

GRADING CONTOURS

The need to provide proposed grading contours at interchange locations should be discussed at field inspection. Particular attention should be given to contouring gore areas and areas where drainage structures will be constructed to insure that the final design can be safely traversed by a vehicle within the established **clear zone** for a particular project. Gore areas at entrance ramps in cut situations should also be discussed to assure that adequate **horizontal sight distance** will be provided. Unless otherwise directed, as a result of field inspection or written recommendations, proposed grading contours are to be included in the plan assembly using 2 foot intervals. The proposed contours are to cover either all or portions of the interchange area where the design can more clearly be defined in order that the plans clearly reflect the limits of fill or cut construction. This will also be of benefit in the placement of guardrail, in the interest of safety and general final appearance of the proposed design.

CONSTRUCTION OF CATTLE PASSES

Cattle passes will not be built on two-lane highways with right of way of 110 feet or less; however, existing structures may be widened. If the property owner desires a cattle pass and pays the difference between such a structure and the structure that is required for drainage, then a cattle pass may be constructed.

Where the right of way width is over 110 feet and the plans for the present or future construction provide for a four-lane divided highway, cattle passes may be constructed under certain conditions. If the land on each side of the highway is under the same ownership, at least forty (40) head of horses or cattle are to be passed from one side of the right of way to the other daily, and its construction is recommended by the Right of Way Engineer and approved as to location by the Transportation Engineer, a cattle pass may be constructed upon approval by the Chief Engineer.

Previous studies and investigations have determined that a St'd. 5' x 7' Box Culvert or an equivalent metal pipe is to be provided for access when the need has been established and so documented. In the location and design of the structure, especially on a four lane divided facility where the barrel length would be long, special attention is required to provide day-lighting when the barrel length approaches or exceeds 200 feet. Sufficient light must be available or the structure will not serve its intended purpose. Erosion control, if required, should have a smooth surface. Sufficient light and a smooth surface are both necessary for horses and cattle to enter a structure. The plan description shall indicate the purpose of the structure. Example: St'd. 5' x7' Box Culvert Req'd. for Cattle Pass.