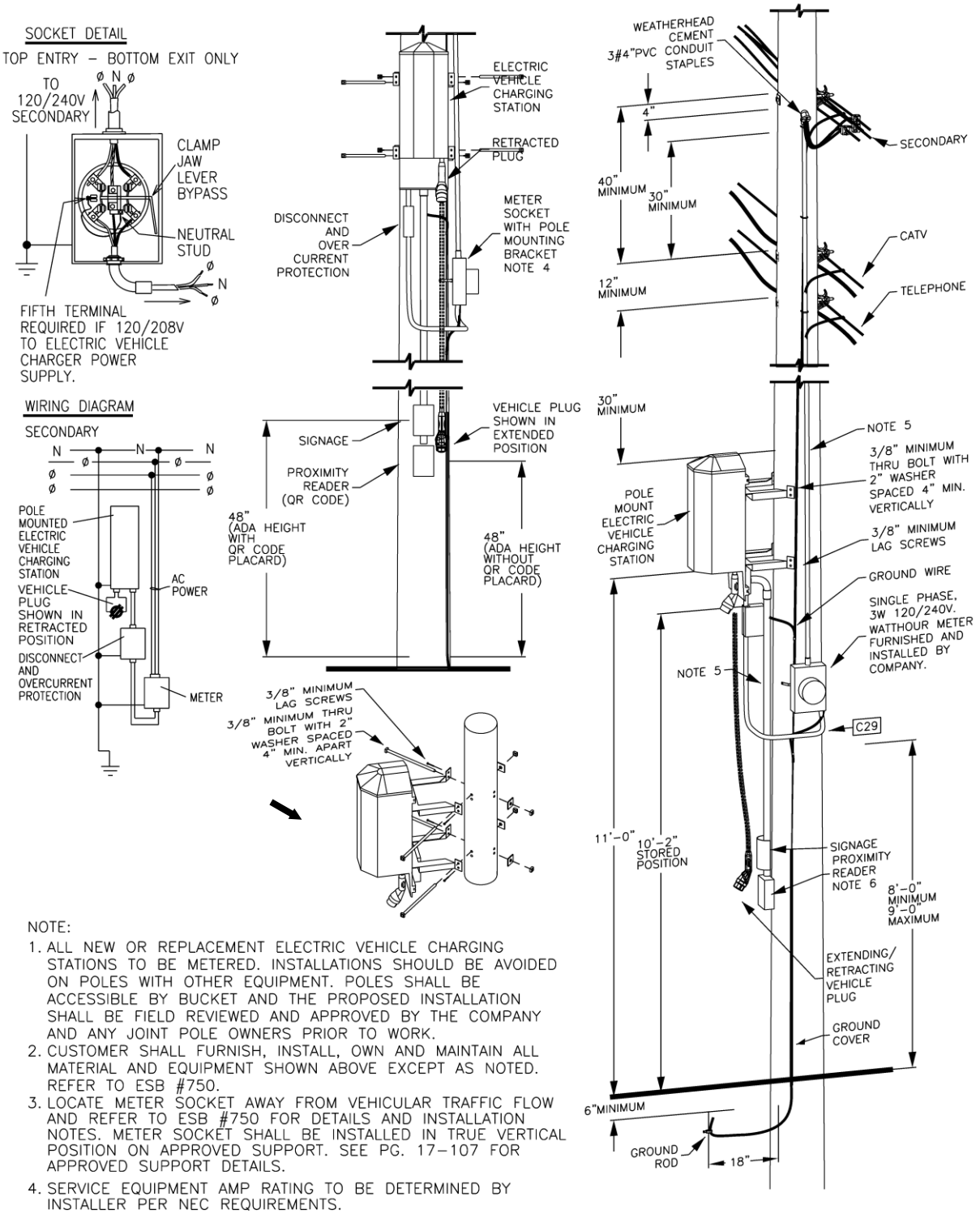


New construction drawing.



7/20 - New construction drawing.

