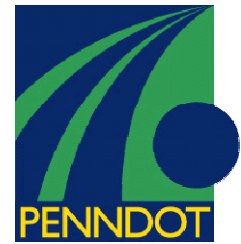


# PENNDOT e-Notification

Bureau of Design  
Engineering Computing Management Division



## BRADD

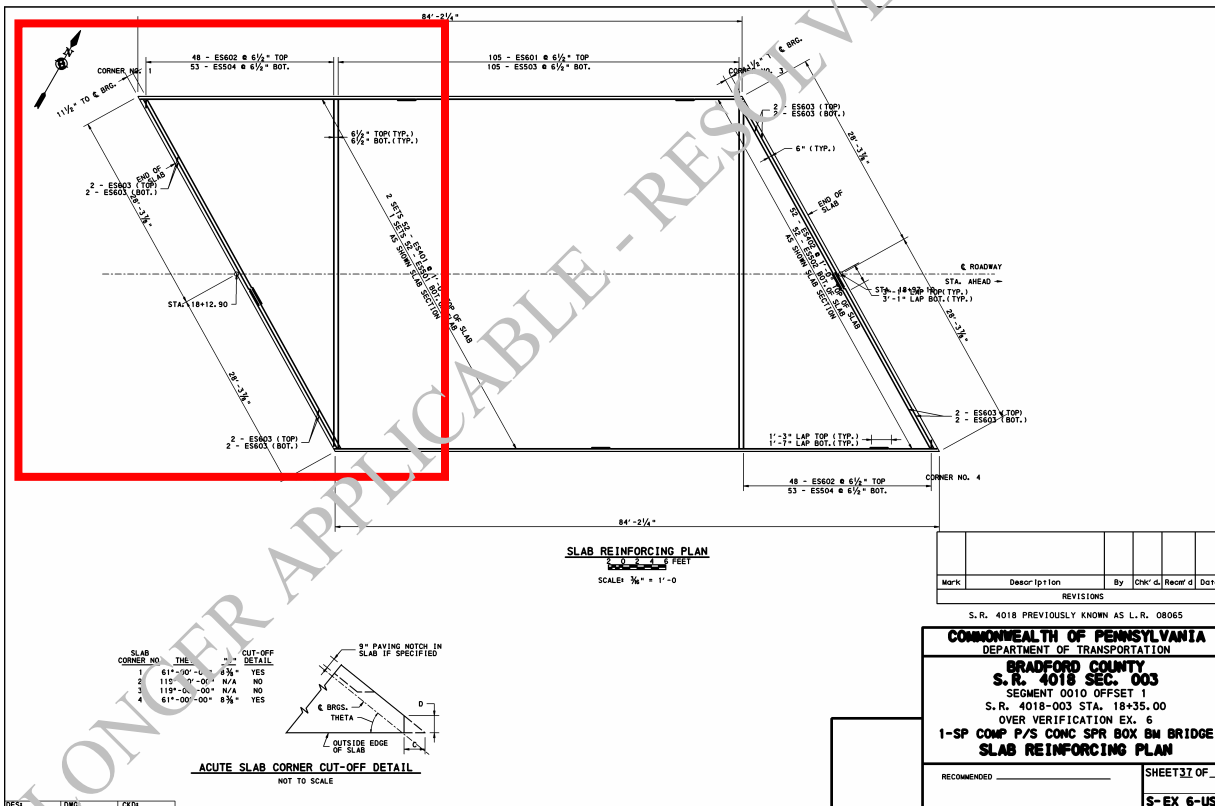
No. 015

August 3, 2006

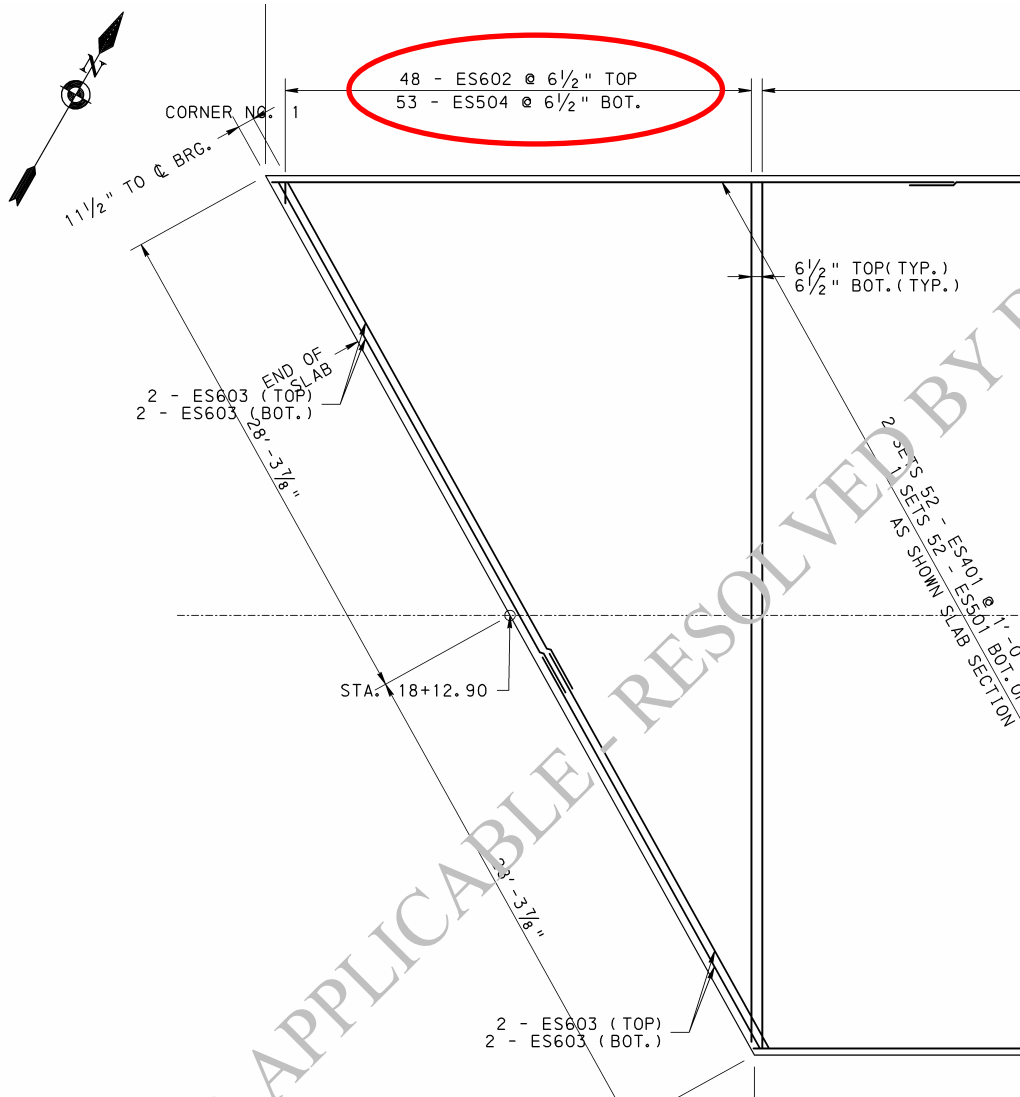
## Problem with Deck Transverse Reinforcement

### Problem Statement:

BRADD has an error when calculating the number of and the lengths of the rebars required in the acute corners of the slab reinforcing plan for spread beam superstructures. This problem only occurs for tangent decks with a skew angle less than 75 degrees. An example slab reinforcing plan demonstrating this problem is shown below, followed by a close-up of the corner at abutment 1.



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The rebar labeled "ES504" in the above detail has the number of rebars computed incorrectly. The number should match that of the top bars (48) which are computed correctly. For this example, the spacing of the top and bottom bars is the same. Regardless of whether the spacings are the same or different, the user will need to recalculate the number of bottom bars and their lengths, and then change the reinforcement bar chart accordingly. These same bars are also placed in the other acute corner of the slab reinforcing plan at abutment 2.

# BRADD

No. 015

August 3, 2006

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In addition to the bottom bar corrections, the length calculation for the top rebar (ES602 shown in the example) is incorrect and must be recalculated by the user. The length as reported in the rebar chart for this example is shown below.

