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CODE OF PRACTICE FOR ROAD SIGNS

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(As on 21.12.1999)

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* ADG(B) being not in position, the meeting was presided by Shri Prafulla Kumar, DG(RD) & Addl. Secretary to the Govt. of India, MORT&H

1. INTRODUCTION

1.1. Traffic signs, which have the backing of law in India, are incorporated in Section 116 of the Indian Motor Vehicles Act, 1988.

1.2. The Motor Vehicles Act, 1988 has covered all the signs warranted by different traffic situations and the designs of signs fully dimensioned. Further the signs have the uniformity, and mostly symbols are used to convey the message, especially in the case of regulatory signs.

1.3. The existing road signs (IRC:67-1977) have been reviewed by the Traffic Engineering Committee of the Indian Roads Congress in the light of recommendations made by various international conventions, with a view to evolving a uniform and an efficient system of road signs suiting the present as well as future traffic. This Code of Practice sets out the methodology to be followed in the use, siting, construction and maintenance of the road signs for all categories of roads excepting for expressways, for which higher standards are required. The traffic signs adopted in this code are as proposed in Protocol on Road Signs and Signals of United Nations Conference on Road and Motor Transport, 1949 and Geneva Convention on Road Signs and Signals, 1968.

1.4. The draft revision of the Code of Practice prepared by Dr. T.S. Reddy was considered by the Traffic Engineering Committee (personnel given below) in their meeting held on the 22nd October, 1998 and it authorised the Convenor and Dr. T.S. Reddy to finalise the same and send to IRC for consideration by Highways Specifications and Standards Committee.

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The Highways Specifications & Standards Committee approved the draft in its meeting held on 21st December, 1999. Subsequently the draft was approved by Executive Committee on 10th February, 2000 and Council in its 159th meeting held at Pune on 26th May, 2000.

3.6. On multi-lane high speed roads, the signs may have to be mounted overhead, as this would ensure better visibility and be effective in communicating with the drivers. For guidelines on location, design and installation of overhead signs, reference may be made to MOST Specifications for Road and Bridge works (Section 802). The overhead signs shall be mounted to ensure better visibility and effective in communicating the drivers in the following cases:

- ✓ Traffic volume at or near capacity
- ✓ Complex interchange design
- ✓ Three or more lanes in each direction
- ✓ Restricted sight distance
- ✓ High speed traffic
- ✓ Insufficient space for ground mounted signs

Overhead signs shall provide a vertical clearance of not less than 5.5 metres over the entire width of pavement and shoulders except where a lesser vertical clearance is used for the design of other structures.

4. ORIENTATION OF THE SIGNS

4.1. The signs shall normally be placed at right angles to the line of travel of the approaching traffic. Signs relating to parking, however, should be fixed at an angle (approximately) 15 degrees to the carriageway so as to give better visibility.

4.2. Where light reflection from the sign face is encountered to such an extent as to reduce legibility, the sign should be turned slightly away from the road. On horizontal curves, the sign should not be fixed normal to the carriageway but the angle of placement should be determined with regard to the course of the approaching traffic.

4.3. Sign faces are normally vertical, but on gradients it may be desirable to tilt a sign forward or backward from the vertical to make it normal to the line of sight and improve the viewing angle.

5. MATERIAL FOR SIGNS

The various materials and fabrication of traffic signs shall conform to the following requirements:

5.1. Concrete: Concrete shall be of M150 grade (mix 1:2:4).

5.2. Reinforcing Steel: Reinforcing steel shall conform to the requirements of IS:1786 unless otherwise specified.

5.3. Bolts, Nuts, Washers: High strength bolts shall conform to IS:1367 whereas precision bolts, nuts, etc. shall conform to IS:1364.

5.4. Plates and Supports: Plates and support sections for the signposts shall conform to IS:226 and IS:2062 or any other stated IS specification.

Table 5.2. Acceptable Minimum Co-efficient of Retro-Reflection for Engineering Grade Sheeting (Candelas per Lux per Square Metre)

Observation angle in degrees	Entrance angle in degrees	White	Yellow	Orange	Green	Red	Blue
0.2	- 4	70	50	25	9.0	14.5	4.0
0.2	+30	30	22	7.0	3.5	6.0	1.7
0.5	- 4	30	25	13.5	4.5	7.5	2.0
0.5	+30	15	13	4.0	2.2	3.0	0.8

When totally wet, the sheeting shall not show less than 90 per cent of the values of retro-reflection indicated in Table 5.2. At the end of 5 years, the sheeting shall retain at least 50 per cent of its original retro-reflectance.

5.8.3. Adhesives: The sheeting shall either have a pressure-sensitive adhesive of the aggressive-tack type requiring no heat, solvent or other preparation for adhesion to a smooth clean surface, or a tack free adhesive activated by heat, applied in a heat-vacuum applicator, in a manner recommended by the sheeting manufacturer. The adhesive shall form a durable bond to smooth, corrosion and weather resistant surface of the base plate such that it shall not be possible to remove the sheeting from the sign base in one piece by use of sharp instrument. In case of pressure-sensitive adhesive sheeting, the sheeting shall be applied in accordance with the manufacturer's Specifications. Sheetings with adhesives requiring use of solvents or other preparation for adhesive shall be applied strictly in accordance with the manufacturer's instructions.

5.8.4. Fabrication: Surface to be reflectorised shall be effectively prepared to receive the retro-reflective sheeting. The aluminium sheeting shall be de-greased either by acid or hot alkaline etching and all scale/dust removed to obtain a smooth plain surface before the application of retro-reflective sheeting. If the surface is rough, approved surface primer may be used. After cleaning, metal shall not be handled, except by suitable device or clean canvas gloves, between all cleaning and preparation operation and application of reflective sheeting/primer. There shall be no opportunity for metal to come in contact with grease, oil or other contaminants prior to the application of retro-reflective sheeting.

Complete sheets of the material shall be used on the signs except where it is unavoidable. At splices, sheeting with pressure-sensitive adhesives shall be overlapped not less than 5 mm. Sheetings with heat-activated adhesives may be spliced with an overlap not less than 5 mm or butted with a gap not exceeding 0.75 mm. Where screen printing with transparent colours is proposed, only butt joining shall be used. The material shall cover the sign surface evenly and shall be free from twists, cracks and folds. Cut-outs to produce legends and borders shall be bonded with the sheeting in the manner specified by the manufacturer.

5.9. Messages/Borders: The messages (legends, letters, numerals, etc.) and borders shall either be screen-printed or of cut-outs. Screen printing shall be processed and finished with materials and in a manner specified by the sheeting manufacturer. Cut-outs shall be of materials as specified by the sheeting manufacturer and shall be bonded with the sheeting in the manner specified by the manufacturer.

8. SIZES OF SIGNS

8.1. As a general rule, there shall be two sizes of signs for mandatory/regulatory and cautionary/warning signs. The normal size shall be used for main roads in rural areas, and the small size shall be used for less important roads in rural areas and all the roads in urban areas. For certain categories of mandatory/regulatory signs, a still smaller size may be used in conjunction with traffic light signals or on bollards on traffic islands.

8.2. General dimensions of different categories of signs are given in respective sections.

9. VISIBILITY OF SIGNS

In order to make them more visible and legible at night, in particular danger/warning signs and regulatory signs other than those regulating parking and stopping in lighted streets of built-up areas, shall be lighted or provided with reflective material including luminous paints or reflective devices. Care should, however, be taken that this does not result in road users becoming dazzled.

10. SIZES OF LETTERS

10.1. The size and shape of letters and their interspacing and numerals used on informative signs or definition plates shall be as detailed in IRC:30-1968 "Standard Letters and Numerals of Different Heights for use on Highway Signs".

10.2. Letter size should be chosen with due regard to the speed, classification and location of the road, so that the sign is of adequate size for legibility but without being too large or obtrusive. The size of the letter, in terms of x-height, to be chosen as per the design speed are given in Table 10.1.

Table 10.1 . Acceptable Limits for Size of Letters

Design Speed the Highway (kmph)	Minimum 'x' Height of the Letter (cms)	Minimum Sighting Distance (m)	Maximum Distance from Centre Line (m)
45	7.5	45	12
60	10.0	60	16
80	12.5	80	21
90	15.0	90	24
120	20.0	115	32

The thickness of the letters and their relation to the x-height, tile width, tile heights are indicated in Table IV(a) of the *Annexure-4* to facilitate the design of the informative signs and definition plates.

10.3. For advance direction signs on rural roads, the letter size ('x' height) should be minimum of 15 cm for National and State Highways and 10 cm for other roads. In case of overhead signs, the size ('x' height) of letters may be minimum 30 cm. Thickness of the letter could be varied from 1/6 to 1/5 of the letter 'x' size. The size of the initial upper case letter shall be $1\frac{1}{3}$ times x-height. In urban areas, letter size shall be 10 cm on all directional signs for easy and better comprehension the word messages shall be written in initial upper case letter followed by lower case letters.

13.2.1.2. Combination with markings: The stop sign shall always be used in combination with certain road markings, such as, stop line and the word "STOP" marked on the pavement vide IRC: 35-1997 "Code of Practice for Road Markings".

13.2.1.3. Size, shape and colour: The sign (shown in Fig. 13.1) shall be octagonal in shape and shall have red background and white border. The word "STOP" written in white (in English or local language) with 150 mm height letters, centrally positioned. The height of the octagon shall be 90 cm including the border for normal sized sign and 60 cm including the border for small sized sign. The width of the border shall be 30 mm and 20 mm respectively.

13.2.1.4. Warrants for installation: The sign should be used on a minor road at its intersection with a major road where conditions are considered to be unduly hazardous due to restricted visibility, bad alignment, high accident record, etc. making it imperative for the minor road traffic to stop on every occasion. The sign may also be used at other inter-sections where a combination of high speed, restricted view and record of serious accidents indicates the need for control by stop sign. The sign should not be used at inter-sections where traffic signals are installed or where traffic is controlled by traffic police. The stop sign is not to be used for speed control.

13.2.1.5. Location: Stop signs should be sited as close to the stop line as possible but not in such a position as to impair visibility along the major road. Normally, these should be fixed 1.5 to 3 metres in advance of the stop line. If the site conditions prevent a sign so placed from being easily seen, it should be placed at a greater distance in advance of the STOP line, but not more than 6 metres from it.

13.2.2. Give way sign

13.2.2.1. Purpose: The sign is used to assign right-of-way to traffic on certain roadways and inter-sections, the intention being that the vehicles controlled by the sign must give way to other traffic having the right-of-way.

13.2.2.2. Size, shape and colour: The sign (shown in Fig. 13.2) shall be an equilateral triangle with the apex downwards. It shall have red border and white background. The side of the normal sized sign shall measure 90 cm including the border : the side of the small sized sign shall measure 60 cm including the border. The size of the border shall be 70 mm and 45 mm respectively. Message GIVE WAY written in black letters of 150 mm height letters as shown in the diagram in appropriate language.

13.2.2.3. Warrants for installation: The sign shall be used on a minor road at the entrance to an inter-section where it is necessary to assign right-of-way to the major road but where a stop is not necessary at all times. The sign shall also be used on hill roads with single or intermediate lane carriageway on long gradients facing the downhill traffic to assign right-of-way to vehicles climbing uphill.

13.2.2.4. Location: The sign should be located in advance to the point where vehicles are required to stop to yield the right-of-way, say at a distance of 25 to 50 metres. It is also recommended that Give Way line (Ref. IRC:35-1997) should be marked at the entry to the junction. Give way line may be preceded by give way marking on the road. On gradients, the sign should be placed at the start of the down gradient and repeated as necessary.

13.3.14. U-turn prohibited: The sign shall be used at the places where vehicles are forbidden to make a turn to reverse direction of travel between the sign and the next inter-section beyond it. The sign shall be erected at the start and at intervals along section of a road on which the controlling authority has authorised the prohibition. The spacing between any two successive signs should not exceed 120 metres on each side of the road (Fig. 13.17).

13.3.15. Overtaking prohibited: The sign shall be erected at the beginning of such sections of highways where sight distance is restricted and overtaking will be hazardous. The sign may be dispensed with where standard "No Lane Crossing" pavement markings (Ref. IRC:35-1997) exist (Fig. 13.18).

13.3.16. Horn prohibited: The sign shall be used on stretches of the road where sounding of horn is not allowed, such as, near hospitals and in silence zones (Fig. 13.19).

13.4. No Parking and No Stopping/Standing Signs (Figs. 13.20 and 13.21)

13.4.1. Size, shape and colour: The signs shall be of circular shape with a red border and blue background. There will be an oblique red bar at 45 degrees for the, 'No Parking' sign and there will be two oblique red bars at 45 degrees and right angles to each other for, 'No Stopping' sign. Their diameter shall be 60 cm in case of normal sized signs and 40 cm. in case of small sized signs. Width of the border shall be 65 mm and 45 mm and that of the red oblique bar shall be 60 mm and 40 mm respectively for normal and small sized signs.

A smaller size of 30 cm diameter may be used in conjunction with traffic light signals or on bollards on traffic islands. Width of the border and red oblique bar shall be 35 mm and 30 mm respectively.

13.4.2. Combination with definition plate: There shall be a definition plate below the signs carrying the words "No Stopping/Standing" as applicable in English and other language as necessary. The scope of the prohibition may be explained by inscriptions on the definition plate specifying as the case may be

- (i) the days of the week during which the prohibition applies,
- (ii) the hours of the day during which parking is prohibited,
- (iii) the distance upto which the prohibition is applicable, and
- (iv) exceptions granted for certain classes of road users.

