



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

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SECRETARY

MEMORANDUM TO: Project Engineers  
Project Design Engineers

FROM: G. R. Perfetti, P. E.  
State Bridge Design Engineer

DATE: August 26, 2005

SUBJECT: BRIDGE APPROACH SLABS

Bridges located on NHS routes and/or carrying a design year ADT greater than 5,000 shall have a 25'-0" (7.62m) approach slab. Otherwise specify a 15'-0" (4.57m) approach slab. All approach slabs shall be constructed with a minimum depth of 1'-0" (305mm).

For flexible approach pavements detail both ends of the approach slab parallel to the end bent fill face. The approach slab length shall be measured along the workline.

For rigid approach pavements detail the roadway end of the approach slab perpendicular to the centerline of the roadway. The minimum length shall be measured along the shortest edge. On very wide bridges and/or bridges with a heavy skew, the long edge of the approach slab may become excessive. For such cases limit the length of the longer edge of the approach slab to 50'-0" (15.24m). This may be accomplished by stepping in the approach slab at approach pavement lane lines while maintaining the minimum dimension.

Approach slab reinforcing bars shall be sized and spaced as follows:

<i>Bar</i>	<i>Size</i>	<i>Spacing</i>
A1	#4 (#13)	1'-0" (300mm)
A2	#4 (#13)	1'-0" (300mm)
B1	#5 (#16)	6" (150mm)
B2	#6 (#19)	6" (150mm)

Guidelines for placement of reinforcing steel are as follows:

- 'B' bars shall be placed parallel to the alignment or the chord formed between the beginning (end) of the approach slab and the end bent work point
- 'A' bars shall be placed parallel to the skew
- For approach slabs without parallel ends, orient the 'A' bars to minimize the number of cut bars

The New Jersey barrier rail and barrier rail transition shall begin 12'-0" (3.66m) from the back face of the end bent backwall and shall be supported on the approach slab as shown in Structure Standards BAS3, BAS5, and BAS9 (BAS3SM, BAS5SM, and BAS9SM)

For bridges detailed with a New Jersey barrier rail, the portion of approach slab supporting the barrier rail shall maintain the same out-to-out dimension as the bridge. The width of the approach slab extending beyond the New Jersey barrier rail shall be stepped in 2 ½" (65mm) on each side if the bridge has a cast-in-place deck, and 2" (50mm) on each side for cored slab bridges. This is extremely important, as it allows the approach slab to accommodate the guardrail post attachment. This segment of approach shall be detailed with a 4" curb, similar to a shoulder-berm gutter. Note that for bridges detailed with other types of barrier rails (i.e. 3BMR, 2BMR and 1BMR) the width of approach slab is unchanged. For example, a bridge detailed with a 3BMR and a sidewalk would have an approach slab width that aligns with the back face of the sidewalk, and the sidewalk extends for the entire length of approach slab.

Construction elevations shall be provided for the left edge, centerline, right edge, and along all crown breaks between the gutter lines.

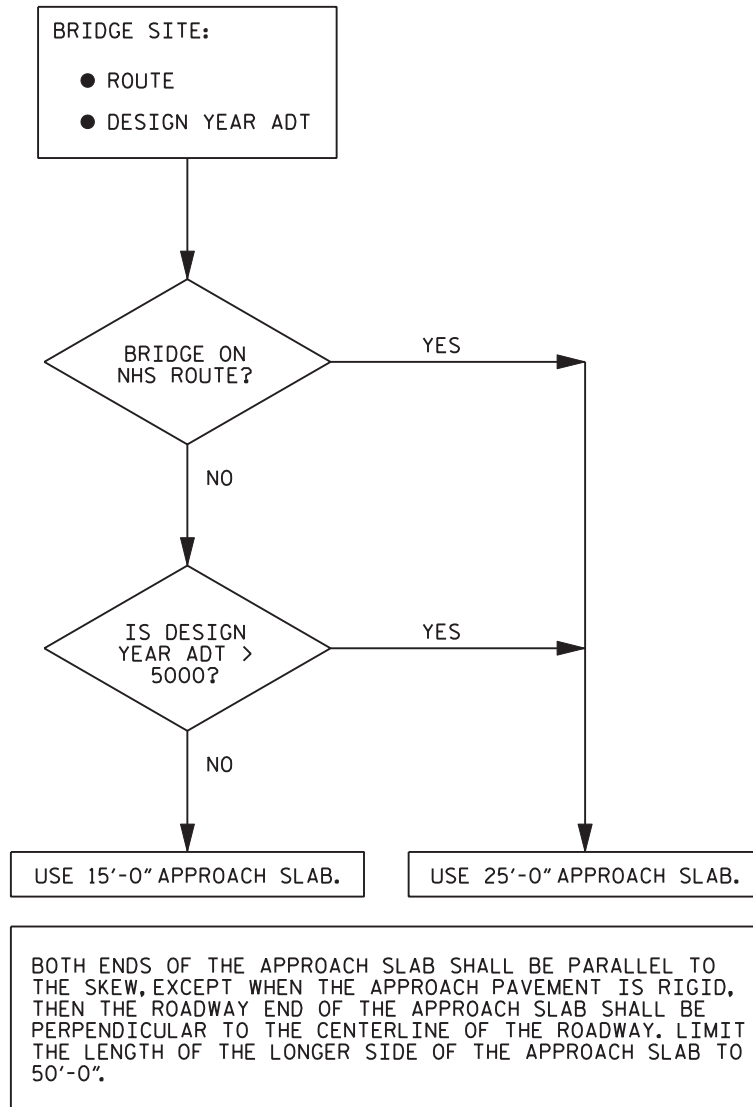
The attached Figure 12-25 has been developed to assist in selecting the approach slab length. This policy shall be effective with the January 2006 letting. The Design Manual and Structure Standards will be revised at a later date.

