TRAFFIC CONTROL DEVICES

Road Markings

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ROAD MARKINGS (IRC 35)

Introduction

What is Road markings?

- Road markings are lines, patterns, words which are applied or attached to the carriageway
- Road markings normally include longitudinal markings, transverse markings, text and symbols etc. on the road surfaces.

Why we need Road markings?

- For guiding and controlling traffic on a highway and serve as a psychological barrier
- Channelize the pedestrians and cyclists movement into safe location

Colour Pattern for Markings

White

Because of the visibility and good contrast against the road surface, the white colour should be widely used for road markings.

Yellow

Longitudinal marking where to convey the message that "it is not permitted to cross the markings". It also used to show parking restrictions and to impose other traffic control.

Blue

Indicate new and special markings which are not conventional. Blue is the colour of public transportation including three wheelers, scooter and rickshaws.

Green

Distinguish the bicycle and non-motorised transport facilities provided on the road. **Green colour background should be marked at the intersection to give priority to the cyclists and pedestrians in crossing the road.**

Colour Pattern for Markings contd..

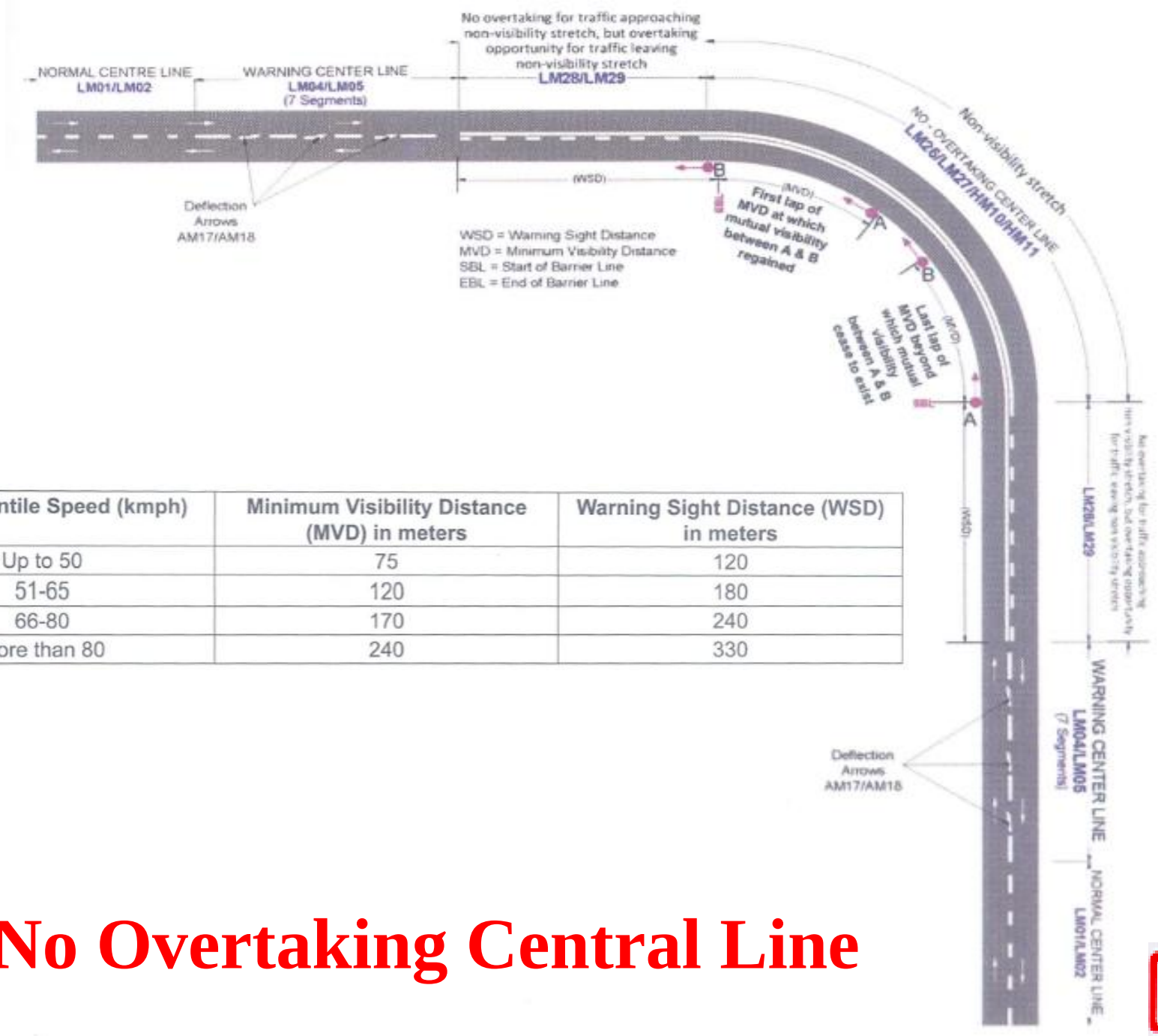
Red/Purple

- Where multiple road users are sharing the road space on hazardous locations, the red colour marking is primarily used to help people understand the danger.
- Red marking is highly recommended on hazardous intersections and also at places where pedestrians traffic conflict with the motorized traffic.

Classifications of Road Markings

Pavement Markings are broadly classified into following seven categories based on the placement of markings

1. **Longitudinal Marking (LM)**
2. **Transverse Marking (TM)**
3. **Hazard Marking (HM)**
4. **Block Marking (BM)**
5. **Arrow Marking (AM)**
6. **Directional Marking (OM)**
7. **Facility Marking (FM)**

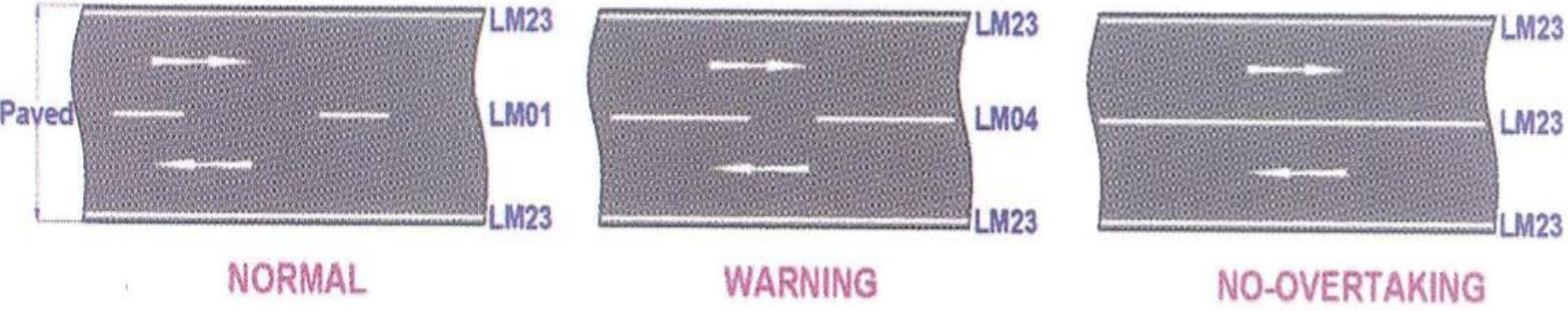


85th Percentile Speed (kmph)	Minimum Visibility Distance (MVD) in meters	Warning Sight Distance (WSD) in meters
Up to 50	75	120
51-65	120	180
66-80	170	240
More than 80	240	330