In addition, the definition plate may exhibit a single-headed arrow pointing the direction in which the restriction is applicable if the sign is at the end of a zone, or a double-headed arrow pointing both ways if the sign is at an intermediate point in the zone.

13.4.3. Location of 'No Parking' sign: The sign shall be erected where the controlling authority has resolved to prohibit parking. The sign should be accompanied by suitable kerb or carriageway markings as indicated in IRC:35-1997 (Fig. 13.20)

13.4.4. Location of 'No Stopping/Standing' sign: The sign shall be erected on sections of a road or street where the controlling authority has decided to prohibit stopping of vehicles, even temporarily (Fig. 13.21).

13.6.2. Purpose: This sign shall indicate the point at which all prohibitions notified by prohibitory signs for moving vehicles ceases to apply.

13.7. Compulsory Direction Control and other Signs (Figs. 13.29 to 13.38)

13.7.1. Size, shape and colour: These signs shall be circular in shape with blue background and white border (2 mm), and having symbols in white. The diameter shall be 60 cm for normal sized sign and 40 cm for small sized sign. However, signs having a diameter of not less than 30 cm may be used in conjunction with traffic signals or on bollards on traffic islands.

13.7.2. Compulsory direction signs-general warrant: These signs shall, by arrow or arrows, indicate the appropriate direction(s) in which vehicles are obliged to proceed, or the only directions in which they are permitted to proceed.

13.7.3. Compulsory keep left/right: The sign is most frequently used on bollards or islands and refuges in the middle of the carriageway and at the beginning of central reserves of dual carriageway. It should not be used at breaks in an otherwise continuous central reserve. This sign is not to be used on the central island of a roundabout (Figs. 13.29 to 13.34).

13.7.4. Compulsory cycle track/cycles only: The sign shall notify cyclists that they must use the cycle track at the entrance to which it is placed, and shall notify the drivers of other vehicles that they are not entitled to use that track (Fig. 13.35).

13.7.5. Compulsory sound horn: The sign shall mean that the motor vehicles shall compulsorily sound horn at the location at which sign is placed, for instance at sharp curves on hill roads (Fig. 13.36).

13.7.6. Pedestrians only: The sign shall mean that only pedestrians are allowed and the traffic is not allowed on this road/carriageway. The sign may be supported by supplementary plate with 'PEDESTRIANS ONLY' written on it (Fig. 13.37).

13.7.7. Busway/buses only: The sign shall mean that only buses are allowed and the other traffic is not allowed on this road/carriageway. The sign may be supported by supplementary plate with 'BUSES ONLY' written on it (Fig. 13.38).

14. CAUTIONARY/WARNING SIGNS

14.1. The detailed dimensioned drawings of normal sized sign and symbols thereon are shown in *Plate-2* for ease of reproduction. For signs of other sizes, the symbols should be proportionately reduced or enlarged. The cautionary/warning signs are listed in *Annexure-2*.

14.2. Size, shape and colour: The signs (shown in Figs. 14.1 to 14.43) shall be in the shape of an equilateral triangle, with apex pointing upwards. It shall have red border and black

14.6. Right/Left Reverse Bend

The sign should be erected where two curves in opposite direction are separated by a tangent less than 120 metres in length in plains and 30 metres in hills. The sign may also be erected where in the opinion of the controlling authority the nature of the reverse bend is not obvious to approaching drivers and constitutes a hazard. If the first curve is to the right, a right reverse bend sign shall be used. If the first curve is to the left, a left reverse bend sign shall be used (Fig. 14.3).

14.7. Steep Ascent/Descent

14.7.1. Steep ascent: The sign should be used 30 metres before a steep upgrade where the erecting authority considers that the steepness of the upgrade warrants a warning to the road users. A gradient of 10 per cent and above may be considered steep gradient for this purpose. The sign should not be used unless the gradient continues for a length of about 1/2 to 1 km. It should be repeated at suitable intervals in the stretch having the steep ascent (Fig. 14.4).

14.7.2. Steep descent: The sign should be used 30 metres before a steep downgrade, where the erecting authority considers that the steepness of the grade may constitute a hazard to traffic. A gradient of 10 per cent and above may be considered as a steep gradient for this purpose. The sign should not be used unless the gradient continues for a length of about 1/2 km. It should be repeated at suitable intervals in the stretch having the steep descent (Fig. 14.4).

14.8. Narrow Bridge

The sign should be erected on roads in advance of bridges where the clear width between kerbs or wheel guards is less than the normal width of the carriageway (Fig. 14.5).

14.9. Narrow Road

The sign should be erected on such sections of roads in rural areas where in the opinion of the controlling authority a sudden reduction in width of pavement causes a danger to traffic (Fig. 14.6).

14.10. Road Widens

The sign should be erected on such sections of roads in rural areas where in the opinion of the controlling authority the sudden widening of a road causes a danger to traffic, such as, a two-lane road suddenly widening to a dual carriageway (Fig. 14.7).

14.11. Gap in Median

The sign should be installed ahead of a gap in the median of a divided carriageway, other than at an intersection (Fig. 14.8).

14.12. Slippery Road

The sign should be erected to warn that the section of the road ahead may be particularly slippery. The sign should be removed immediately after the hazard is remedied (Fig. 14.9).

14.21. Cross Road

The sign should be erected in advance of the cross road where in the opinion of the controlling authority a sufficiently large volume of crossing or entering traffic together with restricted sight distance is likely to constitute a hazard. This sign should only be used when the drivers need to be warned of the existence of an intersection and no other indication, e.g., by a map type advance direction sign or traffic signal, is given (Fig. 14.18).

14.22. Side Road

The sign should be erected in advance of the side road intersections where in the opinion of the controlling authority a sufficiently large volume of entering traffic together with restricted sight distance is likely to constitute a hazard. The sign should only be used when the drivers need to be warned of the existence of a junction and no other indication, e.g., by a map type advance direction sign or traffic signal, is given (Fig. 14.19).

14.23. T-Inter-section

The sign should be erected in advance of T-junctions where in the opinion of the controlling authority the nature of the inter-section is not obvious to approaching drivers. The width of bands should indicate the relative importance of the roads. This sign should only be used when the driver needs to be warned of the existence of a junction and no other indication, e.g., by a map type advance direction sign or traffic signal, is given (Fig. 14.20).

14.24. Y-Inter-section

The sign should be erected on the approach to a bifurcation of any road. This sign should only be used when the driver needs to be warned of the existence of a junction and no other indication, e.g., by a map type advance direction sign or traffic signal, is given (Fig. 14.21).

14.25. Staggered Inter-section

The sign should be used to indicate junctions where the distance between two junctions does not exceed 60 metres. This sign should only be used when the driver needs to be warned of the existence of a junction and no other indication, e.g., by a map type advance direction sign or traffic signal, is given (Fig. 14.22).

14.26. Major Road

The sign should be erected in advance of crossing with a major road, where in the opinion of the controlling authority a sufficiently large volume of traffic together with restricted sight distance is likely to constitute a hazard. The sign should not be used where the inter-section is controlled by traffic signal (Fig. 14.23).

14.35. Runway: This sign is used to warn the drivers of the presence of runway ahead and possible movements of aircrafts. The sign may be posted at 50-100 metres in advance of the runway (Fig. 14.32).

14.36. End of Dual Carriageway: This sign is posted when dual carriageway is ending and single carriageway is starting. The sign may be posted at 100-150 metres from the end of dual carriageway (Fig. 14.33).

14.37. Start of Dual Carriageway: This sign is posted when a single carriageway ends up into a dual carriageway. The sign may be posted at 100 metres from the start of dual carriageway (Fig. 14.34).

14.38. Series of Bends: This sign should be used to caution the driver of the presence of zig-zag for a long distance over the section of road ahead. The sign may be posted 50-100 metres ahead of the section under question. The sign may be repeated at appropriate intervals if the zig-zag road is very long (Fig. 14.35).

14.39. Traffic Diversion on Dual Carriageway: This sign is used to warn the driver of the diversion of traffic from one carriageway to the other. Mostly it is used on dual carriageway when one carriageway is closed (Fig. 14.36).

14.40. Overhead Cable: This sign is used to caution the driver of the presence of overhead power transmission lines (Fig. 14.37).

14.41. Quay Side or River Bank: This sign is used to caution the driver of the presence of the water by the side of the road and the impending danger (Fig. 14.38).

14.42. Two Way Operation: This sign is used to caution the driver of a changed pattern of traffic operation on a carriageway expected to carry traffic in one direction only. For example, on a dual carriageway, the entire traffic is diverted to one side because of emergency or road work. In this situation drivers are warned by posting this sign (Fig. 14.39).

14.43. Lane Closures: This sign is used to caution the driver of the closure of a portion of the carriageway on multi-lane highways (Figs. 14.40 (a), 14.40 (b) and 14.40 (c)).

14.44. Sudden Side Winds: This sign is used to caution the driver of the danger of side winds, which endanger the lives of travellers. This sign is posted at places where such weather conditions exist. This will enable the driver to proceed cautiously and act appropriately in case of emergency (Fig. 14.41).

14.45. Reduced Carriageway: This sign is used to caution the driver of the reduction in the width of the carriageway ahead. This is applicable to undivided carriageway when some portion of the carriageway is closed or reduced for maintenance or repairs (Fig. 14.42).

14.46. Rough Road: This sign is posted in situations where the road is rough and the drivers are required to slow down their vehicles for safe travel (Fig. 14.43).

15.3.5. Reassurance sign: The sign (Fig. 15.6) should be erected on important roads beyond an inter-section or a junction, to reassure a driver of a vehicle that the desired direction is being followed. Two place names alongwith their distances should normally be shown, the upper name being of the town or place with larger population or maximum importance on the route and the next name being of the place next in the order of importance.

15.3.6. Place/city identification: The sign (Fig. 15.7) should be used along highways to mark entrance to the place of city. It should be erected at the entrance to the area incorporated in the local authority. If the built-up area does not extend to the corporate line at the point where it crosses the highway, then the sign should be placed inside the incorporated area 90 metres in advance of the edge of the built-up section.

15.3.7. Truck lay bye: Along the National and State Highways the provision of Truck Lay Byes has become very necessary and as such the truck drivers must be adequately informed of the availability of such a facility. The sign of the type shown in Fig. 15.8 is to be provided with the directional arrow showing the direction in which the facility is located. These signs are posted in advance of the location where truck lay bye is provided.

15.3.8. Toll booth ahead: Where charges are levied and collected from the road users for their use of road facilities to collect these charges are set up, it is necessary to inform the road users of the presence of such facilities ahead of their arriving at them by posting a sign shown in Fig. 15.9. The sign is posted in advance of the toll booth between 500 to 1000 metres.

15.4. Facility Information Signs (Figs. 15.10 to 15.16)

15.4.1. Size, shape and colour: These signs shall be rectangular and have a blue background. While black symbol shall be displayed in white square to indicate the facility. the size of the normal sized sign shall be 80 cm x 60 cm and of the small sized sign 60 cm x 45 cm. Size of the symbol shall be as shown in figures. On the blue band at the bottom of the sign, the distance to the facility indicated or to the entry of the road leading to it, may be inscribed in white. The signs may also be set up at the entry to the road leading to the facility and may then bear a white directional arrow on the blue part at the bottom.

15.4.2. Public telephone: The sign should be erected on long stretches of roads in rural areas indicating the distance to the nearest public telephone on supplementary plate, especially where it is in an inconspicuous position (Fig. 15.10).

15.4.3. Filling station (Petrol Pump): The sign should be erected on long stretches of roads in rural areas at the entry to the road leading to the facility. It is not necessary when the facility is within sight and available at reasonably frequent intervals along the route (Fig. 15.11).

15.4.4. Hospital: The sign should be used to notify drivers of vehicles that they should take the precautions required near medical establishments and in particular that they should not make any unnecessary noise. The sign serves to indicate the location of hospital where medical facilities will be available (Fig. 15.12).

15.4.5. First aid post: The sign should be used to notify the drivers of vehicles on long stretches of roads in rural areas of the first aid facility which may be helpful in case of emergency (Fig. 15.13).

15.5.12. **Auto-rickshaw stand:** The sign is to be erected where the auto-rickshaws are to wait (Fig. 15.27).

15.5.13. **Cycle-rickshaw stand:** The sign is to be erected where the cycle-rickshaws are to wait (Fig. 15.28).

15.6. **Parking Signs (Figs. 15.29 to 15.35)**

The parking sign, which may be set up parallel to the axis of the road, should indicate the places where parking of vehicles is authorised. The sign shall be square of 60 cm x 60 cm size. It shall bear the letter 'P' in white colour. The background colour shall be blue with white border. Symbols or inscriptions on an additional plate below the sign may show the direction in which the parking places lie or the categories of vehicles for which parking is reserved.

15.7. **Flood Gauge**

The sign should be installed at causeways and submersible bridges or culverts to indicate to the road users the height of the flood above the road level (Fig. 15.36).

