

OFFICE OF STATE AID ROAD CONSTRUCTION			S.O.P. NO. SA II-1-61
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Subject: S.O.P. CONSTRUCTION CENTERLINE			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-1-61 EFFECTIVE: October 15, 2000	APPROVED J. Brooks Miller, Sr. STATE AID ENGINEER

PURPOSE: To Establish Uniform Procedures for Establishing and Staking the Construction Centerline.

1. GENERAL:

The first survey work on a project will be to establish or re-establish the construction centerline or control line. This line will conform to the construction centerline or other stationed control line shown on the plans, either of which may or may not be coincidental with the existing survey line. When errors are found in alignment data they are to be corrected and shown on the project and final plans with reference to the plan line.

In order to permit the field party to proceed with a minimum of delays and errors, the alignment book should be prepared by the County Engineer or his designated representative subsequent to a thorough field review and prior to actual staking.

The construction centerline will be marked by stakes driven on line behind the point, with the station and plus station facing the zero station of the survey. If the line traverses a traveled way, centerline points will be referenced at right angles with the station and plus station numbers and the distance right or left marked on the side of the stake facing centerline. At the time the centerline is reproduced, or immediately thereafter, control points will be referenced so that the line can be readily re-established when required. In general, referencing is recommended for the beginning and ending of curves, points of intersection, points on tangents at approximately 1000 foot intervals, and points on long curves where visibility is restricted. It is considered good practice to reference often enough so that each point will "see" at least one other point.

There are various methods of referencing control points and the selection of the proper method must be left to the judgment of the County Engineer. The choice of method may be based on the terrain of the area, the area of the right of way to be disturbed by construction operations, and the use to which the land adjacent to the right of way is put. Reference points will be placed at locations where there is the least possibility of their being disturbed during the construction period and from which it is possible to "reset" the centerline with a minimum of delay. The usefulness of the reference points after cutting or filling to final grades must be considered. Records and sketches of the reference points will be kept in the alignment notebooks.

Swing or chain ties will be avoided if possible at least at major control points (PC's, PT's, & PI's). Three point right angles ties should be used where possible, preferably two points to the right and one to the left or vice versa.

The permissible error of closure for horizontal distance as measured along the centerline will be one part in 5000 unless the Minimum Standards for Surveying in the State of Mississippi require a higher standard. The permissible angular error will be thirty seconds (30") x N, where N is equal to the number of angles in the traverse. If a transit is used, it is essential that it be "double centered" at the beginning of use, adjusted if required, and checked often enough to be sure it is in adjustment.

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2. PARALLEL OFFSET LINES:

It is often advantageous to run a line which is parallel to the survey centerline. This line may be used as an aid for the original staking of the project, or as an aid in determining right angles for the taking of cross-sections.

2.1. Determine Offset Distance:

- 2.1.1. Study the plans and cross-sections to determine the distance to offset the parallel line. The line should fall outside the limits of construction, but be close enough to the top of cut or toe of fill to be useful.
- 2.1.2. The offset distance will vary for different sections of the project, depending on the depth of the cut or fill.