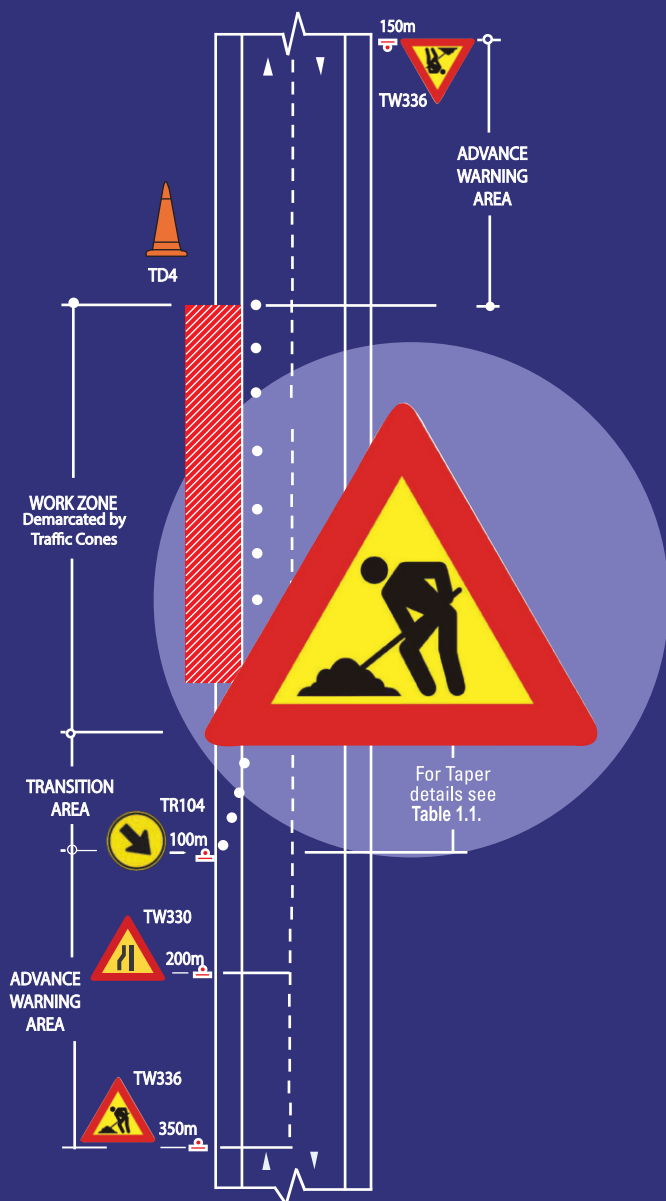


# ROADWORKS SIGNING



## ETHEKWINI TRANSPORT AUTHORITY

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This booklet is meant as a guide only and must be used in conjunction with the South African Development Community (SADC) Road Traffic Signs Manual Volume 2: Chapter 13.

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# 1. INTRODUCTION

## 1.1 GENERAL

The temporary and continually variable nature of road construction and maintenance operations on roadways which are open to traffic makes such sites potentially more dangerous than a permanent hazard since a driver familiar with the route cannot rely on his previous knowledge to predict conditions. In order to clearly identify these temporary conditions from permanent ones, exclusive signs with a yellow background are used. **ONLY TEMPORARY SIGNS COVERED BY THE SOUTH AFRICAN ROAD TRAFFIC SIGNS MANUAL MUST BE USED.**

Any work activity which results in a reduction in the road space available to drivers must be preceded, where space permits, by an adequate number of temporary road signs. The number and spacing of these signs is dependent on the site conditions and the design speed of the roadway.

**All appropriate temporary road signs must be in position prior to the commencement of work.** The crew placing the signs should use a vehicle which has been specially designed to make it highly visible to approaching drivers.

*Great care should be taken that only temporary signs appropriate to the current work activity are displayed. All actions required of a driver should appear obviously realistic to him. When work conditions are variable, the temporary signing must be maintained so that the signs correctly represent the conditions applicable at the given time. Signs which only apply during daylight or only to specific circumstances must be removed or concealed when their significance does not apply.*

Where a roadway is closed, partially closed, or diverted, or when an obstruction exists in the roadway, the alignment to be followed by vehicles should be delineated by delineators, cones, barricades, barriers or road markings, or an appropriate combination of these devices. Delineation should be created in such a manner as to give an impression of continuity, both by day and night. **The delineation devices used must be kept free of anything which could create a hazard should the device be struck by a passing vehicle.**

## 1.2 OBJECTIVES OF ROADWORKS SIGNING

In order to achieve the safest operating environment, the following objectives should be sought with disciplined attention to detail :

- to establish, as far as possible, a standard pattern of traffic control devices for typical road construction and maintenance operations which is simple and clear to understand;
- to develop in drivers, by means of exclusive signs which are visible and have a simple and easily understood message, a high level of awareness that a reduced standard of roadway exists ahead of them, and the knowledge that this requires their increased vigilance;
- to generate a high level of driver respect and familiarity for the efficiency and adequacy of the traffic management used at roadworks;
- to maintain roadway capacity and traffic flow at the highest possible levels, particularly on the higher class routes, where large traffic volumes would otherwise result in congestion, delay and accident potential;
- to keep roadwork related accident levels at a minimum;
- to provide adequate information to redirect drivers via alternate routes when detours are implemented;



- to provide designers of traffic management systems and the site staff who implement them, with adequate tools with which to accomplish the above objectives; and
- to make designers and site staff aware of the need for a very high degree of discipline in the management of their sites on a day to day basis.

### **1.3 TRAFFIC MANAGEMENT AT ROADWORKS SITES**

The manner in which a roadway may be affected by construction and maintenance operations varies considerably. Complete standardisation of practices for signing and delineating such sites is impractical. However, it is important that design and site staff adopt a disciplined approach to the traffic management of roadworks sites. A systematic approach should be used to present the driver with changes in conditions, one change at a time, by the use of standardised sub-components. In this way, the action or reaction of the driver can be anticipated and provided for with an acceptable degree of certainty and effectiveness. The layouts provided in later sections have therefore been prepared with these objectives in mind.

## 1.4 A SYSTEMATIC BREAKDOWN OF A WORKSITE INTO STANDARD SUB-SECTIONS

Refer to Figure 1.1: Component Parts of Temporary Traffic Control

### Advance Warning Area

- This area is used to advise motorists that there are temporary conditions ahead of them which require particular care.
- A stepped speed may be required within this area. These speed reductions should be indicated at reasonable intervals (200m minimum) and occur at 20km/h steps until the speed for which the traffic control has been designed is indicated.
- Diagrammatic signs may be used, depending on the nature of change ahead.
- The length of the advance warning area should relate directly to measured approach speeds. A realistic distance must be allowed for speed reduction.

### Transition Area

- This is the area in which drivers are required to take actions such as shifting positions in the roadway, merging into lanes, enter a detour, etc.
- The transition area must be clearly defined using delineator plates.
- Complex roadworks sites should be broken down into a number of standardised transition situations.
- The length of the transition area will depend on the approach speed of traffic and the amount of shift in alignment involved by the transition. Details of tapers are given at the end of this section in Table 1.1.

### Stabilising Area (to be used in multiple lane drops)

- The purpose of this area is to allow traffic flow to stabilise after negotiating a transition area before reaching another change of condition.
- The area is normally defined by delineator plates.
- Diagrammatic signs may also be used.

### The Buffer Zone

- The principal function of the buffer zone is to separate the traffic from the workers at the site and must not be less than 50m in length.

### Work Area

- This area must be adequately defined by delineators in the less complex situations.
- Where there is risk of traffic entering the work area, temporary barricades of a standard sufficient to prevent vehicle penetration, are recommended.
- The work area must not be longer than is necessary.

### Termination Area

- This area involves the return of traffic to normal flow conditions.
- In simple cases, this can be achieved by a relatively rapid taper of delineator signs.
- In more complex conditions, a reverse crossover may be required.
- Courtesy signs and permanent speed limit signs restoring the normal speed limit conditions, should be adjacent to each other as soon as possible after the end of the termination area.

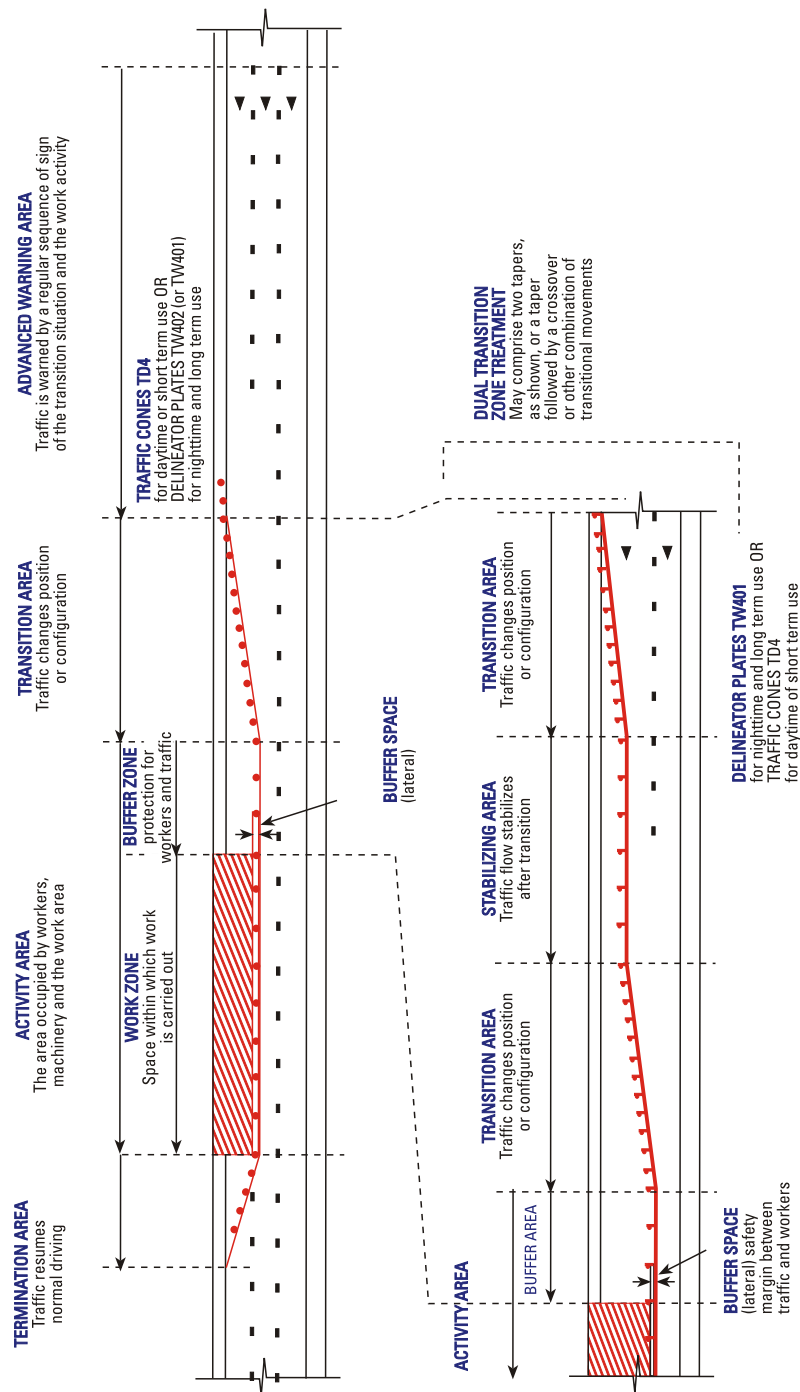


Figure 1.1: Component Parts of Temporary Traffic Control Zone

Table 1.1: Taper Treatments at Roadworks		
Condition	Taper Rate	Length for 4m shift
<b>A. Transition Tapers</b>	120 – 80km/h approach speed	200m to 150m
	80 – 60km/h approach speed	120m to 60m
	60 – 40km/h approach speed	80m to 30m
	under 40km/h approach speed	40m to 20m
	1 in 50 to 1 in 40	
<b>B. Termination Tapers</b>	1 in 30 to 1 in 20	
	1 in 20 to 1 in 10	
All	1 in 10 to 1 in 5	
		40m to 20m

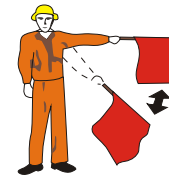
**Note: A taper should never be extended continuously over two lanes. If it is required that two lanes be dropped, this should be achieved by dropping each lane one at a time and separated by a stabilising area.**

## 1.5 TRAFFIC CONTROL METHODS

The choice of the control method to be used will depend on the speed and volume of traffic, and on the length of, and visibility on, the section of roadway subject to control.

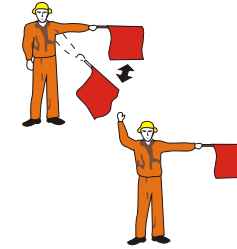
### For traffic volumes less than 200 vehicles per hour

Flagmen are a simple and flexible method of control in this case. The flagmen at each end must be clearly visible to each other and the section must not exceed 100m in length. Flags must be at least 450mm X 450mm and should be made of durable fluorescent red-orange or red cloth fastened to a staff at least 1m long. Flagmen stations should be located far enough from the roadworks to ensure that drivers have sufficient distance to slow down before entering the worksite but not so far away that drivers will tend to increase speed before passing the worksite. Distinctive clothing should be worn by flagmen on duty so that the public will recognize them and respect indications given by them. For the flagging procedures, refer to Detail 1.1: General Flag Procedures.



#### Warning Traffic

Stand facing traffic looking directly at the driver - flag in left hand - move flag up and down from side of leg to shoulder height continuously - For added effect move right arm up and down as well.



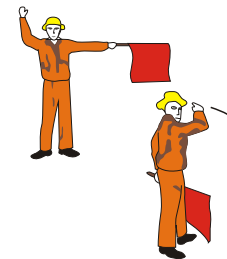
#### To Stop Traffic

Stand facing traffic looking directly at the driver - flag in left hand - move flag up and down from side of leg to shoulder height until vehicle is 100 paces away - Looking at driver directly - hold flag at shoulder height with outstretched arm - raised right hand with palm to face traffic - This procedure is for short-term use only.



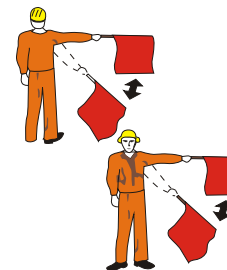
#### Vehicles to Proceed

Turn right hand side of body towards oncoming traffic - lower flag behind left leg and indicate with horizontal swinging movement of the right arm that vehicles may proceed.



#### To Slow Traffic Down

Stand facing traffic looking directly at the driver - keep flag at shoulder height with outstretched arm and raise right hand - palm facing traffic - as soon as traffic has slowed enough turn right hand side of body to oncoming traffic - lower flag behind left leg and indicate with horizontal swinging movement of the arm that vehicles may proceed.



#### Warning of Slow-moving Vehicles

Walk 300 paces in front of moving vehicle while raising and lowering flag continuously from side of leg to shoulder height - at sharp curves or when visibility of vehicles is reduced, stand still, facing and visible to oncoming traffic, and continue to raise and lower flag to warn traffic - use flag in arm nearest to road.

### Detail 1.1: General Flag Procedures

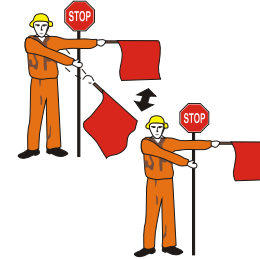
## For traffic volumes greater than 200 vehicles per hour

A STOP/GO R1.5A and R1.5B portable sign should be used where traffic volumes exceed 200 vehicles per hour and where the worksite is greater than 100m in length. The sign should be positioned so that it is readily visible to the approaching driver. A typical advance sign sequence must be set up ahead of the STOP/GO signs. The workers controlling the signs must be visible to each other, or be in radio contact. Temporary traffic signals should be used if there is no visibility and radio contact between the flagmen, and also if the traffic volumes exceed 500 vehicles per hour. The temporary marking of a stop line is recommended. For flag procedures refer to Detail 1.2: STOP/GO Procedures.



### Warning Traffic

Stand with right hand side of body towards oncoming traffic - hold STOP/GO sign with GO turned to traffic with right hand - move flag up and down continuously, behind sign, from side of left leg to shoulder height while vehicles are approaching.



