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# APPENDIX – A

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## Proposed Revisions to General Order 95 Rules

**Proposed Revision #1 – GO 95, Rule 94 (Antennas)**

Original .....	3
Strikeout /Underline .....	7

**Proposed Revision #2 – GO 95, Rule 91.3-B (Stepping)**

Original .....	16
Strikeout /Underline .....	16

**Proposed Revision #3 – GO 95, Rule 92.1-F2 (Vertical Clearances)**

Original .....	17
Strikeout /Underline .....	18

**Proposed Revision #4 – GO 95, Rule 38, Table 2, new Case 21**

Strikeout /Underline .....	19
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# Proposed Revision #1 – GO 95, Rule 94 (Antennas)

*Original*

## **94 Antennas**

### **94.1 Definition** (See Rule 20.0)

### **94.2 Maintenance and Inspection** (See Rules 31.1 and 31.2)

### **94.3 General Requirements**

On joint use poles supporting Class T, C, L or H Circuits (up to 50 kV), the following shall apply:

- A.** Antennas shall meet the requirements of Class C equipment, unless otherwise specified in this rule.
- B.** All associated elements of the antenna (e.g. associated cables, messengers, and pole line hardware) shall meet the requirements of Class C circuits.

### **94.4 Clearances**

- A.** Antennas and supporting elements (e.g. crossarms, brackets) shall maintain a vertical clearance of 6 feet from Supply Conductors operating at 0 – 50kV. (See Figure 94-1)
- B.** Antennas and supporting elements (e.g. crossarms, brackets) shall maintain a 2 ft. vertical separation from communication conductors and equipment. (See Figure 94-2)
- C.** Antennas shall maintain a 2 ft. horizontal clearance from centerline of pole. (See Figures 94-1 and 94-2)
- D.** Antennas shall have a vertical clearance above ground as specified in Table 1, Column B, Cases 1 to 6a.

### **94.5 Marking**

- A.** No antenna owner or operator shall install an antenna on a joint use pole unless such installation is subject to an agreement with the pole owner(s) that includes marking requirements that are substantially similar to and achieve at least the same safety standards as those set forth in Appendix H to GO 95.
- B.** Joint use poles shall be marked with a sign for each antenna installation as follows:
  - (1) Identification of the antenna operator
  - (2) A 24-hour contact number of antenna operator for Emergency or Information
  - (3) Unique identifier of the antenna installation.

#### **94.6 De-energizing**

No antenna owner or operator shall install an antenna on a joint use pole unless such installation is subject to an agreement with the pole owner(s) that includes de-energizing protocols that are substantially similar to and achieve at least the same safety standards as those set forth in Appendix H to GO 95.

#### **Exceptions:**

Antennas utilized by utilities for the sole purpose of operating and monitoring their supply system are exempt from this rule and shall only meet the construction and clearance requirements of supply equipment.

Antennas embedded in or attached to communication cables and messengers are exempt from this rule and shall only meet the construction requirements for Class C circuits.

# Rules 94.4-A & C

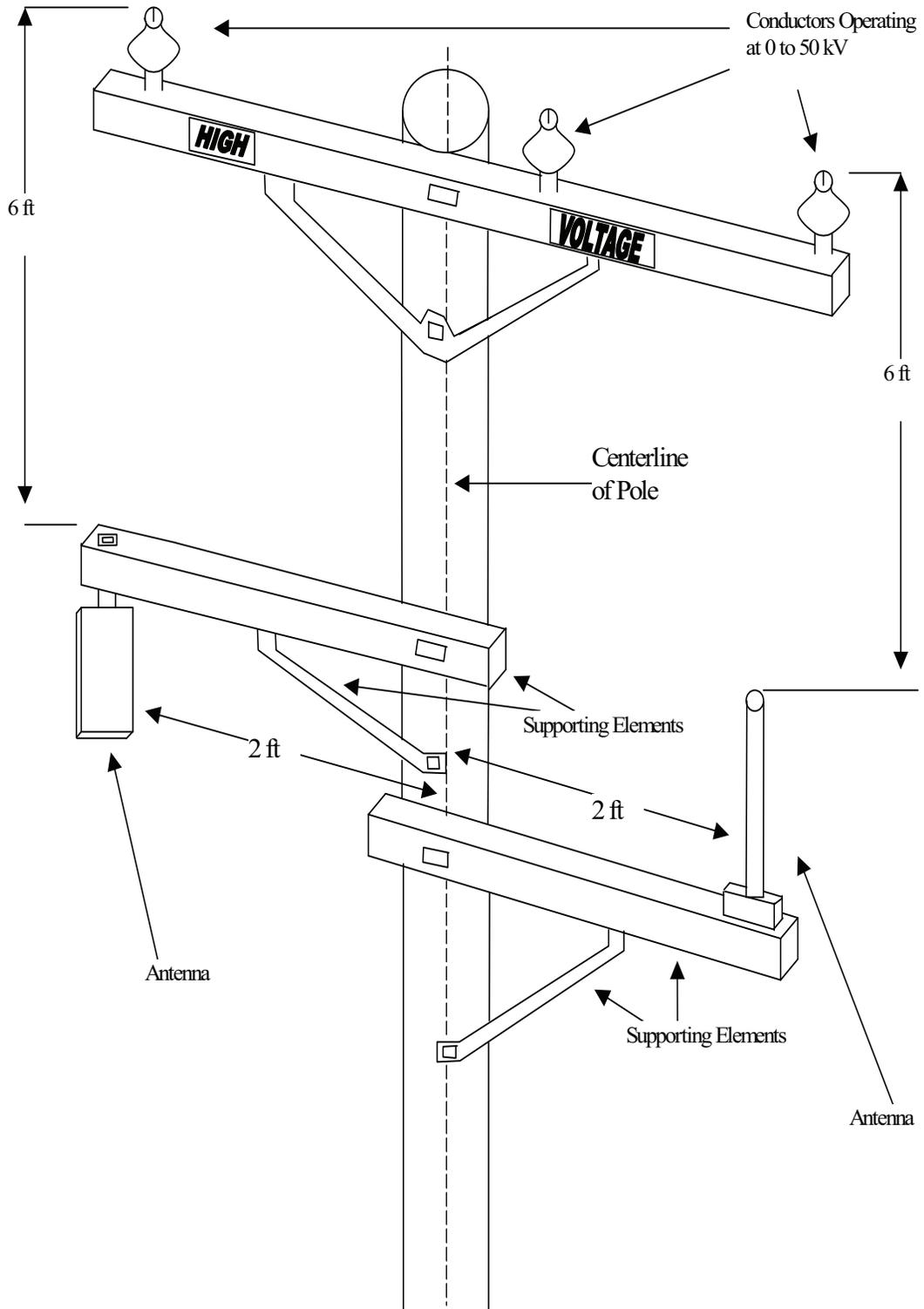


Figure 94-1

# Rules 94.4 B & C

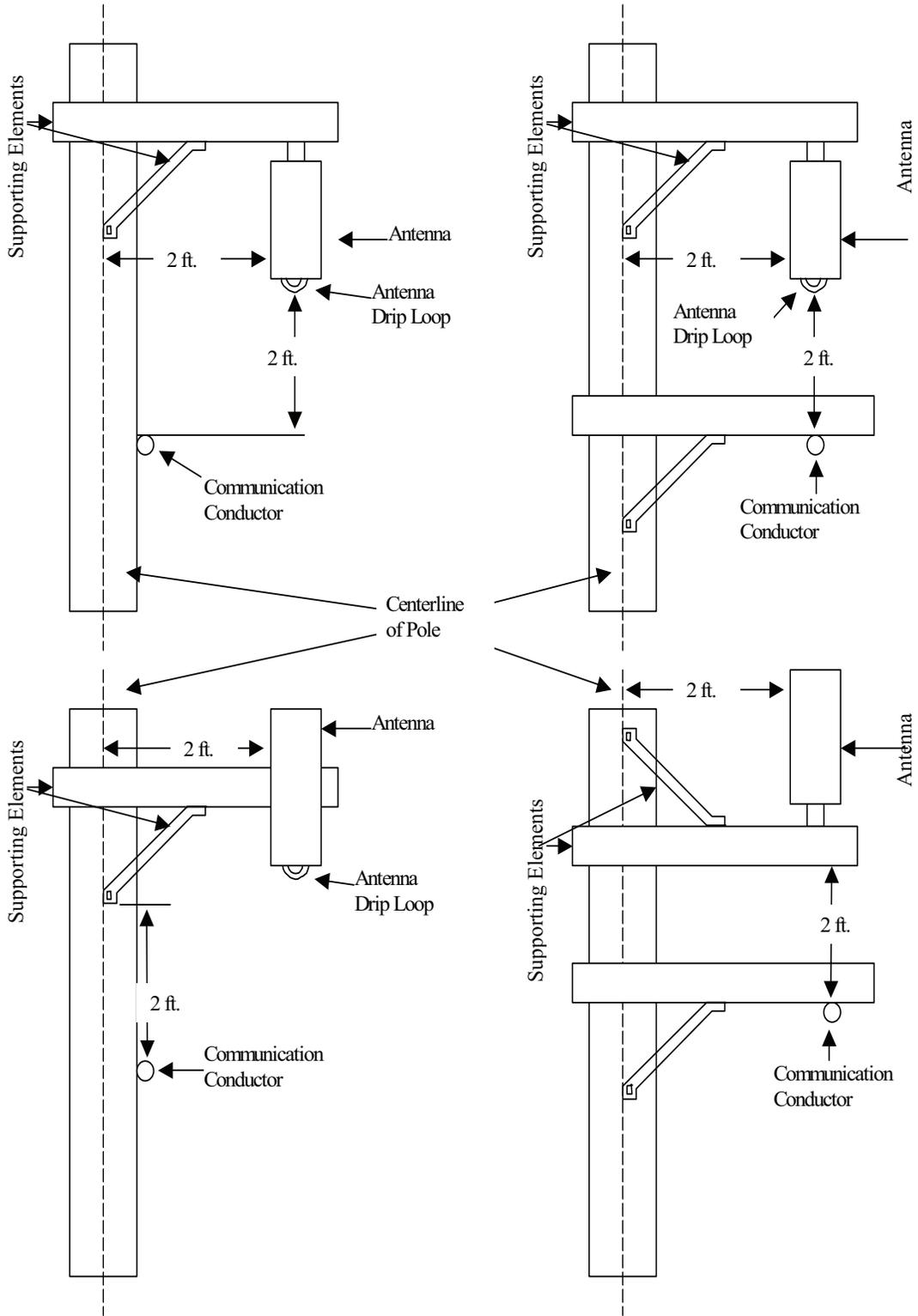


Figure 94-2

## 94 Antennas

### 94.1 Definition (See Rule 20.0)

### 94.2 Maintenance and Inspection (See Rules 31.1 and 31.2)

### 94.3 General Requirements

On joint use poles supporting Class T, C, L or H Circuits (up to 50 kV), the following shall apply:

