File No. RT-25035/07/2023-RS (Part) (221534)

Government of India

Ministry of Road Transport & Highways

(Road Safety Engineering Zone)

Transport Bhawan, 1, Parliament Street, New Delhi-110001

New Delhi, the 24th December, 2024

To

1. The Chief Secretaries of all the State Governments/UTs.
2. The Principal Secretaries/ Secretaries of all States/ UTs Public Works Department dealing with National Highways, other centrally sponsored schemes.
3. All Engineers-in-Chief and Chief Engineers of Public Works Department of States/ UTs dealing with National Highways, other centrally sponsored schemes.
4. The Director General (Border Roads), Seema Sadak Bhawan, Ring Road, New Delhi -110010.
5. The Chairman, National Highways Authority of India, Dwarka, New Delhi - 110075.
6. The Managing Director, NHIDCL, PTI Building, New Delhi-110001.
7. All CE-ROs, ROs and ELOs of the Ministry.
8. The Secretary General, Indian Road Congress - **to incorporate the guidelines in respective IRC Codes simultaneously**

Subject: **Guidelines for provision of signages on Expressways and National Highways- reg.**

Madam/Sir,

Ministry vide letter dated 20.07.2023, has circulated the Guidelines for provision of signages on Expressways and National Highways for implementation by respective executing agencies on immediate priority.

2. Various references have been received in the Ministry on the discrepancies in the afore-mentioned guidelines and IRC:67-2022. A committee had been setup by MoRTH to review the discrepancies in the afore-mentioned guidelines and IRC:67-2022 as well as existing practice followed/prescribed in various international codes from road safety, information and functionality perspective to ensure better compliance of traffic regulations.

3. Based on recommendations of the Committee and **in supersession of the Ministry's letter of even no. dated 20.07.2023, revised** Guidelines for provision of signages on Expressways (Appendix-A) and Guidelines for provision of signages on National Highways including Access Controlled National Highways (Appendix-B) are enclosed herewith, for implementation by respective executing agencies on immediate priority.

4. This Circular shall come into effect after 30 days from the date of issuance of the circular i.e. from 24.01.2025. The circular shall be applicable on all projects prospectively.

(Shreya Pipri)
Executive Engineer (Road Safety)
For DG (RD) & SS
Email: roadsafetyengineeringzone@gmail.com

Copy to:

1. All ADGs and CEs in the Ministry of Road Transport and Highways
2. Director (MVL), MoRTH
3. NIC - for uploading on Ministry's website under "What's new"

Copy for information to:-

1. PS to Hon'ble Minister, RT&H
2. PS to Hon'ble MoS, RT&H
3. PSO to Secretary, RT&H
4. PSO to DG (RD) & SS, MoRTH.

Guidelines for provision of signages on Expressways

1 General

To maintain value added services, signs should be used to provide guidance, warnings, notice and regulatory information to road in well-designed formats for ensuring comfortable, safe and smooth driving. Signs are also essential where hazards are not self-evident.
These also provide information on entry/exit directions, destinations and points of interest. Clear, ample and effective traffic signing provides adequate reaction time for the driver. Signs are designed so that they are legible to road users approaching them and readable in time to permit proper responses. Desired design characteristics include:

- Long visibility distances,
- Large lettering and symbols, and
- Short legends for quick comprehension

In general, the road signage shall follow IRC: 67 code of practice for road signs and clause 800: traffic signs, markings and other appurtenances in MORTH - Specifications for road and bridge works. In addition to IRC: 67 code some changes are made for better visibility and understanding of the road users on Expressway which must be followed along with IRC:67, IRC:35 and clause 800: of MoRTH Specifications.
Functionally road signages are classified as follows:

- Mandatory/Regulatory signs
- Cautionary/ Warning signs
- Informatory/Guide signs

2 Mandatory/ Regulatory Signs

These signs are used to impose legal restrictions applicable to particular locations and unenforceable without such signs. These include all signs, such as, Speed Limits, No Entry, etc. which give notice of special obligations, prohibitions or restrictions for traffic control, which the road users must comply. The violation of the rules and regulations conveyed by these signs is a legal offence and shall attract penalty.

2.1 Size and Dimension of Mandatory Signs

Table 1: Size and Dimension of Mandatory Sign

Terrain	Diameter (mm)	Border (mm)	Oblique Bar (mm)
Hilly terrain	1200	100	100
Plain & rolling terrain	1500	125	125

* Oblique Bar will come to indicate in prohibition

2.2 Mandatory Signs to be installed

2.2.1 No Parking

No Parking sign is used to prevent any parking of vehicles on the main carriageway which will lead to congestion. It is to be provided at an interval of every 5 km (Fig. 2.1)

2.2.2 Speed Limit Sign Board:

Speed limit sign board is provided to warn the drivers about the maximum speed limit at which they can drive their vehicle. Since the speed limit is different for car, bus and trucks the gantry mounted sign board has been introduced. Where different speed limits are to be imposed on certain classes of vehicle types this shall be specified separately to ensure that the numerals indicating the speed limit are clearly visible from a distance. Symbol of specific vehicle type shall accompany such speed limit indication (Fig. 2.2). The speed limit sign Board should be repeated at every 5 km alternately on shoulder side and median side.

2.2.3 Speed Gantry:

Speed information signs for various vehicle categories are to be installed on high-speed corridors preferably as overhead signs (Fig. 2.3). The sign shall be used only on mid-block sections of the Expressway.

2.2.4 Height Limit Sign Board:

If the height of superstructure over bridges/underpass structures exceeds 5.5m no board is required, but if it is less than 5.5m then Height Limit Sign board of appropriate limit is to be provided (Fig. 2.4).

3 Cautionary/ Warning Signs

These signs are used to call attention to actual or potentially hazardous conditions, so that the users can become cautious and take the desired action. The signs shall be in the shape of an equilateral triangle, with apex pointing upwards. Itshall have red border and black symbols on white background.

3.1 Size and Dimension of Cautionary Signs

The size and siting details shall be as per Table below:

Table 2: Size and Dimension of Cautionary Sign

Terrain	Diameter (mm)	Border (mm)	Distance of sign board from Hazard (m)
Hilly Terrain	1200	90	180-245
Plain & rolling terrain	1500	110	245-305

3.2 Cautionary Sign to be installed

3.2.1 Left-Hand and Right-Hand Curve

If the difference between the approach speed to a curve and the safe negotiating speed derived based on geometric parameters of curve exceeds 15 Kmph, the curve shall be provided with Left-hand curve and Right-hand curve warning sign boards as shown below. **(Fig. 3.1).**

3.2.2 Merging Traffic Ahead

This sign is posted in situations where the traffic from other road/ entry ramps is merging with the traffic of main carriageway, and the drivers are required to slow down their vehicles for safe travel **(Fig. 3.2).**

3.2.3 Overhead Cables

This sign is used to caution the driver of the presence of overhead power transmission lines **(Fig. 3.3).**

3.2.4 Pedestrian Crossing

The sign should be erected in advance on both approaches to uncontrolled pedestrian crossings **(Fig. 3.4).**

3.2.5 Reduced Carriageway

This sign is used to caution the driver of the reduction in the width of the carriageway ahead **(Fig. 3.5).**

3.2.6 Rumble Strip

The sign should be posted at a minimum distance of 250m in advance of the rumble strips provided on the road to control and reduce the speed. The sign should also be repeated at a distance of 150m & 50m in advance of the rumble strip. This is to warn the drivers of the presence of the rumble strips **(Fig. 3.6).**

4 Informatory Signs

These signs are used to provide directions to motorists, including route designations, destinations, available services, points of interest, and other geographic, recreational, or cultural sites. These also inform drivers of traffic regulations and information on thepoints necessary for traffic operation.