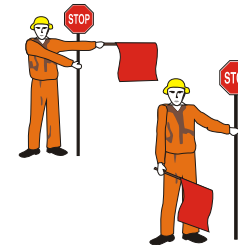
### To Stop Traffic

Stand with right hand side of body towards oncoming traffic - hold STOP/GO sign with the STOP side facing traffic - move flag up and down continuously from side of left leg to shoulder height, behind sign, until traffic is 100 paces away then keep flag at shoulder height pointing towards road centre.



### Vehicles to Proceed

Make sure that all vehicles from the other side have passed through and that the flagman at the opposite end has closed the road - turn STOP/GO sign to GO and lower flag behind left leg behind the sign.



### To Slow Traffic Down

Stand with right hand side of body towards oncoming traffic - hold STOP/GO sign with right hand with STOP facing traffic - hold flag at shoulder height with left hand pointing towards road centre - when oncoming vehicle has slowed, turn sign to GO and lower flag behind left leg behind sign.

## 1.6 SETTING OF SPEED LIMITS AT ROADWORKS

The purpose of speed limits is to reduce the number and severity of accidents to minimum levels consistent with the provision of smooth and efficient traffic flow. It is essential that speed limits are realistic and that the public can learn to respect and rely on them. In planning the traffic management and work phases, the need for unrealistic low speed limits over excessive distances must be avoided. Calculations details are given in Section 13.4 of Chapter 13 of the SADC Road Traffic Signs Manual.

## 2. SIGNING APPLICATIONS FOR SHORT TERM WORKS

'Short term work' is generally defined as work during which the 'site' is affected by the work being undertaken for a duration of up to 24 hours. Most light to medium maintenance work is therefore included by 'short term work'. Maintenance operations which are:




- mobile (or move along the road at a steady rate), or
- such that at the end of the days work the roadway is returned to full use by traffic until maintenance recommences the next day (or after a weekend),

are therefore classified as short term work. Conversely, any maintenance work during which road traffic signs are kept in place for periods longer than 24 hours should be treated in terms of application details given in the Roadworks Signing for Rural Roads, Urban Streets and Freeways sections of this booklet.

2.1 MAINTENANCE IN ROAD RESERVE (OFF THE ROAD)

CHECKLIST

- ☐ Is the site set up with adequately safe buffer zones?
- ☐ Are workers likely to get within 3m of passing vehicles?
- ☐ Is the maintenance unit vehicle and equipment well off the road?
- ☐ Can signs be clearly seen by approaching drivers if not, move them further out?
- ☐ Is a higher level of signing appropriate to ensure worker and public safety?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	1200	2
	TIN 11.3	1200	4
	FLAGS	450 X 450	2

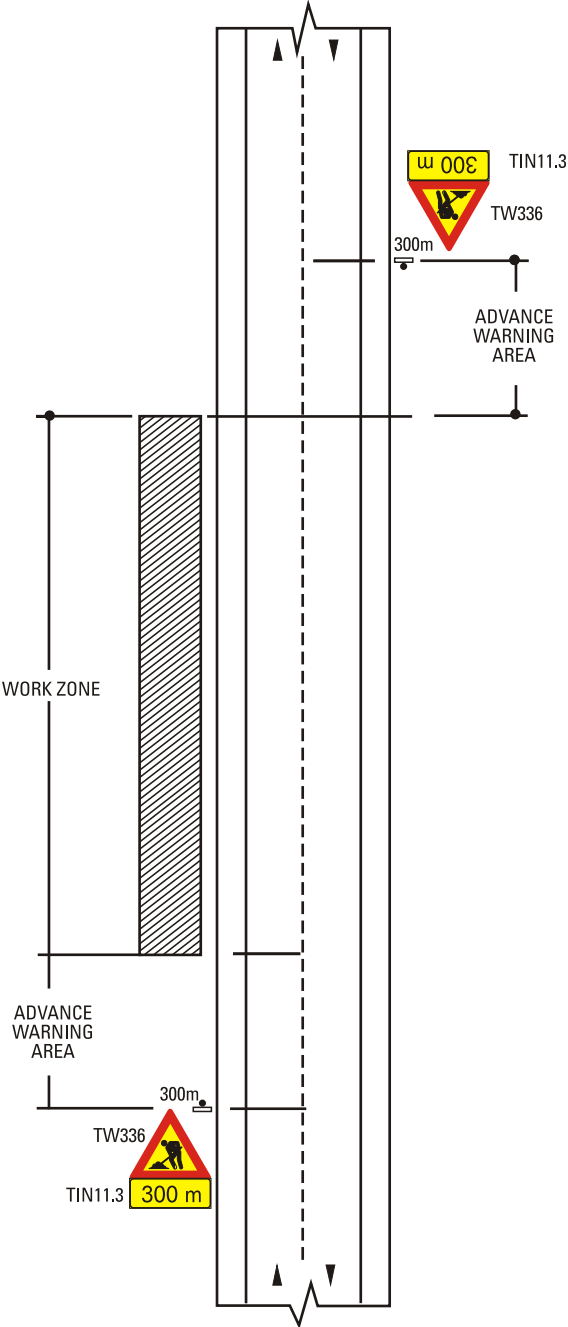







Figure 2.1: Maintenance in Road Reserve (off the road)



## 2.2 FIXED SITE - WORK ON SHOULDER

### CHECKLIST

- ☐ Are operating speeds in excess of 80km/h?
- ☐ Does the unit have enough cones / delineators for correct spacings?
- ☐ Does the unit have delineators or retroreflective sleeves for cones for night time use?
- ☐ Is the site set up with adequately safe buffer zones?
- ☐ Is there adverse vertical or horizontal curvature on the approach to the site?
- ☐ Can signs be mounted higher to improve early warning of the site if required?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	1200	2
	TW330	1200	1
	TR104	1200	1
	TD4	450 750	#
	TR201-80 TR201-60	1200	2 2

# 15 minimum plus 10 per 100m site length

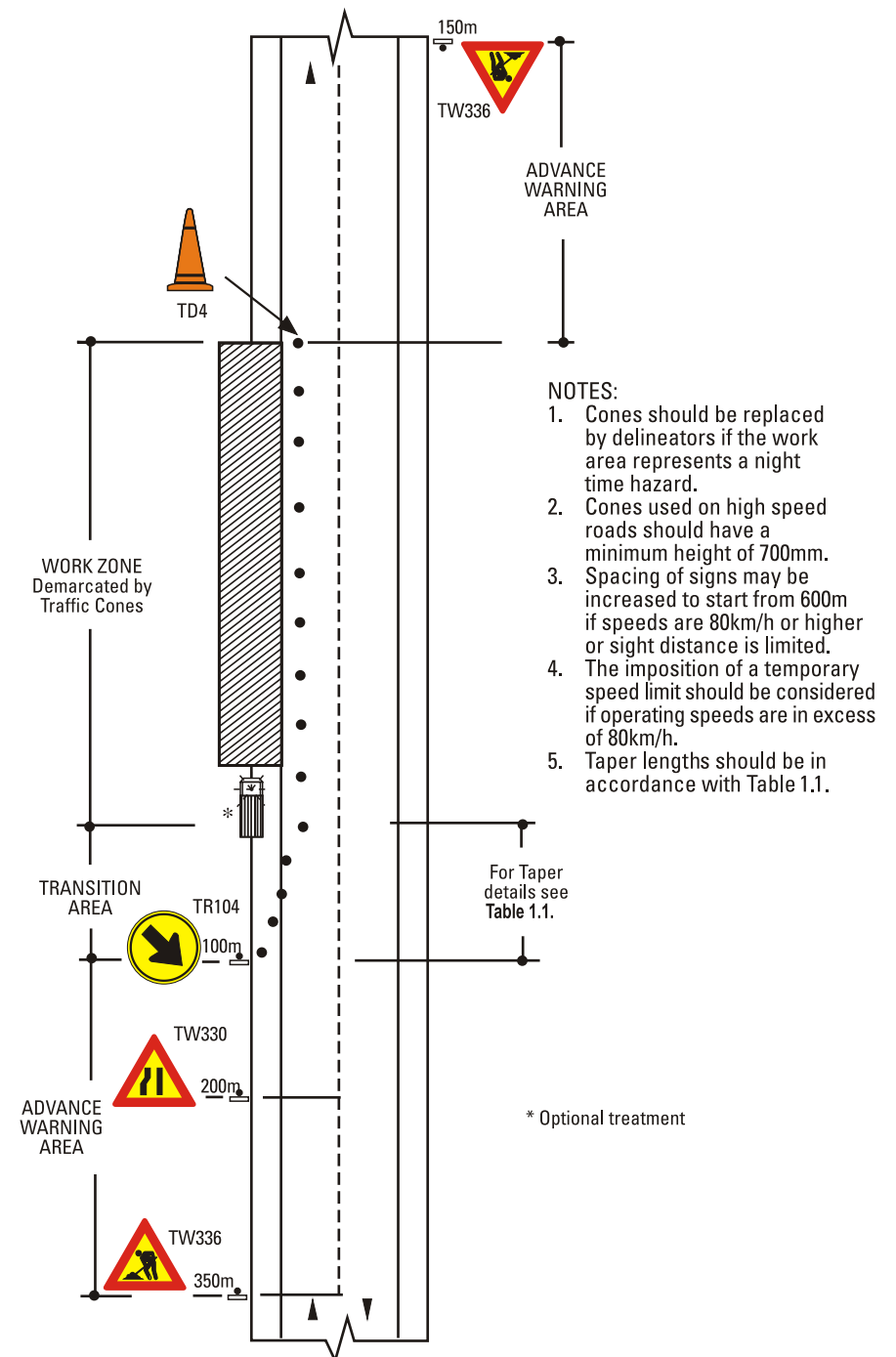







Figure 2.2: Fixed Site - Work on Shoulder

## 2.3 LOCALISED SMALL WORK SITE

### CHECKLIST

- ☐ Are operating speeds in excess of 80km/h?
- ☐ Does the unit have enough cones / delineators for correct spacings?
- ☐ Does the unit have delineators or retroreflective sleeves for cones?
- ☐ Is the site set up with adequately safe buffer zones?
- ☐ Is there adverse vertical or horizontal curvature on the approach to the site?
- ☐ Is there safe operating width for two-way traffic operation?
- ☐ Should the use of STOP/GO control or temporary traffic signals be considered?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	1200	2
	TW329 TW330	1200	1 1
	TR104	1200	2
	TW411	300 X 1800	1
	TD4	450 750	#

# 20 minimum plus 10 per 100m site length

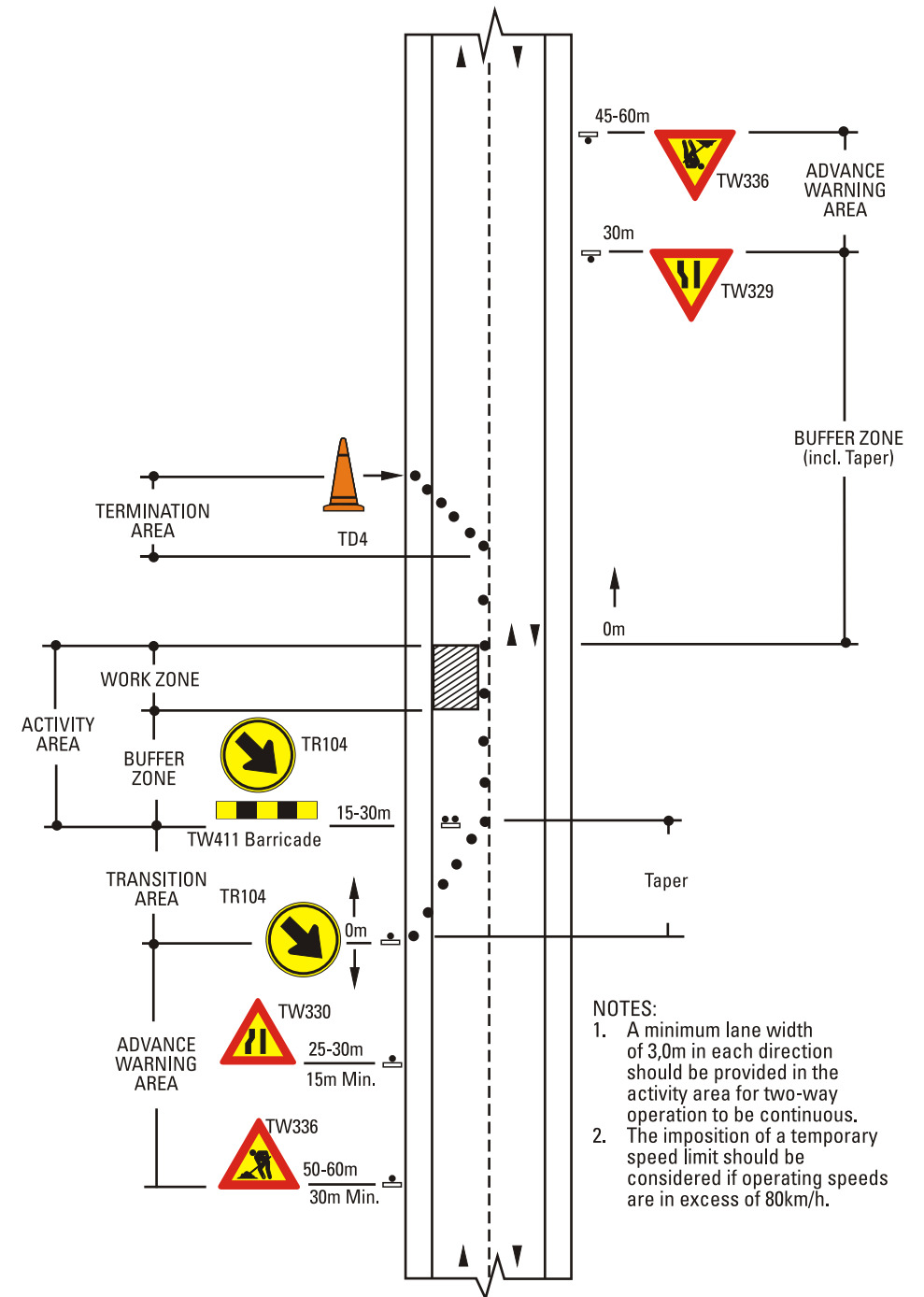






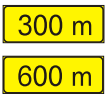

Figure 2.3: Localised Small Work Site

2.4 SHORT TERM LANE CLOSURE

CHECKLIST

- ☐ Are operating speeds in excess of 80km/h?
- ☐ Are enough cones available for the length of the site?
- ☐ Is the site set up with adequately safe buffer zones?
- ☐ Will the work extend beyond the balance of the working day?
- ☐ Is visibility to the work area or the first sign in any way limited?
- ☐ Does the control of the site need to be upgraded to a higher order?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	1200	2
	TW329 TW330	1200	1 1
	TR104	1200	1

INVENTORY			
Sign	Code	Size (mm)	Qty
	TD4	450 750	#
	TIN 11.3	1200	2
	FLAGS	450 X450	6

