

REPUBLIC OF KENYA



MINISTRY OF WORKS
ROADS DEPARTMENT

PROPOSED MANUAL FOR
TRAFFIC SIGNS IN KENYA

PART I

ROAD MARKINGS

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ROAD MARKINGS IN KENYA

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ROAD MARKINGS IN KENYA

1. INTRODUCTION:

1.1 General:

With the continually increasing use made of the road network in Kenya, it is necessary to adopt a uniform and well planned system of road signs and markings. Properly designed and placed highway signs are essential for safe and efficient movement of traffic.

The adequacy of road signs and markings is a function of their location, number, accuracy, legibility and uniformity. It is an effort to standardize and formulate a policy on road markings that this manual has been prepared.

1.2 Government Policy:

In December, 1968, a United Nations Conference on road traffic was held in Vienna, where the 1968 Convention on Road Signs and Signals was proposed. Kenya was not represented at this Conference. Nevertheless, it has been agreed, in principle, by this Ministry to adopt the 1968 Convention on Road Signs and Signals with some variations.

This booklet deals with the road markings and will be published as a part of a larger document for road signs.

2. ROAD MARKINGS IN GENERAL:

Road markings may be defined as markings on the surface of the road for the control, warning, guidance or information to the road users. They may be used to supplement kerbside or overhead signs, or they may be used independently.

YELLOW colour is used as demarcation between opposing traffic flows.

WHITE colour is used for all other road markings. However, yellow is used for restricted parking, but is then painted on the kerb and not on the carriageway.

Keyplan for road markings is shown on figures 1 and 2:

The intention of a longitudinal continuous marking (yellow or white) is to prohibit passage of vehicles or straddling unless the vehicle crosses or straddles a broken line first.

This rule does not apply to the continuous edge line which, according to the Vienna Convention 1968, does not fall into the category of longitudinal road marking.

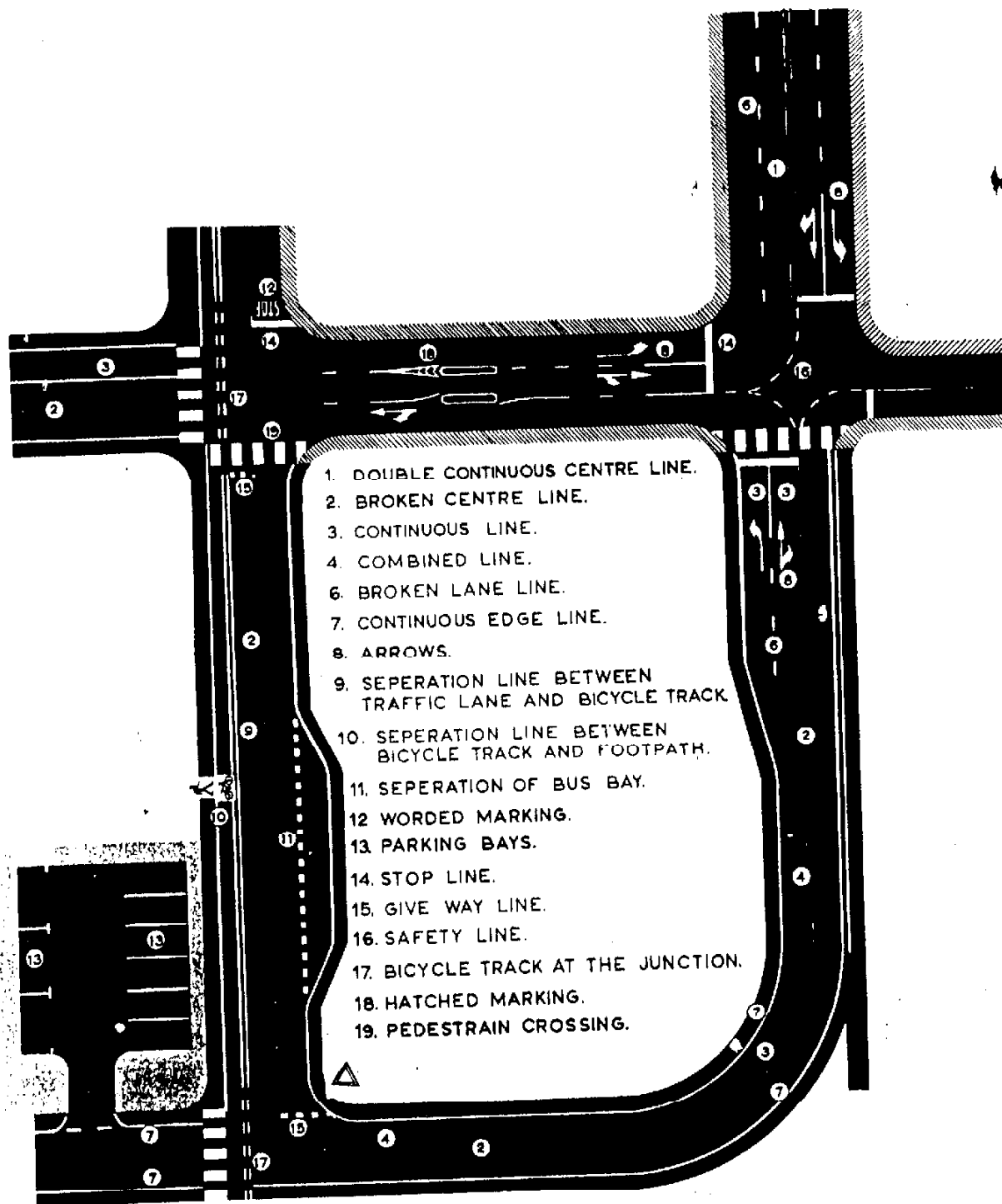


FIG. 1. KEY PLAN I

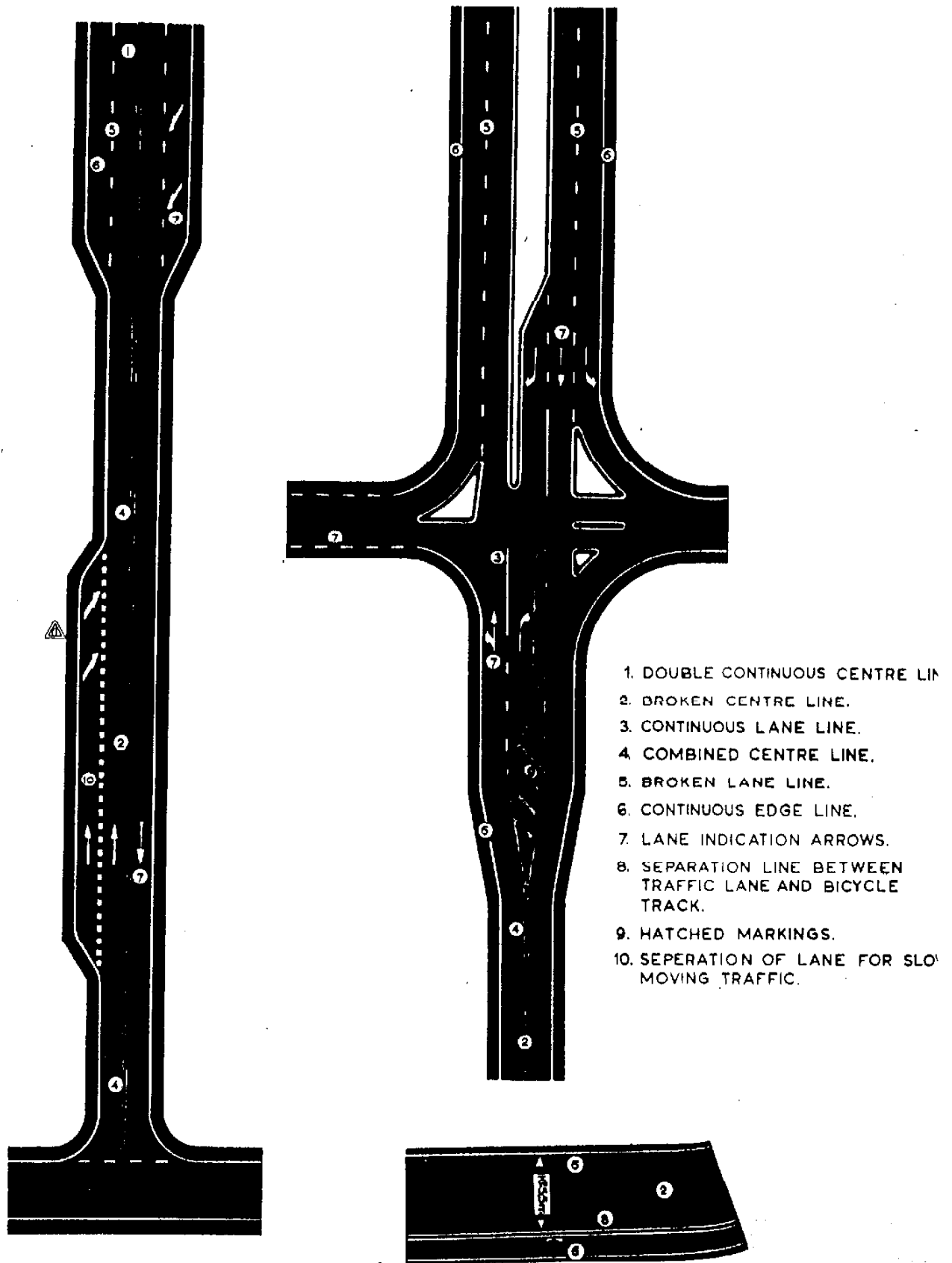


FIG. 2. KEY PLAN II

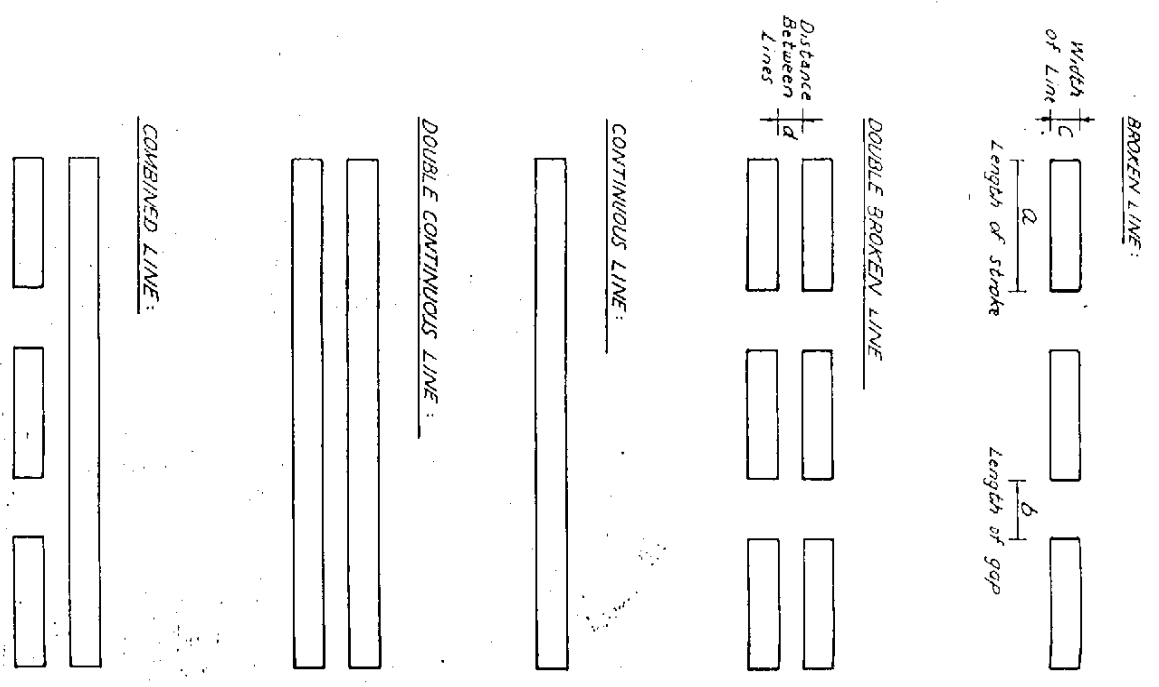


FIG. 3 LONGITUDINAL MARKINGS

NO	YELLOW LINES BETWEEN OPPOSING TRAFFIC FLOWS	SPEED											
		< 65 km/h				> 65 km/h							
		a	b	c	d	a	b	c	d				
1	CENTRE LINE	1/1 CONTINUOUS LINE			0/1								
		1/2 DOUBLE CONTINUOUS LINE			0/1	0/1			0/1	0/1			
		1/3 BROKEN LINE	20	60	0/1		30	90	0/1				
		1/4 COMBINED LINE	20	60	0/1	0/1	30	90	0/1	0/1			
2	LANE MARKING	WHITE LINES FOR OTHER MARKINGS											
		2.1 BROKEN LINE		20	60	0/1		30	90	0/1			
3	EDGE MARKING	3.1 CONTINUOUS LINE			0/1				0/1				
		3.2 BROKEN LINE	20	20	0/1		20	20	0/1				
4	SEPERATION LINE BETWEEN TRAFFIC LANE AND BICYCLE TRACK & FOOTPATH	4.1 CONTINUOUS LINE			0/1	0/1			0/1	0/1			
		4.2 BROKEN LINE			0/1	0/1			0/1	0/1			
5	SEPERATION LINE BETWEEN BICYCLE TRACK & FOOTPATH	5.1 CONTINUOUS LINE			0/1				0/1				
		5.2 BROKEN LINE			0/1	0/1			0/1	0/1			
6	SEPERATION OF BUS BAY & LANE FOR SLOW MOVING TRAFFIC	6.1 CONTINUOUS LINE			0/1				0/1				
		6.2 BROKEN LINE	10	10	0/2		10	10	0/2				

TABLE 1. LONGITUDINAL MARKING

(MEASURE IN m)

3. LONGITUDINAL MARKINGS:

3.1 System:

For longitudinal markings the designations shown in Figure 3 shall be used.