- A. Antennas shall meet the requirements of Class C equipment, unless otherwise specified in this rule.
- B. All associated elements of the antenna (e.g. associated cables, messengers, and pole line hardware) shall meet the requirements of Class C circuits.

### 94.4 Material Strengths

- A. Support elements (e.g. arms, braces, brackets, pole top extensions, hardware) installed above supply lines must:
  - (1) Meet Grade A requirements.
  - (2) Conform to the requirements of Section IV.
- B. Support elements (e.g. arms, braces, brackets, pole top extensions, hardware) installed above or below communication lines (where supply lines are not attached) must:
  - (1) Meet Grade F requirements.
  - (2) Conform to the requirements of Section IV.

### 94.5 Clearances

- A. Antennas and supporting elements (e.g. crossarms, brackets) below supply lines shall maintain a vertical clearance of 6 feet from Supply Conductors operating at 0 –50kV. (See Figure 94-1)
- B. Antennas and supporting elements (e.g. crossarms, brackets) below communication lines shall maintain a 2 ft. vertical separation from communication conductors and equipment. (See Figure 94-2)
- C. Antennas, associated equipment (e.g. terminations, enclosures) and support elements installed above supply lines and/or communication lines of different ownership attached to the same structure shall maintain the vertical clearances specified in Rule 38, Table 2, Case 21, Columns A - H.

Note: Other vertical clearances between communication equipment and supply lines are specified in Rule 92.1-F (2).

- D.** Antennas, associated equipment (e.g. terminations, enclosures) and support elements, installed above supply lines and/or communication lines of different ownership, shall maintain the radial clearances from unattached supply and communication lines specified in Rule 38, Table 2, Case 3.
- E.** Antennas shall maintain a 2 ft. horizontal clearance from centerline of pole when affixed between supply and communication lines or below communication lines. (See Figures 94-1 and 94-2)
- F.** Horizontal clearances from centerline of the pole for Antennas, associated equipment and support elements, affixed between supply lines or at the top of a climbable pole, are not specified, but must be arranged so that qualified persons may climb the structure safely.
- G.** Antennas shall have a vertical clearance above ground as specified in Table 1, Column B, Cases 1 to 6a.

#### **94.6 Marking**

- A.** No antenna owner or operator shall install an antenna on a joint use pole unless such installation is subject to an agreement with the pole owner(s) that includes marking requirements that are substantially similar to and achieve at least the same safety standards as those set forth in Appendix H to GO 95.
- B.** Joint use poles shall be marked with a sign for each antenna installation as follows:

  - (1) Identification of the antenna operator.
  - (2) A 24-hour contact number of antenna operator for Emergency or Information.
  - (3) Unique identifier of the antenna installation.

#### **94.7 Climbing Space**

- A.** Climbing space above supply lines shall be maintained in accordance with Rule 54.7-A to:

  - (1) The bottom of the Antenna (including associated support elements) if affixed less than eight inches from the surface of the pole at the top of the pole or pole top extension.
  - (2) The top of the pole or pole top extension if the Antenna (including associated support elements) is affixed more than eight inches from the surface of the pole or pole top extension.

(3) The bottom of the uppermost Antenna (including associated support elements) if multiple Antennas are present at different levels above supply lines. (See Figure 94.3)

**B.** Climbing space above communication lines shall be maintained in accordance with Rule 84.7 to:

(1) The bottom of the Antenna (including associated support elements) at the top of the pole or pole top extension when affixed less than eight inches from the surface of the pole.

(2) The top of the pole or pole top extension if the Antenna (including associated support elements) is affixed more than eight inches from the surface of the pole or pole top extension.

(3) The bottom of the uppermost Antenna (including associated support elements) if multiple Antennas are present at different levels.

#### **94.8 Stepping (See Exception to Rule 91.3)**

#### **94.9 Risers and Vertical Runs**

**A.** Risers and vertical runs passing supply and/or communication lines, or space typically occupied by supply or communication lines, and equipment on nonmetallic structures (e.g. single wood, concrete, composite, fiberglass poles or multiple pole configurations) shall be suitably covered throughout its length; occur on a single pole; and shall be installed outside the climbing space in accordance with Rule 54.6-D 1, 2, 3 and 5.

(1) Associated cable runs extending to an adjacent structure or building shall be bonded to existing communication cables and messengers and effectively grounded at the originating structure. (See Rule 83.4) Where communication guard arm construction exists, the protective covering shall extend below the guard arm.

**B.** The suitable protective covering for risers and vertical runs passing supply lines or space typically occupied by supply lines and equipment shall extend no less than: (See Figure 94.3)

(1) 3 ft. above lines energized from 0 – 750 Volts.

(2) 7 ft. above lines energized from 750 – 22,500 Volts.

(3) 9 ft. above lines energized from 22,500 – 50,000 Volts.

- C.** Risers and vertical runs passing supply and/or communication lines, or space typically occupied by supply or communication lines and equipment, on metallic structures shall occur on a single structure, and be installed outside the climbing space in accordance with Rule 54.6-D 4.

#### **94.10 De-energizing**

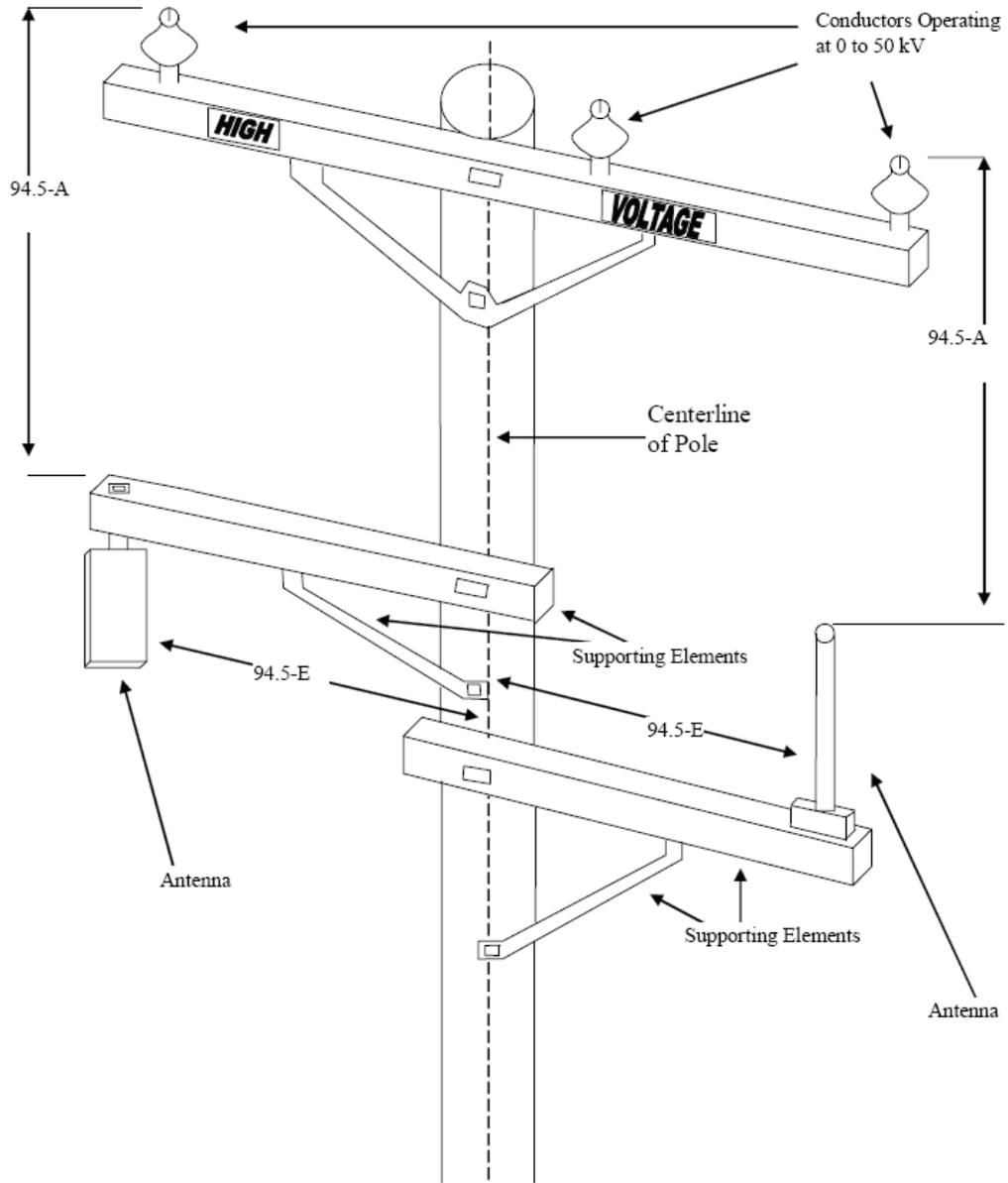
No antenna owner or operator shall install an antenna on a joint use pole unless such installation is subject to an agreement with the pole owner(s) that includes de-energizing protocols that are substantially similar to and achieve at least the same safety standards as set forth in Appendix H to GO 95.