LIST OF CAUTIONARY/WARNING SIGNS

1. Right Hand/Left Hand Curve
2. Right/Left Hairpin Bend
3. Right/Left Reverse Bend
4. Steep Ascent/Descent
5. Narrow Bridge
6. Narrow Road Ahead
7. Road Widens Ahead
8. Gap in Median
9. Slippery Road
10. Loose Gravel
11. Cycle Crossing
12. Pedestrian Crossing
13. School
14. Cattle
15. Men at Work
16. Falling Rocks
17. Ferry
18. Cross Roads
19. Side Road
20. T-Intersection
21. Y-Intersection
22. Staggered Intersection
23. Major Road Ahead
24. Roundabout
25. Dangerous Dip
26. Rumble Strip
27. Barrier Ahead
28. Unguarded Railway Crossing
29. Guarded Railway Crossing
30. Speed Breaker Ahead
31. Traffic Signal Ahead
32. Runway Ahead
33. End of Dual Carriageway
34. Start of Dual Carriageway
35. Series of Bends
36. Overhead Cables Ahead
37. Quayside or River Bank
38. Two Way Operation Ahead
39. Lane Closure Ahead
40. Traffic Diversion on Dual Carriageway
41. Sudden Side Winds Ahead
42. Reduced Carriageway
43. Rough Road

RULES FOR THE DESIGN OF INFORMATORY ROAD SIGNS

Alphabets

- (i) The Transport Medium alphabets are recommended for use of white letters on a dark background (blue, green or red). Alphabets comprises capital and lower-case letters, numerals and associated characters, and each of these is placed on a tile to assist in spacing. These alphabets and associated characters are shown in Figs. 4 (a) to 4 (c). Tile widths and associated spacings are indicated in Table 4 (a).
- (ii) Letter size shall be expressed as centimeters of 'x' height, which is the height of a lower case letter 'x' within the alphabet concerned. The height of the alphabet from which they are taken, for example, 'capitals from the 10 cm 'x' height alphabet'. Where, however, capitals alone are used on a sign they may be described in terms of their actual height.
- (iii) Stroke-width, referred to as S/W, is the thickness of the capital letters I in the Transport Medium alphabet whatever size of alphabet is being used on the sign. This stroke-width is never based on the Transport Heavy alphabet.

Layout of Signs

A. General

- (i) All dimensions are expressed in terms of stroke-widths (S/W).
- (ii) Spaces are measured between the tile edges of letters (and never between the letters themselves), but direct to symbols, borders and arrows.
- (iii) All place names on a sign shall be in letters of the same size, regardless of the relative importance of the place. A smaller letter size may only be used for a name which is too long to fit into a reasonable sized sign and which cannot be hyphenated or abbreviated.
- (iv) Route letters and numbers shall be from the same size alphabet as is used for the related place name.

B. Letter and word spacing

- (i) Words are formed by butting tiles closely together.
- (ii) Tiles of words stacked one above the other shall be butted closely together [(but see also C (iv)(g)].
- (iii) Related words on the same line, as in the phrase, shall be separated by $1\frac{1}{2}$ S/W.
- (iv) Route letters and route numbers shall be separated by $1\frac{1}{2}$ S/W.
- (v) Route letters shall be 2 S/W away place names when on the same line.
- (vi) There shall be 3 S/W space between a route number and a bracketed route number on the same line.

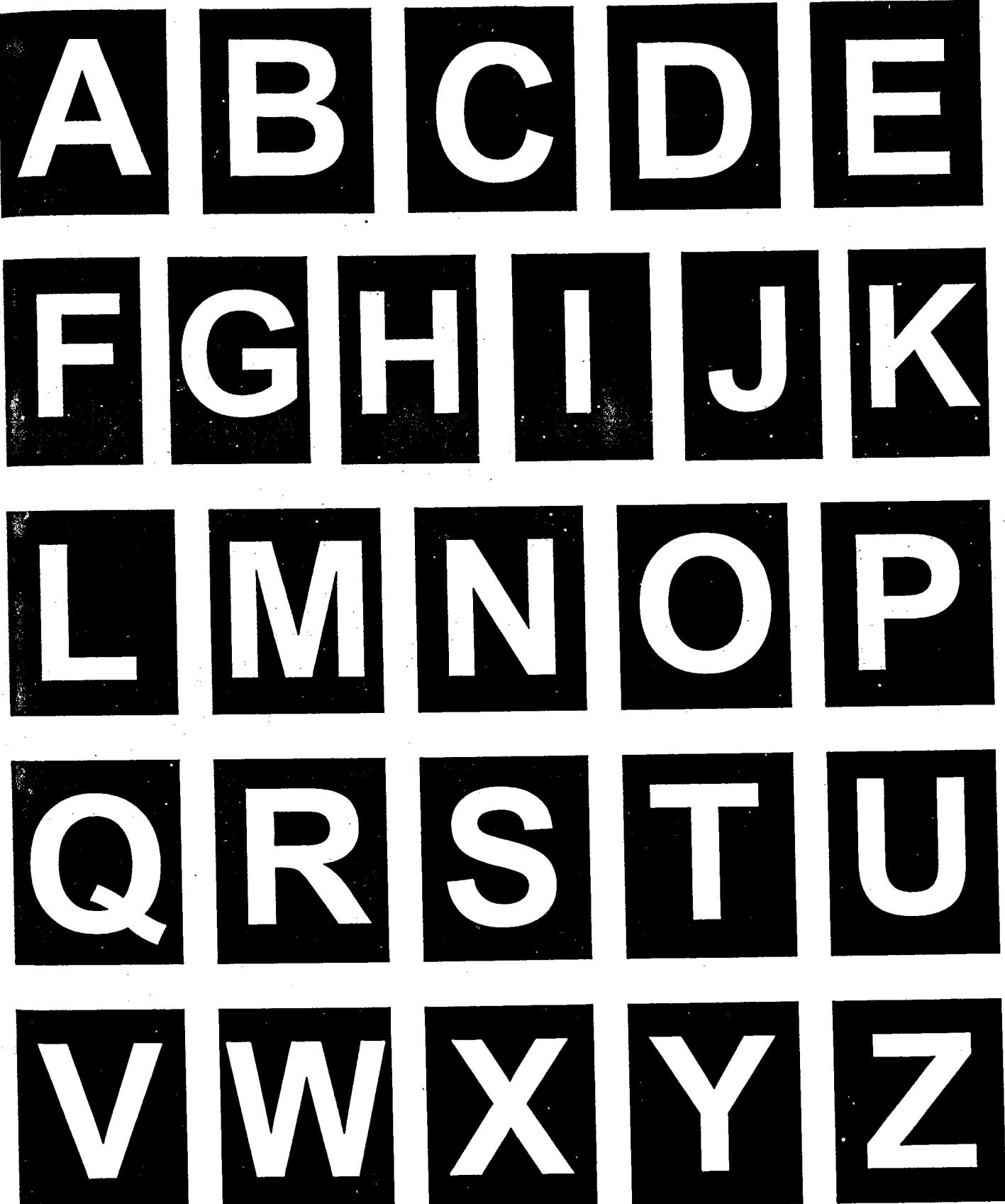


Fig. 4 (a). Transport medium capital alphabet for use on signs with dark backgrounds

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Fig. 4 (c). Transport medium numerals and other characters for use on signs with dark backgrounds

- (c) There shall be $1\frac{1}{2}$ S/W between route symbols and the place names below.
- (f) Forward route symbols shall built up directly to forward destinations, but where there is a descender immediately over the symbol point a stroke thickness should be inserted.
- (g) There shall be a minimum of 12 S/W vertically and 10 S/W horizontally between blocks of names/route numbers.
- (h) The bottom of the forward route symbol shall be $1\frac{1}{2}$ S/W from the bottom border.

D. Map type advance direction signs for roundabouts

(i) Dimension of roundabout symbols

Number of roads	Internal radius	External radius	Length of entry arm	Minimum length of route symbol from centre of roundabout
1 entry + 3 exits	7	12	22	24
1 entry + 4 exits	8	13	30	30

- (ii) When it is more economical on roundabout signs especially where there is a group comprising more than one destination and route number, destinations may be placed to one side of an oblique route symbol, but see especially C (iv) (g).
- (iii) The minimum distance between the route entering a roundabout and destinations to left and right shall be 6 S/W on the left and 5 S/W on the right.
- (iv) There shall be a minimum of 2 S/W between a destination and the nearest point on the perimeter of a roundabout symbol.

E. Stack type signs

- (i) Where a border is of the same colour as the letters it shall be $1\frac{1}{2}$ S/W.
- (ii) Between panels divisions of letter colour shall be 1 S/W.
- (iii) Black borders on local advance direction signs shall be 4 S/W.
- (iv) Internal corners of panels shall be radiused 1 S/W. External corners of sign plates shall be radiused 2 S/W.
- (v) Within panels, the border shall be separated from the top and sides by $2\frac{1}{2}$ S/W and from the base by $1\frac{1}{2}$ S/W.
- (vi) Figured mileages shall follow place names on the same line and shall be at a distance of 3 S/W from them.
- (vii) Route numbers shall be placed below place names and aligned with the initial of the place name.
- (viii) Groups of place names/route numbers within panels shall be separated vertically by 1 S/W.
- (ix) Arrows shall be of a size appropriate to the alphabet.

I. Table of measurements of stroke widths

The following Table shows the measurement in centimetres of the more commonly used multiples of stroke widths.

Table of measurements of stroke widths in centimetres

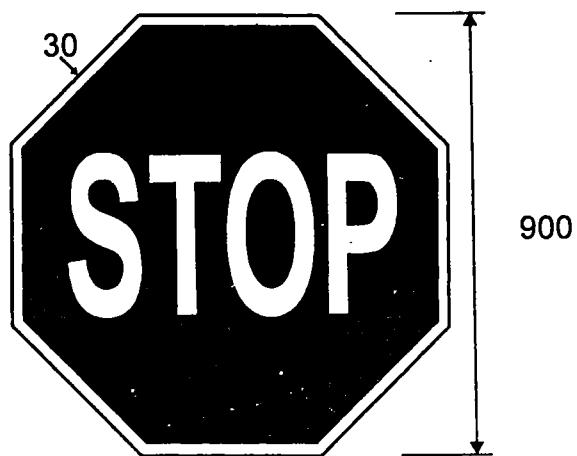
S/Ws	'X' – height (in cm)						
	5	7.5	10	15	20	25	30
1	1.2	1.8	2.4	3.6	4.84	6.0	7.2
1.5	1.8	2.7	3.6	5.4	7.2	9.0	10.8
2	2.4	3.6	4.8	7.2	9.6	12.0	14.4
2.5	3.0	4.5	6.0	7.5	10.0	12.5	15.0
3	3.6	5.4	7.2	10.8	14.4	18.0	21.6
4	4.8	7.2	9.6	14.4	19.2	24.0	28.8
5	6.0	9.0	12.0	18.0	24.0	30.0	36.0
6	7.2	10.8	14.4	21.6	28.8	36.0	43.2
7	8.4	12.6	16.8	25.2	33.6	42.0	50.4
8	9.6	14.4	19.2	28.8	38.4	48.0	57.6
9	10.8	16.2	21.6	32.4	43.2	54.0	64.8
10	12.0	18.0	24.0	36.0	48.0	60.0	72.0
12	14.4	21.6	28.8	43.2	57.6	72.0	86.4
13	15.6	23.4	31.2	46.8	62.4	78.0	93.6
20	24.0	36.0	48.0	72.0	96.0	120.0	144.0
30	36.0	54.0	72.0	108.0	144.0	180.0	216.0

Note: The dimensions in cm are those used to design the sign and position the legend in terms of spacing of elements, borders, route symbols, etc.

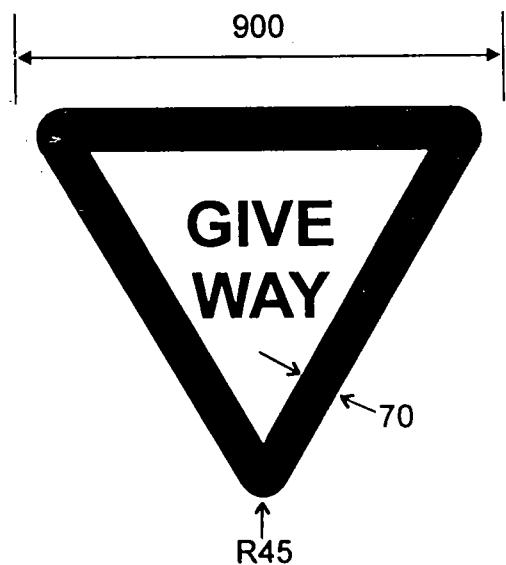


PLATE-1
(Continued)

STOP AND GIVE WAY SIGNS



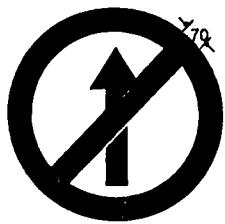
STOP SIGN
Fig. 13.1



GIVE WAY SIGN
Fig. 13.2

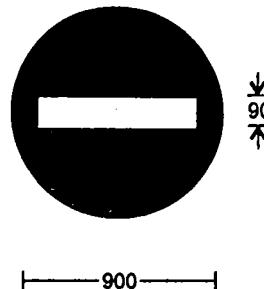
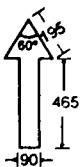
1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres

