

Ronald K. Faller

From: Rod Lacy [rlacy@ksdot.org]
Sent: Thursday, December 16, 2010 6:30 PM
To: Scott King; Ronald K. Faller; Joseph.Jones@modot.mo.gov
Cc: Craig.Anderson@jacobs.com; 'Bob Bielenberg'
Subject: RE: Pinned Down Barrier at Expansion Joints

Hey Joe, the detail we use will accommodate 4" +/- . With a change in temperature of 90 degrees we can accommodate about 1100' long bridge. It is also possible that you could place the barrier with a little larger gap, say to accommodate 6" +/- thermal movement. However if you do that you will need to increase the length of the cable that we have shown as 25'-9" out to out.

The detail you illustrated has an extremely large gap between the barrier to totally span the expansion joint. It appears to me that you could close this gap more by placing the barrier on the finger joint but not bolting the barrier through this joint. There should be enough space between our anchor bolts to allow you to use this on your bridge.

If you decide to go larger than the 6" +/- expansion accommodation then I would recommend that you have you someone conduct a finite element analysis.

We have used this on two projects in KS so far without any accident problems.

Good luck

Rod Lacy, PE

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From: Scott King
Sent: Wednesday, December 15, 2010 11:28 AM
To: Ronald K. Faller; Joseph.Jones@modot.mo.gov
Cc: Craig.Anderson@jacobs.com; Rod Lacy; 'Bob Bielenberg'
Subject: RE: Pinned Down Barrier at Expansion Joints

Hey guys,

Yes, we have an expansion joint barrier detail that was modeled by our bridge department like Ron indicated. Attached is that drawing in Microstation and Adobe formats. If you want to view the other concrete safety barrier details, you can download them for free at the website below in PDF or DGN format. Hope this helps!

KART service (free login):

<http://kart.ksdot.org>

Thanks,
Scott

From: Ronald K. Faller [<mailto:rfaller1@unl.edu>]
Sent: Wednesday, December 15, 2010 11:12 AM
To: Joseph.Jones@modot.mo.gov
Cc: Craig.Anderson@jacobs.com; Scott King; Rod Lacy; 'Bob Bielenberg'
Subject: RE: Pinned Down Barrier at Expansion Joints

Joe:

MwRSF has not developed a stiffened cover plate system for protecting a large gap formed between two rigid barrier ends with an interior expansion joint in the deck surface. However, I do recall that the Kansas DOT has developed a system but not sure of the details. We provided some feedback years ago, but their bridge division personnel performed the FEA analysis and design work. I suggest that you contact Rod Lacy or Scott King to acquire their details for such a connection. However, note that longer lengths of the gap could greatly degrade performance of the existing design. I have copied Rod and Scott on this email so that they are aware of your inquiry of the cover plate system.

Ron

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From: Joseph.Jones@modot.mo.gov [<mailto:Joseph.Jones@modot.mo.gov>]
Sent: Wednesday, December 15, 2010 10:22 AM
To: rfaller1@unl.edu
Cc: Craig.Anderson@jacobs.com
Subject: Pinned Down Barrier at Expansion Joints

Ron,

Do you have a piece of hardware that will handle the transition between two pinned-down temporary installations of pin & loop F-barriers over an expansion joint. The joint probably has a 7 to 10 inch throw.

I spoke to Rory Meza and she showed me the Texas standard plan in which they simply cantilever one of the segments out over the joint. This would certainly allow for movement, but at full contraction, there would be a sizeable gap/snag point between the barriers, nor could the barriers be connected to one another. We've seen the state of Illinois use steel plates which cover the gap while one of the barriers slides independently. The plate is cast with studs into the other barrier.

This seems like a reasonable solution but I wondered how you have seen it handled.

I look forward to your response,

Joe Jones

