

Pipes for extension are to be so noted in the "remarks" column of the drainage summary Chapter 15 (DDM1) of VDOT [Drainage Manual](#). An example of the plan description is as follows:

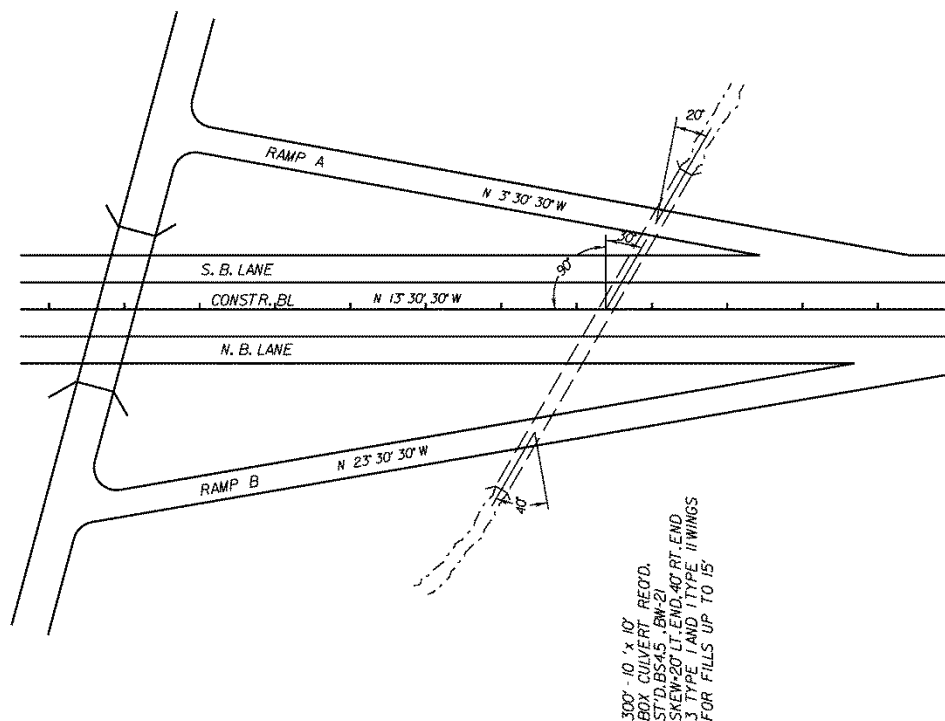
30'-18" (9 m - 450 mm) C.M. Pipe Req'd. for Extension  
 9' (3 m) Cover  
 1 St'd. ES-2 Req'd.

Projects on which the allowable pipe tabulation provides an option for new pipe installations and end sections are required, the drainage summary shall have a column indicating the optional standard, St'd. ES-1 or St'd. ES-2 Req'd., for the end section. A separate column is required when specifying either a St'd. ES-1 or St'd. ES-2 end section for extensions of pipes of a particular type.

### SKEW ANGLE OF DRAINAGE STRUCTURE

The angle of skew shown on the plans for a drainage structure is the angle formed by the centerline of the structure and a line drawn perpendicular to the roadway baseline nearest the ends of the structure.

Where the roadway baseline at opposite ends of the structure are not parallel, an angle of skew for each end of the structure shall be shown on the plans and in the summaries. The angle formed by the structure centerline and a line drawn perpendicular to the mainline baseline shall be shown only on the plans.



**FIGURE 2E-5 ANGLE OF SKEW FOR DRAINAGE STRUCTURES**