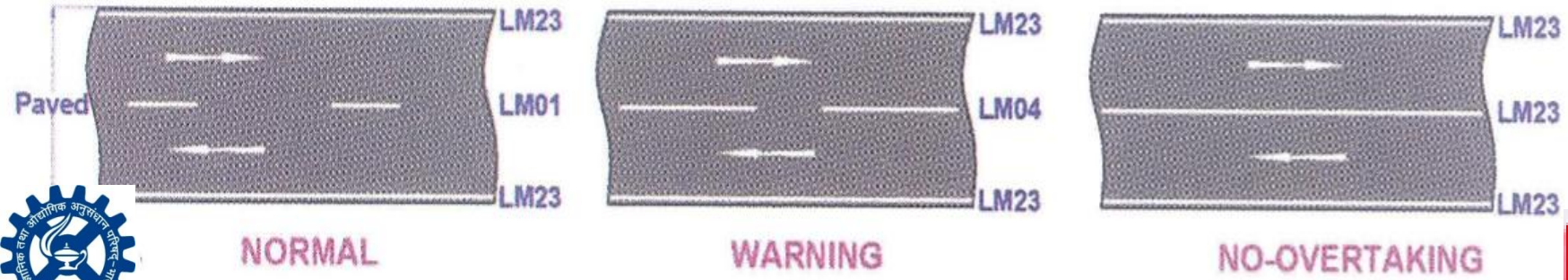
No Overtaking Central Line

Longitudinal Marking for Undivided Roads

- Longitudinal marking at mid-block section of single/ intermediate lane roads, where the carriageway is less than 5.5 m.

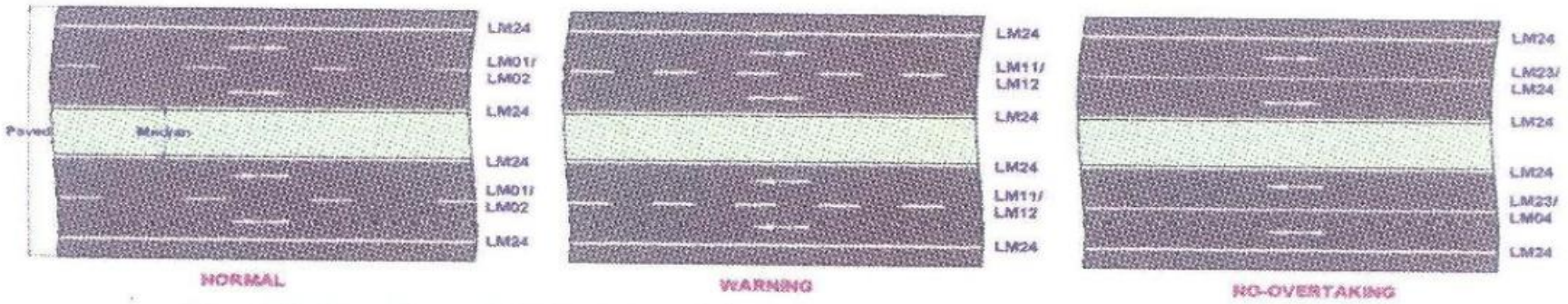


- Longitudinal marking at mid-block section for two lane roads, where the carriageway is 5.5 m to 7 m without any paved shoulder.



Four Lane Divided Road (One Carriageway Width more than 7.3 m)

- For 7.3 m road width the traffic lane line marking is made continuous where stopping sight distance is not available at vertical and horizontal curves, but shall be applied for

