

SIGNING FOR PEDESTRIAN ENVIRONMENTS

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CHAPTER 14: SIGNING FOR PEDESTRIAN ENVIRONMENTS

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CHAPTER 14: SIGNING FOR PEDESTRIAN ENVIRONMENTS

14.1 INTRODUCTION

14.1.1 General

- 1 The purpose of this chapter is to provide guidelines on, and illustrate how, under various circumstances, specific signing related to pedestrian environments should be provided. Portions of the roadway normally set aside for pedestrian use are, in fact, commonly shared with cyclists and/or disabled persons. The proximity of these modes of movement, or their segregation from one another, will vary considerably, but an interfaces with pedestrians must be taken into account. Likewise there is also an interface between pedestrian and public transport, as well as with hawkers which must be considered. The exclusive pedestrian environment is large and complex and therefore only the following pedestrian circumstances are dealt with in this Chapter:
 - (a) the pedestrian/motor vehicle interface;
 - (b) the pedestrian/cyclist interface;
 - (c) aspects related to the pedestrian/public transport interface;
 - (d) aspects related to disabled persons; and
 - (e) aspects related to hawkers.
- 2 This chapter should be read in conjunction with various chapters of Volume 1: Uniform Traffic Control Devices which deals with signing policies and design principles, and gives specific information on the meaning of, and individual application of, all traffic control devices. Specifically the following should be referred to:
 - (a) Chapter 2 – *Regulatory Signs*;
 - (b) Chapter 3 – *Warning Signs*;
 - (c) Chapter 4 – *Guidance Signs*;
 - (d) Chapter 5 – *Information Signs*;
 - (e) Chapter 6 – *Traffic Signals*; and
 - (f) Chapter 7 – *Road Markings*.
- 3 Numerous complimentary aspects relating to the application of these road traffic signs are covered in Volume 2 and the following chapters should be referred to:
 - (a) Chapter 2 – *Road Marking Applications*;
 - (b) Chapter 3 – *Regulatory and Warning Sign Applications*; and
 - (c) Chapter 13 – *Roadworks Signing*.
- 4 Authorities responsible for the planning, provision, maintenance and signing of pedestrian facilities should refer to the *Pedestrian and Bicycle Facility Guideline* or *NMT Guideline*.
- 5 Authorities responsible for the planning, provision, maintenance and signing of bicycle facilities should refer to the *Pedestrian and Bicycle Facility Guideline* or *NMT Guideline*.

14.1.2 General Legal Requirements

- 1 There are many legal requirements which relate to the display of road traffic signs, and in particular, of regulatory signs. These requirements are contained in the Road Traffic Act, Act 93 of 1996 and the Regulations to the Act, as amended from time to time.
- 2 Sections of the Act and Regulations of particular relevance, and their coverage, are as follows:
 - (a) Act: Chapter IX – Road Traffic Signs and General Speed Limits – Sections 56 to 60;
 - (b) Regulations: Chapter X – Rules of the Road – Sections 296 to 323;
 - (c) Regulations: Chapter IX – Matters Relating to Road Traffic Signs and General Speed Limits – Sections 284 to 295;
 - (d) Regulations: Schedule 3; and
 - (e) Definitions:
 - (i) in Section 1 of the Act;
 - (ii) in Section 1 of the Regulations; and
 - (iii) in Section 284 of the Regulations (only valid in respect of road traffic signs).
- 3 It is strongly recommended that anyone specialising in the provision of regulatory and warning signs and markings, or who requires to provide for such signs or markings for a situation which they have not previously had to deal with, should become familiar with all sections of the legislation noted above.

14.1.3 Basic Implications of the Act and Regulations

- 1 There are aspects in the Road Traffic Act, Act 93 of 1996, and its Regulations which apply specifically to pedestrians and cyclists, and there are others which are implicit. It is essential that those practitioners responsible for signing are aware of, and understand, the basic effects of the Act and the Regulations. The reality is that the relevant aspects of the Act and the Regulations most commonly have their effects before the application of road traffic signs. They therefore represent the base upon which the use of particularly regulatory signs and markings is built. Many definitions of terms, and the Rules of the Road, are important in this regard. A good understanding

of the Act and Regulations also has the potential to minimise the cost of signing and marking.

- 2 In the description of the various details, quotations of definitions of terms and sections of the Act and Regulations are frequently given. These are sometimes only quoted in part. For full information readers should consult the Act. Terms which are defined in the Act or regulations are highlighted in bold letters both when a definition is quoted and again if they form part of another definition. The latter is done to highlight the interdependence of certain terms.

- 3 "Road traffic signs" is a legal term and includes within its definition road signs, road markings and traffic signals. Only road traffic signs are permitted to be erected within a road reserve. The only signs, markings or signals recognised as road traffic signs are prescribed by the Minister of Transport by inclusion in Schedule 3 to the Regulations and the Act. "Road traffic signs" are classified in a hierarchical manner. Signs, markings and signals may be used to regulate, to warn or to guide or inform. Regulatory signs, markings and signals carry the force of law, and clearly are the most important. Warning signs, markings and signals have a different importance because of the responsibility on road authorities to see that they are used meaningfully, and when necessary, in the interests of road safety.

- 4 In order to understand better the interaction of various parts of a public road, knowledge of the definitions of the parts is important. These are illustrated in Figure 14.1. The more relevant definitions are listed below and can be correlated with Detail 14.1.1. Definitions include:

"**public road**: means any road, street or thoroughfare, or except for the purposes of Section 88, any other place (whether a thoroughfare or not) which is commonly used by the public or any section thereof or to which the public or any section thereof has a right of access, and includes:

- (a) the **verge** of any such road, street or thoroughfare;
- (b) any bridge, ferry or drift traversed by such road, street or thoroughfare; and
- (c) any other work or object forming part of or connected with or belonging to such road, street or thoroughfare;"

"**roadway**: means that portion of a road, street, or thoroughfare improved, constructed or intended for vehicular traffic which is between the **edges of the roadway**;"

"**edge of roadway**: means the boundary between the **roadway** and the **shoulder**, which is indicated by appropriate **road traffic sign**, or in the absence of such sign :

- (a) in the case of a road with a bituminous or concrete surface, the edge of such surface; or
- (b) in the case of any other road, the edge of the improved part of the road intended for vehicular use;"

"**kerb line**: means the boundary between the **shoulder** and the **verge**;"

"**shoulder**: means that portion of a road, street or thoroughfare between the **edge of roadway** and the **kerb line**;"

"**verge**: means that portion of a road, street or thoroughfare, including the **sidewalk**, which is not the **roadway** or the **shoulder**;"

"**sidewalk**: means that portion of a **verge** intended for the exclusive use of pedestrians."

- 5 Two important terms which have particular relevance on pedestrian rights of way are intersection and junction. Detail 14.1.2 in Figure 14.1 illustrates the extent of an intersection and a junction. It should be noted that a junction is always likely to be within an intersection. The term intersection is defined in the Act and as such has an important bearing on many aspects of traffic legislation. Intersection is defined as follows:

"**intersection**: means the area embraced within the prolongation of the lateral boundary lines of two or more **public roads**, open to vehicular traffic, that join one another at any angle, whether or not one such **public road** crosses the other;"

"junction" is defined for signing purposes only in Regulation 407 as follows:

"**junction**: means that portion of an **intersection** contained within the prolongation of the lateral limits of the intersecting **roadways** and such junctions shall include any portion of the roadway between such lateral limits, and any stop or yield line marking which is painted at such **intersection**."

- 6 In the Act a pedestrian crossing is defined as follows:

"**pedestrian crossing** means:

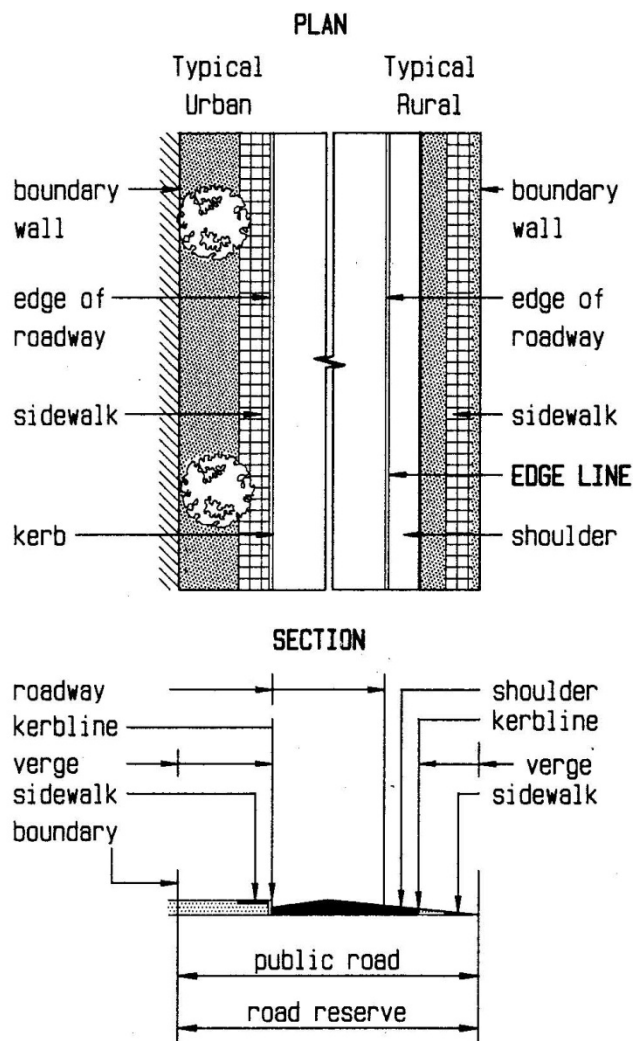
- (a) that portion of a **public road** at an **intersection** included within the prolongation or connection of the **kerb line** and adjacent boundary line of such road, whether such portion is marked or not; or
- (b) any other portion of a **public road** designated as a **pedestrian crossing** by appropriate road traffic signs."

Detail 14.1.3 illustrates the provisions of the definition paragraph (a). It should be noted that, technically, with a relatively narrow roadway within a wide road reserve (public road) the legal pedestrian crossings, within which pedestrians have certain rights, are potentially very wide.

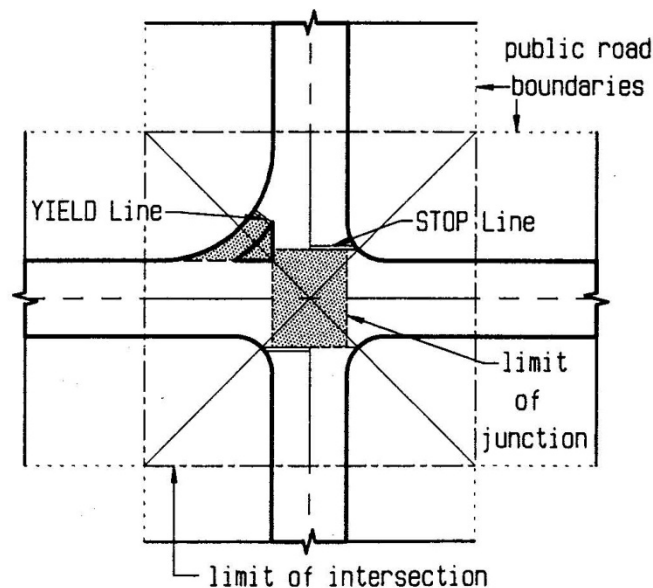
- 7 Guidelines which indicate appropriate signing related to the requirements of paragraph 14.1.3.6(b) are given in Section 14.3.
- 8 The rights of pedestrians are covered by Sections 109 and 110 of the Act. Section 109 states that:

"(1)Where a **pedestrian crossing** is situated in conjunction with a robot (traffic signal), a pedestrian shall not enter such crossing except in accordance with the indications of such robot as prescribed;

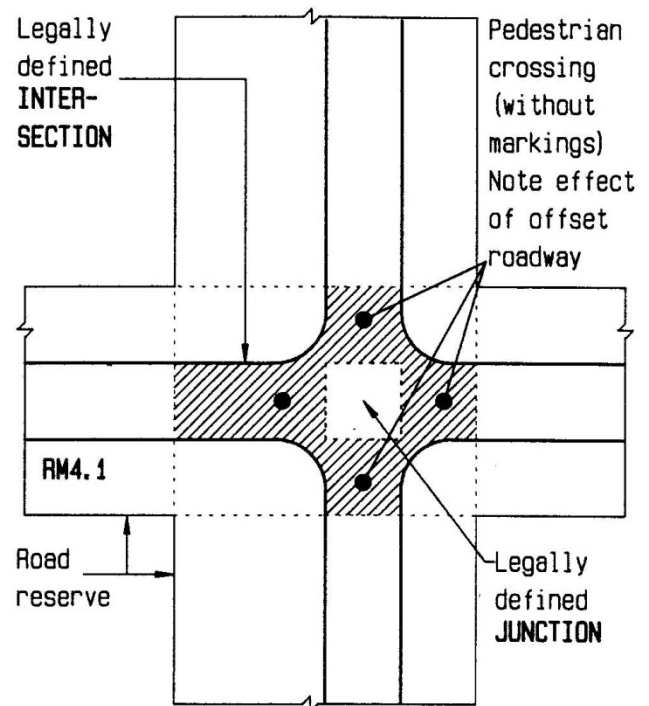
(2)In circumstances not referred to in subsection (1), the driver of a vehicle shall yield the right of way, slowing down or stopping if need be to so yield to a pedestrian crossing the **roadway** within a **pedestrian crossing** when the pedestrian is upon that half of the **roadway** upon which the vehicle is travelling, or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger;...."



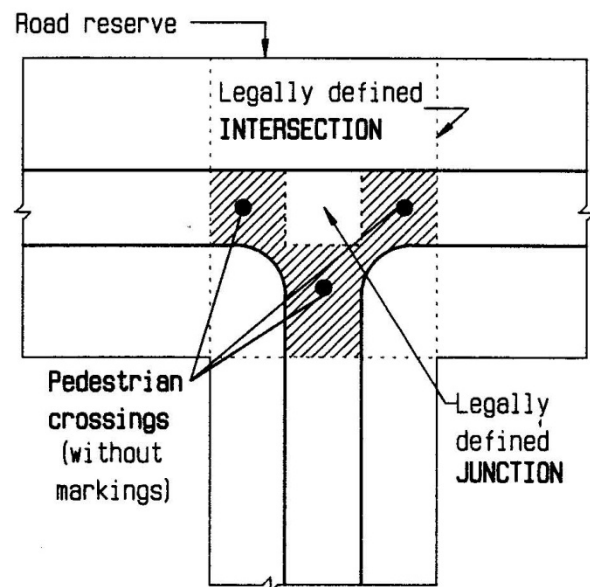
Detail 14.1.1
Anatomy of a Public Road



Detail 14.1.2
Limits of Intersection and Junction



Typical 'Legal' Cross Road Pedestrian Crossing



Typical 'Legal' T-Junction Pedestrian Crossing

This Detail illustrates the areas legally defined as pedestrian crossings if no markings (or signs) are provided. In theory pedestrians have right of way at these points

Detail 14.1.3
Legally Defined Pedestrian Crossings

Fig 14.1 Basic Road Features and Pedestrian Crossing Area Definitions

14.2 RANGE OF APPLICABLE SIGNS AND MARKINGS

14.2.1 General

- 1 This section provides firstly an indication of the symbols related generally to the pedestrian environment, and then relates these to the specific signs used for this purpose. It also indicates the range of signs and markings necessary for adequate control and guidance of pedestrians, cyclists and disabled persons.
- 2 It should be noted that many of the signs and markings dealt with are directed at drivers and not specifically at pedestrians. These signs, however, should enhance the awareness of pedestrians to potential risks, as well as to facilities provided for them.

14.2.2 Basic Symbols

- 1 There are a number of basic symbols which are used in various signs and as road markings for the pedestrian environment. The symbols, which are illustrated in Figure 14.2, are for:
 - (a) pedestrians;
 - (b) children;
 - (c) disabled persons;
 - (d) woonerf precinct;
 - (e) scholar patrol;
 - (f) hitch-hiker;
 - (g) cyclist; and
 - (h) hawkers.

14.2.3 Regulatory Signs

- 1 The range of regulatory signs applicable specifically to pedestrian environments is given in Table 14.1 and illustrated in Figure 14.3.
- 2 The details of the warrants for, and the placement requirements of individual signs, are provided in the respective subsections of Volume 1, Chapter 2 while their application is dealt with in Section 14.3. General applications of regulatory signs and markings are also covered in Chapter 3.
- 3 The specific size and colour of regulatory signs is dealt with in Volume 1, Section 1.4 and Section 2.1.

14.2.4 Warning Signs

- 1 The range of warning signs applicable specifically to pedestrian environments is given in Table 14.2 and illustrated in Figure 14.4
- 2 The details of the warrants for, and the placement requirements of, individual signs are dealt with in detail in Volume 1, Section 1.6 and Chapter 3 and their application is dealt with in Section 14.3. General application of warning signs and markings are also covered in Chapter 3.
- 3 The shape, size and colour of the warning signs is dealt with in Volume 1, Section 1.4 and Section 3.1.

14.2.5 Guidance Signs

- 1 The guidance signs which are primarily related to pedestrian environments are listed in Table 14.3 and illustrated in Figure 14.5.
- 2 The details of the placement requirements of individual signs are dealt with in detail in Volume 1, Section 1.6 and in Chapter 4. Their shape, size and colour are also dealt with in Section 4.0. General applications of guidance signing related to pedestrians is also covered in Chapter 4, Section 4.13.
- 3 The majority of PEDESTRIAN GUIDANCE signs are square in shape. The signs have been designed on a modular basis to facilitate the combination of individual square modules into specific sign messages, with the potential for a wide variation in these messages. This method of application is similar to that used for TOURISM DIRECTION "Totem" signs GF10.

- 4 PEDESTRIAN GUIDANCE signs, because of their modular development, may be used in true guidance function as:
 - (a) LOCATION guidance signs, whereby individual signs may be used to identify (the location of) specific pedestrian facilities;
 - (b) DIRECTION guidance sign clusters whereby one or more signs may be combined in a cluster with an appropriate arrow module to indicate the direction to pedestrian facilities.
- 5 TEMPORARY versions of PEDESTRIAN DIRECTION signs may be required if pedestrians have to be temporarily redirected by a less than obvious route towards their intended destination. This approach can have important safety implications in preventing pedestrians from walking in the roadway in amongst traffic during roadworks.
- 6 PEDESTRIAN GUIDANCE signs may also be appropriate in other pedestrian environments, not covered in this chapter, such as sports facilities, streets converted to malls (which may also about transport terminal facilities), entertainment areas generally, or showgrounds.

14.2.6 Information Signs

- 1 The range of information signs applicable specifically to pedestrian environments is given in Table 14.4 and illustrated in Figure 14.6
- 2 The details of the placement requirement of individual signs are provided in the respective subsections of Volume 1, Chapter 5 while their application is dealt with in Section 14.3
- 3 The shape, size and colour of information signs is dealt with in Volume 1, Chapter 5, Section 5.1.

14.2.7 Combination Signs

- 1 There are applications in the pedestrian environment where a combination of signs is permissible and necessary, for example:
 - (a) warning signs with supplementary plates;
 - (b) combinations of direction signs.
 Refer to Figure 14.7 for typical examples.

SYMBOL	DESCRIPTION	USED ON CLASS OF SIGN
	PEDESTRIANS	Regulatory/Warning/ Direction
	CHILDREN	Warning
	DISABLED PERSONS	Regulatory/Direction
	MOONERF PRECINCT	Regulatory
	SCHOLAR PATROL	Warning
	HITCH-HIKER	Regulatory
	CYCLIST	Regulatory/Warning/ Direction
	HAWKER	Regulatory

Fig 14.2

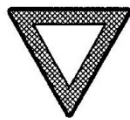
Applicable Symbols

TABLE 14.1		APPLICABLE REGULATORY SIGNS		TABLE 14.1	
Sign Category Description	Sign No.	Reference Section			
		Volume 1	Volume 4		
Control Signs					
Stop	R1	2.2.1	2.2.1		
Yield	R2	2.2.6	2.2.5		
Yield to pedestrians	R2.1	2.2.7	2.2.6		
Pedestrian priority	R5	2.2.11	2.2.10		
Command Signs					
Pedastrian only	R110	2.3.6	2.3.10		
Cyclists only	R111	2.3.7	2.3.11		
Cyclists and pedestrians only	R112	2.3.8	2.3.12		
Cyclists and pedestrians only with barrier	R113	2.3.8	2.3.13		
Cyclists and pedestrian only	R114	2.3.8	2.3.14		
Cyclists and pedestrians only with barrier	R115	2.3.8	2.3.15		
Prohibition Signs					
No hitch-hiking	R207	2.4.6	2.4.9		
No pedestrians	R218	2.4.13	2.4.20		
No cyclists	R219	2.4.14	2.4.21		
No cyclists and pedestrians	R220	2.4.15	2.4.22		
No hawkers	R241	2.4.21	2.4.42		
Reservation Signs					
Bicycle lane	R304	2.5.3	2.5.4		
Bicycle parking	R304-P	2.5.3	2.5.4		
Disabled persons vehicle	R323	2.5.9	2.5.23		
Disabled persons parking	R323-P	2.5.9	2.5.23		
Comprehensive Signs					
Woonerf	R403	2.6.3	2.6.3		
Symbol Message					
Bicycle	(R)561	2.7.7	2.7.21		
Disabled persons vehicle	(R)578	2.7.8	2.7.38		
Derestriction Signs					
End of bicycle lane	R304-600	2.9.1	2.8.5		
End of Woonerf	R403-600	2.9.1	2.8.9		

CONTROL SIGNS



R1



R2



R2.1



R5

COMMAND SIGNS



R110



R111



R112



R113



R114



R115

PROHIBITION SIGNS



R207



R218



R219



R220



R241

RESERVATION SIGNS



R304



R304-P



R323



R323-P

COMPREHENSIVE SIGNS



R403

SYMBOLIC MESSAGE SIGNS



(R) 561



(R) 578

DERESTRICTION SIGNS



R304-600



R403-600

Fig 14.3

Applicable Regulatory Signs

TABLE 14.2		APPLICABLE WARNING SIGNS		TABLE 14.2
Sign Category Description	Sign No.	Reference Section		
		Volume 1	Volume 4	
School patrol ahead	TW305	3.4.3	3.4.5	
Pedestrian crossing	W306	3.4.3	3.4.6	
Pedestrians	W307	3.4.4	3.4.7	
Children	W308	3.4.4	3.4.8	
Cyclists	W309	3.4.5	3.4.9	

TABLE 14.3		APPLICABLE GUIDANCE SIGNS		TABLE 14.3
Sign Category Description	Sign No.	Reference Section		
		Volume 1	Volume 4	
Arrow - straight up	GP1	4.13.6	14.2.1	
Arrow - down	GP2	4.13.6	14.2.1	
Arrow - right	GP3	4.13.6	14.2.1	
Arrow - left	GP4	4.13.6	14.2.1	
Arrow - half right	GP5	4.13.6	14.2.2	
Arrow - half right	GP6	4.13.6	14.2.2	
Arrow - half left	GP7	4.13.6	14.2.2	
Arrow - half left	GP8	4.13.6	14.2.2	
Pedestrian(s)	GP9	4.13.8	14.2.3	
Disabled	GP13	4.13.8	14.2.7	
Hawkers	GP23	4.13.8	14.2.17	
Hawkers (Permit)	GP24	4.13.8	14.2.18	



Fig 14.4

Applicable Warning Signs

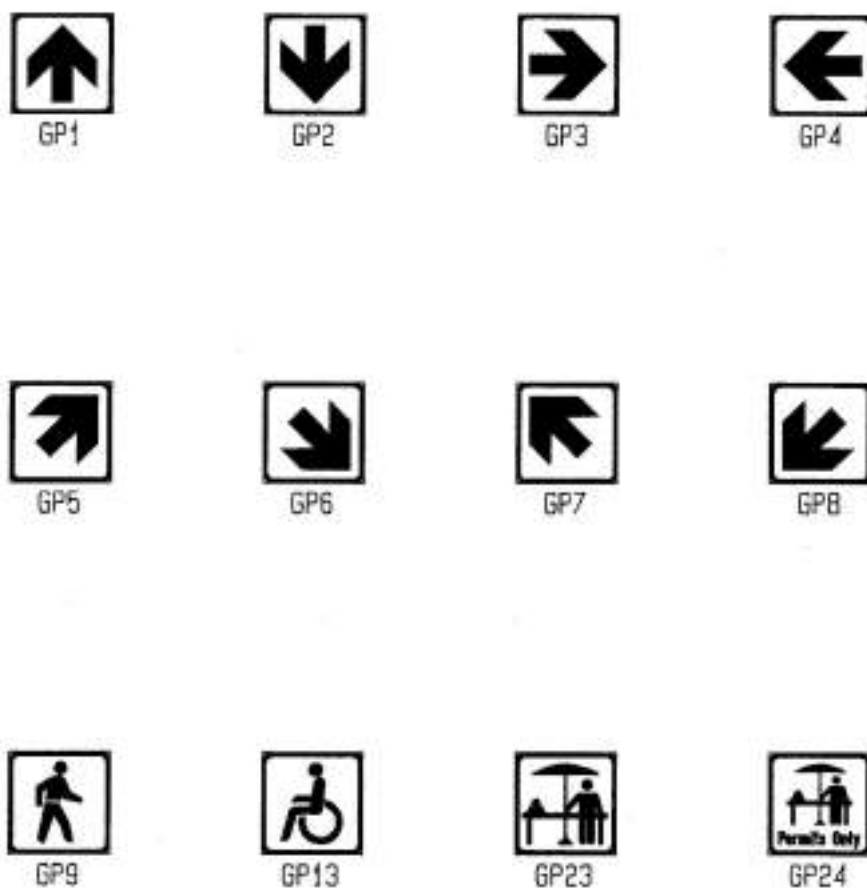


Fig 14.5

Applicable Guidance Signs

TABLE 14.4

APPLICABLE INFORMATION SIGNS

TABLE 14.4

Sign Category Description	Sign No.	Reference Section	
		Volume 1	Volume 4
Supplementary Plates - Distance to	IN11.3	5.2.4	9.2.8 - 13
Supplementary Plates - Text Message	IN11.4	5.2.4	9.2.8 - 13
Symbolic Supplementary Plates - Bicycle	IN11.561	5.2.4	9.3.10/9.3.20
Symbolic Supplementary Plates - Disabled Persons Vehicle	IN11.578	5.2.4	9.3.10/9.3.29
Modal Transfer Car - Train	IN17	5.2.8	9.2.21
Modal Transfer Car, Train, Minibus	IN18	5.2.8	9.2.21
Modal Transfer All Modes	IN19	5.2.8	9.2.21

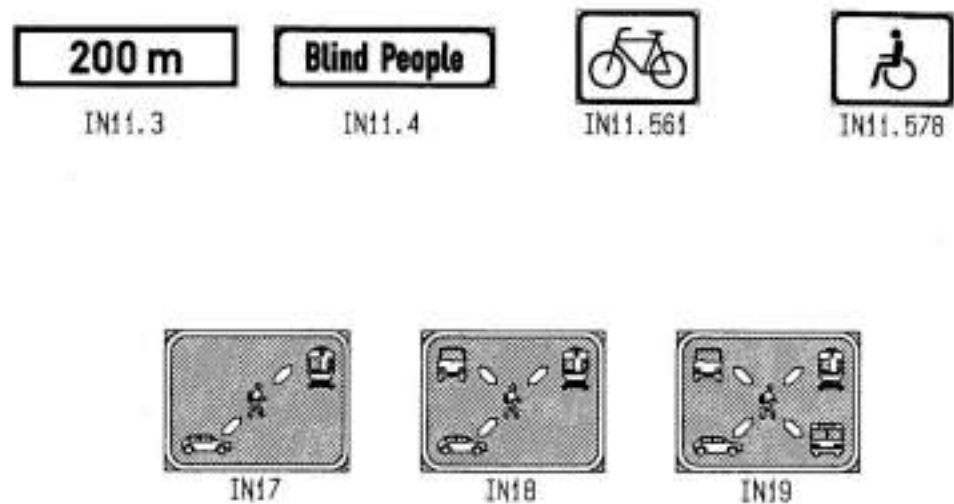


Fig 14.6 **Applicable Information Signs**



Fig 14.7 **Examples of Pedestrian Related Combination Signs**

14.2.8 Road Markings

- 1 The range of road markings applicable both specifically and implicitly to pedestrians, disabled persons and cyclists is given in Table 14.5 and these are illustrated in Figure 14.8.
- 2 The details of the warrants for, and the placement requirements of, the individual pedestrian related road markings and

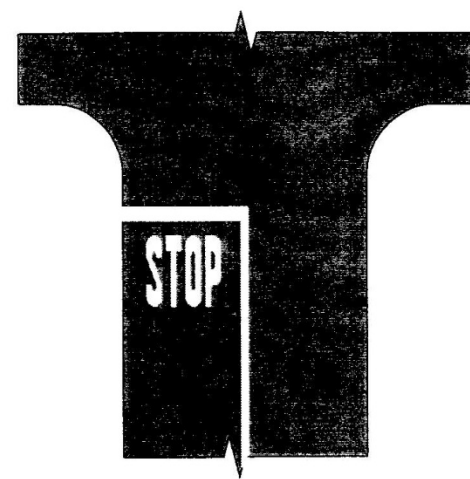
combinations thereof are provided in the respective subsections of Volume 1, Chapter 7, while their application is dealt with in Section 14.3. The General Principles of road marking as well as applications are also dealt with in Volume 2, Chapter 2.