3.2 Two-lane Roads:

3.2.1 Broken Centre Lines:

On a two lane road of width \geq 5.5 m., the centre line must be indicated by a yellow marking. This marking shall normally consist of a broken line.

The broken line shall be interrupted through junctions. The broken line is formed as shown in table 1, paras. 1.3.

3.2.2 Continuous Centre-line:

When it is necessary to prohibit the use of that part of the carriageway reserved for oncoming traffic, restrictions should be imposed on this section by means of a continuous yellow line.

The continuous line shall be interrupted through junctions. The continuous line is formed as shown in table 1, paras 1.1.

When overtaking is not to be allowed for vehicles travelling in one direction, the continuous line must be placed on the left hand side of the centre line as seen from the driving direction. On the other side, there will be a broken line. This combined line is formed as shown in table 1, paras. 1.4.

When danger for overtaking is to be warned for both directions, the two continuous lines and the broken line shall be replaced by a single continuous line.

The system for using continuous and combined centre-line is shown in Figure 4.

The continuous line is used where the visibility distance is less than a certain minimum M (see Table 2), or other places where in the opinion of the Highway Authority it is dangerous to pass.

The speed in table 2 is the average traffic speed under normal free flow conditions. The visibility distance is measured from an eye-height of 1.20 m. to a target of the same height above road level.

The continuous line will be established at the point where the visibility distance is less than given in table 2, and shall be completed at the point where the visibility distance exceeds M.

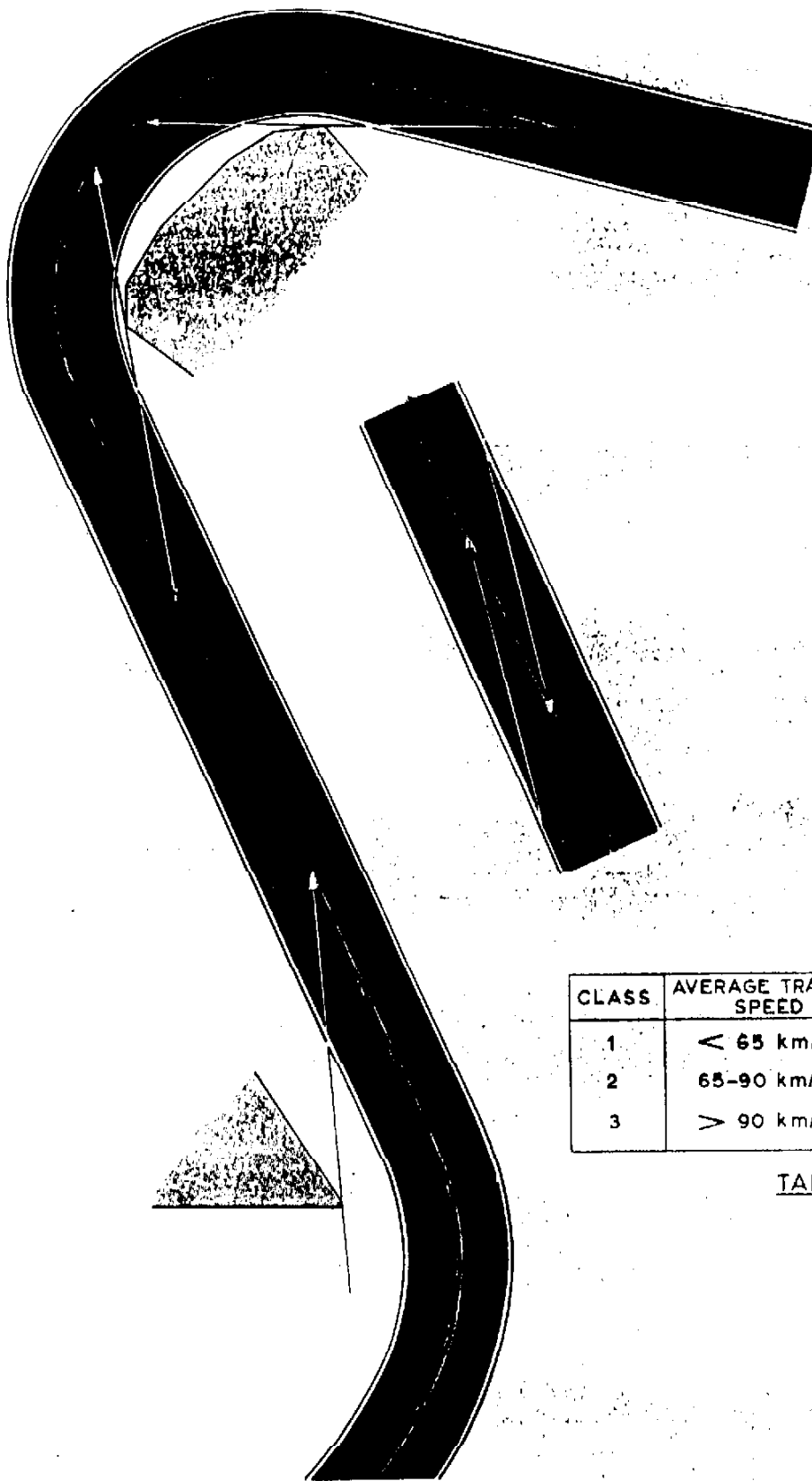
When the continuous line is shorter than 20 m., it should be demolished. When the length is between 20 - 50 m., the line must be lengthened to 50 m.

When the distance between two continuous lines is less than the critical value (see table 2), the two lines are joined and made one line.

3.2.3 Edge Line:

When the centre line is marked with either broken or continuous lines, the lane edge against the shoulder must be marked by a continuous white line.

This line shall be made as a broken line through junctions. Continuous and broken edge lines are formed as shown in table 1, paras 3.1 and 3.2.



CLASS	AVERAGE TRAFFIC SPEED	M	CRITIC VALL
1	< 65 km/h.	130m.	65n
2	65-90 km/h.	180m.	95n
3	> 90 km/h.	300m.	130n

TABLE 2

FIG. 4. CONTROL OF OVERTAKING

3.3 ROADS WITH AT LEAST TWO LANES IN EACH DIRECTION:

3.3.1 Centre Line:

When the road has at least 2 lanes in each direction of width ≥ 3 m., and has no central reserve, it shall be marked with a double continuous yellow line as compensation for central reserve.

The double continuous line shall be interrupted through junctions. The double continuous line is formed as shown in Table 1, paras. 1.2.

3.3.2 Lane Markings:

When a road has sufficient width for at least two lanes in the same direction, the lane width must be ≥ 3 m., a white broken line must be used to divide the two lanes.

The broken line shall be interrupted through junctions. The broken line is formed as shown in table 1, para. 3.1.

To exclude movements from lane to lane, a continuous line shall be used. This line is formed as shown in Table 1, para. 3.2.

3.3.3 Edge Line:

Where the carriageway is divided into lanes according to para. 3.3.2, the lane edge must be marked with a continuous white line.

This line shall be made as a broken line through junctions. Continuous and broken edge lines are formed as shown in Table 1, paras. 3.1 and 3.2.

3.4 OTHER LONGITUDINAL MARKINGS:

3.4.1 Separation Line Between Traffic Lane & Bicycle Track/Footpath :

A double continuous line shall be used as separation line between lane for vehicular traffic and bicycle track/footpath.

The double continuous line is formed as shown in Table 1, para. 4.

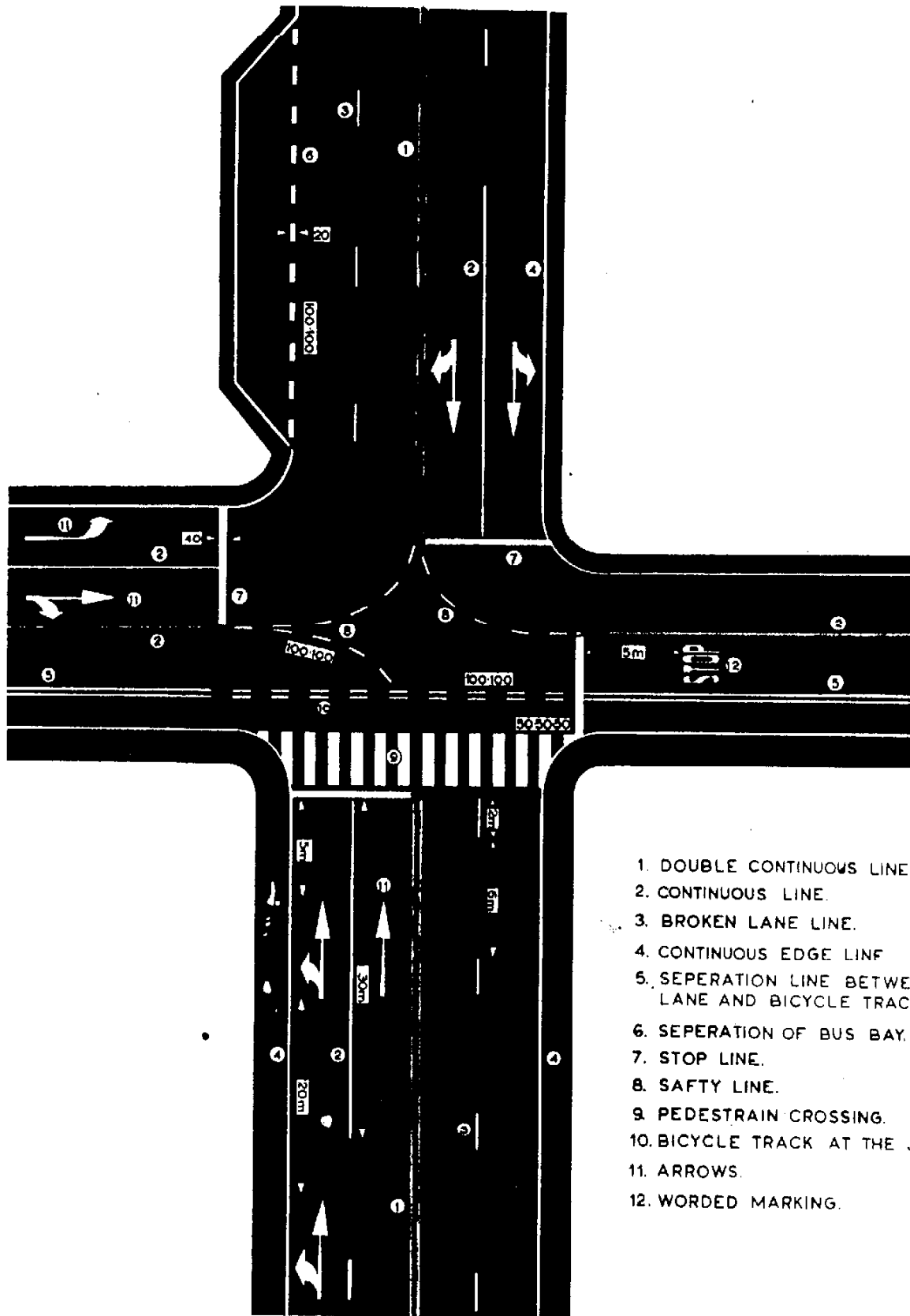
The double continuous line shall be interrupted through junctions, and replaced by a double broken line as shown in Table 3, para. 4.