5-15kV DISTRIBUTION WOOD POLE MOUNTED COMMUNICATION EQUIPMENT – SMART CITY DATA HUB CONNECTED AIR QUALITY MONITOR			
ppl	OVERHEAD CONSTRUCTION STANDARD	PAGE NUMBER	ISSUE
		17- 126	7/20



NOTE:

1. ALL NEW OR REPLACEMENT ELECTRIC VEHICLE CHARGING STATIONS TO BE METERED. INSTALLATIONS SHOULD BE AVOIDED ON POLES WITH OTHER EQUIPMENT. POLES SHALL BE ACCESSIBLE BY BUCKET AND THE PROPOSED INSTALLATION SHALL BE FIELD REVIEWED AND APPROVED BY THE COMPANY AND ANY JOINT POLE OWNERS PRIOR TO WORK.
2. CUSTOMER SHALL FURNISH, INSTALL, OWN AND MAINTAIN ALL MATERIAL AND EQUIPMENT SHOWN ABOVE EXCEPT AS NOTED. REFER TO ESB #750.
3. LOCATE METER SOCKET AWAY FROM VEHICULAR TRAFFIC FLOW AND REFER TO ESB #750 FOR DETAILS AND INSTALLATION NOTES. METER SOCKET SHALL BE INSTALLED IN TRUE VERTICAL POSITION ON APPROVED SUPPORT. SEE PG. 17–107 FOR APPROVED SUPPORT DETAILS.
4. SERVICE EQUIPMENT AMP RATING TO BE DETERMINED BY INSTALLER PER NEC REQUIREMENTS.
5. ALL CONDUCTORS IN NON–METALLIC RIGID CONDUIT ATTACH TO POLE IN ACCORDANCE WITH NEC REQUIREMENTS.
6. PROXIMITY READER AND SIGNAGE SHALL BE MOUNTED FLUSH TO POLE TO AVOID MAKING THE POLE READILY CLIMBABLE.

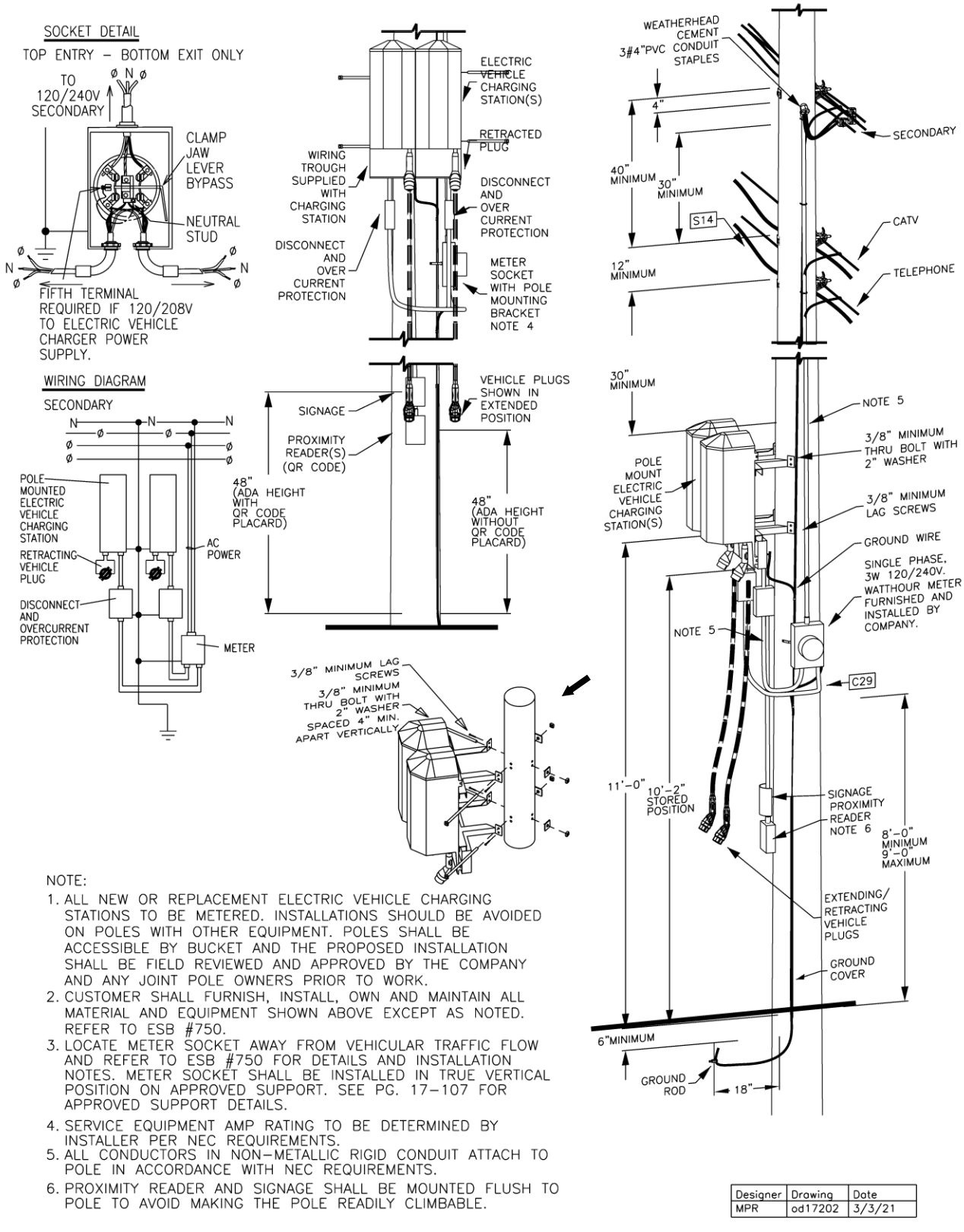
Designer	Drawing	Date
MPR	od17201	3/3/21

