Innovations Showcase

T & E First-Round Winner
Innovations Challenge

April 2016
Prepared by Transportation Planning
Missouri Department of Transportation

Laser Measuring Device

Description

The Laser Measuring Device is used to measure the height of existing guardrail to determine if it meets the standard height requirements. While one employee drives along the guardrail, a second employee monitors whether the laser beam is making contact with the guardrail. If the beam is projected above the guardrail, that stretch of guardrail is deemed non-compliant.

Benefit

There are many benefits to using this laser device. The guardrail height can be checked in a way that saves time, saves money and simplifies work. Most importantly, this innovation improves safety by keeping employees from working along the highway.

Materials and Labor

Materials	Cost
Pen Laser	$8
GoPro Suction Cup Mount	$20
GoPro Ride Hero Support System (GHR30)	$8
Small Level	$4

Materials: $40
Labor: 1hour

For More Information Contact:

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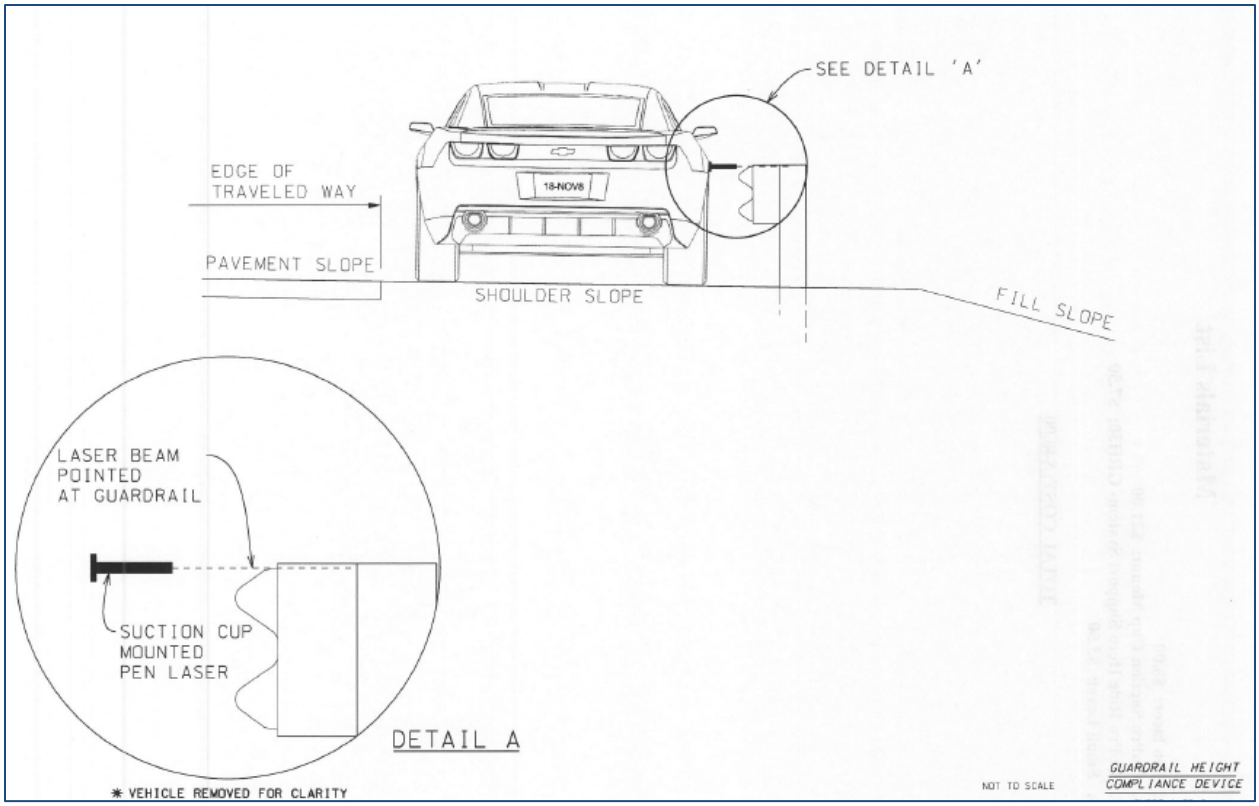
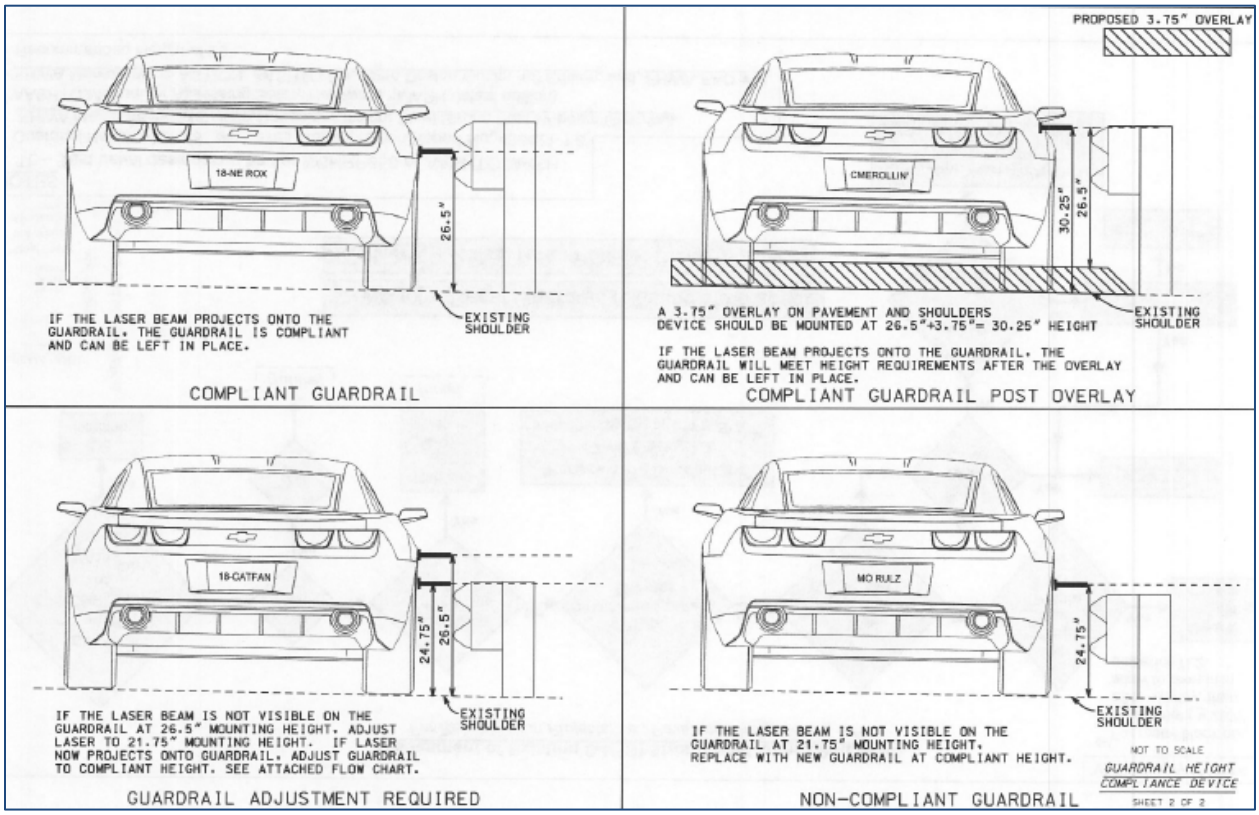
Additional photos can be seen by accessing the Innovations Challenge SharePoint page at: http://sharepoint/systemdelivery/TP/Documents/InnovationsChallenge.aspx.