TABLE 14.5		APPLICABLE ROAD MARKINGS		TABLE 14.5	
Sign Category	Description	Sign No.	Reference Section		
			Volume 1	Volume 4	
Regulatory					
Stop line		RTM1	7.2.1	12.1.2 ⁽¹⁾	
Yield Line		RTM2	7.2.2	12.1.2 ⁽¹⁾	
Pedestrian Crossing Line		RTM3	7.2.3	12.1.2 ⁽¹⁾	
Block Pedestrian Crossing Marking		RTM4	7.2.4	12.1.2 ⁽¹⁾	
Exclusive Use Lane Line		RTM9	7.2.21		
Zig Zag Zone Lines		RM11	7.2.25	12.2.13	
Disabled Persons Parking Bay		RM16	7.2.30	12.1.2 ⁽¹⁾ and 12.4.5 ⁽²⁾	
Word and Symbol Markings		RM17	7.2.31		
Guidance					
Pedestrian Guidelines		GM3	7.4.2	12.1.6 ⁽¹⁾	
Bicycle Guidelines		GM5	7.4.4	12.1.7 ⁽¹⁾	
Road Marking Symbols		GM6	7.4.5	12.4.3/12.4.5	
Word Markings		GM7	7.4.6	12.5.1-12.5.9	

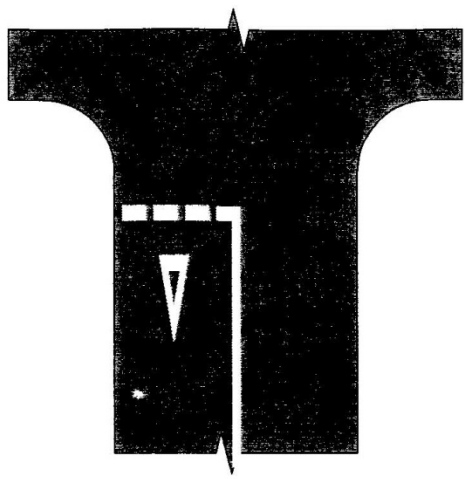
NOTES:

(1) Table 12.1 in Volume 4, Chapter 12 and Table 2.3 in Volume 2, Chapter 2 give typical details of road marking dimensions and areas.

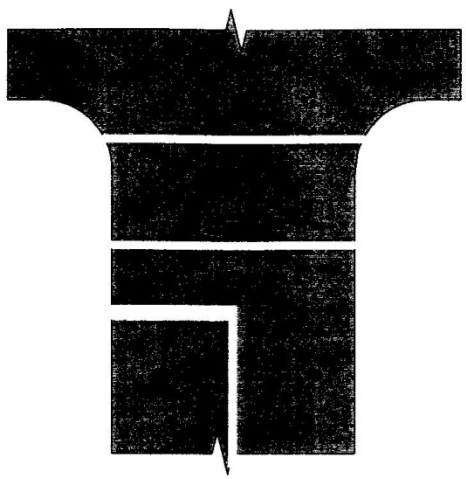
(2) Volume 2, Chapter 2 gives dimensional details of the use of Parking Bay marking RM6 and Disabled Persons Parking Bay RM16.



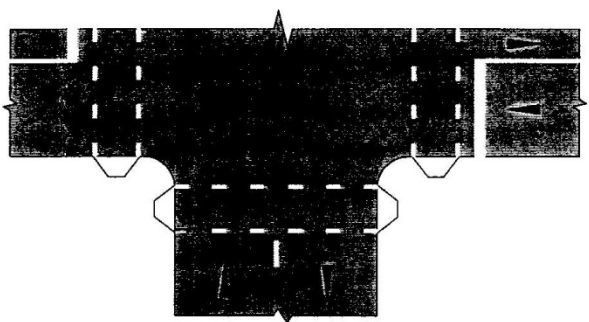
RTM1 - STOP LINE



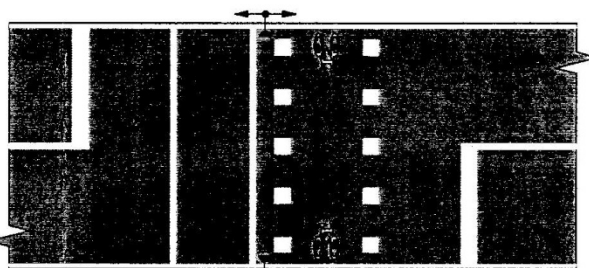
RTM2 - YIELD LINE



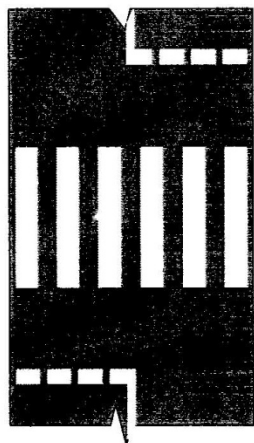
RTM3 - PEDESTRIAN CROSSING LINES



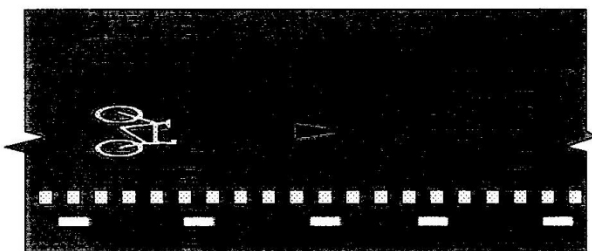
GM2 - PEDESTRIAN GUIDE LINES



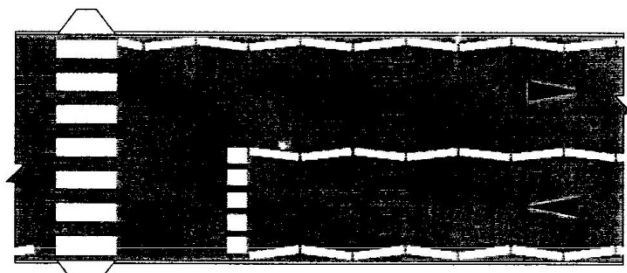
GM5 - BICYCLE GUIDE LINES



RTM4-BLOCK PEDESTRIAN CROSSING MARKINGS



RM9 -Plus Symbol Marking RM17.1
RM9 - EXCLUSIVE USE LANE LINE



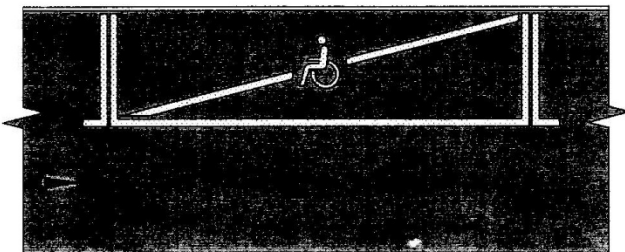
RM11 - ZIG ZAG ZONE LINES



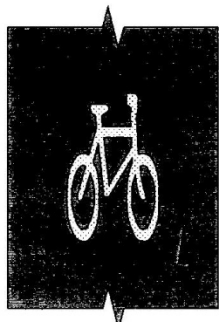
GM6.1-Cycle Facility



GM6.3 Disabled Persons Facility



RM16-DISABLED PERSONS PARKING BAY



RM17.1-Cycle Lane



RM17.3-Disabled Persons Parking Bay



GM7 - WORD MARKINGS
Detail 14.8.2 Guidance Road Markings



Detail 14.8.1 Regulatory Road Markings

Fig 14.8
Applicable Road Markings

14.3 SIGNING APPLICATIONS AT PEDESTRIAN/MOTOR VEHICLE INTERFACES

14.3.1 General

1 The following application situations for the pedestrian/motor vehicle interface are dealt with in this section:

- (a) at road junctions;
- (b) mid-block crossings;
- (c) school patrol crossings;
- (d) urban roadworks sidewalk deviations;
- (e) pedestrian priority areas;
- (f) woonerf areas;
- (g) freeway interface;
- (h) hitch-hikers;
- (i) specific use of the PEDESTRIANS ONLY sign;
- (j) specific use of the NO PEDESTRIANS sign.

14.3.2 Road Junctions

1 As already indicated in Section 14.2.1, it should be noted that many of the signs and markings are directed at drivers and not specifically at pedestrians. These signs and markings, however, should enhance the awareness of pedestrians to potential risks as well as to facilities provided for them.

2 Pedestrian crossings are defined in legislation. For full details of the legal aspects refer to Chapter 3: Regulatory and Warning signs and Markings Applications, in particular Section 3.1.9. Section 14.1.3, Figure 14.1, shows the areas legally defined as pedestrian crossings if no markings or signs are provided, and pedestrians technically have right of way under defined circumstances at these points.

3 Under the following road signing and road marking conditions, at road junction, the driver of a vehicle shall yield the right of way, slowing down or stopping if need be, to so yield to a pedestrian who is crossing that so controlled leg of the crossing, and when the pedestrian is upon that half of the roadway upon which the vehicle is travelling, or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger:

- (a) STOP sign R1 and stop line road marking RTM1 with word marking stop GM7 (see Figure 14.8);
- (b) YIELD sign R2 and YIELD LINE road marking RTM2 with yield ahead marking sign WM5 (see Figure 14.8).

4 Generally at road junctions in rural areas no specific pedestrian road markings, such as the PEDESTRIAN CROSSING LINES RTM3 or GUIDELINES GM2, need be considered, unless specific conditions related to special pedestrian activities apply.

5 In urban areas more specific measures in the way of road signs and markings must be taken to accommodate pedestrians at road junctions.

6 At all signalised junctions the PEDESTRIAN CROSSING LINE marking RTM3, as shown in Detail 14.9.1 of Figure 14.9, shall be used. The application of a PEDESTRIAN CROSSING LINES regulatory marking RTM3 imposes a mandatory requirement that pedestrians shall only cross the roadway

within the crossing, defined by the markings and the edges of the roadway and/or median or other traffic island (if such are provided).

7 Detail 14.9.2 of Figure 14.9 shows other options for marking pedestrian crossing at a signalized junction. The separation of the lines comprising marking RTM3 may be increased to allow for large pedestrian volumes. Another option which is rarely exercised, but which could be considered for sites with poor observance of pedestrians by drivers, is the use of BLOCK PEDESTRIAN CROSSING marking RTM4 (more commonly used in mid-block locations). The mandatory requirements of the RTM4 marking on the pedestrian are as for the PEDESTRIAN CROSSING LINES marking RTM3.

8 Another example of the use of BLOCK PEDESTRIAN CROSSING markings RTM4 at an intersection, but offset in the lanes, separated from each other by a median/pedestrian refuge island is given in Detail 14.9.3.

9 Pedestrians also need to be accommodated at slip roads at major intersections which use channelisation islands to split and direct left-turning traffic. Detail 14.10.2 of Figure 14.10 indicates the recommended practice for various lengths of slip road and various sizes of channelisation island. As standard practice the BLOCK PEDESTRIAN CROSSING marking RTM4 is to be used for the crossing of the slip road rather than the RTM3 marking unless the latter is combined with a traffic signal.

10 The situation at a sign controlled junction or on the uncontrolled legs of a junction in an urban area is variable and the most appropriate road markings, based on the controlling conditions must be applied. Factors which need to be taken into consideration are:

- (a) area in which the junction is located, namely CBD, suburban, industrial, etc;
- (b) class of road;
- (c) pedestrian volumes to be catered for;
- (d) special conditions such as crossings close to schools, major routes to and close to public transport facilities, major shopping centres, etc.

11 The following basic road marking guidelines are recommended for road junctions, other than signalised junctions in urban areas:

- (a) in central business districts (CBD) sign controlled legs of junctions should be provided with PEDESTRIAN CROSSING LINES marking RTM3, in conjunction with the required STOP LINE marking RTM1 or YIELD LINE marking RTM2 (see Detail 14.10.1 in Figure 14.10);
- (b) on uncontrolled legs of a junction in the CBD, generally the higher order road, GUIDE LINE markings GM2 should be considered (see Detail 14.10.2 in Figure 14.10); the purpose of this parallel pair of guidelines is to indicate to pedestrians the preferred point of crossing when a formal pedestrian crossing is not warranted; these GUIDE LINE

markings should line up with any footpath (when GUIDE LINE markings are used in the manner indicated there is a risk, as there is with all forms of pedestrian crossing, whether controlled or uncontrolled, that pedestrians may infer a false sense of security from the marking - it should therefore be understood that the principle employed in the use of such markings is one of guidance only; this guidance is directed mainly at pedestrians but is also of value in warning drivers without resorting to marking RTM3, which also carries a risk, at this type of junction, of being misinterpreted by drivers as a STOP condition).

- (c) in suburban areas where Class B2 and Class C1 roads intersect with a higher order road and are sign controlled, and where pedestrians are a major factor, a PEDESTRIAN CROSSING LINE marking RTM3 should be considered on the controlled legs of the junction; for lower order road junctions generally no specific consideration need be given to pedestrians; special circumstances, however, must be taken into consideration when analysing the pedestrian needs at any junction;
 - (d) in industrial areas the main pedestrian movement between the workplace and the main passenger transport nodes in the area should be supported; where the situation thus warrants it, all the sign controlled legs of the junction should have a PEDESTRIAN CROSSING LINES marking RTM3 in conjunction with the STOP LINE marking RTM1 or YIELD LINE marking RTM2; the uncontrolled legs of the junction may be treated as in the CBD (refer to paragraph 14.3.2.5(b));
 - (e) similar practices should be considered when catering for larger than usual pedestrian volumes which may be encountered at junctions in suburban areas near schools, public transport nodes and shopping centres;
 - (f) in suburban areas and on lower order roads (low traffic volume and low speed roads) use may be made of GUIDE LINE markings GM2 in conjunction with the STOP LINE marking RTM1 or YIELD LINE marking RTM2 as indicated in Figure 14.11; the BLOCK PEDESTRIAN CROSSING marking RTM4 may also be used as shown in Detail 14.11.2 in Figure 14.11; in the latter example the YIELD TO PEDESTRIAN signs R2.1, the YIELD LINE marking RTM2 and the PEDESTRIAN CROSSING warning sign must be included in the system; in practice it is generally not recommended that pedestrian crossing controlled by YIELD TO PEDESTRIANS signs R2.1 be provided on the priority approach to a junction controlled on the intersecting approaches by STOP signs R1 or YIELD signs R2; this is because of the risk of confusion in the minds of motorists, on any approach, as to who actually has priority; such markings are, however, used and Detail 14.11.2 gives guidance on preferred practice.
- 12 The situation for pedestrians at freeway on-ramp and off-ramp intersections with the crossing road should be treated like any other junction in an urban area (see Details 14.12.1 and 14.12.2 in Figure 14.12. Detail 14.12.3 provides an alternative to the treatment when there is channelisation of traffic and where there are large pedestrian volumes.

14.3.3 Mid-block Crossings

- 1 Pedestrian crossings of roads may, under certain circumstances, be necessary or desirable at mid-block locations. The term mid-block pedestrian crossing refers to a variety of pedestrian facilities, provided to assist the pedestrian to cross at some location between junctions, and normally where these junctions are relatively far apart.
- 2 Generally the warrants for installing a formal mid-block pedestrian crossing are based on pedestrian movement desire lines and volumes, and the vehicular volumes on the road needing to be crossed. The need for such crossings shall, however, be subject to a comprehensive traffic engineering analysis. Refer to Volume 1, Chapter 6 and to the *Pedestrian and Bicycle Facility Guideline* or *NMT Guideline* for details of warrants.
- 3 Formal mid-block pedestrian crossings may be considered under the following circumstances, but all must be subject to engineering analysis:
 - (a) where road junctions are relatively far apart;
 - (b) where a road divides a large and integrated community;
 - (c) adjacent to community centres and homes for the elderly, infirm or blind;
 - (d) adjacent to hospitals and clinics;
 - (e) adjacent to major public transport termini;
 - (f) in and adjacent to busy shopping areas;
 - (g) where pedestrian malls are intersected by streets (interrupted malls);
 - (h) outside school entrances;
 - (i) in industrial areas.
- 4 There are a number of possible treatments for signing and marking a mid-block pedestrian crossing:
 - (a) the basic treatment for a sign controlled crossing is given in Detail 14.13.1 in Figure 14.13; the BLOCK PEDESTRIAN CROSSING marking RTM4 demarcates the crossing point; YIELD LINE markings RTM2 are required across all approach lanes to the crossing and YIELD markings WM5 may be provided in all such lanes in advance of the YIELD LINE marking; the following signs are required:
 - (i) YIELD TO PEDESTRIANS sign R2.1 placed at the YIELD LINE marking;
 - (ii) PEDESTRIAN CROSSING signs W306 placed between 90 m and 180 m in advance of the crossing;
 - (b) the requirements for a signalised mid-block pedestrian crossing are given in Detail 14.13.2 of Figure 14.13; the PEDESTRIAN CROSSING LINES marking RTM3 demarcates the crossing point; STOP LINE markings RTM1 are required across all approach lanes to the crossing; PEDESTRIAN CROSSING signs W306 are required and should be placed 90 m to 180 m in advance of the crossing; if the signalization is an upgrade in control level of a crossing already marked with BLOCK PEDESTRIAN CROSSING marking RTM4 it is not

recommended that any attempt be made to remove the large area of marking RTM4; a combination of markings RTM3 and RTM4, should rather be considered as indicated in Detail 14.13.3; a further example of a mid-block crossing is given in Detail 14.13.4 of Figure 14.13 which indicates a typical design for a continuous pedestrian mall connection across an intervening street.

- 5 ZIG-ZAG lines RM11 are regulatory markings which may be used on the approach to a pedestrian crossing to highlight, to a driver, the fact that his vehicle is entering the immediate vicinity of the crossing. It is recommended that RM11 markings be used in all situations which are considered potentially dangerous for pedestrians, and particularly where there are pedestrian visibility problems. The following aspects should be noted:

- (a) the total area on both approaches contained within the zig-zag marking shall be known as the **zig-zag zone**;
- (b) RM11 markings may be used on the approaches to a pedestrian crossing, irrespective of the level of control in use at the crossing;
- (c) RM11 markings impose a mandatory requirement that drivers of vehicles shall not bring their vehicles to a stop, within the **zig-zag zone** marked by such lines, except to yield right-of-way to pedestrians on the crossing, or to stop behind a vehicle which itself has stopped for a crossing pedestrian;
- (d) vehicles shall not change lanes within the zig-zag zone i.e. drivers shall not cross such markings;
- (e) RM11 markings impose a mandatory requirement that pedestrians shall not cross the roadway within a zig-zag zone except at a crossing demarcated by a PEDESTRIAN CROSSING LINES marking RTM3 or a BLOCK PEDESTRIAN CROSSING marking RTM4.

The various applications of the ZIG-ZAG ZONE LINES marking RM11 are illustrated in Figure 14.14 which indicates the fundamental principles and in Figure 14.15 which indicates details more of specific applications.

- 6 ZIG-ZAG ZONE LINE marking RM11 shall replace LEFT EDGE LINE marking RM4.1, LANE LINE marking GM1, and DIVIDING LINE marking WM3, or NO OVERTAKING LINE markings RM1 as appropriate, on both approaches to a non-signal controlled mid-block pedestrian crossing, provided that for reasons of safety, road curve delineation etc, a NON OVERTAKING or NO CROSSING LINE marking may be retained in addition to marking RM11, as indicated in Detail 14.15.4 of Figure 14.15. ZIG-ZAG ZONE LINES should extend 15m to 30 m back from the STOP LINE marking RTM1 or the YIELD LINE marking RTM2 on each approach.
- 7 Parking bays should not normally be allowed within 30 m of a non-signalised mid-block pedestrian crossing. They may, however, be provided within 30 m of the crossing if they are marked on an area that is fully recessed to the left of the normal edge of roadway. If parking bays are provided in this manner the ZIG-ZAG ZONE LINE marking RM11 shall be retained between the travelled lane and the parking bays as shown in Detail

14.15.6 of Figure 14.15. Ideally the closest recessed parking bay on the approach to the crossing should be a minimum of 9 m from the YIELD LINE RTM2 or STOP LINE RTM1, as appropriate.

- 8 It is often also desirable to make provision for a pedestrian safety refuge in the middle of a busy roadway on which total control of pedestrians is just not practical, but where numbers of pedestrians are sufficiently high to warrant such a safety measure. This treatment could be particularly appropriate on a busy industrial road or in rural areas in the vicinity of schools, stores or farm buildings. Application of such a treatment is also particularly recommended when a crossing is known to be used by significant numbers of elderly or handicapped people or by children. Some examples of refuge islands, correct practice and details of adequate marking and signing are given in Figure 14.16 and Figure 14.17. The following details are covered:
 - (a) Detail 14.16.1 - Layout of a raised refuge island with preceding painted island;
 - (b) Detail 14.16.2 - Required road markings for a raised refuge island with preceding painted island;
 - (c) Detail 14.16.3 - Correct practice for the implementation of a pedestrian refuge island at an unsignalised junction;
 - (d) Detail 14.17.1 - Examples of a painted median refuge island;
 - (e) Detail 14.17.2 - Small painted refuge island in a one-way traffic environment.

14.3.4 Scholar Patrol Crossings

- 1 There are a number of options for pedestrian crossings operated by Scholar Patrols and these are illustrated in Figure 14.18. The two basic options are:
 - (a) permanent sign controlled crossing;
 - (b) part-time operation.
- 2 In the one case, as illustrated in Detail 14.18.1, a Scholar Patrol control is superimposed upon a full time crossing normally controlled by signs R2.1 and marking RTM4. Since the Scholar Patrol uses STOP signs R1, these signs over-ride the R2.1 signs whilst the Scholar Patrol is in operation. The real effect of this is that drivers who have stopped (which includes the action of yielding), can no longer choose when to proceed, they are compelled to wait until the Scholar Patrol operator releases them by removing the STOP signs R1.
- 3 Some school and road authorities, however, prefer that the crossing operated by the Scholar Patrol only becomes operationally functional when the Scholar Patrol is present. This approach stems largely from the belief that children should not be encouraged to use an unattended crossing (outside the hours of operation of the Scholar Patrol). This is due to unreliable observance by drivers of such a crossing, resulting in an unacceptable level of safety for the children. To cater for this, the second option is illustrated in Detail 14.18.2 where the permanent markings and signs are limited to GUIDE LINE markings GM3 and central sections of NO OVERTAKING LINE marking RM1 on the approaches. What these markings serve to do is to identify for the Scholar Patrol and the children, the location of the crossing. During operation the Scholar Patrol is identified by temporary SCHOLAR PATROL warning signs

TW305 in advance of the crossing, and drivers are controlled by the STOP signs R1 used by the members of the Scholar Patrol. Although the markings do not represent a controlled crossing when the Scholar Patrol is not present, it is recommended that permanent CHILDREN warning signs W308, or PEDESTRIAN warning signs W307, be provided on each approach.