#### **Exceptions:**

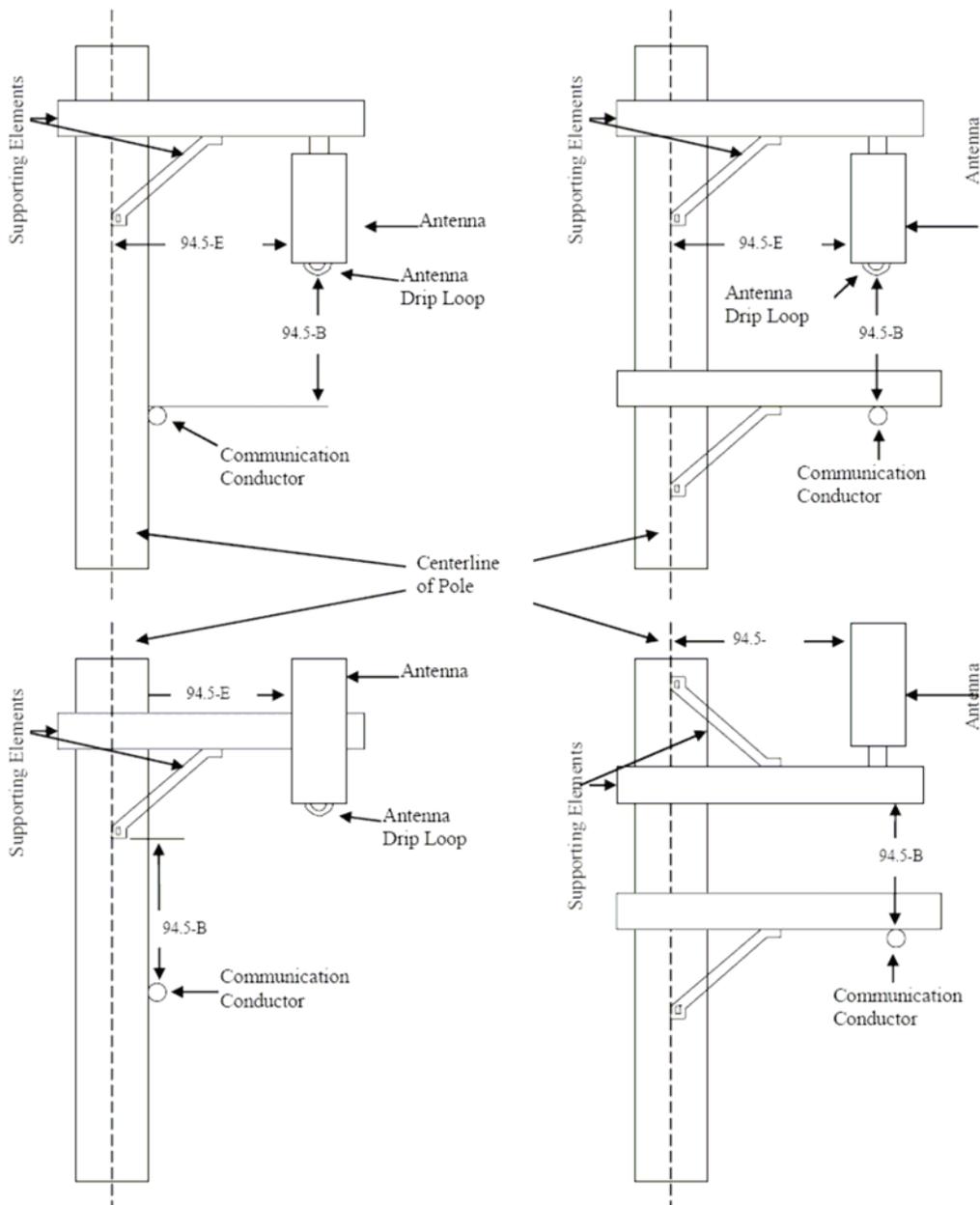
Antennas utilized by utilities for the sole purpose of operating and monitoring their supply system are exempt from this rule and shall only meet the construction and clearance requirements of supply equipment.

Antennas embedded in or attached to communication cables and messengers are exempt from this rule and shall only meet the construction requirements for Class C circuits.

