

OFFICE OF STATE AID ROAD CONSTRUCTION			S.O.P. NO. SA II-1-60
STANDARD OPERATING PROCEDURES			Page 1 of 2
Subject: S.O.P. CONSTRUCTION SURVEY - GENERAL			Distribution A, B, C, D, E
EFFECTIVE July 1, 2005	ISSUED July 1, 2005	SUPERSEDES Page 1 of 2 S.O.P. NO. SA II-1-60 EFFECTIVE: April 15, 2000	APPROVED J. Brooks Miller, Sr. STATE AID ENGINEER

PURPOSE: To Provide General Information and Uniform Procedures for Construction Surveying.

1. GENERAL:

This series of S.O.P.'s will in general provide the standard methods of staking to be used on Office of State Aid Road Construction projects. It is believed that the instruction and the methods contained herein are general enough to provide sufficient latitude to cover all but the most unusual of circumstances.

Centerlines, right of way monuments, and bench marks should be established to required limits of accuracy. Other stakes should only be established to standards commensurate with their use. Construction survey parties are under the direction of the County Engineer and it is necessary that he assure himself that construction survey personnel employed by him are familiar with efficient methods of staking or that he provide training as necessary.

Subsection S-105.08 of the Standard Specifications defines the responsibilities of the County Engineer and the Contractor in the setting of stakes, the verification of their accuracy and the preservation of all stakes and marks.

On projects where considerable staking is required, the County Engineer should begin staking as far in advance of the beginning of construction operations as conditions will permit. This lead time should assure that staking will be maintained well in advance of the Contractor's operations and requirements. In the event that stakes stand over the winter, their message and possible displacement should be checked prior to use. Bench marks, temporary bench marks, and other primary controls should be rechecked prior to use after a winter layover. The Contractor and County Engineer share the responsibility to keep each other informed as to work schedules so as to properly plan the staking work. No delays in staking should be permitted that will hinder the construction operations. However, Contractors will be expected to finish as they go, within the stakes that are set.

It is essential that procedures in staking a project be conducted in a manner to minimize mistakes and errors. It is necessary in staking structures or other work requiring exactness, that the work be carefully done and rechecked before being released as final. It is assumed that the party chief is familiar with methods and procedures in staking, however, concurrence as to methods and procedures to be used must be obtained from the County Engineer before the start of staking operations. To promote efficiency and accuracy in the work, each member of the survey party should be explicitly instructed in the proper manner and method of taking measurements and setting stakes. Periodic observations and checks on the work are essential for assurance that the survey work proceeds properly and conforms to the accuracy required.

OFFICE OF STATE AID ROAD CONSTRUCTION			S.O.P. NO. SA II-1-60
STANDARD OPERATING PROCEDURES			Page 2 of 2
Subject: S.O.P. CONSTRUCTION SURVEY - GENERAL			Distribution A, B, C, D, E
EFFECTIVE July 1, 2005	ISSUED July 1, 2005	SUPERSEDES Page 2 of 2 S.O.P. NO. SA II-1-60 EFFECTIVE: April 15, 2000	APPROVED J. Brooks Miller, Sr. STATE AID ENGINEER

The County Engineer and members of his staff responsible for staking, should confer with the Contractor's foremen concerning the method of staking to be used, how stakes are to be marked and guarded, offsets to be used, spacing, etc. Information to be placed on stakes, abbreviations to be used, location of message on stakes, etc., should be carefully explained so that no misunderstanding or misinterpretation will result.

2. ACCURACY:

The degree of accuracy used in the various operations of construction surveying and staking is to be consistent with the use. Basic horizontal and vertical controls are to conform to recognized accuracies. Other construction stakes should be set to accuracies commensurate with their use. The accuracies and tolerances required for the various construction stakes will be set out in the succeeding S.O.P's of this subdivision. Accurate and complete survey notes taken for future reference must be entered in the field notebook at the time the survey work is performed.

Particular attention is directed to the safety of the survey crew in performing the survey work, especially where the work is subject to traffic. The party chief is responsible for safety procedures, all of which must be in compliance with the Manual on Uniform Traffic Control Devices, current edition..

3. RELATIONS WITH THE PUBLIC:

Survey and staking personnel are to conduct themselves in a courteous manner at all times. They should be responsive to the public and refer questions to the County Engineer when they cannot provide answers.