



Research Notes

RSN 97-2

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Cable Guard Rail Preventing Injuries on I-5

The ODOT Research Unit is currently evaluating a cable median guardrail installed on Interstate 5 between Brooks and Donald. The intent of this median application is to reduce the incidence of serious injuries and fatalities by preventing crossover accidents. The three-strand cable guardrail in place is a flexible barrier system that gradually redirects an impacting vehicle by elastically stretching the cables, thus minimizing the forces on the vehicle and its occupants. It is recommended for irregular terrain and wider medians to prevent infrequent but potentially catastrophic cross-median accidents.

This type of barrier has passed NCHRP 350 crash test requirements. Accident and maintenance history is currently being collected in order to make future recommendations for the use of this type of median barrier. Pictured below is the guardrail anchor assembly with breakaway anchor base plate, breakaway anchor post, turn buckle assembly and tensioning springs.

Site Selection

From the year 1987 through the year 1996, there were 14 injuries and 6 deaths in this section of I-5 due to accidents that involved the median strip. Public interest in increasing the safety of this area was heightened. Extensive maintenance requirements after impacts prohibit widespread use of



Vehicle prevented from crossing into oncoming traffic



ET-2000 guardrail anchor assembly

cable guardrails. However, they are well suited to this particular stretch of freeway. The alternatives of concrete or metal barriers would have required extensive grading for the foundation and eliminated the glare guard median roses.

Promising Results

So far, the system is proving effective in reducing the fatalities and injuries caused by crossover collisions on this section of I-5. There have been approximately 21 hits on the system since it was constructed in December of 1996. Eight of these were potential or likely crossovers, but there have only been two injury accidents. No one striking the barrier has been seriously injured. Since the barrier has been in place there have not been any crossover accidents, with the exception of a crossover semi-truck that struck a passenger vehicle. Neither cable

guardrail or concrete barrier systems are designed to stop truck crossovers. Rather, they are designed for a majority of the vehicle fleet.

Cost Considerations

Total costs were around \$12 per linear foot for the cable system versus \$28.50 per linear foot for the concrete system. The cost of the system in-place was approximately \$8.60 per linear foot. Routine maintenance requirements to preserve optimum cable tension are unknown at this time. Repairs must also be taken into account. When a post is impacted, a relatively long run will need repair.

Future Construction

A construction project will start in the near future to install cable guardrail from milepost 260 to 282, filling in the gaps in the existing median barrier.

For additional information about this project, contact Brett Sposito, Research Unit, (503) 986-2847.

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