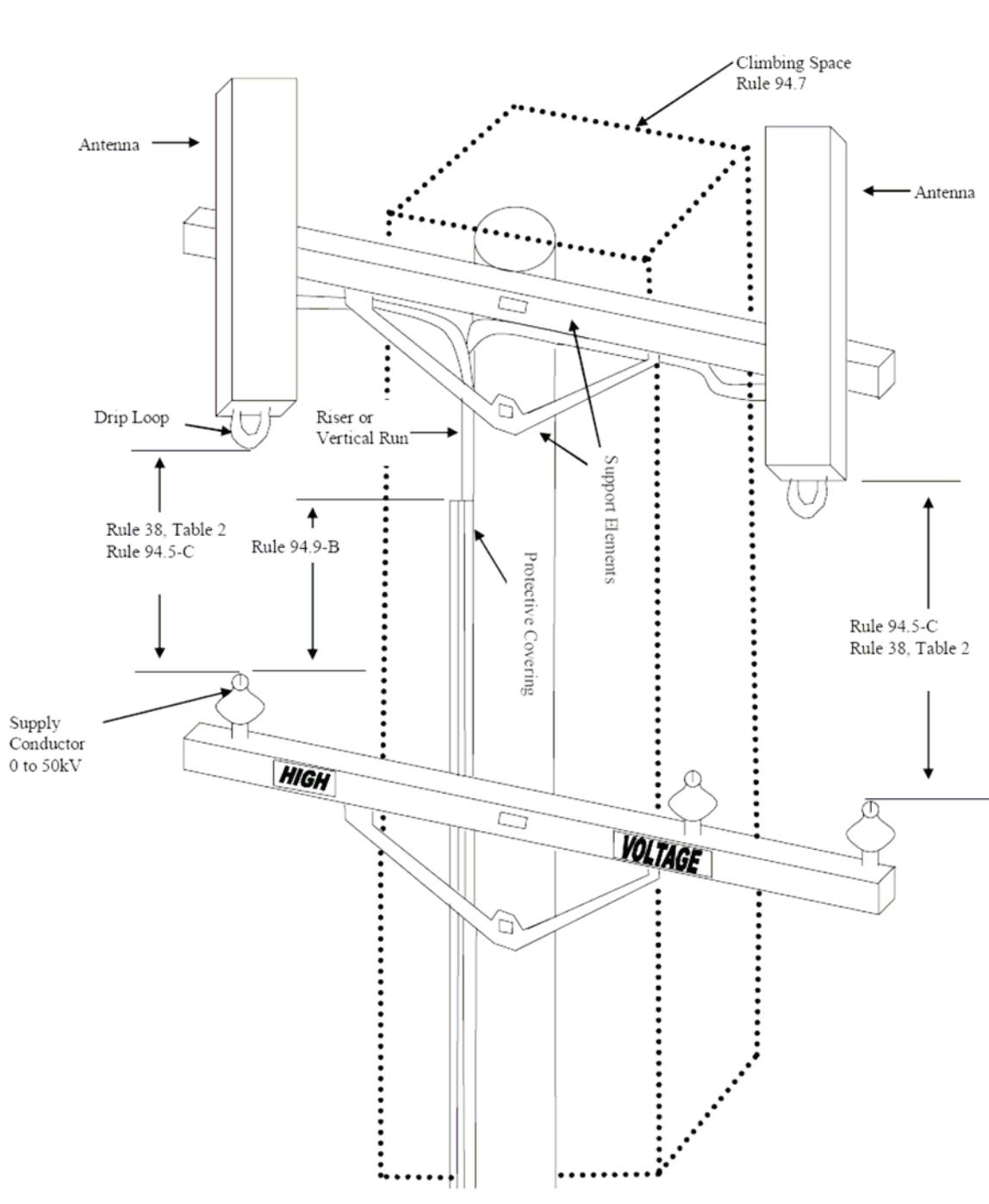
Rules 94.5-A & E



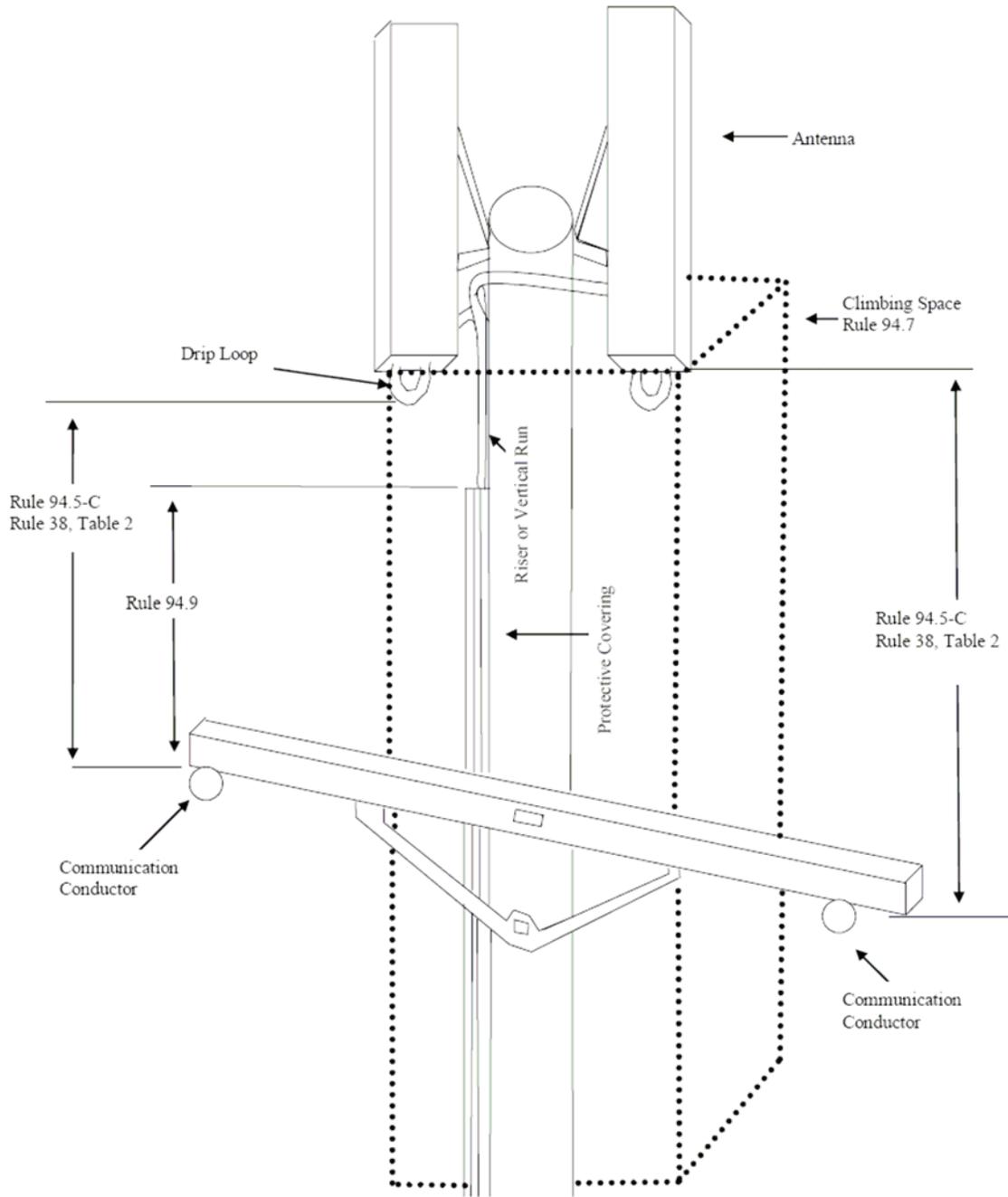
**Revised Figure 94.1**



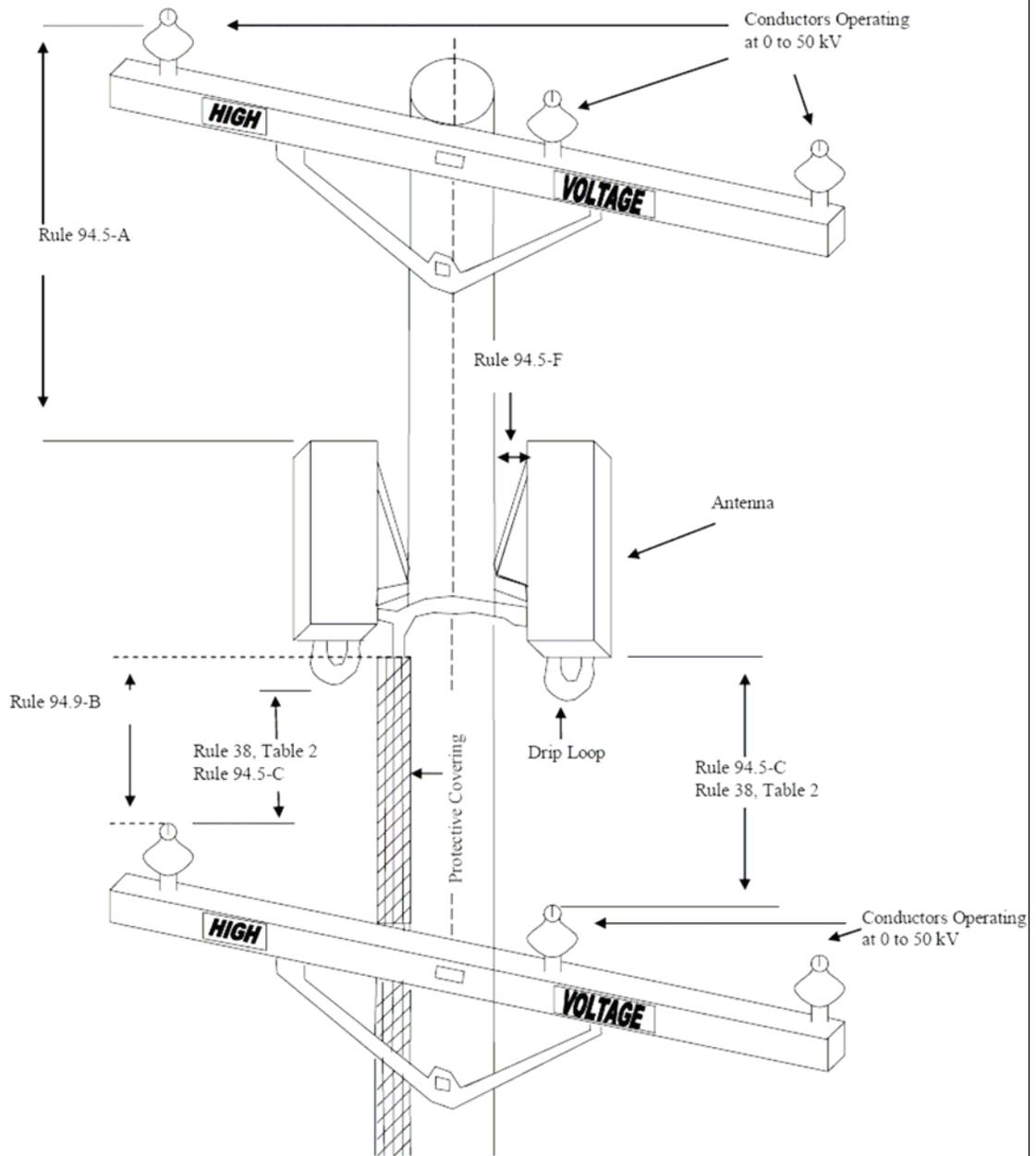
**Revised Figure 94.2**



**New Figure 94.3**



**New Figure 94.4**



**New Figure 94.5**

## Proposed Revision #2 - GO 95 Rule 91.3-B (Stepping)

### *Original*

#### **91.3 Stepping**

##### **B. Location of Steps**

The lowest step shall be not less than 7 feet 6 inches from the ground line and above this point steps shall be placed, with spacing between steps on the same side of the pole not exceeding 36 inches, at least to that conductor level above which only circuits operated and maintained by one party remain. Steps shall be so placed that runs or risers do not interfere with the free use of the steps.

### *Strikeout / Underline*

#### **91.3 Stepping**

##### **B. Location of Steps**

The lowest step shall be not less than 7 feet 6 inches from the ground line and above this point steps shall be placed, with spacing between steps on the same side of the pole not exceeding 36 inches, at least to that conductor level above which only circuits operated and maintained by one party remain. Steps shall be so placed that runs or risers do not interfere with the free use of the steps.

**Exception:** Steps are not required in a Supply utility's designated space when a third party Antenna is affixed above supply conductors.

## Proposed Revision #3 - Rule 92.1-F(2) (Vertical Clearances)

*Original*

### 92.1 Vertical Clearances

#### F. Between Conductors, Cables, Messengers and Miscellaneous Equipment)

- (2) **Cable Terminals or Metal Boxes:** On jointly used poles metal communication cable terminals, metal boxes or similar equipment which are less than 8 inches from center line of pole or are attached to surface of pole shall be placed not less than 6 feet vertically below or 3 feet above the level of the nearest unprotected supply conductor.

All parts of such metal terminals, boxes or similar equipment which are 8 inches or more from centerline of pole shall have vertical clearances from conductors not less than the clearance specified in Table 2, Col. C, Cases 8 to 13 inclusive.

**Exception:** The minimum vertical distance between all parts of such metal terminals, boxes or similar equipment which are 8 inches or more from the center line of pole and are supported by cable and/or messenger alone can be reduced to not less than 1 inch by mutual agreement between the affected owners (see Rule 38, Table 2, Case 8, Column C).

For clearance between street light drop wires and cables, other conductors, and metal boxes see Rules 58.5-B3 and 92.1-F5.

*Strikeout / Underline*

**92.1 Vertical Clearances**

**F. Between Conductors, Cables, Messengers and Miscellaneous Equipment)**

- (2) **Cable Terminals or Metal Boxes:** On jointly used poles, ~~all parts of metal communication cable terminals, metal boxes or similar equipment which are less than 8 inches from center line of pole or are attached to surface of pole shall be placed not less than 6 feet vertically below or 3 feet above the level of the nearest unprotected supply conductor.~~

~~All parts of such metal terminals, boxes or similar equipment which are 8 inches or more from center line of pole shall have~~ maintain vertical clearances from conductors not less than ~~those clearance~~ specified in Rule 38 Table 2, Col. C, Cases 8 to 13 inclusive.