4.1 Size and Dimension of Informatory Signs

Terrain	Overhead Direction Signs		Flag Type Direction Signs		Text Thickness (mm)
	Text Height Lower Case (mm)	Text Height Upper Case (mm)	Text Height Lower Case (mm)	Text Height Upper Case (mm)	
Hilly terrain	330	460	245	345	50 - Lower Case 60 - Upper Case
Plain and Rolling terrain	380	530	270	380	

* Font Type: Transport Medium

4.2 Informative Sign to be installed

4.2.1 Reassurance Sign

This sign is installed to reassure a driver of a vehicle that the desired direction is being followed. However, according to IRC: 67 and IRC: SP: 99, this sign is shoulder mounted but for better visibility it is converted to full Overhead Gantry (**Fig. 4.1**).

- To be provided after 150-200m of Entry Slip and repeated after every 10 km
- The first two destinations shall be the next two exit and the last shall be the ultimate destination
- The distance of location mentioned on sign board should be the distance of the railway station of that location from the board

Every alternate or 20th km Reassurance Sign shall be in English and Hindi

4.2.2 Welcome and Thank-You Gantry

Welcome and Thank You sign board should be installed in first and last package of the project to ensure the road user about the start of expressway so that the restrictions pertaining the project are being followed (**Fig. 4.2 and Fig. 4.3**).

4.2.3 Advance Direction Sign

Advance Direction signs shall be used for grade separated Entry and Exit to the expressways. These signs should be placed normally at 500 m, 1 km and at 2 km in advance of the exit. As per IRC:67 the Advance Direction Sign can be gantry or shoulder mounted. For better visibility at high speed, a full overhead gantry for Advance Direction Sign Board placed at 2 km before exit (**Fig. 4.4**) and cantilever gantry for Advance Direction Sign Board placed at 500 m and 1 km before exit (**Fig. 4.5 and Fig. 4.6**). Cantilever gantry should be provided at tapering of Exit ramp (**Fig. 4.7**), in case of cloverleaf exit sign board as shown in (**Fig. 4.8**) should be used. The text shall be in Sentence case, as indicated in the said figures.

4.2.4 Rest and Service Area Sign Board

This sign board is be provided to inform the road user about the upcoming Way-Side amenity. It is necessary to alert the driver about the existence of way side amenities by providing cantilever gantry type sign board 5 km ahead with repeater sign at 2 km, 1 km and 500 m ahead and flag type shoulder mounted sign board at the exit nosing for way side amenity. Also, the Rest and Service Area sign board 1 km before the wayside amenity should be in Hindi i.e., विश्राम और सेवा क्षेत्र (Fig. 4.9 and Fig. 4.10)

4.2.5 Emergency Helpline Number

The Emergency Helpline number "1033" should be provided at every 5km

interval dimension 2400 X 1800 mm **(Fig. 4.11).**

4.2.6 Heavy Vehicle Keep Left

This sign board is to be provided to inform the drivers of heavy vehicles like trucks moving at lesser speed to drive on left side so that the vehicles moving at higher speedcan easily overtake them. The sign board should be provided at an interval of 5 km with dimension of 2400 X 2400 mm **(Fig. 4.12).**

4.2.7 Expressway and Expressway End Sign

To inform the user about start and end of Expressway, Expressway Sign and Expressway End Sign should be provided in first and last Package of the Project. Dimension 900 X 900 mm **(Fig. 4.13).**

4.2.8 Exit and Entry Ramp Sign

Expressway Entry Ramp and Expressway Exit Ramp Sign Board Should be provided at the nosing of Entry and Exit Ramp respectively. Dimension 900 X 900 mm **(Fig. 4.14).**

4.2.9 Emergency Call Box

This sign shall be used at regular intervals in rural highways and in tunnel roads where emergency phones are installed. Sign Board should be installed 500m ahead ofEmergency Call Box. Dimension 600 X 900 mm **(Fig. 4.15).**

4.2.10 Fee Plaza:

If the project is following closed tolling system, then Fee Plaza Ahead sign board should be provided on slip road **(Fig. 4.16),** no sign regarding fee plaza should be displayed on main carriageway where fee plaza in on slip road. In case if the fee plaza is on main carriageway, it is necessary to alert the driver about the existence of fee plaza by providing cantilever gantry type sign board 2 km ahead with repeater sign at1 km and 500 m ahead **(Fig. 4.17).**

4.2.11 Route Marker

Route Marker sign should be provided at every 5km interval. Dimension 1200 X 900mm **(Fig. 4.18).**

4.2.12 Sign Board along Cross-Road

The signs should be placed normally at 500 m, 1 km and at 2 km in advance of the entry to the Expressway, showing the major town/city that can be accessed via Expressway. The text height and text thickness should be as per the National Highwayguideline **(Fig. 4.19).**

5 Road Markings

5.1 Diagonal and Chevron Marking

Channelizing markings like diagonal and chevron markings are utilized to demarcate the neutral area at the nose of a channelizing island for reducing the incidence of collision with kerb nose. Red coloured Road studs should be provided at spacing of 2m/4m/6m for better visibility at night and adverse weather condition. They direct the entering and exiting traffic into the proper angle for smooth movements of divergence and convergence. These markings provide for proper and safe use of acceleration and deceleration lanes (Fig. 5.1).

5.2 Road Studs

Retro-reflective studs are used to supplement longitudinal/transverse reflectorized road markings, which would improve visibility in night-time and adverse weather conditions. Road studs are also used across the carriageway to serve as Speed Arrestor coupled with eschewing warning through the creation of the rumbling sensation to the user. Series of such road reflector studs are to be laid in advance of junction/crossings/end of the flyover section wherein road crashes are prevalent. Different coloured road studs are used at different location (Fig. 5.2, Fig. 5.3 and Fig.5.4).

5.2.1 Colour for Road Studs

The studs with different colours of reflectors such as white, red, yellow and green are used for highways. The usage of different colours of studs is as follows.

5.2.1.1 Red Colour

Red road studs are to be used to indicate a line which should not be crossed and mainly to delineate left hand edge of the running carriageway i.e., for road studs to be used on shoulder side edge line. The road studs shall be omitted or can be replaced with green colour where the facility for exiting traffic is provided from the main carriageway like entry to Truck Lay Bye/Bus Bay, Start of Service Road, etc.

5.2.1.2 Yellow Colour

Yellow road studs are to be deployed to indicate a line which should not be crossed with the aim to delineate the right-hand edge of the running carriageway in case of the multi-lane divided carriageways i.e., median side edge line.

5.2.1.3 White Colour

White road studs are to indicate traffic lane line and centre of carriageway. Mainly used at warning sections.

5.2.1.4 Green Colour

Green road studs are to be employed to indicate crossable edge line like the

lay byes and to show the boundary of acceleration or deceleration line on left hand side of thecarriageway in case of the multi-lane divided carriageways.

