

SECTION 15 – FINISHING SHOULDERS, DITCHES AND SLOPES

15.1 FINISHING SHOULDERS, DITCHES, AND SLOPES *(Rev. 09-29-09)*

The final shaping and dressing of shoulders, ditches and slopes is not a pay item but is included in the cost of other bid items on the project.

This work consists of the final shaping and dressing of shoulders, ditches and slopes by machine or hand methods, or both, to the required smoothness, elevation and cross section as shown on the plans or as directed by the engineer.

Shoulder construction should be in accordance with the typical sections and standards included as a part of the contract plans. Check the typical sections and standards for shoulder slope on tangent sections and changes in shoulder slope on super-elevated curves.

The scope of shoulder construction on HMA resurfacing contracts is covered in Section 208 of the SS. In many instances the resurfacing contract provides for increasing the super elevation in the old pavement to comply with current design standards. When this situation is applicable the additional fill dirt for shoulders on the high side of the curve may be obtained from waste or excess trench widening excavation elsewhere on the contract or they may be constructed with borrow if so specified in the contract.

The use of borrow for this purpose is discussed in Section 3 of these instructions. Due to the limited width of the available roadbed it is seldom possible under these circumstances to construct the high shoulder in strict accordance with the standards herein set out. Therefore, a modification will be necessary and this should be discussed with the AE unless the contract is specific with respect to the cross section at these locations. All ditches must be constructed so that they will drain and be free of water pockets. At the ends of cuts it is the policy to flare the side ditches out to prevent ditch water from being spilled onto the fill embankment. Abrupt changes in alignment of side ditches should be avoided and any contemplated changes in ditch alignment or grade should be provided for during grading operations in order to avoid the necessity for major revision of slopes and ditches during the finishing operations.

Slopes shall be uniform and transitions from steep slopes to flat areas shall be such that no abrupt changes or bulges result. It is also the policy to roll back the ends of cut slopes slightly in order to obtain a more pleasing appearance. In finishing the slopes of rock cuts the rock face shall be carefully inspected for loose or overhanging rock that might subsequently fall onto the roadway. All such rock shall be removed.

The amount of work necessary to finish the shoulders, ditches and slopes on a job can be materially reduced if the contractor completes grading operations to the grade and cross section as work proceeds. It is neither economical nor good construction to include in the finishing operations, yardage that could and should have been moved during the grading operations. Should the contractor's methods result in rough or otherwise unsatisfactory shoulders, ditches or slopes, they shall be corrected by equipment or hand methods.

If during finishing operations surplus dirt develops and it is decided to use such material to widen the existing shoulders, care must be taken to insure that loose material being dumped along the side of the embankment will not result in sloughing. Section 203 of the SS should be used for guidance in the use of excess material to widen existing slopes.