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SECTION VII

DETAILED CONSTRUCTION REQUIREMENTS FOR TROLLEY
CONTACT AND FEEDER CONDUCTORS AND THEIR
SUPPORTING MESSENGERS, SPAN WIRES, ETC.

(Class T Circuits)

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SECTION VII

DETAILED CONSTRUCTION REQUIREMENTS FOR TROLLEY
CONTACT AND FEEDER CONDUCTORS AND THEIR
SUPPORTING MESSENGERS, SPAN WIRES, ETC.

(Class T Circuits)

70. GENERAL

The following rules cover certain special details for the construction of Class T circuits, together with their supporting messengers, span wires and appurtenances. These rules are in many cases supplemental to the rules for supply lines in general (Class T circuits being by definition supply lines), which general rules, including construction details of Section V, must be observed, except where clearly inapplicable or where specifically modified herein.

When the use of a special type of construction appears desirable or is necessary, and these rules are not clearly applicable thereto, the Commission will consider the application of a trolley system for such modification or amplification of these rules as shall be deemed necessary to apply to such case or special construction (see Rules 15 and 16).

71. POLES, TOWERS AND STRUCTURES

71.1 Definition (see Rules 21.7-C and 22.0)

71.2 Maintenance and Inspection (see Rules 31.1 and 31.2)

71.3 Material and Strength

The strength of poles shall be as prescribed in Section IV, except that in computing the strength of poles supporting Class T circuits, consideration shall be given the stresses set up by the dead weight of brackets, span wires, etc.

71.4 Clearances

A. From Railroad Tracks (see Rule 36)

71.5 Dimensions and Settings (see Rules 49.1-B and 49.1-C)

71.6 Marking and Guarding

A. Marking

Poles supporting only Class T conductors in excess of 750 volts not on crossarms need not be marked as supporting high voltage conductors as required by Rule 51.6.

B. Guarding Of Latticed Poles And Latticed Structures (see Rule 51.6-B)

71.7 Stepping (see Rule 51.7)

72. CROSSARMS

72.1 Definition (see Rule 20.9)

72.2 Maintenance and Inspection (see Rules 31.1 and 31.2)

72.3 Material and Strength (see Rule 49.2)

72.4 Marking

The provisions of Rule 52.4 apply to crossarms supporting Class T conductors except that any crossarm (either of wood or metal) or any appliance used in lieu thereof attached to poles or structures which support only Class T conductors of more than 750 volts, or such conductors and private communication conductors of the same ownership, need not be marked as supporting high voltage conductors.

72.5 Hardware

A. Protection Against Corrosion (see Rule 49.8)

B. Separation Between Different Hardware Elements (see Rules 52.7-C and 52.7-D)

73. PINS, DEAD ENDS AND CONDUCTOR FASTENINGS

73.1 Maintenance and Inspection (see Rules 31.1 and 31.2)

73.2 Material and Strength (see Rule 49.3)

73.3 Pin and Dead-End Spacing (Table 2, Case 15)

73.4 Bonding and Grounding (see Rules 52.7-F and 53.4)

74. CONDUCTORS

74.1 Definition (see Rule 20.8)

74.2 Maintenance and Inspection (see Rules 31.1 and 31.2)

74.3 Material and Strength

In determining strength requirements, Class T lines are classed as supply lines of equal voltage and will take grades of construction accordingly. This will generally mean Grade "C" construction for d-c trolley lines of 0-750 volts, Grade "A" or "B" being required at crossings over railways according to the importance of the railway crossed. (See Rule 22.3, Table 3, Rule 49.4 and Section XI.)

The minimum size which shall be used for trolley contact conductors on public streets or highways is No. 0 solid medium-hard-drawn copper, or other wire of equal strength.

The minimum size of wire to be used as a feeder span or feeder auxiliary span wire shall be No. 4/0 stranded medium-hard-drawn copper or other wire of equal strength.

74.4 Clearances

Except where specifically designated, Class T conductors take clearances specified for supply lines of like voltage.

A. Above Ground

The minimum vertical clearances above ground for Class T conductors shall be those specified in Rule 37, Table 1. References to rules modifying the tabulated values for supply conductors and Class T conductors of equal voltage are given in notes following Table 1.

B. Above Railways

- (1) Tracks: The vertical clearance of 16 feet above rails for trolley contact, feeder and span wires of Table 1, Case 2, Column C, applies only to those railways which do not transport or propose to transport freight cars. This value shall be increased to 22½ feet where the railway involved does transport or proposes to transport freight cars.

