

© 1959

The Pacific Telephone and Telephone Company

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

ADDENDUM G52.140.1
Issue B, Sep., 1959
TPT & TCo
L.A. Area

AERIAL CABLE

MECHANICAL PROTECTION

NOTES CONCERNING THIS ADDENDUM

This addendum is being issued to include requirements for protecting cables from contact wires of trolley coaches as well as instructions for the protection of riser cables when crossing guys of other utilities attached to poles by the wrap method, and the use of C span Clamps in the installation of L Tree Guards and L Trolley Guards. It also contains a section on Protection of Aerial Cable from Rodents and a new section on requirements for protecting cables from Street Light Standards by use of the DX-1026 Cable Guard.

"See Addendum" should be marked in G52.140.1 to indicate the following:

Paragraph 2.01 (a)	Cancelled
Paragraph 2.01 (d)	Supplemented
Paragraph 2.01 (f & g)	Supplemented
Paragraph 2.01 (h)	Added
Paragraph 3.01	Supplemented
Paragraph 3.01 (a)	Added
Paragraph 3.01 (b)	Added
Paragraph 4.01	Cancelled
Paragraph 5.01	Replaced
Paragraph 5.03	Added
Paragraph 6.01	Replaced
Paragraph 9.01	Added
Paragraph 9.02	Added

ADDENDUM
G52.140.1
Page 1

AERIAL CABLE
MECHANICAL PROTECTION

Paragraph 9.03	Added
Paragraph 9.04	Added
Paragraph 10.01	Added
Paragraph 10.02	Added
Paragraph 10.03	Added
Paragraph 10.04	Added



2. PROTECTING CABLE FROM TREES

2.01 (a) The "pull-off" method shall not be used in this Area.

(d) Use an L Tree Guard for protecting a lashed cable from contact with the tree or limb. Where an L Tree Guard is required it shall be installed as indicated in the picture in paragraph 2.01 (d) except that a C Span Clamp shall be placed at each end of the guard instead of a one-bolt clamp and lashed cable support.

(f) and (g) Where adequate protection would not be provided by the type of guard specified in Section G52.140.1 and it is necessary to protect the cable through heavy tree growth for several feet, use Softwood Half Round Molding in the manner illustrated.

(h) The use of Aerial Tape Armored Cable should be considered in place of the methods described in Paragraph 2.01, (b) to (g) inclusive, of Section G52.140.1 where the cable passes through heavy tree growth for a considerable distance and it is not practicable to reroute the line.

3. PROTECTING CABLE FROM TROLLEY CONTACT WIRES

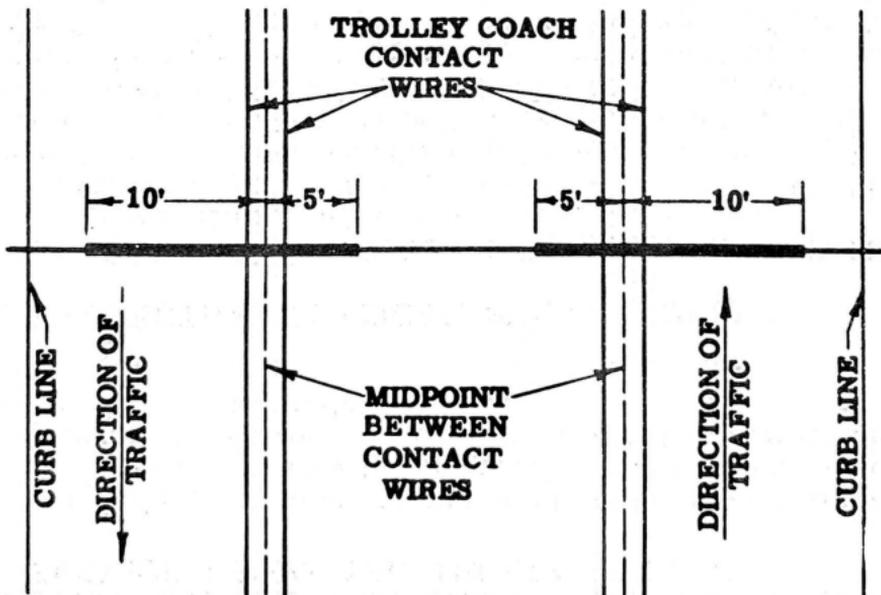
3.01 Place an L Trolley Guard over lashed cable and suspension strand where it is impracticable