- 4 ZIG-ZAG ZONE LINE markings RM11 may also be used on the approaches to a crossing at which a Scholar Patrol operates. This is illustrated in Detail 14.18.3.

14.3.5 Urban Roadworks Sidewalk Deviations

- 1 The temporary signing of urban roadworks situations is commonly influenced by the following factors, either separately, or in combination:
 - (a) limited space to accommodate signs and traffic;
 - (b) high traffic volumes (even moderate urban traffic flows are high by rural standards);
 - (c) the presence of pedestrians;
 - (d) the need to maintain access to many properties.
- 2 Roadworks situations in urban areas vary widely in their signing requirements and operational characteristics including, as they do, such environments as:
 - (a) quiet residential streets;
 - (b) high capacity arterial streets;
 - (c) congested central business districts.
- 3 Factors which commonly mitigate against the effectiveness of temporary road signs in urban areas, and which must be recognised and taken into account, include:
 - (a) street lighting - which may not, as might be expected, improve signing at night, due to stray reflections and reduced luminance contrast so that signs need to be positioned with care;
 - (b) obscuration of signs by trees, street furniture and by large vehicles;
 - (c) limited sight distance.
- 4 It is an important aspect of the safety arrangements of urban (and other) roadworks sites that specific accommodation shall be made for pedestrians. It is too common an occurrence that pedestrians are left to their own devices and expected to just disappear, or to walk within reduced spaces provided for vehicles, totally without protection. Given the numbers of pedestrians on our roads at all times of day and night, it is quite unreasonable that, if the exclusion of pedestrians should be required, or advisable, adequate provisions are not made to redirect the pedestrians to an alternative route. **Any authority or contractor not making adequate provision for pedestrians could, in the event of an accident, find themselves facing serious litigation.**
- 5 Figure 14.19 shows a typical arrangement for the accommodation of pedestrians due to the temporary, and localised, excavation of the sidewalk. Such a situation may be an isolated excavation, with no other associated roadworks, such as a local repair to a water main, sewer, electrical cable or other underground service, or similar excavations may be required at one or more places within a larger site. In the latter

case the signs provided within the ADVANCE WARNING AREA may be modified according to specific site requirements. It should be noted that the table of signs opposite is a typical listing only, and is not intended to be a definitive inventory.

- 6 Figure 14.19 shows the option to use modular PEDESTRIAN DIRECTION signs (see Volume 1, Chapter 4). The manufacture of temporary arrow signs TGP1, TGP2, TGP3 and TGP4 is, due to the square shape, identical. It is recommended that contractors order left- and right-handed versions of sign TGP9. These signs should only be used when the revised pathway available to pedestrians may not be obvious to them. Night-time conditions should be borne in mind when assessing this need. These pedestrian direction sign are particularly important to emphasise to pedestrians the need to NOT take a route within the roadway, either with, or in the face of, on-coming traffic. If a normally available path is completely cut-off to pedestrians, this should be indicated by means of NO PEDESTRIANS sign TR218 (or NO CYCLISTS OR PEDESTRIANS sign TR220).
- 7 The figure shows the use of TEMPORARY BARRICADE signs TW411. These may be replaced by a local authority if it has a custom made device. However, these need to have retroreflective properties and should not simply be painted. Any traffic cones shall be provided with retroreflective sleeves if left in place during times of poor visibility.

14.3.6 Pedestrian Priority Areas

- 1 There are areas, such as pedestrian malls, where pedestrians have priority but where, for various reasons, certain vehicles may be allowed access. The PEDESTRIAN PRIORITY sign R5 should be displayed at all possible vehicular points of entry to a pedestrian precinct where full access control is not exercised.
- 2 The PEDESTRIAN PRIORITY sign R5 is used to indicate to drivers of vehicles that only a vehicle for the purpose of delivering or loading goods, a vehicle used in connection with maintenance, or an emergency vehicle, shall be permitted in an area set aside as a pedestrian precinct marked by such signs. Sign R5 may be used in conjunction with an appropriate RESERVATION sign if access to the area is required to be given to a specific class of vehicle such as those used by hotel residents or post office officials.
- 3 All vehicles allowed into the pedestrian precinct area shall yield right-of-way to all pedestrians who are in, or who are crossing or about to cross their path, observe a maximum speed of 15 km/h, and if they are delivering or loading goods, shall only do so in places marked for such purpose in such area by a road traffic sign.
- 4 In some cases traffic regulations will prohibit access to all vehicles and/or motor vehicles at all times. In such cases the use of sign R5 is not required, however, depending on circumstances it may be necessary to permit access to emergency or maintenance vehicles. Such provision is best made by having movable or demountable barriers, of an aesthetic design, with provision for access by such vehicles being covered by by-law rather than signs.
- 5 The design of pedestrian precincts which permit vehicular access should ensure the points of entry or exit of vehicles are clearly identifiable to pedestrians within the precinct.

(continued on page 14.3.17)

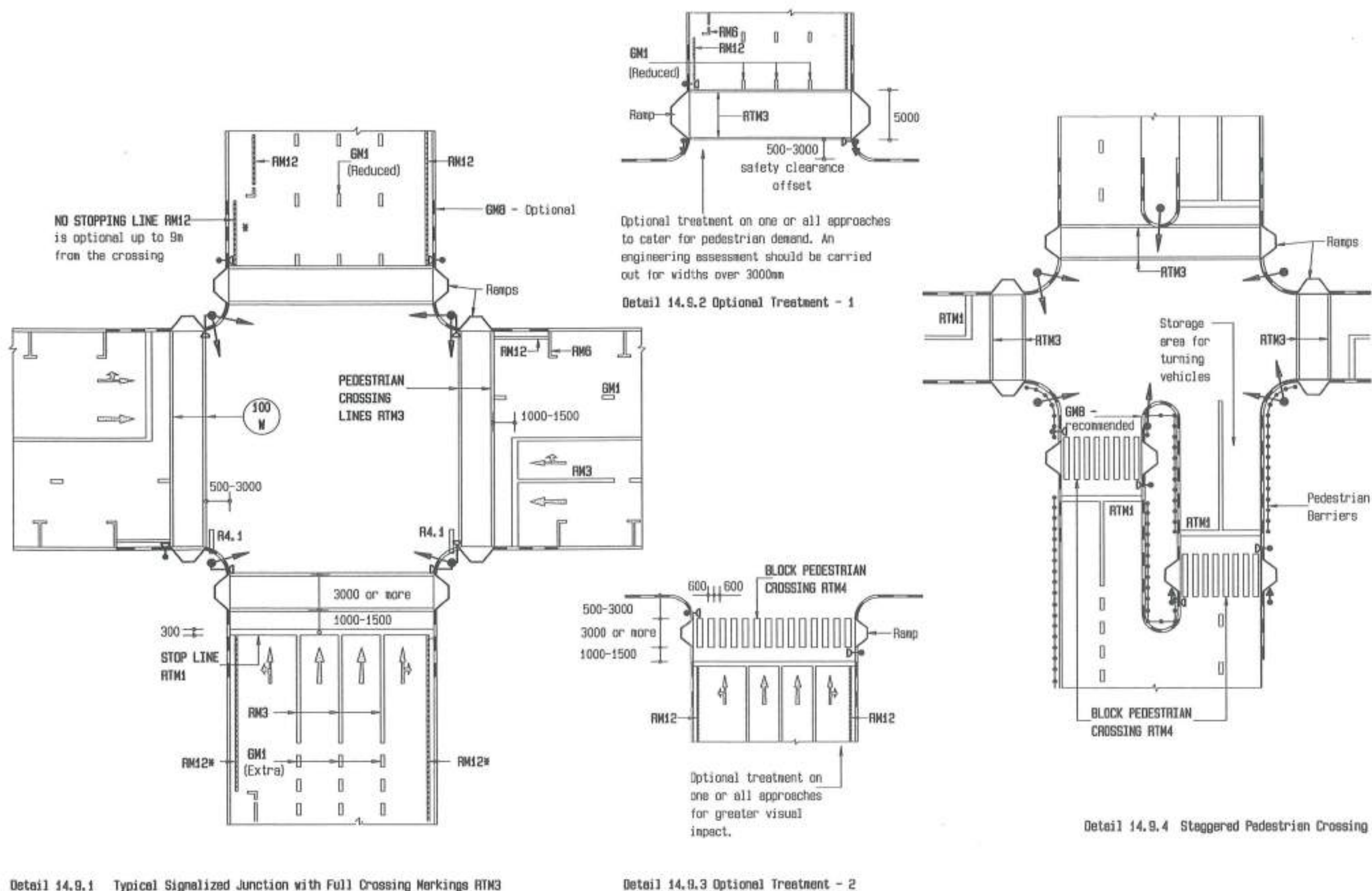


Fig 14.9
Pedestrian Crossings at Junctions
(Urban Areas) - 1

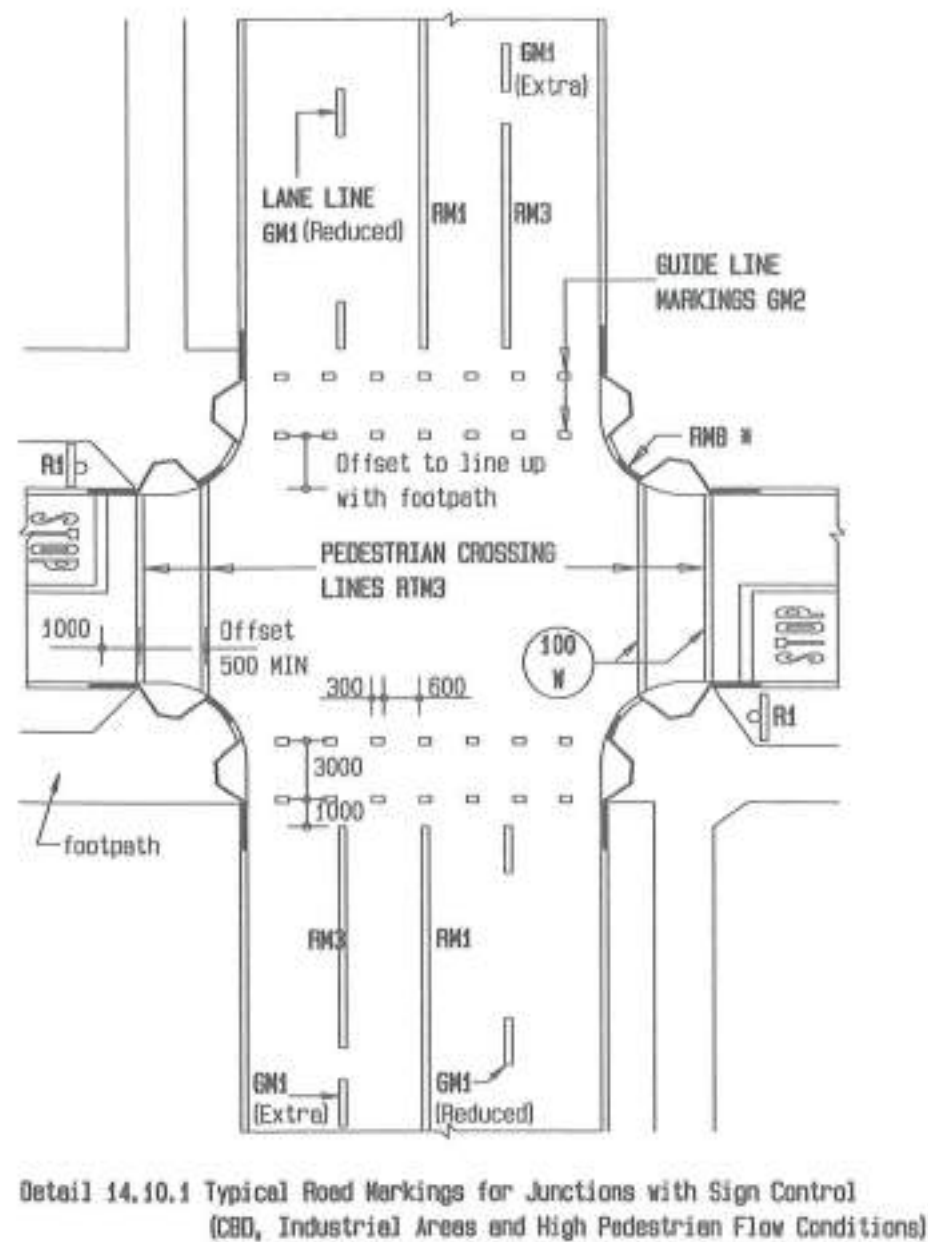
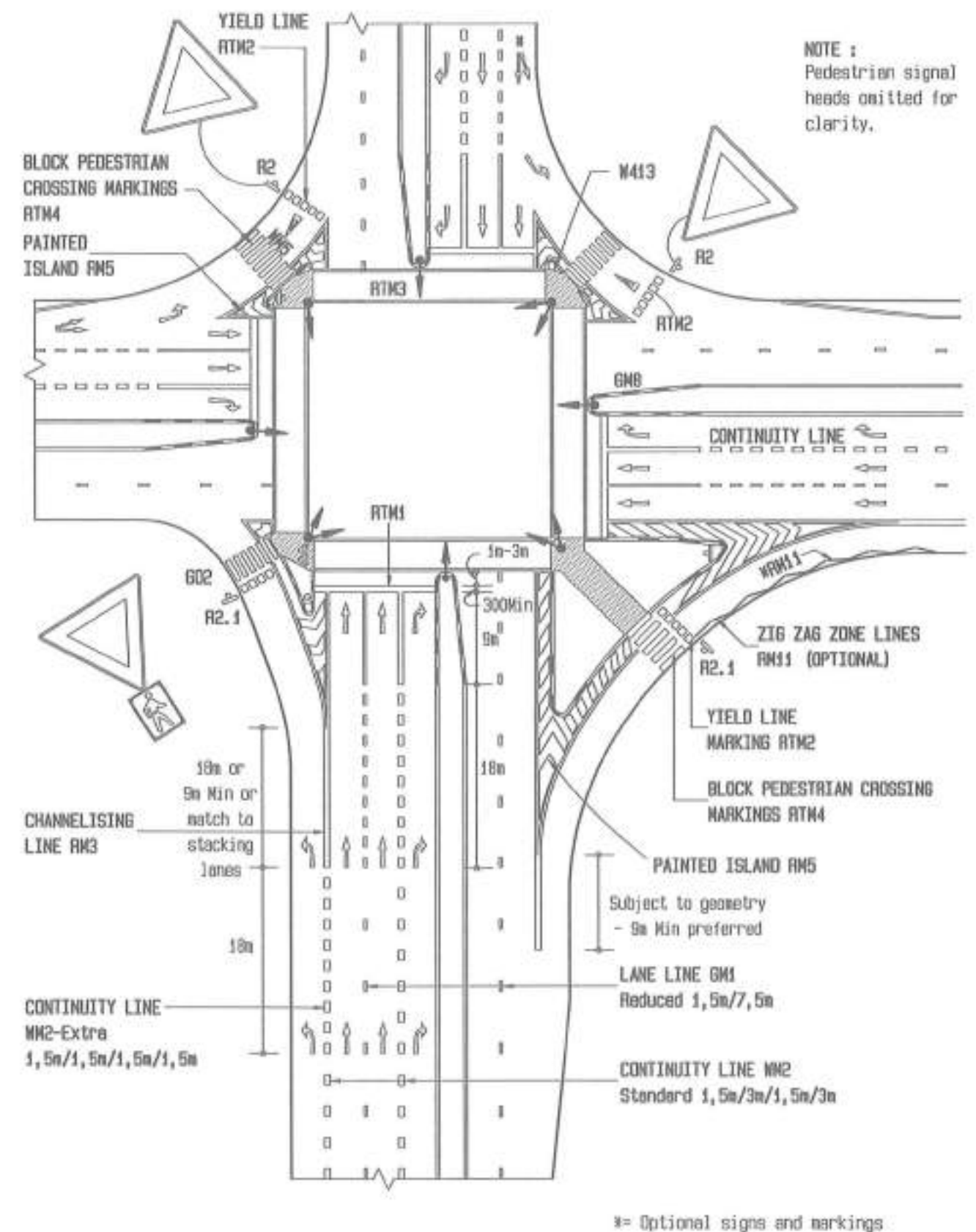
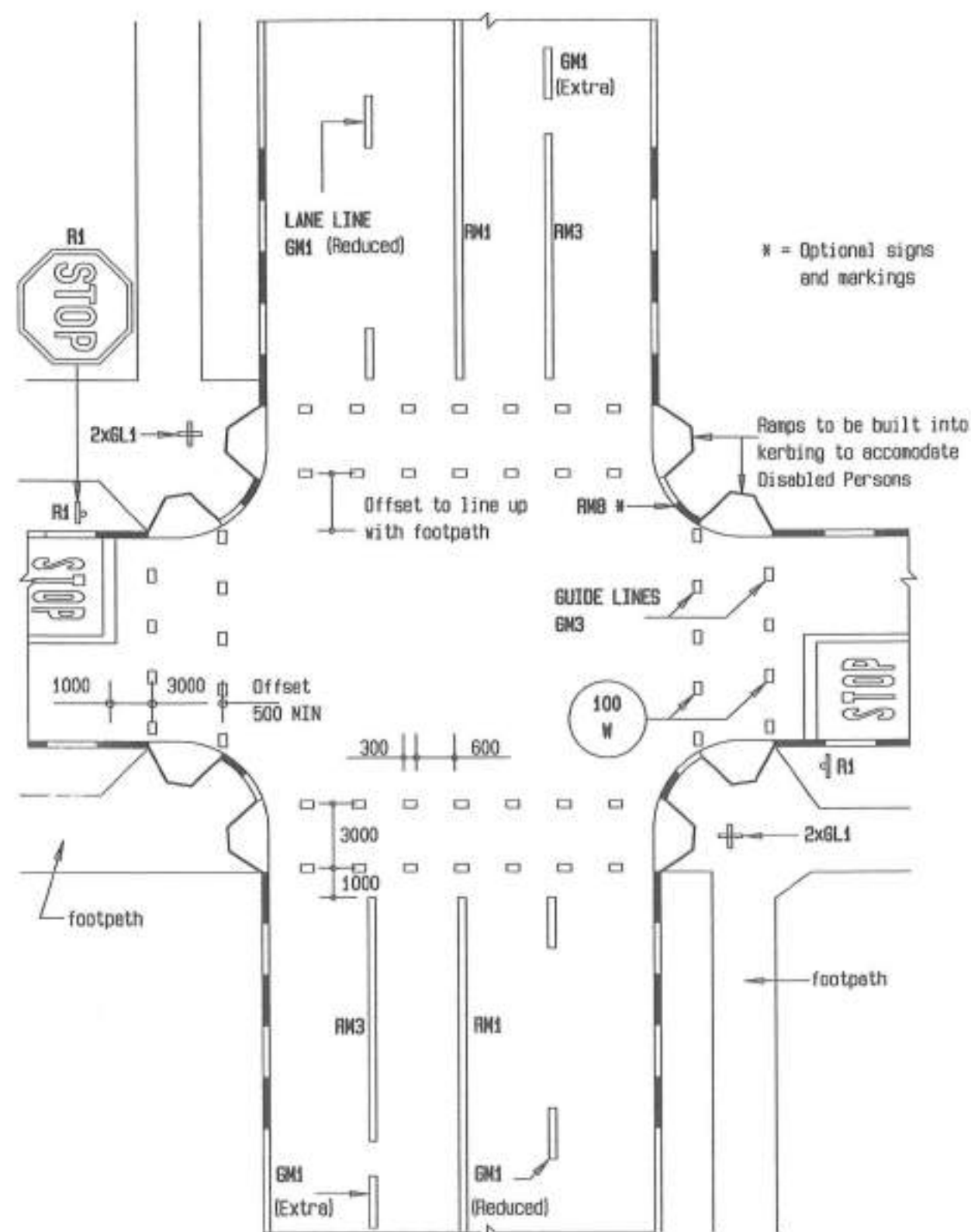


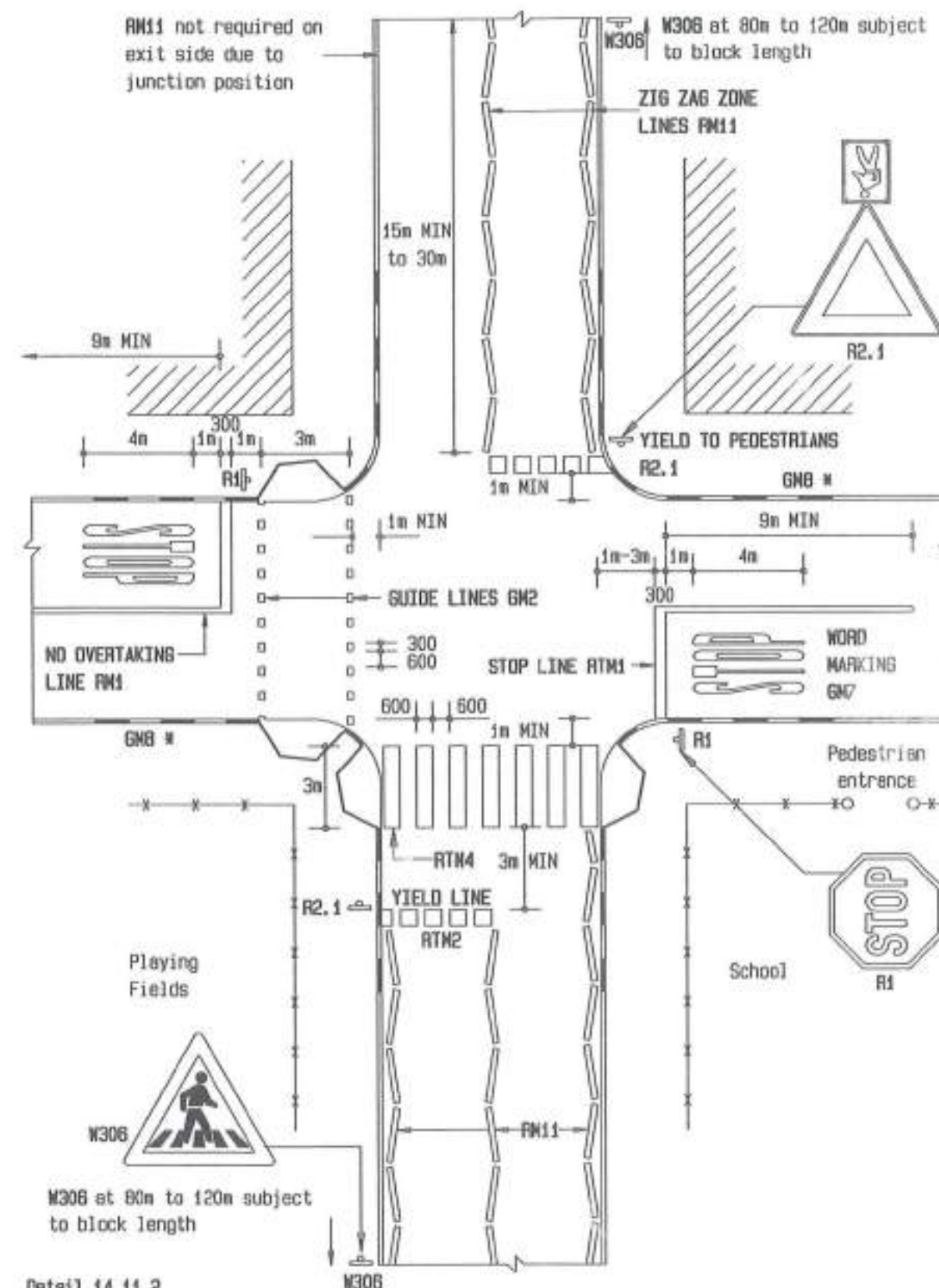
Fig 14.10
Pedestrian Crossings at Junctions
(Urban Areas) - 2



Detail 14.10.2 Pedestrian Crossings at Slip Road at Major Junctions

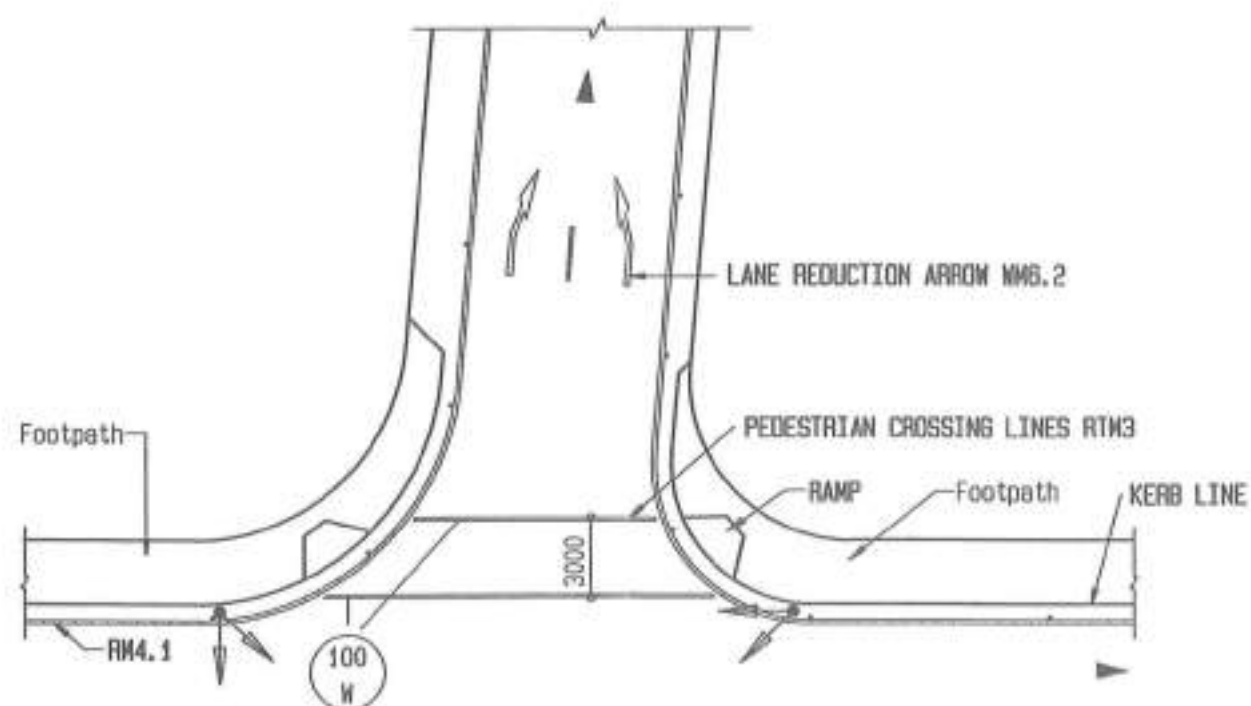


Detail 14.11.1
Guidelines Advising Pedestrians Where to Cross
At an Un-signalized Junction (Low Order Roads)