- (2) Crossings: Unless electric railroad systems are protected by interlocking plant at grade crossings with interurban or other heavy or high speed railway systems, the trolley contact conductors shall be at the same elevation above their own tracks throughout the crossing and next adjoining spans and, in addition thereto, catenary construction shall be provided when crossing spans exceed 100 feet. (See Appendix G, Figs. 62 and 63.) This rule is not intended to apply where pantagraph collector or similar device is used.

C. Between Conductors

The minimum clearances specified in Case 2, Column D; Case 4, Column B; Case 5, Column E and Case 15, Column D of Table 2 are not required between Class T conductors of the same potential and system.

The minimum clearance of 24 inches specified in Table 2, Case 9, Column D, is not required between trolley feeders of the same system provided, however, that the clearance shall be not less than 12 inches.

The minimum clearance of 48 inches specified in Table 2, Case 2, Column D, and Case 4, Column B, is not required in double trolley construction between feeder auxiliary span cables or equalizer cables and trolley contact conductors of opposite polarity provided, however, that the clearance shall be not less than 18 inches or, where the feeder or equalizer cables are attached to the span wires in accordance with Rule 74.4-G3, the clearance shall be not less than 3 inches at the point of crossing the trolley contact conductor.

Trolley contact conductors of the same system but of opposite polarity, (as in double trolley construction) or of different systems and of the same or opposite polarity, shall have a separation of not less than 11½ inches. Excepted from this provision are conductors at switches, frogs, crossings, etc., in which locations a vertical separation of not less than 3 inches shall be maintained between conductors of opposite polarity.

D. From Poles

Class T conductors of not more than 750 volts and of the same polarity, potential and system when carried on poles supporting no other conductors are not required to obtain

the clearance of 15 inches from center line of pole (Table 1, Case 8), but shall comply with the clearance of 3 inches from surface of pole (Table 1, Case 9). The attachment of clearance arms for either supply or communication service drops does not affect the pole clearance of Class T conductors which are carried on one side or the top of a pole.

Where Class T conductors are carried on more than one side of jointly occupied poles the clearances of Table 1, Cases 8 and 9, shall apply and a climbing space conforming to Rule 54.7 shall be provided.

E. Under Bridges, Etc.

A reduction of the clearances given in Table 1 to a minimum of 14 feet for trolley contact conductors is permitted for subways, tunnels or bridges, provided the railway does not operate freight cars where the vertical distance from the top of car or load to trolley contact conductor is less than 6 feet. This will require the grading of the trolley contact conductor from the prescribed construction down to the reduced elevation. (See App. G, Fig. 64)

No clearance is specified between the trolley contact conductor and the structure. Where the structure is of material which will ground the trolley current in the event the collector leaves the contact conductor, a properly insulated trolley trough or equivalent protection shall be installed to prevent contact between the collector and the structure. Where pantograph collectors are used, this protection is not required. See Rule 54.4-I for provisions applicable to conductors other than trolley contact conductors.

F. At Points of Failure

- (1) **Overhead Trolley Contact Conductors:** All overhead trolley contact conductors shall be so supported and arranged that the breaking of a single "suspension" or fastening will not allow the trolley conductor, or live span wire, or current carrying connections to come within 10 feet from the ground or from any platform accessible to the general public. This does not apply to feeder taps to or from trolley contact conductors. (See App. G, Figs. 65 and 66.)

- (2) Trolley Contact Conductors Of More Than 1500 Volts: Where in urban districts and not on fenced rights of way, trolley contact conductors of more than 1500 volts shall be so suspended that if the conductor is broken at a single point it cannot fall within 10 feet from the ground or from any platform accessible to the general public. This practically requires catenary construction.

G. From Span Wires, Guys and Messengers

The minimum clearances of conductors from span wires, guys and messengers are specified in Table 2 and are modified for Class T conductors by the following rules and by Rule 78.

- (1) Span Wires and Contact Conductors: The minimum clearance of 48 inches specified in Table 2, Case 1, Column B, and Case 2, Column A, is not required between span wires and trolley contact conductors supported therefrom.
- (2) Trolley Contact Conductors of 750-7500 Volts: The clearance specified in Table 2, Case 1, Column E, and Case 5, Column A, shall be increased to not less than 48 inches where trolley contact conductors of 750-7500 volts are involved. These clearances are not intended to apply to span wires and trolley contact conductors supported therefrom.
- (3) Feeder and Equalizer Cables: Feeder auxiliary span cables or equalizer cables shall be installed at a distance not less than 18 inches above the span wire (see App. G, Fig. 67), or in lieu thereof, such cables, when protected by the equivalent of triple-braid weatherproof covering, may be supported not less than 2½ inches above the span wire by insulating supports attached to the span wire at intervals of not more than 5 feet.