# 50 minimum plus 10 per 100m site length

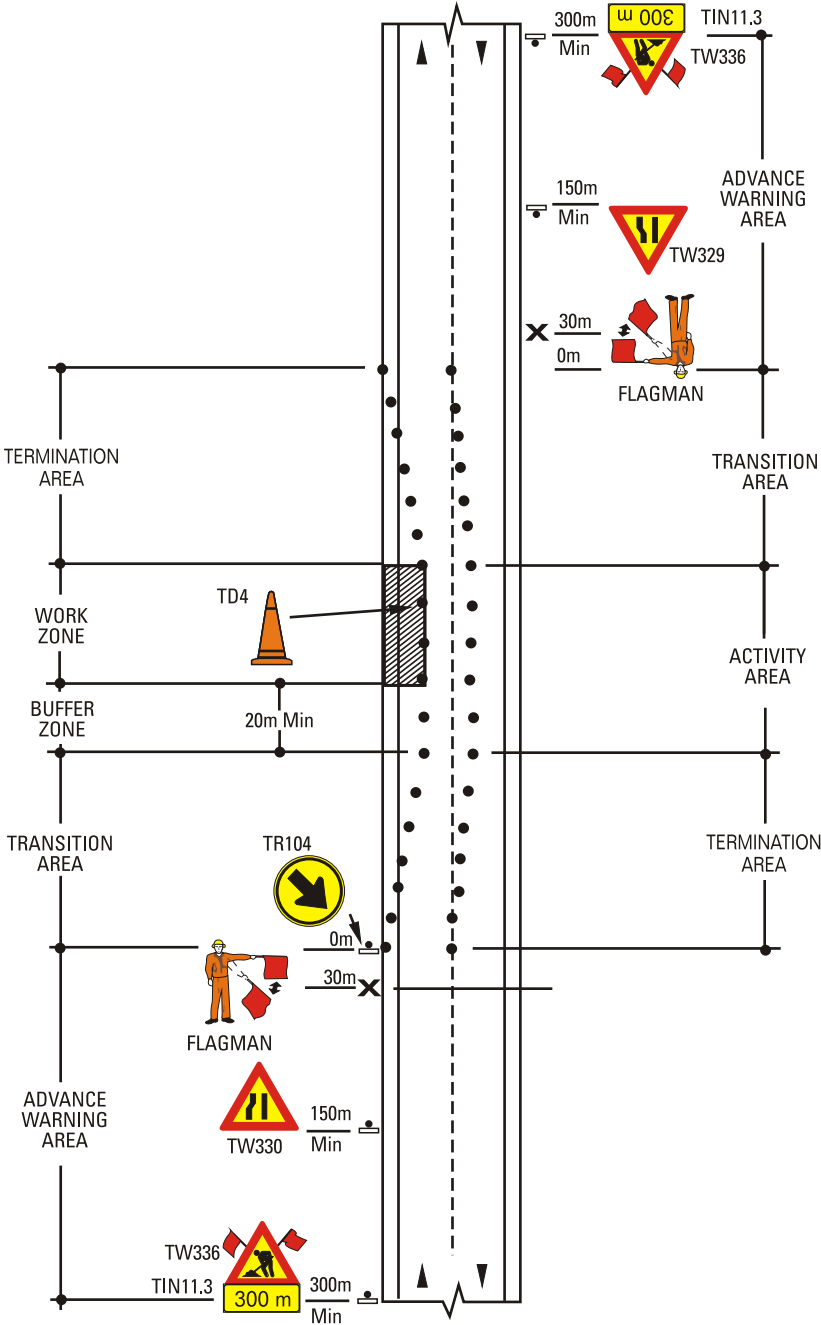





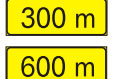

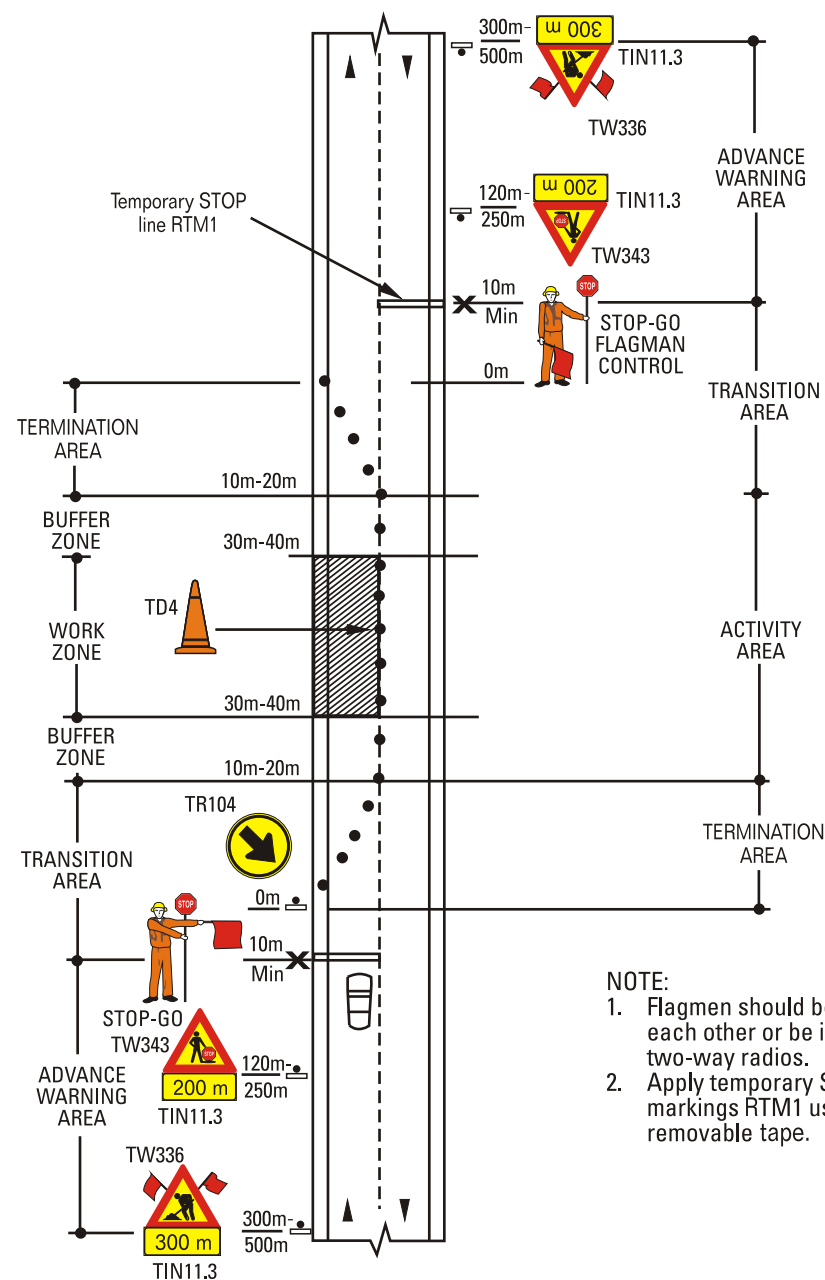


Figure 2.4: Short Term Lane Closure - Partial Lane

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	1200	2
	TW343	1200	2
	TR104	1200	1
	R1.5A R1.5B	750	2

INVENTORY			
Sign	Code	Size (mm)	Qty
	TD4	450 750	#
	TIN 11.3	1200	2 2
	FLAGS	450 X450	6

# 50 minimum plus 10 per 100m site length






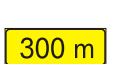

- NOTE:
1. Flagmen should be able to see each other or be issued with two-way radios.
  2. Apply temporary STOP line markings RTM1 using removable tape.



Figure 2.5: Short Term Lane Closure - Full Lane

## 2.5 SHORT TERM LANE DROP WITHIN DEVIATIONS

### CHECKLIST

- ☐ Are operating speeds in excess of 80km/h?
- ☐ Can traffic speeds be reduced effectively to allow these applications to work safely?
- ☐ Is the site set up with adequately safe buffer zones?
- ☐ Can signs be displayed at a greater than minimum mounting height?
- ☐ Are flagmen alert and well motivated?
- ☐ Would flags on the first sign in each direction assist driver awareness?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	1500	2
	TW330	1500	1
	TR104	1200	1
	TIN 11.3	1500	2
	FLAGS	450 x450	6

INVENTORY			
Sign	Code	Size (mm)	Qty
	TD4	750	#
	TW214	1500	1

# 60 minimum plus 20 per 100m site length

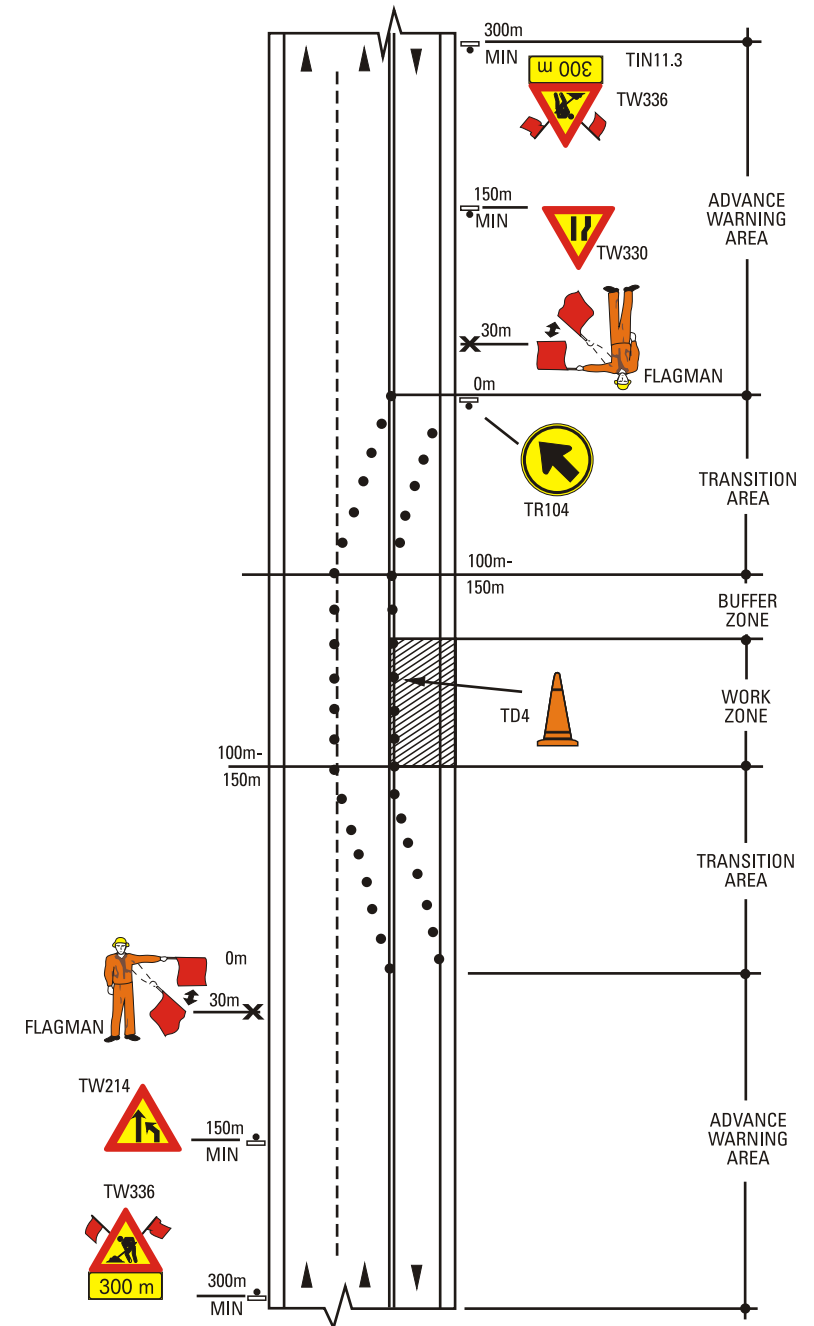





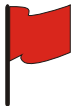


Figure 2.6: Short Term Lane Drop within Deviation - Work in Single Lane Section

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	1500	2
	TR104	1500	1
	TIN 11.3	1500	2

INVENTORY			
Sign	Code	Size (mm)	Qty
	TD4	750	#
	TW215	1500	1
	FLAGS	450 x450	5

# 60 minimum plus 20 per 100m site length

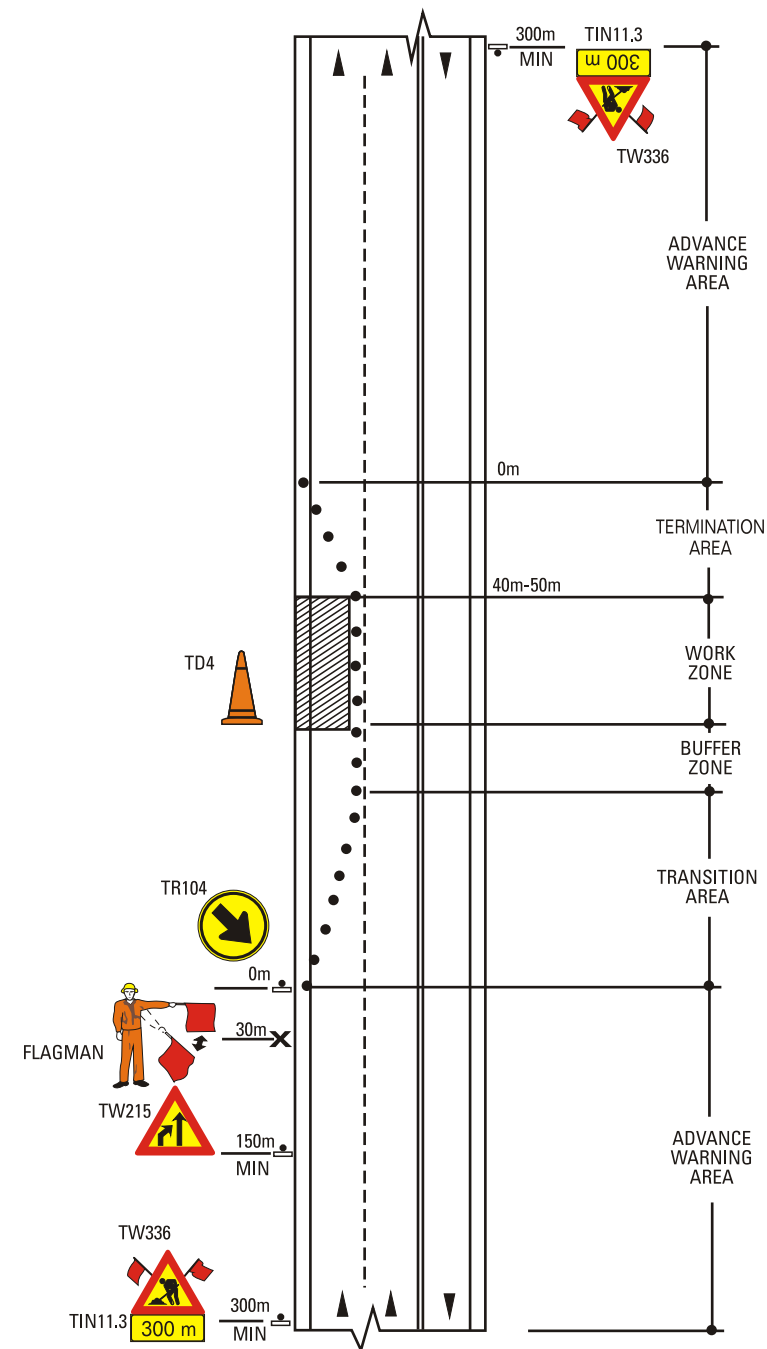









Figure 2.7: Short Term Lane Drop Within Deviation - Work in 2-Lane Section

## 2.6 STOP / GO TRAFFIC CONTROL- MINOR WORKS

### CHECKLIST

- ☐ Are operating speeds in excess of 80km/h?
- ☐ Do advance signs for the STOP/GO control clash with other roadworks signs within the site?
- ☐ Are the flagmen alert and well trained for their task?
- ☐ Are the flagmen fully visible to oncoming traffic?
- ☐ Are the flagmen standing in safe positions?
- ☐ Can the restriction be eliminated to permit two-way traffic by dusk?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	1200	2
	TW343	1200	2
	R1.5A R1.5B	750	2
	TR103 TR104	1200	1 2
	TW411	300 x 1800	2