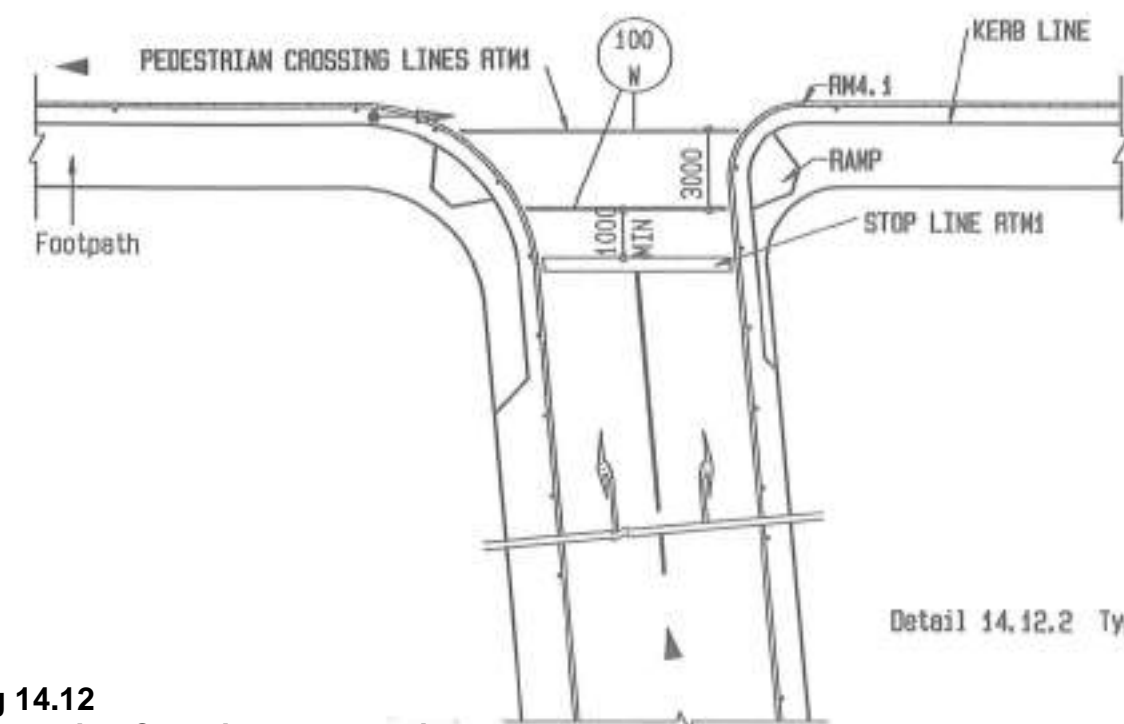


Detail 14.11.2
Compromise Application for School Crossing
at Junction

Fig 14.11
Pedestrian Crossings at Junctions
(Urban Areas) – 3: Examples of
Variations



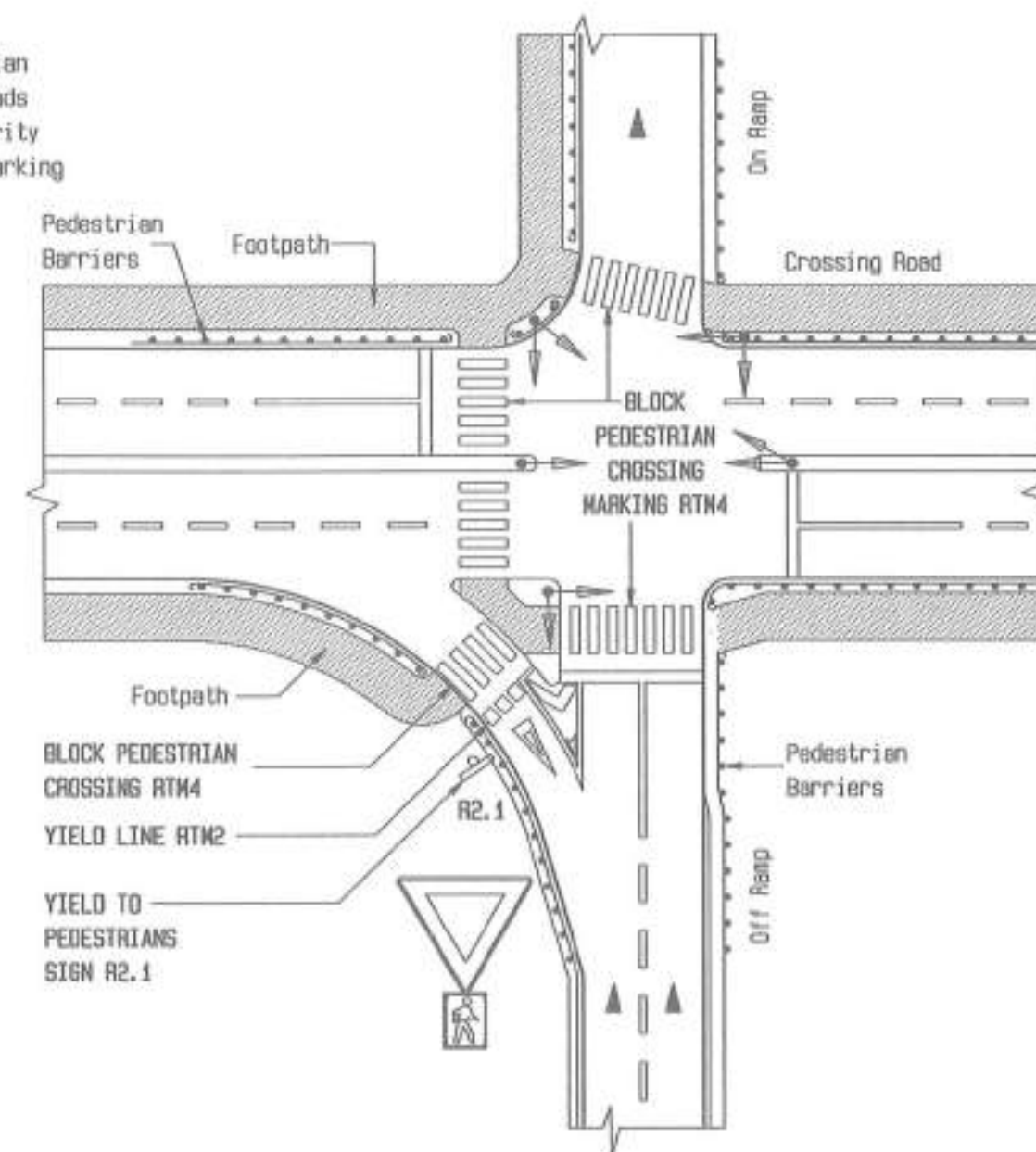
Detail 14.12.1 Typical On - Ramp Terminal



Detail 14.12.2 Typical Off - Ramp Terminal

NOTE :

1. Ramps and pedestrian traffic signal heads not shown for clarity
2. Use of KERBLINE marking GMB is optional



Detail 14.12.3 Alternative Treatment with High Pedestrian Volumes

Fig 14.12
Pedestrian Crossings at Junctions
(Urban Areas) – 4: Freeway
Interchange Ramp Terminals

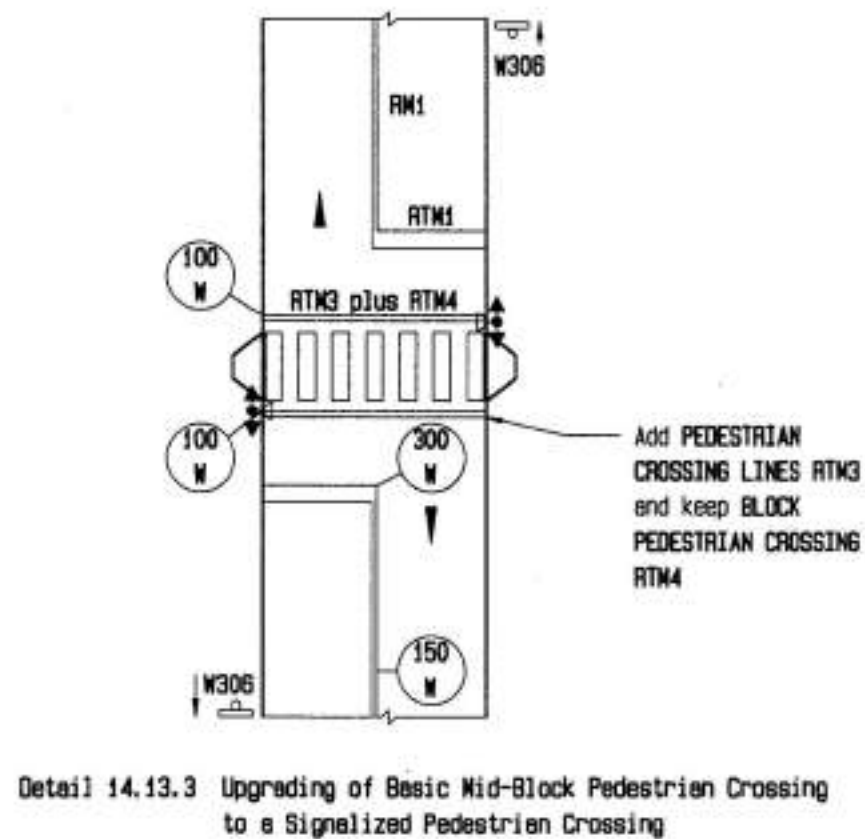
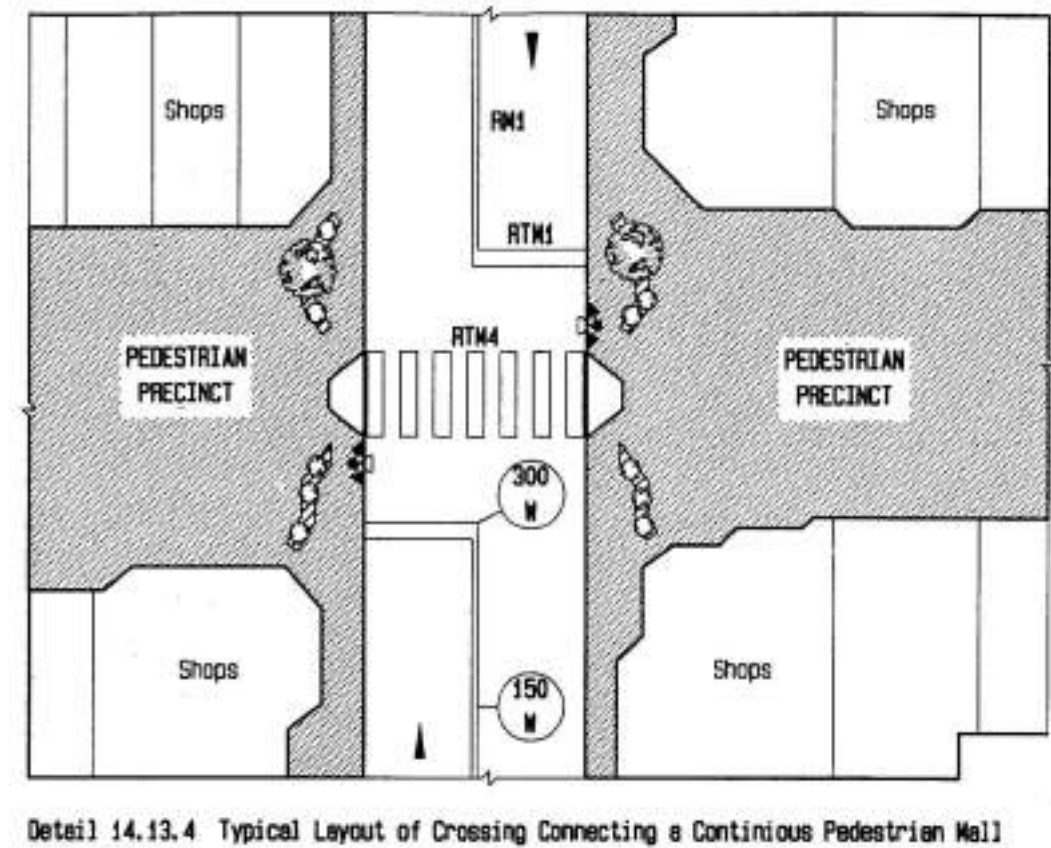
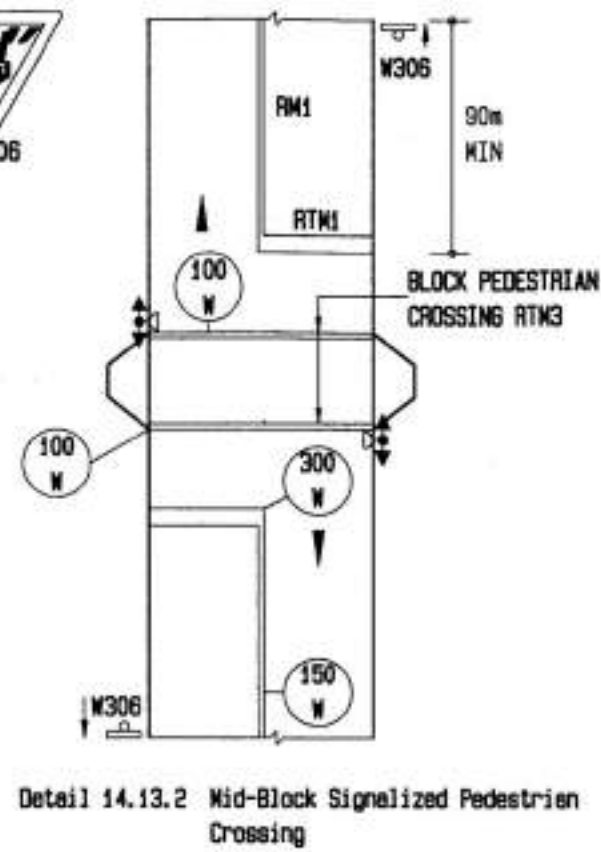
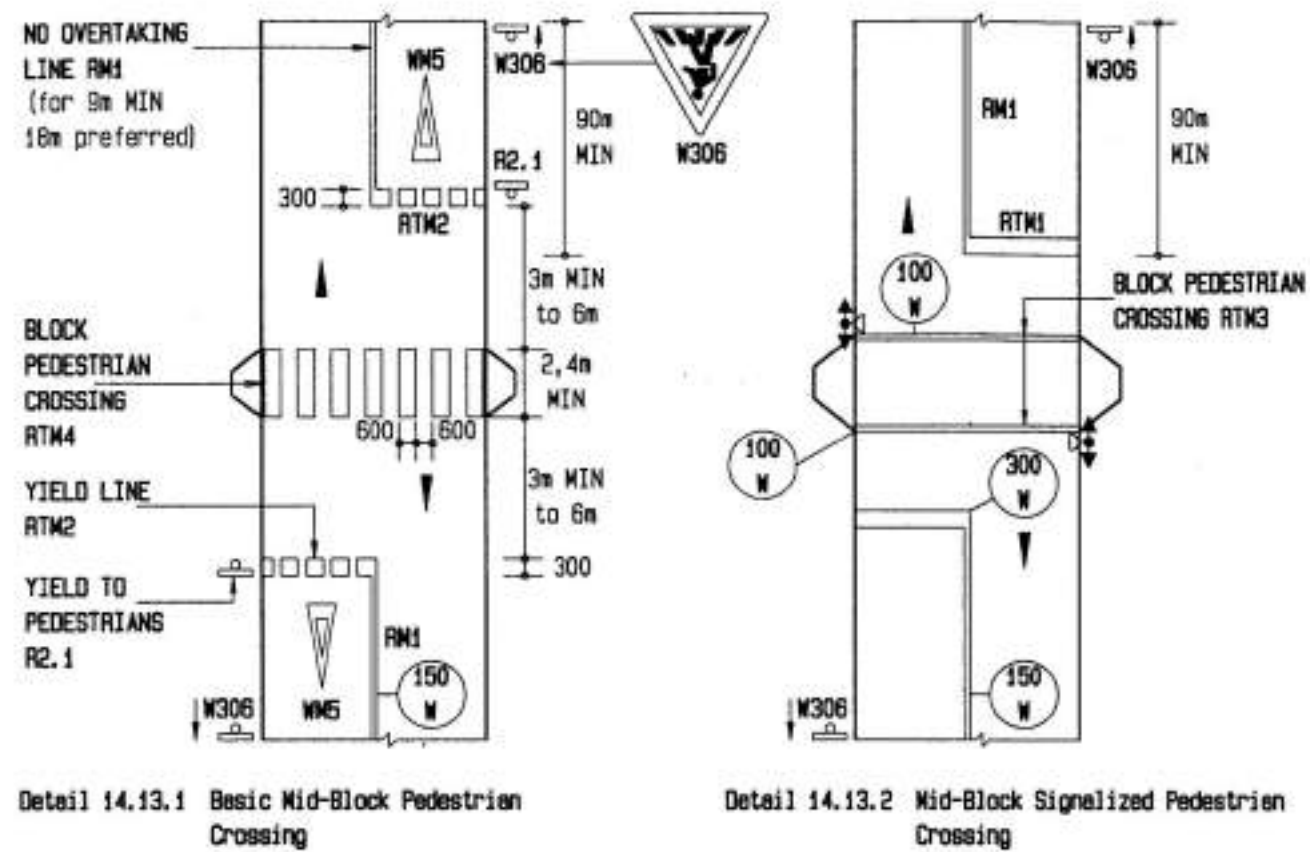


Fig 14.13
Mid-Block Pedestrian Crossings - 1

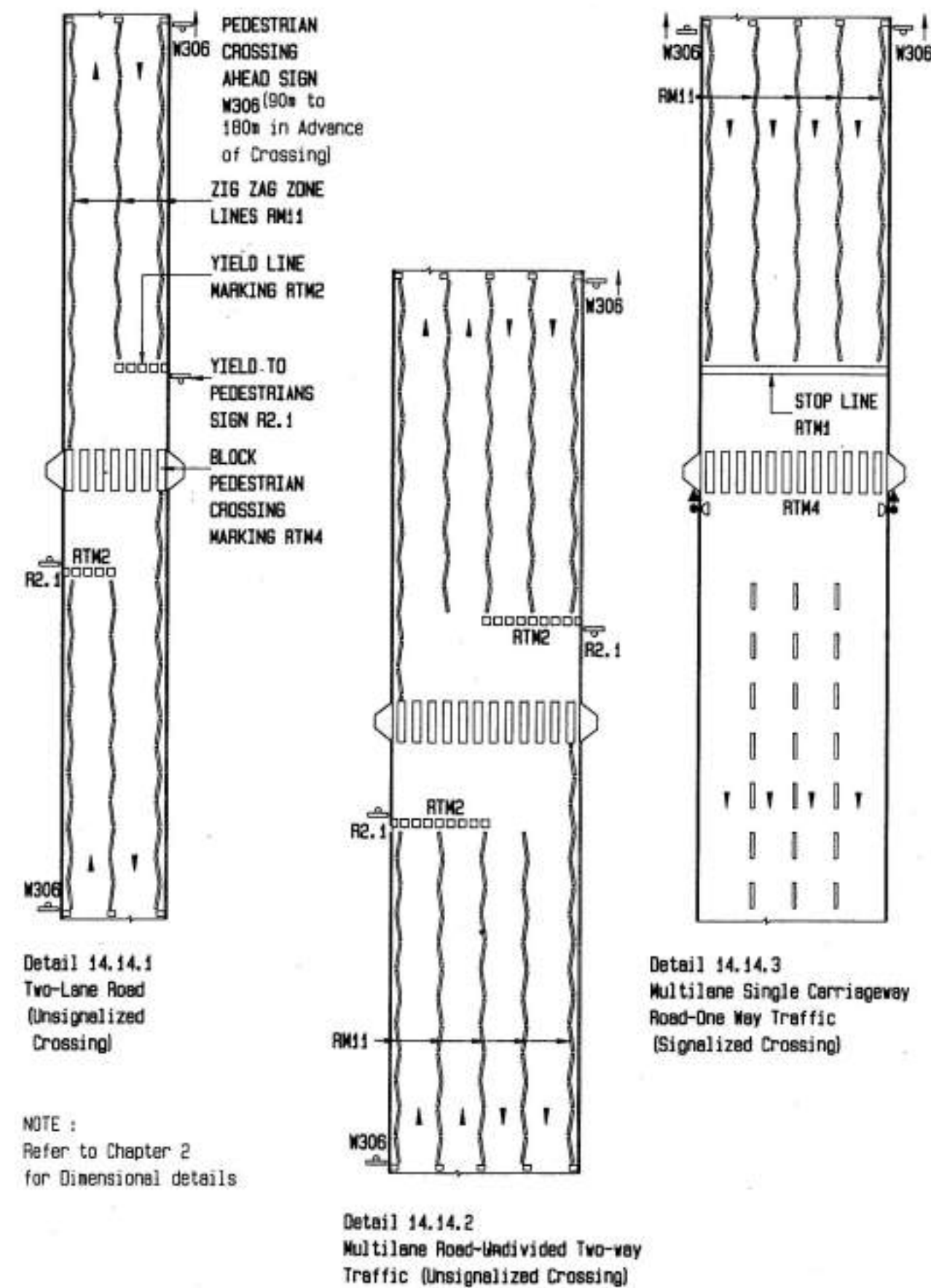
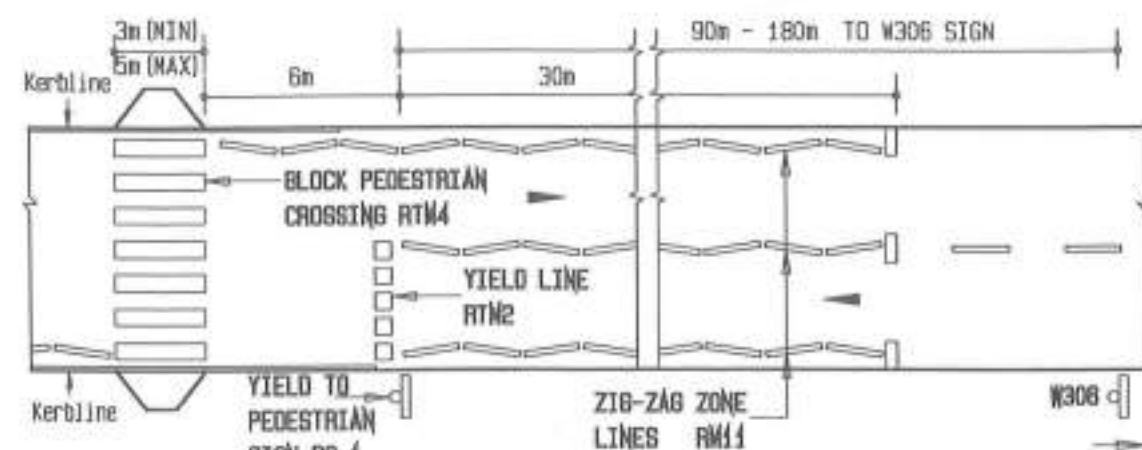
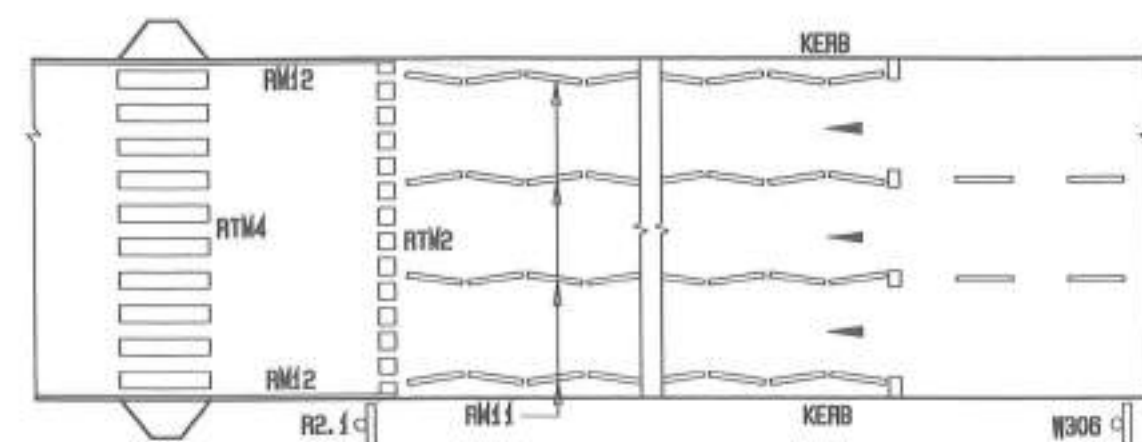