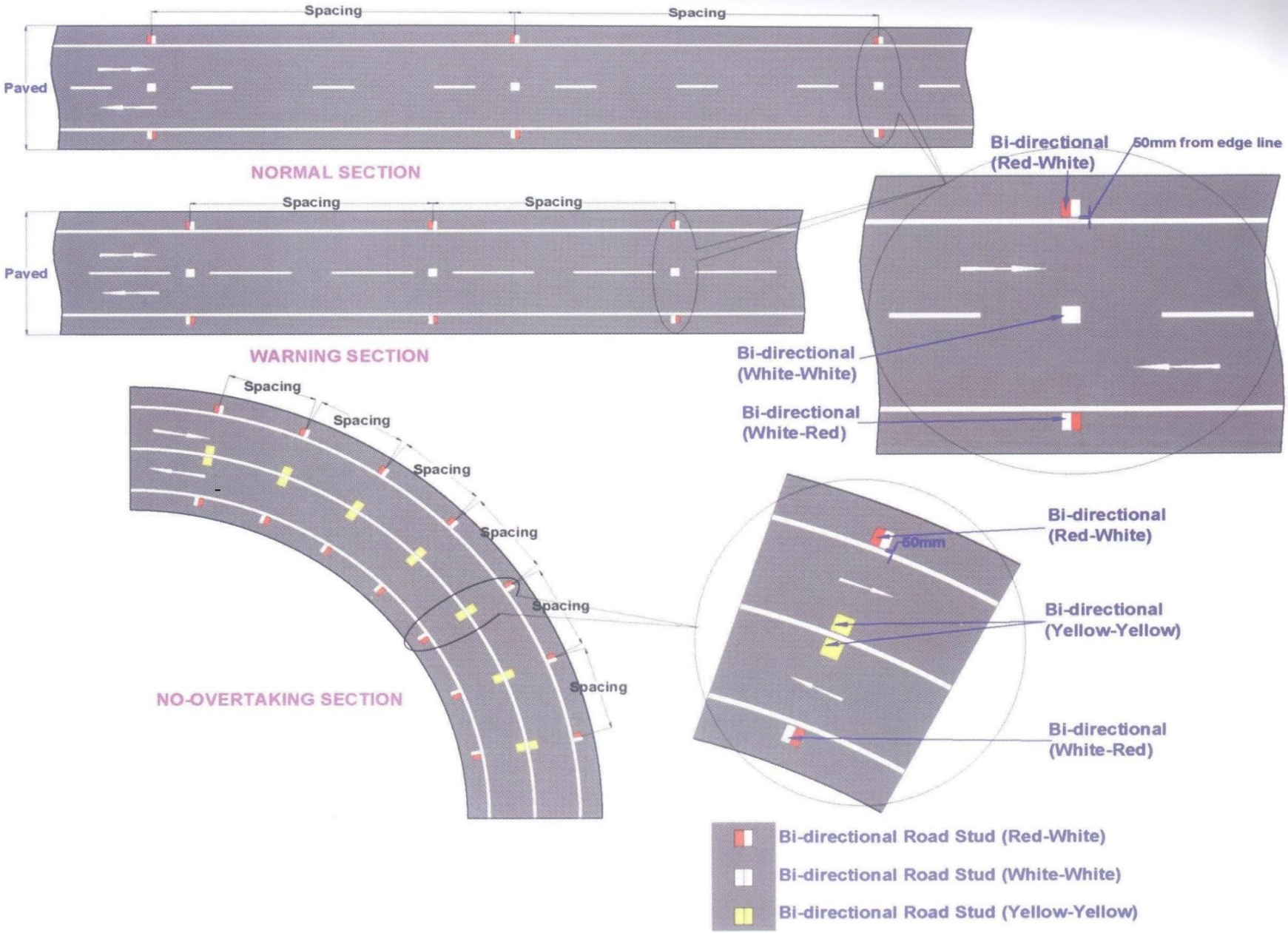


ROAD STUDS

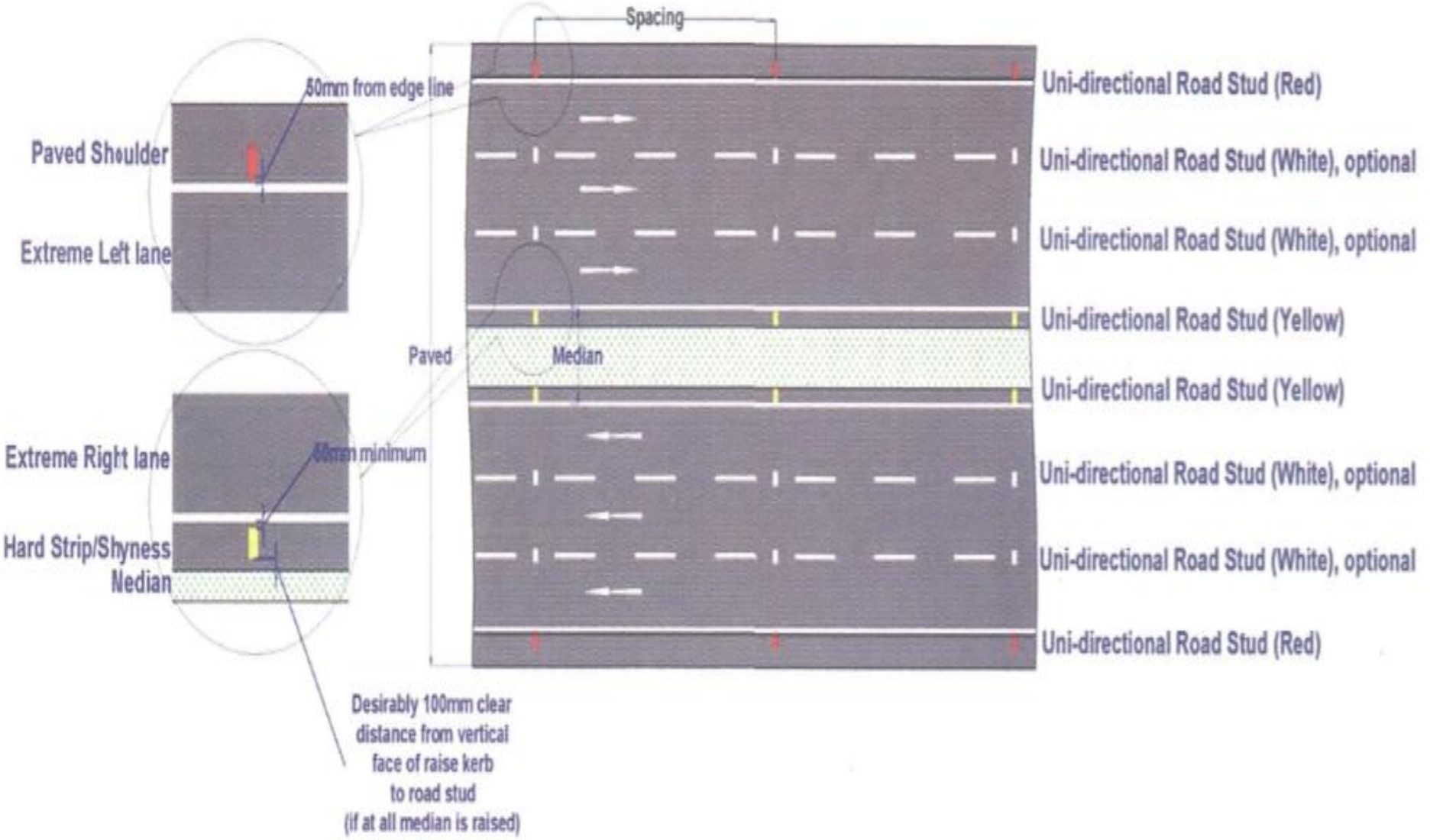
Road studs are used (in series) across the carriageway to serve as Speed Arrestor coupled with eschewing warning through the creation of the rumbling sensation to the user.

Colour for Road Studs:

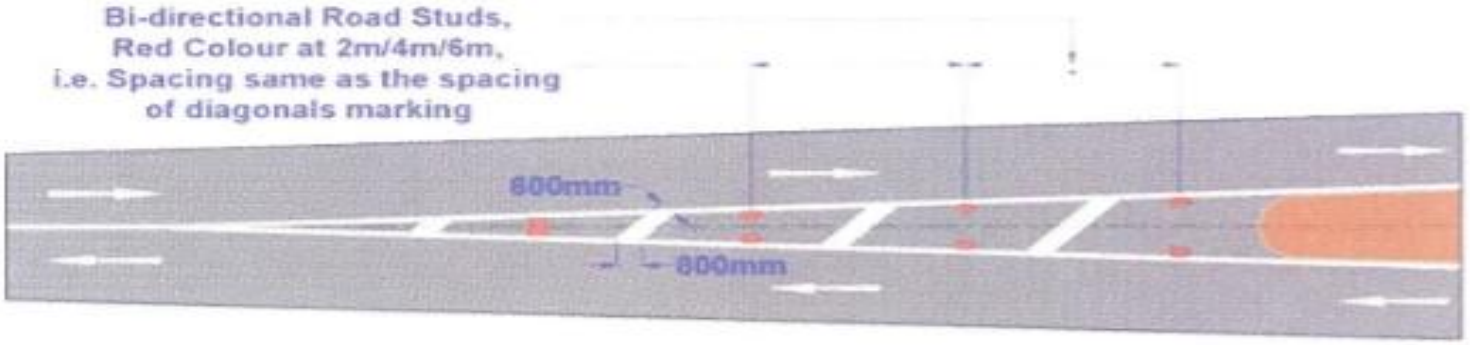
- ***White*** **- To indicate traffic lane line and centre of carriageway.**
- ***Red*** **- *M*ainly to delineate left hand edge of the running carriageway**
- ***Yellow -*** ***A*****im to delineate the right hand edge of the running carriageway (multilane divided carriageways).**
- ***Green -*** **Green road studs are to be employed to indicate crossable edge line.**