5.3 Direction Arrow Markings

Directional arrows should be used in advance to guide drivers to correct lane when approaching busy intersections whether signal controlled or not. Directional arrows must be elongated in the direction of the traffic flow to have adequate legibility, as arrows are viewed at low angle **(Fig. 5.5)**. The length of directional arrow is as per speed is shown in table below:

Speed	Length of Arrows
Upto 50 kmph	3.5m
51 – 100 kmph	5m
> 100 kmph or Expressway	9m

The direction arrow near Entry and Exit location **(Fig. 5.6)** should be as per table below:

Approach Speed	D1	D2	D3	D4	D5
81-100 kmph	30	45	90	180	-
>100kmph	30	60	90	150	150

Other than Entry and Exit location the straight arrow should be repeated at every 10 km

5.4 Bifurcation Arrow

The bifurcation arrow should be provided at the commencement of deceleration lanes on the approach to junctions to guide vehicles ensuring that the full length of the lane is used to slow down for the junction without impeding the through vehicles on the main carriageway **(Fig. 5.7-A)**. The size of bifurcation arrow is prescribed in table below:

Speed	Length of Arrows
< 65 kmph	8m
65 – 100 kmph	16m
> 100 kmph or Expressway	32m

5.5 Speed Limit as Road Marking

Speed limit along with vehicle logo should be marked on the pavement to guide the road users about the appropriate driving speed and lane **(Fig. 5.8)**. This marking should be repeated at every 10 kms. The text height of the markings is prescribed in table below:

Category of Road	Text Height
National Highways and Expressways	2.5m

5.6 The alphabets of all sign boards as shown in the guidelines are indicative and the lettering shall conform to cl. 12.2 of IRC: 67- 2022.

MANDATORY SIGN BOARDS

Fig 2.1 No Parking

Fig 2.2 Speed Limit

Fig 2.3 Speed Gantry

Note: The signboard shall be used only on mid-block sections of the Expressway.