7/21 - New bracket to move charging station off pole face.

DISTRIBUTION WOOD POLE MOUNTED ELECTRIC VEHICLE CHARGING STATION – SINGLE CHARGERI

ISSUE	PAGE NUMBER		
7/21	17-201	OVERHEAD CONSTRUCTION STANDARD	ppl

7/21 - New bracket to move charging station off pole face.



NOTE:

1. ALL NEW OR REPLACEMENT ELECTRIC VEHICLE CHARGING STATIONS TO BE METERED. INSTALLATIONS SHOULD BE AVOIDED ON POLES WITH OTHER EQUIPMENT. POLES SHALL BE ACCESSIBLE BY BUCKET AND THE PROPOSED INSTALLATION SHALL BE FIELD REVIEWED AND APPROVED BY THE COMPANY AND ANY JOINT POLE OWNERS PRIOR TO WORK.
2. CUSTOMER SHALL FURNISH, INSTALL, OWN AND MAINTAIN ALL MATERIAL AND EQUIPMENT SHOWN ABOVE EXCEPT AS NOTED. REFER TO ESB #750.
3. LOCATE METER SOCKET AWAY FROM VEHICULAR TRAFFIC FLOW AND REFER TO ESB #750 FOR DETAILS AND INSTALLATION NOTES. METER SOCKET SHALL BE INSTALLED IN TRUE VERTICAL POSITION ON APPROVED SUPPORT. SEE PG. 17–107 FOR APPROVED SUPPORT DETAILS.
4. SERVICE EQUIPMENT AMP RATING TO BE DETERMINED BY INSTALLER PER NEC REQUIREMENTS.
5. ALL CONDUCTORS IN NON–METALLIC RIGID CONDUIT ATTACH TO POLE IN ACCORDANCE WITH NEC REQUIREMENTS.
6. PROXIMITY READER AND SIGNAGE SHALL BE MOUNTED FLUSH TO POLE TO AVOID MAKING THE POLE READILY CLIMBABLE.

Designer	Drawing	Date
MPR	od17202	3/3/21

DISTRIBUTION WOOD POLE MOUNTED ELECTRIC VEHICLE CHARGING STATION – DUAL CHARGER

		PAGE NUMBER	ISSUE
ppl	OVERHEAD CONSTRUCTION STANDARD	17- 202	7/21

Version	Date	Modification	Author(s)	Approval by (Name/Title)
8	7/22	• Corrected drip clearance in 17-105, 17-108, 17-109, 17-109A, 17-118, and17-119.		
7	7/21	• Revised ground clearance dimensions in 17-109A. • Add bracket to move charging station off pole face in 17-201 and 17-202.		
6	7/20	• Revised Space Allocation Table on 17-100 to reflect current agreement with Verizon. • Revised 17-102 to show clearances for streetlight mounted communication equipment. • Added new drawings 17-122 through 17-206 for Smart City applications. • Added new drawings 17-201 and 17-202 for distribution pole mounted electric vehicle chargers.		
5	7/19	• Revised footnotes 2 and 4, and deleted footnote 3 to tables on page 17-100. • Updated Note 3 on 17-103. • Corrected note numbering to match drawings in 17-110 through 17-117.		
4	7/16	• Revised 17.6.30 limits on antenna locations. • Revised antenna clearances and title on drawing 17-109.		
3	7/15	• Revised 17.6.30 limits on antenna locations. • Corrected issue dates on pages 17-109, 17-110, 17-111, 17-112, 17-113, 17-114, 17-115, 17-116, 17-117.		
2	7/12	• Added communication messenger spacing requirement in section 17.4.		
1	07/10	• Revised section 17.7.10 and drawings 17-109 through 17-117 to limit supply space communication cables to agreements made prior to January 1, 2020. • Revised drawing on page 17-102 and associated notes on new page 17-103.		