**Exception:** The minimum vertical distance between all parts of such metal terminals, boxes or similar equipment which are 8 inches or more from the center line of pole and are supported by cable and/or messenger alone can be reduced to not less than 1 inch by mutual agreement between the affected owners (see Rule 38, Table 2, Case 8, Column C).

For clearance between street light drop wires and cables, other conductors, and metal boxes see Rules 58.5–B3 and 92.1–F5.

For vertical clearance above supply and/or communication lines for Antennas and associated elements on the same support structure see Rule 38, Table 2, Case 21.

# Proposed Revision # 4 – new Rule 38, Table 2, Case 21

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Case No.	Nature of Class and Voltage of Wire, Cable or Conductor Concerned	A Span Wires, Guys and Messengers	B Trolley Contact Conductors 0-750 Volts	C Communication Conductors (Including Open Wire, Cables and Service Drops	D 0-750 Volts (Including Service Drops) and Trolley Feeders (a)	E 750 - 7,500 Volts	F 7,500 - 20,000 Volts	G 20,000 - 35,000 Volts	H 35,000 - 75,000 Volts	I 75,000 - 150,000 Volts	J 150,000 - 300,000 Volts
	<u>Vertical clearance above supply and/or communication lines</u>										
<u>21</u>	Antennas and associated elements on the same support structure. (ft. xx)	<u>24 (ww)</u>	<u>48 (ww)</u>	<u>24 (uu)</u>	<u>48 (ww)</u>	<u>96 (ww, zz)</u>	<u>96 (ww, zz)</u>	<u>120 (ww, yy)</u>	<u>120 (v.v., ww)</u>	-	-

(tt) Clearances for supply antennas from supply and communication lines ... 58.6 and 54.4-G

(uu) May be reduced to 10 inches for cables installed/operated by antenna owner.

(vv) Up to 50 kV.

(ww) Pole top antenna lead-in wires, drip loops or incidental wiring shall not extend more than 12 inches below the specified clearance.

(xx) For clearances below supply and communication lines and between supply and communication lines see Rule 94.5A-B.

(yy) May be reduced to 96 inches for circuits up to 22,500 volts.

(zz) May be reduced to 72 inches for circuits up to 22,500 volts provided the antenna is suitably isolated. Where a reduction to 72 inches is allowed, the clearance for associated risers and vertical runs specified in 94.9-B2 may be reduced to 5 feet.

# **APPENDIX – B**

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Proposed Final Versions  
of New and Revised  
General Order 95 Rules

**PR #1 – GO 95, Rule 94 (Antennas)**

Proposed Final..... 22

**PR #2 – GO 95, Rule 91.3-B (Stepping)**

Proposed Final..... 31

**PR #3 – GO 95, Rule 92.1-F2 (Vertical Clearances)**

Proposed Final..... 31

**PR #4 – GO 95, Rule 38, Table 2, new Case 21**

Proposed Final..... 32

# Proposed Final #1 – GO 95, Rule 94 (Antennas)

## 94 Antennas

### 94.1 Definition (See Rule 20.0)

### 94.2 Maintenance and Inspection (See Rules 31.1 and 31.2)

### 94.3 General Requirements

On joint use poles supporting Class T, C, L or H Circuits (up to 50 kV), the following shall apply:

- A. Antennas shall meet the requirements of Class C equipment, unless otherwise specified in this rule.
- B. All associated elements of the antenna (e.g. associated cables, messengers, and pole line hardware) shall meet the requirements of Class C circuits.

### 94.4 Material Strengths

- A. Support elements (e.g. arms, braces, brackets, pole top extensions, hardware) installed above supply lines must:
  - (1) Meet Grade A requirements.
  - (2) Conform to the requirements of Section IV.
- B. Support elements (e.g. arms, braces, brackets, pole top extensions, hardware) installed above or below communication lines (where supply lines are not attached) must:
  - (1) Meet Grade F requirements.
  - (2) Conform to the requirements of Section IV.

### 94.5 Clearances

- A. Antennas and supporting elements (e.g. crossarms, brackets) below supply lines shall maintain a vertical clearance of 6 feet from Supply Conductors operating at 0 –50kV. (See Figure 94-1)
- B. Antennas and supporting elements (e.g. crossarms, brackets) below communication lines shall maintain a 2 ft. vertical separation from communication conductors and equipment. (See Figure 94-2)
- C. Antennas, associated equipment (e.g. terminations, enclosures) and support elements installed above supply lines and/or communication lines of different ownership attached to the same structure shall maintain the vertical clearances specified in Rule 38, Table 2, Case 21, Columns A - H.

Note: Other vertical clearances between communication equipment and supply lines are specified in Rule 92.1-F (2).

- D.** Antennas, associated equipment (e.g. terminations, enclosures) and support elements, installed above supply lines and/or communication lines of different ownership, shall maintain the radial clearances from unattached supply and communication lines specified in Rule 38, Table 2, Case 3.
- E.** Antennas shall maintain a 2 ft. horizontal clearance from centerline of pole when affixed between supply and communication lines or below communication lines. (See Figures 94-1 and 94-2)
- F.** Horizontal clearances from centerline of the pole for Antennas, associated equipment and support elements, affixed between supply lines or at the top of a climbable pole, are not specified, but must be arranged so that qualified persons may climb the structure safely.
- G.** Antennas shall have a vertical clearance above ground as specified in Table 1, Column B, Cases 1 to 6a.

#### **94.6 Marking**

- A.** No antenna owner or operator shall install an antenna on a joint use pole unless such installation is subject to an agreement with the pole owner(s) that includes marking requirements that are substantially similar to and achieve at least the same safety standards as those set forth in Appendix H to GO 95.
- B.** Joint use poles shall be marked with a sign for each antenna installation as follows:
  - (1) Identification of the antenna operator.
  - (2) A 24-hour contact number of antenna operator for Emergency or Information.
  - (3) Unique identifier of the antenna installation.

#### **94.7 Climbing Space**

- A.** Climbing space above supply lines shall be maintained in accordance with Rule 54.7-A to:
  - (1) The bottom of the Antenna (including associated support elements) if affixed less than eight inches from the surface of the pole at the top of the pole or pole top extension.
  - (2) The top of the pole or pole top extension if the Antenna (including associated support elements) is affixed more than eight inches from the surface of the pole or pole top extension.

- (3) The bottom of the uppermost Antenna (including associated support elements) if multiple Antennas are present at different levels above supply lines. (See Figure 94.3)
- B.** Climbing space above communication lines shall be maintained in accordance with Rule 84.7 to:
- (1) The bottom of the Antenna (including associated support elements) at the top of the pole or pole top extension when affixed less than eight inches from the surface of the pole.
  - (2) The top of the pole or pole top extension if the Antenna (including associated support elements) is affixed more than eight inches from the surface of the pole or pole top extension.
  - (3) The bottom of the uppermost Antenna (including associated support elements) if multiple Antennas are present at different levels.

#### **94.8 Stepping (See Exception to Rule 91.3)**

#### **94.9 Risers and Vertical Runs**

- A.** Risers and vertical runs passing supply and/or communication lines, or space typically occupied by supply or communication lines, and equipment on nonmetallic structures (e.g. single wood, concrete, composite, fiberglass poles or multiple pole configurations) shall be suitably covered throughout its length; occur on a single pole; and shall be installed outside the climbing space in accordance with Rule 54.6-D 1, 2, 3 and 5.
- (1) Associated cable runs extending to an adjacent structure or building shall be bonded to existing communication cables and messengers and effectively grounded at the originating structure. (See Rule 83.4) Where communication guard arm construction exists, the protective covering shall extend below the guard arm.
- B.** The suitable protective covering for risers and vertical runs passing supply lines or space typically occupied by supply lines and equipment shall extend no less than: (See Figure 94.3)
- (1) 3 ft. above lines energized from 0 – 750 Volts.
  - (2) 7 ft. above lines energized from 750 – 22,500 Volts.
  - (3) 9 ft. above lines energized from 22,500 – 50,000 Volts.

- C. Risers and vertical runs passing supply and/or communication lines, or space typically occupied by supply or communication lines and equipment, on metallic structures shall occur on a single structure, and be installed outside the climbing space in accordance with Rule 54.6-D 4.