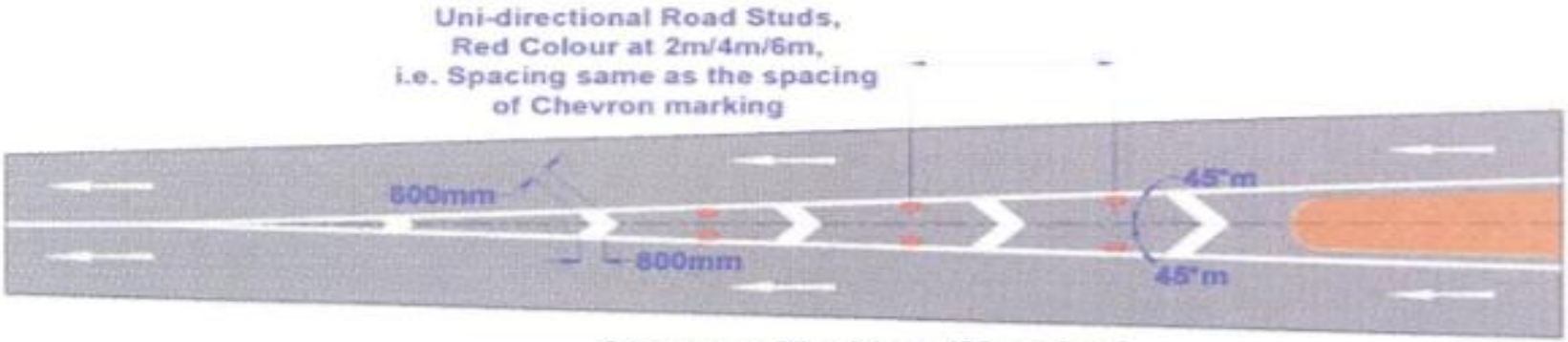
Road studs for Bi-Directional Road



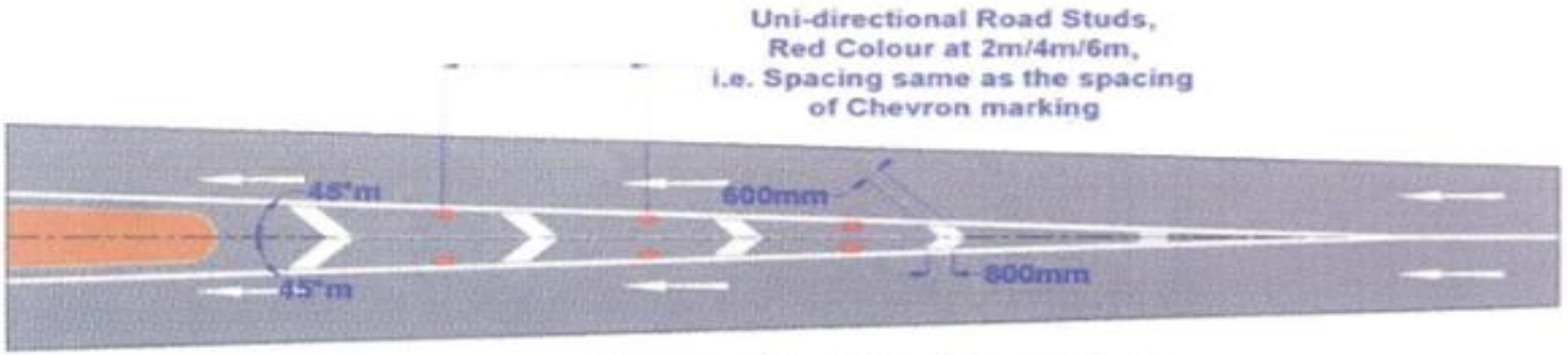
Road Studs For Divided Carriageway – Colour matter and lateral placement



Diagonal Marking



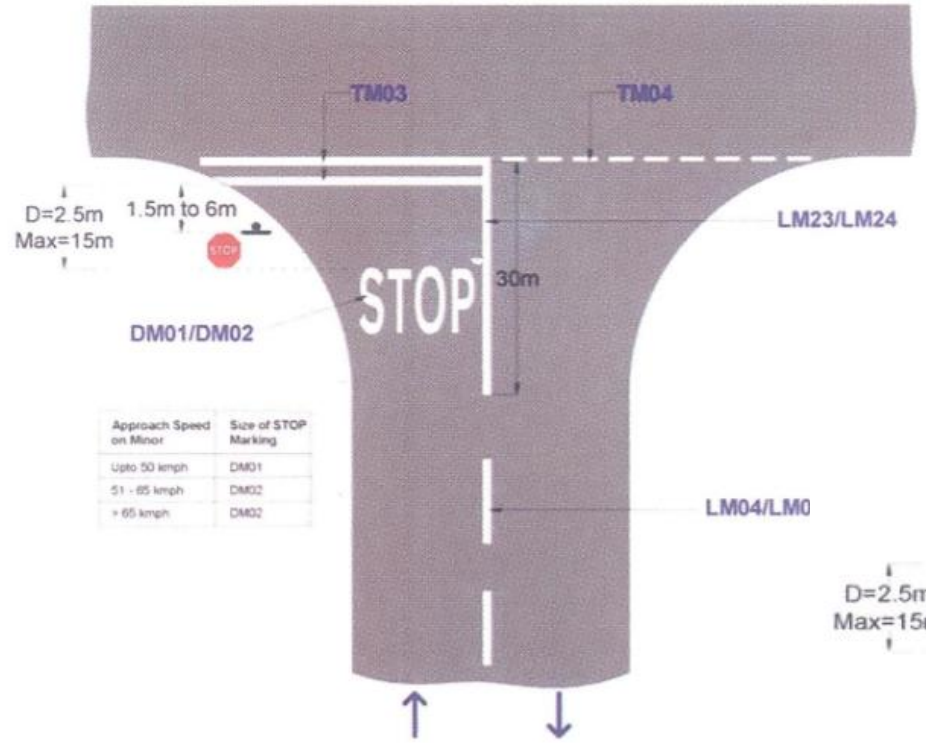
Chevron Marking (Merging)