PROHIBITIY SIGNS



— 750 —
— 900 —

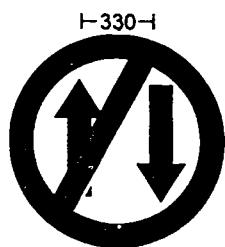
**STRAIGHT PROHIBITED
OR NO ENTRY**



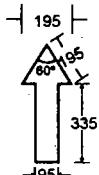
— 900 —

NO ENTRY

Fig. 13.3



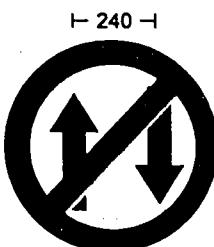
— 750 —
— 900 —



— 750 —
— 900 —

ONE WAY SIGNS

Fig. 13.5



— 750 —
— 900 —

**VEHICLES PROHIBITED
IN BOTH DIRECTIONS**

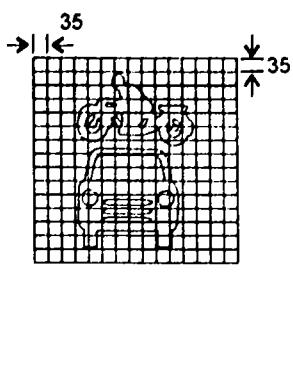
Fig. 13.6

1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres

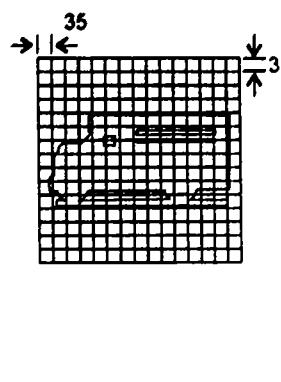


**ALL MOTOR VEHICLES
PROHIBITED**

Fig. 13.7

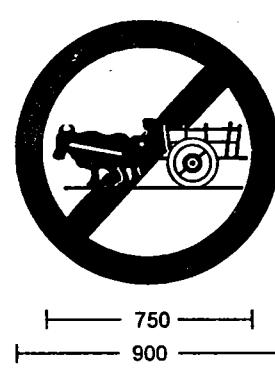
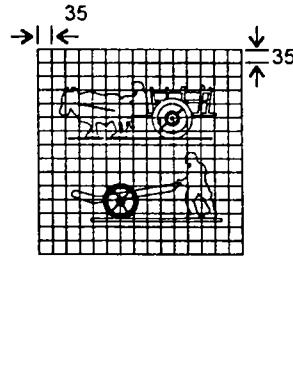


TRUCK PROHIBITED
Fig. 13.8

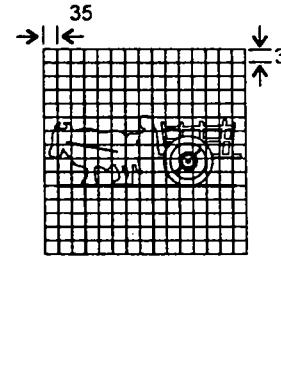


**BULLOCK CART & HAND
CART PROHIBITED**

Fig. 13.9

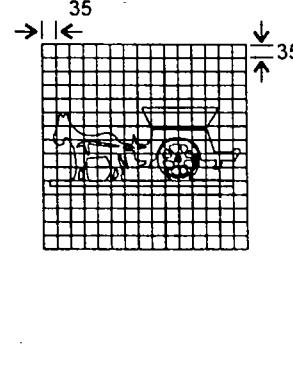


BULLOCK CART PROHIBITED
Fig. 13.10

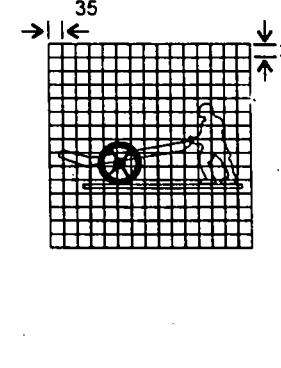


TONGA PROHIBITED

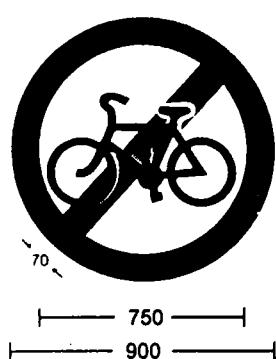
Fig. 13.11



HAND CART PROHIBITED
Fig. 13.12

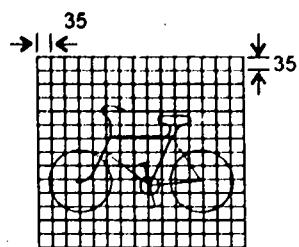


1. Dimensions shown are for normal sized signs.
2. All dimensions are in millimetres.



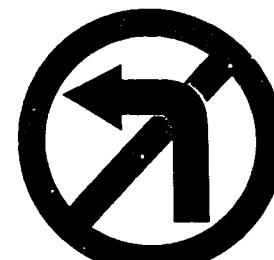
CYCLE PROHIBITED

Fig. 13.13



PEDESTRIAN PROHIBITED

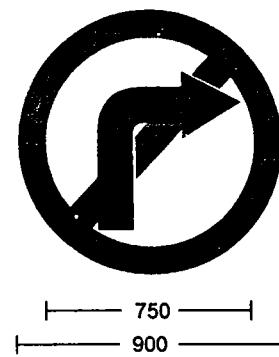
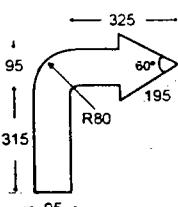
Fig. 13.14



750
900

LEFT TURN PROHIBITED

Fig. 13.16



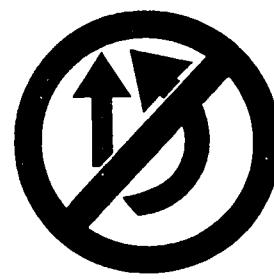
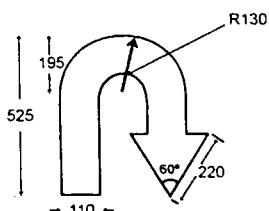
RIGHT TURN PROHIBITED

Fig. 13.15



U-TURN PROHIBITED

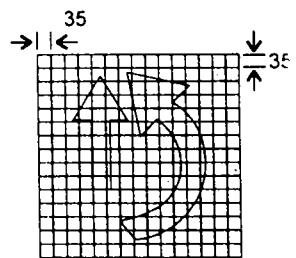
Fig. 13.17



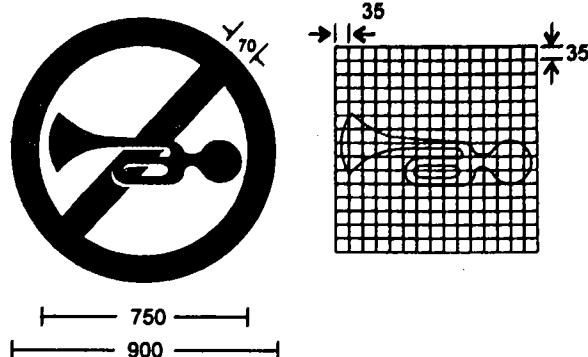
750
900

OVERTAKING PROHIBITED

Fig. 13.18



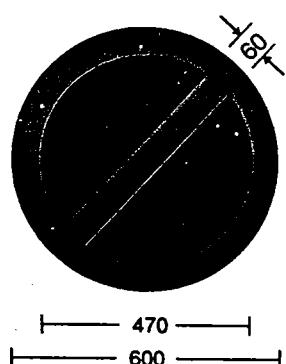
1. Dimensions shown are for normal sized sign
2. All dimensions are in millimetres



HORN PROHIBITED

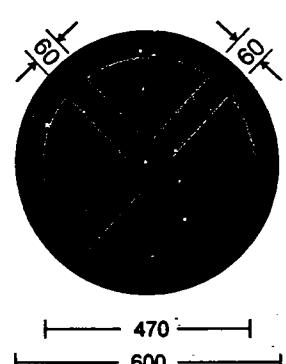
Fig. 13.19

NO PARKING AND NO STOPPING SIGNS



NO PARKING

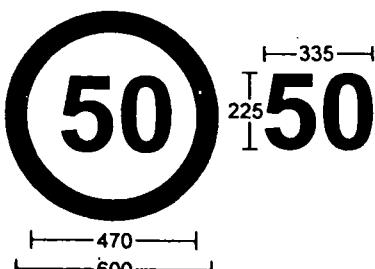
Fig. 13.20



NO STOPPING OR STANDING

Fig. 13.21

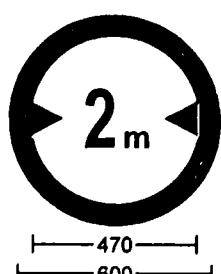
SPEED LIMIT AND VEHICLE CONTROL SIGNS



SPEED LIMIT

Fig. 13.22

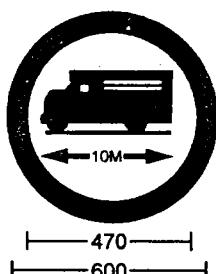
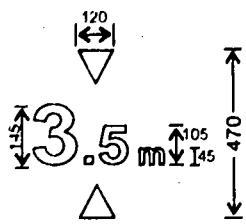
- Dimensions shown are for normal size signs.
- All dimensions are in millimetres.
- A definition plate may be attached with the No Parking and No Stopping signs carrying the message in English and other languages as necessary, as also any additional information such as the period during which the restrictions will be in force or the particular vehicles to which it applies.
- Speed limits for different classes of vehicles may be indicated in separate definition plate attached to the Speed Limit sign.



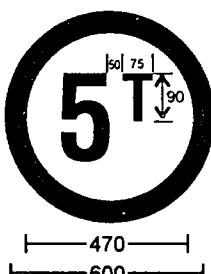
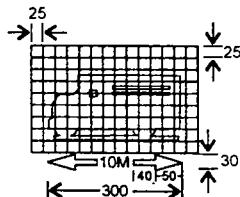
WIDTH LIMIT
Fig. 13.23



HEIGHT LIMIT
Fig. 13.24



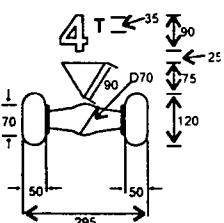
LENGTH LIMIT
Fig. 13.25



LOAD LIMIT
Fig. 13.26



AXLE LOAD LIMIT
Fig. 13.27



RESTRICTION ENDS SIGNS

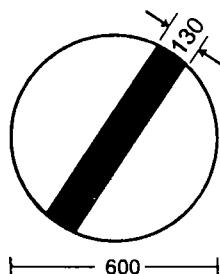
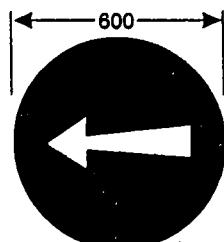


Fig. 13.28

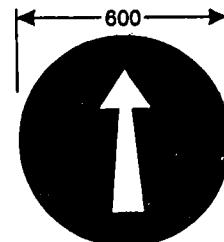
1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres

COMPULSORY DIRECTION CONTROL AND OTHER SIGNS



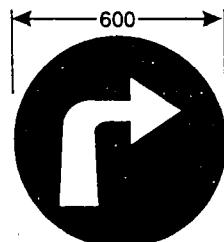
**COMPULSORY
TURN LEFT**
(FOR TURN RIGHT, SYMBOL TO
BE REVERSED)

Fig. 13.29

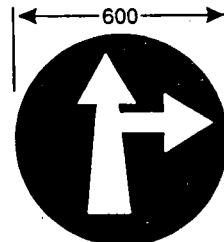
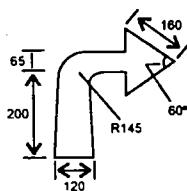


**COMPULSORY
AHEAD ONLY**

Fig. 13.30

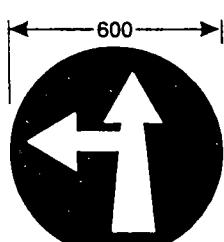


**COMPULSORY
TURN RIGHT AHEAD**
(FOR TURN LEFT, SYMBOL TO
BE REVERSED)



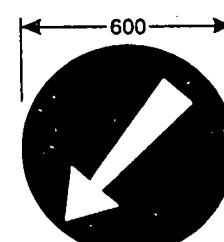
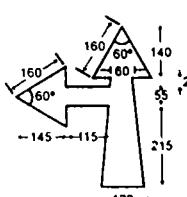
**COMPULSORY
AHEAD OR TURN RIGHT**

Fig. 13.32



**COMPULSORY
AHEAD OR TURN LEFT**

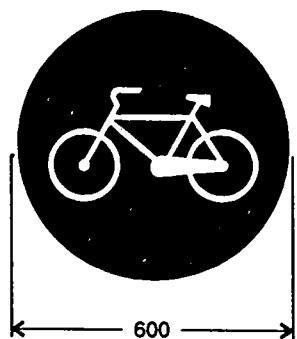
Fig. 13.33



**COMPULSORY
KEEP LEFT**

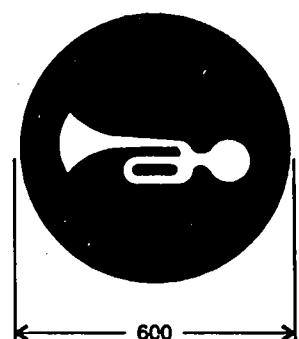
Fig. 13.34

1. Dimensions shown are for normal sized signs.
2. All dimensions are in millimetres.



COMPULSORY CYCLE TRACK

Fig. 13.35



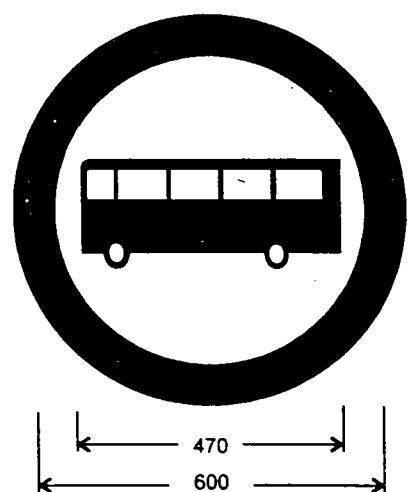
COMPULSORY SOUND HORN

Fig. 13.36



PEDESTRIANS ONLY

Fig. 13.37



BUSES ONLY

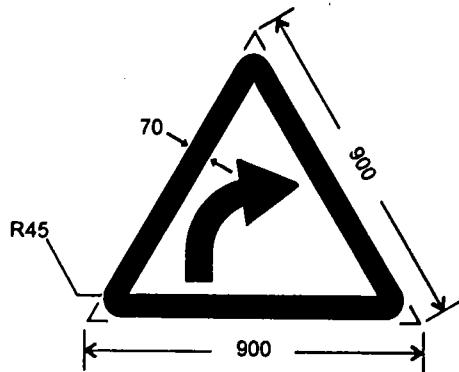
Fig. 13.38

1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres

PLATE-2

CAUTIONARY/WARNING SIGNS

THE SIZE OF THE TRIANGLE SHALL BE 90 CM FOR NORMAL SIZED SIGN AND 60 CM FOR SMALL SIZED SIGN. THE WIDTH OF THE BORDER SHALL BE 70 MM AND 45 MM RESPECTIVELY. THE SIZE OF THE SYMBOLS SHOWN IN DRAWINGS IS FOR NORMAL SIZED SIGN AND IN THE CASE OF SMALL SIZED SIGN, THE SYMBOL SHOULD BE TWO-THIRDS OF THE SIZE SHOWN IN THE DRAWINGS.



