

# Impending Changes for Traffic Sign Design

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In response to several changes in policies concerning traffic and traffic control devices, there is a need to revise some of our own sign designs for sign structures. One such change in policy has been the implementation of the Indiana Department of Highways' new guidelines for clear zone requirements. To get federal funding for projects, sign designs for structures must be changed or alternatives found which would meet the new requirements.

To protect the motorist from running into overhead sign structures, guardrail and sand barrel arrays are used. Currently, steel double-faced guardrail is being used for median installations and all aluminum guardrail is to be replaced with steel guardrail. Also, the median is now to be regraded to a 10:1 slope for guardrail installation and 20:1 for sand barrel arrays.

Sand barrel arrays are an alternative to protect the median installations on an overhead sign structure. One problem with a sand barrel array, however, is ponding either upstream or downstream from the structure. A solution to this is to use a grate inlet to divert the water. The sand barrel array and median guardrail installation are priced comparatively; therefore, the choice of which one to install can be made depending on other criteria relative to specific cases.

Another change in traffic sign design concerns wide flange posts for panel signs. Because of the decrease in the average size of cards being used today, the largest wide flange beam to be used is the W8 × 18. Also keeper plates are to be installed. These are thin plates of galvanized steel from 20 to 28 gage thick and placed between base plates.

For four lane divided highways, the breakaway features on wide flange posts are satisfactory since hitting a sign post is limited to one direction — the front. However, for two-lane, two-way traffic, a vehicle could hit the back or side of such a post and the breakaway feature would not be effective. A perforated fuse plate or back to back fuse plates are possible solutions.

Presently, the Indiana Department of Highways has specifications for wooden posts, yet we do not currently use them; however, there are proposals to begin using them. Wood posts are easier to install as com-

pared to wide flange beams. Concrete is not needed; therefore, installing the wood posts are less complicated. A crew of four can install two posts and a sign in four hours.

The Southwest Research Institute of San Antonio, Texas, prepared a video (which was presented) on two crash tests using pressed plywood, hollowed rectangular posts. The first test was of a 1840 lb, 1981 VW Rabbit, running into one of the two posts which was standing upright holding a 20 × 10 sign approximately 15 feet high, at 20 mph. At first, the post was shown to have saw cuts at the three inch line and the eighteen inch line. The car was then crashed through the post, completely fracturing the post at the three inch line. The car then followed through with apparently minor damage to the front of the car, yet the remainder of the wood post fell on top of the roof of the vehicle causing damage to the roof. The break at the three inch line left less than the maximum of four inches above the ground line and did not cause snagging under the carriage of the car. Several views of this test were shown in slow motion. The second test showed a similar vehicle at 60 mph. In this example, there was more damage to the front, yet the wood post did not fall on top of the car due to the speed of the car enabling it to get beyond the falling sign and sign post. Again, this test was shown at various views in slow motion.