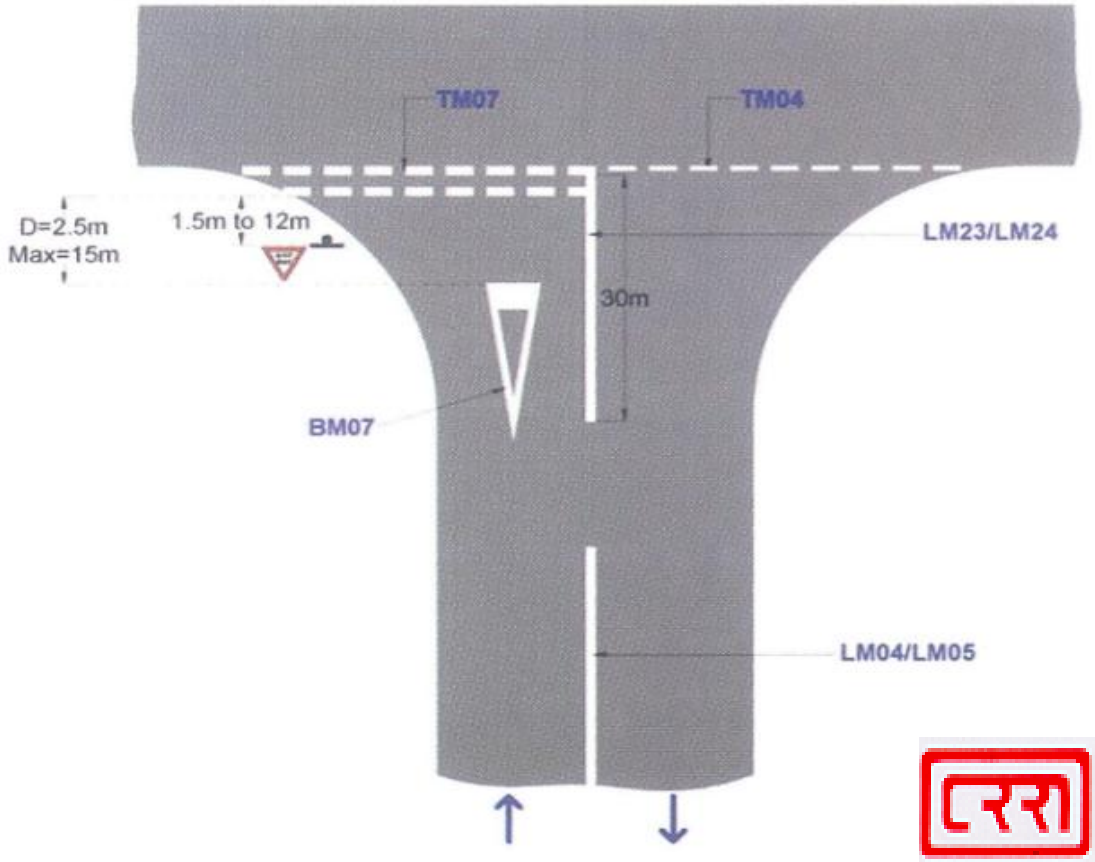
Chevron Marking (Diverging)

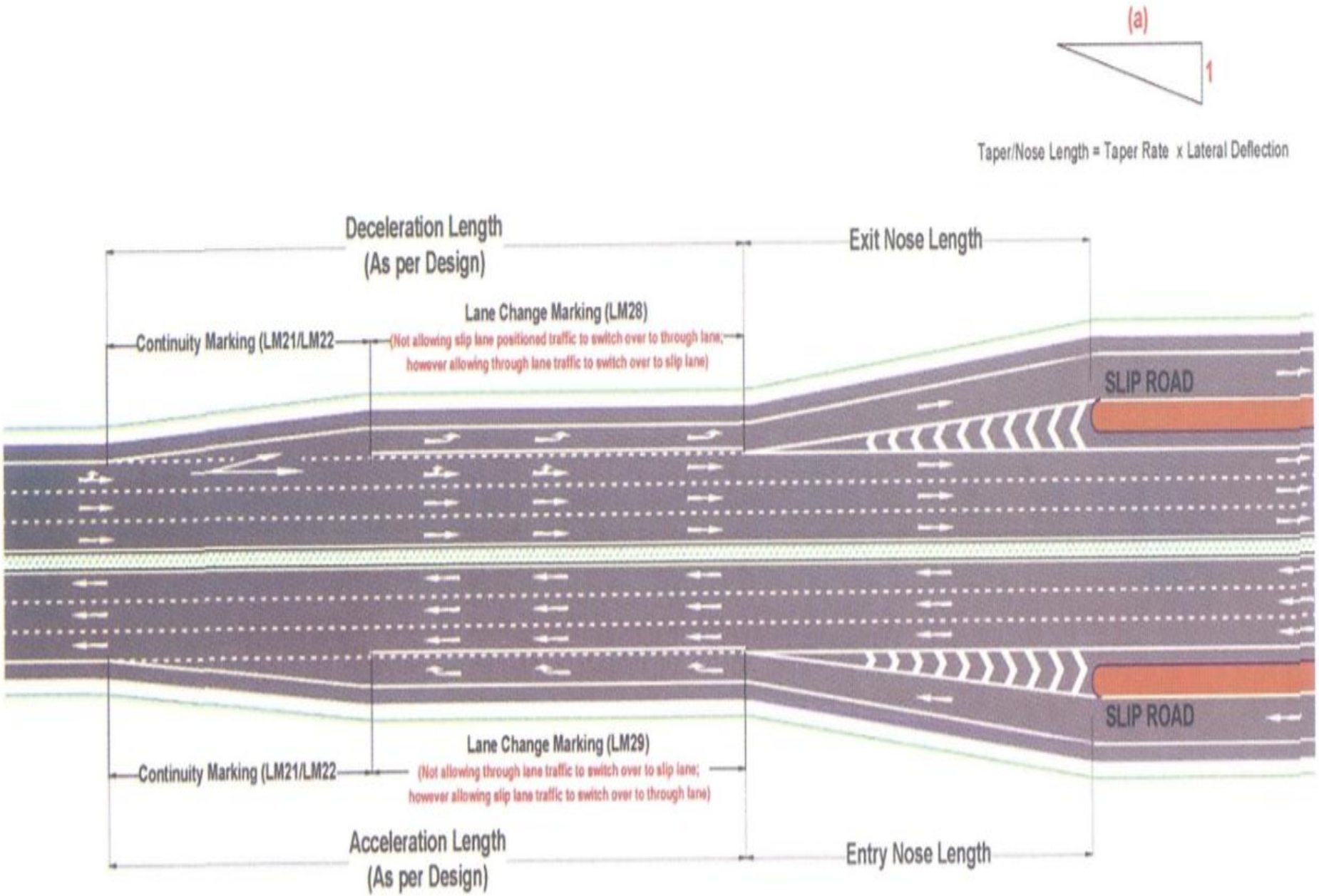
Road Studs for Diagonal & Chevron Markings

