

**New drawing/specification**

Post by Administrator on 4/22/05 at 15:52

This system is already in the current Guide, but a new drawing/specification (conforming to the new standards) has been posted at <http://users.wpi.edu/~skwirl/HardwareGuide/New/Ready/Systems/sgr04a-c.pdf>

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**Re: New drawing/specification**

Post by Greg Speier on 5/23/05 at 17:54

It is not clear how much space I need to have between the barrier that I am considering and the hard spot that I am shielding.

I like the European approach of considering a working width. EN 1317 does a great job of describing the concept and I think we should set our pride aside and copy this concept.

We on the other hand have done a great job of "stiffening" barriers with additional posts, longer posts etc.

In Chile I have had been faced with the task of using "typical" reductions of dynamic deflection by adding additional posts, double W-Beam etc as tested in USA with strong post systems to the European H-1 barriers which have not been tested with additional posts etc.

Based on the previous comments I am thus recommending some modifications to the barrier system drawings:

1. All should show the tested dynamic deflection and it would be nice to show how much space should be left between the back of the barrier and the item that is being shielded.
2. Where we have reasonable test data we should show that for a semi-rigid system the doubling of posts results in a revised dynamic deflection of x.xx ft.

It would be great if we could get FHWA to test all non-proprietary barriers with additional posts, with double W-beam, and with both. It would give the designer a bunch of options not now available. Of course, it just may be that some of this testing has already been done and I am just not aware of it. Should that be the case then we should include this information in the Guide.

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**Re: New drawing/specification**

Post by Administrator on 6/15/05 at 16:24

I have added an SGR04c, which is the steel post option with wood blockouts, and made a few minor changes to the specification. The new drawing/spec is located at <http://users.wpi.edu/~skwirl/HardwareGuide/New/Barriers/sgr04a-c.pdf>

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**Re: New drawing/specification**

Post by Terry Hale on 6/16/05 at 8:23

New York quit using the steel blockouts after reports of it collapsing on itself due to longitudinal movement of the rail at impact. (Looking from above, the flange against the rail moved sideways, inducing bending at the junctures of the web with the flanges.) In the extreme, the sideways movement reaches the state where the web and flanges are all in essentially the same plane and there is no significant blockout distance remaining, allowing tires to contact the heavy post.

While the above blockout collapses have not been commonly reported with our operational installations, we have gone to solid blockouts of either wood or plastic for all of our new, repair, and replacement operations. I thought that FHWA had also come out against the continued use of the steel blockouts. If so, we should drop the steel blockout option from the manual.

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**Re: New drawing/specification**

Post by Terry Hale on 6/16/05 at 8:34

The SGR04c option appear to show the back of the blockout flush with the face of the post flange. Our NYSDOT detail uses a solid blockout that is 'routed' out to permit it to fit around the flange. The 'ears' of the blockout extend past the outer edges of the web, allowing the blockout to lock around the flange and prevent rotation of the block against the face of the flange. The standard depth of the routing is 10 millimeters. For the SGR04c post profile figure, this would mean that the flange edge would be hidden by the blockout, rather than completely visible as currently shown.

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**Re: New drawing/specification**

Post by Terry Hale on 6/16/05 at 8:44

If I am interpreting the figure for SGR04c correctly, it depicts the FBB03 bolt as passing through the blockout and both flanges, giving it a length simiar to the FBB04 bolt. Our NYSDOT detail has that same bolt passing only throught the first flange, after which it is nuted.

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**Re: New drawing/specification**

Post by Terry Hale on 6/16/05 at 9:25

I have not figured out where to go to look at the details for the posts PWE01 and PW02. Regardless, New York has three post options, so at least one of them is not represented. We have our standard post which does not include a soil plate and is used with 1905 mm post spacings. When we need to reduce the deflection distance of the system, we double the number of posts, going to a 953 mm post spacing AND including soil plates on all of these standard length posts. When we need to install posts close to steep dropoffs, we use extra length posts with soil plates, giving us a third type of post. Somewhere in the illustrations, the soil plates should be included.

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**Re: New drawing/specification**

Post by rjr on 6/30/05 at 8:45

ref: SGR04c

The blockout shown in your drawing should be a routed wood or poly/composite block.

I do not know of any strong post system with a flush wood block.

You also show the post bolt going through both flanges it should only go through one flange.

A post bolt and DR nut should be all the hardware required to attach the rail and block to the post, a washer is not needed with a steel post only for a wood post.

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**Re: Comments by Terry and rjr**

Post by Administrator on 6/30/05 at 16:56

Thanks for the comments on SGR04c. I have made a few changes in response to your comments:

SGR04b uses blockout PDB01a (the original drawing), and SGR04c uses blockout PDB01b, which is routed to fit the steel post.

I also shortened the guardrail bolt used in SGR04c.

I've kept the washer that "rjr" referred to because it is shown in the NYSDOT standard drawing on which I'm basing option (c).

The post drawings are posted now. PWE01 is the regular post, and PWE02 is longer. Neither one showed soil plates in the old Guide. The NY drawing for SGR04c shows rectangular (6x200x600mm) soil plates - looks like a PLS01 to me, although right now that's labeled as a "weak post soil plate." Anyone else use soil plates on these posts? Have they been crash-tested and/or FHWA approved with soil plates?

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**Re: New drawing/specification**

Post by Administrator on 9/8/05 at 14:13

**5/23/05 at 17:54, Greg Speier wrote:**

It would be great if we could get FHWA to test all non-proprietary barriers with additional posts, with double W-beam, and with both. It would give the designer a bunch of options not now available. Of course, it just may be that some of this testing has already been done and I am just not aware of it. Should that be the case then we should include this information in the Guide.

Some testing has been done. See approval letter B-64C for example, where an SGR04-like system was tested with reduced post spacing. TTI is probably the best source of information about what has been tested.

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