Fig 2.4 Height Limit

CAUTIONARY SIGNS BOARDS

Fig 3.1 Left-Hand and Right-Hand Curve

Fig 3.2 Merging Traffic Ahead

Fig 3.3 Overhead Cables

Fig 3.4 Pedestrian Crossing

Fig 3.5 Reduced Carriageway

Fig 3.6 Rumble Strip

INFORMATORY SIGN BOARD

Fig 4.1 Reassurance Sign

Fig 4.2 Welcome Gantry

Fig 4.3 Thank You Gantry

Modified to Fig 4.4 Advance Direction Sign 2 km before Exit for Expressway

Fig 4.5 Advance Direction Sign 1 km before Exit

Fig 4.6 Advance Direction Sign 500 m before Exit

Fig 4.7 Advance Direction Sign at Exit Nosing

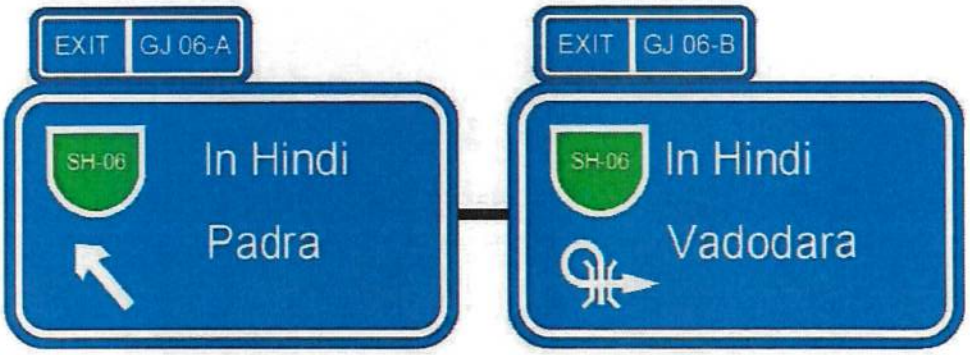

Fig 4.8 Advance Direction Sign at Exit Nosing of Cloverleaf

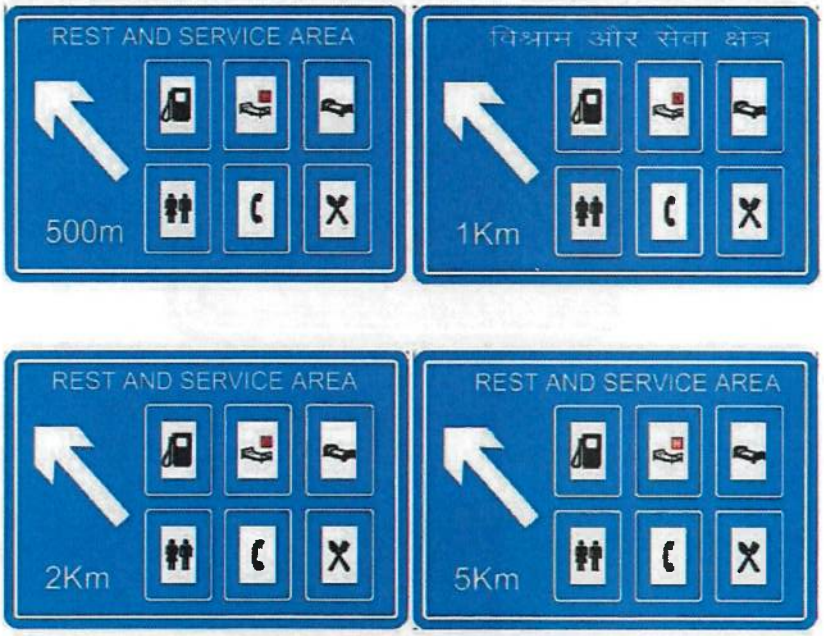

Fig 4.9 Rest And Service Area

Fig 4.10 Rest and Service Area at Exit Nosing

Fig 4.11 Emergency Helpline Number

Fig 4.12 Heavy Vehicle Keep Left

Fig 4.13 Expressway and Expressway End Symbol

Fig 4.14 Expressway Exit and Entry Ramp

Fig 4.15 Emergency Call Box

Fig 4.16 Fee Plaza Ahead

Fig 4.17 Fee Plaza

Fig 4.18 Route Marker

Fig 4.19 Cross-Road Sign board

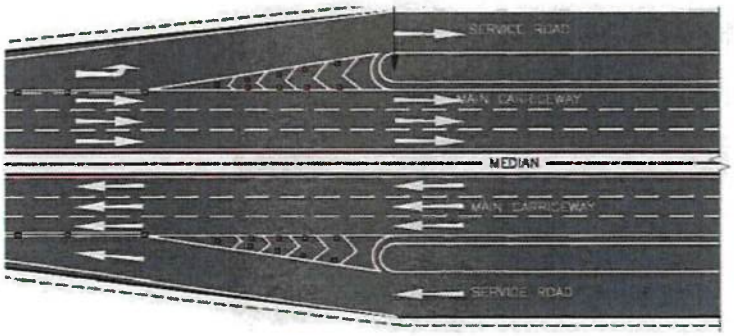

Fig 5.1 Chevron Marking

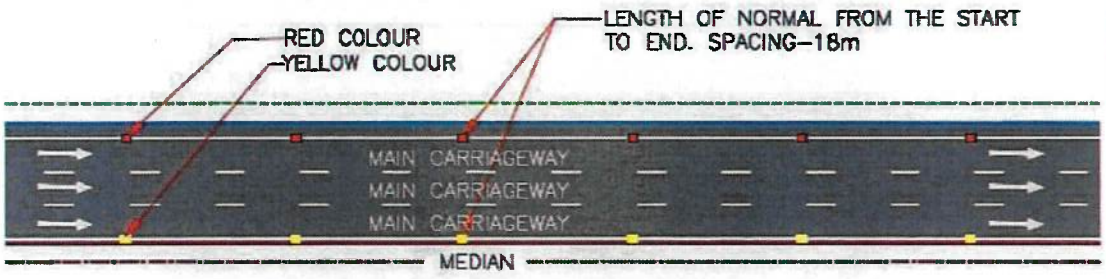

Fig 5.2 Road Stud at Normal Section

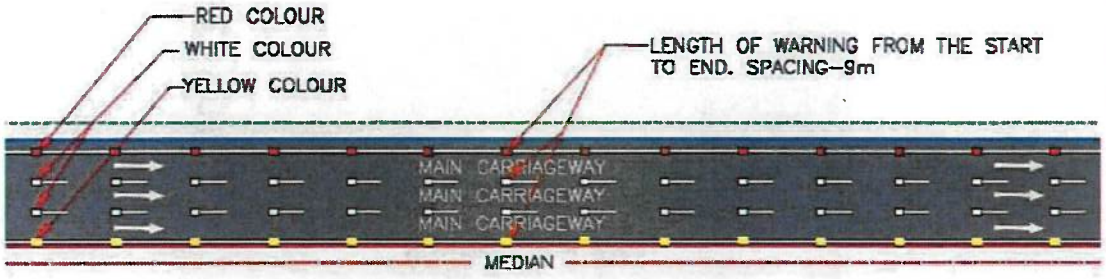

Fig 5.3 Road Stud at Warning Section

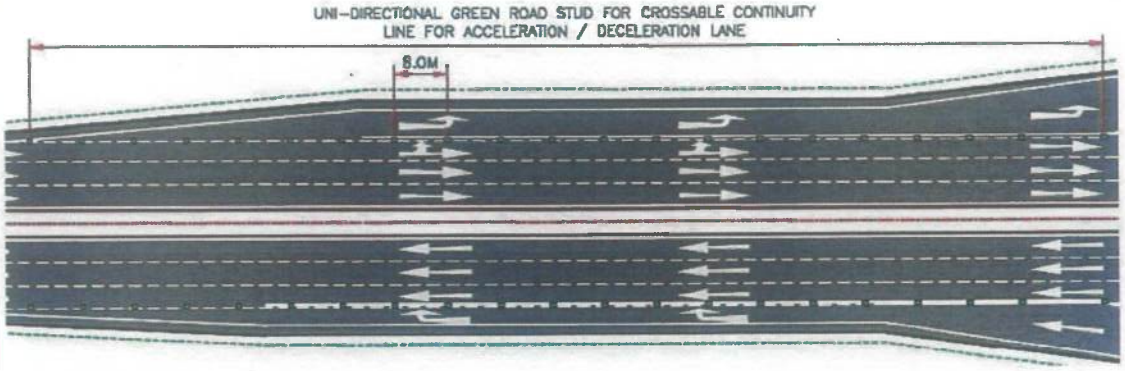

Fig 5.4 Road Stud at Merging/Diverging location

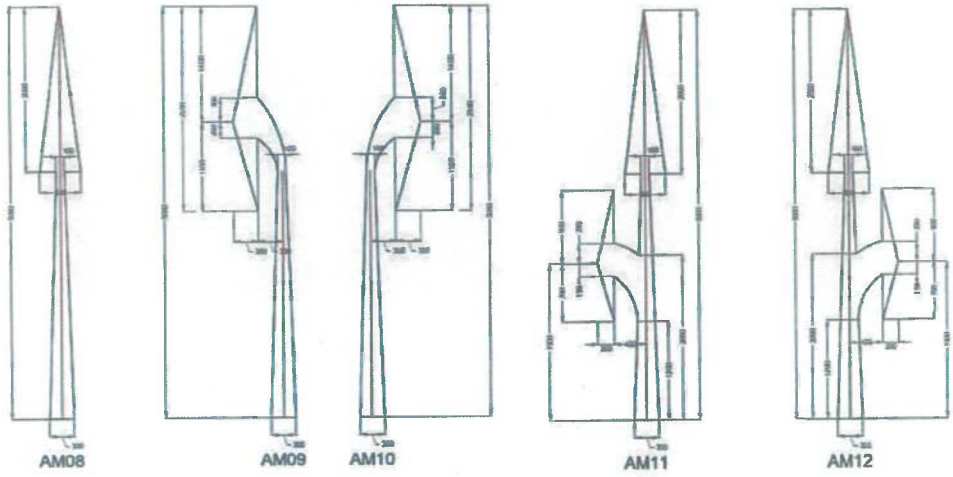

Fig 5.5 Direction Arrows

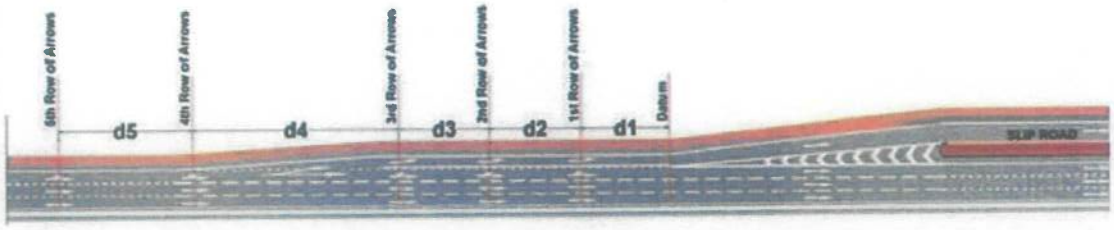

Fig 5.6 Direction Arrow distance at Entry and Exit Location

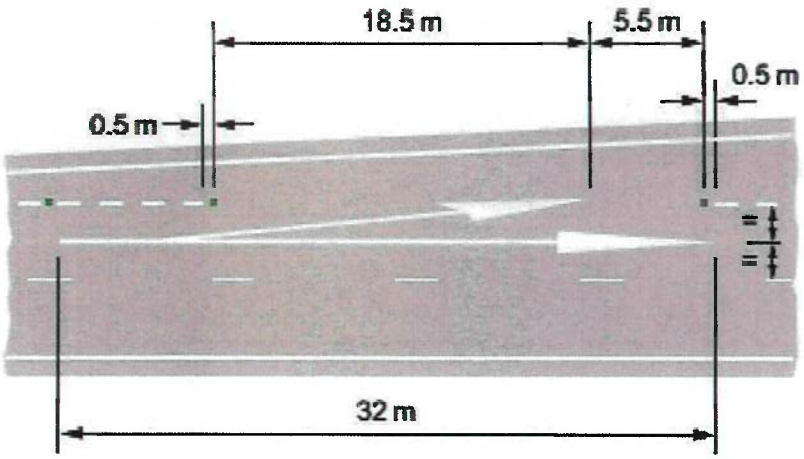

Fig 5.7-A: Bifurcation Arrows

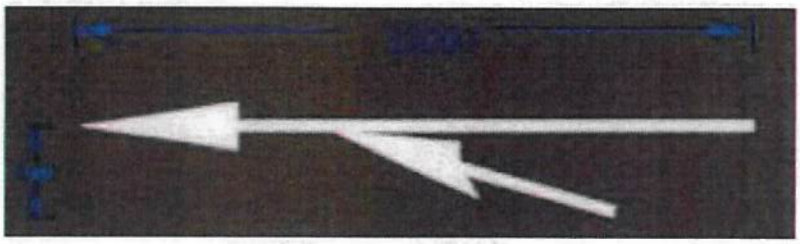

Fig 5.7-B: Merging Arrows

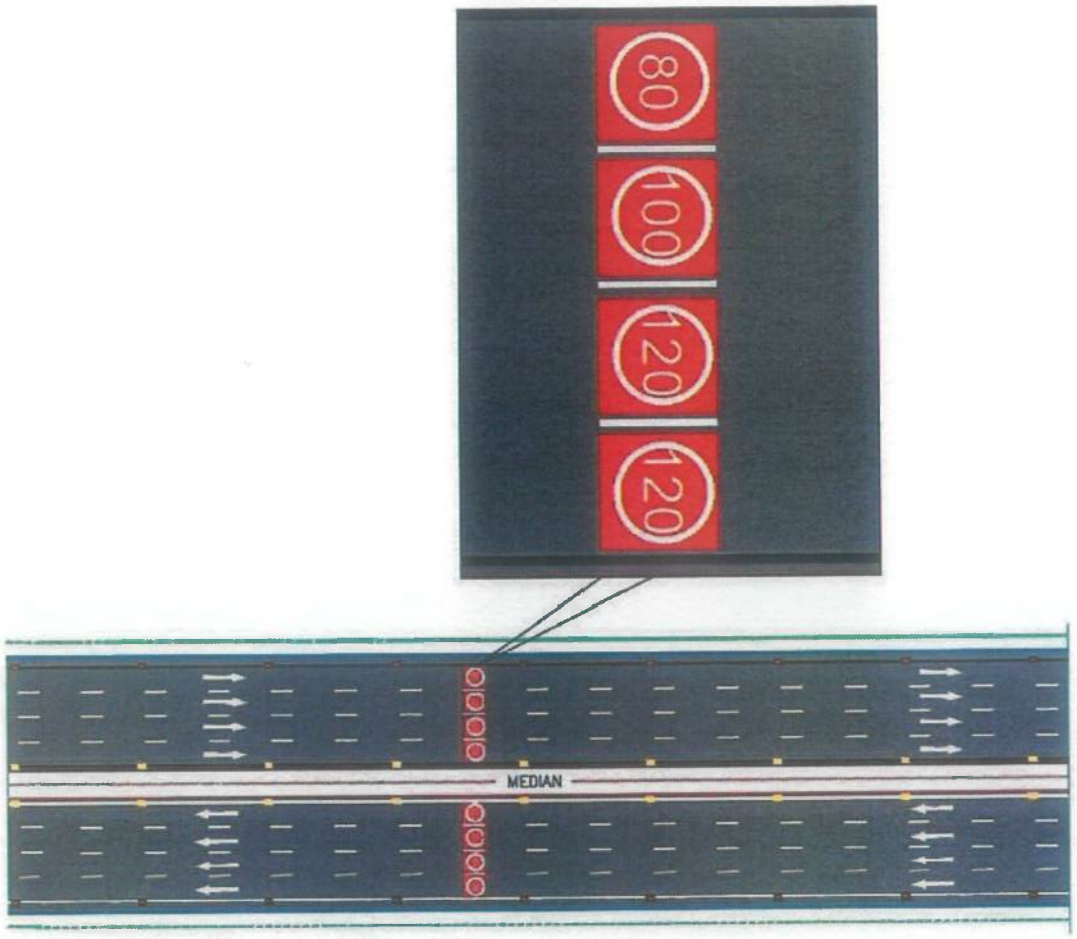

Fig 5.8 Speed Limit as Road Marking

Guidelines for provision of signages for National Highways

1 General

To maintain value added services, signs should be used to provide guidance, warnings, notice and regulatory information to road in well-designed formats for ensuring comfortable, safe and smooth driving. Signs are also essential where hazards are not self-evident.

These also provide information on entry/exit directions, destinations and points of interest. Clear, ample and effective signing provides adequate reaction time for the driver. Signs are designed so that they are legible to road users approaching them and readable in time to permit proper responses. Desired design characteristics include:

- Long visibility distances,
- Large lettering and symbols, and
- Short legends for quick comprehension

In general, the signage shall follow IRC: 67 code of practice for road signs and clause 800: traffic signs, markings and other appurtenances in MORTH - Specifications for road and bridge works. In addition to this IRC: 67 code some changes are made for better visibility and understanding of the road users on Access Controlled National Highways which must be followed along with IRC:67, IRC:35 and clause 800: of MoRTH Specifications.

Functional usage classifications are generally defined as follows:

- Mandatory/Regulatory signs