3.4.2 Separation Line Between Bicycle Track and Footpath:

A single continuous line shall be used as separation line between bicycle track and footpath. The single continuous line is formed as shown in Table 1, para. 5.

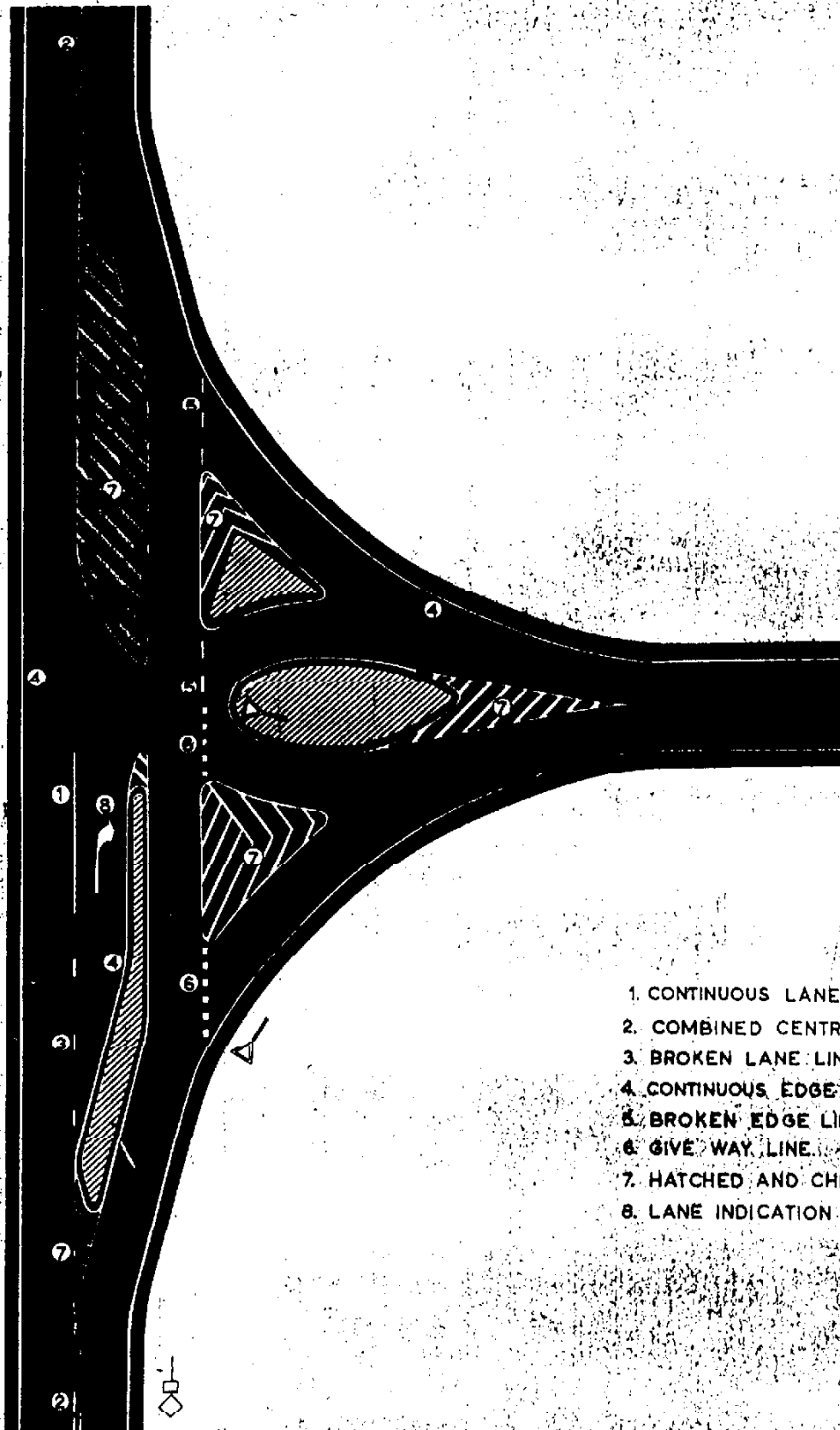
3.4.3 Separation of Bus Bay and Lane for Slow Moving Traffic:

A specially formed broken line is used to separate bus bay and lane for slow moving traffic. This broken line is formed as shown in Table 1, para. 6.



1. DOUBLE CONTINUOUS LINE.
2. CONTINUOUS LINE.
3. BROKEN LANE LINE.
4. CONTINUOUS EDGE LINE
5. SEPERATION LINE BETWEEN TRAFFIC LANE AND BICYCLE TRACK.
6. SEPERATION OF BUS BAY.
7. STOP LINE.
8. SAFTY LINE.
9. PEDESTRAIN CROSSING.
10. BICYCLE TRACK AT THE JUNCTION.
11. ARROWS.
12. WORDED MARKING.

FIG. 5. ROAD JUNCTION (URBAN)



1. CONTINUOUS LANE LINE.
2. COMBINED CENTRE LINE.
3. BROKEN LANE LINE.
4. CONTINUOUS EDGE LINE.
5. BROKEN EDGE LINE.
6. GIVE WAY LINE.
7. HATCHED AND CHEVRON MARKINGS.
8. LANE INDICATION ARROWS.

FIG 6. ROAD JUNCTION (RURAL)

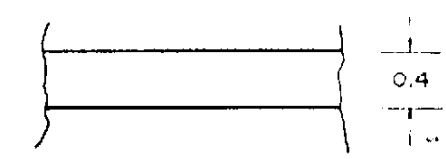
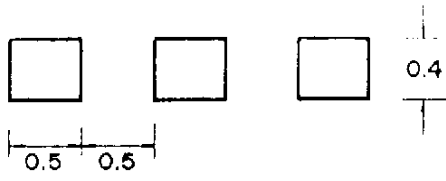

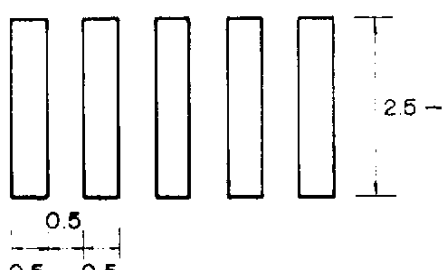
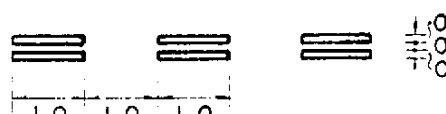
	TYPE	DIMENSION (m)
1	STOP LINE	
2	GIVE WAY LINE	
3	SAFETY LINE	
4	PEDESTRIAN CROSSING	
5	BICYCLE TRACK IN JUNCTION	

TABLE 3 TRANSVERSE MARKINGS

4. ROAD JUNCTION MARKINGS:

Examples on road junction markings are shown in Fig. 5 and Fig. 6. Types of transverse markings are shown in Table 3.

4.1 Broken & Continuous Centre Line and Lane Lines:

Broken and continuous centre line and lane lines shall be interrupted through junctions with official roads and private roads which are open to commercial traffic.

The lines must be carried up to transverse markings like stop lines and give way lines, edge lines or the the edge of the carriageway, marked bicycle track or footpath.

4.2 Edge Line:

Continuous edge lines shall be made as a broken line through junctions with official roads and private roads which are open to commercial traffic.

When continuous edge lines cross at a junction, only the edge line for the most important road shall be carried through the junction.

Edge lines should not be carried through a junction when crossing lanes are supplied with stop lines, give way lines or pedestrian crossing which are parallel to the actual traffic direction.

Continuous and broken edge lines are formed as shown in Table 1, paras. 3.1 and 3.2

4.3 Stop Line:

A stop line is a broad continuous transverse white line. The line indicates the position at which a vehicle must stop when this is required by the road sign "STOP", by traffic signals or by level crossing.

When the Stop line is used in connection with the road sign "STOP", the line must always be accompanied by the worded STOP marking on the carriageway. See para. 5.5 for details of this marking.

The Stop Line is laid down across the lanes which are restricted by the above mentioned sign or signals, and is located at that place which gives the driver the best possible general view of the junction.

If a junction has a marked pedestrian crossing, the stop line must be placed at least 1m. before the crossing.

At traffic signals, the line is normally located 1m. before the nearside primary signal, but site conditions may necessitate adjustment of this distance.

At level crossing, the stop line is located 5m. before the nearest rail. If there are signal lights at the crossing, the stop line is located 5m. before the lights.

When the stop line is used, it must be accompanied by a longitudinal continuous lane line or centre line extending back from the junction at least 30m.

The stop line is formed as shown in Table 3, para. 1.

4.4 Give Way Line:

A give way line is a broad broken white line laid across traffic lanes at junctions or along the inner edge of acceleration lanes, when the traffic in these lanes is required to give way by the road sign "GIVE WAY". The give way line indicates where a vehicle, if necessary, should stop.

The give way line is laid down on that part of the carriage-way which is restricted by "GIVE WAY" sign, and is located at that place which gives the driver the best possible general view of the crossing road.

When the give way line is used at a junction, it must be accompanied by a longitudinal continuous line extending back from the junction at least 30m.

The give way line is formed as shown in Table 3, para. 2.

4.5 Safety Line:

A white broken line can be used at a junction to guide turning traffic through the junction. Safety line is formed as shown in Table 3, para. 3.

4.6 Pedestrian Crossing:

Pedestrian crossing must be marked with white zebra stripes laid down parallel to the driving direction.

The pedestrian crossing is formed as shown in Table 3, para. 4.

4.7 Lane For Bicycle:

When a lane for bicycles crosses a carriageway, it is marked with a double broken white line on each side. If an edge line or a pedestrian line is marked on one side, the double broken line is demolished.

The double broken line is formed as shown in Table 3, para. 5.

4.8 Hatched and Chevron Markings:

Parts of the carriageway at a junction which are not designed for traffic, shall be marked with either single 45° hatched markings or by chevron markings. Both forms of markings shall be bounded by continuous lines. The angle of the hatching and chevrons shall be arranged to oppose drivers who may be tempted to cross it. See Fig. 7 for details on these markings.

These markings must be yellow when they are used as demarcation between opposing traffic flows, elsewhere they are white.