to obtain 6 feet clearance over contact wires. Secure the guard as indicated in the picture in paragraph 2.01 (d) except that a C Span Clamp shall be placed at each end of the guard instead of a one-bolt clamp and lashed cable support.

(a) When cable is protected from trolley coach contact wires the guards should be installed as outlined in Paragraph 3.01 except that the protection should extend at least ten feet on the curb side and five feet on the street side measuring from a point midway between the two contact wires. See typical example below.

(b) When it is necessary to protect cable from both standard trolley contact wires and trolley coach contact wires in the same span, trolley guards should be placed on each side of the contact wires for a distance which will meet the minimum requirements specified in Paragraph 3.01 and 3.01 (a).



4. PROTECTING CABLE FROM ELECTRIC LIGHT SERVICE DROPS AND TROLLEY POLES

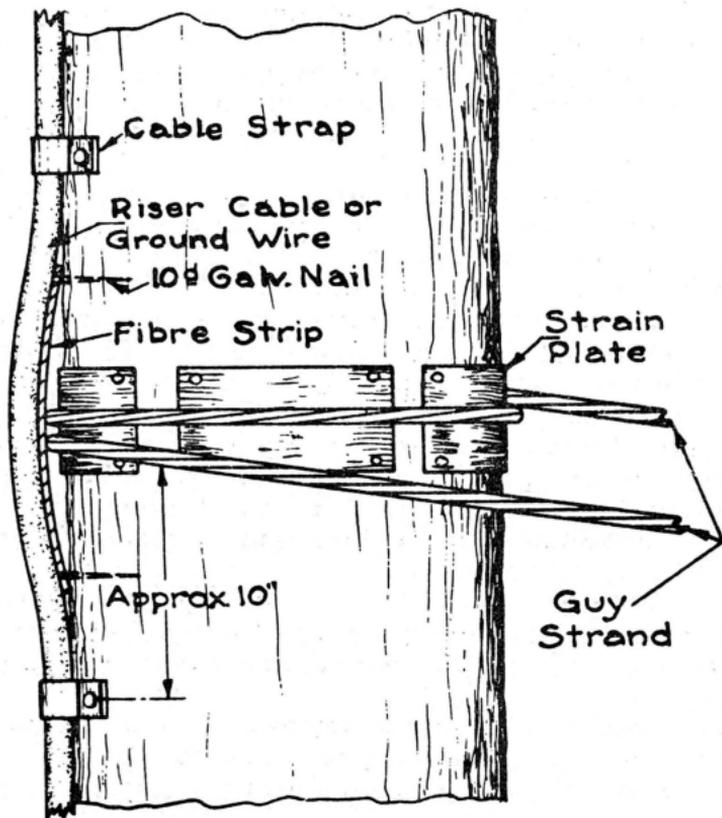
4.01 This paragraph is not applicable in this Area.

The clearances between cable and foreign wires as given in Section G10.301-S shall be maintained under these circumstances.

5. PROTECTING VERTICAL RUNS OF CABLE

5.01 Place Hardwood Half-Round Molding (oak or rock elm) over vertical runs of cable on poles supporting supply circuits, or on poles that are within 6 feet of poles supporting supply circuits, for a distance of not less than 3 feet above and not less than 6 feet below the level of the supply circuits. If trolley feeders are supported on the poles, below the aerial cable or terminal, at the upper end of the riser, the molding shall be extended downward to the top of the U Cable Guard or steel pipe. Two sections of half-round molding are required and they shall encircle the cable and be attached to the pole by means of Cable Straps and 2-inch Strap Nails. The straps shall be about 18 inches apart. Below a point 6 feet below the trolley feeder a single half-round molding may be used and strapped to the pole as noted.

