Mr. ZION. Now, does this imply, then, if the W-beam is low enough, it would not be necessary to go to the expense of blocking it out? Or would this make the guardrail too low to be effective?

Mr. PRISK. You have two considerations, Mr. Congressman. If you get the beam low enough, you can prevent the blockout—I mean you can prevent this wheel engagement with the post—but then you run the risk of the vehicle topping the rail. This rail was mounted low enough so that you might presume that a wheel could not get in there, although I think Mr. Skeels would differ with me about that.

Mr. CONSTANDY. Mr. Skeels?

Mr. SKEELS. I would like to just add, under accident conditions, when that rail is hit, that post will deflect backward in the dirt. It will push back at a considerable angle. When it does, the bottom of the post is ahead of the rail and will catch the wheel.

Mr. ZION. I see.

Mr. CONSTANDY. Do we have any thoughts on the desirable height of the rail, Mr. Prisk?

Mr. PRISK. Yes. I think the research that has been performed indicates that the rail on the median barrier side, as a median barrier, should be about 30 inches, 30 or 31 inches.

Mr. ZION. Is that the bottom of the W?

Mr. PRISK. That would be the top of the W-beam. And on the edge barrier, about 27 inches. This rail was low on this particular project.

Mr. CONSTANDY. Would you care to make a comment, Mr. Wilson?

Mr. WILSON. I was going to make almost the same comment, that in our continuing test program, we ran a test, a full-scale test, on the 24-inch height normal guardrail.

Mr. CONSTANDY. Twenty-four inches?

Mr. WILSON. Twenty-four inches high. This is the height we were using several years ago. And in order to verify that we either should continue or make modifications, it told us we ought to go to 27 inches in height. And this is the way it is being done now.

Mr. CONSTANDY. That is on the shoulder?

Mr. WILSON. That is on the normal guardrail installation as you see here. On a barrier, it would be higher, median barrier.

Mr. CONSTANDY. When you speak of the research conducted in California, these were live tests, were they not? Actual automobiles being smashed into guardrails?

Mr. WILSON. Oh. yes. We have had several hundreds of these tests run into guardrails, curb, median barriers of all kinds.

Mr. CONSTANDY. Those several hundred tests give a considerable amount of data to justify the standard you then used?

Mr. WILSON. Right.

Mr. ZION. In the center, it appears that if someone were guided along this guardrail, it would guide them right into a concrete curb of some kind. Is that true?

Mr. PRISK. Yes, the curb that is at the base of the rail as you get onto the bridge is a hazard point, and a car sliding on the rail would, if he slid all the way to the bridge, certainly have to put up with that curb on the bridge.

Mr. CONSTANDY. That is a significant point, Mr. Congressman. We propose to get into that in some detail in the next section of this presentation when we deal with the bridges.