74.5 Sags (see Rule 54.5)

74.6 Vertical and Lateral Conductors (see Rule 54.6)

74.7 Climbing and Working Space

The requirements of Rule 54.7 apply to poles supporting Class T conductors except where in accordance with the provisions of Rule 74.4-D conductors are permitted to have clearances from center line of pole less than are specified in Table 1, Case 8.

75. CONDUCTOR INSULATORS (see Rule 55)

76. GUYS AND ANCHORS

All of the provisions of Rule 56 are applicable to guys and anchors in trolley lines but are not intended to apply to trolley span wires, or other wires or cables used to support trolley contact conductors. Provisions applicable to trolley span wires are in Rule 77.

77. SPAN WIRES, BACKBONES, MESSENGERS, ETC.

77.1 Definitions (see Rules 20.1, 21.9, 22.9)

77.2 Inclusions

The provisions of Rule 77 apply to span wires, backbones, messengers, cross span wires, pull-offs, trolley strain guys and any other wires used to support trolley contact conductors and appurtenances.

77.3 Material and Strength

A. Material

Span wires, backbones, messengers, etc., shall be stranded and of galvanized steel or other corrosion-resisting material of equal durability.

B. Strength

The strength of span wires, backbones, messengers, etc., shall be such that the safety factors of Rule 44 are met:

77.4 Clearances

The basic minimum clearances for trolley span wires are specified in Table 1, Column C and in Table 2, Column A. Modifications of these basic clearances are specified in Rules 37 and 38 and by the following provisions:

A. Above Railways

The minimum vertical clearance of 16 feet above rails for trolley span wires (Table 1, Case 2, Column C) applies only to those railways which do not transport or propose to transport freight cars. This minimum clearance shall be not less than $22\frac{1}{2}$ feet where the railway involved does transport or proposes to transport freight cars.

B. Under Bridges, Etc.

A reduction of the clearances given in Table 1 to a clearance of not less than 14 feet above the rails is permitted for trolley span wires under bridges, in tunnels, or in subways, provided the railway does not transport freight cars where the vertical distance from the top of car or load to trolley contact conductor is less than 6 feet. The grading of the level of trolley span wires from the basic clearance to this reduced clearance is permitted at approaches to bridges, tunnels, or subways.

C. From Conductors

The clearances of trolley span wires from conductors shall be as specified in Table 2, Column A, except as modified by the provisions of Rules 74.4-G and 78.

D. From Guys or Span Wires

The clearance specified in Table 2, Case 1, Column A (18 inches) is not required between trolley span wires, backbones, messengers, and similar wires or cables, used to support trolley contact conductors and appurtenances.

E. From Poles and Crossarms

The clearances specified in Table 1, Column C, Cases 8 and 9, are not intended to apply to insulated (unenergized) portions of span wires, backbones, messengers, pulloffs and similar equipment at the poles to which they are attached.

77.5 Fastenings

Hardware by which span wires, messengers, etc., are dead ended to poles or structures shall have a strength at

least equal to that of the strand to which they are attached. Cedar and other soft-wood poles around which any span wire or messenger having an ultimate strength of 5000 pounds or more is wrapped, shall be protected by suitable shims. Hooks, lag bolts or other equivalent means to prevent the span wire or messenger from slipping along the pole shall be provided where necessary.

77.6 Requirements for Sectionalizing with Insulators

Span wires, backbones, messengers, etc., shall be sectionalized by means of insulators placed in them in accordance with the following rules.

Insulators used in the sectionalizing of span wires, backbones and messengers shall conform to the specifications for guy insulators as given in Rule 56.8 based on the voltage of the trolley contact conductor.

A. Span Wires

Span wires, not including bracket span wires, supporting or attached to wires which support contact conductors shall be sectionalized as follows:

- (1) Supporting One Contact Conductor: One insulator (preferably of the interlocking strain type) shall be placed in the span wire between 4 feet and 5 feet (measured along the span wire) from each hanger or point of support of the trolley contact conductor and its appurtenances which have electrical contact therewith. Where the angle between the span wire and contact conductor is so small that the insulator will interfere with the movement of the current collecting device, such insulator may be installed more than 5 feet (measured along the span wire) from the contact conductor, but shall be not more than 4 feet in a perpendicular direction from the contact conductor. (See App. G, Figs. 68 and 69.)