TYPICAL CAUTIONARY SIGN

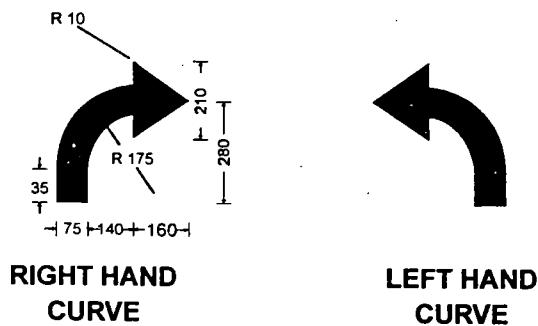


Fig. 14.1

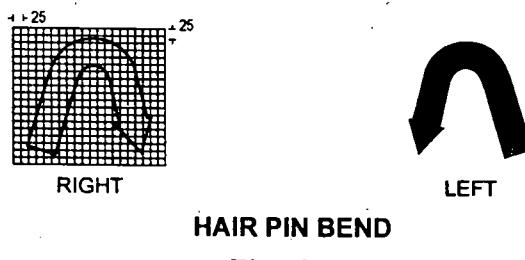
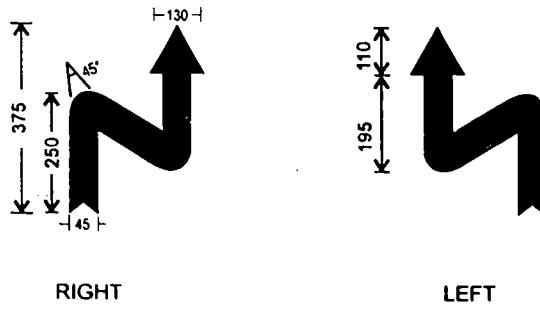


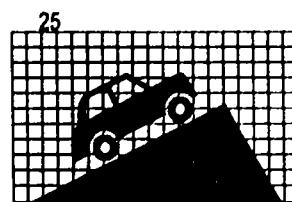
Fig. 14.2



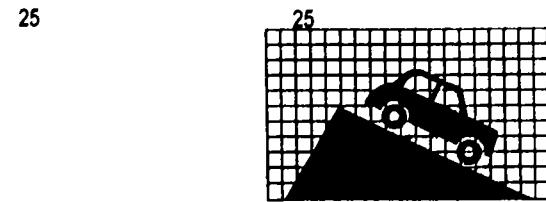
REVERSE BEND

Fig. 14.3

1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres

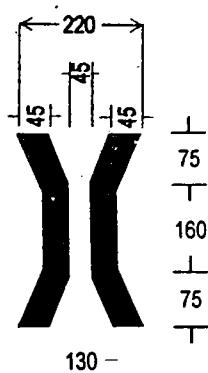


STEEP ASCENT



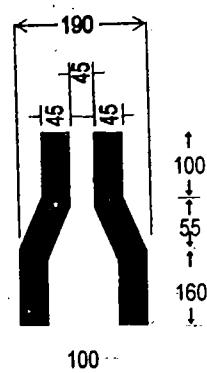
STEEP DESCENT

Fig. 14.4



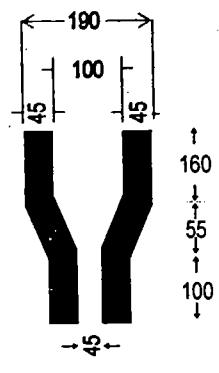
NARROW BRIDGE

Fig. 14.5



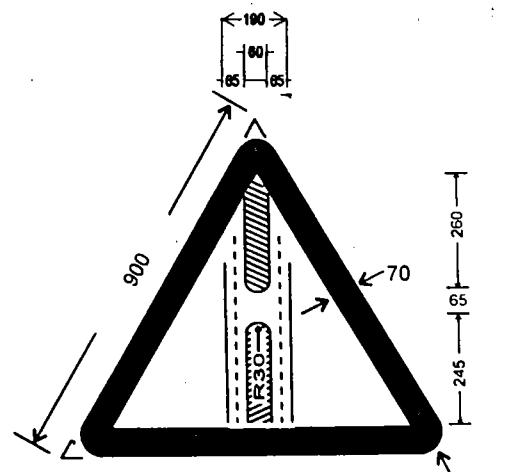
NARROW ROAD

Fig. 14.6



ROAD WIDENS

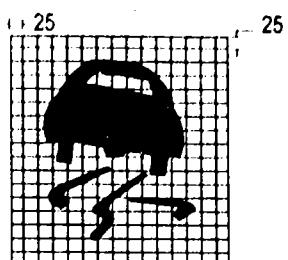
Fig. 14.7



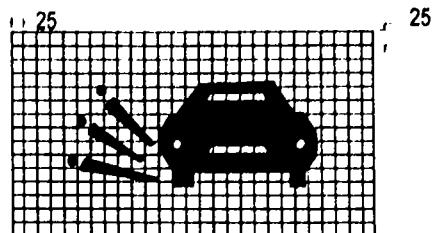
GAP IN MEDIAN

Fig. 14.8

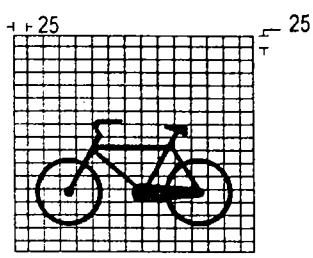
1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres



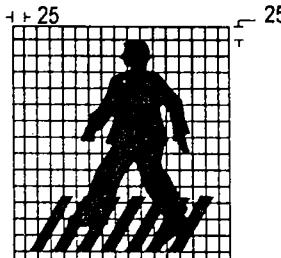
SLIPPERY ROAD
Fig. 14.9



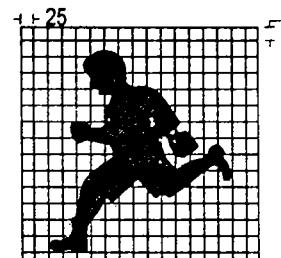
LOOSE GRAVEL
Fig. 14.10



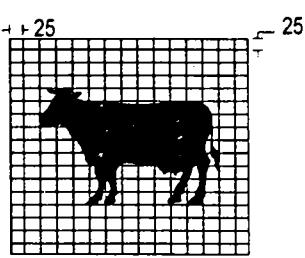
CYCLE CROSSING
Fig. 14.11



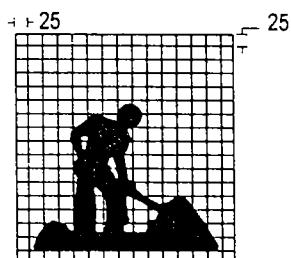
**PEDESTRIAN
CROSSING**
Fig. 14.12



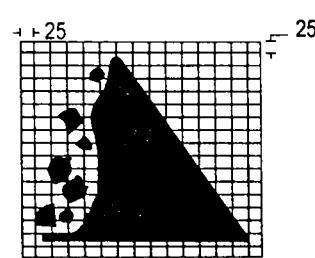
SCHOOL
Fig. 14.13



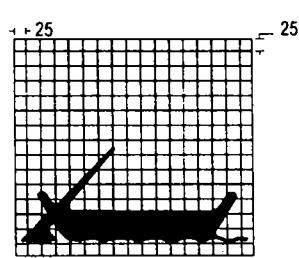
CATTLE
Fig. 14.14



MEN AT WORK
Fig. 14.15

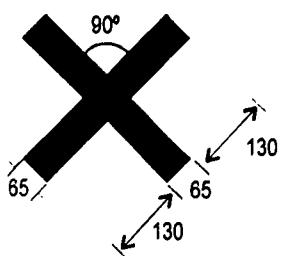


FALLING ROCKS
Fig. 14.16



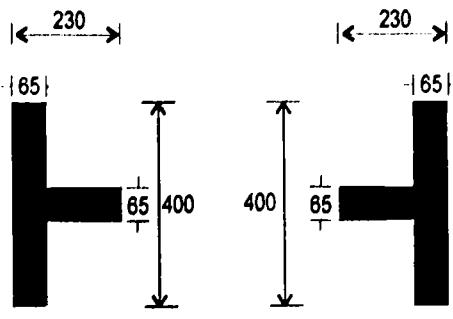
FERRY
Fig. 14.17

1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres



CROSS ROAD

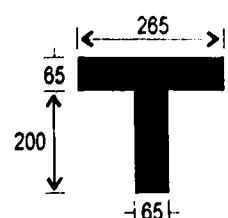
Fig. 14.18



RIGHT

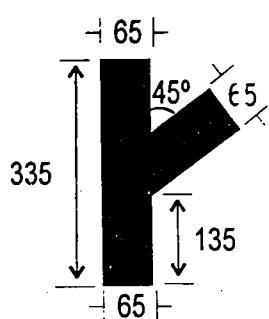
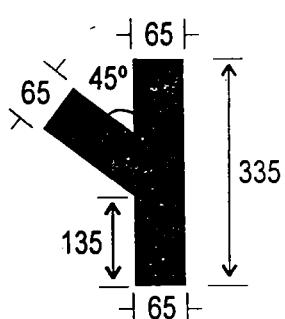
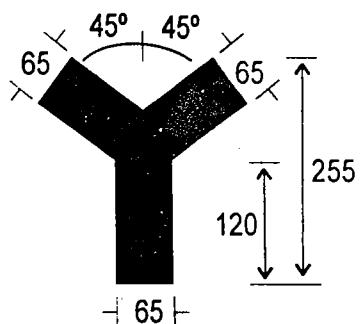
SIDE ROAD

Fig. 14.19



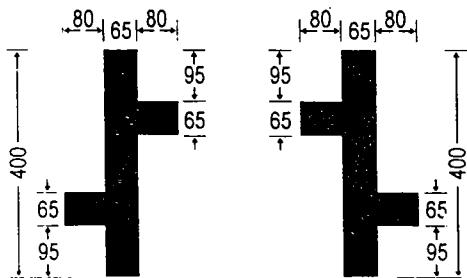
T-INTER-SECTION

Fig. 14.20



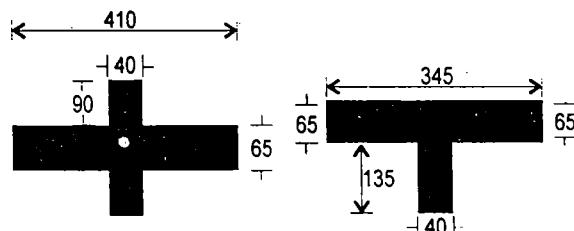
Y-INTER-SECTION

Fig. 14.21



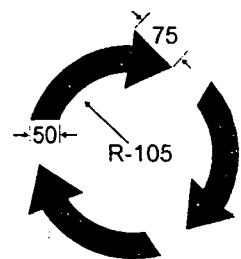
STAGGERED INTER-SECTIONS

Fig. 14.22



MAJOR ROAD

Fig. 14.23

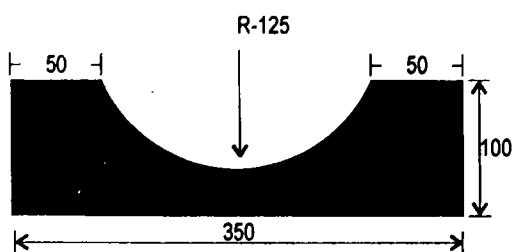


ROUND ABOUT

Fig. 14.24

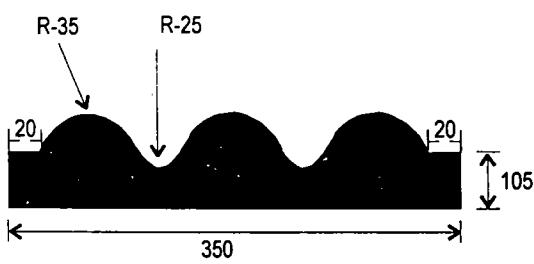
1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres

