

**634 SPAN WIRE ASSEMBLY.**  
**(REV 8-13-07) (FA 10-3-07) (7-08)**

SUBARTICLE 634-2.3 (Page 692) is deleted and the following substituted:

**634-2.3 Hardware and Fittings:** For Utility or Siemens-Martin Grade wires, use the connection hardware as specified herein and in 634-3.3 (f). For installations that use other grades of wire, provide the hardware and fittings indicated on the plans. Provide only hardware and fittings made of galvanized steel or non-corrosive metal unless the fiberglass insulators specified in 634-2.4 are also required. Provide hardware and fittings of sufficient strength to resist the breaking strength of the wire with which they are used.

Connect the automatic compression dead-end clamps of the catenary wire (or wires) to the strain poles with 3/4 inch diameter oval eye bolts, except as noted in 634-3.3 (f). For single point attachments, attach the automatic compression dead-end clamp of the messenger wire to the same oval eye bolt as the catenary wire. For two point attachments, connect the messenger wire to 3/4 inch diameter oval eye bolts at the lower attachment location, except as noted in 634-3.3 (f). Do not use thimbleye bolts for these connections.

Only use thimbleye and oval eye bolts, 3/4 inch in diameter, minimum, to connect the automatic compression dead-end clamps of tether wires to strain poles.

Only use "S" hooks, 5/16 inch in diameter, minimum, when connecting the tether wire to all poles.

Ensure that other hardware and fittings, as required for the attachment of a span wire assembly to support poles or structures, are in accordance with the details shown in the Design Standards.

SUBARTICLE 634-3.3 (Pages 693-695) is deleted and the following substituted:

**634-3.3 General Requirements:**

(a) Provide a span wire assembly with catenary messenger and tether wires of one continuous length of wire cable with no splices except when an insulator is required by 634-2.4. Connect the insulator, if required, to the cable with automatic compression dead-end clamps.

(b) Attach the span wire assemblies to the support poles or structures by means of automatic compression clamps and accessory hardware.

(c) Assemble the washer and nut on the oval eye bolt with the flat washer next to the pole. Tighten the nut sufficiently to prevent the oval eye bolt from rotating.

(d) For single point attachment, supply tension to the messenger wire with the signal conductor cables attached to eliminate any appreciable sag.

For two point attachments, install the messenger wire with the following tensions per 100 feet. Linearly prorate cable tensions for other lengths from these values:

Cable Size Inch	Wire Tension Lbs.
3/8	340.0
7/16	500.0
1/2	645.0

- (e) Install the catenary wire to the following initial wire tensions:  
For 3/8 inch diameter:

Span Feet	Initial Wire Tension Lbs.
0 to 100	50.0
101 to 125	75.0
126 to 150	85.0
151 to 175	100.0
176 to 200	115.0
201 to 225	125.0
226 to 250	140.0
251 to 275	150.0
276 to 300	175.0
over 300	200.0

For 7/16 inch diameter:

Span Feet	Initial Wire Tension Lbs.
0 to 100	75.0
101 to 125	100.0
126 to 150	125.0
151 to 175	150.0
176 to 200	175.0
201 to 225	175.0
226 to 250	200.0
251 to 275	225.0
276 to 300	250.0
over 300	275.0

(f) Connect a maximum of two 3/8 inch diameter catenary wires to a strain pole with one 3/4 inch diameter oval eye bolt. Connect a maximum of one 7/16 inch diameter catenary wire to a strain pole with one 3/4 inch diameter oval eye bolt.

Use a 3/4 inch diameter alloy steel eyebolt (ASTM F 541, Type 2) and a 3/4 inch heavy hex nut ASTM A 563, Grade C or D), both zinc coated in accordance with ASTM A 153, Class C, to connect more than one 7/16 inch diameter catenary wire or one 1/2 inch diameter messenger or catenary wire to a single strain pole. Alternatively, the Engineer may design a special connection for this case.

(g) Install the span wire assemblies in accordance with the Design Standards, Index No. 17727, and at a height on the support poles which will provide a clearance from the roadway to the bottom of the signal head assemblies as specified in 650-3.

(h) Connect all span wires to the pole grounding system in accordance with Section 620.

(i) Obtain and meet all provisions of the National Electric Safety Code (ANSI-C2) regarding clearance from electric lines, contacting of utility owners, and safety requirements prior to span wire installation.

(j) Prior to installation of the span wire assembly, submit the method of providing the required tension in the catenary wire and the messenger wire in two point attachments to the Engineer for approval.