Fig 14.14

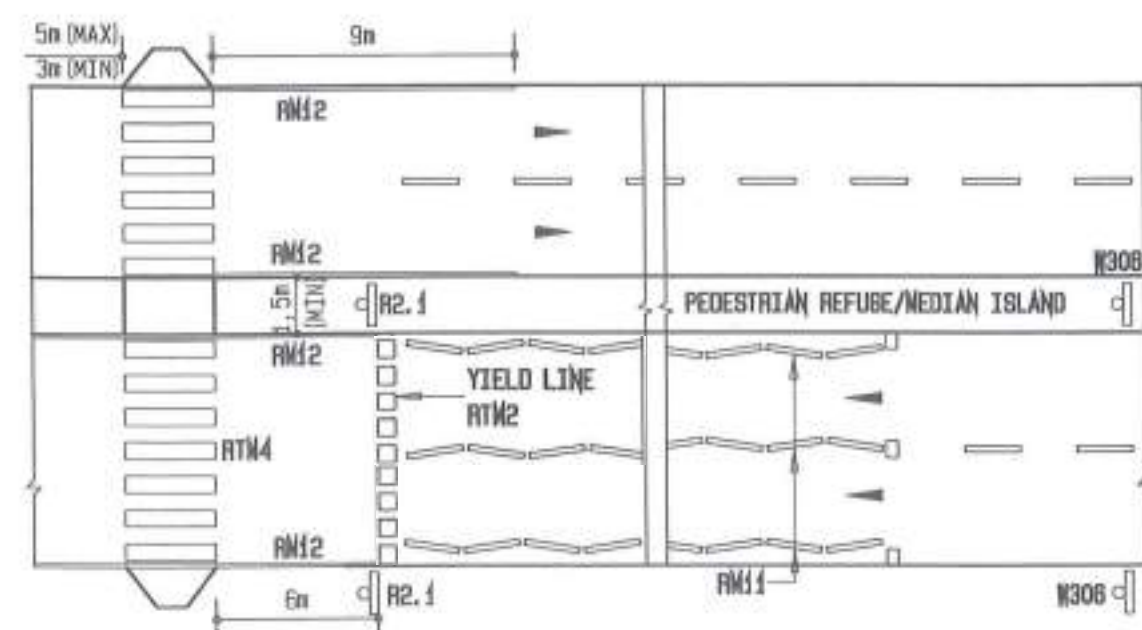
Mid-Block Pedestrian Crossings – 2:
Fundamental Principles of ZIG-ZAG ZONE Marking RM11



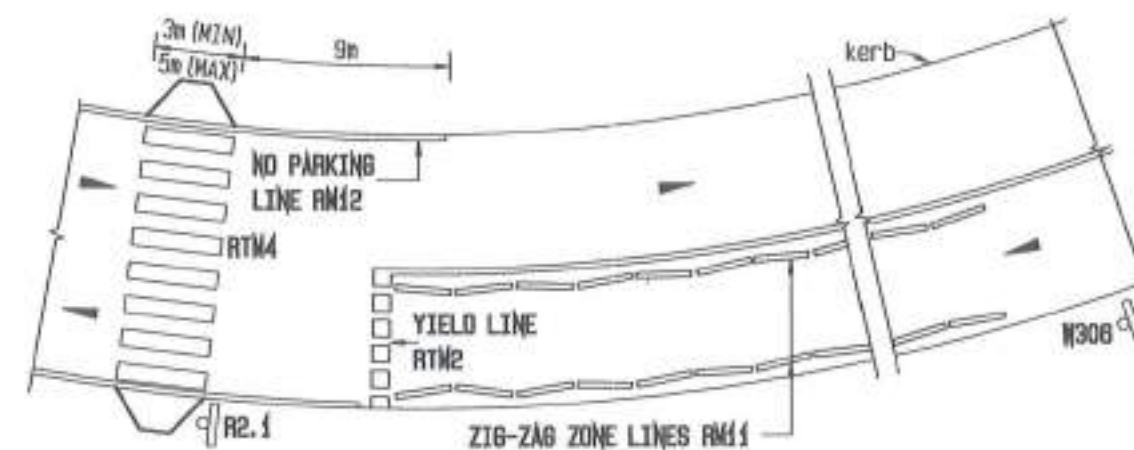
Detail 14.15.1 Two-Lane Road with Unsignalised Crossing (No RM12 Markings)



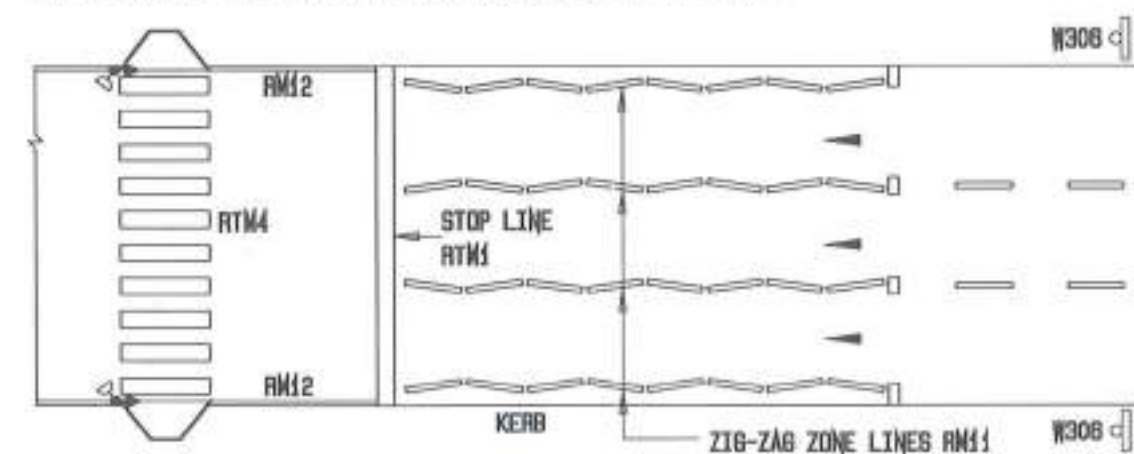
Detail 14.15.2 Multilane One-way Traffic Road with Unsignalised Crossing



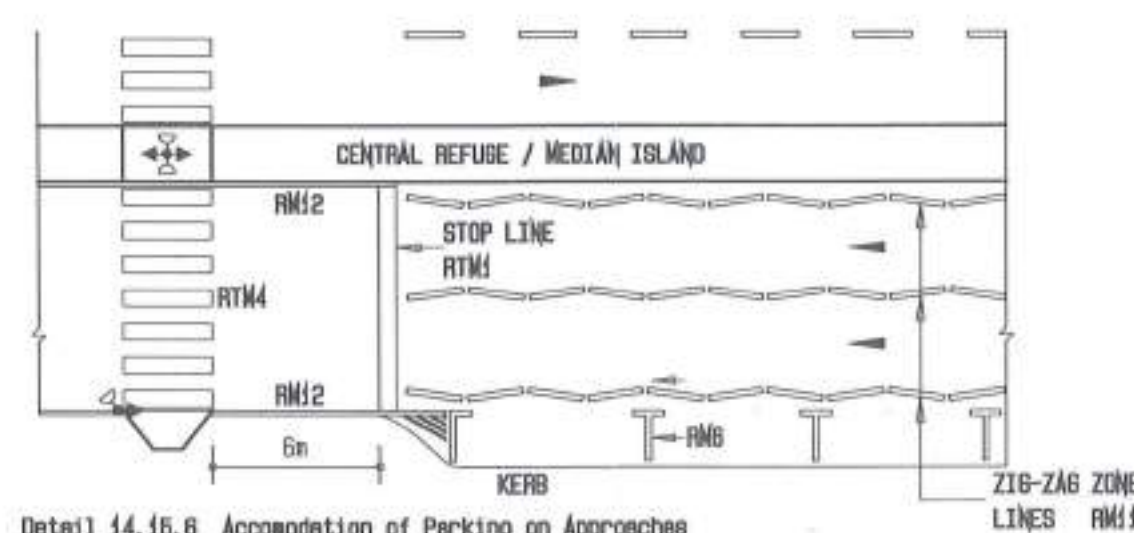
Detail 14.15.3 Multilane Dual Carriageway Road with Unsignalised Crossing



Detail 14.15.4 Two-Lane Road with No-Passing Line Retained



Detail 14.15.5 Multilane One-way Traffic Road with Signalized Pedestrian Crossing



Detail 14.15.6 Accommodation of Parking on Approaches to Signalized Pedestrian Crossing

Fig 14.15
Mid-Block Pedestrian Crossings – 3:
ZIG-ZAG ZONE Marking Applications

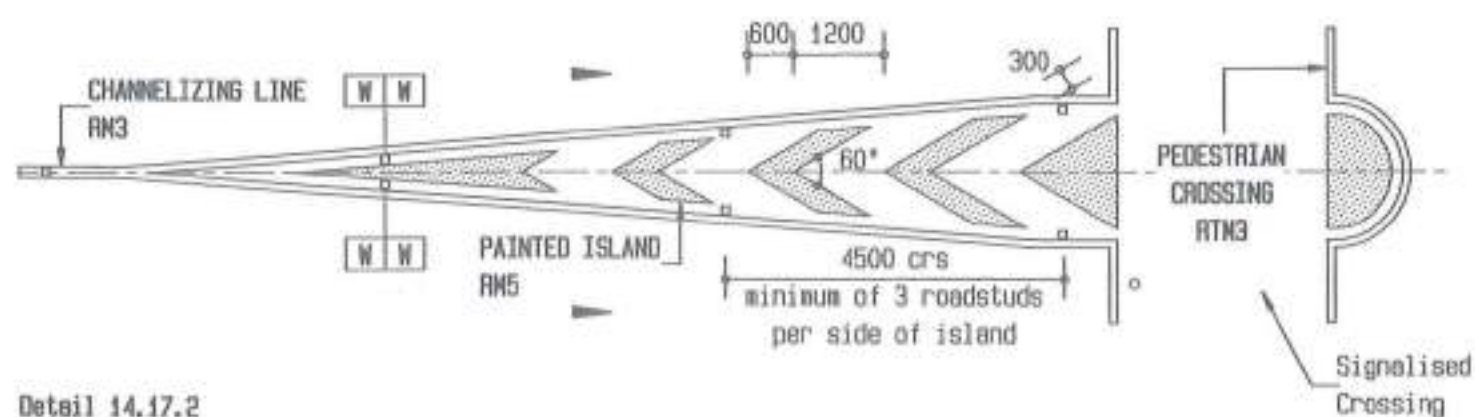
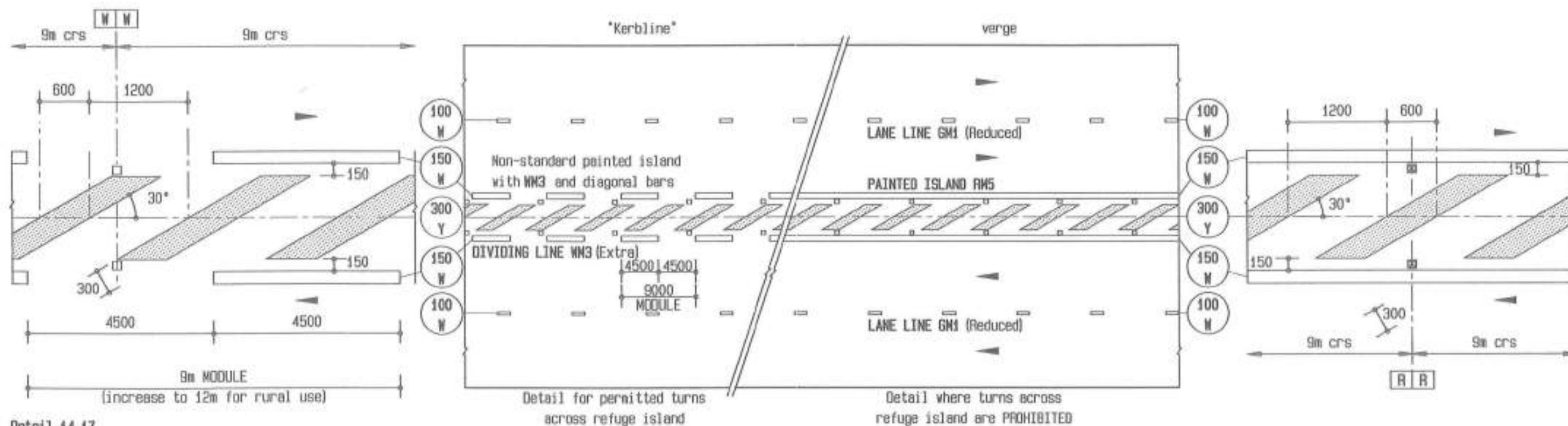
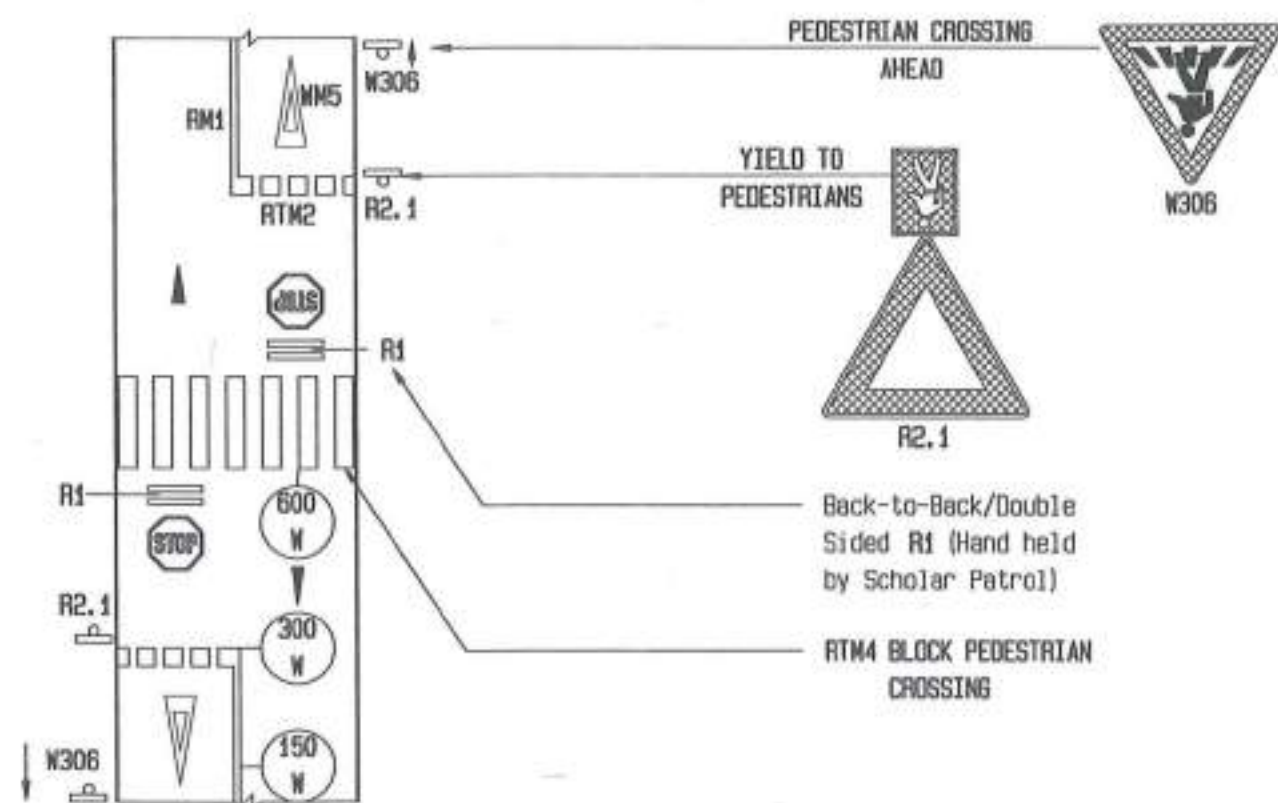
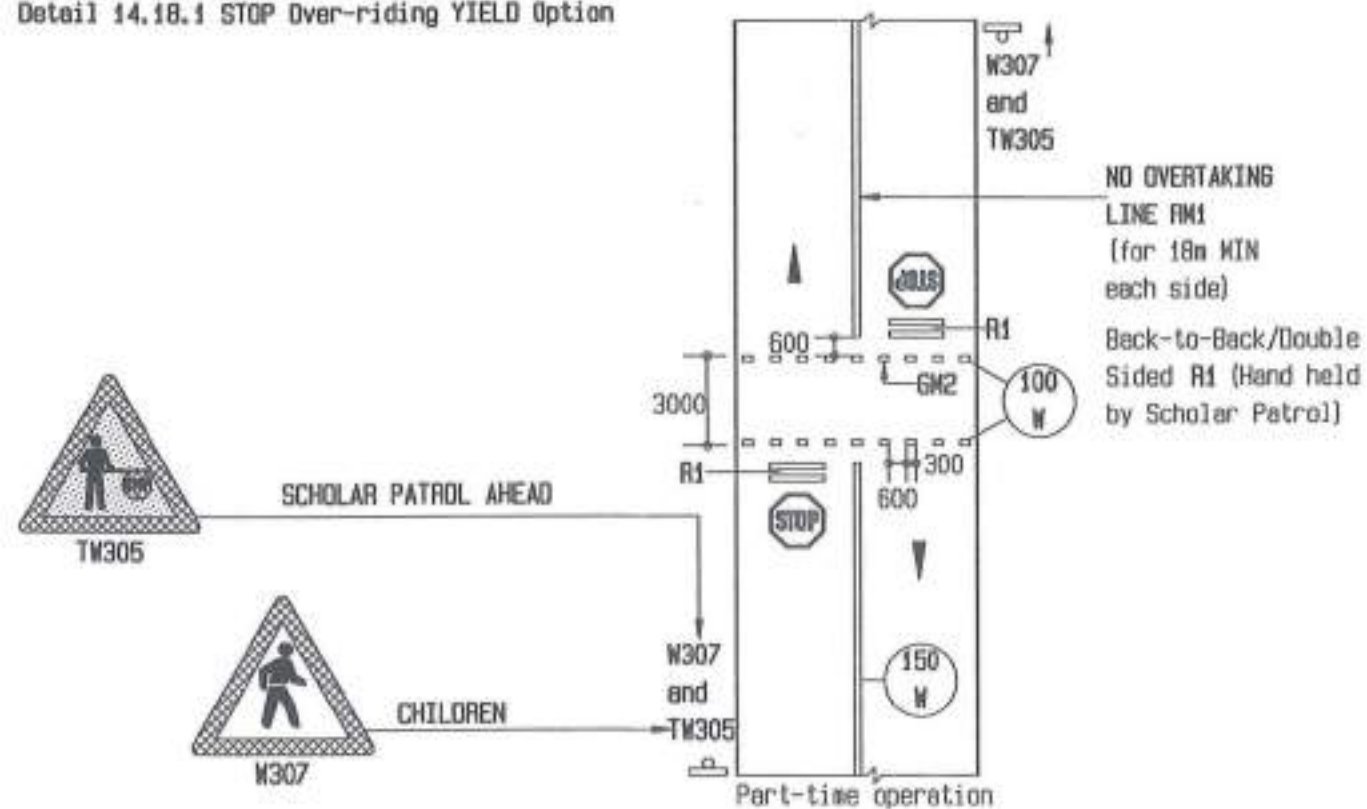


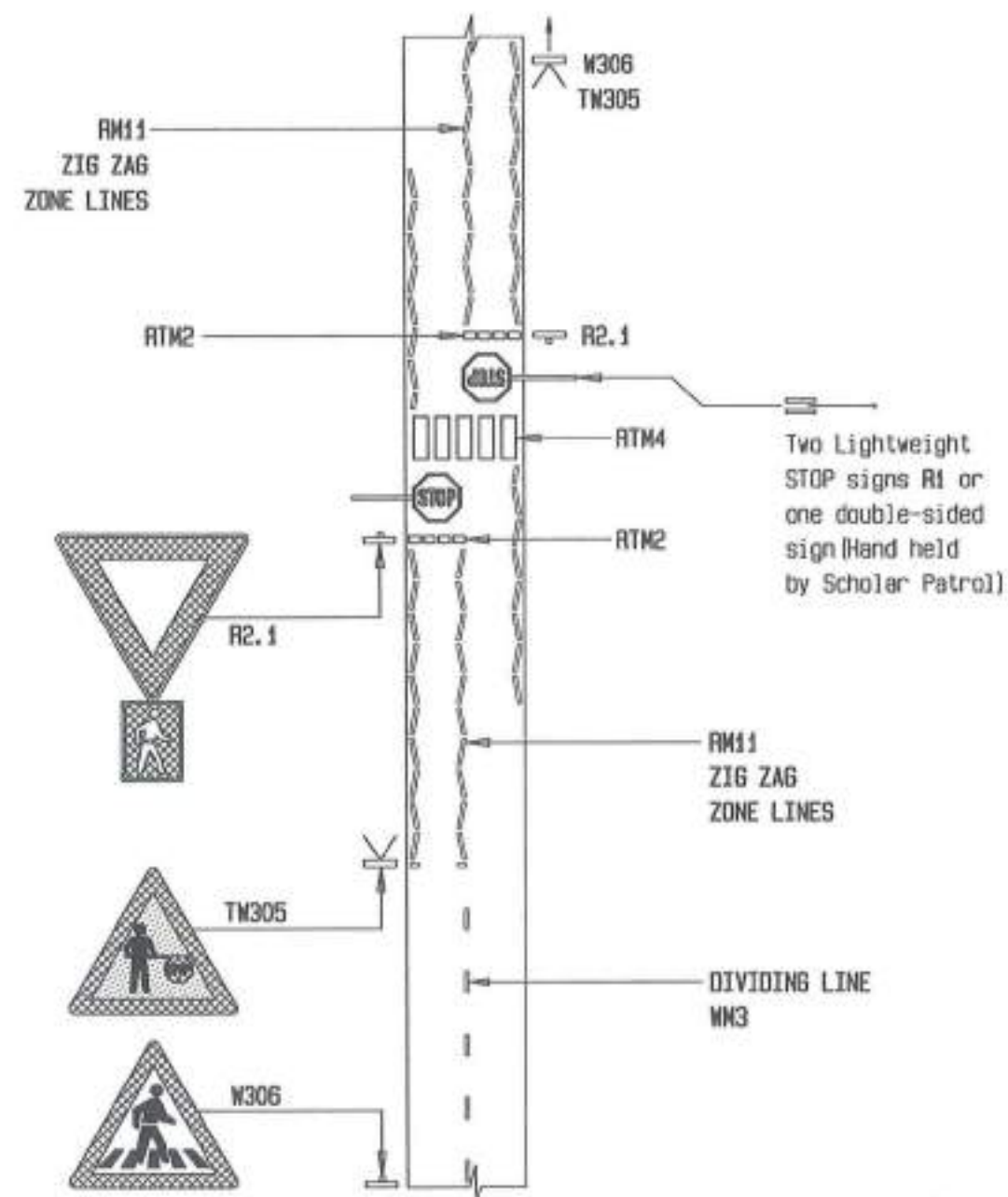
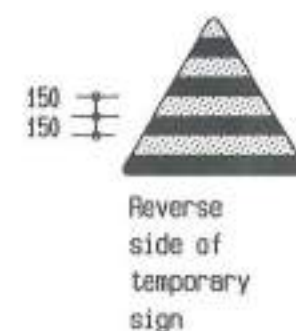
Fig 14.17
Pedestrian Refuge Islands - 2



Detail 14.18.1 STOP Over-riding YIELD Option

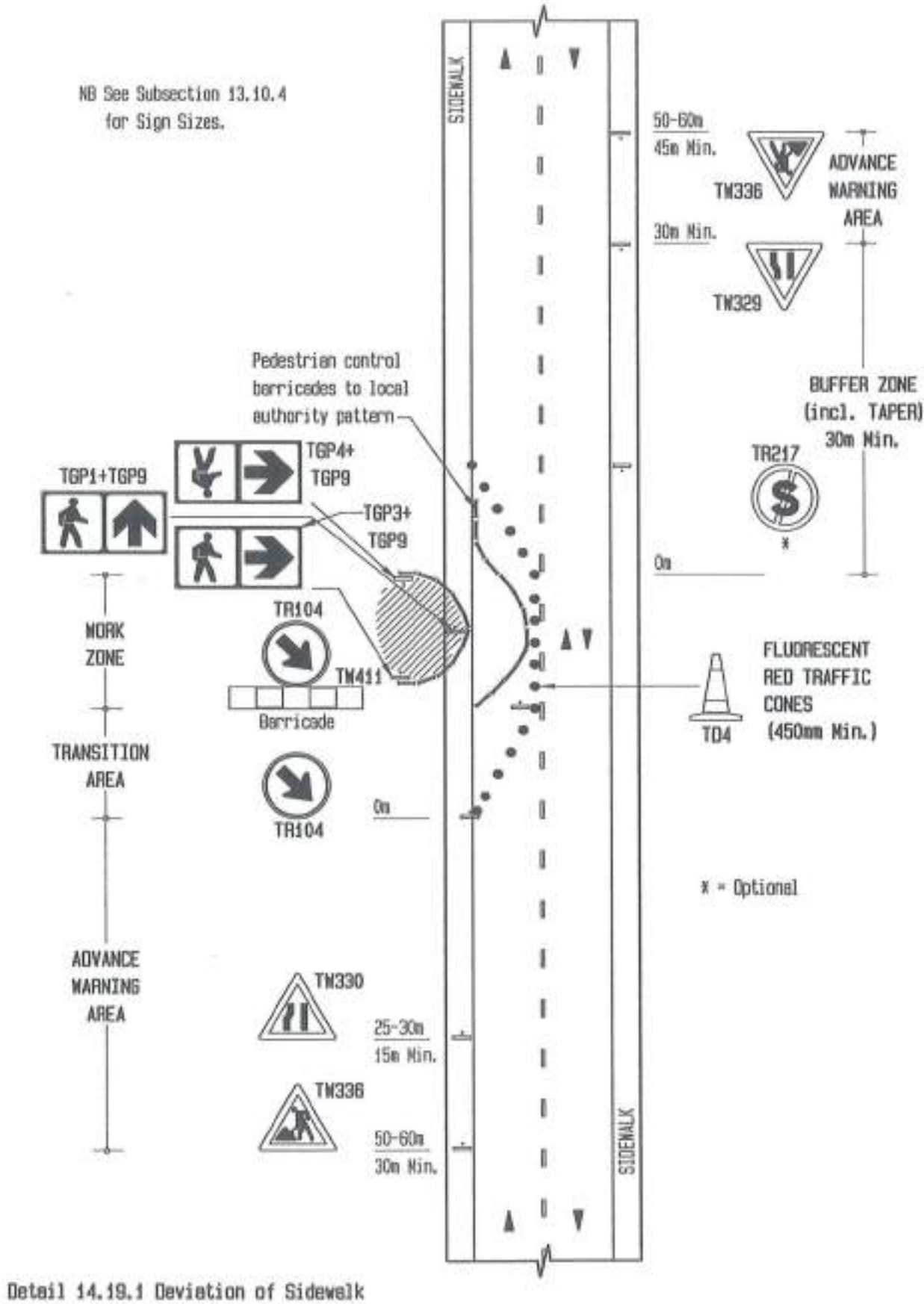


Detail 14.18.2 Part Time Operation Option



Detail 14.18.3 Permanent Crossing Used by Scholar Patrol (Use of Temporary Signs)

Fig 14.18
Scholar Patrol Crossings



TYPICAL SIGN REQUIREMENTS			
Sign	No	Size (mm)	Quantity
	TW336	900	2
	TW329 TW330	900	1 1
	TR104	900	2
	TW411	300 X 1800	10 Min
	TD4	450	Tapers 24 plus 10 per 100m
	TR217 Optional	900	1
	TGP4 plus TGP9	900 X 675	(1) 1
	TGP3 plus TGP9	900 X 675	(1) 1
	TGP1 plus TGP9	900 X 675	(1) 1

(1) Due to the modular nature of PEDESTRIAN DIRECTION signs, arrow signs may be used to point in any of four directions.