STOP AND GIVEWAY MARKINGS

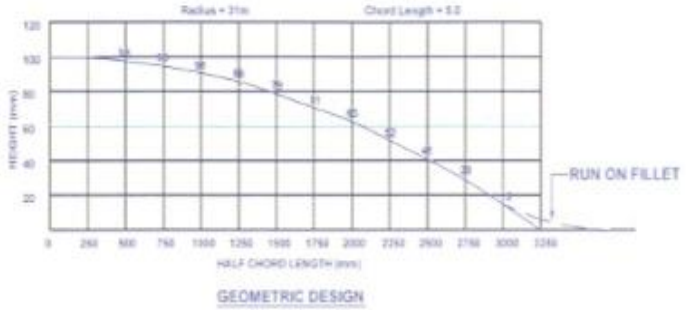


Approach Speed on Minor	Size of STOP Marking
Upto 50 kmph	DM01
51 - 65 kmph	DM02
> 65 kmph	DM02

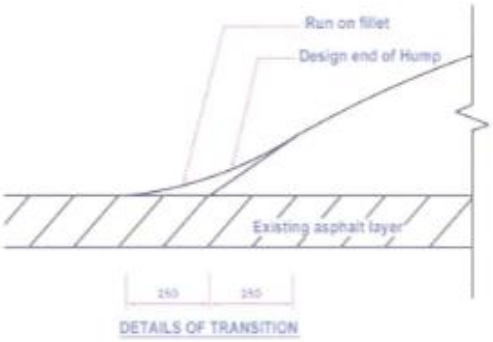




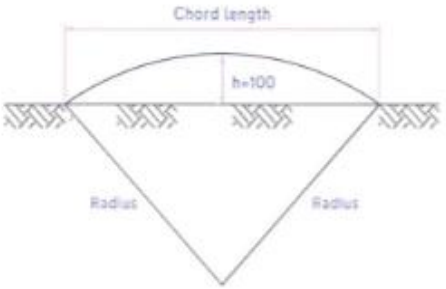
Lane Change Markings and Nose Length in Multilane Highways



