



Speer

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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MEMORANDUM TO: Roadway Design Project Engineers, Scott Blevins, PE
and Zigrida Smith, PE

FROM: Debbie Barbour, PE *Debbie Barbour*
Roadway Design Unit

DATE: February 2, 1999

SUBJECT: Placement of Median Guardrail in Areas of
Superelevation

Questions have been raised recently regarding the type of median guardrail to use in curves where median ditch slopes exceed 6:1. (This memo assumes the tangent alignments within the project have median ditch slopes that are 6:1 or flatter and that one line of cable guardrail is being used on the project). The guardrail committee recently discussed this situation and offers the following recommendation.

If graded properly, the median ditch on the low side of the superelevation section will remain 6:1 while the ditch slope on the high side of the median edge of pavement will vary and become steeper than 6:1. Instead of changing the type of guardrail from cable rail to steel beam guardrail or beginning two lines of rail, place the cable guardrail on the 6:1 median ditch slope midway between the edge of travel lane and the middle of the ditch. At no time, should the cable rail be closer than 11.5 feet from the edge of the travel lane.

For example, on a 46 foot median, the guardrail will be placed 11.5 feet from the edge of the near travel lane and 34.5 feet from the edge of the opposing travel lane. The guardrail transition should occur prior to the beginning of the curve. A 16:1 flare rate will be used to transition the guardrail. The logic behind this placement assumes that even though a car will traverse down a steeper slope than 6:1, the car will have more distance to recover and strike the cable rail on a standard 6:1 slope.

Please contact me or Garry Lee if you have any questions regarding this information.

DMB

- cc: Len Hill, PE
- Tom Shearin, PE
- Bob Brown, PE
- Victor Barbour, PE
- Charlie Casey, PE
- John Alford, PE
- Garry Lee, PE

