APPENDIX 13
Information from Japan
• Title: Effectiveness of Road Markings in Curve Section
• Author: A.Kozaki, T.Fukui ; Gifu Regional Construction Office, Ministry of Construction
• Publication: 19th Japan Road Congress, 10.1991
• Type of speed reduction marking : Arrow marking type
  Three patterns were settled in curves.
    Pattern 1 : Delineators
    Pattern 2 : Delineators and arrow markings
    Pattern 3 : Delineators, arrow markings and chevron signs
• Result:
  Speed reduction
    Pattern 1 : Speeds of vehicles at curve starting point are high and vehicles slow down between curve starting point and middle of curve section.
    Pattern 2,3 : Vehicles slow down before entrance of the curve.
  Sections where effectiveness of arrow markings does not appear.
    Slope sections where cars go up and slope is more than 2%.
    Curve sections where radius is larger than 150m

• Title: Road Safety Countermeasures Using Road Markings
• Author: N.Takada ; Shiga Regional Construction Office, MOC
• Publication: 22th Japan Road Congress, 10.1997
• Type of speed reduction marking : Comb marking type
  Speed reduction markings were settled in curves and slopes
• Results:
  Average speed of vehicles were reduced between 1.6km/h and 5.7km/h.
  Scattering of vehicle speeds was decreased
  Speed reduction was clear at the slope (going down direction) at night.
  The number of lane-change times were decreased.
Title: Effectiveness of Speed Reduction Markings for Traffic Accident

Author: U. Kurosaki et al. · Japan Highway Public Corporation

Publication: 7th Annual Meeting of Japan Society of Traffic Engineers, 11, 1997

Type of speed reduction marking: Comb marking type

Speed reduction markings were settled at traffic accident occurring section of National Expressway

Results:

Speed reduction effectiveness is not clear.
The number of lane-change times were decreased.
Drivers felt that the lane is narrow (29%), lane change is not easy (22%) and running speed is high (10%). (Answering rate of questioners).
Chevron Sign Marking (anti-skid type)
Typical anti-skid pavement install section.

This is not a good case.

Pavements have to be installed before the curve section.