GEOMETRIC DESIGN

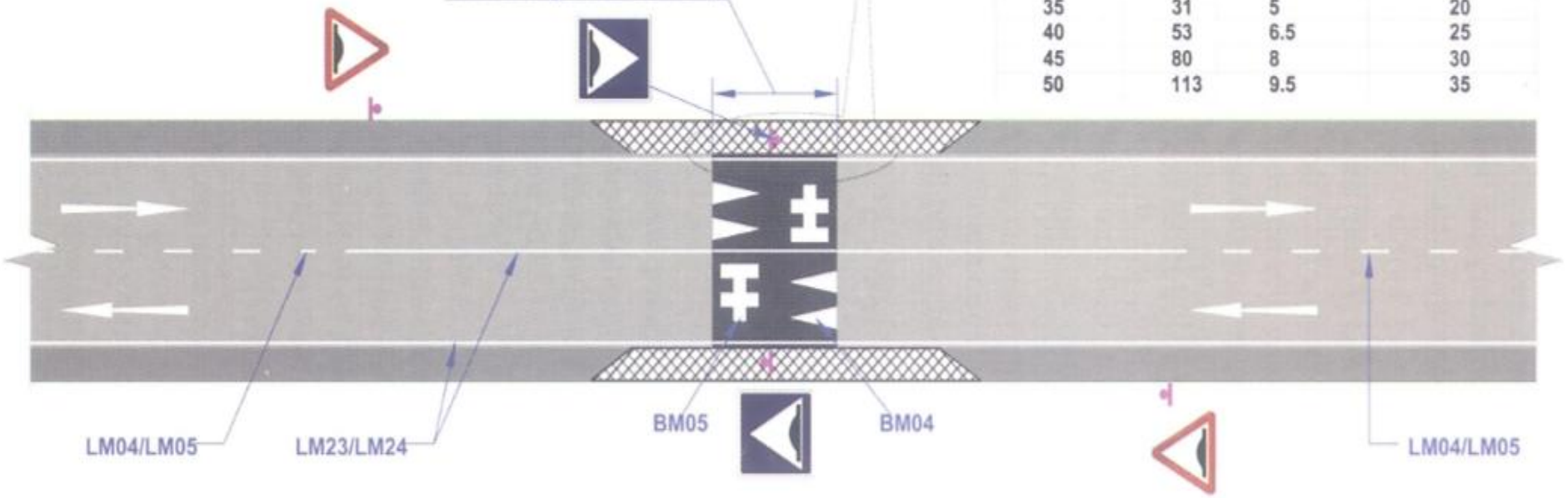


DETAILS OF TRANSITION

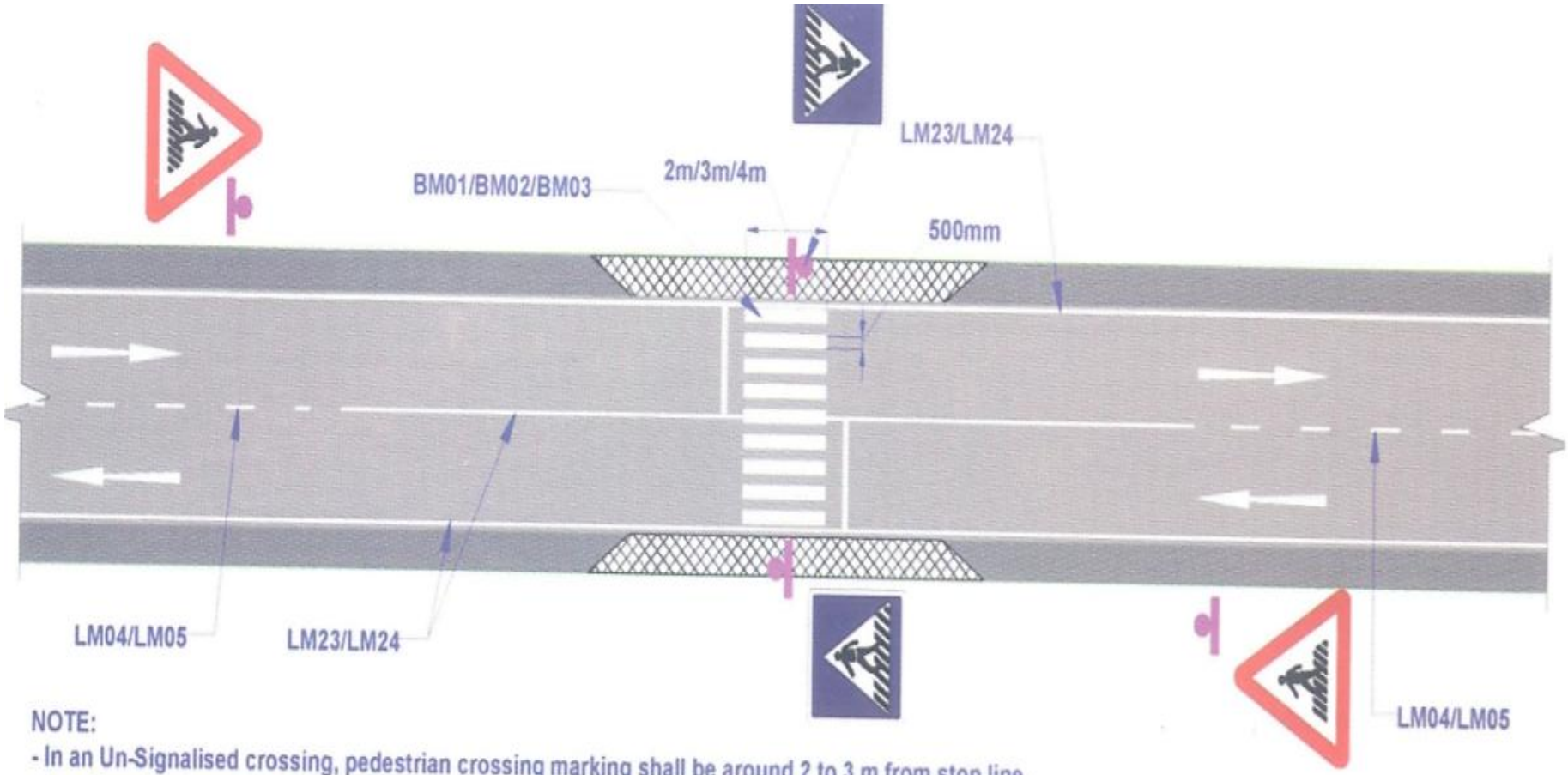


Geometric Details of Road Hump

DESIRED SPEED (kmph)	RADIUS (METER)	CHORD LENGTH (METER)	BUS SPEED DURING PASSAGE (kmph)
20	11	3	5
25	15	3.5	10
30	20	4	15
35	31	5	20
40	53	6.5	25
45	80	8	30
50	113	9.5	35

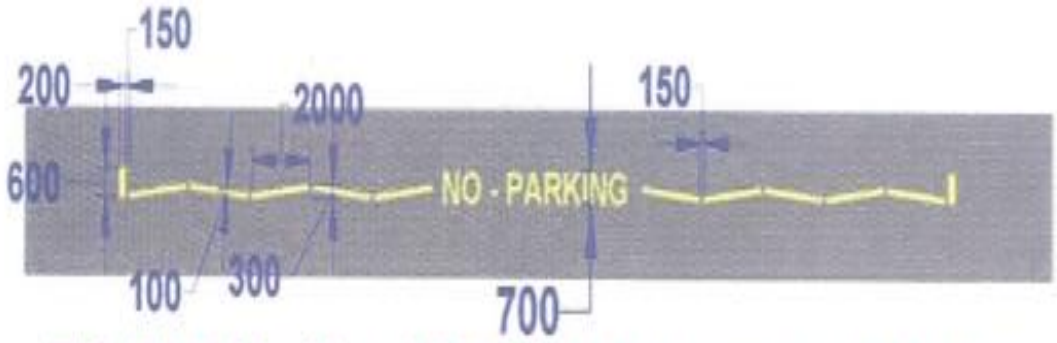


Marking for Road Hump

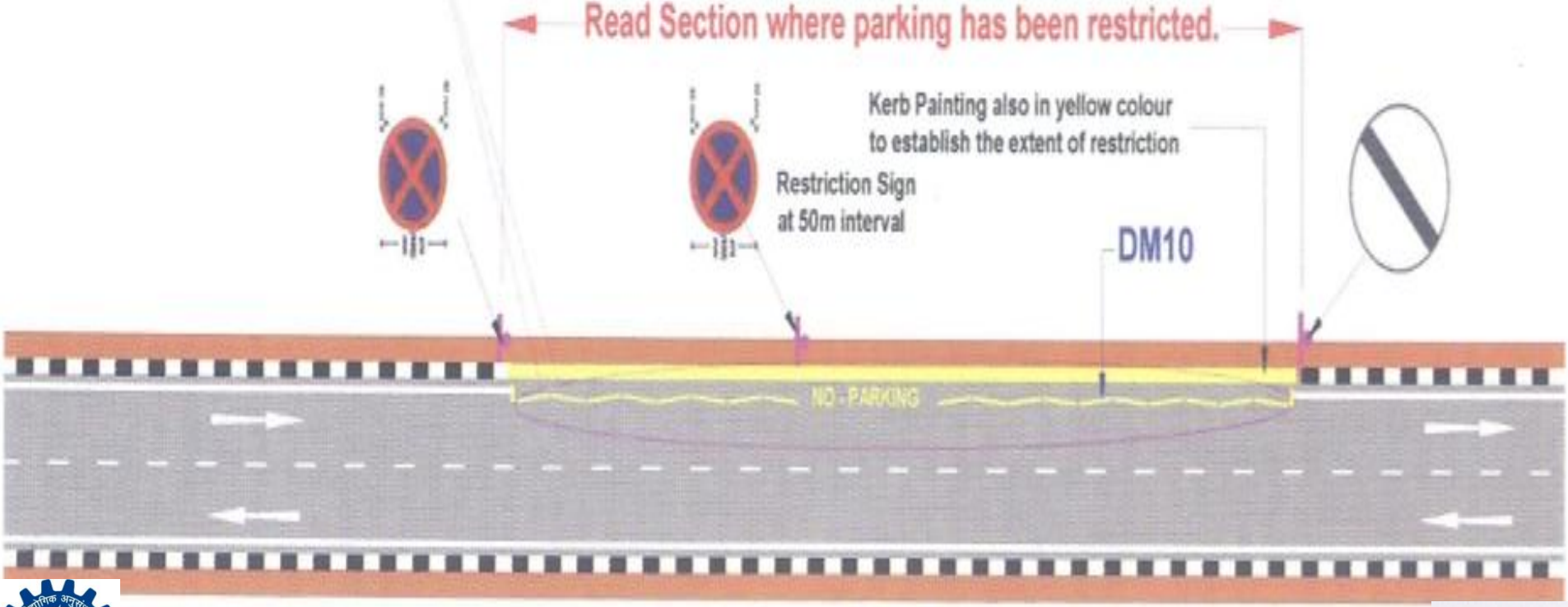


NOTE:
- In an Un-Signalised crossing, pedestrian crossing marking shall be around 2 to 3 m from stop line.
- In a Signalised crossing, pedestrian Marking around 1 to 1.5 m in advance of a primary signal.

