

CHAPTER 9

FINAL SURVEYS

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Sec. 9.01 **General**

The district survey review and preparation procedures for final estimates shall be in accordance with the current **Post Construction Manual**, or as directed by the District Construction Engineer. If the District Construction Engineer requests finals, the following sections and the Post Construction Manual should be used as guidelines.

Sec. 9.02 **Alignment**

The centerline should be retraced accurately putting in all points where slope DTM's were taken. In case the centerline can be retraced accurately without running a traverse line over the project, a note conspicuously placed in the digital file, ascii file, or field book should state that a traverse line was not run as it was not necessary for the establishing of the centerline, and that the project was constructed according to plan alignment. When the line is retraced this is to be done in accordance with the procedures outlined in **Sec. 8.02**.

Sec. 9.03 **Levels**

After the centerline has been re-established, centerline levels are to be run taking elevations at all points where slope stake DTM's were taken. These levels shall be run in accordance with the procedure outlined in **Sec. 8.03**.

Sec. 9.04 **Cross-Sections**

Cross Sections are no longer used in final surveys. **In lieu of securing cross-section information, a DTM surface is the accepted VDOT format for determining final volumetric and final grading information. In case of emergency or a special situation, cross sections can be requested.**

Except in the case of Plan Quantity projects [Section 9.06](#), DTMs shall be secured as outlined below.

Sec. 9.05 **Borrow Pits**

DTM readings must be secured on all borrow pits, prior to the removal of any topsoil from the borrow pit. The same benchmark elevation must be used when securing both the original and final ground elevations. If DTM's are to be secured on the borrow pit a traverse or baseline must be established and referenced, and used when securing both the original and final surfaces. DTM readings must be taken in a manner to ensure that an accurate computation of volume of material removed be obtained. If it becomes necessary to secure DTM readings for an area not covered by original ground elevations, the original ground elevation must be interpolated and placed in the same format as the originals. If DTM readings were secured, a break line must be secured to define the beginning of excavation. In the case of more than one borrow pit, they must be numbered to correspond with the number used in staking them out.

Sec. 9.06 **Plan Quantity Projects**

A centerline profile at "Final" stage on plan quantity projects is not required. Spot checks will be made to assure that the vertical alignment is within required specifications. In some cases, a complete profile may be needed to provide proper assurance; but in most cases, this can be accomplished by use of reference stakes and benchmarks along the project.

On secondary roads having a daily traffic count of two hundred (200) or less, five-tenths (**0.5 ft.**) of a foot tolerance would be allowed provided such tolerances tend to equalize and are not to the detriment of the quality of the project.

On Class IV primary roads and comparable secondary roads the allowable tolerance is three-tenths (**0.3 ft.**) of a foot. On Class I, II and III primary and on secondary roads comparable thereto, the allowable tolerance is two-tenths (**0.2 ft.**) of a foot except in the case of Portland cement concrete surfaces where the tolerance is reduced to one-tenth (**0.1 ft.**) of a foot.

When setting slope stakes, in the event areas are found that show changes from the original location of the DTM's, these areas will again have DTM's collected to show the changes and a final DTM surface taken to coincide with these sections.

DTMs are required on all borrow pits and material pits.

Sec. 9.07 **Federal Aid State Force Account Projects**

Finals on Federal Aid State Force Account Projects are to be taken up in the same manner as regular contract projects.

Sec. 9.08 **Non-Federal Aid State Force Account Projects**

If deemed necessary by the District Construction Engineer, finals can be taken on this type project and specific information obtained.

Sec. 9.09 **Minimum Plan Projects**

A Minimum Plan Project is to be handled the same as the Plan Quantity Project, except that DTMs are **not** necessary.

Sec. 9.10 **Submitting Survey Data**

As soon as the final survey is completed, the Survey Party Manager (Land Surveyor) should send to the District Survey Manager all notebooks and Inspector's records which are in his possession. The District Survey Manager will then transmit these books to the District Design Unit.

. For the current **Post Construction manual** please click here:

http://www.virginiadot.org/business/resources/pc_manual.pdf