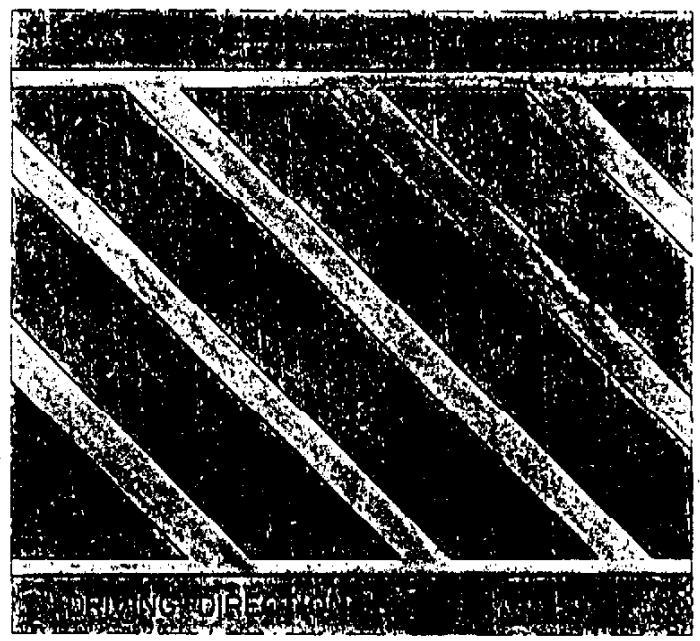
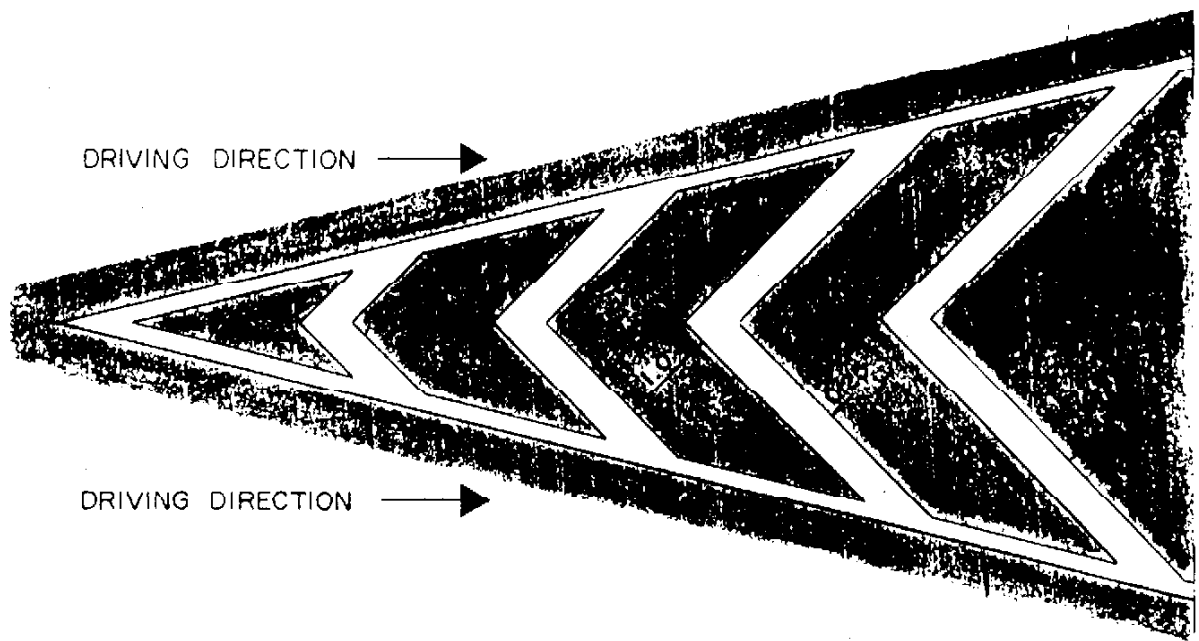


FIG. 7 HATCHED AND CHEVRON MARKINGS

4.9 Lane Indication Arrows:

In addition to the continuous line on approaches to junctions, directional arrows should be used to give drivers advance indication of correct lane to take when approaching multilane intersections.

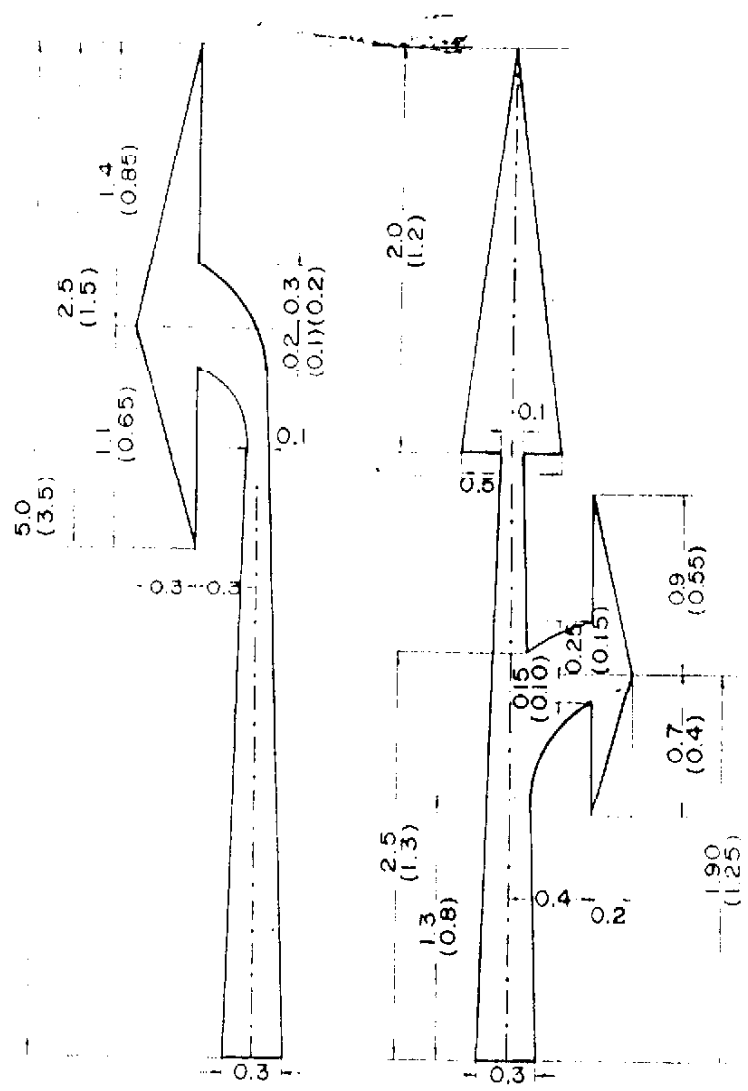
See Fig. 5 for details on the arrows. Generally, with speeds less than 50 km/h the 3.5m. length of arrow should suffice, but on an open, faster road the 5.0m. size should be used.

The number of arrows depend upon the queue and the approach speed of the traffic. The one nearest the junction should be between 15m. and 25m. from the stop line, the second 30m. to 50m. further back etc., the greater distance being used on roads subject to higher average traffic speed.

4.10. Lane Destination Markings:

At heavily trafficked junctions, worded lane destinations on repeating the information shown on the advance direction signs may, with advantage, be marked on the carriageway on the approaches to junctions. The markings should normally be located at least as far back from the junction as the longest peak hour queues.

These markings can be drawn using the alphabet described in Appendix III.



MEASURE IN m

LENGTH 5 m → SPEED \geq 50 km/h

--- 3.5 m → --- < 50 ---

FIG. 8 LANE INDICATION ARROWS

5. OTHER ROAD MARKINGS:

5.1 Pedestrian Crossing Outside Junctions:

Pedestrian crossing outside junctions shall be marked as described in para. 4.6, but the width should be increased to 4m.

5.2 Hatched & Chevron Markings Outside Junctions:

Parts of the carriageway outside a junction, which are not designed for traffic, shall be marked with hatched or chevron markings as described in para. 4.8.

5.3 Arrow Markings Outside Junctions:

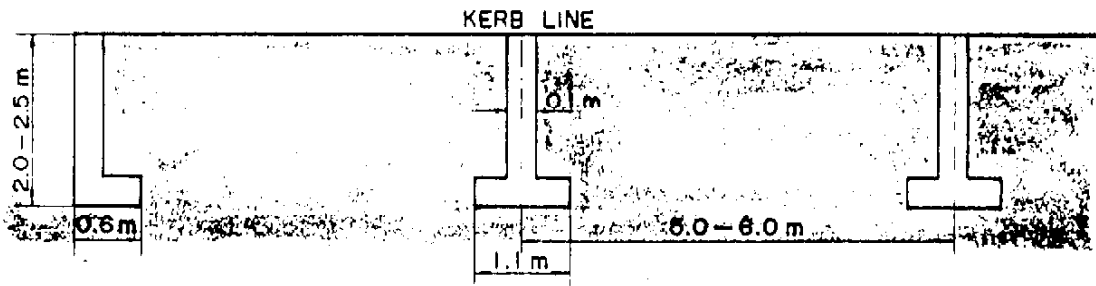
Arrow Markings outside a junction can, for example, be used:

On parking places for indicating driving directions;
In one way streets as a supplement to signs;
Before the end of a traffic lane to give drivers
advance indication of changing lanes.

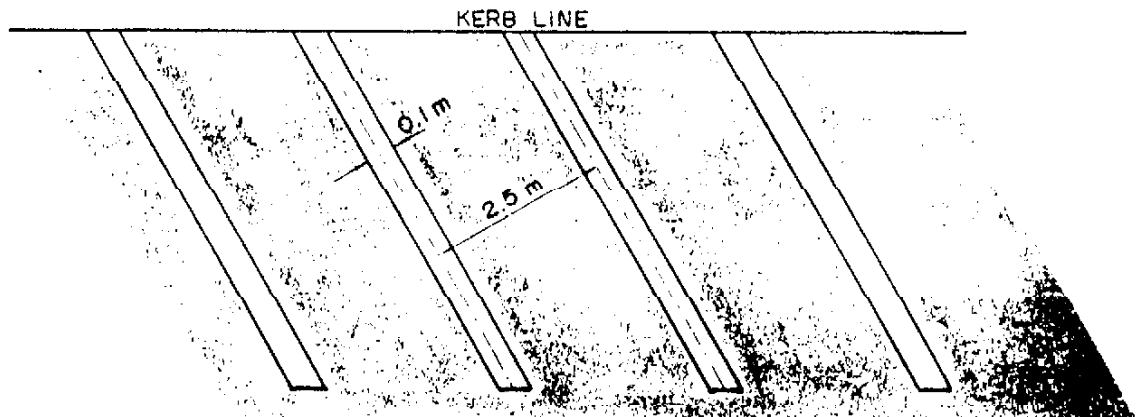
See Fig. 8 for details on the arrows.

5.4 Parking Bays:

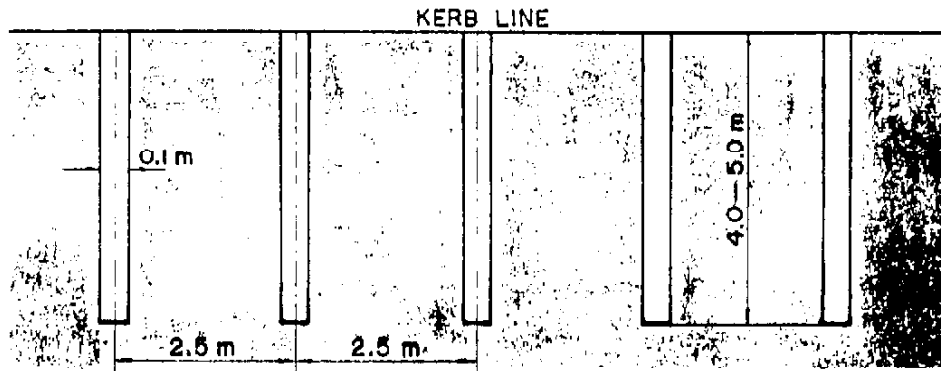
Parking Bays are marked with white continuous lines as shown in Fig. 9.



a. PARALLEL PARKING BAYS



b. ANGLED PARKING BAYS



c. ANGLED PARKING BAYS

FIG. 9 PARKING BAYS

5.5 Worded Markings:

All these markings are coloured white and are described in Appendix III.

STOP:

This marking must be used to supplement a STOP sign and a STOP line (See para. 4.3) and may not be used in other circumstances. Two sizes are prescribed as follows:

Overall Length	Overall Width	Use
1.80 m.	2.10 m.	Low Speed Traffic
2.70 m.	2.10 m.	High Speed Traffic

The marking should normally be located so that the top of the word is not more than 2.75 m. or less than 2.0 m. from the nearest part of the STOP line. Exceptionally, this distance may be increased up to 15 m.

SLOW:

This marking may be used to supplement any warning sign on the approach to a hazard or a road junction, including the advance sign giving warning of STOP and GIVE WAY. Two sizes are prescribed as follows:

Overall Length	Overall Width	Use
1.20 m.	2.30 m.	Low Speed Roads
2.40 m.	2.30 m.	High Speed Roads

The location of the marking will depend on the nature of the hazard. In general, it should be located sufficiently far back to enable a driver to reduce speed in time to negotiate the hazard in safety.

KEEP CLEAR:

This marking indicates to drivers that part of the carriageway at the road junction which should be left clear of stationary vehicles so as to permit the passage of vehicles into or out of a side turning.

Its main use is in urban areas where a queue of vehicles waiting at one junction may block back across a previous junction, and thereby obstruct the flow of cross traffic.

The marking is not intended to keep portions of the carriageway outside premises clear of waiting vehicles.

See Fig. 10 for details.

BUS STOP:

This marking delineates the limits of a bus stop. The markings should only be used to supplement a kerbside bus stop sign.

See Fig. 11 for details.

Other forms of worded road markings can be drawn using the alphabet described in Appendix III.