A second insulator (preferably of the interlocking strain type) shall be placed in the span wire not less than 6 feet and not more than 9 feet from the pole or structure.

The separation between the first and second insulators shall be at least 4 feet wherever practicable but where the distance between the pole or structure and the trolley contact conductor is less than 14 feet the second insulator shall be not less than 15 inches from the surface of the pole or structure and outside of the climbing and working spaces.

Where the span wire is attached to a building, the second insulator shall be not less than 3 feet from the building.

Where the support is a wood pole and all facilities supported thereon are of one ownership and are operated and maintained by the same crews of workmen, the second insulator may be omitted.

- (2) Supporting Two or More Contact Conductors of Same Polarity: Span wires supporting two or more contact conductors of the same polarity shall be sectionalized in accordance with Rule 77.6-A1, above. If the contact conductors are more than 18 feet apart an insulator shall be placed in the section of the span wire between the contact conductors at a point between 4 feet and 5 feet from each contact conductor hanger or support. Where the distance between contact conductors is less than 18 feet this provision does not apply.
- (3) Supporting Contact Conductors of Opposite Polarity: Span wires supporting contact conductors of opposite polarity shall be sectionalized as follows: (insulator preferably of the interlocking strain type.)
 - (a) Where the support is a wood pole, one insulator placed between the nearest contact conductor of the pair and pole or structure shall be deemed sufficient. Location: Preferably four feet and not more than nine feet away from pole;
 - (b) Where the support is a steel pole, or is attached to a building, a second insulator in addition to the one mentioned above shall be placed between the nearest contact conductor of the pair and pole. Location: Preferably within the distance between four feet and nine feet;

(c) A span wire which supports trolley contact conductors of opposite polarity shall have an insulator placed in the span wire between the hangers of such opposite polarity conductors unless the hangers have a dry flash-over insulating value of 6,000 volts or more.

- (4) Feeder Cables Used as Span Wires: One insulator (preferably of the interlocking strain type) shall be placed in such a span wire at a distance of not less than 15 inches from the surface of the pole supporting the feeder (except where only Class T circuits of the same polarity are installed on the pole as specified in Rule 74.4-D) and outside of the climbing and working spaces on such pole.

A second insulator (preferably of the interlocking strain type) shall be placed at the point where the feeder cable terminates, which point shall be not less than 1 foot nor more than 5 feet beyond the last trolley contact conductor to which it is electrically connected.

A third insulator (preferably of the interlocking strain type) shall be placed in the remaining section of the span wire at a distance of not less than 6 feet and not more than 9 feet (measured along the span wire) from the opposite pole or structure. (See App. G, Fig. 71.)

In catenary construction, the point at which the second insulator is placed shall be not less than 1 foot plus the distance between the messenger and contact conductor, nor more than 5 feet, beyond the last trolley contact conductor to which the feeder cable is electrically connected.

- (5) Feeder Cables Used as Auxiliary Span Wires: Where the feeder cable is used as an auxiliary span wire, it shall be installed and maintained at a distance of not less than 18 inches above the span wire, or it may be attached to the span wire as provided in Rule 74.4-G3. Auxiliary feeder cable spans shall be sectionalized in accordance with the provisions of Rule 77.6-A4 above. (See App. G, Fig. 67) In this type of construction the attachment of the feeder to the trolley contact conductor shall preferably be made on the side of the contact conductor opposite approaching traffic. (See App. G, Fig. 70)

- (6) Feeder Cables Crossing Poles: Where a feeder cable crosses the pole laterally, it shall not impair the climbing or working spaces and it is recommended that the cable be installed under a crossarm in fiber conduit or other suitable protective covering. (See Rule 54.6-C.)

B. Backbones And Pull-Offs

- (1) Backbones Supported on Crossarms: A backbone which is supported by insulators on crossarms, pole brackets or trolley brackets, shall be treated as a Class T line conductor except in that section between the last such support and its dead-end attachment where it shall be sectionalized by means of an insulator placed not less than 6 feet and not more than 9 feet from each support. (See App. G, Fig. 72.)
- (2) Backbone Attached to Poles: A backbone run between and attached directly to poles shall have insulators placed in it not less than 6 feet and not more than 9 feet (measured along the line of the backbone) from the points of attachment to the poles. (See App. G, Fig. 73.)
- (3) Pull-Offs: Each pull-off from the contact conductor to that section of the backbone between the insulators specified in Rule 77.6-B2, above, shall have an insulator placed in it at a distance between 4 feet and 5 feet from the nearest contact conductor; or if this is not practicable, the insulator shall be installed as far as possible from the contact conductor. Any pull-off from the contact conductor to a point between the supporting pole and the backbone insulator shall have two insulators installed in it and the insulator nearest the pole or the backbone shall be not less than 15 inches from the center line of pole and shall be outside the climbing and working spaces. (See App. G, Fig. 73.)

