

# Guardrail Committee Minutes

January 18, 2007

10:30 AM

Roadway Design Conference Room

## I. Quick items to address from the last meeting's "To Do" List

- ◆ Amount of Prime Coat called for on Standard Drawing 862.01 (Sheet 10 of 11) (Joel Howerton)

*Joel Howerton spoke with Mr. Clark Morrison in regards to this standard drawing. Mr. Morrison's recommendation to address concrete shoulders is to place 4" of ABC with a Straight Seal. Warren Walker was concerned with the cost associated with performing this operation. Another concern was how would we make sure the quantity calculations were accounted for in our projects. It was the general consensus of the Guardrail Committee that the best way to address concrete shoulders would be to place a note on the standard noting that a special detail would be required for concrete shoulders. For asphalt shoulders, Jay Bennett recommended that we investigate using the surface course for the top layer. Joel Howerton will check with Clark Morrison to make a determination on how best to revise this standard. Joel will provide a copy of the new special detail sheet to be used in lieu of this standard at our next committee meeting.*

- ◆ NP-06-4604 - T31/39 Guardrail by Trinity Highway Safety Products Inc (Joel Howerton)

*Joel noted that this product would save some grading and that it is a proprietary product. Therefore, it should not be treated as a new product. To use this product will require special approval. Joel has discussed the usage of this product with the New Products Committee.*

- ◆ Letter (dated November 29, 2006) to add additional guiderail post **(Attachment 1)**

*Ron Allen briefly reviewed a copy of the subject letter. No further comments were noted.*

- ◆ Field Inspection Questions to address what design measures to use on dead-end roadways **(Attachment 2)**

*A copy of the Combined Field Inspection Questions was attached for attachment 2. Roger Thomas reviewed the two questions that addressed the placement of guardrail/terminal treatments on dead-ended roadways. Dennis Jernigan noted that he would send out a bulletin to the Construction Unit and make them aware that they need to review the roadway plans closer to make sure they address what measures to use on dead-ended roadways.*

**II. Potential issues with the recent release of AASHTO Roadside Design Guide Chapter 6 Update; specifically to the 6.6.1 Terrain Effects section.**

Kevin Lacy and Shawn Troy presented their findings in regards to this recent release. Shawn passed out documentation that summarized their concerns. He also passed out a table which showed both Frontside and Backside cable guiderail breach information.

Kevin Lacy gave a brief history of how the AASHTO Subcommittee coordinated with George Washington University during the development of the update for chapter 6, section 6.6.1 Terrain Effects. The Transportation Engineering Safety Systems Branch (TESSB) has concerns with the new guidelines, because it appears to be based off limited simulation and minimal crash testing. The AASHTO Subcommittee is recommending that the new guidance apply to all cable barriers, including high-tension designs and 4-cable systems. Basically, it recommends that maximum redirection with cable barrier can be achieved if the area from 1 ft to 8 ft from the ditchline on a 1V:6H slope is avoided. The final draft is in circulation.

The TESSB would like to respond back to AASHTO in regards to the Chapter 6 Update. They noted that NCDOT was the only data providers to assist George Washington University with input data for their research. Furthermore, they noted that there have been no crash tests performed with an eight foot offset from the centerline of median. They also noted that based upon frontside hit data information that more research needs to go into address frontside penetrations. The TESSB thinks it is too early to make this section of the new update a national standard guideline. The Chapter 6, 2006 update of the Roadside Design Guide (2002) has been released through AASHTO. Following the release, the Department continues to place cable guiderail that does not meet this new guidance. Therefore, we will need to coordinate with the Attorney General's Office on how to best document our placement policy. A letter will likely need to be prepared for either Kevin Lacy's or Debbie Barbour's signature.

Shawn Troy noted that we have a 3-year crash history and documentation for areas where we have placed different types of median barrier. Shawn questioned, "What is an acceptable rate of penetration?"

**III. Follow up to Depressed Median Guardrail Issues with Divided Highways of 6 Lanes or more.**

The Guardrail Committee Reviewed two new Special Details developed by Garry Lee and Virginia Mabry to address median barrier placement for both 46 and 60 foot medians with three or more travel lanes in each direction. The 46-foot median detail showed the placement of two lines of steel beam guardrail with the face of the guardrail lining up with the shoulder edge of pavement. While the 60 foot median detail showed a single line of cable guiderail offset from the centerline of the median ditch 8 feet. In regards to the 46-foot median detail, Garry Lee recommended that we investigate the

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likelihood of making all the median slopes 4:1. This would aid with positive pavement drainage.

A subcommittee will be formed to address what design measures should be taken to address positive pavement drainage with a 46-foot median divided facility and 12 foot inside paved shoulders. Also, Garry Lee will look into what updates may need to be made to the Design Manual to address positive pavement drainage and the median barrier placement with 6 lanes or more.

The results from a poll taken of Roadway Design Project Engineers to determine how many projects are in the unit that have 6 or more travel lanes with a 46 foot median was compiled by Roger Thomas. Five out of a total of 13 Project Engineer groups have projects at various stages (preliminary and right of way plan stage) with this typical section. There are a total of 9 projects unit wide with this proposed typical section. Five projects are at the Preliminary design stage and four are at the Right of Way Plan development stage.

### **III. Miscellaneous**

- ◆ Ron Allen noted we need to have a field trip to look at the cable guiderail and guardrail placement on recently constructed projects. For instance, the placement of cable guiderail on recently completed sections of I-540 was suggested.
- ◆ Garry Lee noted the Roadway Design Unit and Traffic Control Unit need to coordinate better in making a determination on whether gating or non-gating impact attenuators will be required. One possible way to address this concern is to revise the Pre-Let Field Inspection Questions to incorporate a question that addresses this issue and to make sure Mr. Stuart Bourne is cc'd.

### **To Do List**

- Joel Howerton will coordinate with Clark Morrison on how to revise Standard Drawing 862.01 (sheet 10 of 11). Joel will provide a copy of the new special detail sheet at our next committee meeting.
- Kevin Lacy will coordinate with Jay Bennett on how to address the recent release of the AASHTO Roadside Design Guide Chapter Six, section 6.6.1 Terrain Effects Section update.
- Scott Blevins, Roger Thomas, Cynthia Perry, Garry Lee and Clark Morrison will meet to discuss what design measures should be taken to address positive pavement drainage with a 6 lane, 46-foot median divided facility.
- Garry Lee and Roger Thomas will develop a new Pre-Let Field Inspection Question to address if gating or non-gating impact attenuators are required due to temporary traffic patterns.

Minutes prepared by Roger Thomas, PE

Minutes approved by Ron Allen, PE

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