INVENTORY			
Sign	Code	Size (mm)	Qty
	FLAGS	450 x 450	2
	TD4	450 min	#

# 20 minimum plus 10 per 100m site length

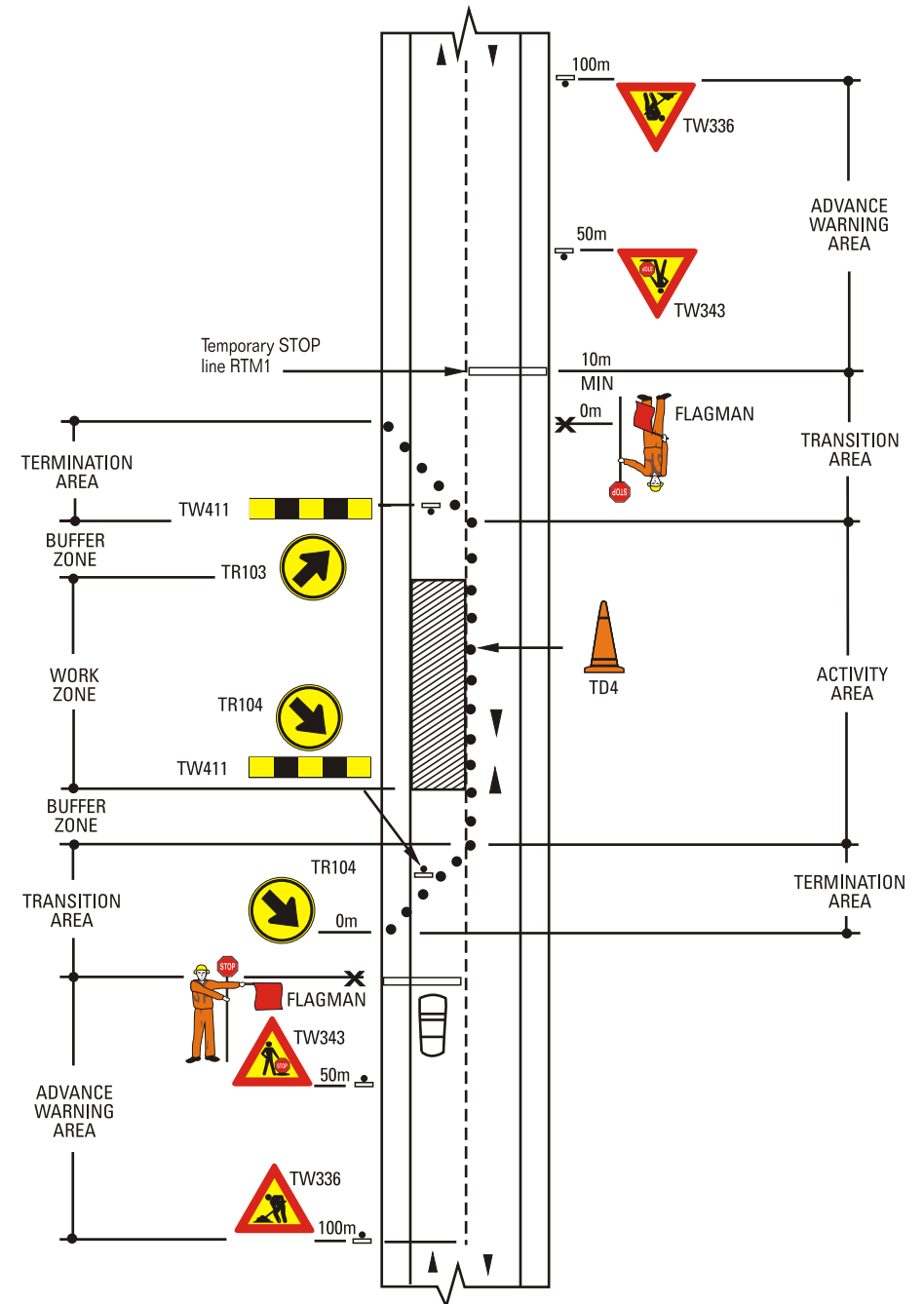





Figure 2.8: STOP/GO Traffic Control - Minor Works



2.7 MOBILE MAINTENANCE OF ROAD SHOULDER

CHECKLIST

- ☐ Are workers equipped with high visibility clothing?
- ☐ Are flagmen alert and well trained?
- ☐ Are all flags clean and bright?
- ☐ Are the signs on the HIGH VISIBILITY REAR PANEL correctly set?
- ☐ Are all flashing lights working?
- ☐ Is the tractor clean and brightly painted?

INVENTORY			
Sign	Code	Size (mm)	Qty
	FLAGS	450 X450	1
	TR103/ TR104 TW336	900 1200	1 1
	Yellow Flash Light		2

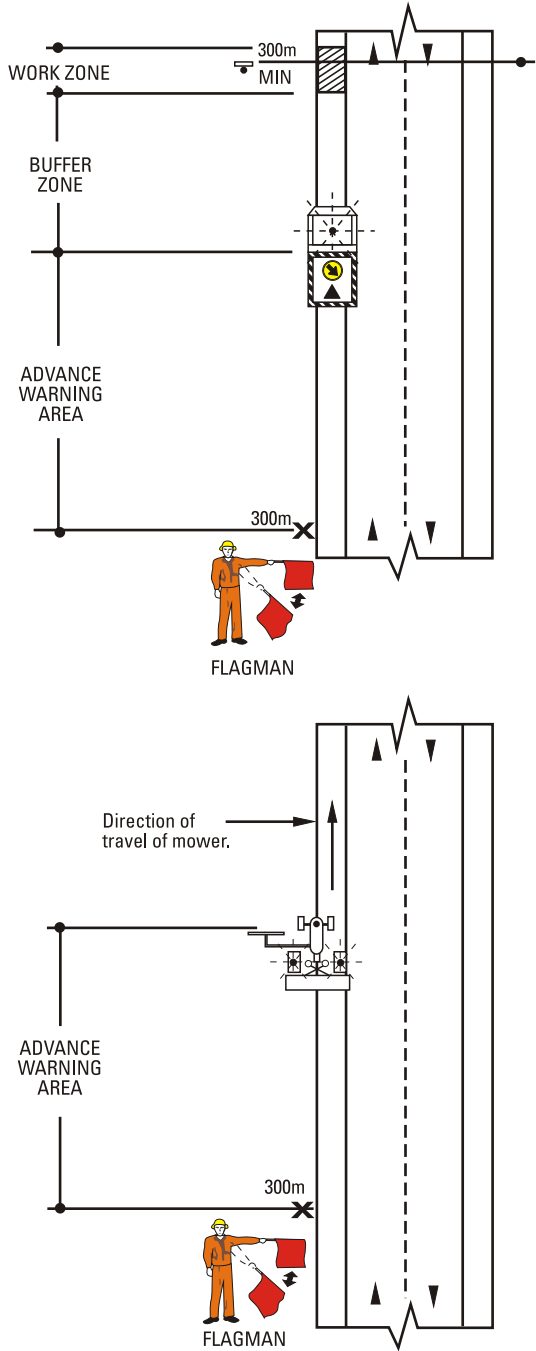






Figure 2.9: Mobile Maintenance of Road Shoulder

2.8 MOBILE MAINTENANCE IN CENTRE OF ROADWAY

CHECKLIST

- ☐ Are workers equipped with high visibility clothing?
- ☐ Are flagmen alert and well trained?
- ☐ Are all flags clean and bright?
- ☐ Are the signs on the HIGH VISIBILITY REAR PANEL correctly set?
- ☐ Are all flashing lights working?

INVENTORY			
Sign	Code	Size (mm)	Qty
	FLAGS	450 X450	1
	TR103	1200	1
	TR103/ TR104 TW336	900 1200	2 2
	Yellow Flash Light		2 2

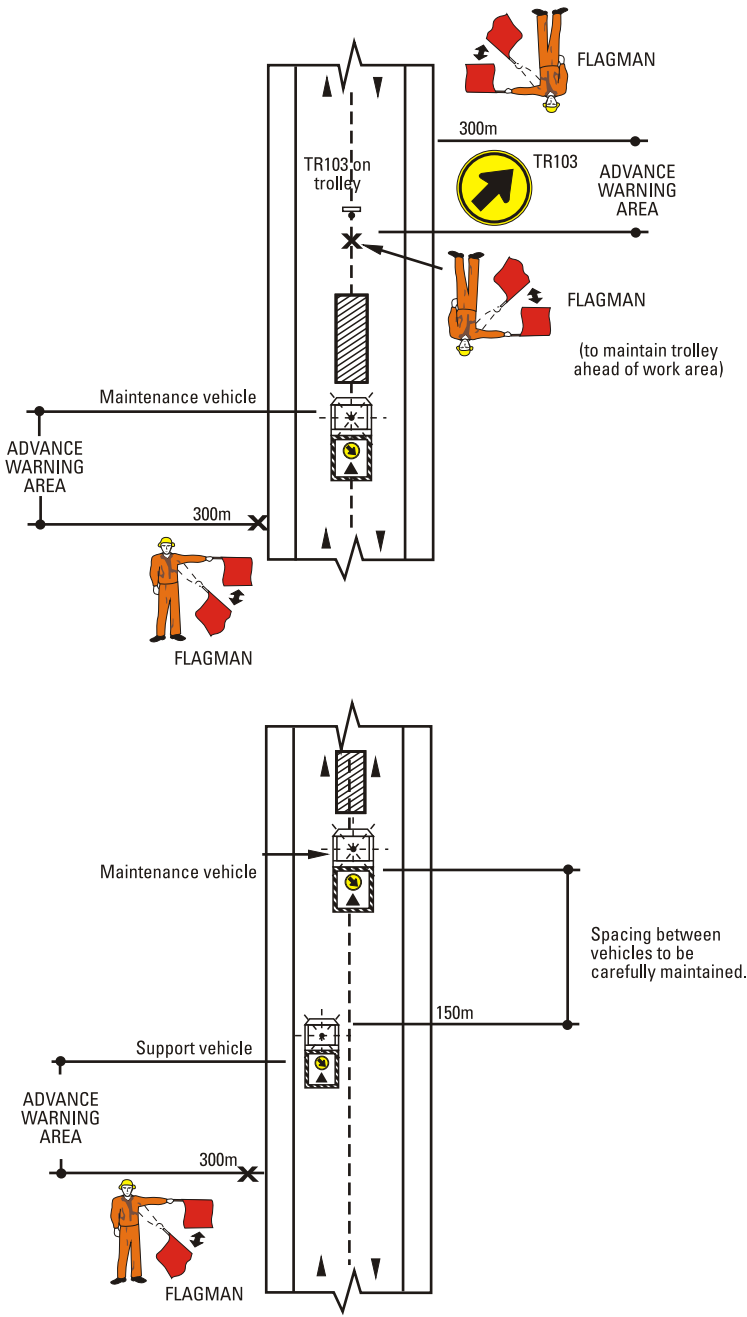



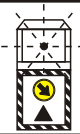



Figure 2.10: Mobile Maintenance in Centre of Roadway

2.9 MOBILE MAINTENANCE OF DUAL CARRIAGEWAY ROADS

CHECKLIST

- ☐ Are all flags clean and bright?
- ☐ Are the signs on the HIGH VISIBILITY REAR PANEL correctly set?
- ☐ Are all flashing lights working?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	1200	2
	FLAGS	450 X450	6
	TIN 11.2	1200	1
	TR103/ TR104 TW336	900 1200	1 1
	Yellow Flash Light		2 2

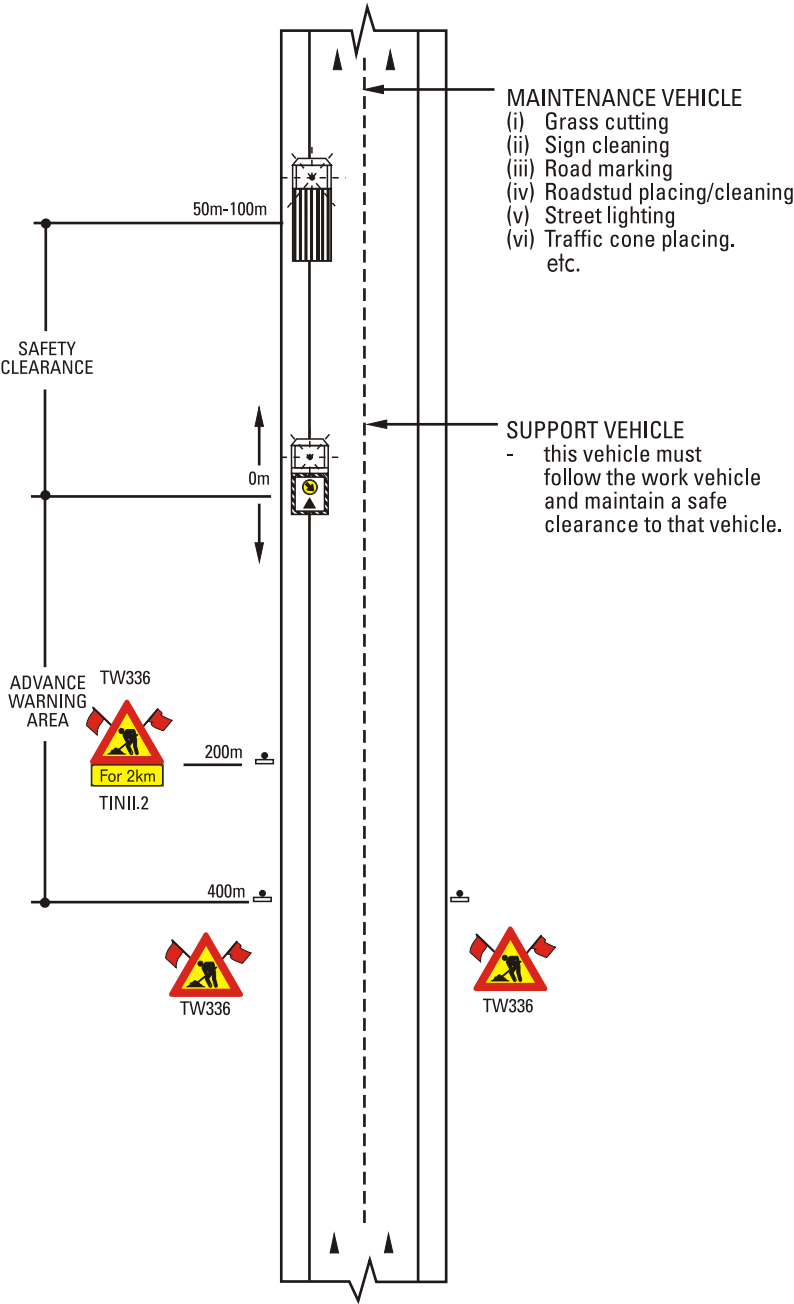


Figure 2.11: Mobile Maintenance of Dual Carriageway Roads

### 3. SIGNING APPLICATIONS FOR RURAL ROADS

The examples of temporary signing given in this section deal with applications which are most typical of rural roads such as :











- gravel road construction including re-gravelling,
- reseal / chip-and-spray type surfacing operations,
- partial road closure / reduced width operations,
- separately constructed deviations around the work site.

Although common to rural roads, the conditions listed above may also occur in urban areas where similar signing principles to those illustrated should be used.

3.1 STOP / GO OPERATION

CHECKLIST

- ☐ Do the advance signs for the STOP/GO control clash with other roadworks signing within the site?
- ☐ Is the flagman fully visible to oncoming traffic?
- ☐ Are all signs fully visible to oncoming traffic?
- ☐ Is the flagman standing in a safe position?
- ☐ Is the lateral buffer zone within the site adequate for worker and public safety?
- ☐ Can the restriction be eliminated to permit two-way traffic by dusk?

INVENTORY				INVENTORY			
Sign	Code	Size (mm)	Qty	Sign	Code	Size (mm)	Qty
	R201-60 R201-80	1200	2 2		TW337	1200	2
	R201-100	1200	2		TW344	1200	2
	TW 336-WA	1200 X1600	2 or 0		TW331	1200	2
	TW336	1200	2		TW339	1200	2
	TW343	1200	2		TIN 11.3	1200	2 2

