

From: Dean Leo Sicking [<mailto:dsicking@uab.edu>]

Sent: Wednesday, November 05, 2014 5:02 PM

To: Paniati, Jeff (FHWA); Furst, Tony (FHWA); Mike.griffith@fhwa.dot.gov; Longstreet, Will (FHWA); Artimovich, Nick (FHWA); Albin, Dick (FHWA); Frank Michael Skidmore

Subject: RE: Changes to the ET-Plus Design in early 2013

Note: there was an errant phrase in my prior e-mail. I was going to cite a study developed elsewhere, but I discovered it was still protected. I took a half dozen measurements or so and changed the dimensions in the letter but forgot to delete the reference to the number of heads in the restricted study.

I am sorry for the mistake.

All,

I want to remind all of you of the informal study I conducted in Birmingham during that latter part of 2012 and the first half of 2013. In this study, I visited 20 ET-Plus accident sites and found none that had extruded more than 4 ft. of guardrail. On April 21st of 2013, I found 3 impacts that extruded more than 6 ft. One of these impacts actually extruded 24 ft of guardrail. When I examined the impact heads, I found that they were all new impact heads with shiny new guardrail. Upon careful examination of the impact heads, I found that the top to bottom dimension of the guide channel at the inlet to the squeezer section had been increased from 14.75" to 15.125." I believe there were other small dimensional changes as well. Although I believe this change was a move in the right direction, it is my understanding that it was done without communicating with FHWA. A quick review of a handful of ET-Plus installation revealed that the a variation in the guide channel heights at the inlet from 14.75" to 15.25". Almost all of the other dimensions vary widely as well. Hence, any plan for testing the ET-Plus should take into account the fact that there are wide variations in key dimensions and that the most critical combinations of the dimensions installed around the country should be used in the testing.

I hope you find this note helpful.

Let me know if anyone would like more information.

Thanks

Dean