Detail 14.19.2
Typical Temporary Sign Inventory

Fig 14.19
Roadworks Applications – Deviation
of Pedestrian Sidewalk

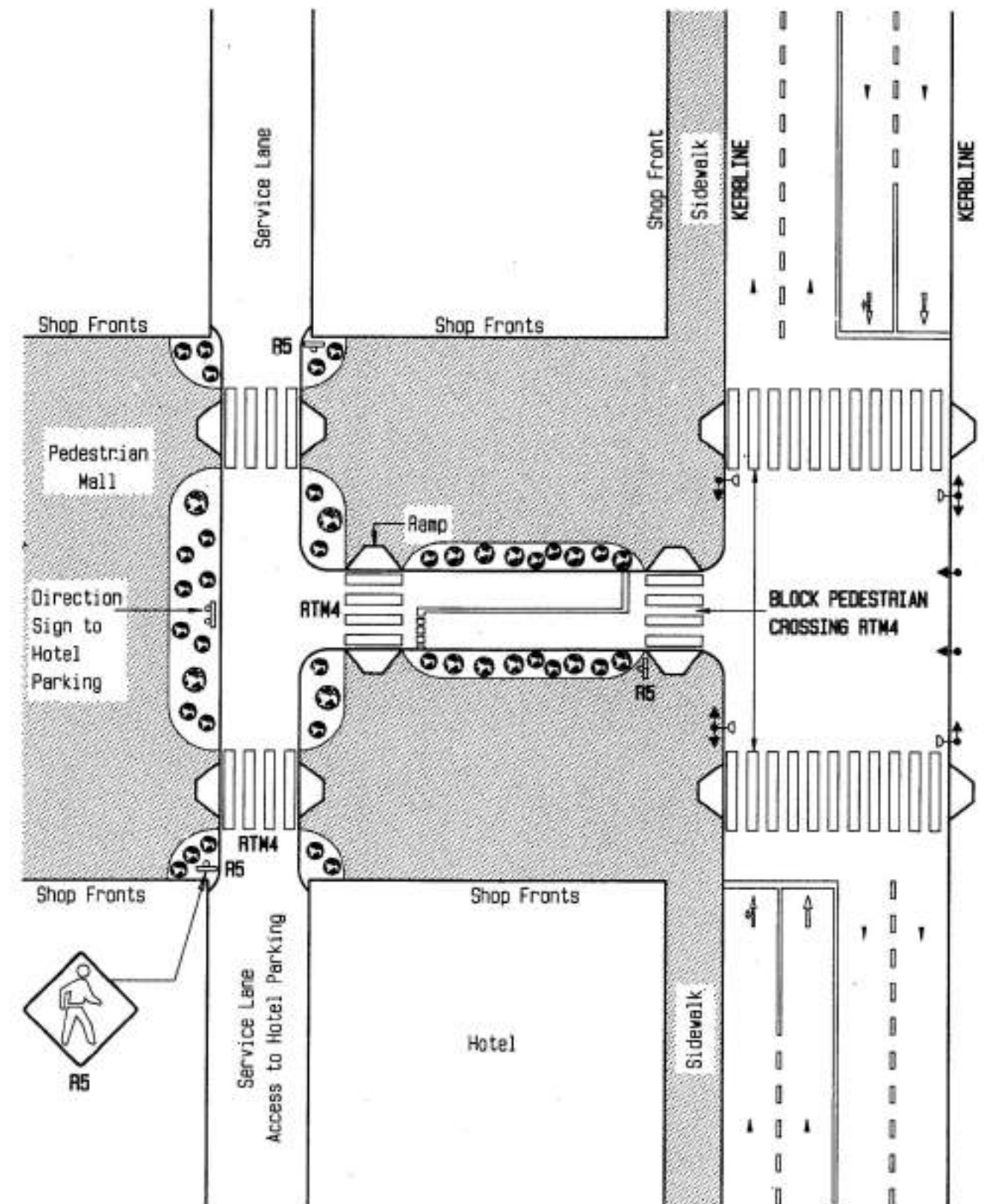


Fig 14.20

Example of Pedestrian Precinct

(continued from page 14.3.4)

- 6 Where a relatively high frequency of vehicle access has been deemed acceptable it may be necessary to introduce signs to guide pedestrians.
- 7 All signs used to control the movements or actions of vehicles permitted access to a pedestrian precinct may be of minimum size and may be specially mounted to blend harmoniously with the environmental treatment of the area.
- 8 A typical example of such a pedestrian precinct with pedestrian priority is illustrated in Figure 14.20.

14.3.7 Woonerf Areas

- 1 "Woonerf" is the term used for the street serving a residential area, normally a cul-de-sac or access controlled Class 5 road serving a limited number of homes. Such streets should carry no through traffic and essentially serve as extended play areas from the erven for children and general pedestrian areas as well as local access for residents cars.
- 2 Since service vehicles, delivery vehicles and emergency vehicles, and vehicles of visitors to residents living in the woonerf, are allowed access to the area, the drivers of all such vehicles need to be warned that it is a woonerf, and thereby of the potential presence of children and other pedestrians on the street. Therefore, WOONERF regulatory sign R403 should be displayed on the left side of all points of access to all residential areas declared, for the purpose of traffic control, as WOONERF as shown in Figure 14.21.
- 3 *Inter alia* the R403 sign indicates that drivers shall yield right of way to pedestrians, and children who may be in the roadway, observe a general speed limit of 30 km/h within the area, and not enter the area by vehicle and drive through the area to exit at another point or the same point without breaking their journey.
- 4 The WOONERF DERESTRICTION sign R403-600 should be displayed on the left side of all points of exit from an area designated as a woonerf as illustrated in Figure 14.21.

14.3.8 Freeway Interface

- 1 No pedestrians are allowed anywhere within the reserve of a freeway, either walking along the roadway or crossing the freeway at grade. The concept of a freeway as a vehicle exclusive domain must be preserved. Thus grade separated crossings and adequate fencing to prevent pedestrian access along the freeway must be provided.
- 2 The only pedestrian related road traffic sign which may possibly be necessary within a freeway environment would be NO PEDESTRIANS sign R208. Where there is a situation at freeway access interchange ramp terminals where pedestrians may try to access the freeway, the R208 sign should be displayed on any relevant, or all, on- and off-ramp entrances facing the crossing as indicated in Figure 14.22.
- 3 NO PEDESTRIANS regulatory sign R128 imposes a mandatory requirement that pedestrians shall NOT proceed beyond such sign.

14.3.9 Hitch-hikers

- 1 Along stretches of road where there is a need for a prohibition of vehicles stopping for hitch-hikers, a NO HITCH-HIKING sign R207 is recommended. Sign R207 should be displayed on the

left-hand side of the roadway to indicate the point from which the prohibition on hitch-hiking shall apply.

- 2 NO HITCH-HIKING regulatory sign R207 imposes a mandatory requirement that pedestrians shall NOT attempt to secure a lift from a passing vehicle, as well as imposing a mandatory requirement that drivers of vehicles shall NOT pick up passengers. The prohibition on hitch-hiking is effective for a distance of 500 m beyond such sign.
- 3 If the section of roadway subject to a prohibition on hitch-hiking is known to have points of pedestrian activity care should be taken to ensure that R207 signs are placed in such a manner that pedestrians can reasonably be expected to see them as well as drivers. This may require signs at closer spacing than 500 m.
- 4 The use of freeways by persons on foot is prohibited by the Road Traffic Act, Act No 93 of 1996. Sign R207 should not normally to be required.

14.3.10 Specific Use of the PEDESTRIANS ONLY Sign

- 1 This subsection gives an indication of the use of the PEDESTRIANS ONLY regulatory sign R110. This sign indicates that public road or portion of public road is set aside for pedestrians only and imposes a mandatory requirement that pedestrians shall only use such public road or such portion of public road indicated by the sign.
- 2 Sign R110 should be displayed at the beginning of a path, route or lane which has been specifically provided for pedestrians only. It is, however, not required that the normal sidewalk or footpath provided for pedestrian movement in urban business districts or residential areas be so signed unless there is a particular problem of control which requires such a sign. It may be necessary to repeat the sign at intervals along the pedestrian path.
- 3 The sign should be located on the left side of the pedestrians only facility, provided that when a physical separator exists between the path or route and an adjacent roadway it may be more effective to locate the sign on the right side of the pedestrians only facility. A NO PEDESTRIANS sign R218 should not be displayed on the traffic side of a PEDESTRIANS ONLY sign R110.
- 4 Sign R110 should not be used as a pedestrian direction sign in combination with an arrow. If there is a need to guide pedestrians, appropriate guidance signs in the GP series should be provided.
- 5 Temporary regulatory PEDESTRIAN ONLY signs are unlikely to be required. However, it is possible that at complex urban roadworks sites or at building construction in city centres the use of temporary PEDESTRIAN ONLY signs TR110 may be appropriate.

14.3.11 Specific Use of the NO PEDESTRIANS Sign

- 1 This subsection gives and an indication of the use of NO PEDESTRIANS regulatory sign R218. This sign imposes a mandatory requirement that pedestrians shall NOT proceed beyond such sign.

(continued on page 14.3 20)

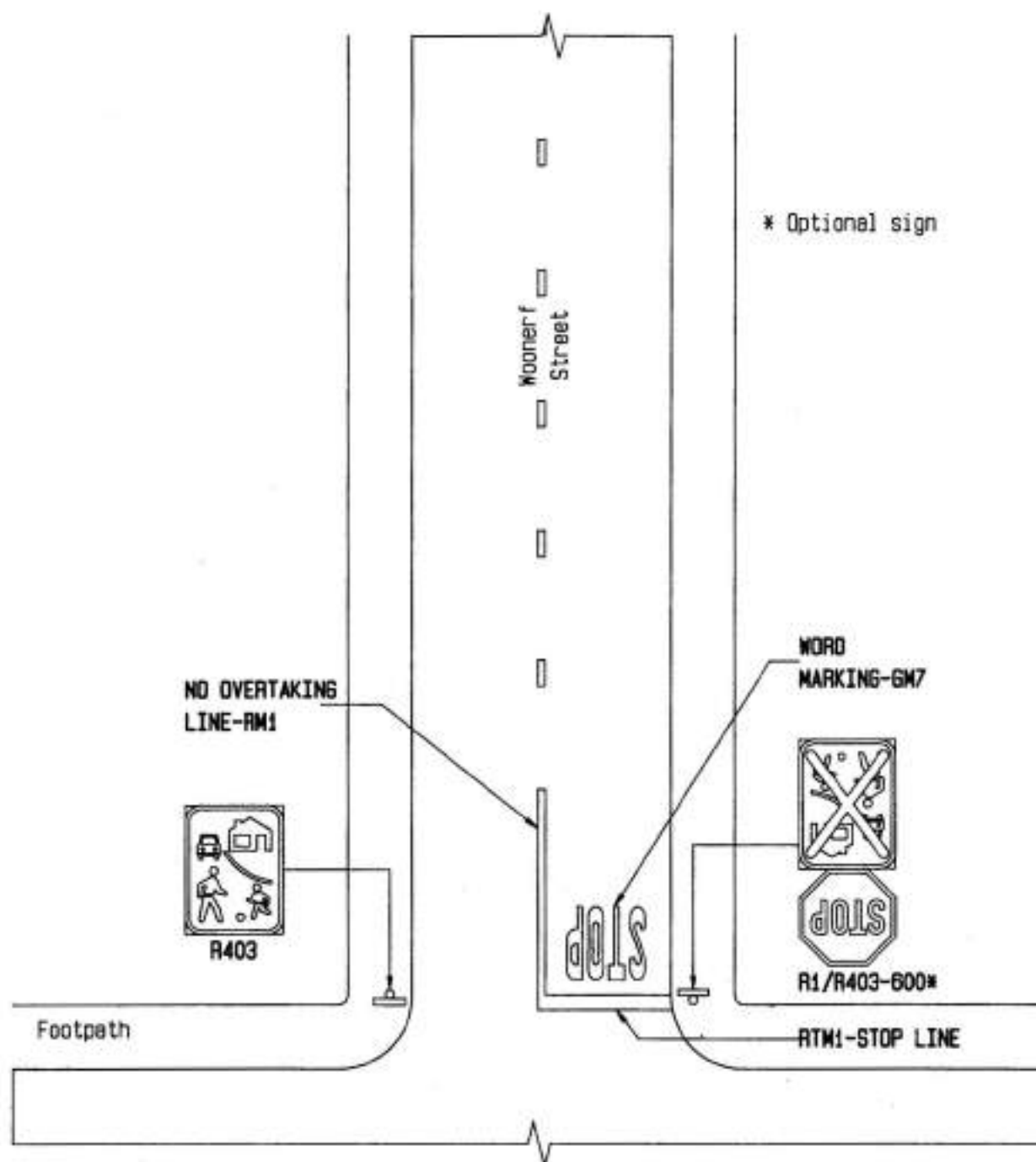
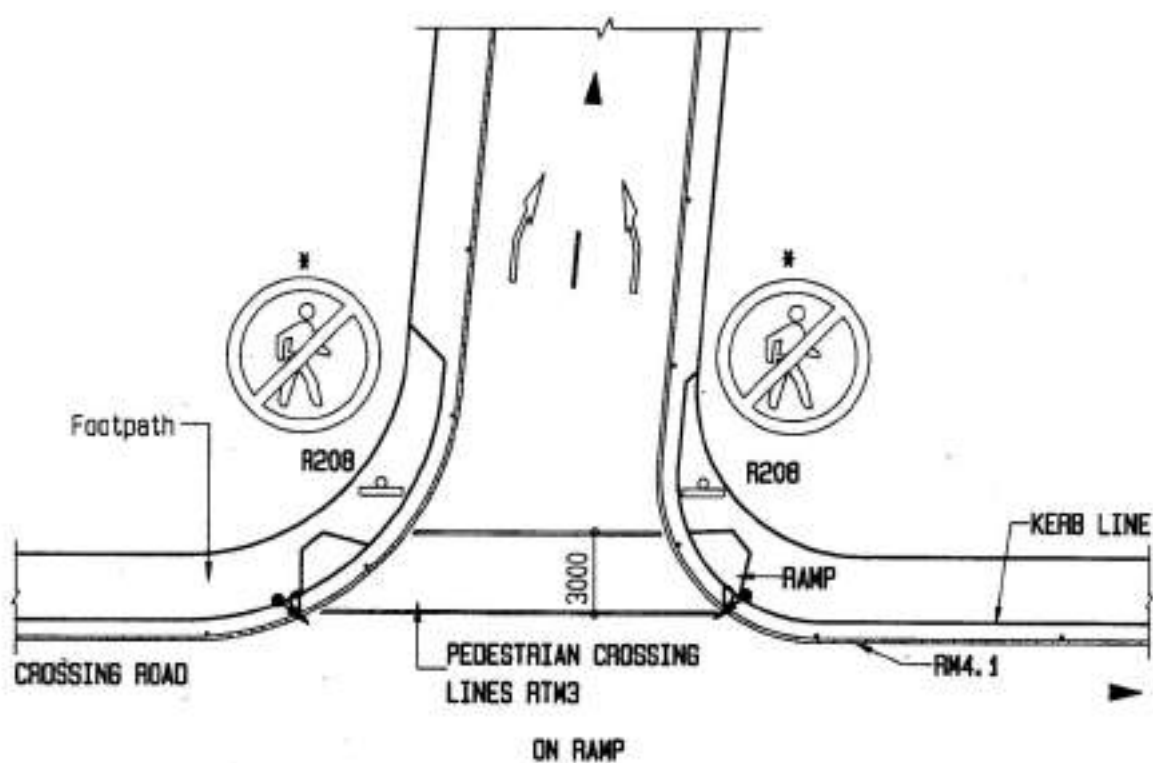


Fig 14.21

Signing for "Woonerf"



* = Optional signs

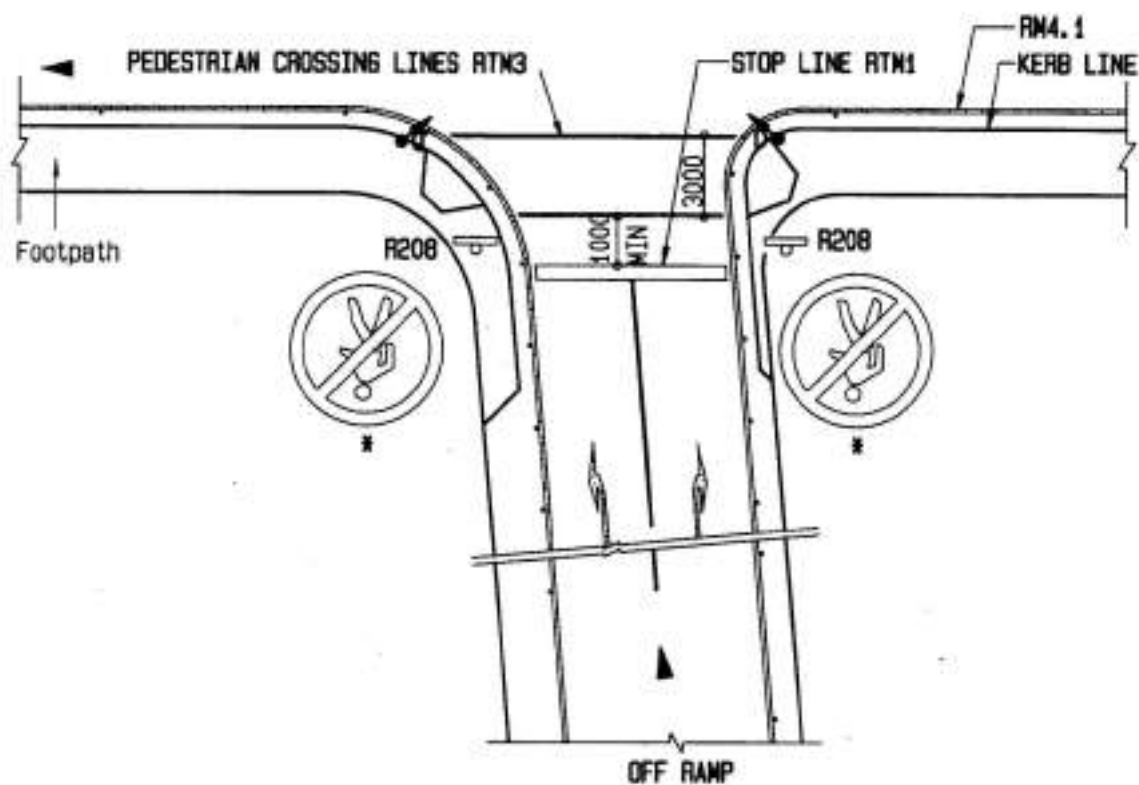


Fig 14.22

Optional Signing for Pedestrian Control at Freeway interchange Ramp Junctions

(continued from page 14.3.17)

- 2 Sign R218 should be displayed at the beginning of, and at entrances to, a roadway, lane or path to indicate that pedestrians are prohibited from using that roadway, lane or path. Sign R218 may be used to indicate to pedestrians that they should not cross a roadway at the point indicated by the sign. In the latter case it is recommended that guidance signs in the GP series signs be displayed to guide pedestrians to a safe crossing point. If sign R218 is used in this manner at a junction, the junction should not be marked with PEDESTRIAN CROSSING LINE marking RTM3 at that point.
- 3 A NO PEDESTRIANS sign shall not be displayed between a roadway and a pedestrian way at the commencement of a pedestrian way when such a point is signed with PEDESTRIANS ONLY sign R110 or one of the CYCLISTS AND PEDESTRIANS ONLY signs R112 to R115.
- 4 A NO PEDESTRIANS signs shall not be displayed at the beginning of a cyclists only facility which is already signed with a CYCLISTS ONLY sign R111.
- 5 Temporary regulatory sign TR218 may be used under the same circumstances as a permanent NO PEDESTRIANS regulatory sign when temporary roadworks or other conditions require that a roadway, lane or path normally available to pedestrians is temporarily not available.

14.4 SIGNING APPLICATIONS AT THE PEDESTRIAN/CYCLIST INTERFACE

14.4.1 General

- 1 Some of the potential signing and marking requirements at pedestrian/cyclist interfaces are indicated in this Section, but specific planning and design aspects of cycle paths are not dealt with. The *Pedestrian and Bicycle Facility Guideline* or *NMT Guideline* should be referred to for design details.
- 2 The following situations with regard to pedestrian and cyclist facilities may occur:
 - (a) pedestrians and cyclists may share a facility;
 - (b) pedestrians may use a sidewalk footpath with a cycle path adjacent and physically separated;
 - (c) the cycle path may be on its own alignment away from the pedestrian way.
- 3 In the case of the former situation there is a direct interface between the pedestrians and the cyclists along the whole length of the shared facility while in the case of the two latter situations there will be interfaces at cross-over points and possibly at road crossings.

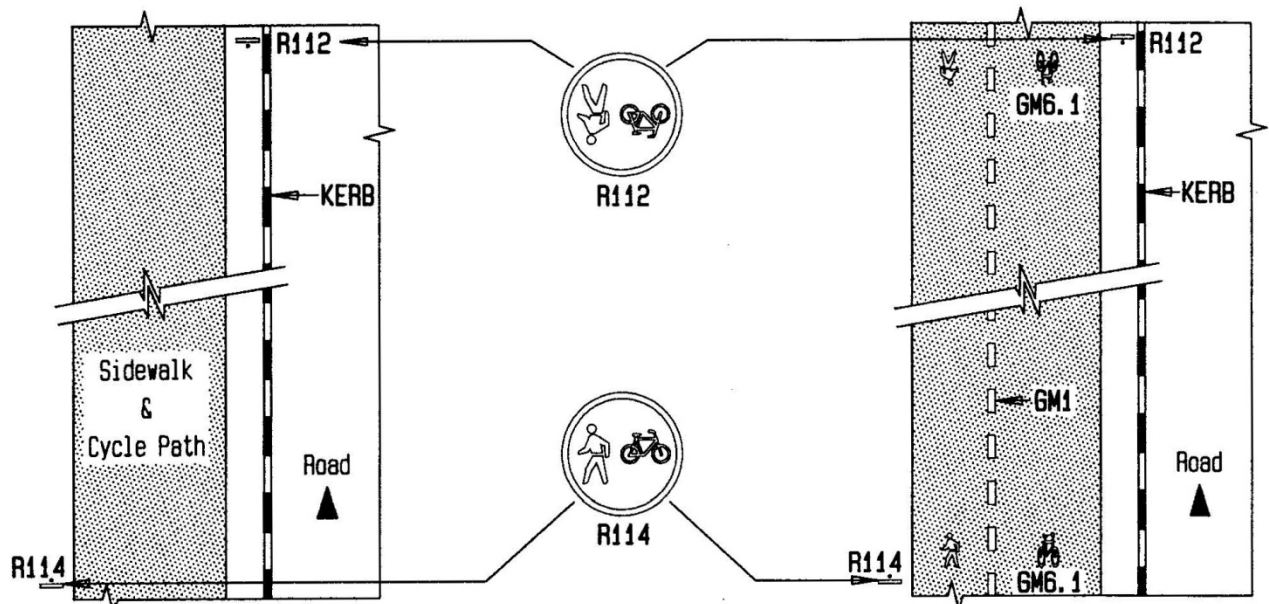
14.4.2 Typical Situations

- 1 The main regulatory signs used in the pedestrian/cyclist interface are as follows:
 - (a) signs R112 and R114 which indicate a shared facility;
 - (b) signs R113 and R115 which indicate a separated (segregated) facility.

All these signs indicate the relative sides of the path to be used by pedestrians and cyclists.

- 2 The CYCLISTS AND PEDESTRIANS ONLY regulatory signs R112, R113, R114 and R115 indicate that the public road, or portion of public road, is set aside for cyclists and pedestrians only, and imposes a mandatory requirement that cyclists and pedestrians shall only use such public road or portion of public road. This has the effect that no other class of road user shall use the public road, or portion of public road, indicated by the relevant sign.
- 3 Signs R112 and R114 should be displayed to indicate that the shared facility is an INTEGRATED one as indicated in Detail 14.23.1 of Figure 14.23. Cyclists and pedestrians utilise the same path which may or may not be divided longitudinally by a white DIVIDING LINE road marking WM3. If the path is sub-divided by such a marking it is recommended that symbols indicating which portion should be used by cyclists and which by pedestrians should be marked on the roadway surface in appropriate positions. The divided situation is illustrated Detail 14.23.2.
- 4 Signs R113 and R115 should be displayed to indicate that the shared facility is a SEGREGATED one. Cyclists and pedestrians utilise separate but parallel paths. The division between paths may be a physical separator or a single continuous white CHANNELIZING LINE marking. Painted symbols depicting a cyclist and a pedestrian should be applied to the surface of the roadway to indicate which portions each should use. These situations are illustrated in Detail 14.23.4 of Figure 14.23.