#### **94.10 De-energizing**

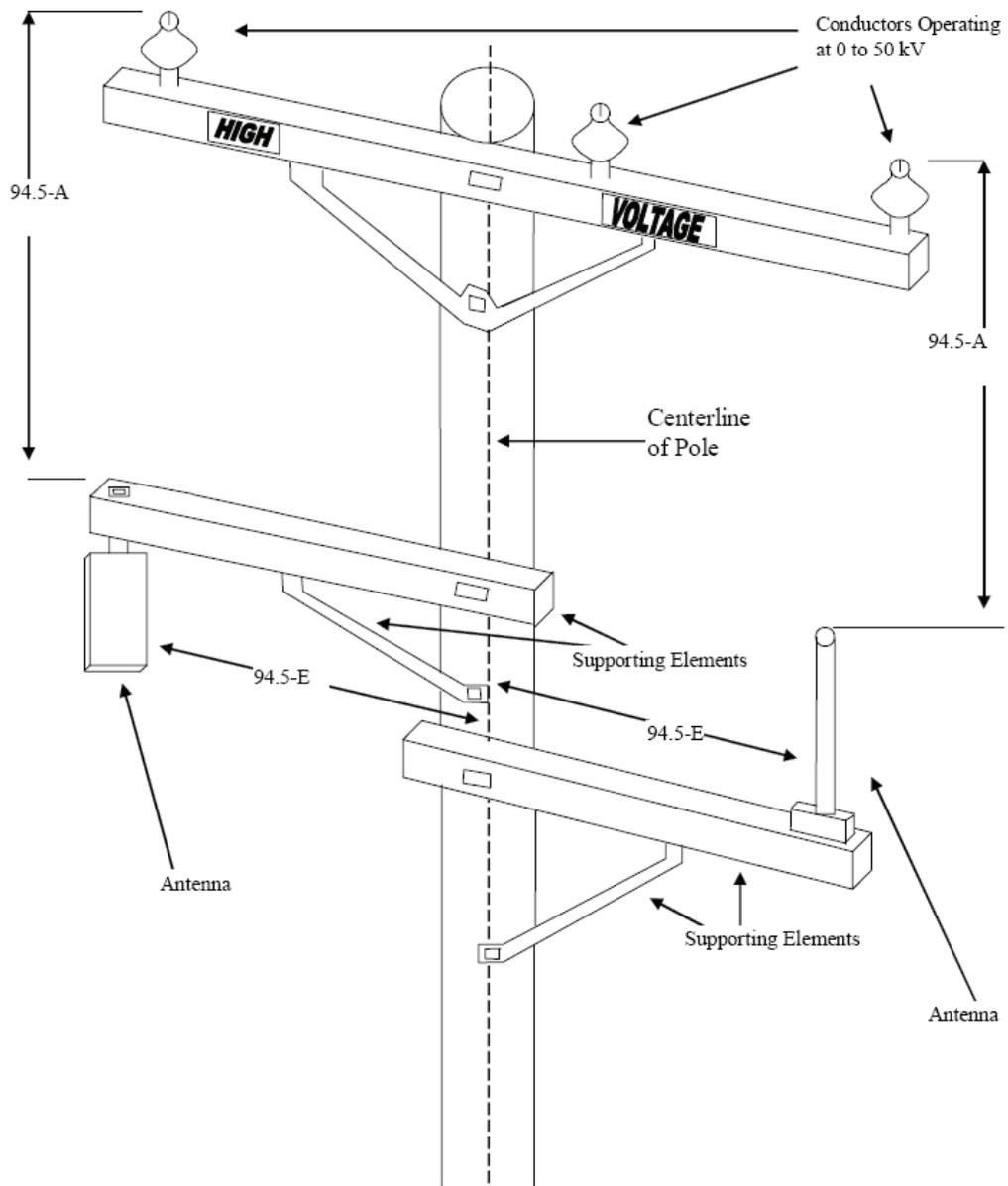
No antenna owner or operator shall install an antenna on a joint use pole unless such installation is subject to an agreement with the pole owner(s) that includes de-energizing protocols that are substantially similar to and achieve at least the same safety standards as set forth in Appendix H to GO 95.

#### **Exceptions:**

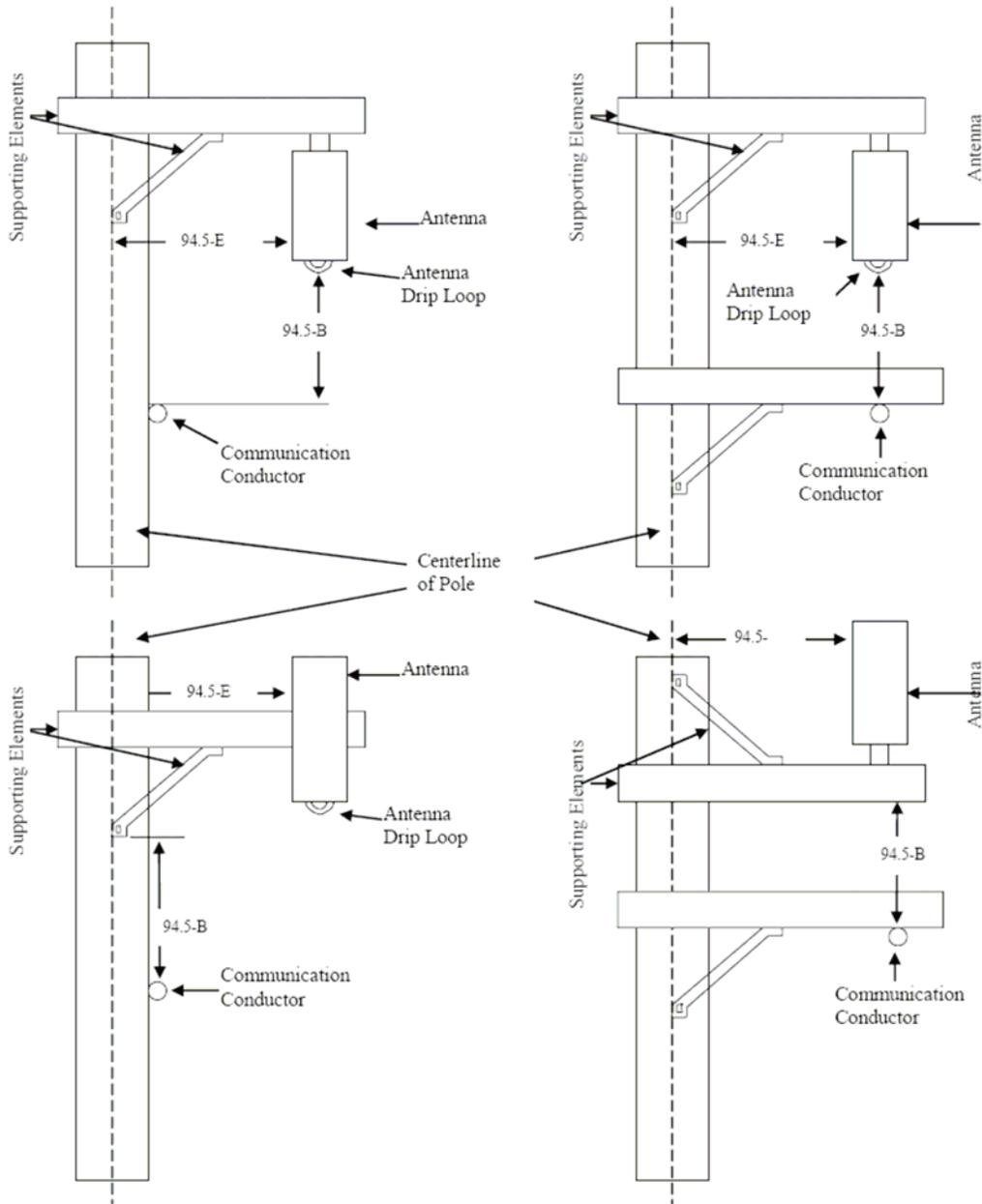
Antennas utilized by utilities for the sole purpose of operating and monitoring their supply system are exempt from this rule and shall only meet the construction and clearance requirements of supply equipment.

Antennas embedded in or attached to communication cables and messengers are exempt from this rule and shall only meet the construction requirements for Class C circuits.

