



BRIDGE CONSTRUCTION MEMO 145-3.0
SECTION 145-MISCELLANEOUS
INFORMATION

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Support Systems for Portions of Permanent Bridges Which are Temporarily Unstable

Occasionally portions of permanent bridges are unstable during some stages of construction. Examples of such unstable portions of bridges are sloping abutments, and bent columns, where these components are hinged at the footing and not yet stabilized by completion of the superstructure. Numerous other conditions of instability of portions of the permanent structure may occur during individual phases of construction.

It is essential that the Structure Representative determine if, when, and where such conditions of instability may occur. When it is determined that a portion of the permanent structure will be unstable, the Contractor should be required to submit working drawings showing details of his proposed temporary support system. (Section 5-1.02 of Standard Specifications) The Structure Representative shall review these working drawings to ascertain that the proposed support system is adequate to provide the necessary stability. It is especially important that these procedures be followed when there is an unstable portion of a bridge adjacent to a railroad or to an area occupied by public traffic.

Contractors frequently make use of wire rope "guys" to temporarily support unstable portions of bridges. The Structure Representative should be alert to the fact that a poorly designed wire rope "guy" system, or the improper installation of wire rope "guys", may result in a catastrophic failure of that portion of permanent structure that is being stabilized by the "guy" system.

For information concerning the proper use of wire rope, refer to the report prepared by John MacNeill entitled *The Use of Wire Rope Guys and Restrainers for Concrete Forms and Structural Components*, dated May, 1975. This report is available to all registered Civil Engineers of the Office of Structure Construction.