5.03 Separation shall be maintained between riser cables (and their protective covering) and vertical runs and risers, guy strands, bolts and other hardware of other utilities in accordance with Section G10.301-S. The preferable method of maintaining such separation is through the use of an eye bolt for attaching the guy. The method of protecting riser cables to prevent contact with guy strands, where the use of the eye bolt is not practicable, is shown in the following illustration. A fiber strip per Dwg. L-2539 shall be inserted between the cable and the strand. When required by Paragraph 5.01 above, the cable shall also be protected by standard molding.



6. PROTECTING CABLE FROM GUYS

6.01 To provide mechanical protection between a cable and a guy, place a tree guard over the cable. For clearances required see G10.301-S.

9. PROTECTING CABLE FROM RODENTS

9.01 This Part covers the placing of mechanical protection to prevent aerial cable damage by rodents.

9.02 Where galvanized tape armored cable is used the exposed lead sheath such as sleeve and terminal stubs shall be protected in the following manner.

(a) On the terminal stub place a length of flexible steel conduit long enough to extend from the nipple to a point even with the tape armor on the main cable. Use 1/2 inch conduit for 16 pair stubs and smaller and 3/4 inch conduit for 26 pair stubs. Protect the cut ends of the flexible conduit with 2 wraps of 3/4 inch friction tape tucked in the ends before sliding the conduit over the cable.

(b) Complete splicing and closing operations in the normal manner and bond steel tapes as prescribed in the practice on Aerial Cable Bonding.

(c) Support the cable and splice as prescribed in Aerial Cable, Cable Supports - Use and Location.

(d) To protect the sleeve and exposed cable at both ends, cut a piece of 1/8 inch mesh 24 gauge galvanized hardware cloth wide enough to wrap twice around the strand, cable, and sleeve with an overlap of 3 inches. The wire cloth should extend 5 inches over each end of the tape armor and should have three 2-inch slits cut in the ends to aid in fitting the wire cloth snugly to the cable. If ring construction is used it will be necessary to press together that portion of the wire cloth between the strand and cable on each end and secure it with 3 turns of copper lashing wire.

(e) The wire cloth shall be secured with 3 turns of copper lashing wire at each end and on the sleeve at each aerial support. The wire should be threaded through the mesh at several points to

prevent slippage. Care should be taken to tuck the pigtail joints on the lashed ties into the mesh to avoid sharp ends.

9.03 Where vertical runs of cable such as BD stubs, dips, etc., are to be protected, wire cloth shall be cut in strips, placed over the cable and fastened to the pole with roofing nails. On bends the wire cloth may be cut in strips and wrapped to the point where it will extend under the protection placed on the splice. At the start and finish of a given length of wrap it shall be secured to the cable with three turns of copper lashing wire.

9.04 Use Squirrel Cable Guards to protect aerial cables other than galvanized tape armored cable when it is evident that protection against Squirrels is required. The guard is placed over the strand and cable and secured in place with two C cable lashing clamps.

10. PROTECTING CABLE FROM METAL STREET LIGHT STANDARDS

10.01 Where horizontal clearance from non-climbable metal street light standards supplied by aerial street lighting circuits cannot be obtained as specified in the Clearance Practices place a DX-1026 Cable Guard over cable and suspension strand to provide both insulation and mechanical protection.