- 5 The correctly handed versions of the CYCLISTS AND PEDESTRIANS ONLY signs should be used for integrated and segregated facilities. The decision as to which sign is most appropriate is likely to be subjective based on local conditions. If in doubt, arrange signs so that pedestrians are furthest from passing vehicular traffic. Signs R112 and R113 will then be used in one direction and signs R114 or R115 in the opposite direction.
- 6 Signs R112, R113, R114 or R115 should be displayed, as appropriate, at the beginning of the shared path which has been specifically provided for cyclists and pedestrians only. They should be repeated at regular intervals along the path to indicate to other crossing traffic that it is a cyclist and pedestrian only facility.
- 7 The signs should be located on the left side of the path provided that if a physical separator exists between the path(s) and the adjacent roadway it may be more effective to locate the sign on the right side of the path.
- 8 A NO CYCLISTS AND PEDESTRIANS sign R220, should not be displayed on the traffic side of CYCLISTS AND PEDESTRIANS ONLY signs R112, R113, R114 or R115.
- 9 Temporary regulatory signs CYCLISTS AND PEDESTRIANS ONLY are unlikely to be required. If they should be required they should be numbered TR112, TR113, TR114 or TR115 as appropriate.
- 10 Figure 14.24 illustrates the use of the CYCLIST AND PEDESTRIAN ONLY regulatory signs including:
 - (a) shared pedestrian and bicycle paths, separated from the roadway;
 - (b) a bicycle lane;
 - (c) parallel pedestrian and bicycle crossings at a signalised junction; and
 - (d) parallel pedestrian and bicycle mid-block signalised crossing.
- 11 Figure 14.25 gives a higher level of detail for the combined pedestrian/bicycle crossings. It should be noted that BICYCLE GUIDE LINES GM5 are guidance markings and do not have the same legal force as PEDESTRIAN CROSSINGS LINES RTM3. It is therefore recommended that where practical both crossing markings be used.

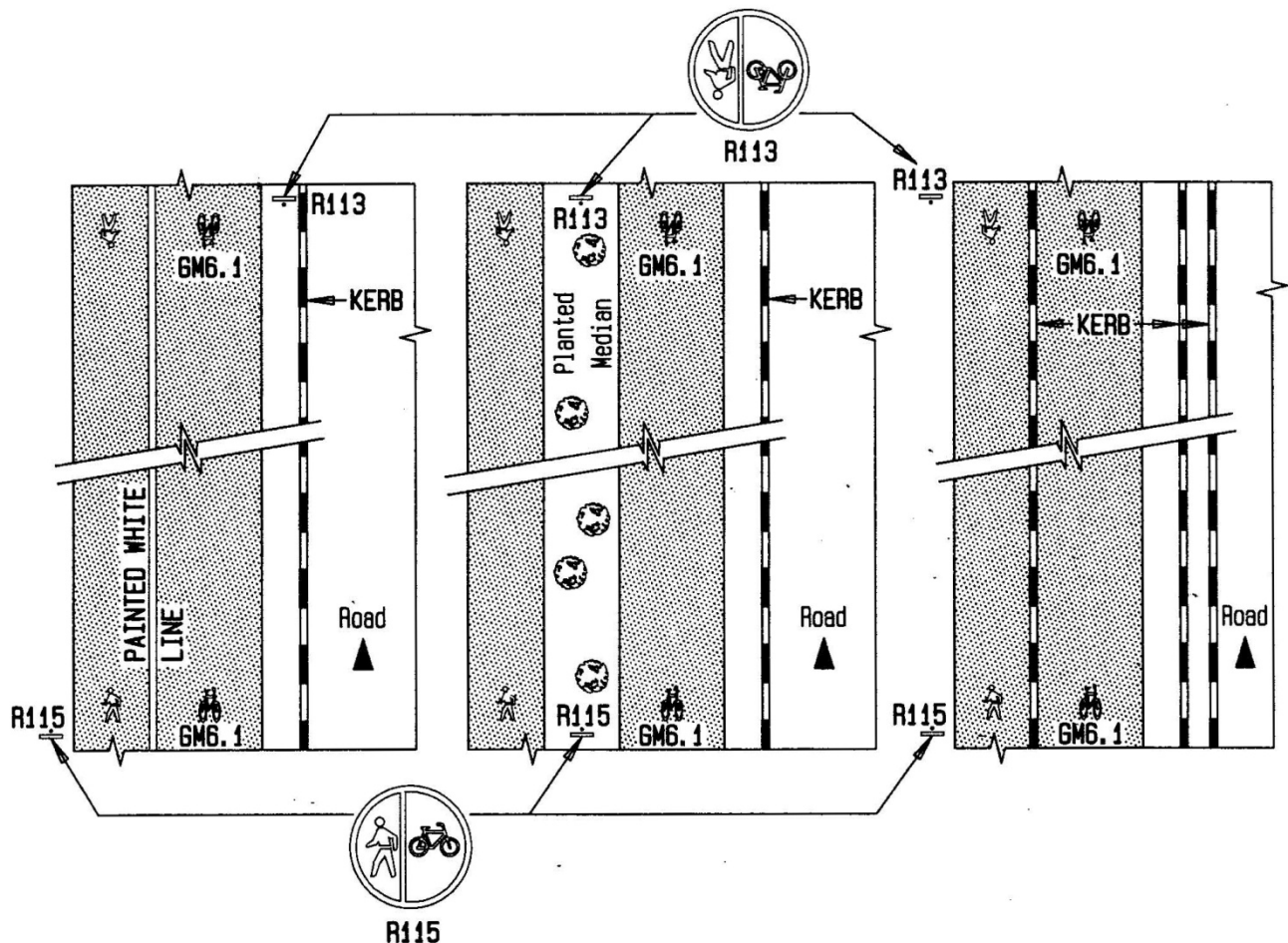


Detail 14.23.1

Integrated Situation with Separation
Only Indicated Generally

Detail 14.23.2

Integrated Situation with
an Indication of Separation



Detail 14.23.3 Separated Facility Situation

Fig 14.23

Pedestrian/Cyclist Interface - 1

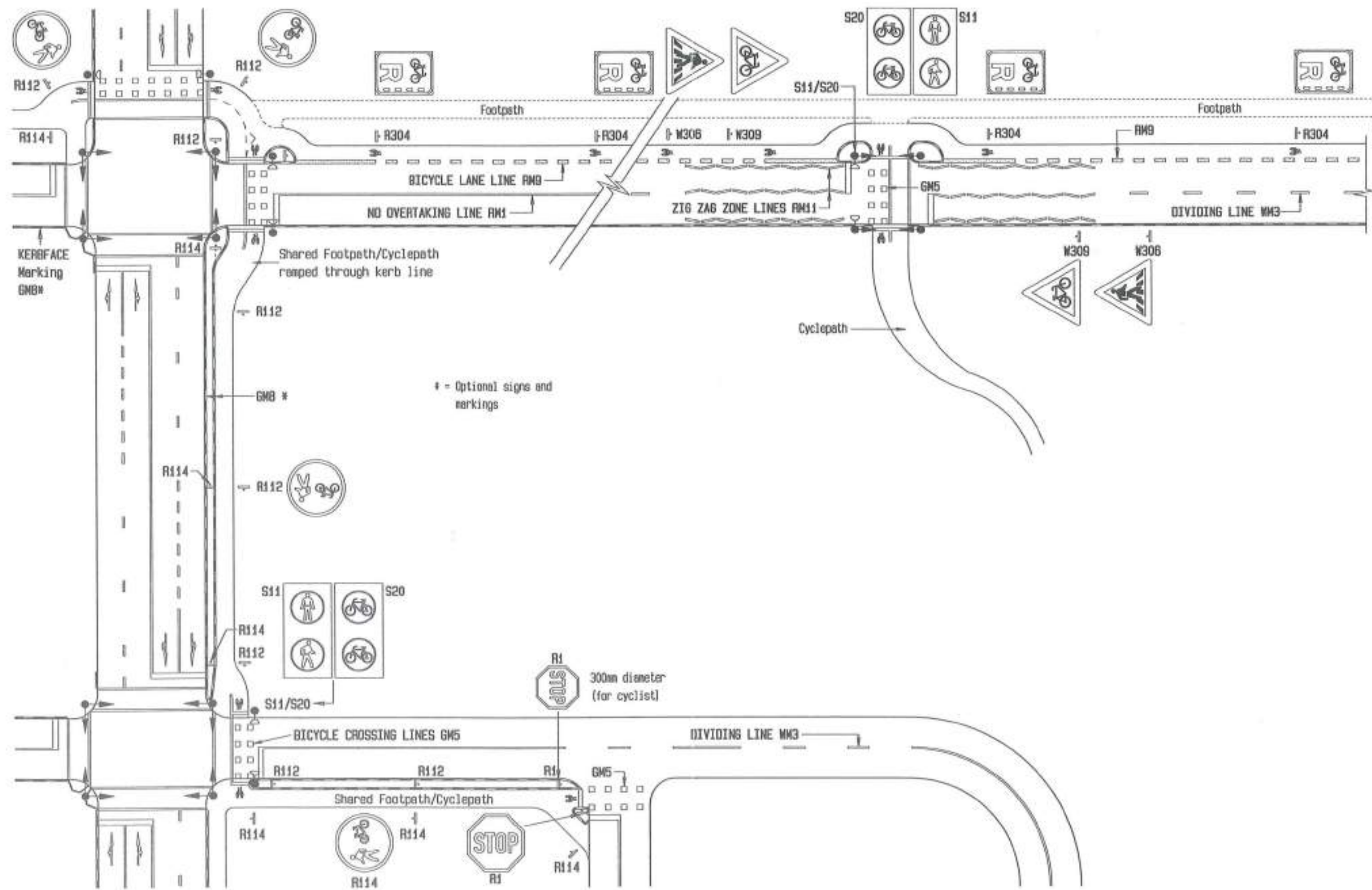
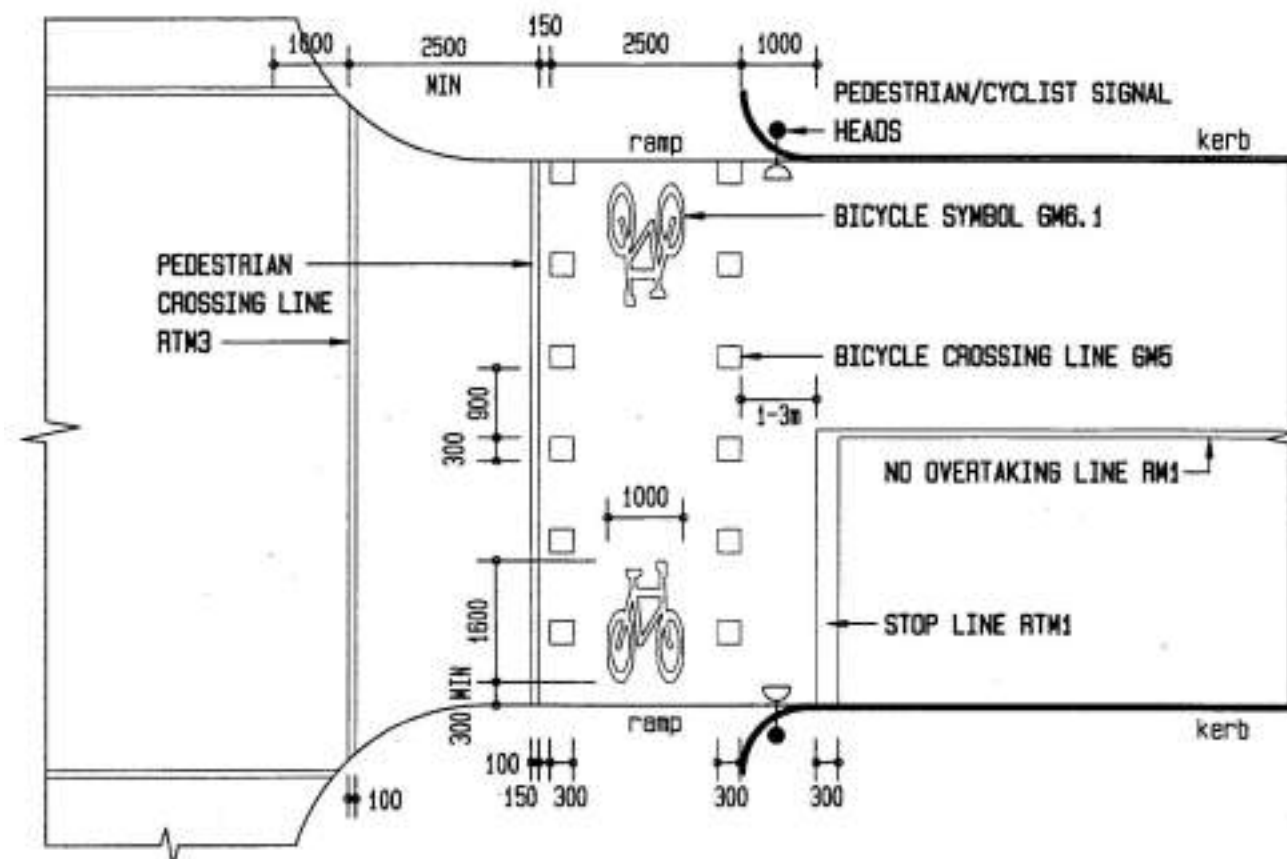
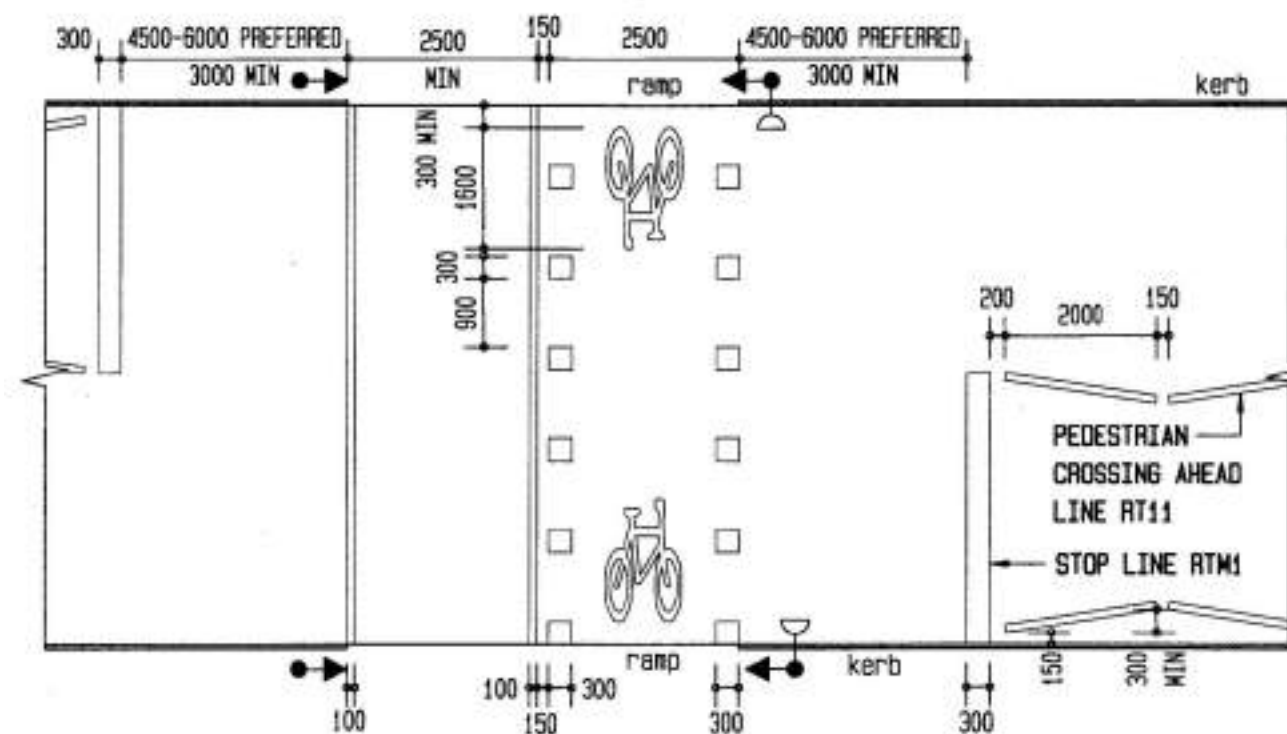


Fig 14.24
Pedestrian/Cyclist Interface - 2



Detail 14.25.1 Bicycle Crossing at a Signalized Junction



Detail 14.25.2 Mid-Block Signalized Bicycle Crossing

Fig 14.25

Pedestrian/Cyclist Interface - 3

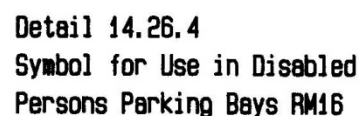
14.5 SIGNING APPLICATIONS FOR DISABLED PERSONS

14.5.1 General

- 1 Disabled persons (in wheelchairs) will generally be required to follow normal pedestrian routes and the facility to enable the passage of their wheelchairs must be incorporated into the physical fabric of the sidewalk and roadway. Adequate ramps to negotiate physical height barriers are required. Where it is required that disabled persons take an alternative route to pedestrians, this will need to be indicated by means of guidance direction signs in the GP series. This Section deals specifically with signing applications at the parking interface.

14.5.2 Parking Applications

- 1 The correct marking and signing of parking for disabled persons is of particular importance. Details 14.26.1, 14.26.2 and 14.26.3 of Figure 14.26 illustrate examples of the use of DISABLED PERSONS PARKING BAY marking RM16 in parallel, angled and 90° parking bay situations respectively. The size of the parking bays for disabled persons shown in these examples have all been enlarged to permit the manoeuvring of wheelchairs when necessary. Care should be exercised in providing a left side parallel bay for disabled persons, as shown in the example, since disabled drivers will have to get into a wheelchair in a traffic lane. Each of the examples also shows the need to provide for a ramp from road level to footpath level. Marking RM16 is enforceable on its own since it is a regulatory marking, however, the optional additional use of PARKING FOR DISABLED PERSONS RESERVATION sign R323-P may be considered. Detail 14.26.3 gives an example of the use of PAINTED ISLAND marking RM5 between bays to provide manoeuvring space for wheelchairs between parked vehicles.



Disabled Persons Parking Bays

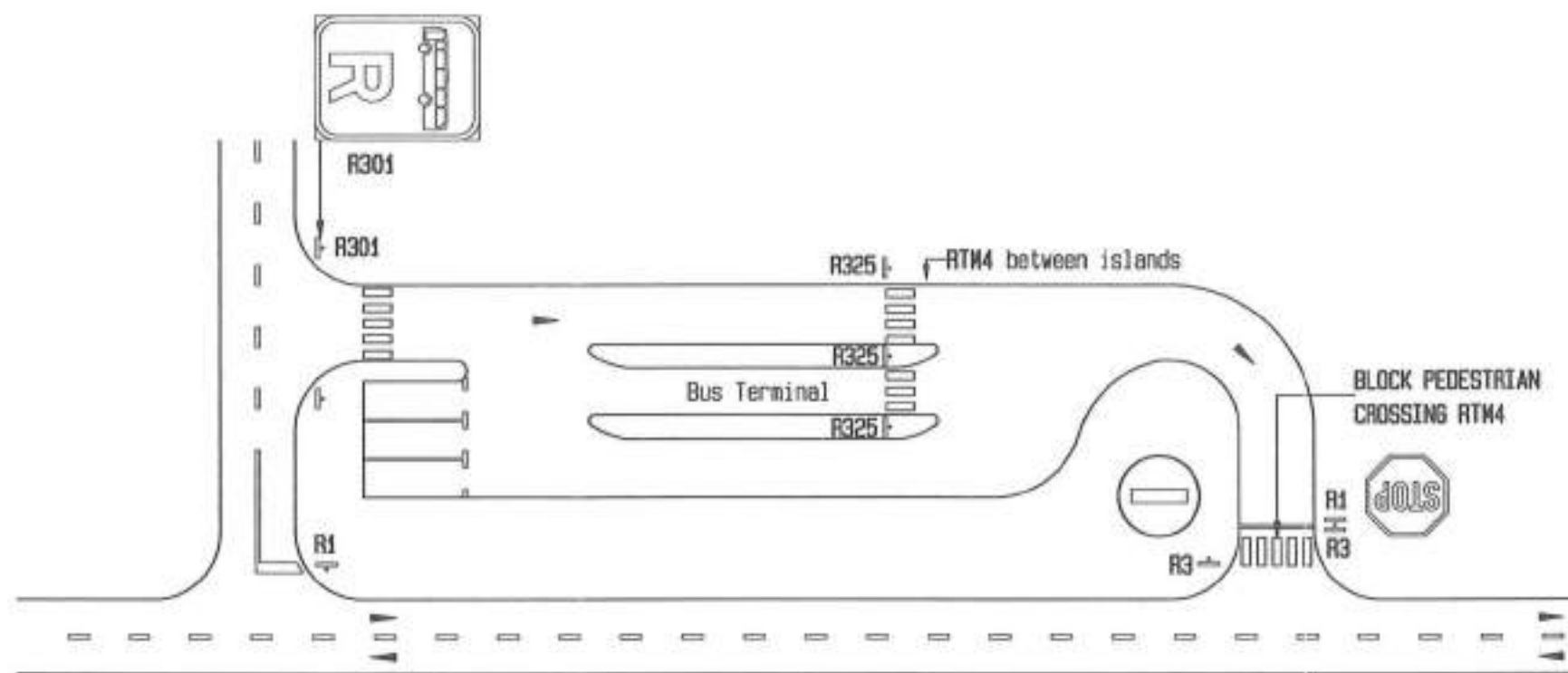
14.6 **SIGNING APPLICATIONS FOR**
 PEDESTRIAN/PUBLIC TRANSPORT
 INTERFACES

14.6.1 **General**

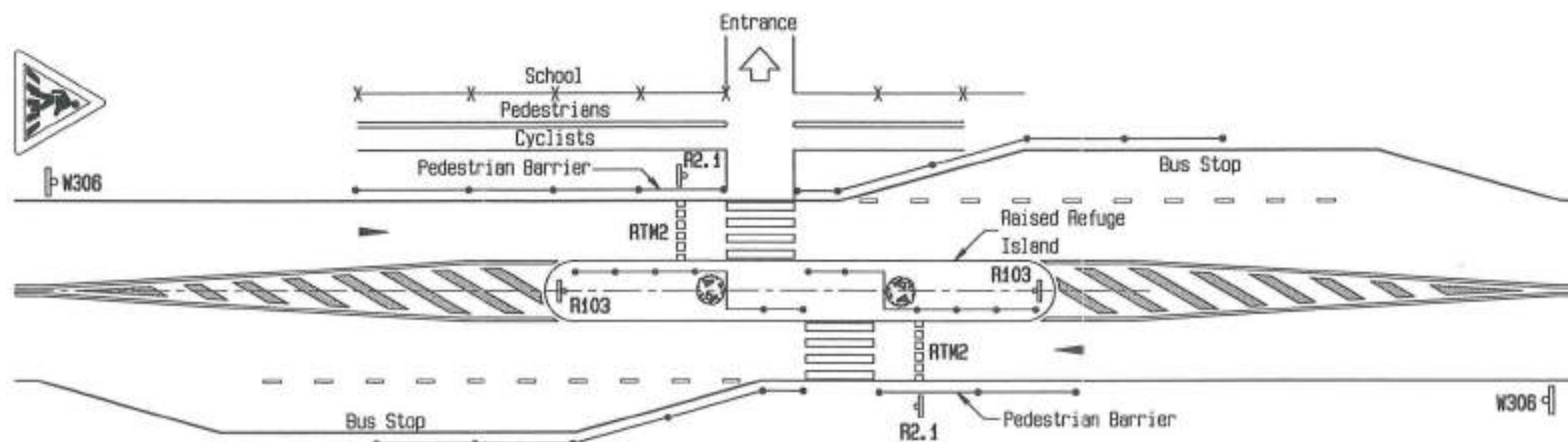
- 1 Signing and markings for use within public transport precincts such as bus or minibus ranks/termini are not specifically dealt with in this Chapter except to indicate that an adequate layout, ensuring measures, inclusive of appropriate signs and road markings, for the safe movement of pedestrians to and from public transport vehicles must be provided. This Section looks rather at the interface between pedestrians in the normal road reserve and public transport.