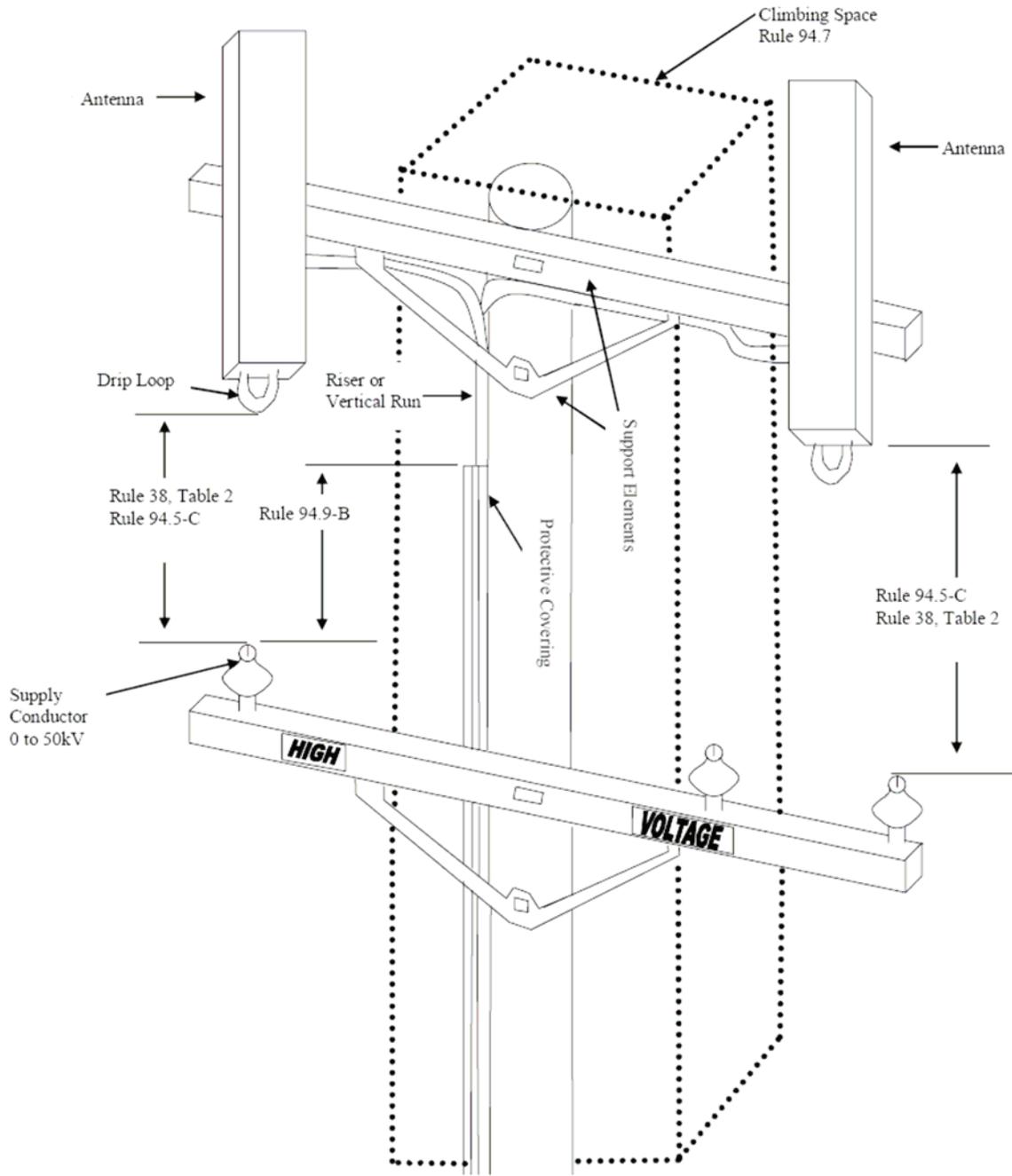
# Rules 94.5-A & E



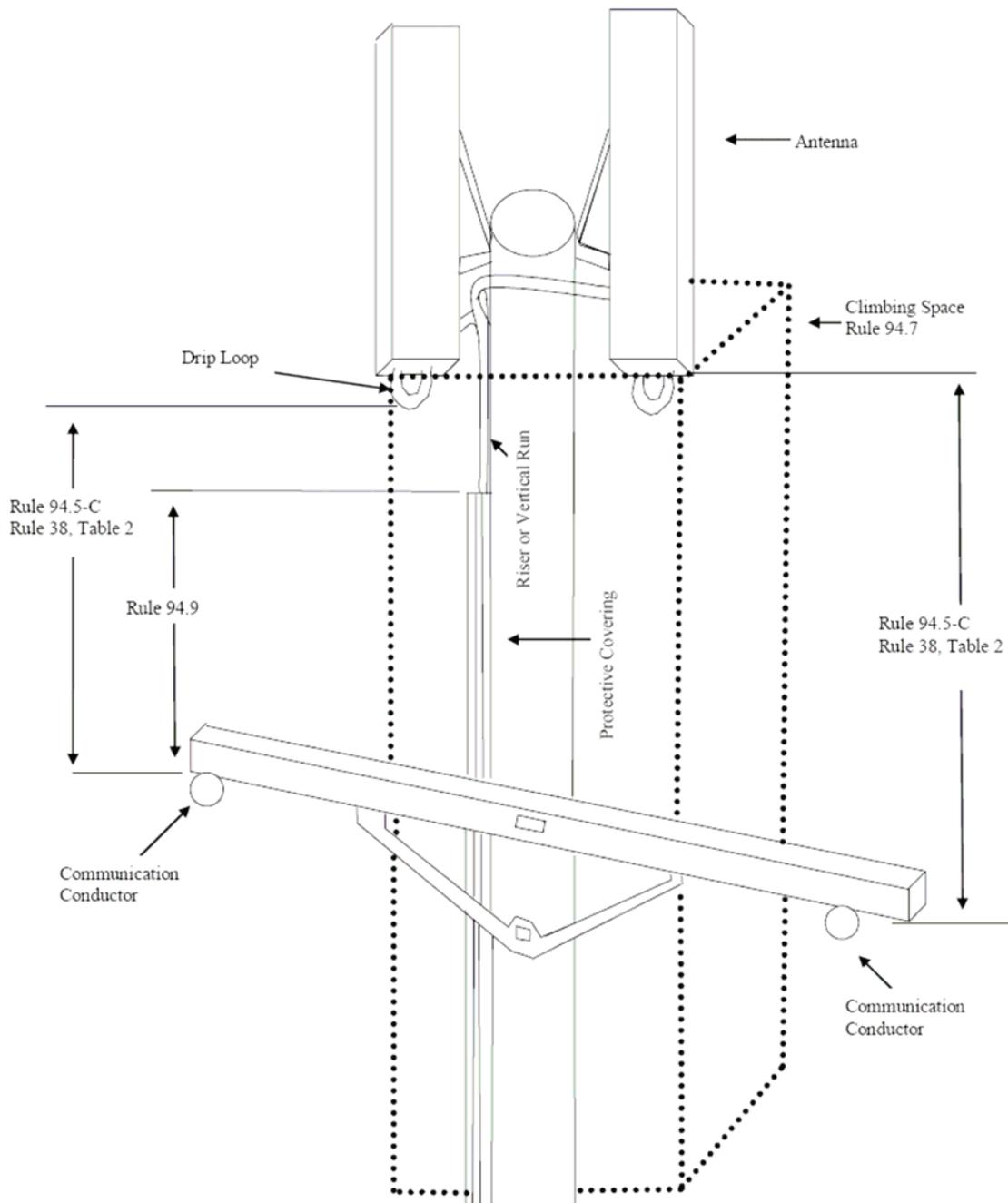
**Figure 94.1**



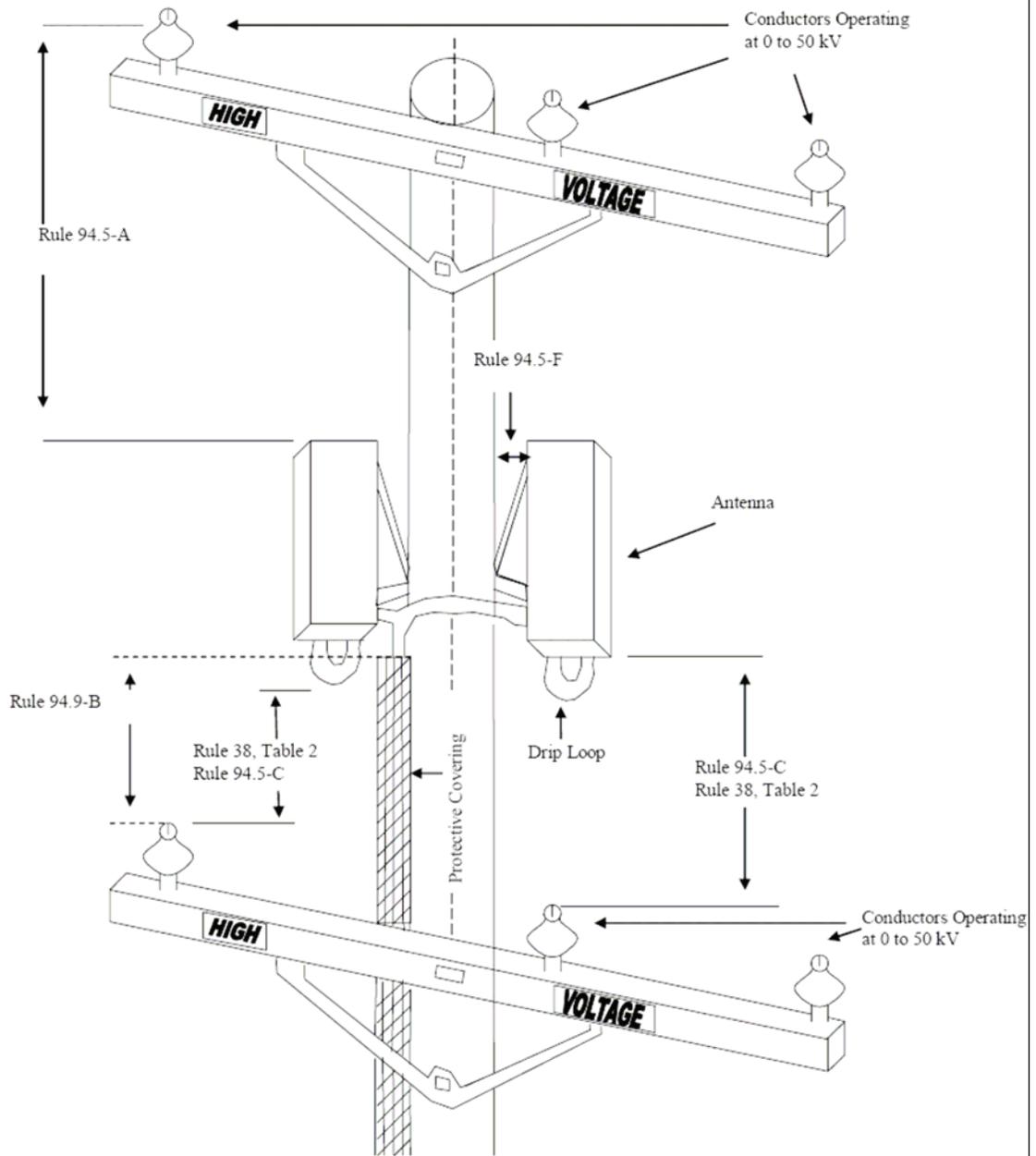
**Figure 94.2**



**Figure 94.3**



**Figure 94.4**



**Figure 94.5**

## Proposed Final #2 - GO 95 Rule 91.3-B (Stepping)

### 91.3 Stepping

#### B. Location of Steps

The lowest step shall be not less than 7 feet 6 inches from the ground line and above this point steps shall be placed, with spacing between steps on the same side of the pole not exceeding 36 inches, at least to that conductor level above which only circuits operated and maintained by one party remain. Steps shall be so placed that runs or risers do not interfere with the free use of the steps.

**Exception:** Steps are not required in a Supply utility's designated space when a third party Antenna is affixed above supply conductors.