- Cautionary/ Warning signs
- Informatory/Guide signs

2 Mandatory/ Regulatory Signs

These signs are used to impose legal restrictions applicable to particular locations and unenforceable without such signs. These include all signs, such as, Speed Limits, No Entry, etc. which give notice of special obligations, prohibitions or restrictions for traffic control, which the road users must comply. The violation of the rules and regulations conveyed by these signs is a legal offence and shall attract penalty.

2.1 Size and Dimension of Mandatory Signs

Table 1: Size and Dimension of Mandatory Sign

Terrain	Diameter (mm)	Border (mm)	Oblique Bar (mm)
Hilly Terrain	900	70	70

Plain & rolling terrain	1200	100	125

* Oblique Bar will come to indicate in prohibition

Note: Wherever there is speed restriction due to site constraint or otherwise, suitable size as per IRC:67-2022 shall be adopted.

2.2 Mandatory Signs to be installed

2.2.1 No Parking

No Parking sign is used to prevent any parking of vehicles on the main carriageway which will lead to congestion. It is to be provided at an interval of every 5 km **(Fig. 2.1)**

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Speed limit sign board is provided to warn the drivers about the maximum speed limit at which they can drive their vehicle. Since the speed limit is different for car, bus and trucks the below shown sign board and gantry has been introduced. Where different speed limits are to be imposed on certain classes of vehicle types this shall be specified separately to ensure that the numerals indicating the speed limit are clearly visible from a distance. Symbol of specific vehicle type shall accompany such speed limit indication **(Fig. 2.2)**. The speed limit sign Board should be repeated at every 5 km alternately on shoulder side and median side.

2.2.3 Speed Gantry:

Speed information signs for various vehicle categories are to be installed on high-speed corridors preferably as overhead signs **(Fig. 2.3)**. The sign shall be used only on mid-block sections of the National Highway.

2.2.4 Height Limit Sign Board:

If the height of superstructure over bridges/underpass structures exceeds 5.5m no board is required, but if it is less than 5.5m then Height Limit Sign board of appropriate limit is to be provided **(Fig. 2.4)**.

3 Cautionary/ Warning Signs

These signs are used to call attention to actual or potentially hazardous conditions, so that the users can become cautious and take the desired action. The signs shall be in the shape of an equilateral triangle, with apex pointing upwards. It shall have red border and black symbols on white background.

3.1 Size and Dimension of Cautionary Signs

The size and siting details shall be as per Table below:

Table 2: Size and Dimension of Cautionary Sign

Terrain	Diameter (mm)	Border (mm)	Distance of sign board from Hazard (m)
Hilly Terrain	900	70	110-180
Plain & Rolling Terrain	1200	90	180-245

Note: Wherever there is speed restriction due to site constraint or otherwise, suitable size as per IRC:67-2022 shall be adopted.