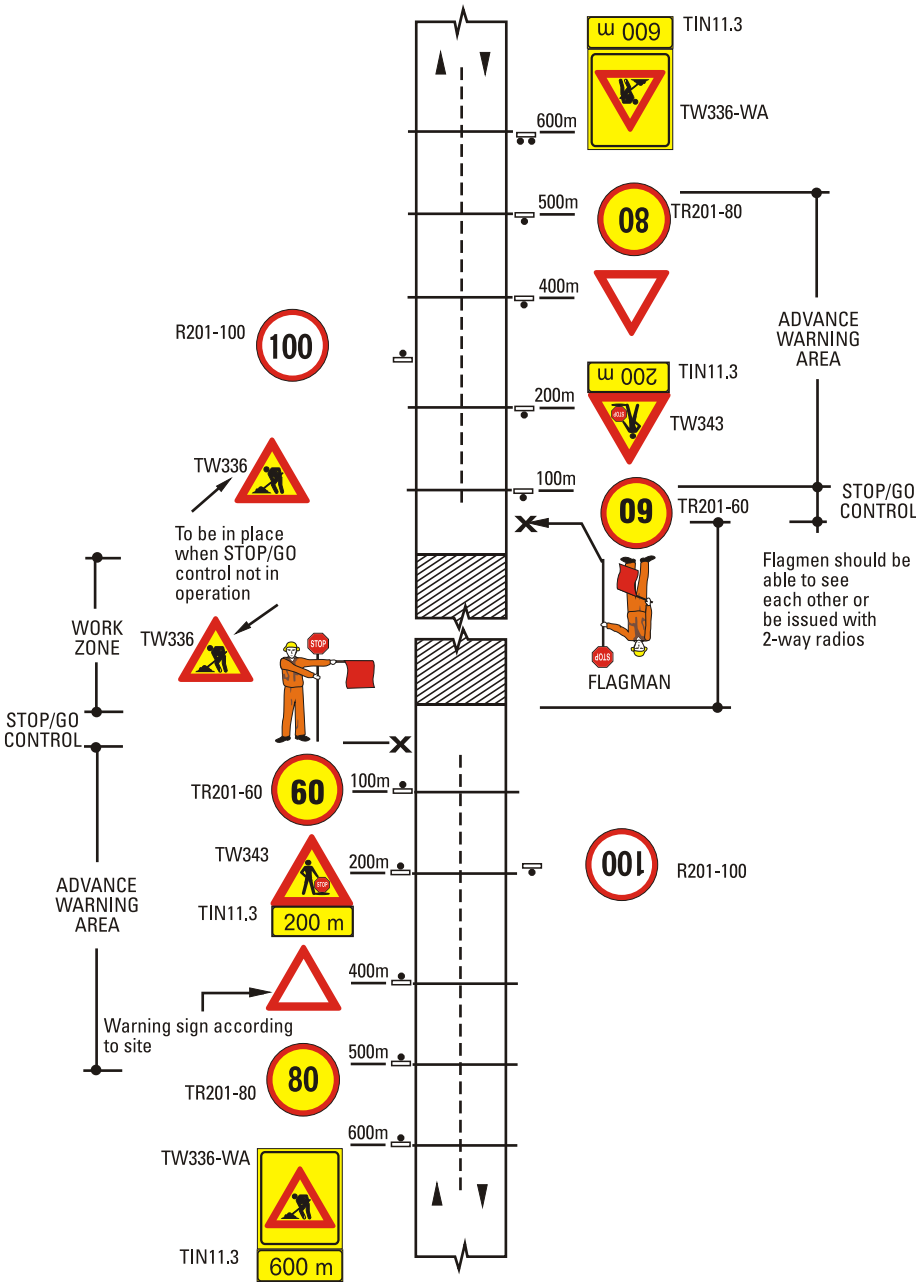


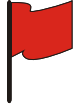




Figure 3.1: STOP/GO Operation

## 3.2 GRAVEL ROAD BLADING / RE-SHAPING

### CHECKLIST

- ☐ Is the grader's flashing light operational?
- ☐ Is the grader working in hilly terrain and / or on winding roads?
- ☐ Are labourers also present in the section?
- ☐ Are flagmen required?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW337	1200	6
	TIN 11.2	1200	2
	FLAGS	450 X450	2
	MARKER FLAG	500 on 3000 aerial	1 per grader
	TW336	1200	4

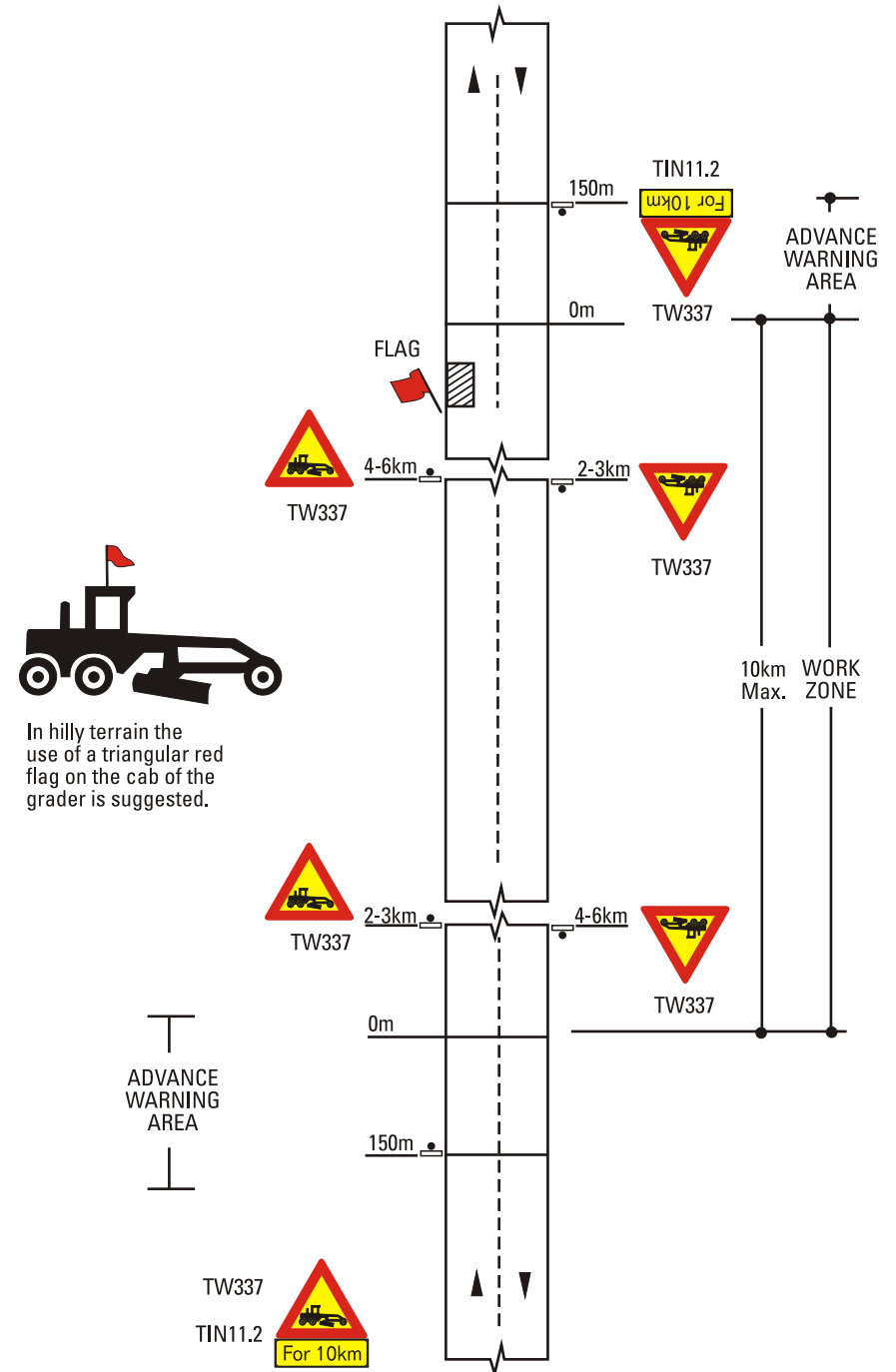










Figure 3.2: Gravel Road Blading/Re-shaping

### 3.3 GRAVEL ROAD RECONSTRUCTION

#### CHECKLIST

- ☐ Are gravel heaps to be left in place overnight?  
Do all signs have good retroreflective properties?
- ☐ Is a deviation or detour likely to be required?
- ☐ What is a safe manageable length of site for the size of work unit and likely traffic?
- ☐ Is the unit equipped for STOP / GO operation?

INVENTORY				INVENTORY			
Sign	Code	Size (mm)	Qty	Sign	Code	Size (mm)	Qty
	TW336 -WA	1200 X1600	2		TW337	1200	2
 	R1.5A/ R1.5B	750	2		TW343	1200	2
 	TIN 11.3	1200	2 2		FLAGS	450 X450	2

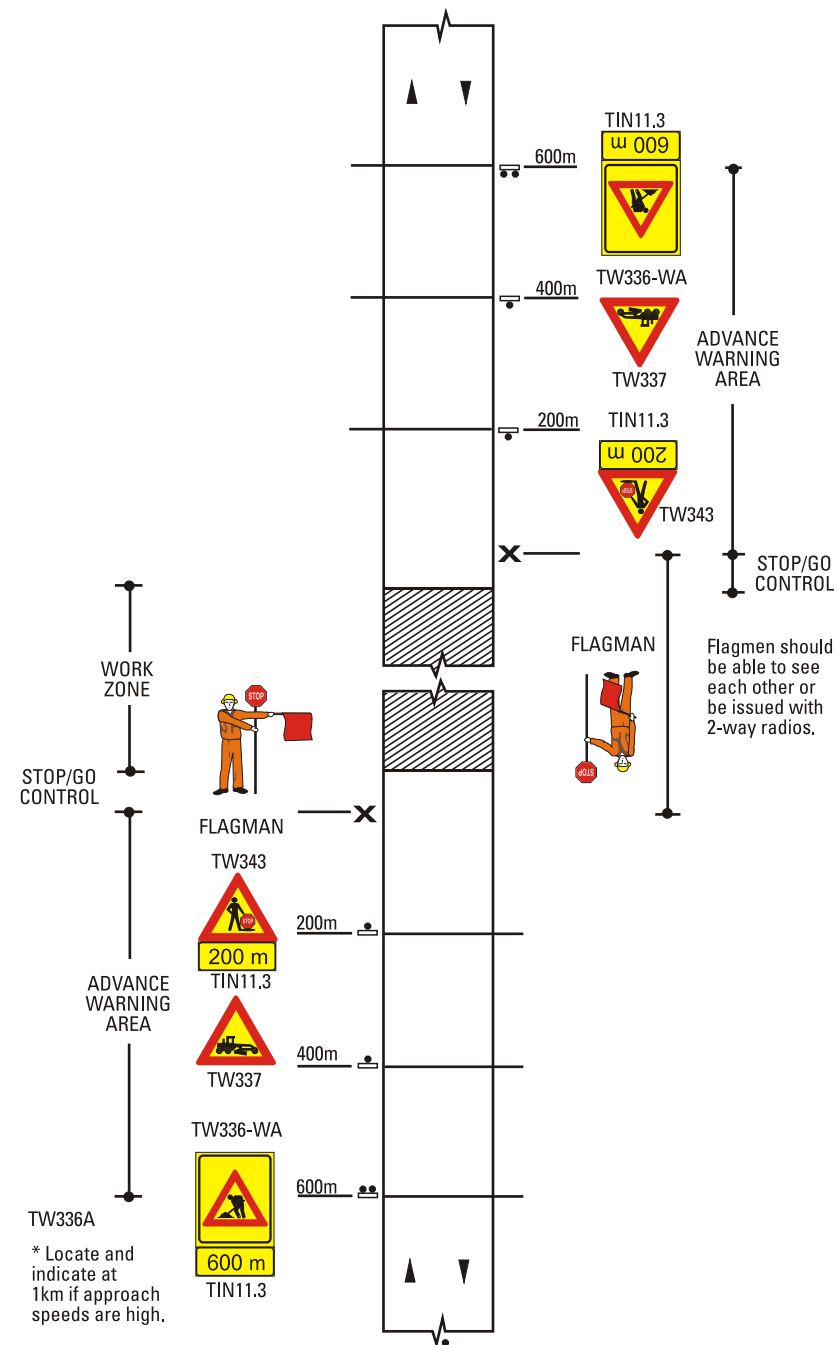


Figure 3.3: Gravel Road Reconstruction - Gravel Being Spread/Worked



INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336 -WA	1200 X1600	2
	TR201-60 TR201-80	1200	2 2
	TW329 TW330	1200	1 1
	TR104	1200	1
	TW212	1200	2

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW401 TW402	150 X 600	#
	R201-100	1200	2
	TIN 11.3	1200	2
	TIN 11.3	1200	2
	TW344	1200	2

# 20 minimum plus 10 per 100m site length

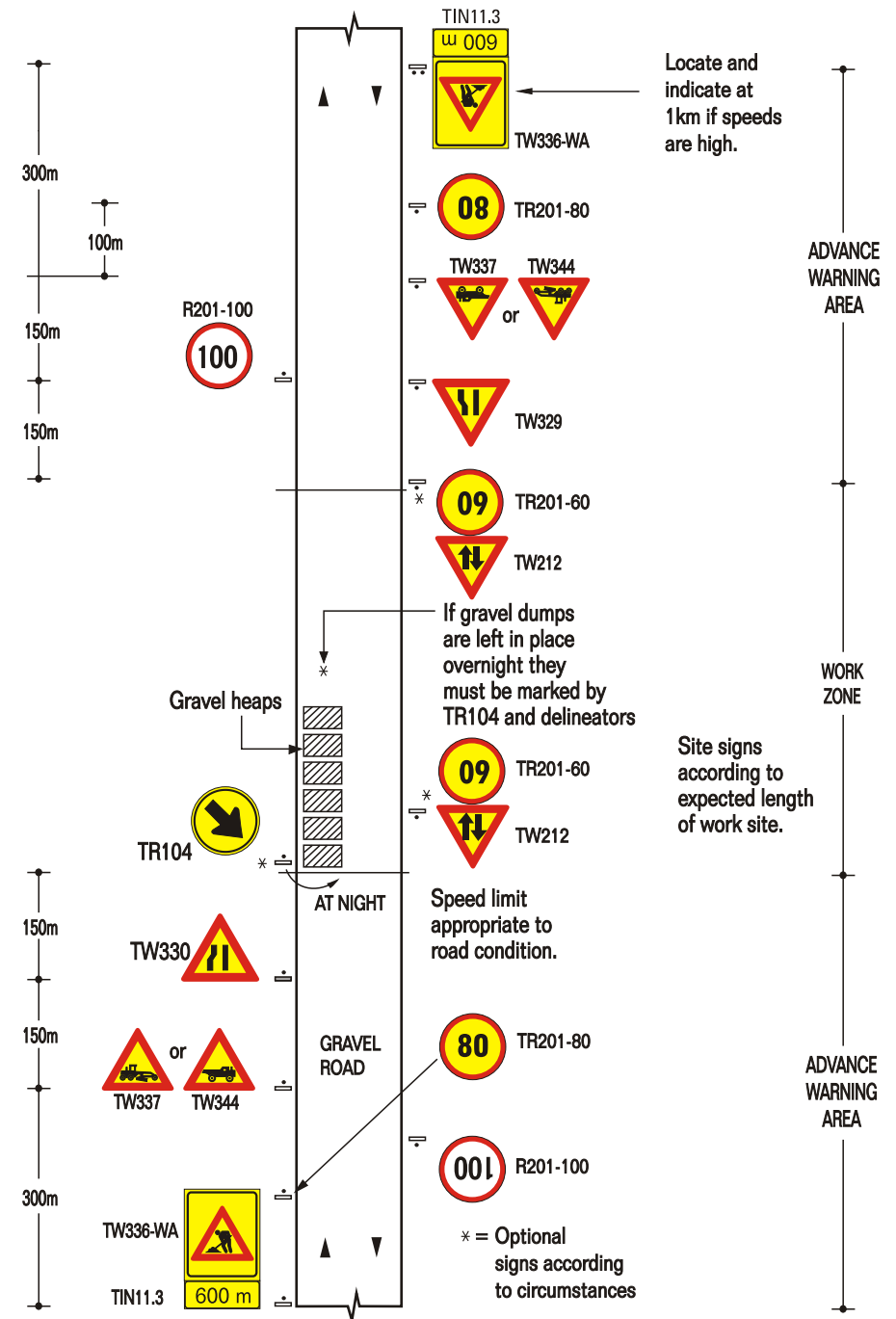













Figure 3.4: Gravel Road Reconstruction - Gravel Heaps Before Spreading

### 3.4 REDUCED WIDTH OPERATION - TWO WAY TRAFFIC

#### CHECKLIST

- ☐ Does the maintenance unit have sufficient DELINEATOR PLATES for its task?
- ☐ Are there vertical and / or horizontal curves on the approaches which should be taken into account when positioning signs?
- ☐ Are flagmen required?
- ☐ If flagmen are required, are they well trained and alert?

