

6340203 SPAN WIRE ASSEMBLY
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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Comment: (12-6-10)

1. The proposed change from 5% to 3% for the sag of the catenary wires in single-point attachment configurations may result in higher tension forces in the catenary wires. This would increase the bending moments in the poles and although the pole length will be reduced, this reduction just has a linear reduction effect in the bending moment in the pole, therefore the overall bending moment will still be greater with the 3% than with the 5% sag. If the above statement is valid, then it may be a good idea to provide additional standard poles with greater capacity to minimize the requirement for use of special poles, which will require shop drawing submittal. In the past there was a Type IX concrete pole included in the QPL, but this is no longer available as a standard pole.

Response: The poles for a single point attachment have far less forces in the pole than the two point attachment. Yes we realize there is more stress on the pole with 3% sag versus 5% sag. The same poles for a two point attachment are well within the stresses needed for a single point connection. No changes made.

2. Another issue with the larger forces in the catenary wires could be that the maximum allowable tension force (25kip) for the standard wire clamp used to connect two wires to a pole may be exceeded so that a special clamp (or special eye bolt in the case of concrete poles) may be required due to larger tension forces in the catenary wires.

Response: I am not aware of any special stresses in the cable. I am not aware of any stresses in excess of 25 kips so no special clamps are needed.

3. On the tether wire issue: Could the tether wire be made a just an temporary measure (means and methods) for the proper alignment of the signals during installation? It appears that if (or when) the tether wire or S-hook fails as designed, the loose wire on the road could pose a temporary traffic hazard that could be avoided.

Response: The tether wire is intended to keep the heads from moving during low wind conditions, not for proper alignment during installation. When the S-hook fails under high wind conditions, the tether wire should pull loose from the pole but would still be attached to the signal heads. A detail is being added to Index 17727 to show how to support the end of tether wire when the S-hook detaches. No changes made.

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634-2.3 - Will the use of stainless steel (Grade 316) "S" hook with a material gauge of 11/32 inch be exclusive only to this application in terms of size, seeing that you are deleting the word "minimum" from the original specification. It seems limited to not being able to increase the material gauge more 11/32 inch if the span of the tether warrants it.

Response: The S-hook is designed to release when the force in the tether wire reaches a specific force. At that point the S-hook releases the tether wire from the pole and allows the heads to move unconstrained. No we do not want to use a S-hook with a greater capacity. No changes made.