ES601	6	105	50' - 6 1/2 "	15	8 "	49' - 2 1/2 "	
ES602	6	96	48' - 1 1/8 "	14	8 "	47' - 5 1/8 "	
ES603	6	16	29' - 8 1/4 "	STR			

The length should be shown for this example as a varying bar with 2'-2" as the minimum length. The maximum value is correct. The "B" leg of the bar varies from 1'-6" to 47'-5 1/8". The correct calculation for this example would show in the reinforcement chart as the following.

ES601	6	105	50' - 6 1/2 "	15	8 "	49' - 2 1/2 "				
ES602	6	96	2' - 2" TO 48' - 1 1/8 "	14	8 "	VARIES				B VARIES 1' - 6" TO 47' - 5 1/8 "
ES603	6	16	29' - 8 1/4 "	STR						VARIES 1 EA. BY 11 3/4 "

### Problem Workaround:

The workaround for tangent deck spread beam superstructures with skew angles less than 75 degrees is as follows:

- Recalculate and modify the number of bottom slab bars in the acute corners of the slab and modify both the slab plan and superstructure reinforcement schedule.
- Recalculate and modify the length of the top slab bars in the acute corners of the slab and modify the length shown in the superstructure reinforcement schedule.
- Recalculate the total reinforcement computed by BRADD based on the above two calculations.

### Problem Resolution:

This issue will be addressed in the next release of BRADD.

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**BRADD**

No. 015

August 3, 2006

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Please direct any questions to:

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