



R. Thomas, PE

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

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MEMO TO: Roadway Design Project Engineers  
FROM: Jay A. Bennett, PE  
Assistant State Roadway Design Engineer  
(Guardrail and Safety Features Chairman)  
DATE: May 7, 2001  
SUBJECT: Roadway Criteria - widening fill slopes for guardrail

The following statement represents how roadway criteria will widen fill slopes (shoulder widening) to accommodate the placement of guardrail.

IF FILL SLOPE = 3:1 AND FILL HEIGHT IS GREATER THAN AND/OR EQUAL TO 12 FEET, THE SHOULDER WILL BE WIDENED AN ADDITIONAL 3 FEET.

OR

IF FILL SLOPE < 3:1 (STEEPER THAN 3:1) AND HEIGHT IS GREATER THAN AND/OR EQUAL TO 6 FEET, THE SHOULDER WILL BE WIDENED AN ADDITIONAL 3 FEET.

In other words, fill slopes at 3:1 with fill heights of 12 feet and higher, shoulder widening will occur to accommodate the placement of guardrail. For fill slopes at 2:1 and fill heights equal to and/or greater than 6 feet, shoulder widening will occur to accommodate the placement of guardrail. A fill slope at 2:1 with a five-foot fill height will get no shoulder widening.

Please contact me at (919) 250-4016 if you have any questions on this issue.

JAB

cc: John Alford, PE  
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