

PENNDOT e-Notification

Bureau of Design
Engineering Computing Management Division



BRADD

No. 013

June 19, 2006

Problem with Reinforcement Bar Quantities

Problem Statement:

BRADD reports a quantity value for the reinforcement bars in the superstructure and both abutments. The value is reported for both plain and epoxy coated reinforcement on the design drawings and in the cost and quantities report files as shown below.

APPROXIMATE QUANTITIES - BRIDGE STRUCTURE DESIGNED						
ITEM NO.	ITEM	UNIT	ABUT. 1	ABUT. 2	SUPER.	TOTAL
1002-0001 (6)	REINFORCEMENT BARS	LBS	288	129	—	417
AND						
1002-0053 (6)	REINFORCEMENT BARS, EPOXY COATED	LBS	32152	22906	29379	84437
AND						
1005-1000 (7)	CAST-IN-PLACE CONCRETE PILES 18" DIA	LF	1591	—	—	1591
AND						

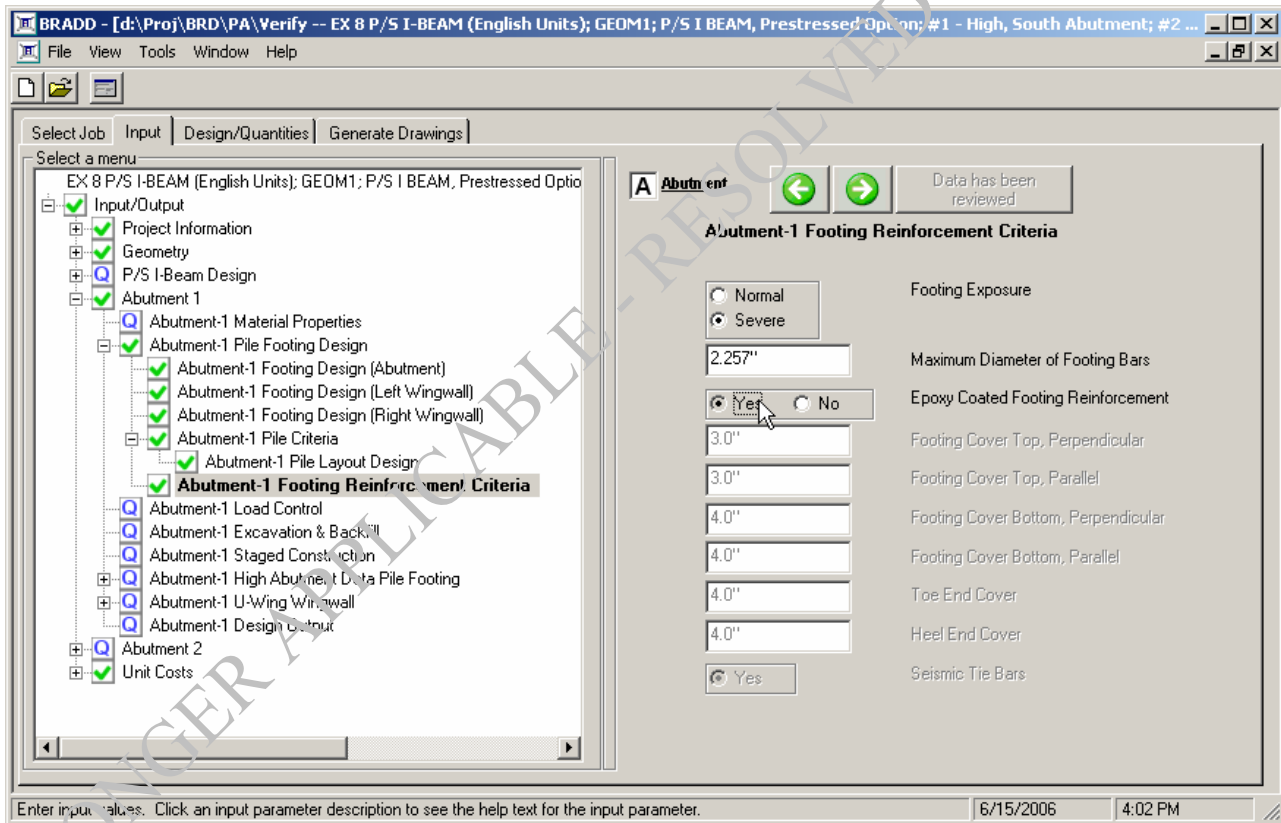
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*** TOTAL COST / QUANTITY OUTPUT ***      20-Apr-2006 12:00:12.18
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Item                               Unit Cost      Quantity       Cost
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Class 3 Excavation                  $ 30.00        1522 CY        $ 45,660.00
Membrane waterproofing               $ 5.00         18 SY          $ 90.00
Number 57 Coarse Aggregate          $ 25.00        12 CY          $ 300.00
Class AAA Concrete                   $ 350.00       88 CY          $ 30,800.00
Class AA Concrete                    $ 300.00       96 CY          $ 28,800.00
Class A Concrete                     $ 250.00       715 CY         $ 178,750.00
Selected Borrow Excavation, Struct  $ 25.00       3824 CY        $ 95,600.00
Test Piles Abutment 2                $ 0.00         1 LS           $ 0.00
Pedestrian Railing                  $ 0.00        126 LF         $ 0.00
Strip Seal Dam                       $ 0.00        105 LF         $ 0.00
Reinforcement Bars                  $ 0.45         417 lbs        $ 187.65
Reinforcement Bars Epoxy            $ 0.60       84437 lbs      $ 50,662.20
Piles Abutment 1                    $ 0.00       1591 LF        $ 0.00
Piles Abutment 2                    $ 0.00       940 LF         $ 0.00
Pile Tip Reinforcement Abutment 2   $ 0.00         31 EA          $ 0.00
PA HT Bridge Barrier Railing        $ 0.00        126 LF         $ 0.00
Protective Coating                  $ 2.50        331 SY         $ 827.50
P/S Concrete I-Beams                $ 0.00        359 LF         $ 0.00
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Total                               |               |               | $ 431,677.35
    
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The current version of BRADD incorrectly computes the distribution of the total quantity of reinforcement in the abutment between plain versus epoxy coated reinforcement. The seismic tie bars in the left and right wingwalls are ***always*** reported as plain rebars in the quantities summary rather than relying on the user input set in the 'Abutment Footing Reinforcement Criteria' menu (see below). The seismic ties bars in the abutment footing are not affected.

This applies to the reporting of quantities only. The seismic rebars are labeled as epoxy coated as appropriate based on the user input in both the footing details and in the reinforcement bar chart.



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Problem Workaround:

Currently, the workaround is to independently compute the quantity of seismic tie reinforcement bars in the left and right wingwall footings, subtract the amount from the quantity for plain reinforcement bars and add it to the quantity for epoxy coated reinforcement bars.

Problem Resolution:

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

Please direct any questions to:

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