SEE DETAIL 'A'
EDGE OF
TRAVELED WAY
PAVEMENT SLOPE
SHOULDER SLOPE
FILL SLOPE
18-NOV8
LASER BEAM
POINTED
AT GUARDRAIL
SUCTION CUP
MOUNTED
PEN LASER
DETAIL A
* VEHICLE REMOVED FOR CLARITY
NOT TO SCALE
GUARDRAIL HEIGHT
COMPLIANCE DEVICE


18-NE ROX
26.5"
EXISTING
SHOULDER
IF THE LASER BEAM PROJECTS ONTO THE
GUARDRAIL. THE GUARDRAIL IS COMPLIANT
AND CAN BE LEFT IN PLACE.
COMPLIANT GUARDRAIL
PROPOSED 3.75" OVERLAY
CMEROLLIN'
30.25"
26.5"
EXISTING
SHOULDER
A 3.75" OVERLAY ON PAVEMENT AND SHOULDERS
DEVICE SHOULD BE MOUNTED AT 26.5"+3.75"= 30.25" HEIGHT
IF THE LASER BEAM PROJECTS ONTO THE GUARDRAIL. THE
GUARDRAIL WILL MEET HEIGHT REQUIREMENTS AFTER THE OVERLAY
AND CAN BE LEFT IN PLACE.
COMPLIANT GUARDRAIL POST OVERLAY
18-CATFAN
24.75"
26.5"
EXISTING
SHOULDER
IF THE LASER BEAM IS NOT VISIBLE ON THE
GUARDRAIL AT 26.5" MOUNTING HEIGHT. ADJUST
LASER TO 21.75" MOUNTING HEIGHT. IF LASER
NOW PROJECTS ONTO GUARDRAIL. ADJUST GUARDRAIL
TO COMPLIANT HEIGHT. SEE ATTACHED FLOW CHART.
GUARDRAIL ADJUSTMENT REQUIRED
MO RULZ
24.75"
EXISTING
SHOULDER
IF THE LASER BEAM IS NOT VISIBLE ON THE
GUARDRAIL AT 21.75" MOUNTING HEIGHT.
REPLACE WITH NEW GUARDRAIL AT COMPLIANT HEIGHT.
NON-COMPLIANT GUARDRAIL
NOT TO SCALE
GUARDRAIL HEIGHT
COMPLIANCE DEVICE
SHEET 2 OF 2