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No.RW/NH/33015/1/93-S&R ***Dated, the 30th December, 1993***

To

The Chief Engineers of all State PWDs and Union Territories (dealing with Roads)

Subject: Drainage of dual carriageway on curves

The drainage of road surface is an important requirement, more so when road sections having divided carriageway negotiate horizontal curves. Different practices are followed for providing drainage arrangement. Therefore, there has been felt need for bringing out guidelines for this situation. After considering the various practices for drainage arrangement, a suitable scheme has been evolved and is shown in the attached sketch. The salient features are :

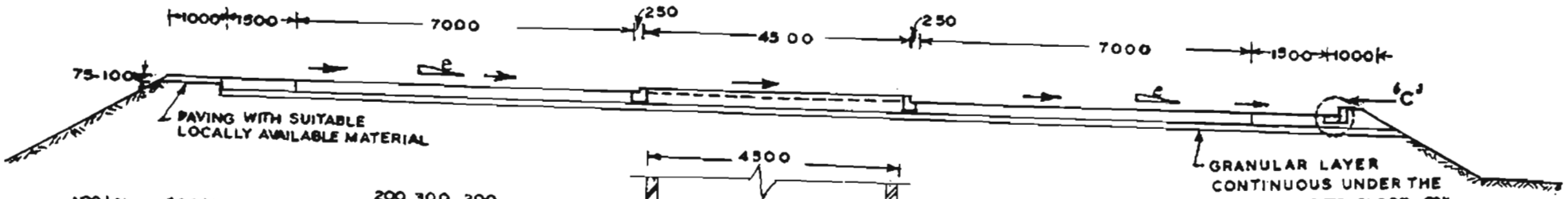
a) The outer edge is super-elevated and a uniform slope from the outer edge to the inner edge of the roadway is provided as worked out with the established formulae subject to maximum permissible limits.

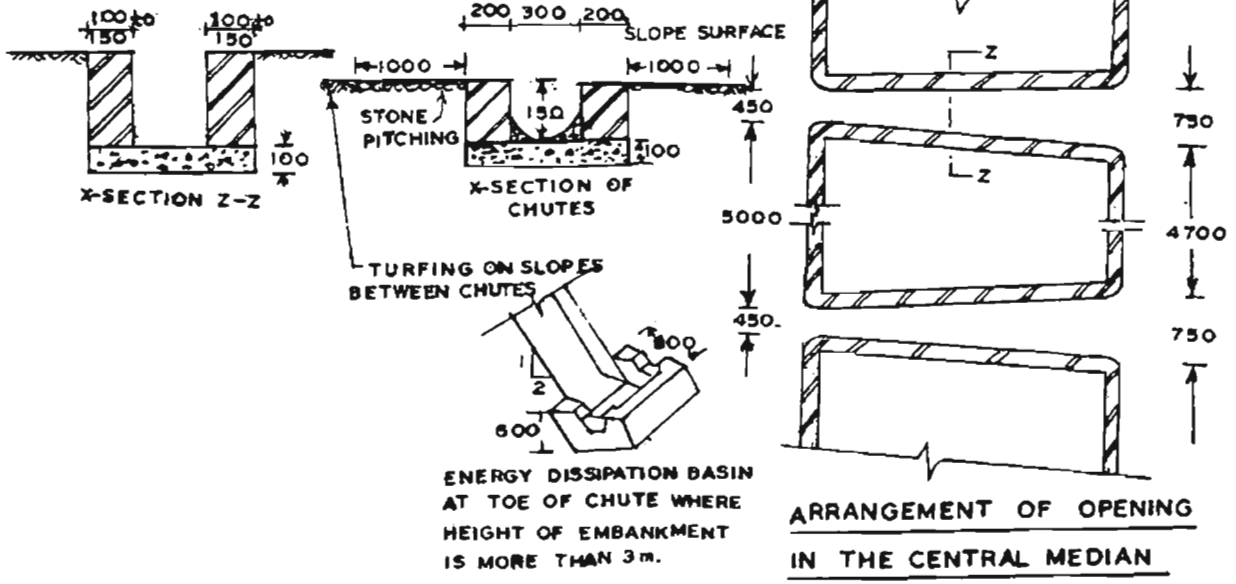
b) Openings in the central median are provided as shown in the sketch.

c) Paved shoulder is provided in 1.5 m width of the berm on either side. The remaining 1.0m width of the berm on the outer side is suitably paved.

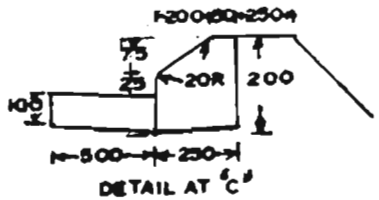
d) For proper drainage of water collected from the road surface in the longitudinal drain, chutes are provided in the inner side slope of the embankment. Energy dissipator basin is provided at the toe of the chute.

2. It is requested that the above guidelines may please be brought to the notice of all officers concerned with the preparation of highway projects.





1. SPACING FOR MEDIAN CROSS DRAINS MAY BE SUITABLY INCREASED FOR LOW INTENSITY RAINFALL AREAS.
2. CROSS SLOPE IS EQUAL TO SUPERELEVATION OR CAMBER WHICH EVER IS HIGHER.
3. DELINEATORS, KERBS, GUARD STONES AND RAILINGS ETC MAY BE PROVIDED AS PER RELEVANT IRC STANDARDS, WHEREEVER NECESSARY.
4. CHUTES TO BE PROVIDED AT 10-15 mc/c. ON INNER SIDE OF CURVE. THE SPACING MAY BE SUITABLY INCREASED FOR LOW INTENSITY RAINFALL AREAS.
5. DIRECTION OF FLOW OF WATER. → → →



DRAINAGE ARRANGEMENT ON SUPER-ELEVATED STRETCHES ON DUAL CARRIAGEWAY.

SKETCH NOT TO SCALE
(ALL DIMENSIONS IN mm)