PLATE-2
(Continued)



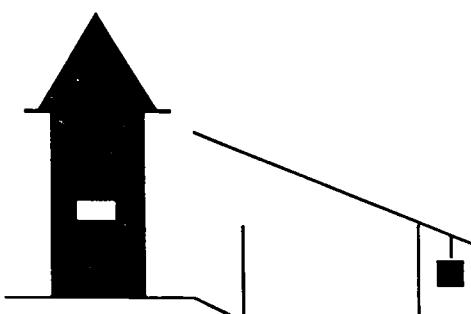
DANGEROUS DIP

Fig. 14.25



RUMBLE STRIP

Fig. 14.26



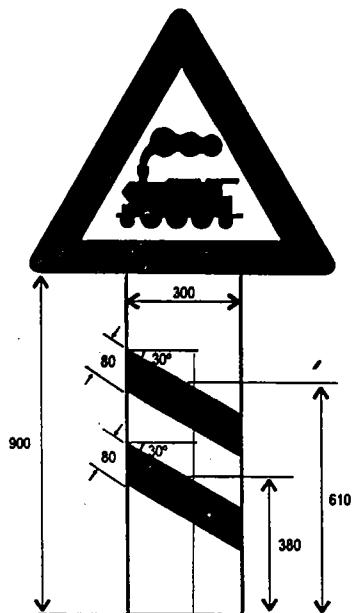
BARRIER

(A DEFINITION PLATE MAY BE
ATTACHED WITH THE SIGN INDICATING
THE DISTANCE TO THE BARRIER AND
ANY OTHER INSTRUCTIONS)

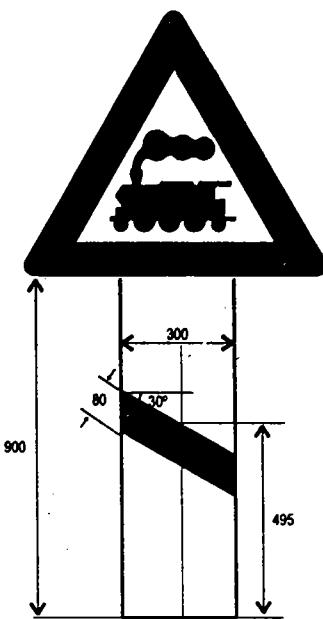
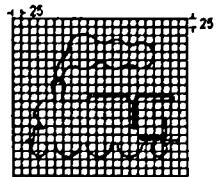
Fig. 14.27

1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres

PLATE-2
(Continued)



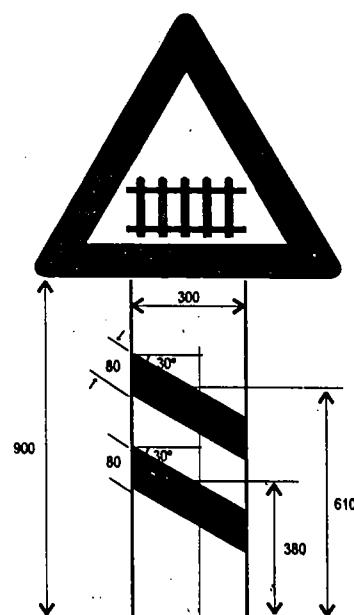
200 METRES



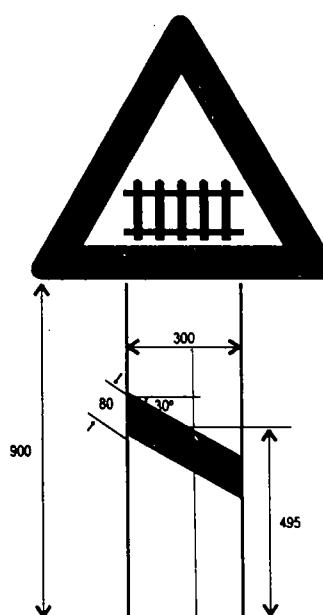
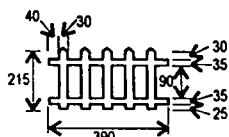
50-100 METRES IN PLAIN & ROLLING
TERRAIN AND 30-60 METRES IN
HILLY TERRAIN

UNGUARDED RAILWAY CROSSING
(FOR EACH CROSSING, BOTH SIGNS ARE TO BE
USED AT DISTANCES INDICATED ABOVE)

Fig. 14.28



200 METRES



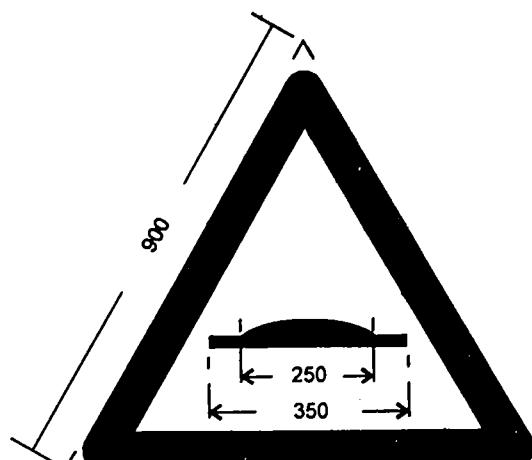
50-100 METRES IN PLAIN & ROLLING
TERRAIN AND 30-60 METRES IN
HILLY TERRAIN

GUARDED RAILWAY CROSSING
(FOR EACH CROSSING, BOTH SIGNS ARE TO BE
USED AT DISTANCES INDICATED ABOVE)

Fig. 14.29

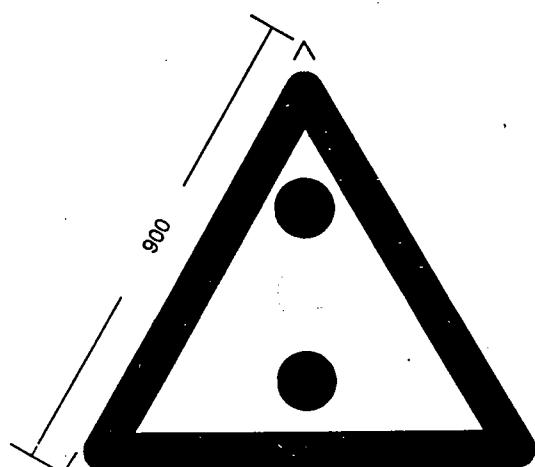
1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres

PLATE-2
(Continued)



SPEED BREAKER

Fig. 14.30



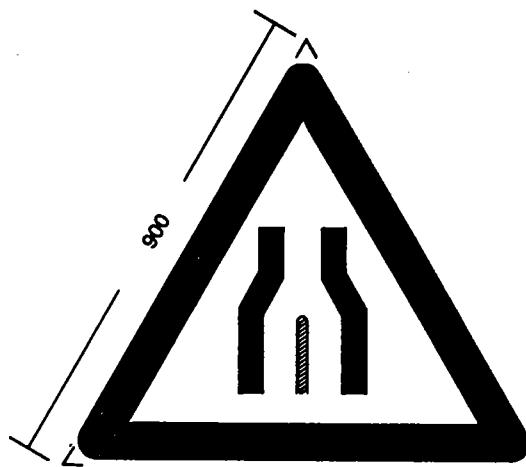
TRAFFIC SIGNAL

Fig. 14.31



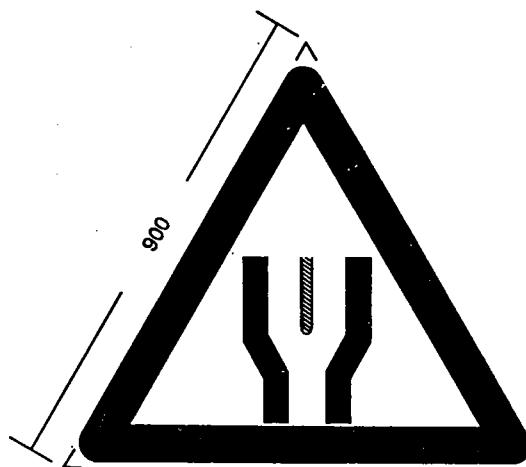
RUN-WAY

Fig. 14.32



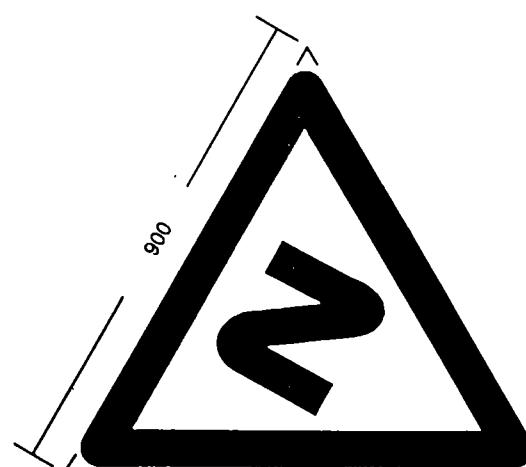
END OF DUAL CARRIAGEWAY

Fig. 14.33



START OF DUAL CARRIAGEWAY

Fig. 14.34



SERIES OF BENDS

Fig. 14.35

PLATE-2
(Continued)



**DIVERSION TO THE OTHER CARRIAGEWAY
OF DUAL CARRIAGEWAY ROAD**

Fig. 14.36



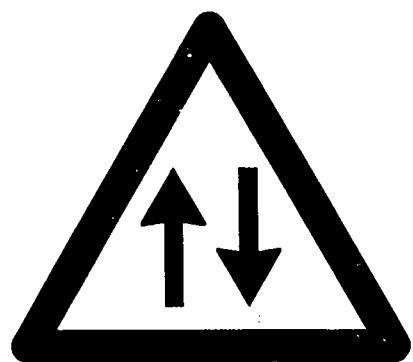
OVERHEAD CABLE

Fig. 14.37



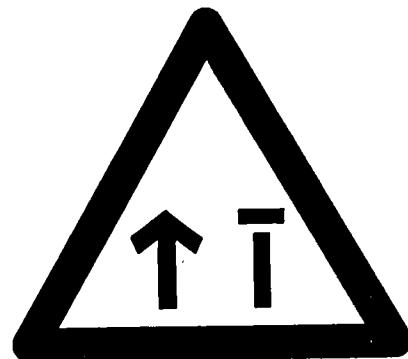
QUAYSIDE OR RIVER BANK

Fig. 14.38



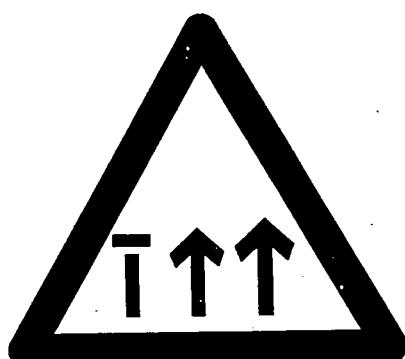
TWO-WAY TRAFFIC

Fig. 14.39



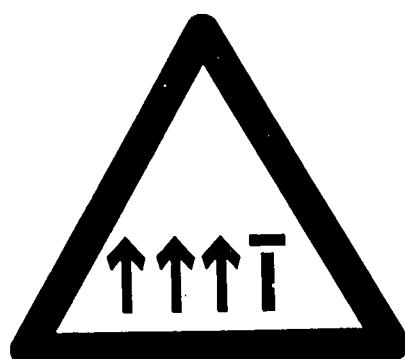
LANE CLOSED (TWO LANE ROAD)

Fig. 14.40 (a)



LANE CLOSED (THREE LANE ROAD)

Fig. 14.40 (b)



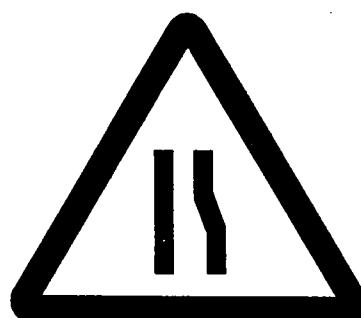
LANE CLOSED (FOUR LANE ROAD)

Fig. 14.40 (c)



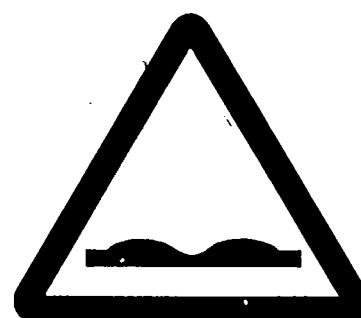
SUDDEN SIDE WINDS

Fig. 14.41



REDUCED CARRIAGEWAY

Fig. 14.42



ROUGH ROAD

Fig. 14.43

PLATE-3

INFORMATORY SIGNS

IN CASE OF FACILITY INFORMATION SIGNS, THE SIZE OF THE RECTANGLE SHALL BE 80 CM X 60 CM FOR NORMAL SIZED SIGN AND 60 CM FOR SMALL SIZED SIGN. THE SIZE OF THE SQUARE SHALL BE 40 CM AND 40 CM RESPECTIVELY. THE SIZE OF THE SYMBOLS SHOWN IS FOR NORMAL SIZED SIGN AND IN CASE OF SMALL SIZED SIGN, THE SYMBOL SHOULD BE THREE-FOURTH OF THE SIZE SHOWN.