6. MATERIALS:

6.1 General:

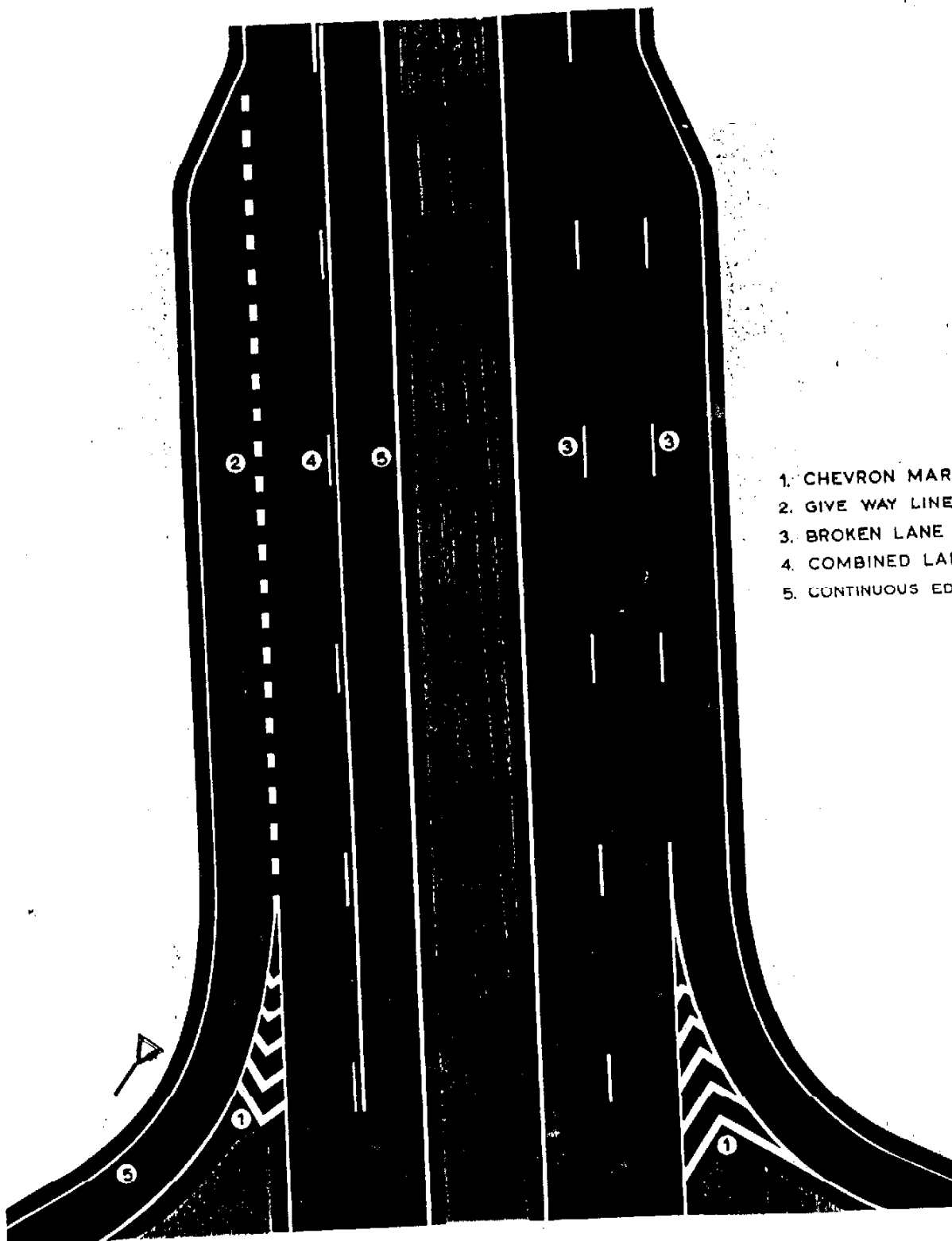
Road markings can be laid in paint or thermoplastic materials. The materials must be in accordance with the following specifications:

-
-
-

(not yet decided)

6.2 Reflectorisation:

The markings should always be in reflectorised materials unless the road is sufficiently lighted or the markings are of less importance like on parking bays.



1. CHEVRON MARKINGS.
2. GIVE WAY LINE.
3. BROKEN LANE LINE.
4. COMBINED LANE LINE.
5. CONTINUOUS EDGE LINE.

FIG.12. DUAL CARRIAGEWAY

APPENDIX I

CLASSIFICATION OF ROADS ACCORDING TO TABLE 2

Namanga - Malala

Namanga - Athi River	.. .. .	Class 3
Athi River - Airport T'off	.. .. .	Class 3
Airport T'off - Nairobi	.. .. .	Class 2
Nairobi - Limuru T'off	.. .. .	Class 2
Limuru T'off - Narok T'off	.. .. .	Class 1
Narok T'off - Gilgil	.. .. .	Class 3
Gilgil - Nakuru	.. .. .	Class 2
Nakuru - Molo Road	.. .. .	Class 3
Molo Road - Burnt Forest	.. .. .	Class 2
Burnt Forest - Eldoret - Malala	.. .. .	Class 3

Mombasa - Athi River

Mombasa - Mariakani	.. .. .	Class 2
Mariakani - Sultan Hamud	.. .. .	Class 3
Sultan Hamud - Ulu T'off	.. .. .	Class 2
Ulu T'off - Athi River	.. .. .	Class 3

Nairobi - Isiolo

Nairobi - Thika	.. .. .	Class 2
Thika - Kiganjo	.. .. .	Class 2
Kiganjo - Nanyuki	.. .. .	Class 3
Nanyuki - Timau	.. .. .	Class 1
Timau - Lewa - Isiolo (Meru)	.. .. .	Class 2

Mau Summit - Yala

Mau Summit - Awasi	.. .. .	Class 2
Awasi - Kisumu	.. .. .	Class 3
Kisumu - Yala	.. .. .	Class 2
Isebania - Kisii - Kisumu - Kakamega - Broderick Falls	.. .. .	Class 2
Leseru - Kitale	.. .. .	Class 2
Sagana - Embu	.. .. .	Class 2

APPENDIX I (Cont.)

Mombasa - Malindi	..	..	..	Class 2
Likoni - Lunga Lunga	..	..	..	Class 2
Voi - Mwatate	..	..	..	Class 2
Mwatate - Wandanyi	..	..	..	Class 1
Kitale - Enderbess	..	..	..	Class 2
Kitale - Kiminini	..	..	..	Class 2
Eldoret - Sergoit	..	..	..	Class 2
Kolo Link Road	..	..	..	Class 1
Nakuru - Njoro	..	..	..	Class 2
Nakuru - Bohati	..	..	..	Class 2
Nakuru - Ndundoi	..	..	..	Class 1
Naivasha Lake Road	..	..	..	Class 2
Gilgil - Thomson Falls	..	..	..	Class 2
Naivasha - Escarpment	..	..	..	Class 1
Nairobi - Limuru	..	..	..	Class 2
Muthaiga - Kiambu	..	..	..	Class 2
Ruiru - Kambui	..	..	..	Class 2
Roy Sambu - Kamiti	..	..	..	Class 1
Ngong Road	..	..	..	Class 1
Kenyatta Road	..	..	..	Class 2
Thika - Gaitura	..	..	..	Class 2
Fort Hall - Kangema	..	..	..	Class 2
Machakos Road - Ngelani	..	..	..	Class 2
Embakasi - Ruaraka	..	..	..	Class 1
Embakasi Road	..	..	..	Class 1

METHOD OF DETERMINING VISIBILITY DISTANCE

The common feature of all methods is that two observers set themselves on the centre line of the road in advance of the bend or hump at the appropriate visibility distance apart and move forward, marks being made on the carriageway by the two observers as a reference mark carried by observer No. 1 disappears and re-appears for observer No. 2.

Two men, M and N (see Fig. 13) when approaching a bend, get into the center of the road, and space themselves apart by the visibility distance appropriate to the speed (see table 2).

To keep the distance constant, they can use a cord or they can put down marks on the carriageway with constant distance between and then use walkie-talkies for communication.

The two men can walk along the road or they can use two light vans with warning signs on them.

If they are walking, they must use two sticks to keep the target in a constant height (1.20 m.) above road level. If they are using vans, they can put a target on the front van, and mark the windscreen on the second van.

N is looking in the direction of M. When N is at the point A, M is disappearing. M is then at the point A¹. A is marked with a cross and A¹ with a circle. They then proceed at the same spacing until M again comes into view. N is then at the point B which is marked with a new cross, and M is at the point B¹ which is marked with a new circle.

The figure shows how the markings will be painted through the bend.

The crosses and circles may later be marked with sticks on the shoulder - see the figure.

