

No.RW/NH-33044/11/96-S&R**Dated, the 20th December, 1996**

To

The Chief Engineers (dealing with National Highways and other Centrally Financed Schemes), Public Works Department of all States and Union Territories, Director General (Works), Central Public Works Department, Director General Border Roads

Subject: Safety precautions on 2-lane National Highways with paved shoulders.

Detailed guidelines for construction of paved shoulders on both sides of two-lane carriageway had been issued vide this Ministry's Circular No. RW/NH-33054/20/88-DO II, dated 10.5.89. These guidelines had provided 1.5 m paved shoulders flanked by 1 m wide earthen/granular berm. Wherever paved shoulders are constructed on the sides of two-lane carriageway provision of the said circular should invariably be followed and berms in 1 m width should be maintained to proper cross sectional levels and slopes at all times.

2. It has come to Ministry's notice that at some locations, the above standards have been relaxed and the entire 2.5 m shoulder upto edge of the embankment has been paved. This has increased risks of accidents and drivers are not able to judge easily and accurately the edges of embankment particularly in the condition of poor visibility such as rain, fog or darkness. It has, therefore, been decided that on exceptional cases wherever shoulders have been paved upto the edge of the embankment, roadway indicator type delineators should be provided as per enclosed sketch at the edges of embankment.

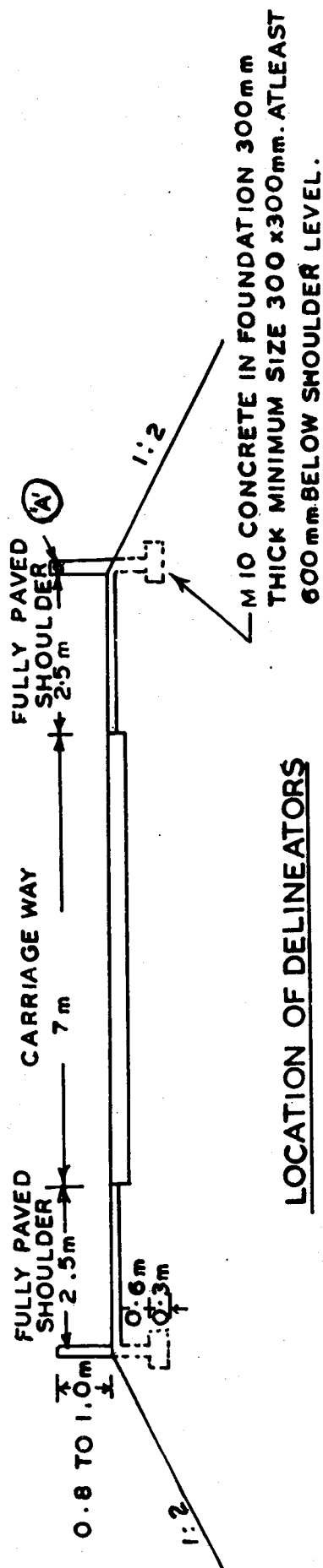
3. The above delineators can also be provided at the edges of high embankment in the accident-prone locations in cases where roadside safety barriers/railings are not provided.

4. The delineators referred to above shall be made of pipes, posts of metal, concrete, timber, cut stone or plastic. Plastic posts damage the vehicles less while concrete pipes could be less prone to vandalism or theft. The delineator posts should be 80-100 cms high and painted alternatively in black and white bands each 150 mm wide. This should be fitted with white coloured rectangular (80 x 100 mm) or circular (75 mm dia), retro-reflective panels at the top. Detailed guidelines for such delineators are given in IRC:79-1981. The delineators should be installed according to nature and stiffness of the ground and local practice. The installation should ensure that the post does not change its orientation and the reflectorised face remaining perpendicular to the direction of travel. A foundation slab of M-10 concrete 300 mm thick and having sides equal to 3 times the dimension of posts (Minimum 30 cm) shall meet these objectives.

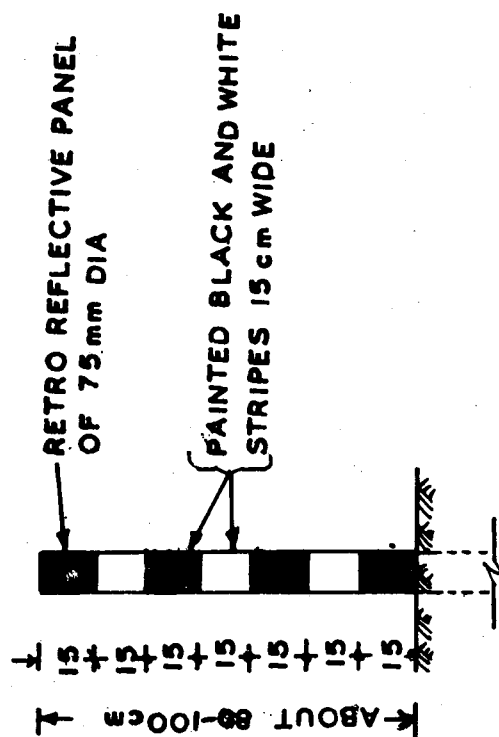
5. The specific cases where entire shoulder upto the edge of the embankment has been paved and the edges are failing due to slippage in the upper portion of the side slopes, shall be referred separately to Ministry after site inspection with the suggestions for remedial measures.

6. It is hoped that the implementation of the above suggestions will be useful particularly at night time in guiding a driver to drive his vehicle away from the edges.

7. The contents of this letter may please be brought to the notice of your field staff for information and necessary action.



LOCATION OF DELINEATORS



DETAIL AT 'A'
(NOT TO SCALE)

RADIUS OF CURVE (METRES)	SPACING OF DELINEATORS (METRES)
30	6
50	8
100	12
200	20
300	25
400	30
500	35
600	38
700	40
900	45
1000	50

NOTE:- SPACING OF DELINEATORS ON STRAIGHT REACHES SHOULD BE 50-70M AND ON CURVES AS SHOWN ABOVE.