3.2 Cautionary Sign to be installed

3.2.1 Left-Hand and Right-Hand Curve

If the difference between the approach speed to a curve and the safe negotiating speed derived based on geometric parameters of curve exceeds 15 kmph, the curve shall be provided with Left-hand curve and Right-hand curve warning sign boards as shown in **Fig. 3.1.**

3.2.2 Merging Traffic Ahead

This sign is posted in situations where the traffic from other road/ entry ramps is merging with the traffic of main carriageway, and the drivers are required to slow down their vehicles for safe travel **(Fig. 3.2).**

3.2.3 Overhead Cables

This sign is used to caution the driver of the presence of overhead power transmission lines **(Fig. 3.3).**

3.2.4 Pedestrian Crossing

The sign should be erected in advance on both approaches to uncontrolled pedestrian crossings **(Fig. 3.4).**

3.2.5 Reduced Carriageway

This sign is used to caution the driver of the reduction in the width of the carriageway ahead **(Fig. 3.5)**

3.2.6 Rumble Strip

The sign should be posted at a minimum distance of 180 m in advance of the rumble strips provided on the road to control and reduce the speed. The sign should also be repeated at a distance of 50 m in advance of the rumble strip. This is to warn the drivers of the presence of the rumble strips **(Fig. 3.6).**

4 Informatory Signs

These signs are used to provide directions to motorists, including route designations, destinations, available services, points of interest, and other geographic, recreational, or cultural sites. These also inform drivers of traffic regulations and information on the points necessary for traffic operation.

4.1 Size and Dimension of Informatory Signs:

Terrain	Overhead Direction Signs		Shoulder Mounted Direction Signs		Text Thickness (mm)
	Text Height Lower Case (mm)	Text Height Upper Case (mm)	Text Height Lower Case (mm)	Text Height Upper Case (mm)	
Hilly Terrain	280	390	245	345	50 -Lower Case
Plain & Rolling Terrain	330	460	245	345	60— Upper Case

* Font Type: Transport Medium

4.2 Informative Sign to be Installed

4.2.1 Reassurance Sign

This sign is installed to reassure a driver of a vehicle that the desired direction is being followed. However, according to IRC:67 this sign is shoulder mounted but for better visibility it is converted to full Overhead Gantry **(Fig. 4.1)**.

- To be provided after 150-200m of Entry Slip and repeated after every 10 km in case the next entry is more than 10 km away
- The first two destinations shall be the next two exit and the last shall be the ultimate destination
- The distance of location mentioned on sign board should be the distance of the railway station of that location from the board
- Every alternate or 20th km Reassurance Sign shall be in English and Hindi/ Regional/local language wherever applicable
- Exit Number should be Exit-1, Exit-2, ...

4.2.2 Welcome and Thank-You Gantry

Welcome and Thank You sign board should be installed in first and last package of the project to ensure the road user about the start of expressway so that the restrictions pertaining the project are being followed **(Fig. 4.2 and Fig. 4.3)**.

4.2.3 Advance Direction Sign

Advance Direction signs shall be used for grade separated Entry and Exit to the Access Controlled National Highway. These signs should be placed normally at 500 m, 1 km and at 2 km in advance of the exit. As per IRC:67 the Advance Direction Sign can be gantry or shoulder mounted. For better visibility at high speed, it is recommended to provide a full overhead gantry for Advance Direction Sign Board placed at 2 km before exit **(Fig. 4.4)** and cantilever gantry for Advance Direction Sign Board placed at 500 m and 1 km before exit and at tapering of Exit Ramp **(Fig. 4.5, Fig. 4.6 and Fig. 4.7)**.
The text shall be sentence case as shown in the figures.

4.2.4 Rest and Service Area Sign Board

This sign board is be provided to inform the road user about the upcoming Way-Side amenity. It is necessary to alert the driver about the existence of way side amenities by providing cantilever gantry type sign board 2 km ahead with repeater sign at 1 km and 500 m ahead and flag type shoulder mounted sign board at the exit nosing for way side amenity. Also, the Rest and Service Area sign board 1 km before the wayside amenity should be in Hindi i.e., विश्राम और सेवा क्षेत्र (Fig. 4.8 and Fig. 4.9)

4.2.5 Emergency Helpline Number

The Emergency Helpline number "1033" should be provided at every 5km interval. Dimension 2400 X 1800 mm **(Fig. 4.10).**

4.2.6 Heavy Vehicle Keep Left

This sign board is to be provided to inform the drivers of heavy vehicles like trucks moving at lesser speed to drive on left side so that the vehicles moving at higher speed can easily overtake them. The sign board should be provided at an interval of 5 km with dimension of 2400 X 2400 mm **(Fig. 4.11).**

4.2.7 Emergency Call Box

This sign shall be used at regular intervals in rural highways and in tunnel roads where emergency phones are installed. Sign Board should be installed 500m ahead of Emergency Call Box. Dimension 600 X 900 mm **(Fig. 4.12).**

4.2.8 Fee Plaza:

If the project is following closed tolling system, then Fee Plaza Ahead sign board should be provided on slip road **(Fig. 4.13),** no sign regarding fee plaza should be displayed on main carriageway where fee plaza in on slip road. In case if the fee plaza is on main carriageway, it is necessary to alert the driver about the existence of fee plaza by providing cantilever gantry type sign board 2 km ahead with repeater sign at 1 km and 500 m ahead **(Fig. 4.14).**

4.2.9 Route Marker

Route Marker sign should be provided at every 5km interval. Dimension 600 X 800 mm **(Fig. 4.15).**

5 Road Markings

5.1 Diagonal and Chevron Marking

Channelizing markings like diagonal and chevron markings are utilized to demarcate the neutral area at the nose of a channelizing island for reducing the incidence of collision with kerb nose. Red coloured Road studs should be provided at spacing of 2m/4m/6m for better visibility at night and adverse weather condition. They direct the entering and exiting traffic into the proper angle for smooth movements of divergence and convergence. These markings

provide for proper and safe use of acceleration and deceleration lanes (**Fig. 5.1**).

5.2 Road Studs

Retro-reflective studs are used to supplement longitudinal/transverse reflectorized road markings, which would improve visibility in night-time and adverse weather conditions. Road studs are also used across the carriageway to serve as Speed Arrestor coupled with eschewing warning through the creation of the rumbling sensation to the user. Series of such road reflector studs are to be laid in advance of junction/crossings/end of the flyover section wherein road crashes are prevalent. Different coloured road studs are used at different location **(Fig. 5.2, Fig. 5.3 and Fig.5.4)**.

5.2.1 Colour for Road Studs

The studs with different colours of reflectors such as white, red, yellow and green are used for highways. The usage of different colours of studs is as follows:

5.2.1.1 Red Colour

Red road studs are to be used to indicate a line which should not be crossed and mainly to delineate left hand edge of the running carriageway i.e., for road studs to be used on shoulder side edge line. The road studs shall be omitted or can be replaced with green colour where the facility for exiting traffic is provided from the main carriageway like entry to Truck Lay Bye/Bus Bay, Start of Service Road, etc.

5.2.1.2 Yellow Colour

Yellow road studs are to be deployed to indicate a line which should not be crossed with the aim to delineate the right-hand edge of the running carriageway in case of the multi-lane divided carriageways i.e., median side edge line.

5.2.1.3 White Colour

White road studs are to indicate traffic lane line and centre of carriageway. Mainly used at warning sections.

5.2.1.4 Green Colour

Green road studs are to be employed to indicate crossable edge line like the lay byes and to show the boundary of acceleration or deceleration line on left hand side of the carriageway in case of the multi-lane divided carriageways.