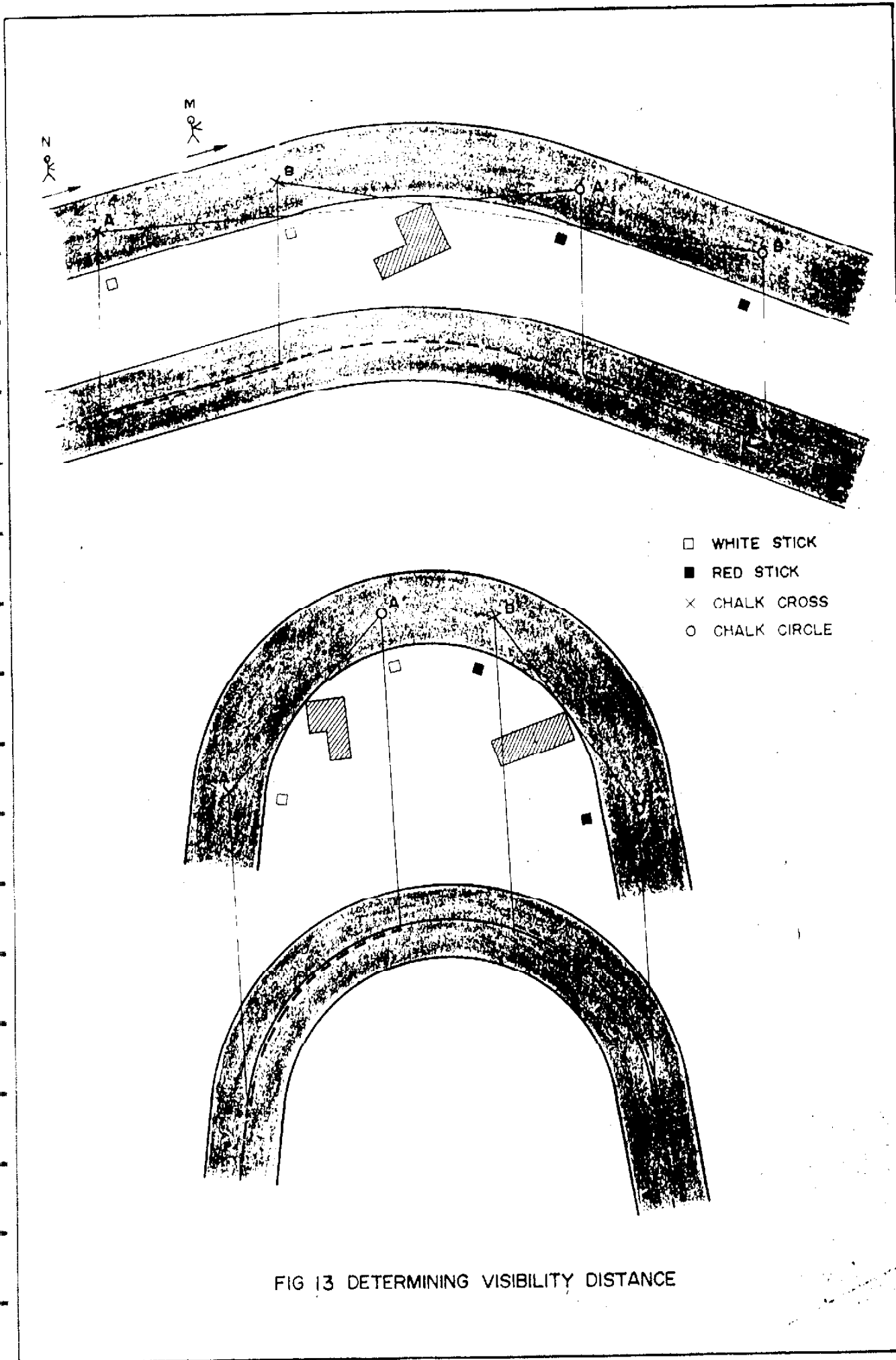
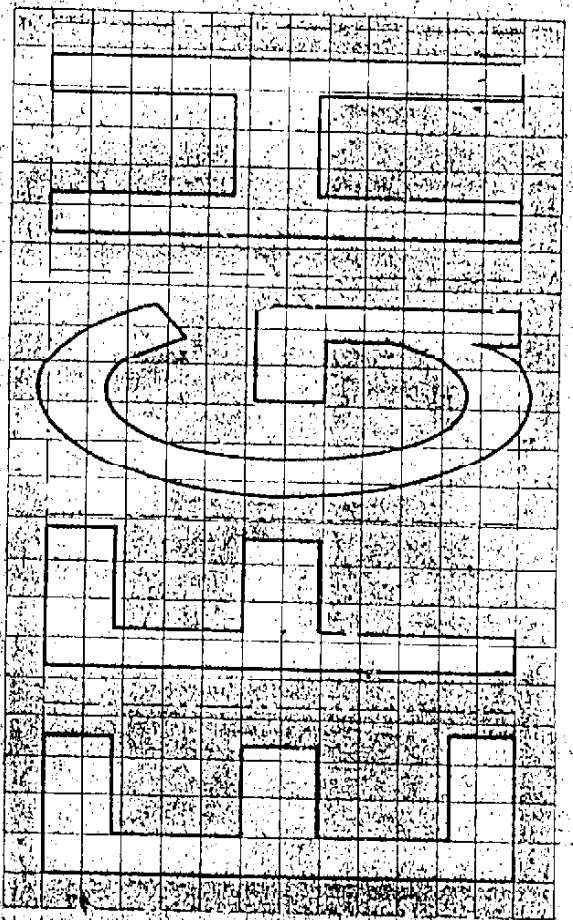
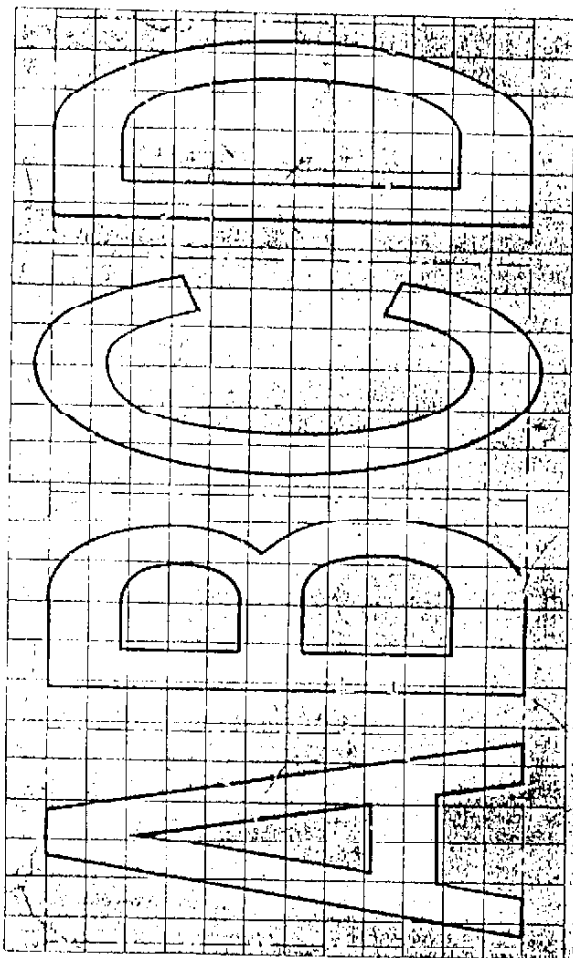
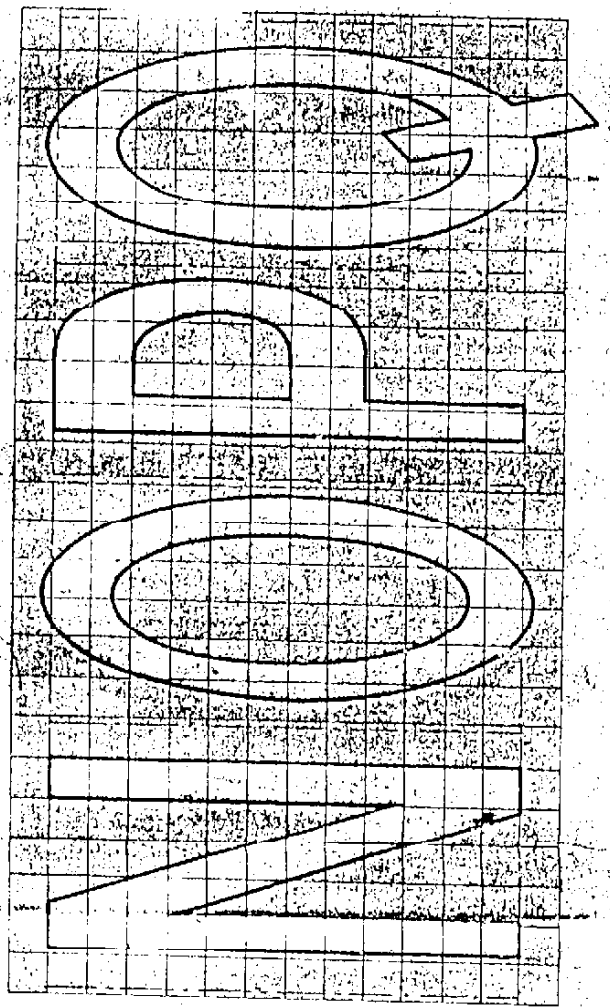
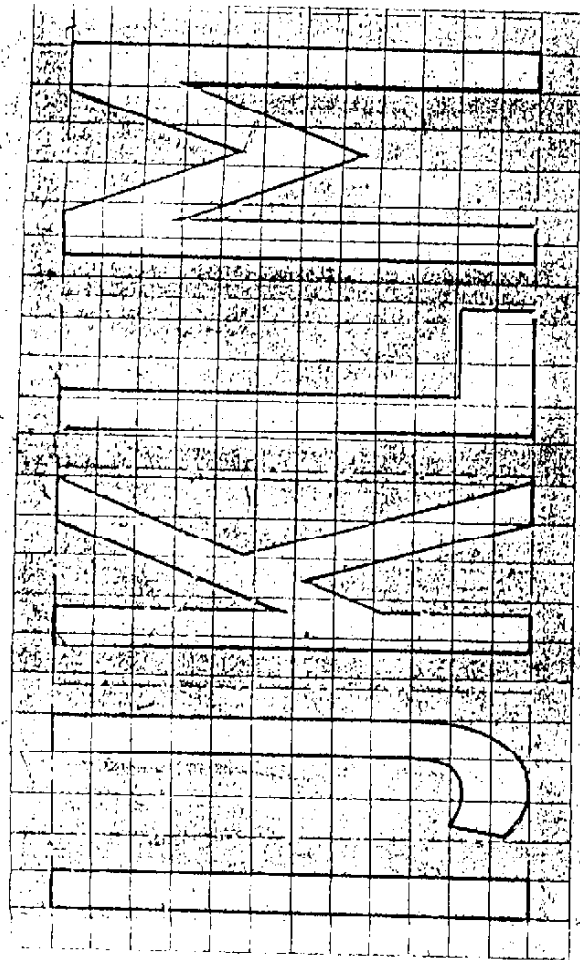


FIG 13 DETERMINING VISIBILITY DISTANCE

WORDED ROAD MARKINGS

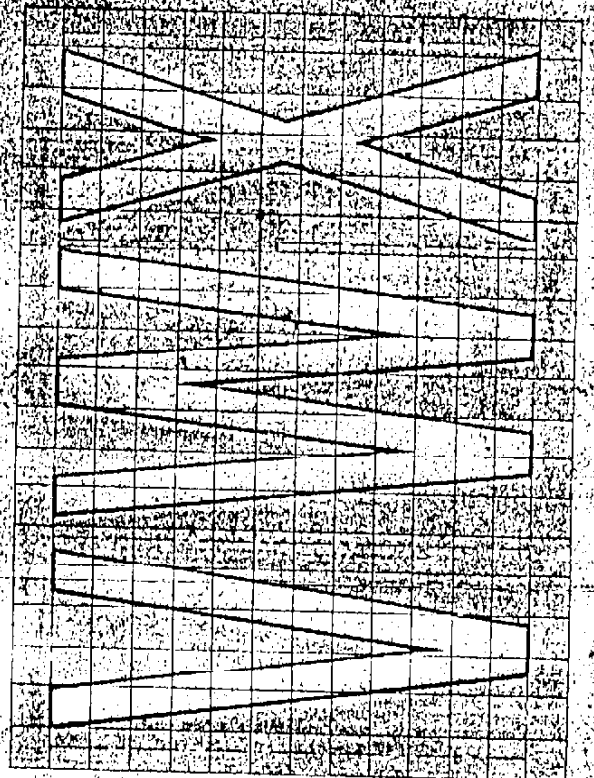
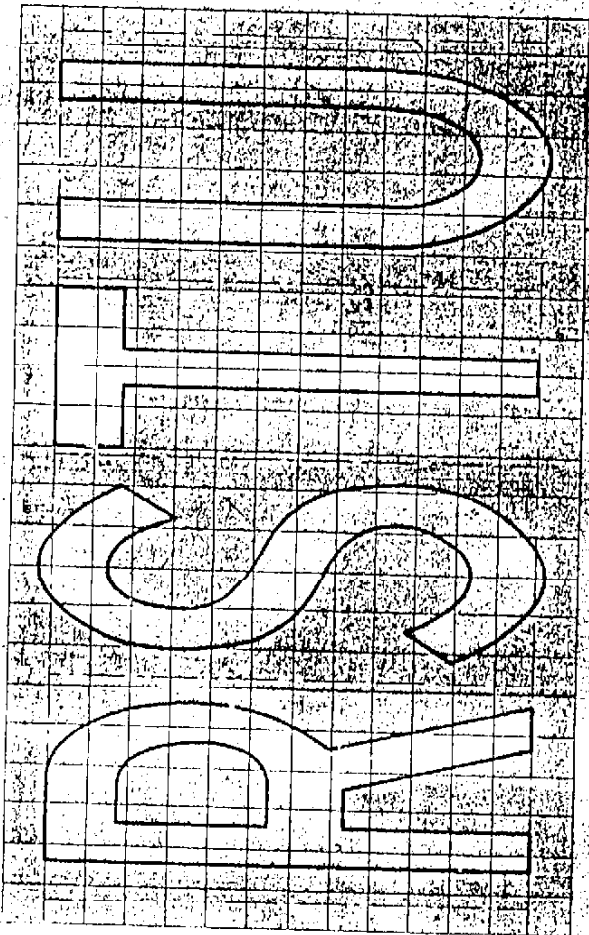
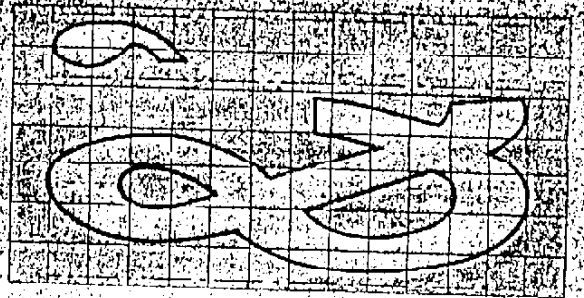
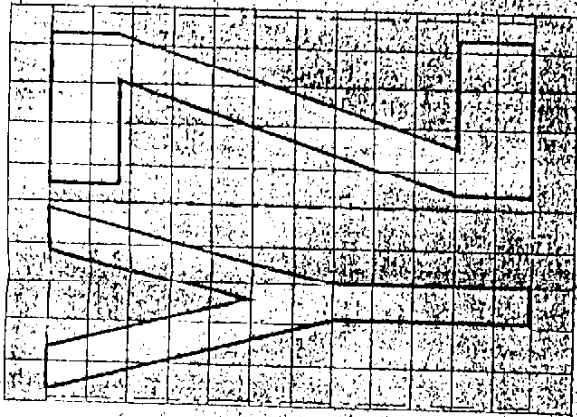
The basic characters for worded road markings are the capitals, numerals and the apostrophe from the Transport Medium Alphabet enlarged (and where appropriated elongated) to the required overall dimensions. Words are formed in the same manner as for any worded sign.