C. Brackets or Bracket Arms

In bracket construction span wires which support, or are attached to other span wires which support, trolley contact conductors or appurtenances in electrical contact therewith shall be sectionalized as follows:

- (1) General: An insulator shall be inserted in the span wire between the suspension of the trolley contact conductor and each point of support of the span wire, such insulators to be not less than 12 inches from the nearest trolley contact conductor. (See App. G, Figs. 74 and 75.)

Where the span wire supports contact conductors of opposite polarity an additional insulator shall be inserted between the hangers of such opposite polarity conductors unless the hangers have a dry flashover insulating value of 6000 volts or more.

- (2) Exceptions: Where the brackets are supported on wood poles which support only conductors of one ownership, the insulators between the hangers and points of span wire support may be omitted. (See App. G, Figs. 76 and 77.)

Where brackets and their lift spans are suitably insulated along their length (perpendicular to the poles) and from the span wire, that part of Rule 77.6-C1 which prescribes an insulator between the contact conductor suspension and the point of bracket support need not apply. (See App. G, Fig. 78.)

Insulators placed in metal brackets and lift spans shall be not less than 12 inches radially from the trolley contact conductor. (See App. G, Fig. 79.)

- (3) Feeder Conductors: Feeder wires used as bracket span wires shall be sectionalized as follows:

One insulator (preferably of the interlocking strain type) shall be placed in the span wire at a distance of not less than 15 inches from the surface of poles (except where only Class T circuits of the same polarity are installed on the pole as specified in Rule 74.4-D) and outside the climbing and working spaces. A second insulator shall be placed at the point where the feeder terminates. (See App. G, Fig. 80.)

On high speed lines it is recommended that in lieu of this type of construction the bracket span be installed as specified in Rule 77.6-C1 and the feeder span be installed as a bracket guy or lift span. In this case, one insulator

shall be placed in the lift span so that the horizontal distance between the insulator and the surface of the supporting pole or structure shall be not less than 15 inches, and a second insulator shall be placed along the line of this lift span adjacent to the point of attachment to the bracket.

D. Messengers

Where an extended messenger is treated as a guy, the requirements specified for guys shall be met.

78. ATTACHMENTS OF FEEDER, COMMUNICATION OR FOREIGN CONDUCTORS

78.1 Feeder Conductors

Trolley feeders not exceeding 750 volts may, when suitably insulated, be attached to span wires supporting trolley contact conductors of the same system.

78.2 Private Communication Conductors

The general requirements for private communication conductors of trolley line systems are specified in Rules 20.5-B, 32.4-C and 89 of Section VIII. In addition to the treatment therein provided, private communication wires (Class C) owned by and used solely in the operation of trolley systems may, where suitably insulated, be attached to span wires supporting trolley contact conductors of such systems when installed and maintained in accordance with the following provisions.

A. Attached to Unenergized Span Wires

Private communication conductors (Class C) may be supported by unenergized portions of span wires provided they are attached between the first span wire insulator specified in Rules 77.6-A1 and 77.6-A2 or the second span wire insulator specified in Rule 77.6-A4 and the pole or structure. They shall not be attached to the section of span wire between contact conductor hangers except within such section of span wire sectionalized by means of insulators placed between 4 feet and 5 feet from each contact conductor hanger.

B. Attached to Energized Span Wires

Private communication conductors (Class C) may, where necessary, be supported by feeder cables of 0-750 volts

used as span wires when such communication conductor attachments to feeder spans are insulated for not less than the trolley voltage.

78.3 Foreign Conductors

The following rules shall apply to decorative lighting fixtures, decorative lighting circuits, decorative garlands, and all other apparatus used for decorative purposes, where supported by and attached to the lines of trolley systems and when special permission for such supports and attachments has been secured from the trolley systems concerned.

Nothing herein contained shall be construed as requiring utilities to grant permission for such use of their overhead facilities; or permitting any use of joint poles or facilities for such temporary construction without the consent of all parties having any ownership whatever in the poles to which attachments may be made; or granting authority for the use of any poles or facilities without the owner's or owners' consent.