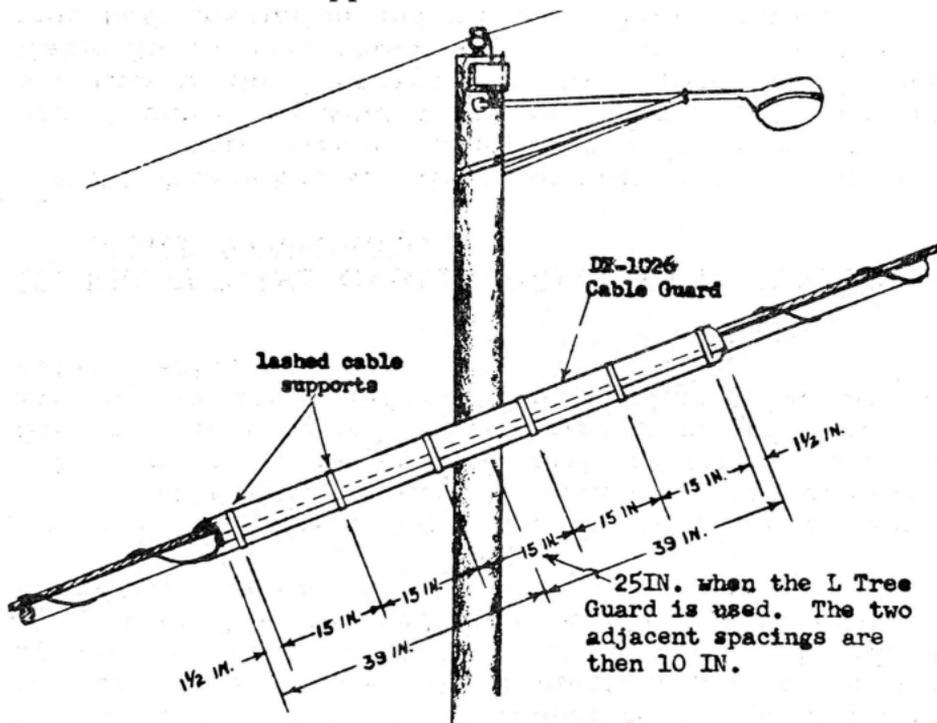
Use size and number of DX-1026 Cable Guards as shown in the following table.

Max. Diameter of Cable (inches)	No. of Guards Required	Size of Guard
.7	1	1 1/2
1.1	1	2
1.8	2	1 1/2
2.8	2	2

Note: The DX-1026 Cable Guard is 6 1/2 feet in length.

10.02 With lashed cable place DX-1026 Cable Guards so as to entirely cover the cable and suspension strand in the area requiring protection. Use of the proper size and number of guards will permit an overlap in all cases.

(a) Where one DX-1026 Cable Guard is used at- tach as shown in the following illustration. Slippage will be prevented by tightly securing the lashed cable support.



(b) Where the cable is of large size two sections of DX-1026 Cable Guard are required to insure that, all of the cable, suspension strand, and lashing wire will have an insulation covering.

Place the two DX-1026 Cable Guards so that they overlap each other and the open portions will be opposite and in a vertical plane then secure

with lashed cable supports as illustrated for placement of one DX-1026 Cable Guard.

10.03 Where the cable is not lashed remove all rings in the area to be protected and pull the cable and strand together with 4 wraps of .091 lashing wire, or equivalent, spaced at 20 inch intervals. Then proceed to attach DX-1026 Cable Guard as covered in Paragraph 10.02.

10.04 Where the DX-1026 Cable Guard will be subject to mechanical abrasion provide protection as follows:

(a) Place a L Tree Guard between the lashed cable supports nearest to the street light standard.

(b) Using about 5 feet of .091 lashing wire or equivalent, loop the wire under the two lashed cable supports and over the L Tree Guard on the side away from the street light standard.

(c) Bend back the wire ends and twist together so as to hold the L Tree Guard securely and prevent slippage. Trim away excessive wire and tuck in the pigtail joint to avoid sharp ends.

ADDENDUM

G52.140.1

Page 9

9 Pages

**AERIAL CABLE
MECHANICAL PROTECTION**