



The crossover site should be selected so as to not interfere with maintenance turnarounds. If this cannot be accomplished the crossovers can be modified to function as a maintenance turnaround.

Permanent crossovers generally should not be located in close proximity to urban areas or interchanges.

### **Taper Rate**

A taper rate of 12:1 should be used for the crossover. The 12:1 taper rate was selected because it is comparable to what is used for exit ramps. The crossover is similar because the driver is leaving the 4-lane facility and entering a two-lane facility. The same taper rate should be used for a ramp crossover. Sites will be evaluated on a case-by-case basis if constraints make the use of this taper rate impractical.

### **Surfacing**

Unless a separate recommendation is provided by the Pavement Analysis Section, the surfacing for median crossovers will consist of 0.40' of plant mix and 1.0' of Crushed Aggregate Course. A seal and cover should be applied to the crossover when it is applied to the mainline.

To ensure the accuracy of crossover quantities, cross sections should be surveyed at all crossover locations. As-built dimensions may not be accurate.

### **Drainage**

The drainage features should be designed for the same frequency storm event used for the mainline (e.g. 50-year event). The designer will need to ensure that adequate cover is provided over the culverts. RACETS should be provided on all culvert ends.

Where practical, the crossovers should be located adjacent to median drop inlets so that no other drainage facilities are needed. The crossover should be sloped typically with an inverse crown to prevent an increase in runoff across travel lanes.

### **Safety considerations**

20:1 transverse slopes should be used, and a minimum 15:1 slope can be used where the use of the flatter slope is not feasible due to site conditions.

Evaluate the installation of crossovers on sections where two-way traffic will have to utilize bridges that only provide a 28-foot roadway width. The extended risk could become an issue

Traffic volumes – AASHTO recommends that two-way traffic extend for a maximum of 4 miles. The length between permanent crossovers needs to be evaluated on subsequent projects to determine if increased traffic volumes will result in traffic queues or congestion.

### **Construction**

The contractor will construct and maintain the crossovers in accordance with the plans and specifications including all necessary temporary traffic control devices.

### **Closure**

The contractor will install pre-stretched, high tension cable rail to close the crossover

upon completion of construction. We recommend that the cable rail be measured and paid separately from the cost of the Construct and Maintain Crossover item

If a seal and cover is not placed on the crossover, the pavement markings must be removed prior to the completion of construction.

#### Post-Construction Maintenance

MDT Maintenance forces will provide normal maintenance for the crossovers. In addition, they will inspect the crossovers to ensure that delineation and other appurtenances necessary to prevent the use of the crossover are in place and in good condition. They will repair or replace signing, delineation and guardrail as necessary.

If you have questions concerning this, please contact me at 444-6244.

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