14.6.2 **Basic Considerations**

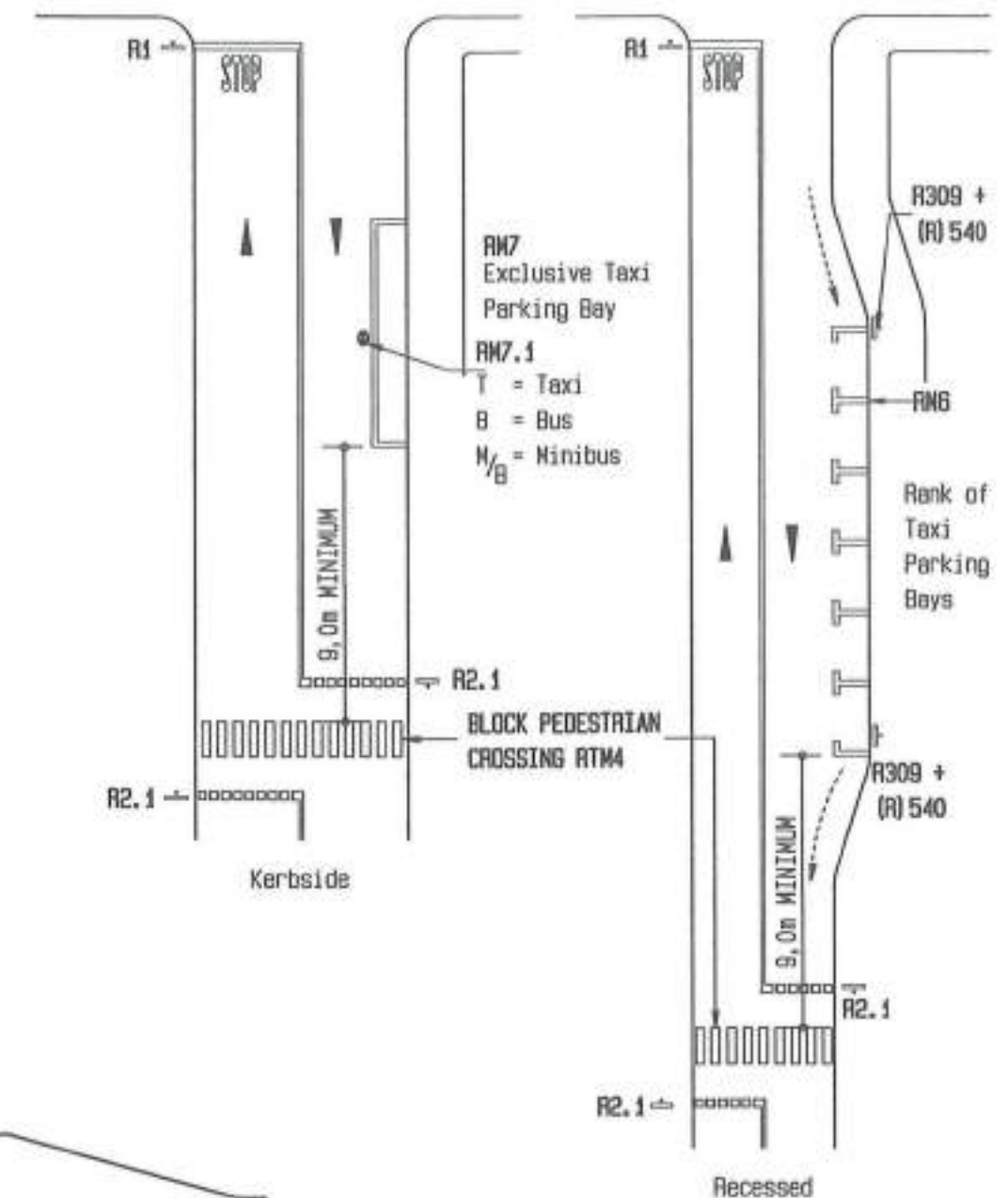
- 1 Special measures may be desirable at:
- (a) entrances and exits to public transport ranks/termini which conflict with heavy pedestrian movements along the sidewalk, for example, in the CBD or at major shopping centres; a typical treatment of this type of situation is illustrated in Detail 14.27.1 of Figure 14.27.
- (b) bus/minibus stops, where adjacent crossing facilities are necessary for commuters such as when the stops are mid-block, or at an intersection on a heavily trafficked road which is subject to stop or yield control on the side road; it is essential to cater for this type of situation, particularly near schools; Detail 14.27.2 illustrates some basic requirements of such a crossing near a public transport stop, while Detail 14.27.3 illustrates a situation at a school adjacent to a bus route on a main road.



Detail 14.27.1 Pedestrian Crossings at Entrance to Bus / Taxi Terminals



Detail 14.27.3 Recommended Application of a Pedestrian Crossing on a Busy Road With Bus Stops Near School



Detail 14.27.2 Pedestrian Crossing in Relation to a Public Transport Stop

Fig 14.27
Signs and Markings at Pedestrian/
Public Transport Interfaces

14.7 PEDESTRIAN TRAFFIC SIGNALS

14.7.1 General

- 1 Traffic signals will normally be provided where a significant number of pedestrians experience difficulty and/or delay in crossing a road at certain times during the day. Situations in which pedestrian signals may be used are:
 - (a) at signalised road junctions;
 - (b) at signalised mid-block pedestrian crossings.
- 2 Pedestrian signals shall be operated only in conjunction with vehicular traffic signals as described in Volume 1, Chapter 6, Section 6.3.
- 3 Warrants for the provision of pedestrian signal heads at a junction are given in Volume 3. Pedestrian signal faces shall be provided at road junctions in any one or more of the following circumstances:
 - (a) when the product of the pedestrian flow multiplied by the sum of the conflicting turning traffic flows exceeds 10×10^3 in any one hour, or 5×10^3 for each of any four hours;
 - (b) where a turning phase is operated at any time as signalled by a flashing green arrow (left or right);
 - (c) on a crossing parallel to a one-way approach at a road junction, i.e. where there is no vehicular signal face facing the crossing pedestrians.
- 4 Warrants for the installation and operation of pedestrian signals at signalised mid-block pedestrian crossings are given in the SARTSM Volume 3, *Traffic Signal Design*.
- 5 The general provisions for vehicular traffic signals given in Volume 1, Chapter 6, Part B, Section 6.2B shall apply to pedestrian signals and to vehicular traffic signals used in conjunction with pedestrian signals.

14.7.2 Installation

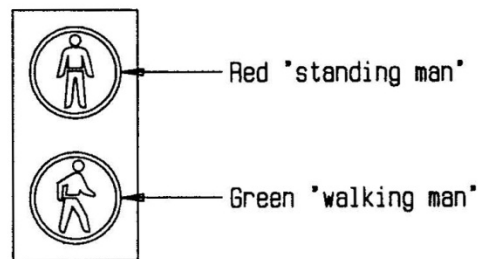
- 1 A pedestrian signal face shall comprise two aspects, one depicting a red standing man and the other depicting a green walking man. The standard signal face Type S11P shown in Detail 14.28.1 of Figure 14.28 shall be used. The RED MAN shall be located in line directly above the GREEN MAN.
- 2 Pedestrian signal lights shall conform to standard specification SANS 1459:2004, *Traffic Lights*. Aspects may be 210 mm or 300 mm nominal diameter. The larger diameter aspect may be used for improved visibility or conspicuity.
- 3 A pedestrian signal face Type S11P shall be located on each side of the road, facing as near as possible in line with the crossing, at a height of 2,1 m to 2,6 m from sidewalk level to the centre of the green aspect as indicated in Figure 14.28. Pedestrian signal faces shall not be located in line vertically with any vehicular signal aspects facing the same direction and shall be offset to the right or left of any adjacent vehicular aspect as indicated in Detail 14.28.2 of Figure 14.28.
- 4 At signalised mid-block pedestrian crossings, Type S1 signal faces, incorporating a green disc aspect shall be used to control vehicular traffic. There shall be at least two Type S1 signal faces for each approach and these shall be located within the extension of the edges of the crossing. Vehicular signal faces shall be not more than 2 m beyond the kerb line or

edge of carriageway and shall be not more than 20 m apart. Overhead mounted signal faces should be provided if necessary and on a divided carriageway road the right-hand vehicular signal face, Type S1, shall be located on the median or refuge island.

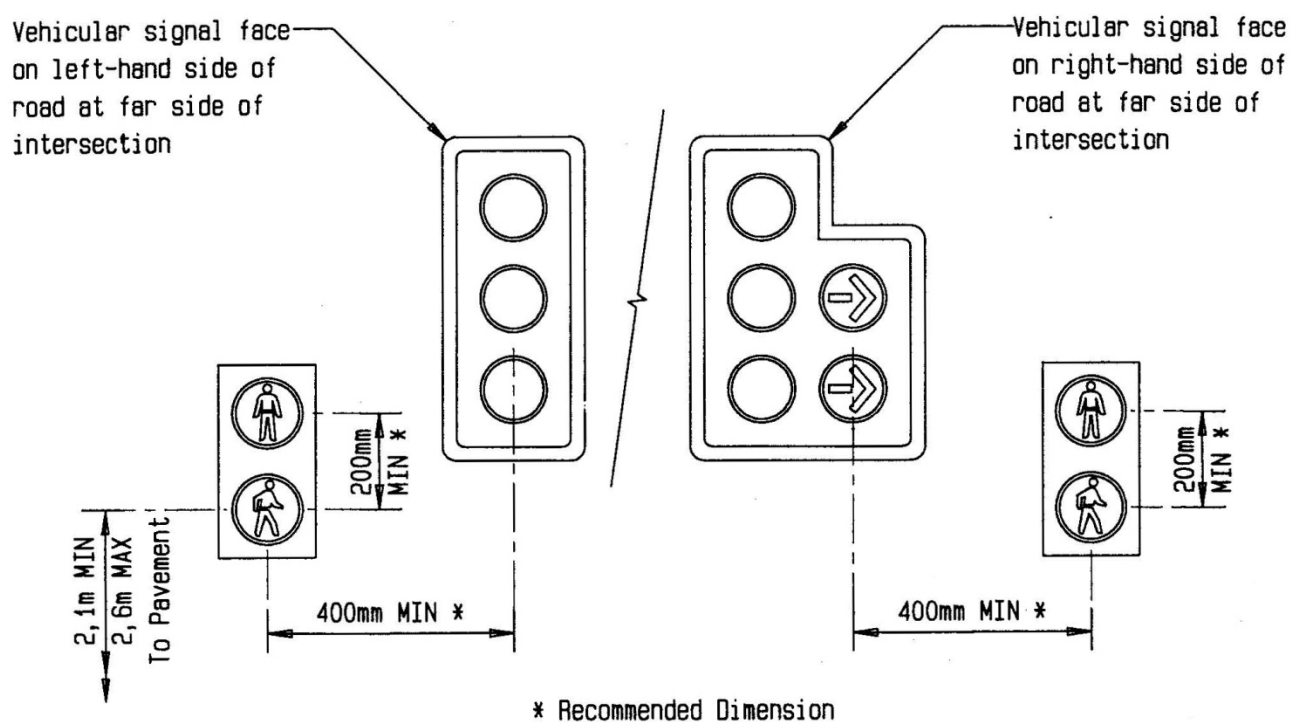
- 5 In practice, the arrangement and layout of signals at a particular site should be designed to meet the specific characteristics of the junction and the needs of both vehicular and pedestrian traffic. The exact location of poles and signal heads should always be finalised on site, taking into account road alignment, sight distance, lines of site, parking, obstructions to vision, background etc. A number of examples of the typical layout for pedestrian signals at road junctions and in mid-block are illustrated in Figure 14.29. These are:
 - (a) Detail 14.29 - 4-Way single-carriageway junction with a right-turn phase on one axis;
 - (b) Detail 14.29.2 - 3-Way single-carriageway junction with a left-turn;
 - (c) Detail 14.29.3 - Typical mid-block pedestrian crossing on a 2-lane single-carriageway road;
 - (d) Detail 14.29.4 - Typical staggered mid-block pedestrian crossing on a divided-carriageway road, to be crossed in two stages;
 - (e) Detail 14.29.5 - Typical mid-block pedestrian crossing with a local median island refuge on a 4-lane single-carriageway road.

14.7.3 Pedestrian Signal Indications

- 1 Pedestrian signal indications shall comprise:
 - (a) a STEADY GREEN MAN, followed by
 - (b) a FLASHING RED MAN, followed by
 - (c) a STEADY RED MAN.
- 2 Pedestrian signal indications shall have the significance assigned to them in the current Road Traffic Act Regulations.
- 3 A STEADY GREEN MAN INDICATION shall be displayed to indicate to pedestrians that they may use the pedestrian crossing within the PEDESTRIAN CROSSING marking RTM3 or RTM4, as appropriate, and that drivers of vehicles shall yield right of way to such a pedestrian. Its function is to provide a limited initial step off or launching interval for pedestrians. It shall always be followed immediately by a flashing red man indication.
- 4 A FLASHING RED MAN INDICATION shall always be displayed immediately following a steady green man indication to indicate to pedestrians:
 - (a) who have not yet commenced crossing the roadway that they shall not cross the roadway until a steady green man indication is again displayed; or
 - (b) who are within a pedestrian crossing that the steady red man indication will follow shortly.
- 5 A STEADY RED MAN INDICATION shall be displayed at all other times, to indicate to pedestrians that they shall not cross the roadway until the steady green man indication is displayed. Pedestrians should have had sufficient time to have safely



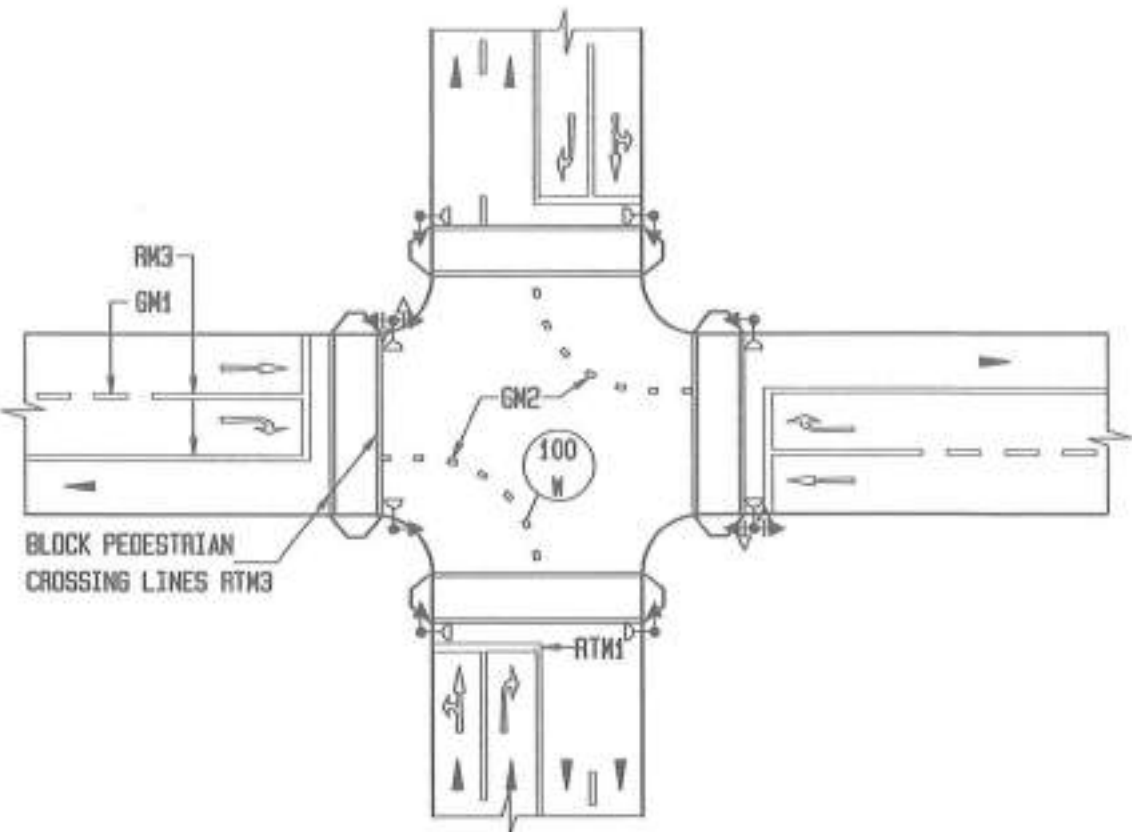
Detail 14.28.1 Standard Signal Face Type S11P, for the Control of Pedestrian Traffic



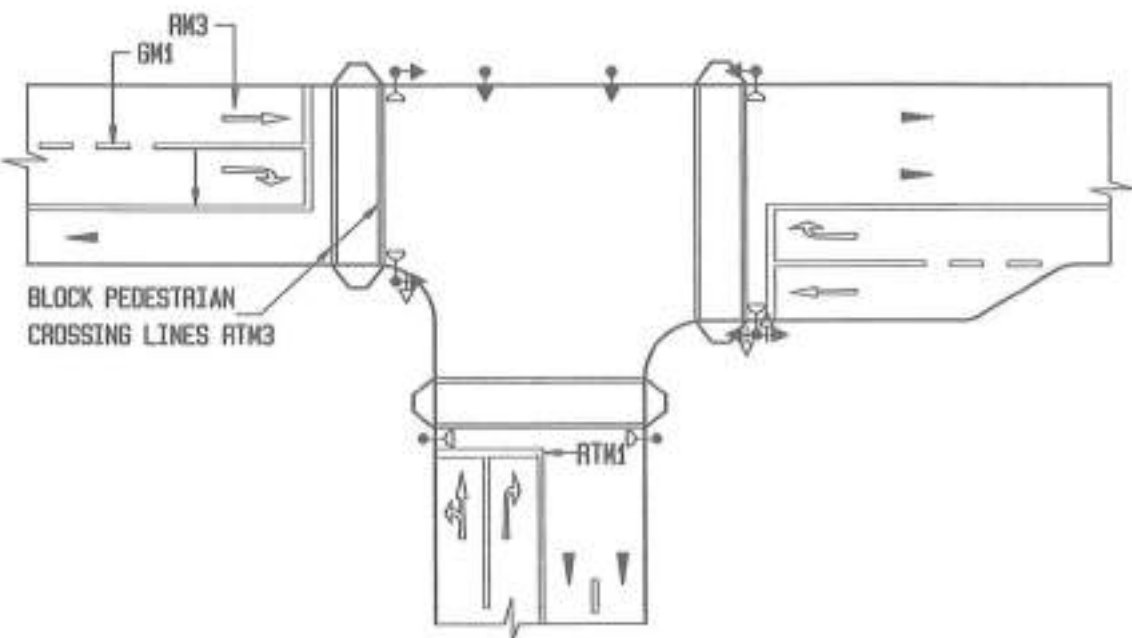
Detail 14.28.2 Standard Pole Mounting for Pedestrian Signal Heads

Fig 14.28

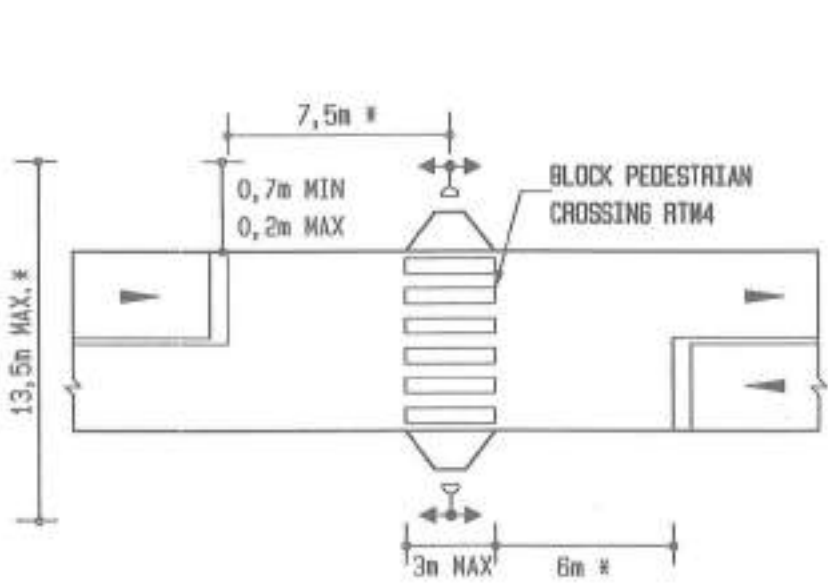
Pedestrian Traffic Signal Details



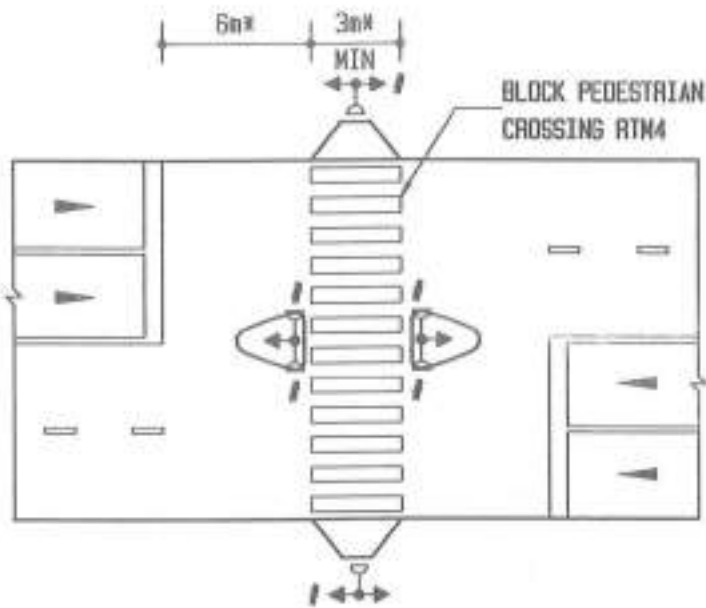
Detail 14.29.1 4-Way Single-Carriageway Junction with a Right Turn Phase on one Axis



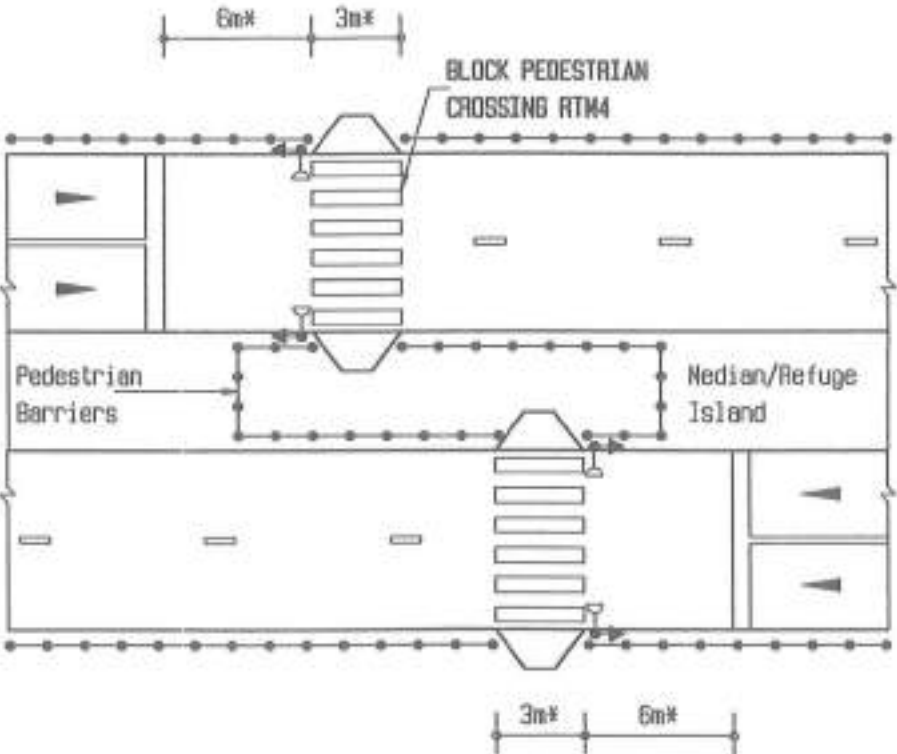
Detail 14.29.2 3-Way Single-Carriageway Junction with a Left Turn Filter Phase



Detail 14.29.3 Typical Mid-Block Pedestrian Crossing on a 2-Lane Single Carriageway Road



Detail 14.29.5 Typical Mid-Block Pedestrian Crossing with a Local Median Island on a 4-Lane Single Carriageway Road



Detail 14.29.4 Typical Staggered Mid-Block Pedestrian Crossing on a Divided-Carriageway Road, to be crossed in Two Stages

- LEGEND :
- Traffic signal heads
 - Pedestrian signal heads
 - / Optional signal heads
 - * Recommended dimensions

Fig 14.29
Schematic Examples of Pedestrian
Traffic Signal Layouts and Positioning

cleared the crossing by the time this indication is displayed.

- 6 A GREEN MAN indication shall not be displayed at the same time as a FLASHING or STEADY RED MAN indication.

14.7.4 Operation of Pedestrian Signals

- 1 The steady GREEN MAN INDICATION shall be displayed for an interval calculated to suit the particular pedestrian and traffic conditions and shall be not less than 4 seconds. Longer intervals than necessary should not be used where pedestrians conflict with turning vehicles, reducing vehicular capacity.
- 2 The FLASHING RED MAN INDICATION shall be displayed for a clearance interval equal to the time required for a pedestrian to walk across the roadway or carriageway (if there is a central refuge and the crossings are staggered or otherwise clearly intended to be crossed separately) at an average walking speed of between 1,2 m/s and 1,5 m/s for pedestrians or at a slower speed, if required, for elderly or infirm people. The FLASHING RED MAN INTERVAL should not be extended beyond the calculated period.
- 3 At a road junction the pedestrian phase may run concurrently with a non-conflicting parallel vehicular phase. Both may start at the same time, or the VEHICULAR GREEN INDICATION may be delayed by up to 3 seconds to allow pedestrians to enter the roadway ahead of the vehicles. The termination of the parallel vehicular yellow indication shall not occur before the termination of the flashing red man interval.
- 4 At a mid-block pedestrian crossing, other than a Pelican crossing described in paragraph 14.7.4.5 a RED DISC INDICATION shall be given at least for the full duration of the GREEN MAN AND FLASHING RED MAN INTERVALS. During the vehicular GREEN DISC INDICATION and the YELLOW DISC INDICATION preceding the vehicular RED DISC INDICATION, a STEADY RED MAN INDICATION shall be given. In some cases it may be necessary to introduce an all red period during which the vehicular RED DISC INDICATION and the STEADY RED MAN INDICATION run concurrently.
- 5 At Pelican crossings, a vehicular FLASHING YELLOW DISC INDICATION shall be given, which shall not terminate before the FLASHING RED MAN DISC INDICATION terminates. Vehicles facing a FLASHING YELLOW DISC INDICATION should give right of way to pedestrians crossing during the pedestrian clearance (FLASHING RED MAN) interval.
- 6 If pedestrian traffic signals are added to vehicular signals, at some time after their original installation, care should be exercised to see that no operational conflict exists with existing signal phases, such as a Left Turn On Red After Stop FLASHING RED ARROW INDICATION.