5.3 Direction Arrow Markings

Directional arrows should be used in advance to guide drivers to correct lane when approaching busy intersections whether signal controlled or not. Directional arrows must be elongated in the direction of the traffic flow to have

adequate legibility, as arrows are viewed at low angle (**Fig. 5.5**). The length of directional arrow is as per speed is shown in table below:

Speed	Length of Arrows
Upto 50 kmph	3.5m
51 – 100 kmph	5m
> 100 kmph or Expressway	9m

The direction arrow near Entry and Exit location (**Fig. 5.6**) should be as per table below:

Approach Speed	D1	D2	D3	D4	D5
81-100 kmph	30	45	90	180	-
>100kmph	30	60	90	150	150

Other than Entry and Exit location the straight arrow should be repeated at every 10 km

5.4 Bifurcation Arrow

The bifurcation arrow should be provided at the commencement of deceleration lanes on the approach to junctions to guide vehicles ensuring that the full length of the lane is used to slow down for the junction without impeding the through vehicles on the main carriageway (**Fig. 5.7-A**). The size of bifurcation arrow is prescribed in table below:

Speed	Length of Arrows
< 65 kmph	8m
65 – 100 kmph	16m
> 100 kmph or Expressway	32m

5.5 Speed Limit as Road Marking

Speed limit along with vehicle logo should be marked on the pavement to guide the road users about the appropriate driving speed and lane (Fig. 5.8). This marking should be repeated at every 10 kms. The text height of the markings is prescribed in table below:

Category of Road	Text Height
National Highways and Expressways	2.5m

5.6 The alphabets of all sign boards as shown in the guidelines are indicative and the lettering shall conform to cl. 12.2 of IRC: 67- 2022.

MANDATORY SIGN BOARD
 Fig 2.1 No Parking
 Fig 2.2 Speed Limit
 Fig 2.3 Speed Gantry Note: The sign shall be used only on mid-block sections of the National Highway.