When a word is elongated, all the transverse dimensions of the basic word are kept constant but the longitudinal dimensions are increased to the prescribed height. Fig. 7 (a) and (b) show the details of the alphabet and numerals enlarged in this manner. The stroke width of the vertical parts of the lettering as used on the road should be 0.1 m.

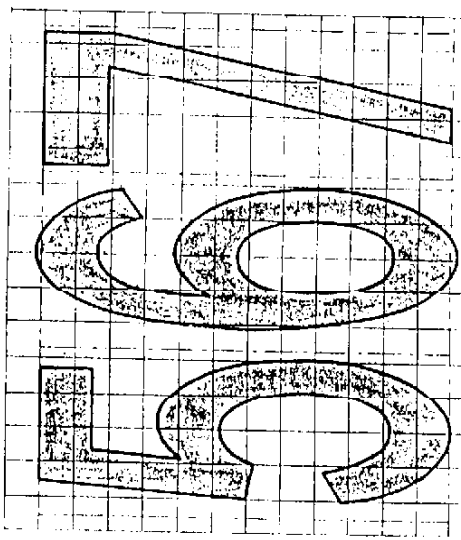
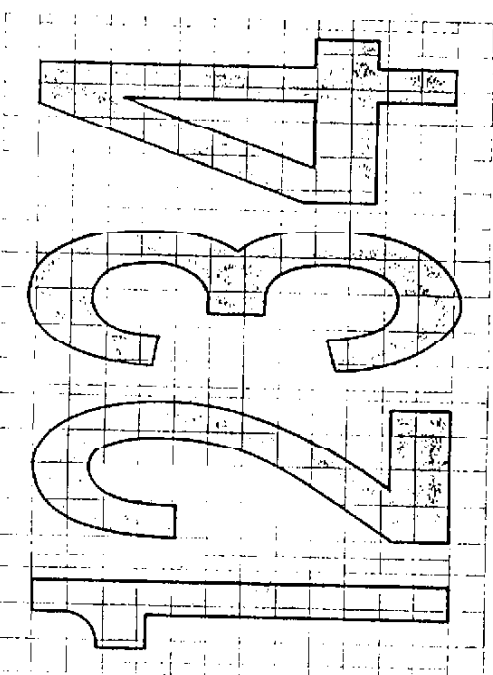
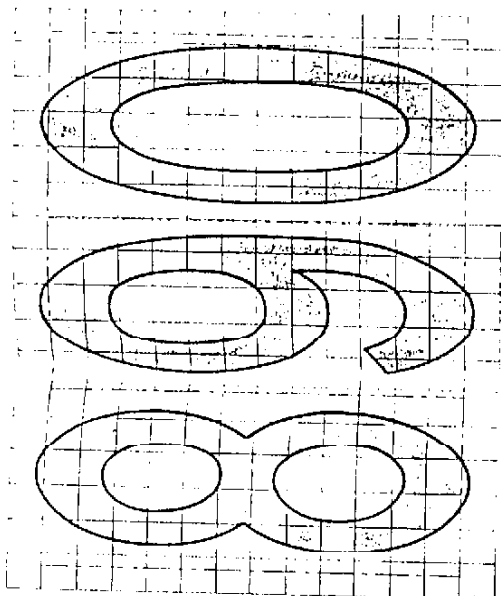


1.20 m

0.10 m



NOTE:
BROKEN LINES
REPRESENT LETTER
TILES USED FOR
CORRECT SPACING
BETWEEN ADJACENT
LETTERS



NOTE:
BROKEN LINES REPRESENT
NUMERAL TILES USED FOR
CORRECT SPACING BETWEEN
ADJACENT NUMERALS

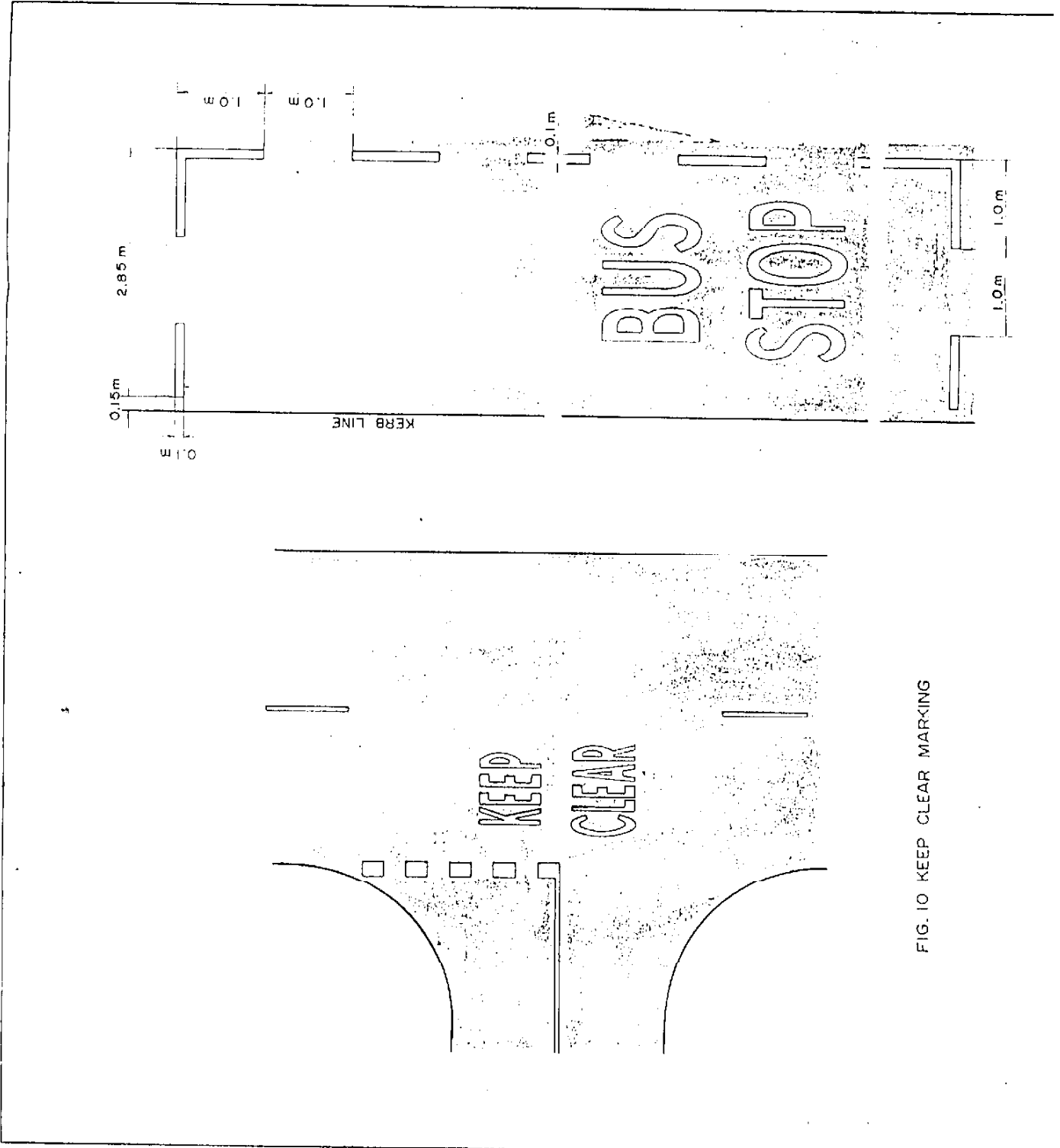


FIG. 10 KEEP CLEAR MARKING

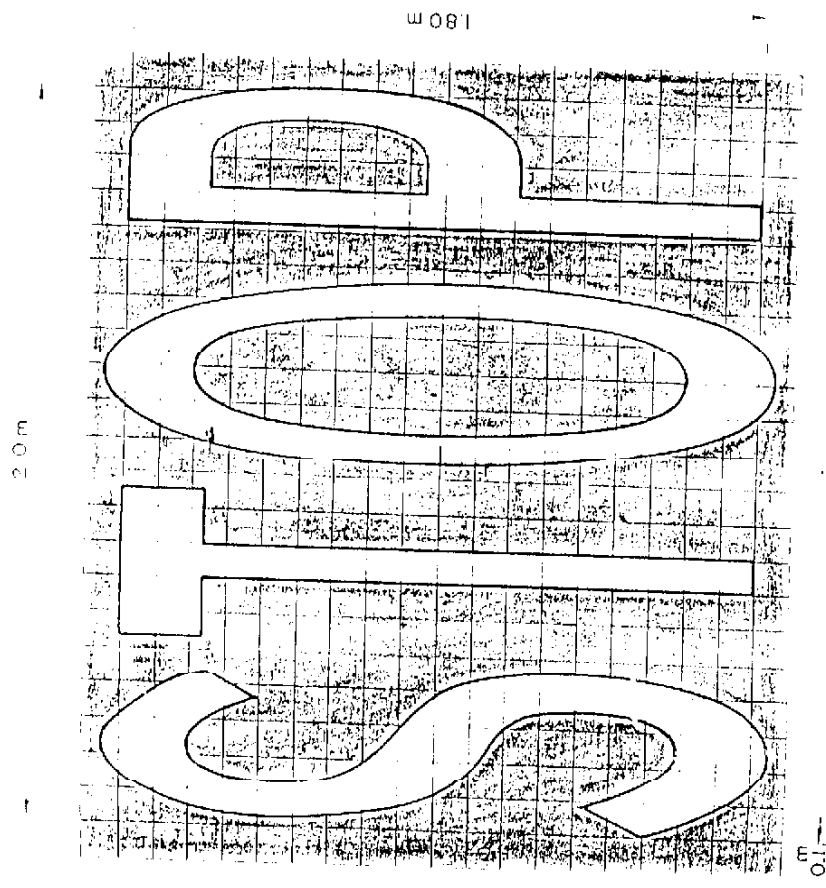
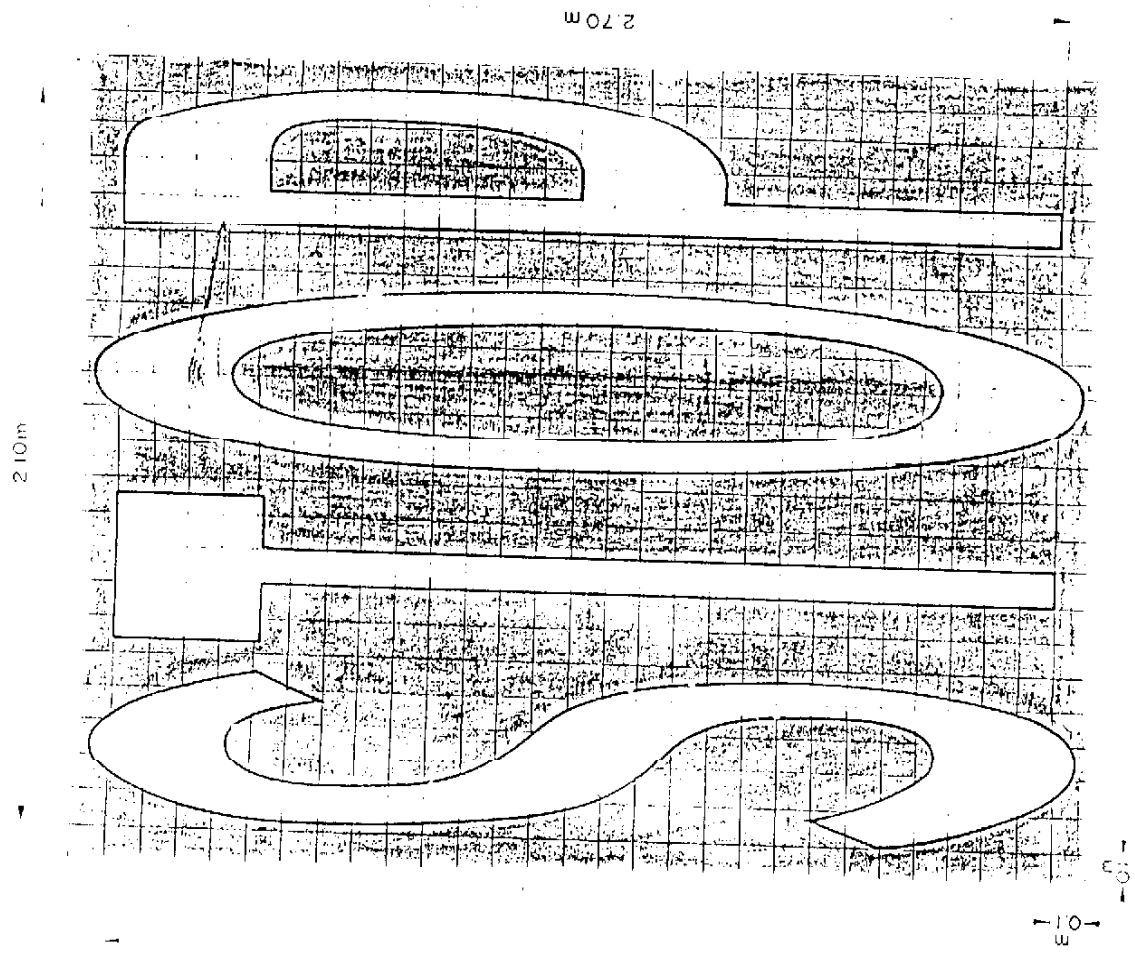