INVENTORY				INVENTORY			
Sign	Code	Size (mm)	Qty	Sign	Code	Size (mm)	Qty
	TW336	1200	2		TR104	1200	1
	TR201-100	1200	2		FLAGS	450 X450	2
	TR201-60 TR201-80	1200	4 2		TR214	1200	2
	TGS111 TGS112	1200 X1600	1 1		TGS107 TGS108	1200 X1600	1 1
 	TIN 11.3	1200	2 2		R201-120	1200	2

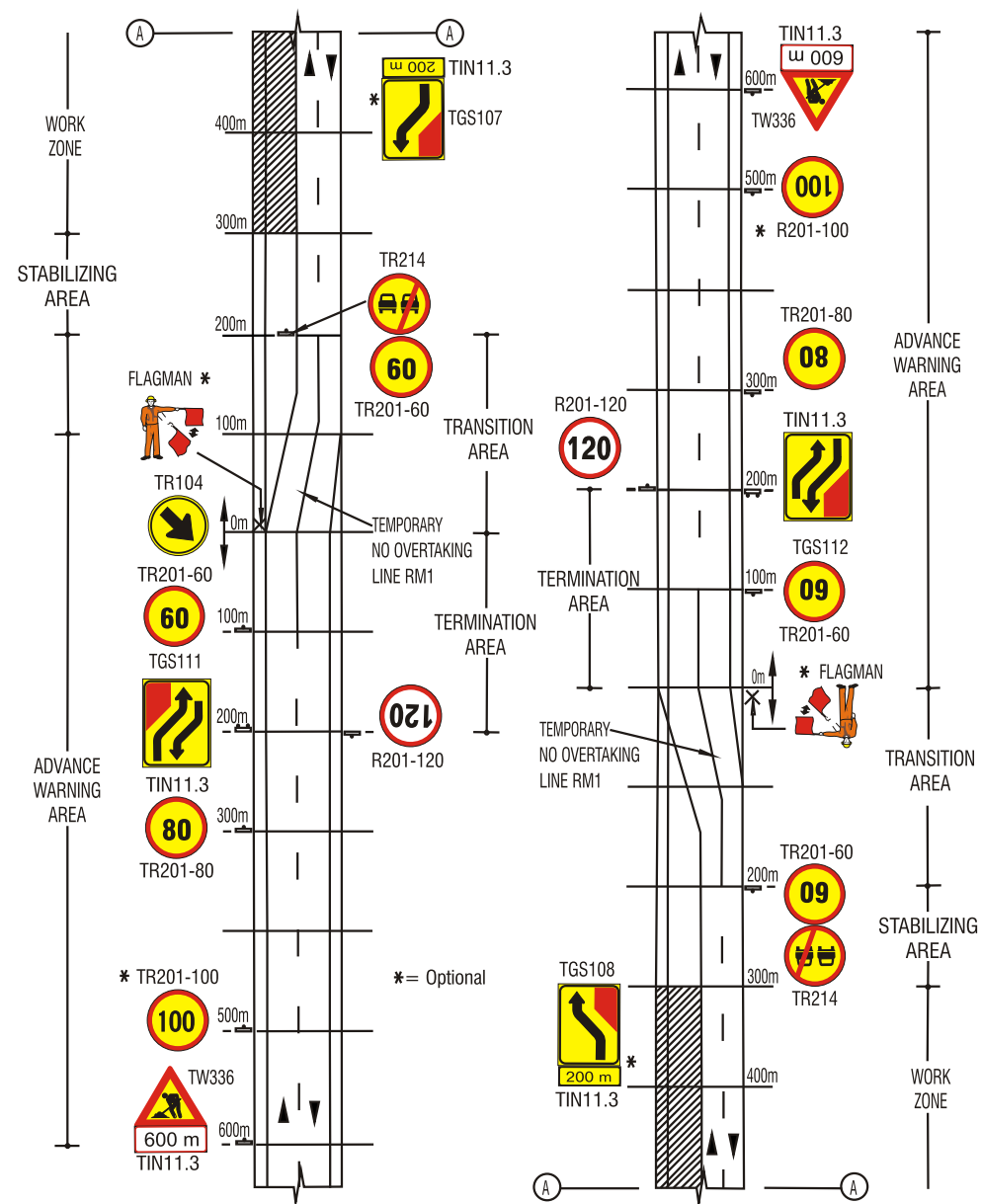








Figure 3.5: Reduced Width Operation - Two Way Traffic

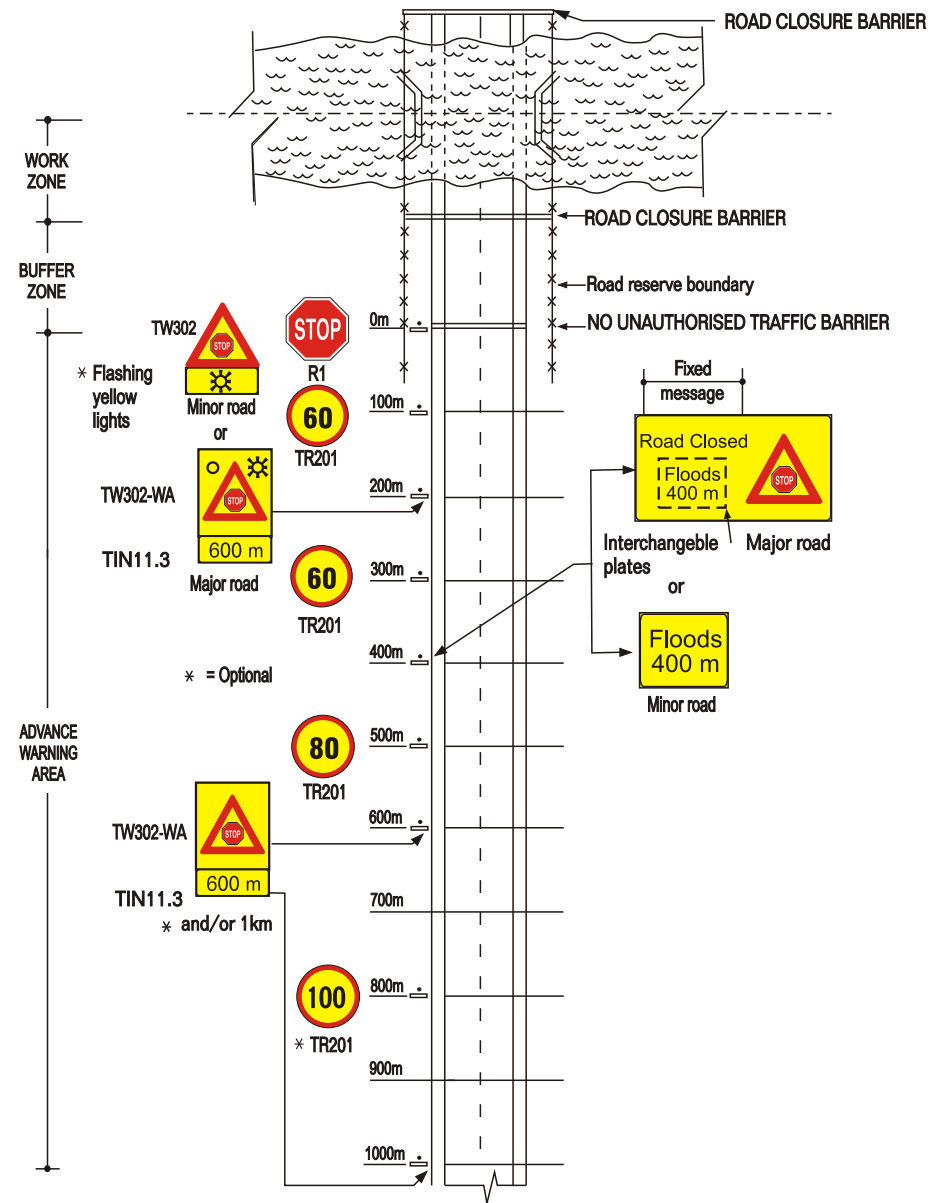
### 3.5 TOTAL ROAD CLOSURE AHEAD

## CHECKLIST

- ☐ Are the optional signs shown warranted due to high traffic approach speeds?
- ☐ Has an effective detour been put in place?
- ☐ Will the site require major reconstruction when the effects of the incident are over?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW302 -WA	1200 X1600	2
	TR201 -100	1200	2
	TR201- 60 TR201- 80	1200	2 2
	TW302 -WA	1200 X1600	2

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW302	1500	2
	R1	1200	2
<div>1km</div> <div>200 m</div> <div>600 m</div>	TIN 11.3	1200	<div>2</div> <div>2</div> <div>2</div>













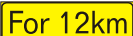

### Figure 3.6: Total Road Closure Ahead

### 3.6 DEVIATION - LOW TRAFFIC VOLUMES

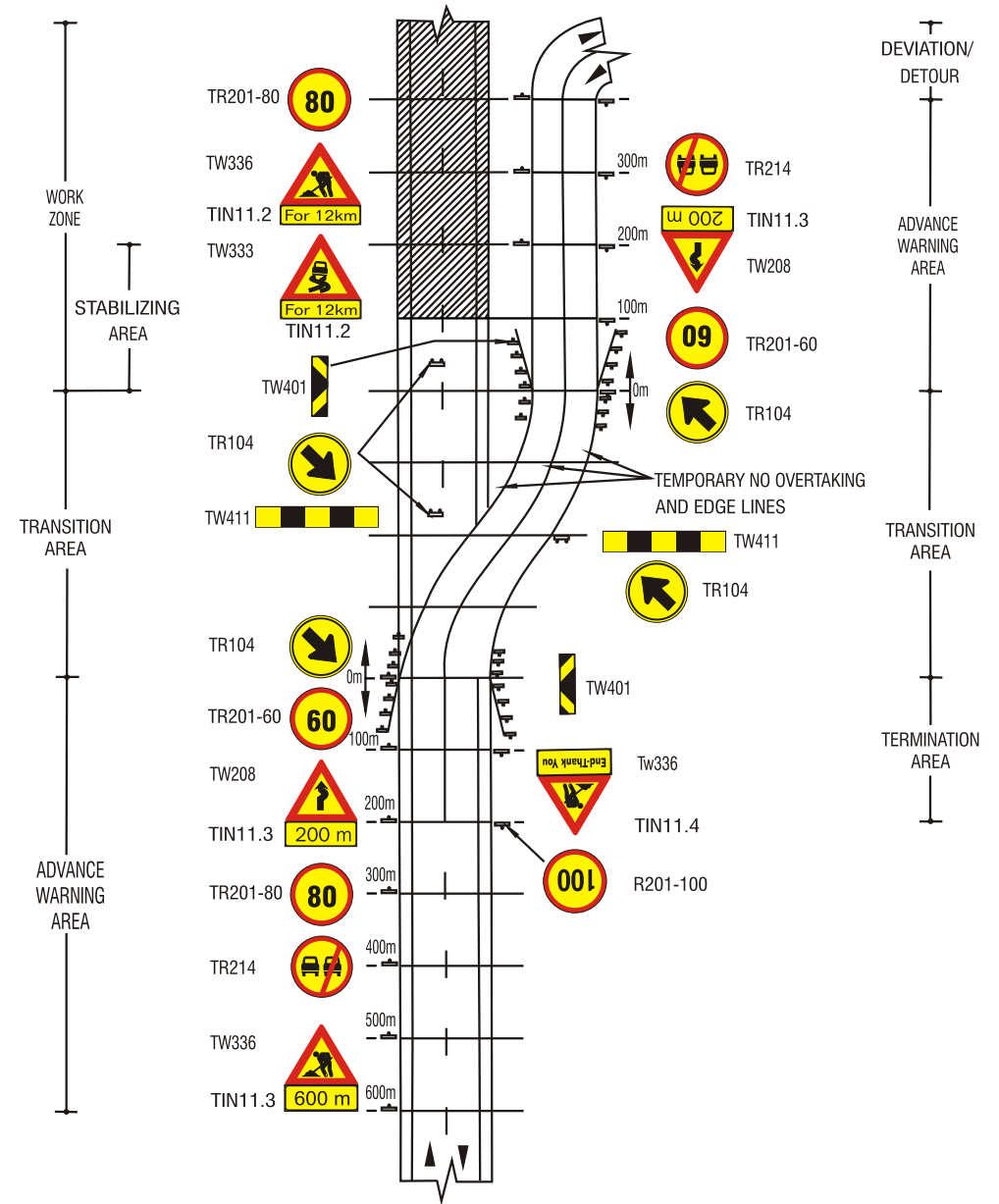
## CHECKLIST

- ☐ Are traffic volumes sufficiently low for this level of signing?
- ☐ Is the geometry and road condition of the entry to the deviation suitable for the indicated speed?
- ☐ Is there sufficient width throughout the curves of the entry to the deviation to accommodate large vehicles in both directions at the same time?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	1500	3
	TR214	1200	2
	TR201-60 TR201-80	1200	2 2
	TW208	1500	2
	TIN 11.3	1500	2 1
	TR104	1200	4

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW411	2400 X400	2
	TW401 TW402	150 X600	#
	TW333	1500	1
	R201 -100	1200	1
 	TIN11.2 TIN11.4	1500	2 1

# 5m to 10m centres














### Figure 3.7: Deviation - Low Traffic Volumes

3.7 DEVIATION - HIGH TRAFFIC VOLUMES

CHECKLIST

- ☐ Is the geometry and road condition of the entry to the deviation suitable for the indicated speed?
- ☐ Is there sufficient width throughout the curves of the entry to the deviation to accommodate large vehicles in both directions at the same time?
- ☐ Can the deviation be satisfactorily connected to adjacent roads to limit construction costs?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336 WB	1200 X1600	1
	TR201-60 TR201-80 TR201-100	1200	2 2 1
	R201-120	1200	1
	TR214	1200	2
	TW336	1500	2
	TW411	2400 X400	2

INVENTORY			
Sign	Code	Size (mm)	Qty
	TR104	1200	6
	TW202 TW203	1500	2
	TGS113 TGS114	1200 X1600	4
	TW401 TW402	150 X600	#
	TIN 11.3	1200	5

# 10m-20m centres

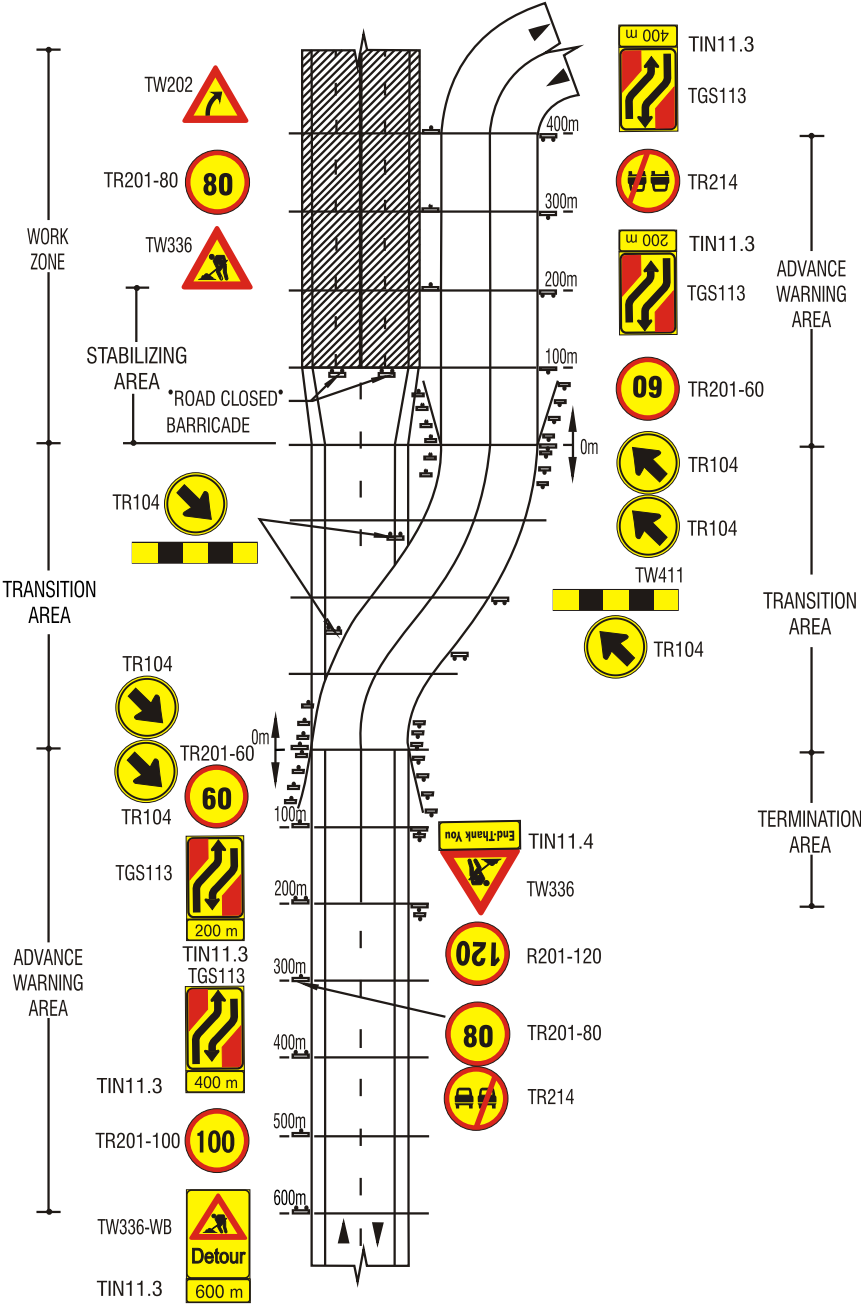


Figure 3.8: Deviation - High Traffic Volumes

## 4. SIGNING APPLICATIONS FOR URBAN STREETS

The temporary signing of urban roadworks situations is commonly influenced by the following factors, either separately, or in combination :

- limited space to accommodate signs and traffic;
- high traffic volumes (even moderate urban traffic flows are high by rural standards);
- the presence of pedestrians; and
- the need to maintain access to many properties.