Fig 2.4 Height Limit

CAUTIONARY SIGN BOARDS

Fig 3.1 Left-Hand and Right-Hand Curve

Fig 3.2 Merging Traffic Ahead

Fig 3.3 Overhead Cables

Fig 3.4 Pedestrian Crossing

Fig 3.5 Reduced Carriageway

Fig 3.6 Rumble Strip

Informatory Sign Board

Fig 4.1 Reassurance Sign

Fig 4.2 Welcome Gantry

Fig 4.3 Thank You Gantry

Fig. 4.4 Advance Direction Sign 2 km before Exit

Fig. 4.5 Advance Direction Sign 1 km before Exit

Fig 4.6 Advance Direction Sign 500 m before Exit

Fig 4.7 Advance Direction Sign at Exit Tapering

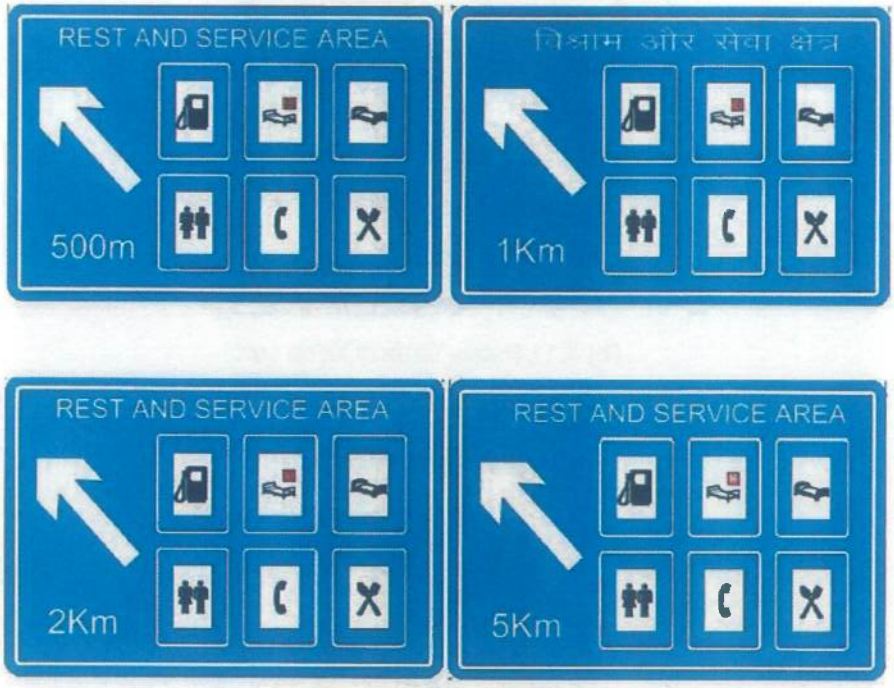

Fig 4.8 Rest and Service Area

Fig 4.9 Rest And Service Area at Exit Nosing

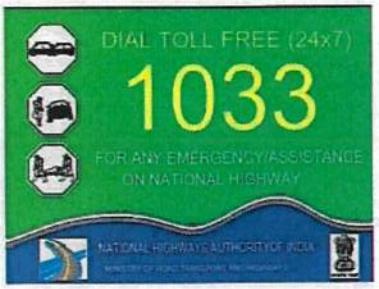

Fig 4.10 Emergency Helpline Number

Fig 4.11 Heavy Vehicle Keep Left

Fig 4.12 Emergency Call Box

Fig. 4.13 Fee Plaza Ahead

Fig 4.14 Fee Plaza

Fig 4.15 Route Marker

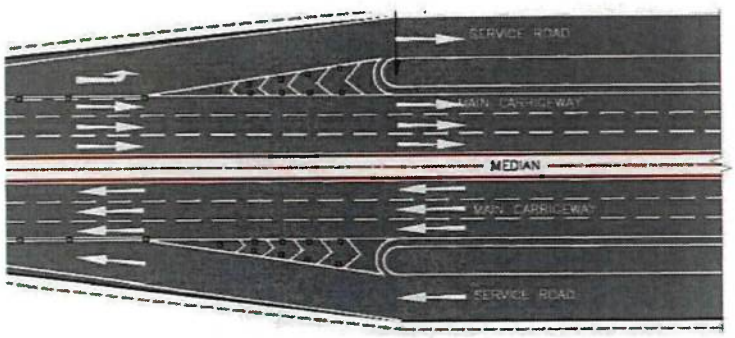

Fig 5.1 Chevron Marking

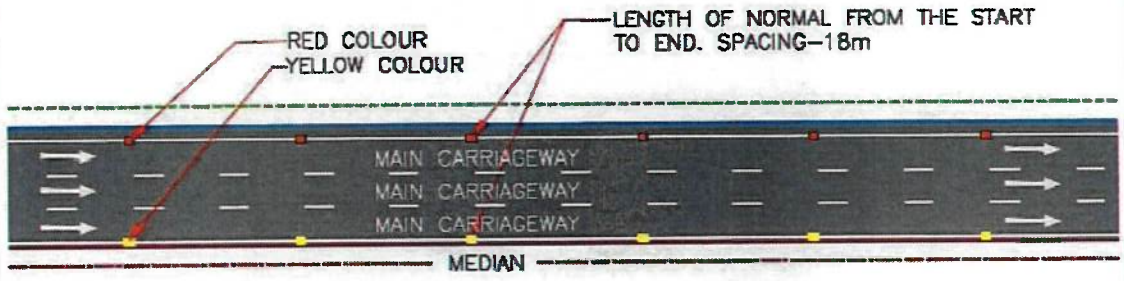

Fig 5.2 Road Stud at Normal Section

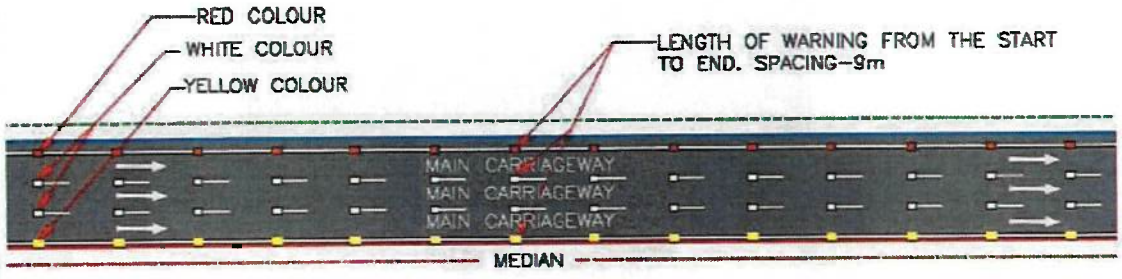

Fig 5.3 Road Stud at Warning Section

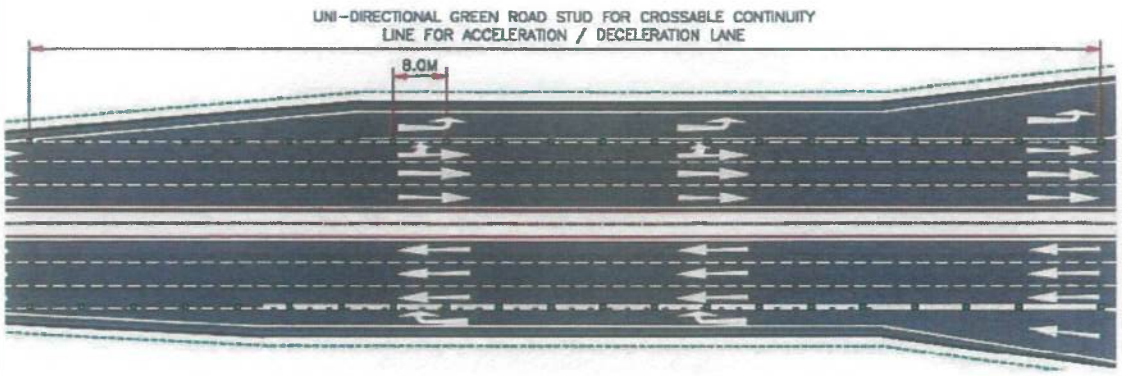

Fig 5.4 Road Stud at Merging/Diverging location

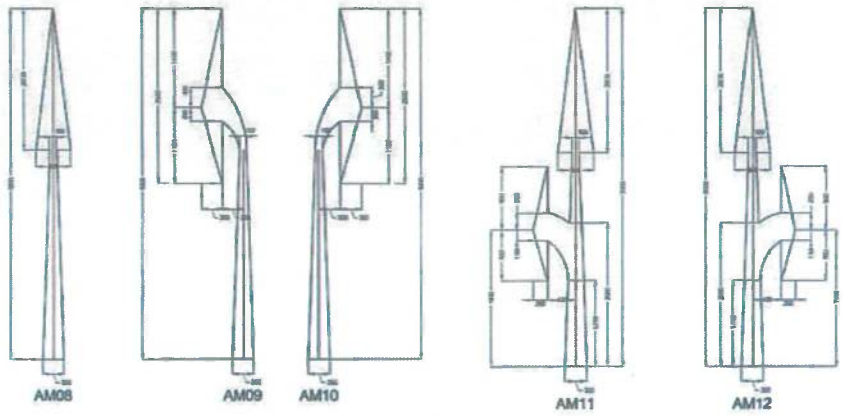

Fig 5.5 Direction Arrows

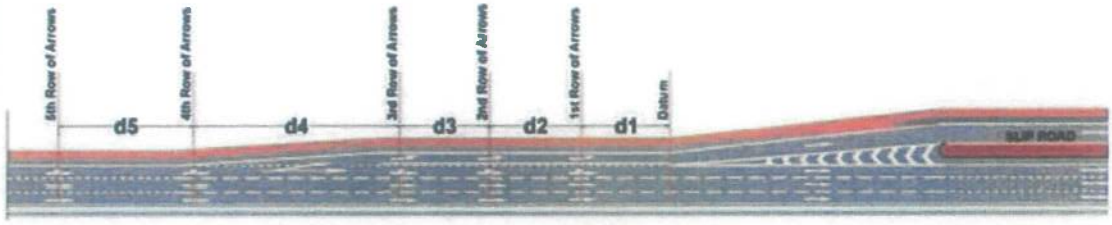

Fig 5.6 Direction Arrow distance at Entry and Exit Location

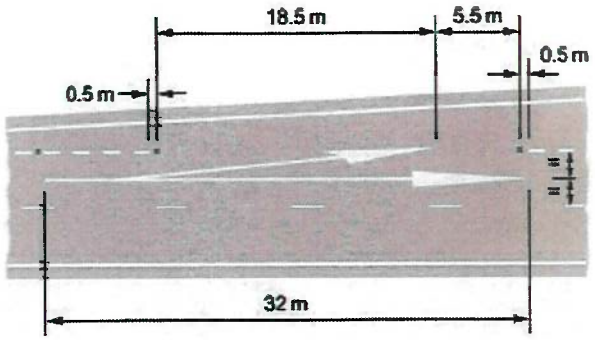

Fig 5.7-A: Bifurcation Arrows

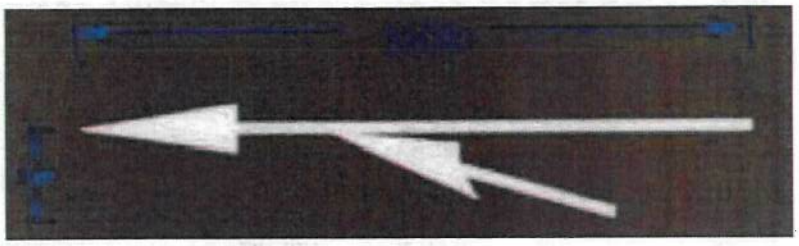

Fig 5.7-B: Merging Arrows

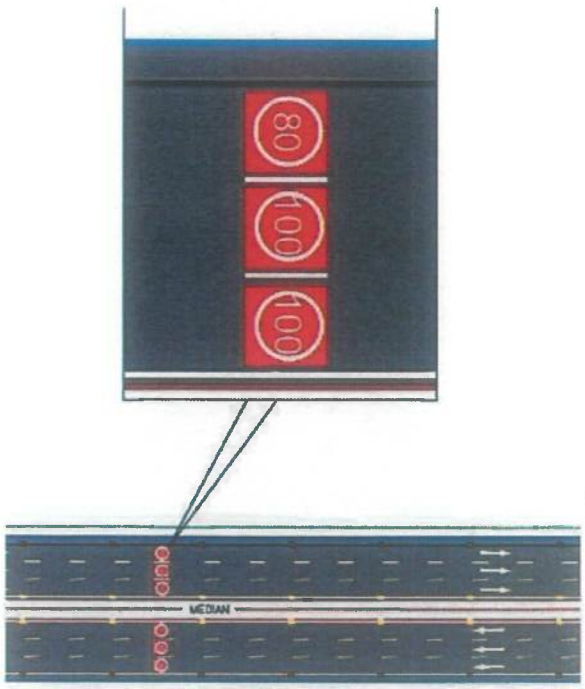

Fig 5.8 Speed Limit as Road Marking

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