

<b>OFFICE OF STATE AID ROAD CONSTRUCTION</b>			S.O.P. NO. SA II-1-68
<b>STANDARD OPERATING PROCEDURES</b>			Page 1 of 1
Subject: S.O.P. FIELD LAYOUT OF BRIDGES			Distribution A, B, C, D, E
EFFECTIVE  July 1, 2005	ISSUED  July 1, 2005	SUPERSEDES Page 1 of 1  S.O.P. NO. SA II-1-68  EFFECTIVE: April 15, 2000	APPROVED  J. Brooks Miller, Sr.  STATE AID ENGINEER

PURPOSE: To Establish Uniform Procedures for the Staking of Bridges.

1. GENERAL:

The responsibilities of the Engineer and the Contractor respectively for staking and establishing lines and grades to control work on bridges is defined in Subsection S-105.08 of the Standard Specifications.

1.1. In order to preserve the lines and grades established by the County Engineer, and in order to properly inspect other controls established by the Contractor and the work performed from such controls, it is necessary that the County Engineer establish sufficient reference points from which basic control points may be re-established, and the Contractor's work adequately inspected and verified. Basic control points will be interpreted to be at least the Beginning and End of the Bridge; centerline of each bent; working point of each spur dike; and a bench mark at each end of bridge. All control points and reference points established by the County Engineer should be checked by a closed traverse.

2. BENCH MARKS:

A good bench mark that is not likely to be disturbed should be established at each end of the bridge site. It is desirable that this bench mark be referenced by at least one other bench mark in the same vicinity, such that both may be seen from the same setup in order that one will verify the accuracy of the other. These bench marks should be thoroughly checked by tying into other bench marks used in the work and should be used to set all subsequent control elevations of the bridge work.

3. CHECKING:

A thorough check of all measurements, angles and elevations should be made to make sure that no error exists. The checking should, if possible, be done by persons other than those who did the original staking. Also, if feasible, the checking should be done by different procedures. Reference points for centerline points should, if possible, be set at the same angles from centerline and at the same offset distance. This will provide a convenient method for checking skew angles and offset distance by measuring parallel to centerline through the offset stakes. There are many other ways within good engineering knowledge to verify the accuracy of layout work.