

5380000 Resetting Guardrail.
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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Comment: (3-4-11) 1) **Modified Thrie Beam Guardrail that is to be reset** - The Department should consider allowing the contractor to re-use the large STEEL modified block as long as the block has not been damaged. This is a costly steel block. But it is made of steel that could be re-used, just like the guardrail we are resetting. If this is not allowed or stated in the plans, Contractors will have to include the cost of new steel blocks causing an unnecessary cost in the price of this reset. Reminder that "Reset" guardrail includes the re-use of "galvanized" steel guardrail and the re-use of "galvanized" steel post, then we should be able to reuse "galvanized" steel block and save the Department and tax payers some money.

2) **Potential to Re-use of plastic blocks** that are now predominately being used. Possibly the original spec was written for wood blocks, that deteriorated over time due to exposure. The plastic block may be more durable over longer periods of time, therefore; the necessity of replacing them may not be required as often. Perhaps an engineer's forethought of this may warrant a different mindset in the re-use of the existing plastic blocks. I don't know what the expected life of a plastic block is, but it probably is longer than that of a wood block. Which would allow it to be reused. Maybe we could require the Designers to designate the re-use of the plastic block in the plans, in a plan note.

The spec could read something like this "Provide exclusively new offset blocks, wood or plastic depending on the existing system, for the guardrail systems to be reset that contains old wood block. For Modified Thrie Beam systems, the steel block that is not damaged may be reused. Replacement for damaged Modified Thrie Beam blocks will be paid for under the 538-5 specification." "Plastic Blocks can be re-set, if approved by the Designer in the plans."

3) **In section 538-3 where it is being added "using a consistent type of post throughout the run of guardrail."** Not sure where this is coming from, but could lead to trouble. I can see this needed to ensure that if a contractor must replace posts that are damaged in a run to be reset, he must use the same consistent type of post that is being replaced. That is replace a wood post with a wood post and a steel post with a steel posts. No issues here. However, if we are resetting a run of existing guardrail that has inconsistent types of posts - are we to expect to have to posts, that are not damaged, just to make the guardrail run consistent in the type of posts. If this is the intent fine. But clarify that we will be compensated for the new guardrail post material per 538-5?

Response: To satisfy the first two comments I suggest:
"Provide exclusively new offset blocks throughout all installations or provide evidence acceptable to the Engineer that any blocks to be reused have a modulus of elasticity within 5% of new like material."
I would respond to the third comment that "the intent of the specification as currently proposed is clear."

From the State Specifications Office: After more discussions with the construction office, new offset blocks will be required for all installations. Some of the existing blocks could be reused, but the cost of testing to determine the condition of the material may not be cost effective.

John Mauthner, P.E.

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Comments: (3-7-11) *You may want to consider moving the sentence - "Prevent damage to reusable hardware and posts." - from the "Materials" paragraph to the "Construction Methods" paragraph (see below).*

538-2 Materials.

Prevent damage to reusable hardware and posts.

538-3 Construction Methods.

Prevent damage to reusable hardware and posts.

Response: Change Made.

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Comments: (3-9-11) 1. *I agree with reusing the Large Steel Modified blocks - if they are not damaged, can be installed correctly and will function /operate as originally designed (performance issue).*
2. *I would exercise caution in allowing the reuse of Plastic Offset Blocks. These plastic blocks are exposed to Ultra-Violet Rays and as a result experience an accelerated rate of deterioration.*
3. *The intent of item 3 above is to ensure that all posts are of the same type. If there are posts which differ in material composition (i.e. wooden posts versus steel posts within the Length of Need), then the Contractor should ensure that only one type of post is installed during resetting operations.*

Response:

1. Under 538-2, add "blocks" to list of items to be determined by the Engineer.
2. Engineer will accept if shape of block is acceptable (538-2, first sentence) and if modulus of elasticity is within 5% of expectation (538-2, second sentence).
3. Covered by second sentence of 538-3.

From the State Specifications Office: After more discussions with the construction office, new offset blocks will be required for all installations. Some of the existing blocks could be reused, but the cost of testing to determine the condition of the material may not be cost effective.

Barry Smith

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Comments: (3-31-11) 538-3 Construction Methods. Instead of "Replace any reusable salvageable materials damaged by operations at no expense to the Department". Replace with: Reusable materials damaged during resetting operations must be replaced at no cost to the Department.

Response: Agree

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Comments: (4-1-11) We have had problems with contractors “resetting” posts by only lifting them rather than extracting them and re-driving. In this case the line of “reset” guardrail settled and ultimately failed MRP right out of the gate.

I am not interested in specifying means and methods. Suggest the following in 538-3:

Reset posts in a manner that prevents any subsequent settlement after the blocks and panels are reattached.

Response: Agree

Michael Shannon, P.E

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Comments: (4-6-11) FTE recently had an internal discussion about the need to replace the misc asphalt when the GR is reset. Could this be incorporated into the specification?

Response: Design Standard Index No 400, 15 of 26, covers miscellaneous paving for standard guardrail sections.

Ken Zinck

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Comments: (4-26-11) Comments assembled by Lorie Wilson for D5 Construction:<<>>538-2 Materials.<<>>Replace non-reusable hardware and posts, as determined by the Engineer. The spec refers to the Engineer determining if the posts or hardware is reusable, do we have guideline in place to make these determinations on site or in the field? Would the original EOR be reasonable to make these determinations before contracts are executed? This changes also allows marked materials be used when ever these determination are incorrect. To protect the department we need to be as accurate as possible in the original plan set.

Response: Following the progression of comments and responses regarding blocks, if the Engineer doubts suitability for reuse, new will be installed.

Alan Autry

Comments: (5-3-11) Install guardrail panels, anchors, hardware and reflector elements in accordance with the design standards and plan details.

Response: Agree, Change made.