FIG. 14 STOP MARKING

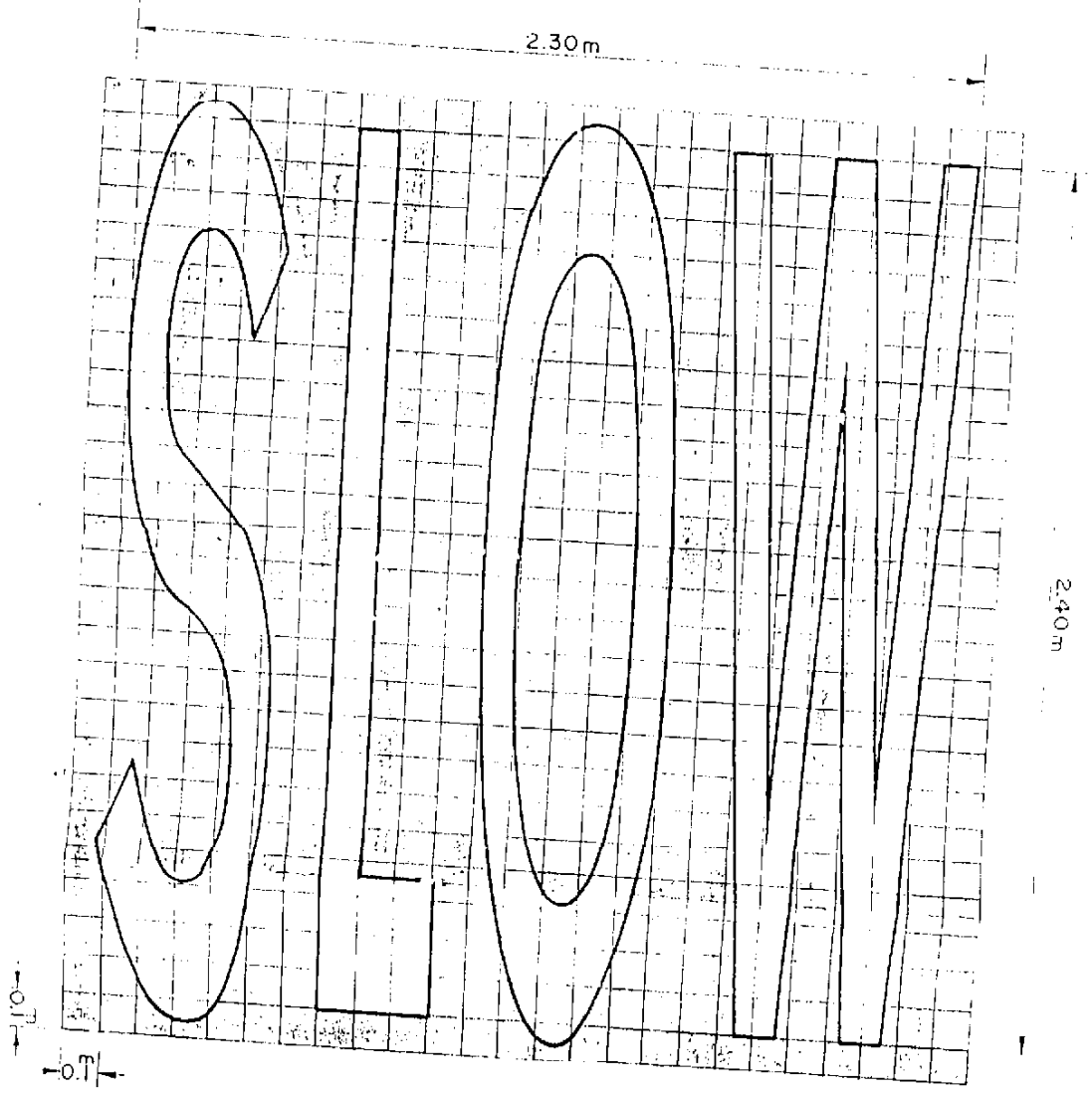
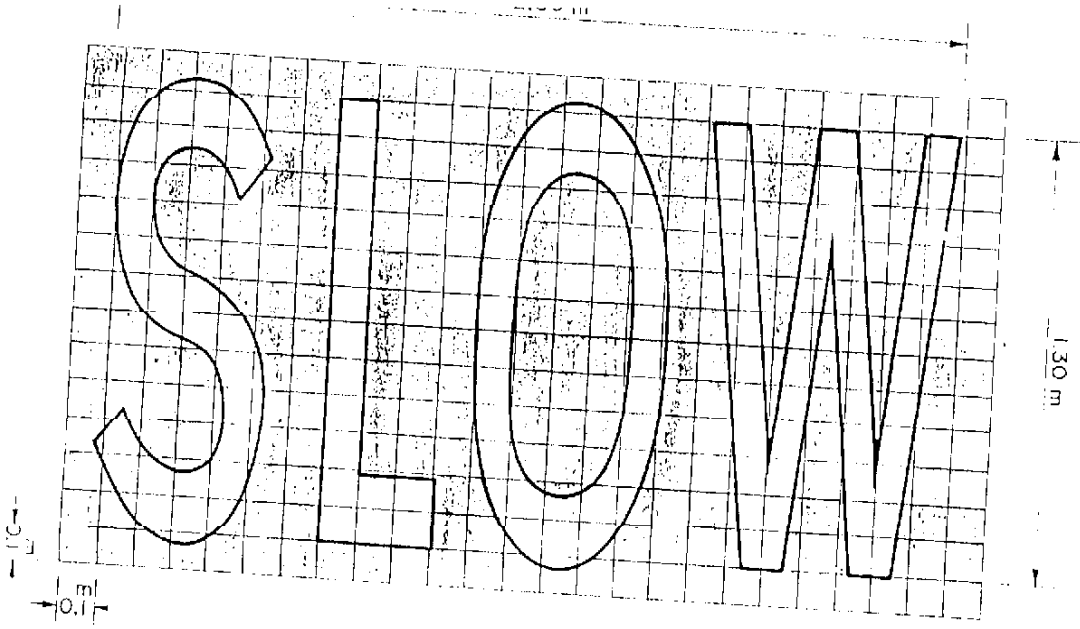


FIG. 15 SLOW MARKING.

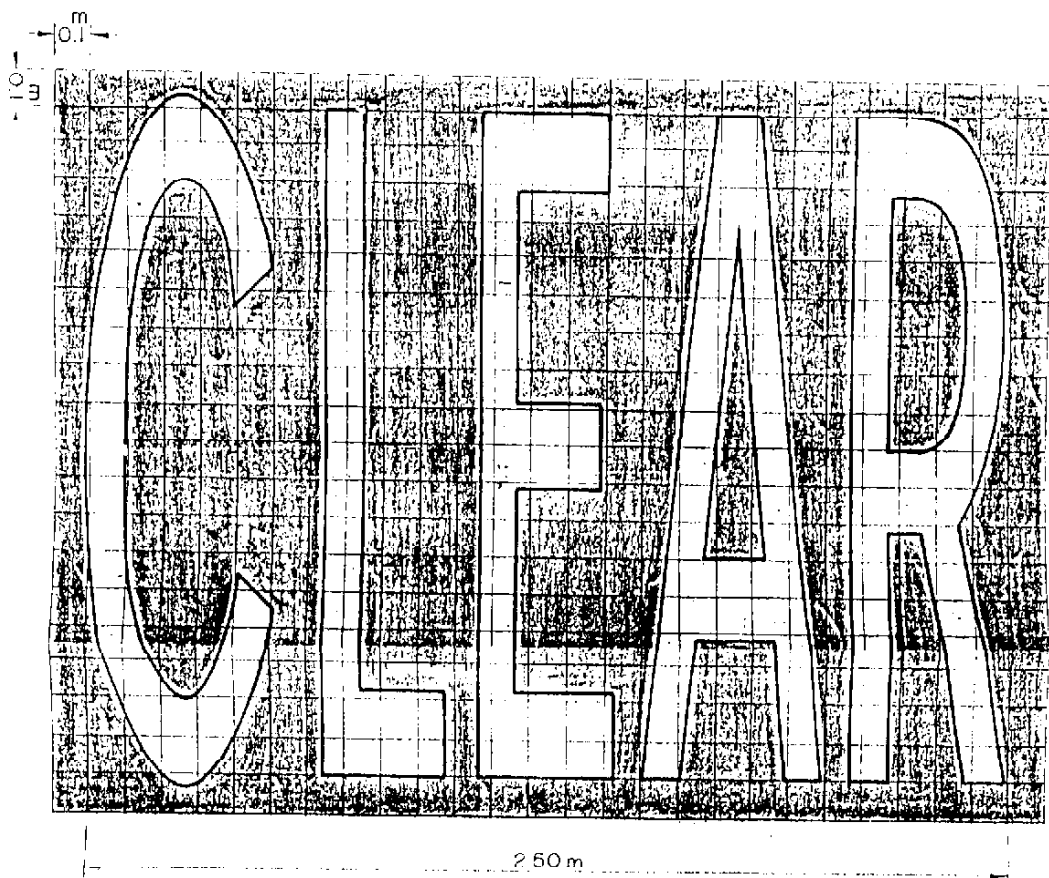
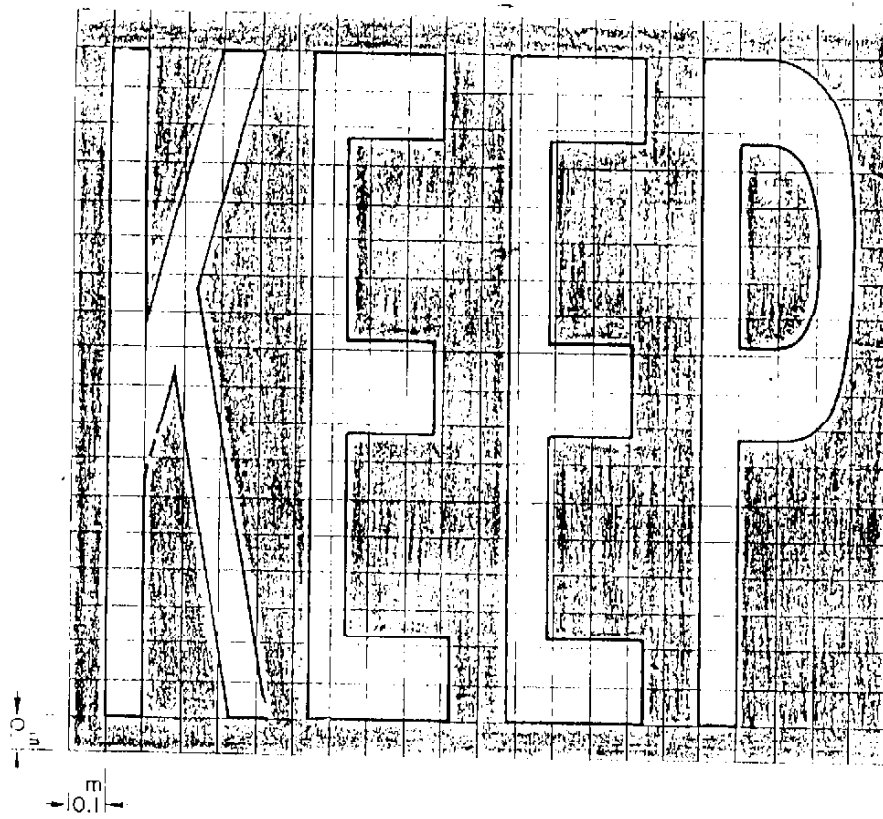


FIG. 16. KEEP CLEAR MARKING