DIRECTION AND PLACE IDENTIFICATION SIGNS



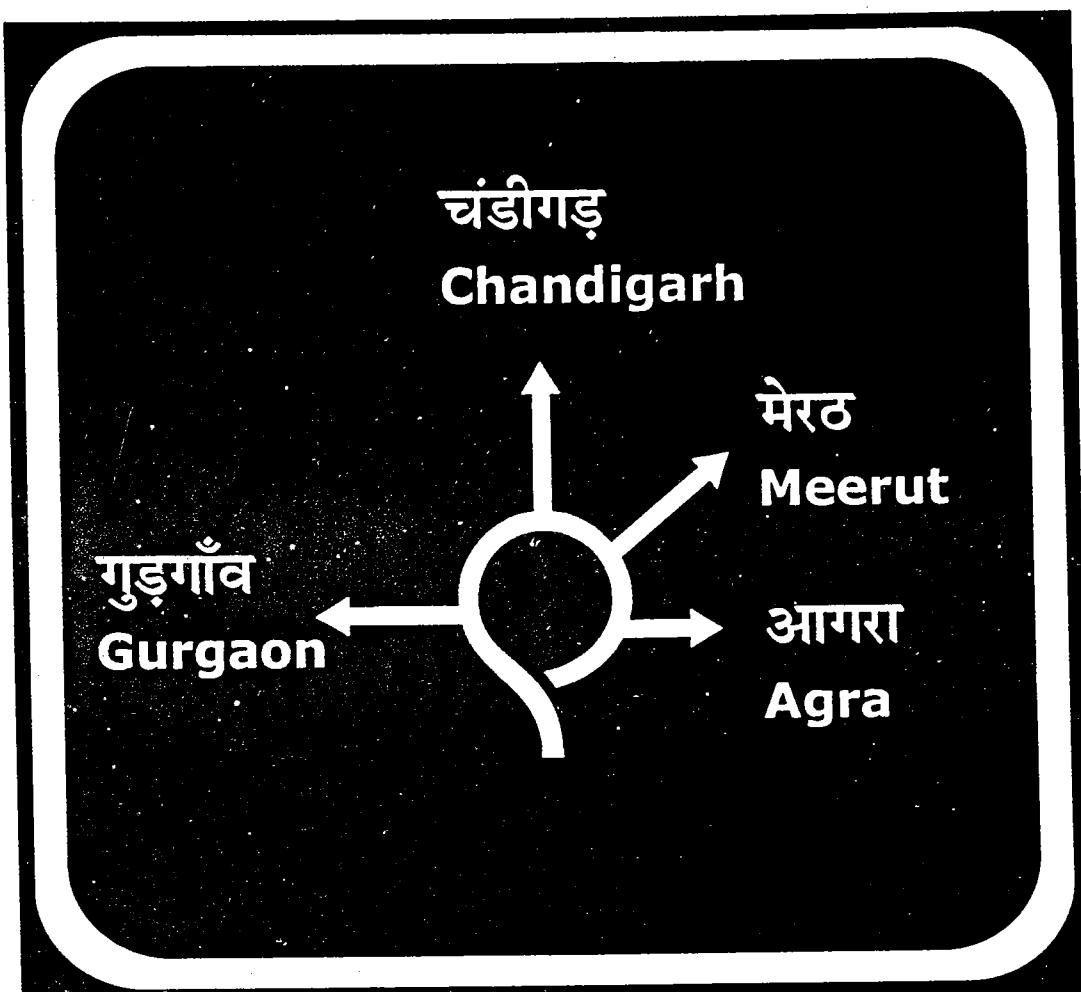
ADVANCE DIRECTION / DESTINATION SIGN

Fig.15.1



MAP TYPE ADVANCE DIRECTION SIGN

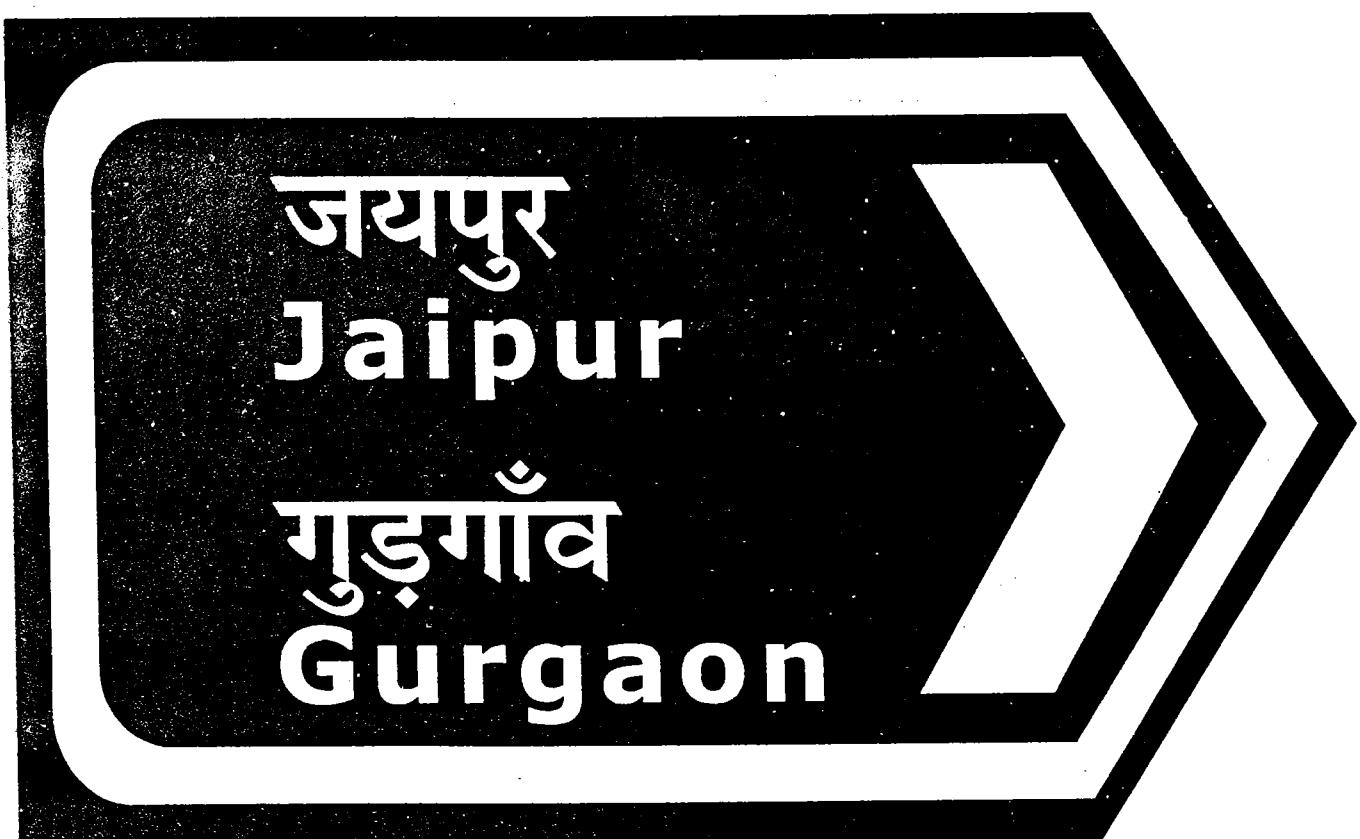
Fig.15.2



ADVANCE DIRECTION SIGN ON ROTARY INTER-SECTION
Fig.15.3



DIRECTION SIGN
Fig.15.4



DIRECTION SIGN

Fig.15.5



REASSURANCE SIGN

Fig.15.6



PLACE IDENTIFICATION SIGN

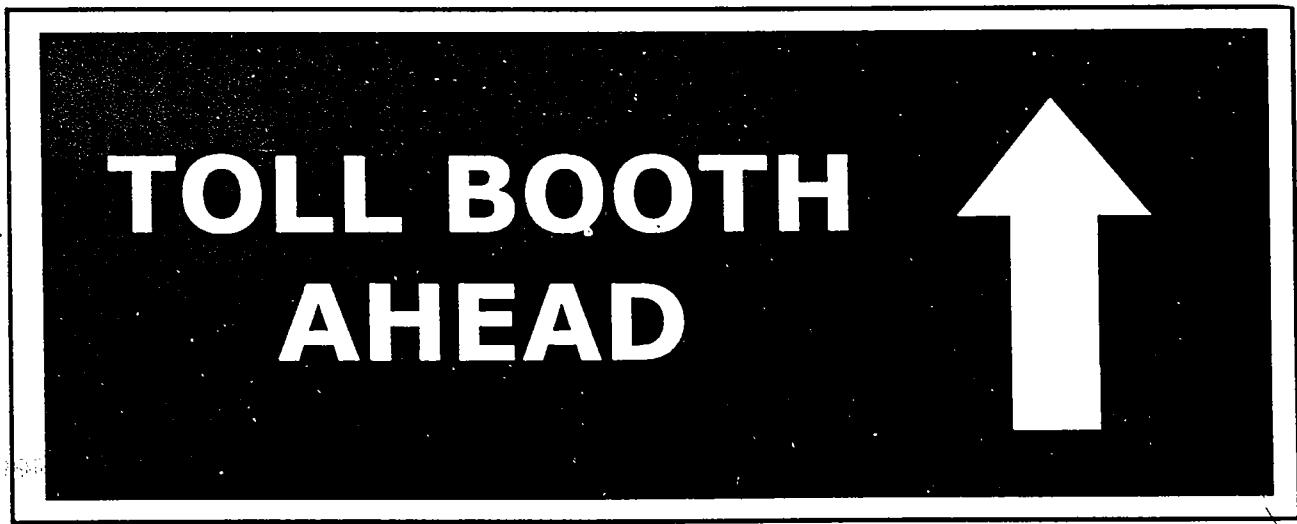
Fig.15.7

PLATE-3
(Continued)



TRUCK LAY BYE

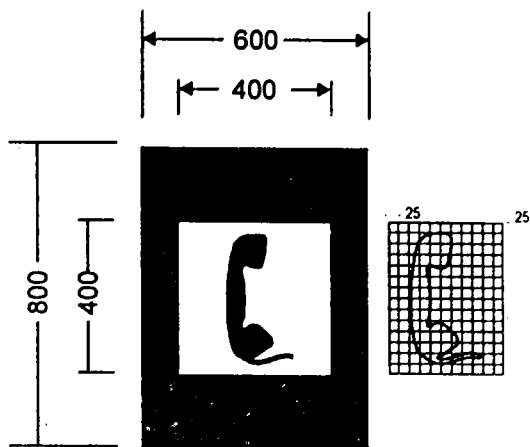
Fig.15.8



TOLL BOOTH AHEAD

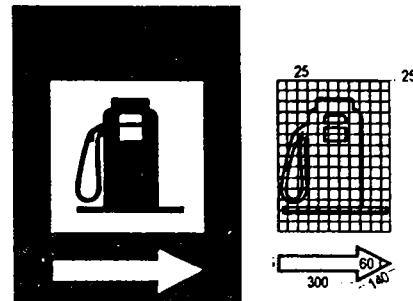
Fig 15.9

FACILITY INFORMATION SIGNS



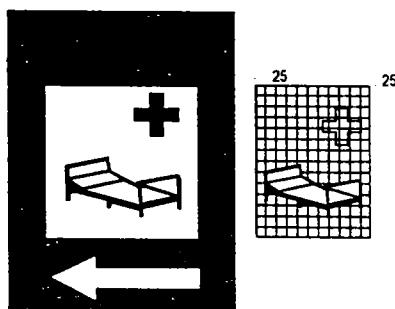
PUBLIC TELEPHONE

Fig. 15.10



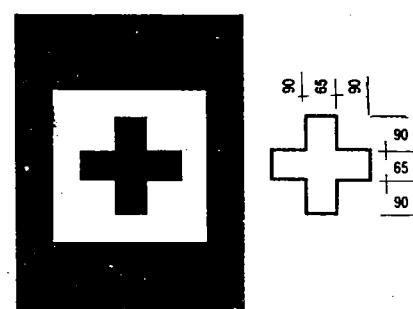
FILLING STATION

Fig. 15.11



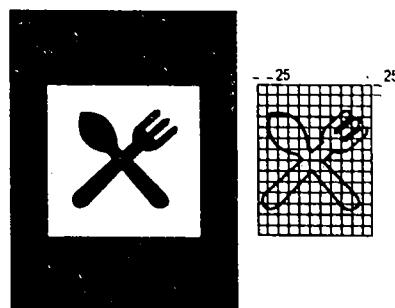
HOSPITAL

Fig. 15.12



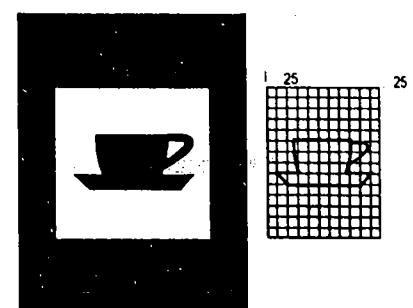
FIRST-AID POST

Fig. 15.13



EATING PLACE

Fig. 15.14

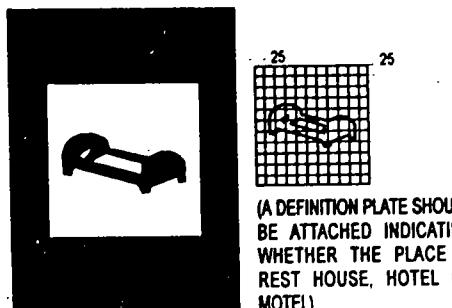


LIGHT REFRESHMENT

Fig. 15.15

1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres

OTHER USEFUL INFORMATION SIGNS



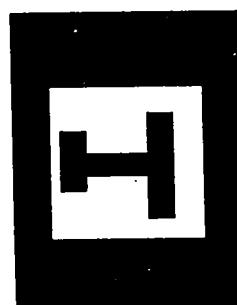
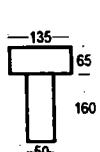
RESTING PLACE