Roadworks situations in urban areas vary widely in their signing requirements and operational characteristics including, as they do, such environments as :

- quiet residential streets;
- high capacity arterial streets; and
- congested central business districts.

Factors which commonly mitigate against the effectiveness of temporary road signs in urban areas, and which must be recognized and taken into account, include

:





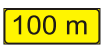
- street lighting which may not, as might be expected, improve signing at night, due to stray reflections and reduced luminance contrast so that signs need to be positioned with care,
- obscuration of signs by trees, street furniture and large vehicles; and
- limited sight distances.

Whilst the examples covered in this section illustrate individual situations, in practice, a large urban roadworks site may include several such situations within one site. The signing treatment must therefore take into account the individual situations and the collective effect of all situations from a driver's perspective.

4.1 TEMPORARY TRAFFIC SIGNALS

CHECKLIST

- ☐ Will the need for one-way operation extend into dusk and night time?
- ☐ Is a power supply available?
- ☐ Are traffic volumes known in order to set up cycle limit criteria under vehicle actuated operation?
- ☐ What are the fail-safe characteristics of the equipment?
- ☐ Are the advance warning signs correctly located for appropriate vehicle approach speeds?
- ☐ Will the end of a queue always be visible to approaching vehicles within stopping sight distance requirements?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TR103 TR104	900	1 1
	TW301	900*	2
	TW329 TW330	900*	1 1
	TD4	450	#
	TIN 11.3	900*	2

\* Sizes indicated for 60 km / hr. Increase to 1200mm for over 60km / h.  
# Taper 24 plus 10 per 100m

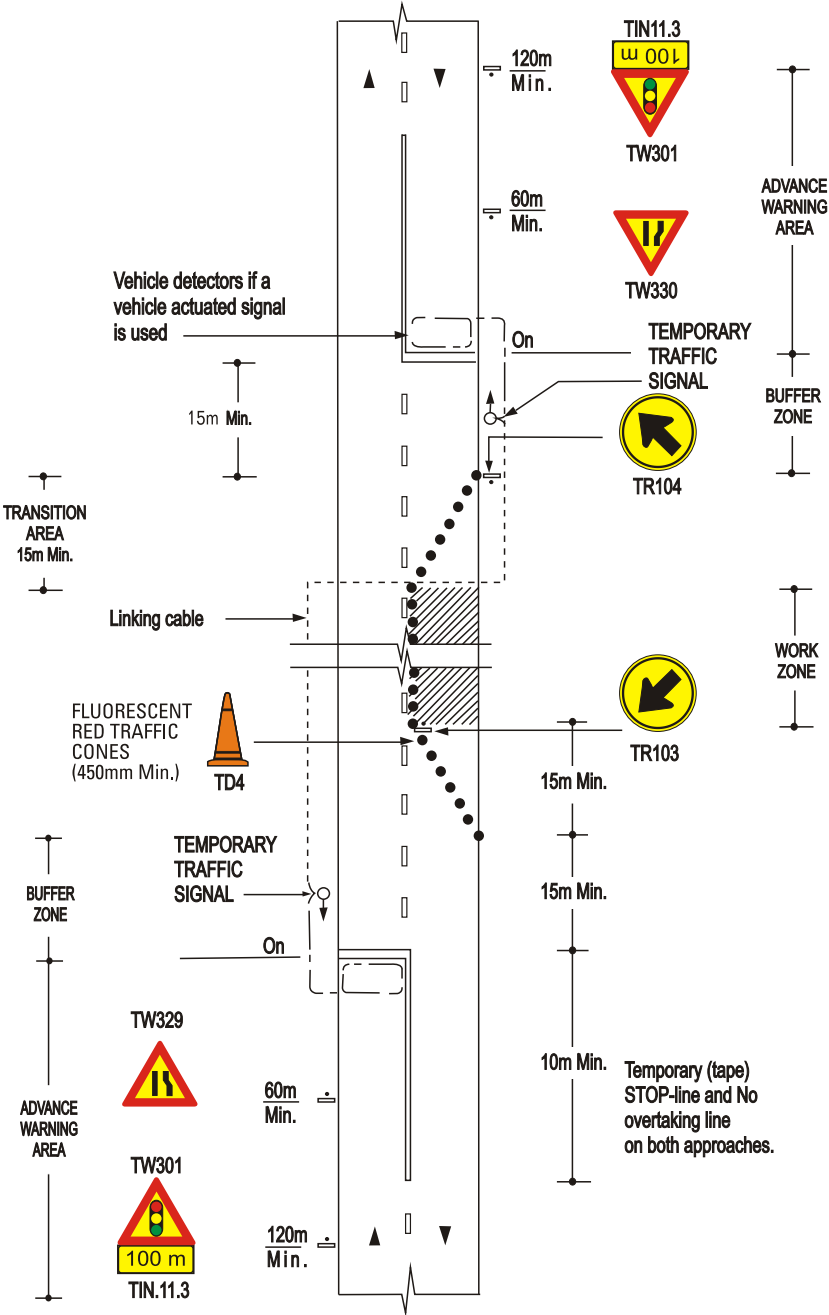







Figure 4.1: Temporary Traffic Signals







4.2 SIDEWALK DEVIATION

CHECKLIST

- ☐ Is pedestrian deviation within the roadway?
- ☐ Are cones and barricades retroreflective?
- ☐ Are PEDESTRIAN DIRECTION signs required for the safety of pedestrians?
- ☐ Are pedestrian prohibition signs required?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	900	2
	TW329 TW330	900	1 1
	TR104	900	2
	TW411	300X 1800	10 min
	TD4	450	#

INVENTORY			
Sign	Code	Size (mm)	Qty
	TR217	900	1
	TGP4 TGP9	900 X675	1*
	TGP3 TGP9	900 X675	1*
	TGP1 TGP9	900 X675	1*

\* Due to the modular nature of pedestrian signs, arrow signs may be used to point in any of four directions.  
# Tapers 24 plus 10 per 100m.

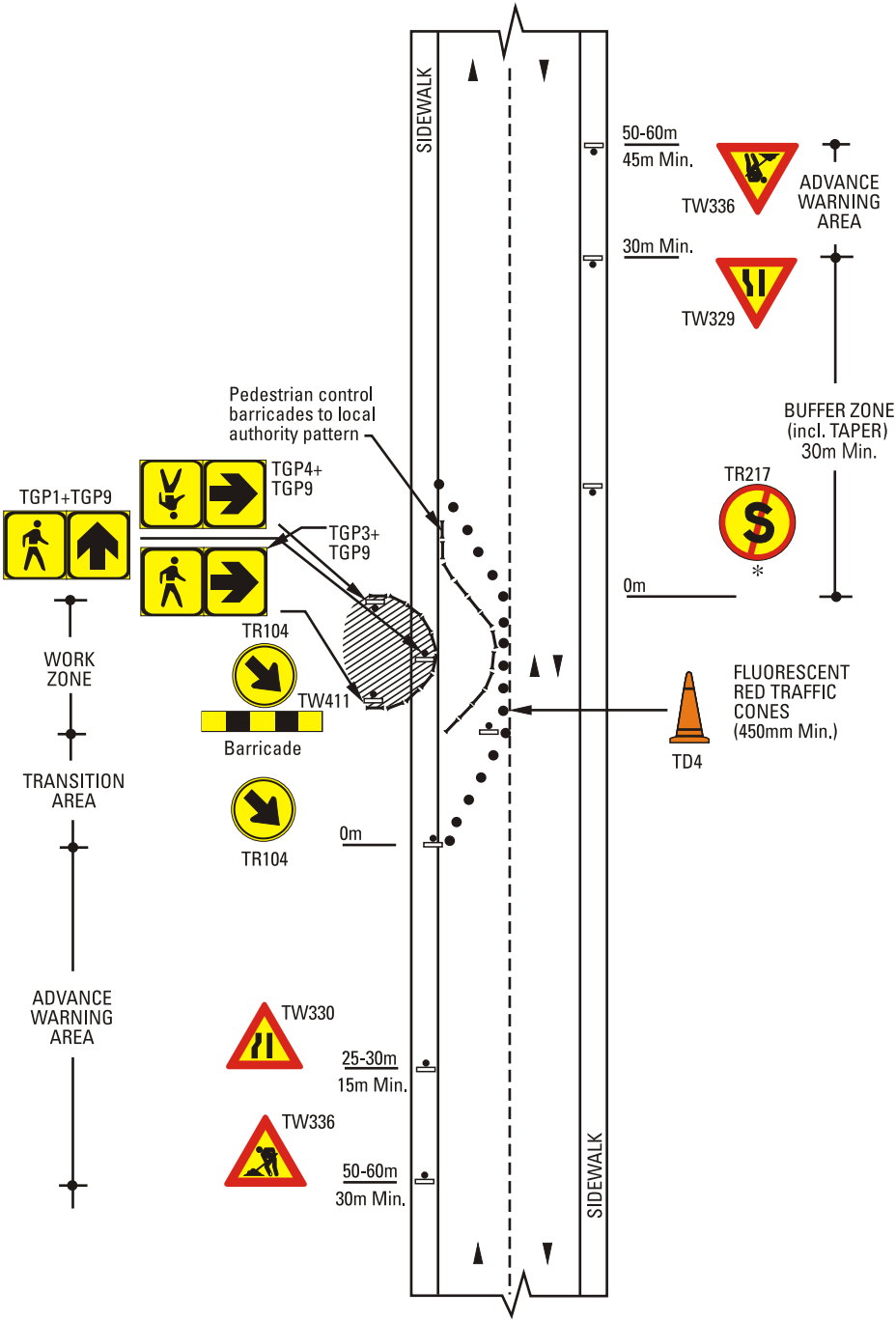




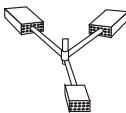


Figure 4.2: Footway Deviation

4.3 LOCALISED WORK SITE - GOOD VISIBILITY

CHECKLIST

- ☐ Is the sign cluster clearly visible to approaching drivers?
- ☐ Is there a crest in the road or a curve or sharp bend on the approach to the site?
- ☐ Is there sufficient space available for two-way traffic to pass the WORK AREA?
- ☐ Should the service vehicle be parked on the upstream side of the site?
- ☐ Does the service vehicle have flashing yellow warning lights?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	900	2
	TR103 TR104	900	1
	TW401	800 X200	1
	TD4	450	#
	Maintenance stand		1

# Taper 12 plus 10 per 100m

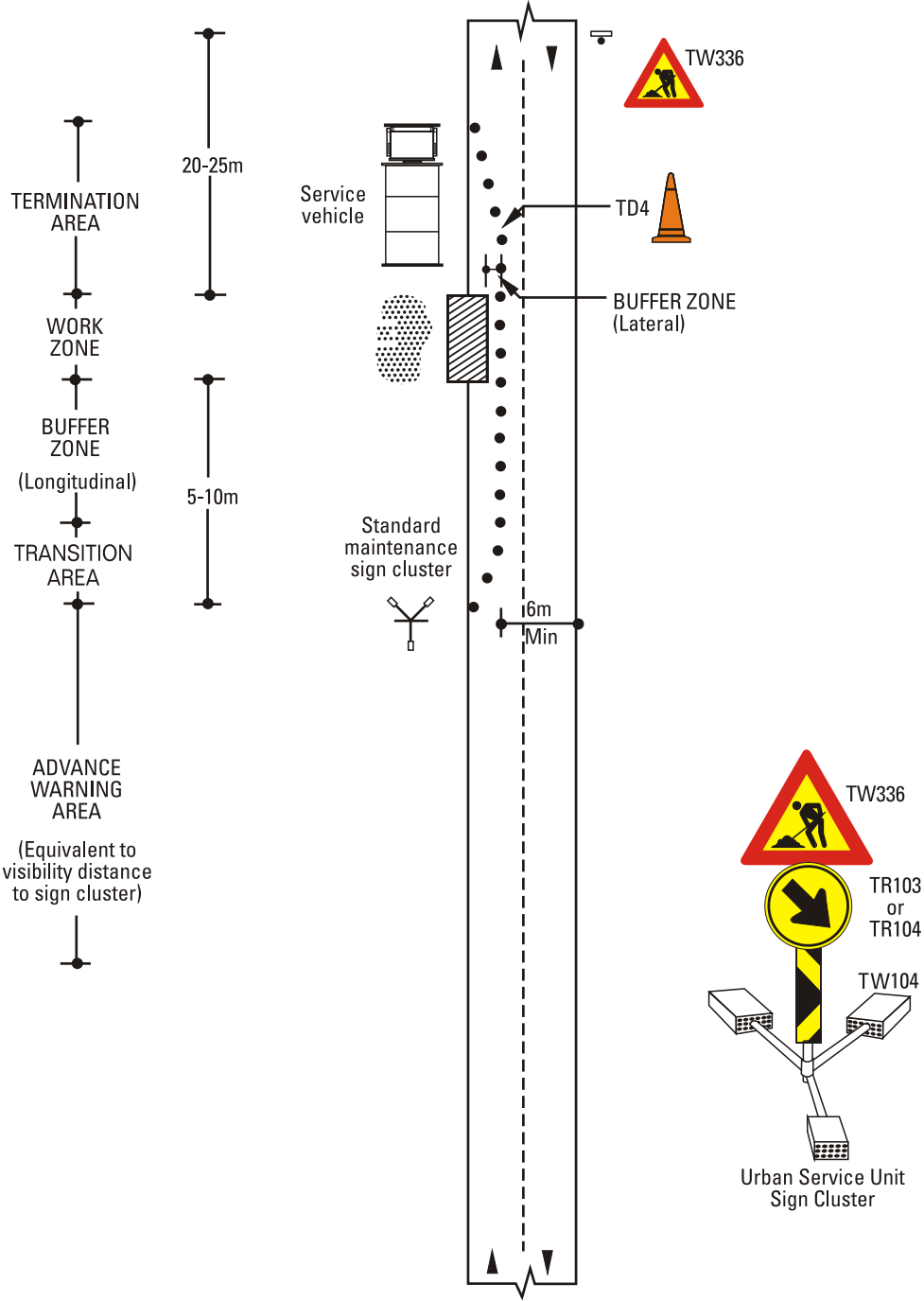


Figure 4.3: Localised Work Site - Good Visibility

4.4 LANE CLOSED BEYOND A JUNCTION

CHECKLIST

- Is there space to accommodate a coned-off island on the approach side of the junction?
- Can such an island be set back to permit left turning traffic the use of the lane?
- Have TW336 signs been placed on the intersecting side of the road?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	900	3
	TW330	900	1
	TR104	900	3
	TW411	300X1800	2
	TD4	450	#