Pedestrian Crossing

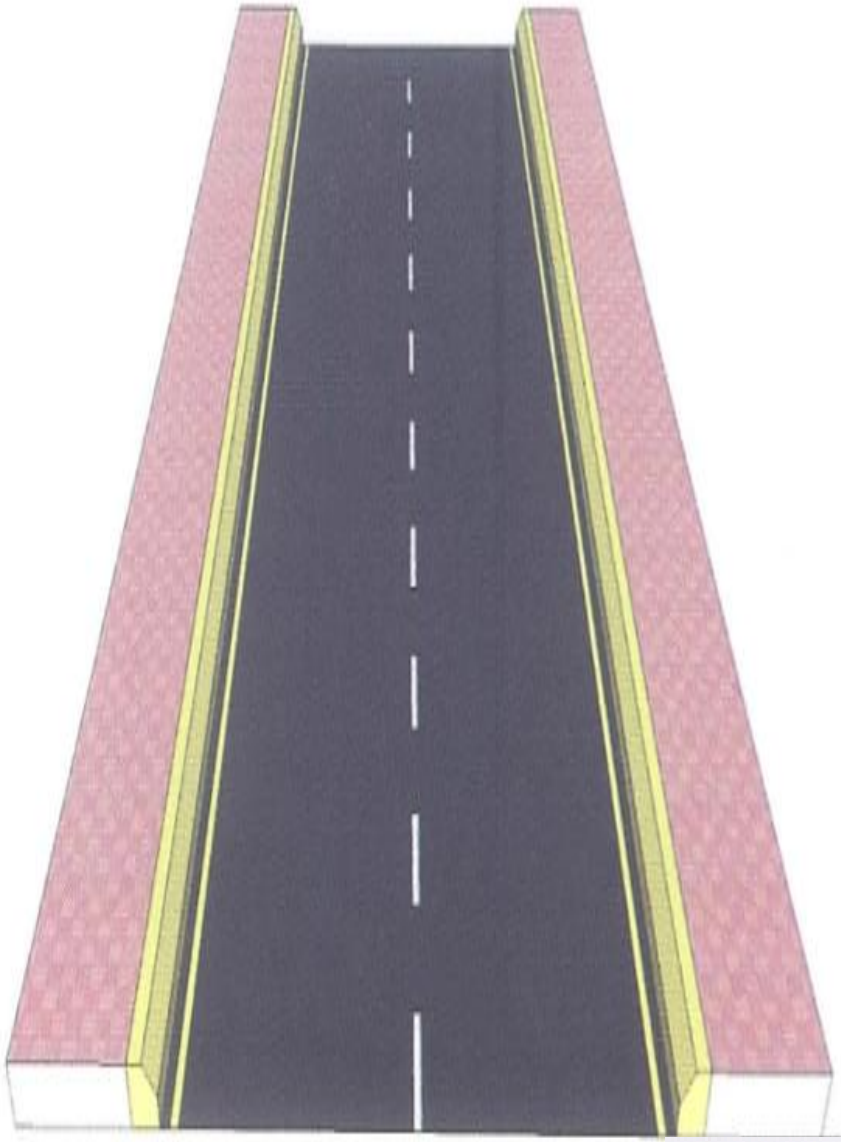


ZIG-ZAG Marking HM23/HM24 along with DM10



No Parking

Markings for Objects adjacent to Carriageway



All objects located within 2.4 m from shoulder/kerb shall be painted

Warning Centre Line

Non-Overtaking Centre Line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NO PARKING
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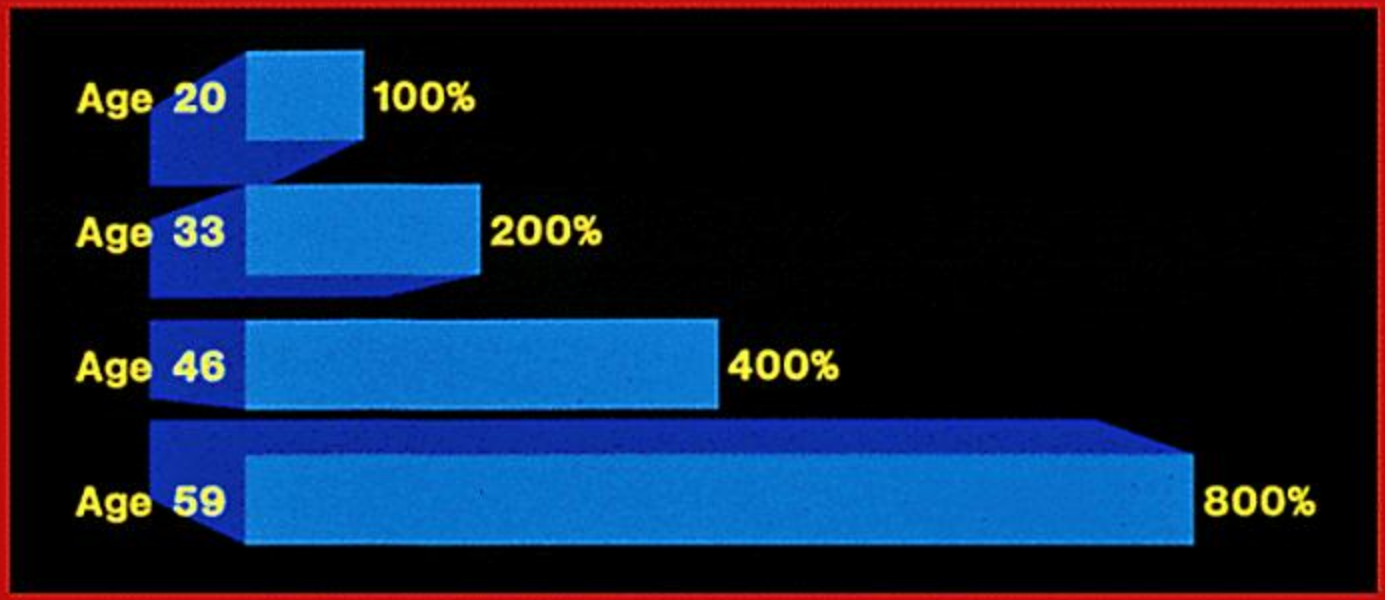
Double Centre Line

TRAFFIC SIGNALS

Amount of Light Required to See During Hours of Darkness Doubles Every 13 Years



Normal Vision

Cataracts

Peripheral Loss

Central Loss


Thank you!