A. Attachment to Span Wires

- (1) Decorative Lighting Fixtures and Circuits:
Decorative lighting fixtures and decorative lighting circuits of not more than 300 volts may be attached temporarily to trolley span wires provided that such equipment and appurtenances meet all of the following requirements:

Circuit wires shall be rubber covered,
Wires shall be suitably insulated from
(and in no case shall contact) the span
wire,

Such equipment shall be placed only between
the pole (or other support in lieu thereof)
and the span wire insulator nearest the sus-
pension of the trolley contact conductor,
and

No energized part of such equipment shall
be less than 18 feet above the street surface.

It is recommended that no attachment be made to energized portions of feeder span wires. However, if such attachment is permitted by the utility the insulators and rubber covered wire used shall be capable of withstanding the trolley voltage.

- (2) Decorative Garlands and Other Unenergized Decorations: Decorative garlands and other decorations which are not energized may be supported by trolley span wires provided that no span wire insulator is made ineffective (shorted out) by such attachment.

B. Attachment to Poles

Where temporary lighting circuits of not more than 300 volts are attached to poles and used independent of span wire attachments or used to serve those span wire attachments, they shall comply with all of the requirements for supply conductors of 0-750 volts.

No decorative equipment shall be attached in any manner to longitudinal feeder cables (along or across thoroughfares).

C. Attachment of Auxiliary Span Wires to Poles Supporting Trolley Contact Conductors

Auxiliary span wires for the support of decorative lighting fixtures, decorative lighting circuits, decorative garlands, and any other apparatus used for temporary decorative purposes are strictly prohibited except when special permission is secured from this Commission. Under such permission the auxiliary span wire shall comply with all of the following requirements:

It shall be sectionalized, by means of insulators, in accordance with the rules applicable to overhead guys,

The span wire and conductors and any apparatus attached thereto shall be installed and maintained not less than 4 feet above the level of the trolley contact conductors and not less than 4 feet below any conductor in excess of 750 volts,

The span wire shall provide an ultimate strength of not less than that afforded by 3/8-inch common galvanized-steel strand, and

The additional mechanical loads on poles resulting from such installation shall not be such that the requirements of Section IV are not maintained.

No permits issued by Municipal or County Inspection Departments, or any trolley line system or other utility, shall be construed to permit the use of auxiliary span wires attached to poles supporting span wires of electric trolley systems, other than those auxiliary span wires which shall comply with all conditions set forth above.

79. THIRD RAILS

79.1 Territory

A. Cities, Towns, Etc.

Third rail construction or reconstruction shall not be permitted in or through cities, towns or urban territory, except for local rapid transit lines principally located in subways or on elevated structures.

B. Along Fenced Rights-of-Way

Third rail construction or reconstruction shall not be permitted unless the rights of way, easement or other property upon which same is located is entirely fenced. At every opening in such fence cattle guards or suitable fence gates must be used and a sign installed near such opening as provided in Rule 79.4.

79.2 Protection

Third rail construction or reconstruction shall not be permitted unless the third rail is protected by suitable guards made of wood or other suitable material. In lieu of such protection on spurs and loading tracks, disconnecting switches may be used, which shall be locked open when cars are not being switched.

79.3 Grade Crossings

A. Highways

Third rail railroads shall not cross a public highway at grade unless suitable wing fences are constructed dividing said highway from the private rights-of-way or fenced portion of highway or other property upon which said third rail railroad is located and unless all portions of said third rail are excluded from the portions of the highway between said wing fences, suitable signs being installed on either side of the highway as provided in Rule 79.4.

B. Fenced Railroad Rights-Of-Way

Where third rail railroads cross railroads located on fenced rights-of-way, wing fences and cattle guards need not be installed. No portion of the third rail shall be constructed or reconstructed within 10 feet of the nearest rail of the railroad crossed.

C. Railroad Rights-Of-Way Not Fenced

Where third rail railroads cross railroads not located on fenced rights-of-way, wing fences and cattle guards must be installed on both sides of the crossing at least 10 feet from the nearest rail of the railroad crossed. No portion of the third rail shall extend beyond the wing fences.

79.4 Warning Signs

At every cattle guard, gate or other opening in the fence surrounding the third rail, a sign bearing the words, "Danger," "Electric Third Rail" and "Keep Away," in letters at least three inches in height, shall be installed. The sign may carry other information relative to the hazard present, but these three items shall be in type of larger size than the type of the additional items.