GRP/JJV/snj

Attachments

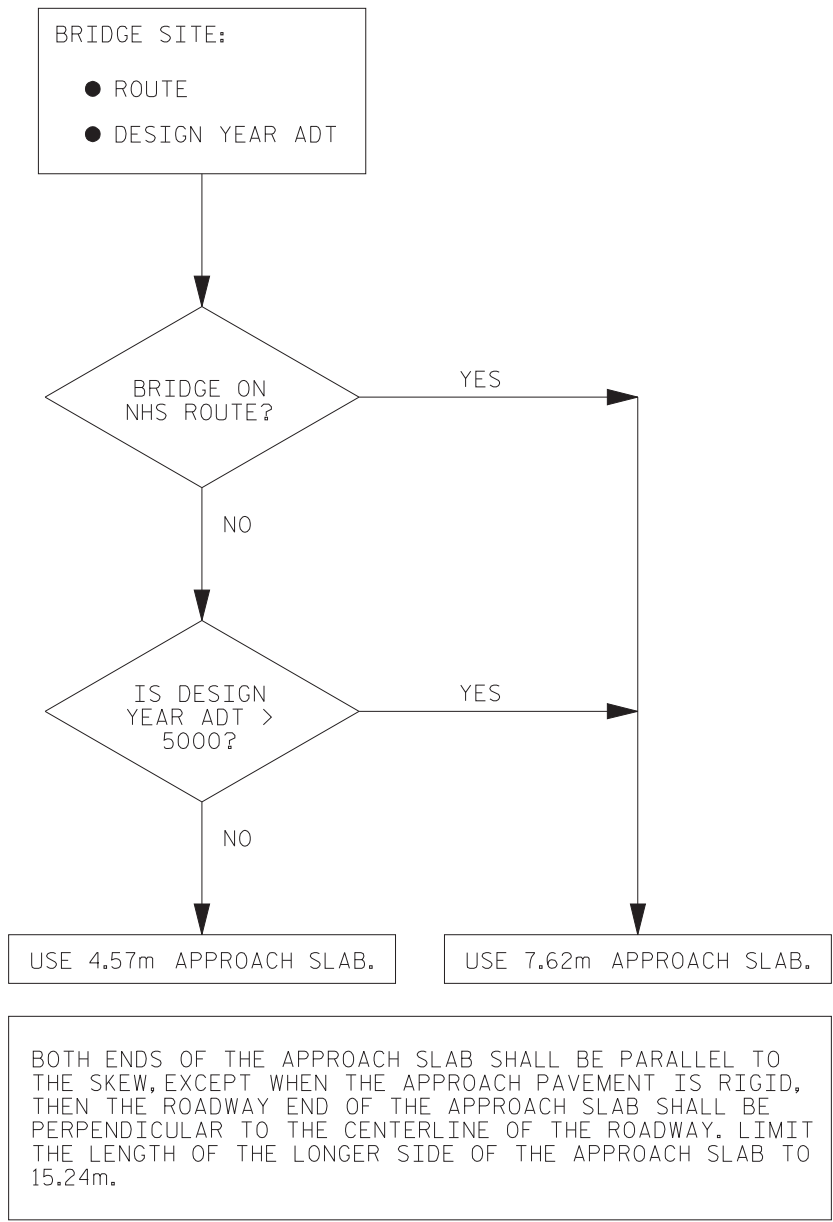
[Figure 12-25, Figure 12-25 \(Metric\)](#)

cc: R. V. Keith, P. E., with attachments  
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APPROACH SLAB LENGTH FLOW CHART

**FIGURE 12 - 25**



APPROACH SLAB LENGTH FLOW CHART

**FIGURE 12 - 25**