Fig. 15.16



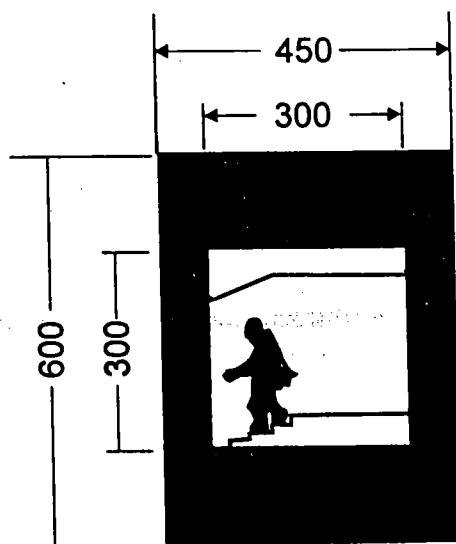
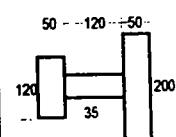
NO THROUGH ROAD

Fig. 15.17



NO THROUGH SIDE ROAD

Fig. 15.18



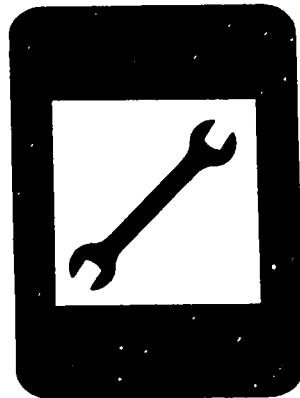
PEDESTRIAN SUBWAY

Fig. 15.19

PLATE-3
(Continued)



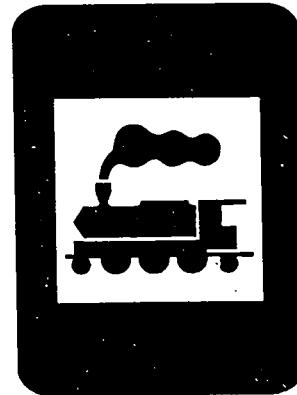
AIRPORT
Fig. 15.20



REPAIR FACILITY
Fig. 15.21



POLICE STATION
Fig. 15.22

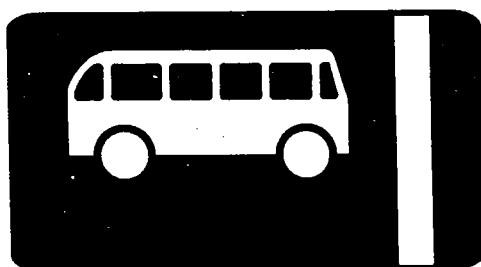


RAILWAY STATION
Fig. 15.23

PLATE-3
(Continued)

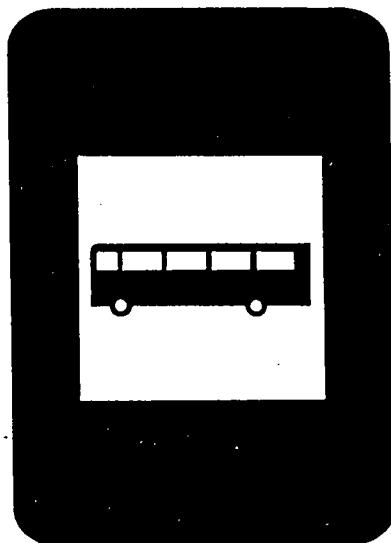


(a) CONTRA-FLOW BUS LANE

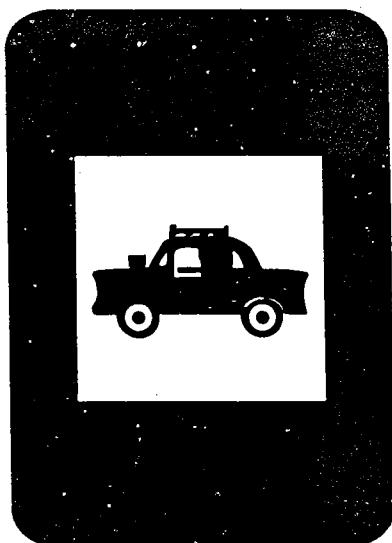


(b) BUS LANE
Fig. 15.24

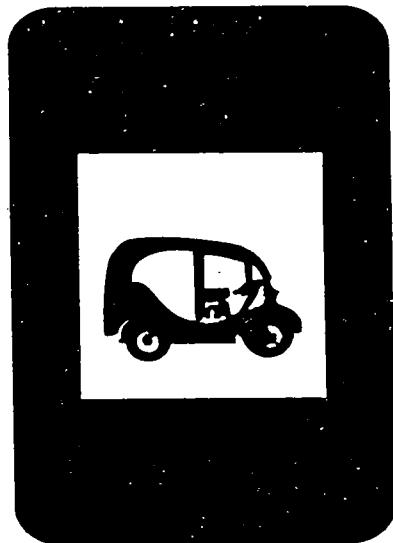
PLATE-3
(Continued)



BUS STOP
Fig. 15.25



TAXI STAND
Fig. 15.26



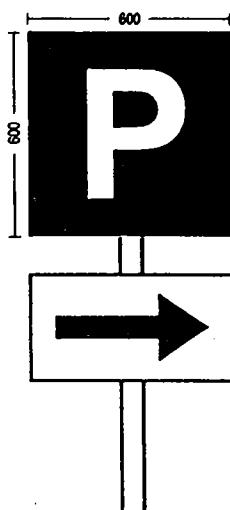
AUTO-RICKSHAW STAND
Fig. 15.27



CYCLE-RICKSHAW STAND
Fig. 15.28

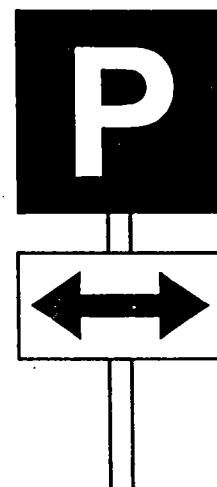
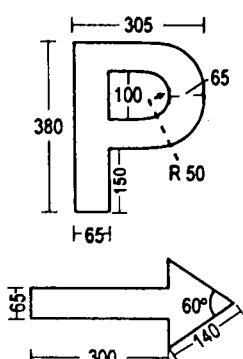
PLATE-3
(Continued)

PARKING SIGNS



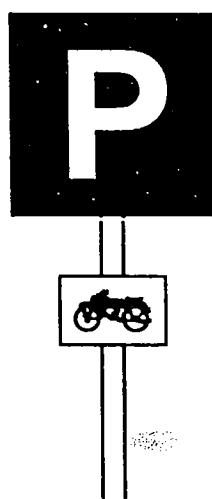
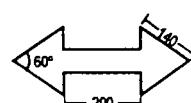
PARKING THIS SIDE

Fig. 15.29



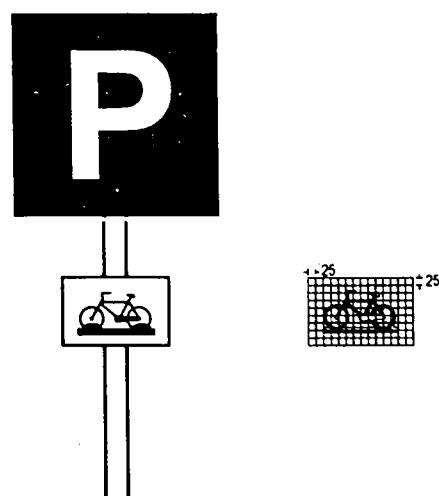
PARKING BOTH SIDES

Fig. 15.30



SCOOTER & MOTOR CYCLE STAND

Fig. 15.31

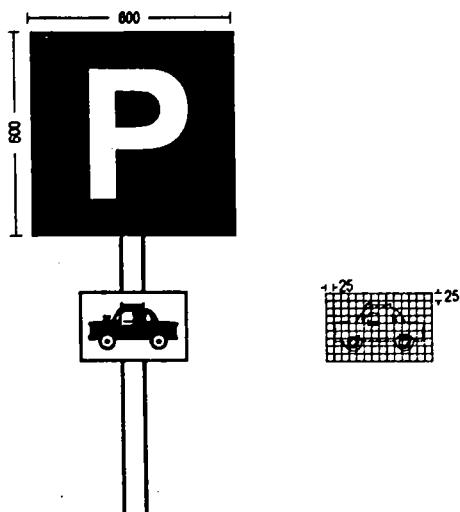


CYCLE STAND

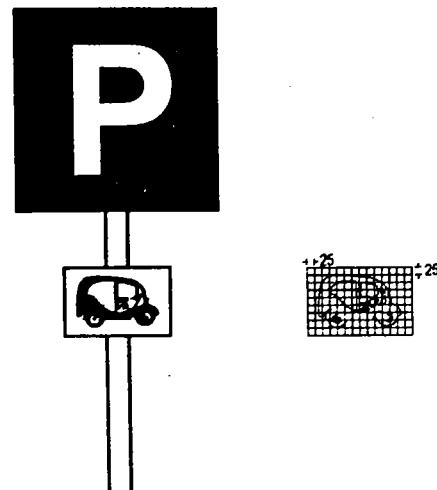
Fig. 15.32

1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres

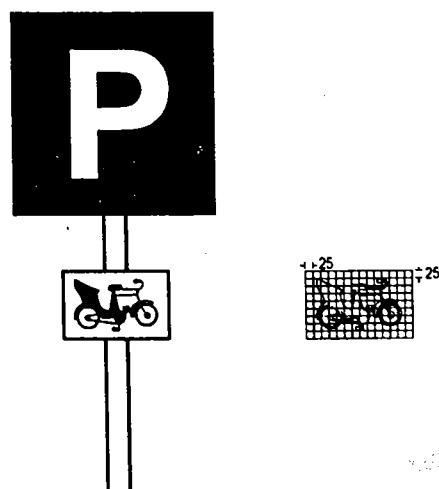
PLATE-3
(Continued)



TAXI STAND
Fig. 15.33



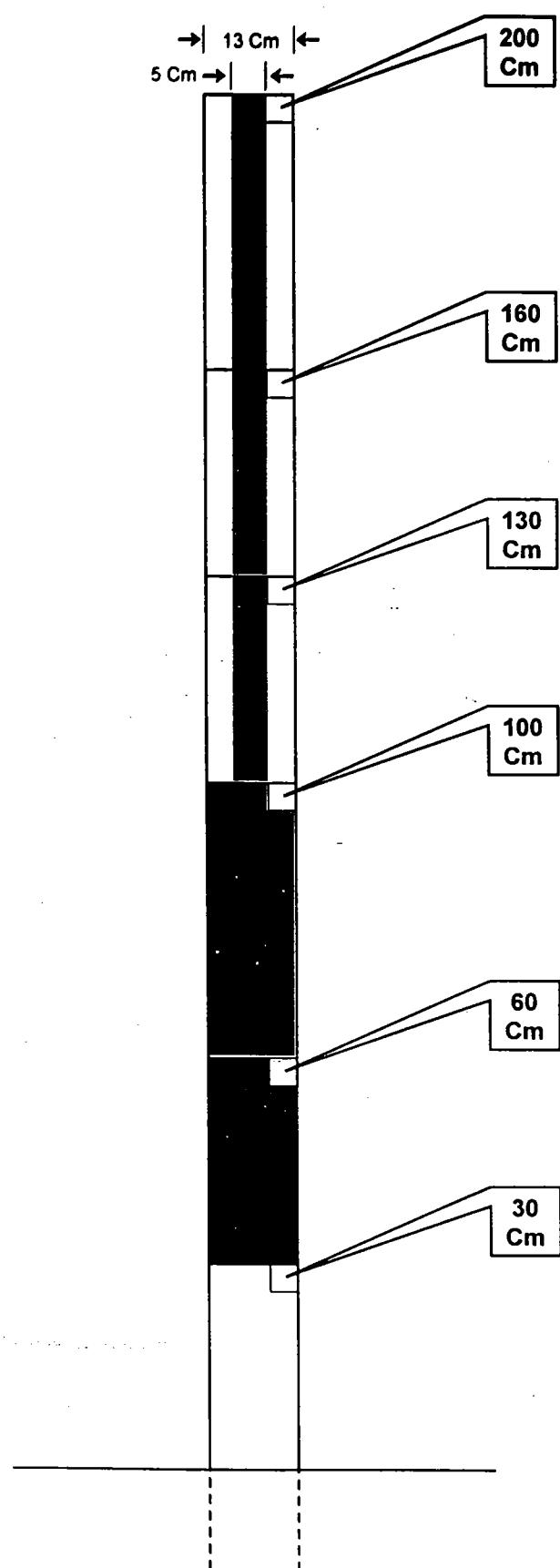
**AUTO-RICKSHAW
STAND**
Fig. 15.34



**CYCLE-RICKSHAW
STAND**
Fig. 15.35

1. Dimensions shown are for normal sized signs
2. All dimensions are in millimetres

PLATE-3



FLOOD GAUGE

Fig. 15.36