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## Proposed Final #3 – GO 95, Rule 92.1-F(2) (Vertical Clearances)

### 92.1 Vertical Clearances

#### F. Between Conductors, Cables, Messengers and Miscellaneous Equipment)

(2) **Cable Terminals or Metal Boxes:** On jointly used poles, all parts of metal communication cable terminals, metal boxes or similar equipment shall maintain vertical clearances from conductors not less than those specified in Table 2, Col. C, Cases 8 to 13 inclusive.

**Exception:** The minimum vertical distance between all parts of such metal terminals, boxes or similar equipment which are 8 inches or more from the center line of pole and are supported by cable and/or messenger alone can be reduced to not less than 1 inch by mutual agreement between the affected owners (see Rule 38, Table 2, Case 8, Column C).

For clearance between street light drop wires and cables, other conductors, and metal boxes see Rules 58.5–B3 and 92.1–F5.

For vertical clearances between Antennas and associated elements located above supply and communication lines see Rule 38, Table 2, Case 21.

**Proposed Final # 4 – GO 95, Rule 38, Table 2, Case 21**

Case No.	Nature of Class and Voltage of Wire, Cable or Conductor Concerned	A Span Wires, Guys and Messengers	B Trolley Contact Conductors 0-750 Volts	C Communication Conductors (Including Open Wire, Cables and Service Drops	D 0-750 Volts (Including Service Drops) and Trolley Feeders (a)	E 750 - 7,500 Volts	F 7,500 - 20,000 Volts	G 20,000 - 35,000 Volts	H 35,000 - 75,000 Volts	I 75,000 - 150,000 Volts	J 150,000 - 300,000 Volts
21	Antennas and associated elements on the same support structure. (tt, xx)	24 (ww)	48 (ww)	24 (uu)	48 (ww)	96 (ww, zz)	96 (ww, zz)	120 (ww, yy)	120 (v v, ww)	-	-

(tt) Clearances for supply antennas from supply and communication lines ... 58.6 and 54.4-G

(uu) May be reduced to 10 inches for cables installed/operated by antenna owner.

(vv) Up to 50 kV.

(ww) Pole top antenna lead-in wires, drip loops or incidental wiring shall not extend more than 12 inches below the specified clearance.

(xx) For clearances below supply and communication lines and between supply and communication lines see Rule 94.5A – B.

(yy) May be reduced to 96 inches for circuits up to 22,500 volts.

(zz) May be reduced to 72 inches for circuits up to 22,500 volts provided the antenna is suitably isolated. Where a reduction to 72 inches is allowed, the clearance for associated risers and vertical runs specified in 94.9-B2 may be reduced to 5 feet.

# **APPENDIX – C**

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Rationales for Proposed Revisions  
to General Order 95 Rules

**Introduction** ..... 35

**Proposed Revision #1 – GO 95, Rule 94 (Antennas)**

Rationale ..... 36

**Proposed Revision #2 – GO 95, Rule 91.3-B (Stepping)**

Rationale ..... 37

**Proposed Revision #3 – GO 95, Rule 92.1-F2 (Vertical Clearances)**

Rationale ..... 37

**Proposed Revision #4 – GO 95, Rule 38, Table 2, new Case 21**

Rationale ..... 38

## Introduction

The possible installation and maintenance of third party wireless antennas above energized supply lines raises some unique public and worker safety concerns for California's supply utilities and communication companies.

General Order 95, Rule 13 (Scope of Rules) states – “These rules are not intended as complete construction specifications, but embody only the requirements which are most important from the standpoint of safety and service. Construction shall be according to accepted good practice for the given local conditions in all particulars not specified in the rules.”

Although GO 95 rules do not prohibit the installation of Class C (communication) public and private circuits above Supply (electric) lines on joint use utility poles, as a practical matter, utilities and entities responsible for installing and operating California's electric and communication systems agreed long ago to segregate their facilities in a purposeful effort to secure public and utility worker safety and to ensure adequate service.

In its continuing role, the GO 95/128 Rules Committee took up the matter of “pole top antennas” in December 2005. In addition to the guiding principles cited above, the Rules Committee members agreed that the joint use of utility poles is in fact subject to mutual agreement and that the future installation of “pole top antennas” would be decided on a case-by-case basis by the utility pole owner(s) and the incoming carrier; and would also be subjected to a variety of technical and legal requirements outside the scope of GO 95 rules.

Presently, the cables, lines and equipment that comprise conventional “wireline” communication circuitry, occupy space on joint use utility poles 4 – 6 feet below electric lines and equipment. Similarly, Rule 94 (as adopted in D.07-02-030) now requires wireless facilities to be affixed at least 6 feet below electric lines and equipment in that portion of a joint use utility pole typically occupied by wireline communication facilities.

The proposed revisions to new Rule 94 and the other supplemental rule revisions presented in Appendix A and B (further described in the rationales below) are intended to encapsulate the basic construction requirements for third party wireless antennas when installed at the top of joint use utility poles and when installed on joint use utility poles below communication lines.

## **Rationale for Proposed Revision #1 – GO 95, Rule 94 (Antennas)**

The basic requirements of Rule 94 remain unchanged; however certain subsections were renumbered or revised to clarify or new or specific conditions.

Sections **94.1 (Definition)**, **94.2 (Maintenance and Inspection)** and **94.3 (General Requirements)** were not edited or rearranged.

New Section **94.4 (Material Strengths)** was added to coincide with similar arrangements of rules in Sections V, VI, VII and VIII.

Section **94.5 (Clearances)** was re-numbered (from 94.4).

- Original subsections “A” and “B” were slightly modified to clarify applicability.
- New subsections “C” and “D” express new clearance requirements for pole top antennas.
- Subsection “E” was renumbered (originally “C”) and modified to clarify applicability.
- Subsection “F” supplements the requirements of subsection “E”.
- Subsection “G” was renumbered (originally “D”) without modification.

Section **94.6 (Marking)** was renumbered (from 94.5) without modification.

Section **94.7 (Climbing Space)** was added to establish supplemental requirements for antennas affixed above supply and communication lines.

Section **94.8 (Stepping)** was added to bookmark the revision to Rule 91.3

Section **94.9 (Risers and Vertical Runs)** was added to establish supplemental construction and clearance requirements.

Section **94.10 (De-energizing)** was renumbered (from 94.6) without modification.

The “**Exceptions**” remain at the end of the rule without further modification.

## **Rationale for PRC #2 - GO 95, Rule 91.3-B (Stepping)**

An “exception” was added to 91.3-B to afford electric utilities the option of installing pole steps in that portion of the pole (above communication lines) typically occupied by their lines and equipment, when a third party antenna installation is allowed at the top of the pole.

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## **Rationale for PRC #3 – GO 95, Rule 92.1-F(2) (Vertical Clearances)**

In deference to Rule 94.3 (General Requirements), the second paragraph of F(2) was revised in order to establish a single point of reference for minimum clearances when determining the vertical clearances between electric lines and Class C communication equipment. With this revision, the referenced vertical clearances (Rule 38, Table 2, Column C, Cases 8 - 13) are no longer dependant on the attachment point (i.e., more than or less than eight inches from the centerline of the pole) of the communication equipment.

A new sentence at the end of the rule distinguishes the separate clearance requirements for wireless antennas equipment.

## **Rationale for PRC #4 - New GO 95, Rule 38, Table 2, Case 21**

Columns A thru D of new Case 21 establish minimum vertical clearances for third party antennas affixed above low voltage supply lines, trolley lines and communication lines.

Columns E thru H establish minimum vertical clearances for third party antennas and supply lines to protect a qualified electrical worker from making incidental contact with a third party antenna (operating at a different ground potential) while working on or near an energized supply line or supply ground wire.

- Footnote “tt” references specific GO 95 rules for supply antennas.
- Footnote “uu” in Column C allows a reduction to 10 inches of vertical clearance for pole top antennas and associated horizontal cables suspended below.
- Footnote “v v” in Column H sets a voltage threshold of 50 kV.
- Footnote “ww” allows drip loops and incidental wiring to extend up to 12 inches below the clearances set forth in Columns A, B, D, E, F, G, H.
- Footnote “xx” refers to Rule 94 for clearances not specified in Case 21.
- Footnote “yy” allows the 96-inch vertical clearance to be applied to supply voltages up to 22.5 kV.
- Footnote “zz” provides for the 96-inch clearance between antennas and supply lines to be reduced to 72 inches where the antenna is suitably isolated and allows the corresponding riser/run clearances to be reduced.

# **APPENDIX – D**

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**Supplemental Remarks  
By  
GO 95/128 Rules Committee  
Executive Board**

## **Supplemental Remarks by the GO 95/128 Rules Committee Executive Board**

Since the Committee took up this issue some sixteen months ago, it's principal goals have been to: 1) develop technically sound rules in a timely manner; 2) reach agreement among the membership; and 3) submit a complete set of proposed rule changes, with the understanding that each proposal would be scrutinized and publicly vetted according to the Commission's Rules of Practice and Procedure.

The proposed vertical clearances between supply lines and third party wireless antennas installed in the pole top position has proven to be a perpetual hot button topic. In fact, at the Committee's second balloting meeting in May, attending members focused most of the allotted pre-ballot discussion time on the vertical clearances specified in new Case 21, Columns "E", "F" and "G" (PRC #4), which had been revised and confirmed during the April balloting meeting.

For the record, the Committee did not reach full and complete agreement on the vertical clearances in PRC #4. Instead, three members representing wireless communication companies opted to "abstain" in deference to their and the other member's desire to submit the complete set of proposed rule changes contained in Appendices A and B in a timely and purposeful manner.

Should the Commission initiate a Rulemaking, we anticipate that the proposed vertical clearances between pole top antennas and electric (supply) lines detailed in PRC #4 will again be a central topic of discussion.