# Taper 20 plus 10 per 100m

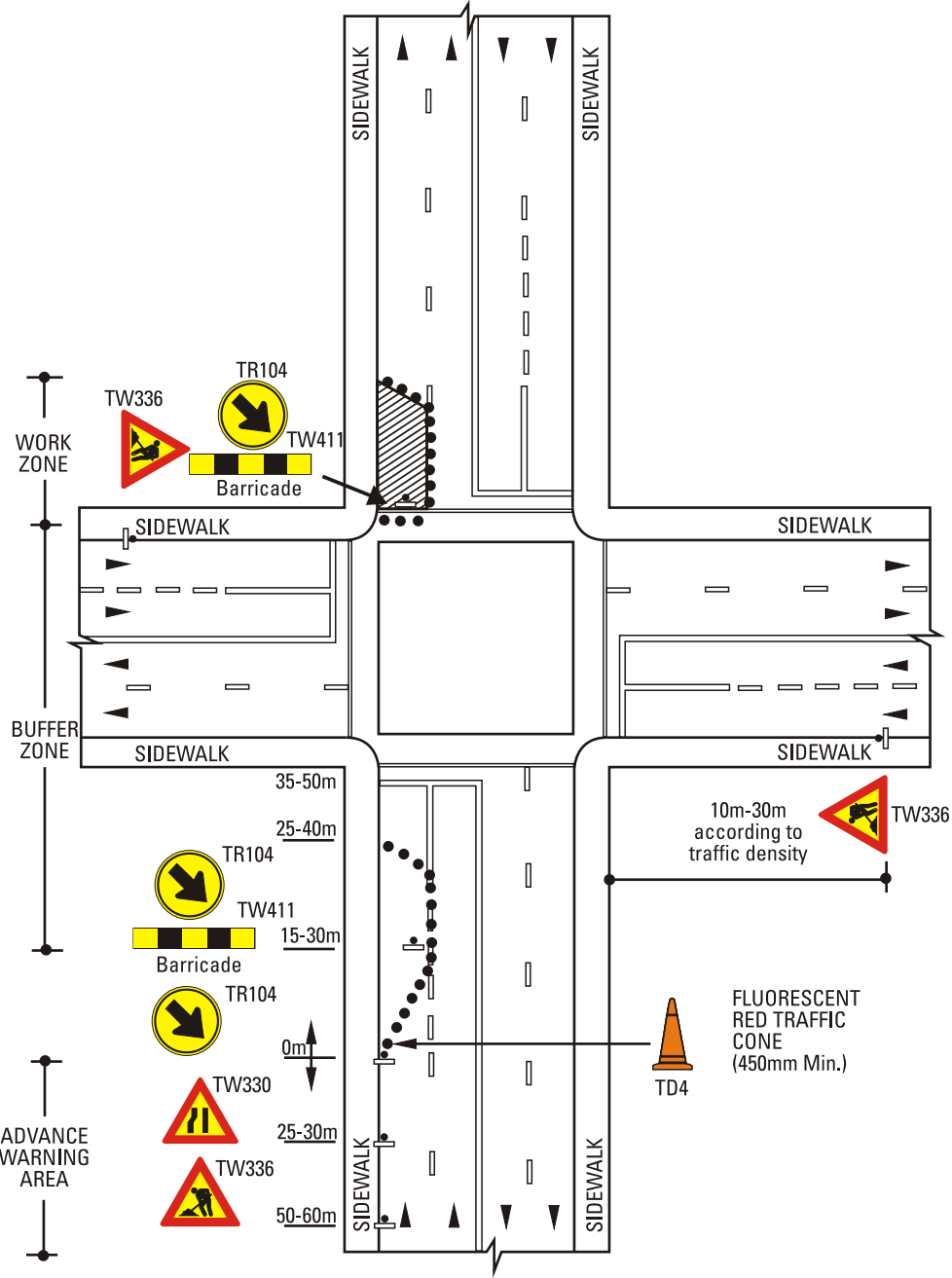


Figure 4.4: Lane Closed Beyond a Junction

4.5 WORK WITHIN A JUNCTION

CHECKLIST

- ☐ Is work scheduled for a short period only?
- ☐ If work is to include peak traffic times, will there be sufficient road capacity for traffic?
- ☐ Will limited advance warning signs be adequate or should DIAGRAMMATIC signs be considered?
- ☐ Will it be necessary to consider partial or full road closure?
- ☐ Will temporary signs be required to redirect traffic by alternative routes?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	900	5
	TW329 TW330	900	1 1
	TR103 TR104	900	1 1
	TW401 TW402	800 X200	1 1
	TD4	450	#

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW411	300X 1800	#
	TW405 TW406	400	1 1
	Stand		2

# Depends on size of work area

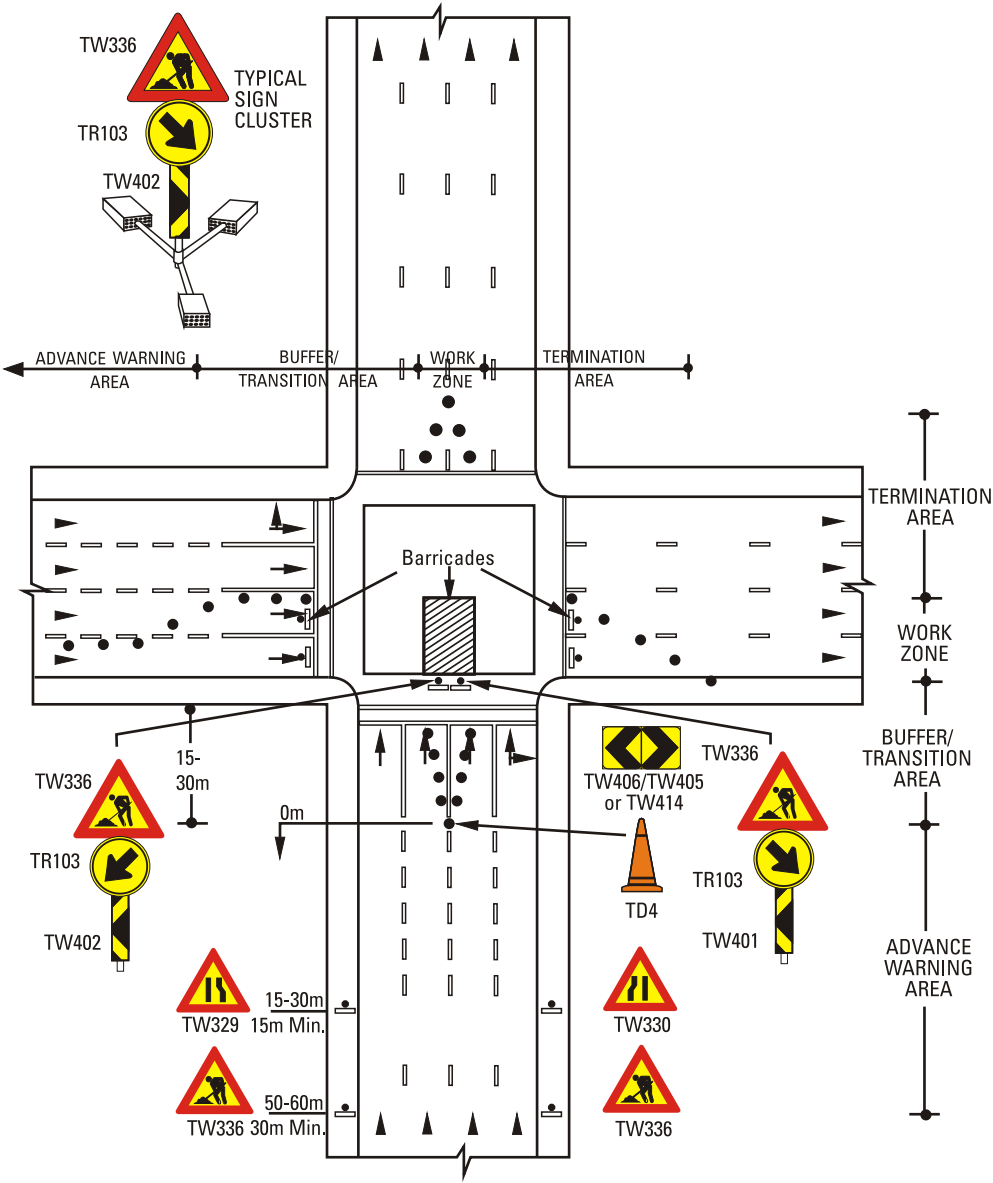







Figure 4.5.1: Work Within a Junction




4.6 WORK IN A ONE-WAY STREET

CHECKLIST

- ☐ Is there sufficient space for DIAGRAMMATIC signs?
- ☐ Are the advance warning signs mounted high enough for good visibility?
- ☐ If traffic cones are used, are they clean and retroreflective?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	900	2
	Tw214	900	2
	TR103 TR104	900	5
	TW411	300X1800	*
	TD4	450	#

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW402	800 X200	#

# Taper 30 plus 10 per 100m  
\* The number of pedestrian barricades depends on the size of the work area.

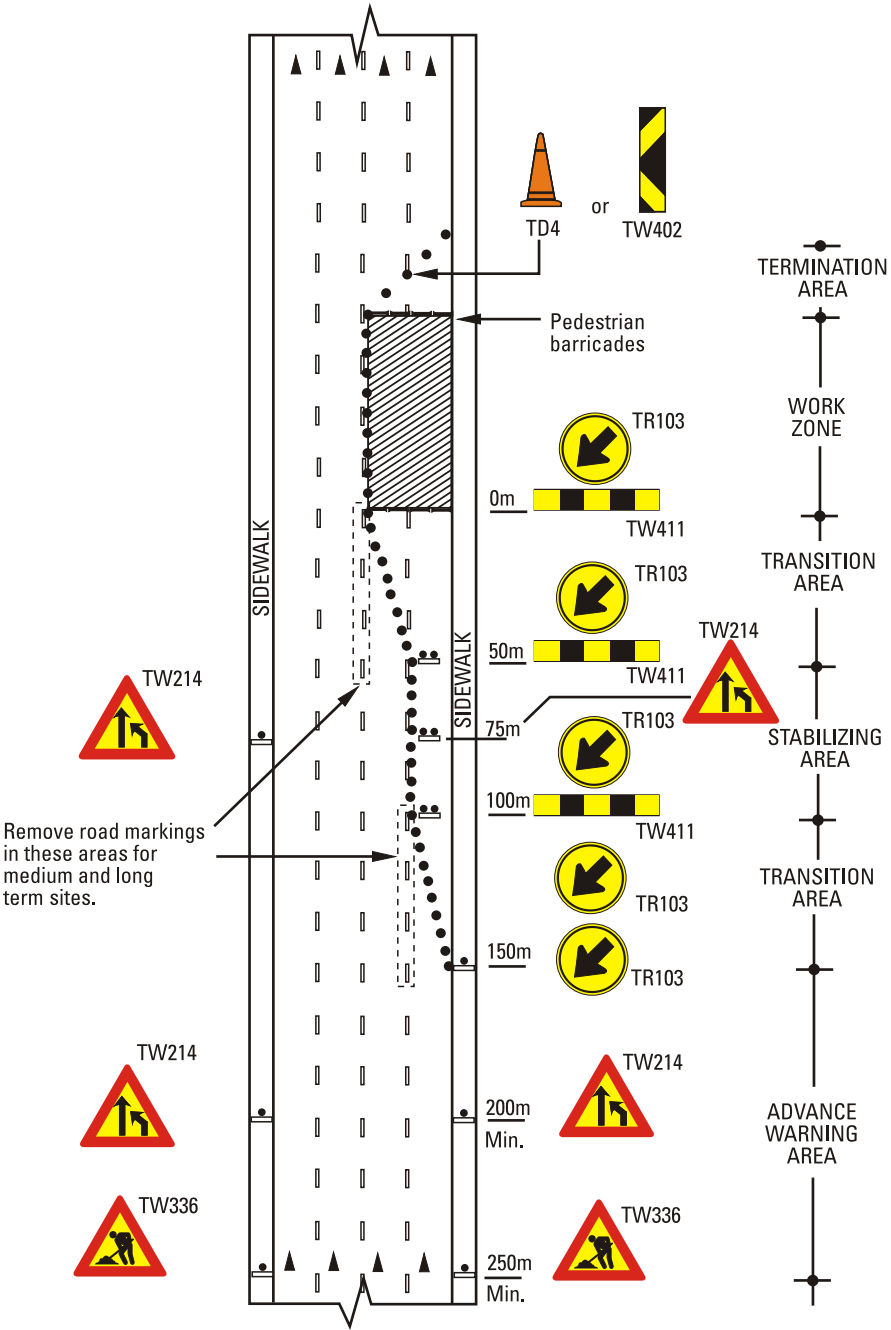










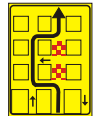

Figure 4.6: Work in a One-Way Street

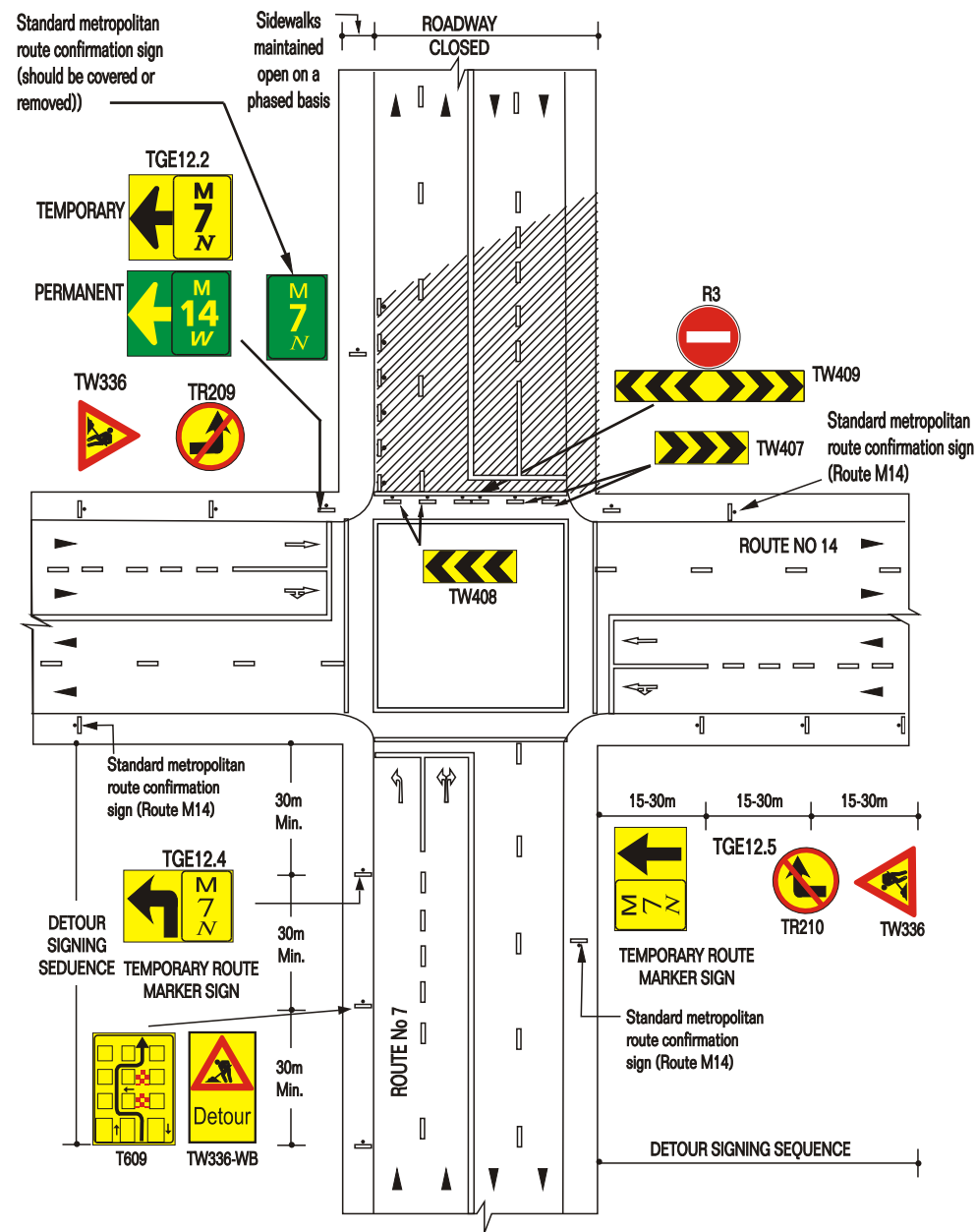
#### 4.7 ROAD CLOSURE - CBD

## CHECKLIST

- ☐ Has a public information campaign been implemented?
- ☐ Is the detour able to handle the redirected traffic without major delays?
- ☐ Should some wider ranging form of detour be considered?
- ☐ Does local access to the site area need to be maintained?

INVENTORY			
Sign	Code	Size (mm)	Qty
	R3	900	1
	TR209 TR210	900	1 1
	TW336 -WB	1200 X1600	1
	TW336	1200	2
	TW407 TW408	1200 X400	2 or 7

INVENTORY			
Sign	Code	Size (mm)	Qty
	TGE12.3 TGE12.4	900 X600	1
	TGE12.1 TGE12.2	725 X600	1
	TGE12.5	400 X600	1
	TGD9	1800 X2400	1
	TW409	2400 X400	1



### Figure 4.7.1: Road Closure - CBD





4.8 ROAD CLOSURE - DUAL CARRIAGEWAY STREET

CHECKLIST

- ☐ Should sign TW215 (or TW214) be used in place of sign TW330 (or TW329)?
- ☐ What direction and lane configuration does the cross street have?
- ☐ Should this configuration affect the approach lane treatment?
- ☐ Is the deviation through the junction sufficient to require the part-time or full-time use of a pointsman?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	900	1
	TW330	900	1
	TW407	1200 X400	1
	TR103 TR104	900	2 2
	R3	900	2
	TW411	300X1800	2

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW211	900	1
	TGS109	1200 X1600	1
	TIN11.3	1200	1
	TD4	450	#
	TW401	800 X200	#

# Taper 8 plus 10 per 100m

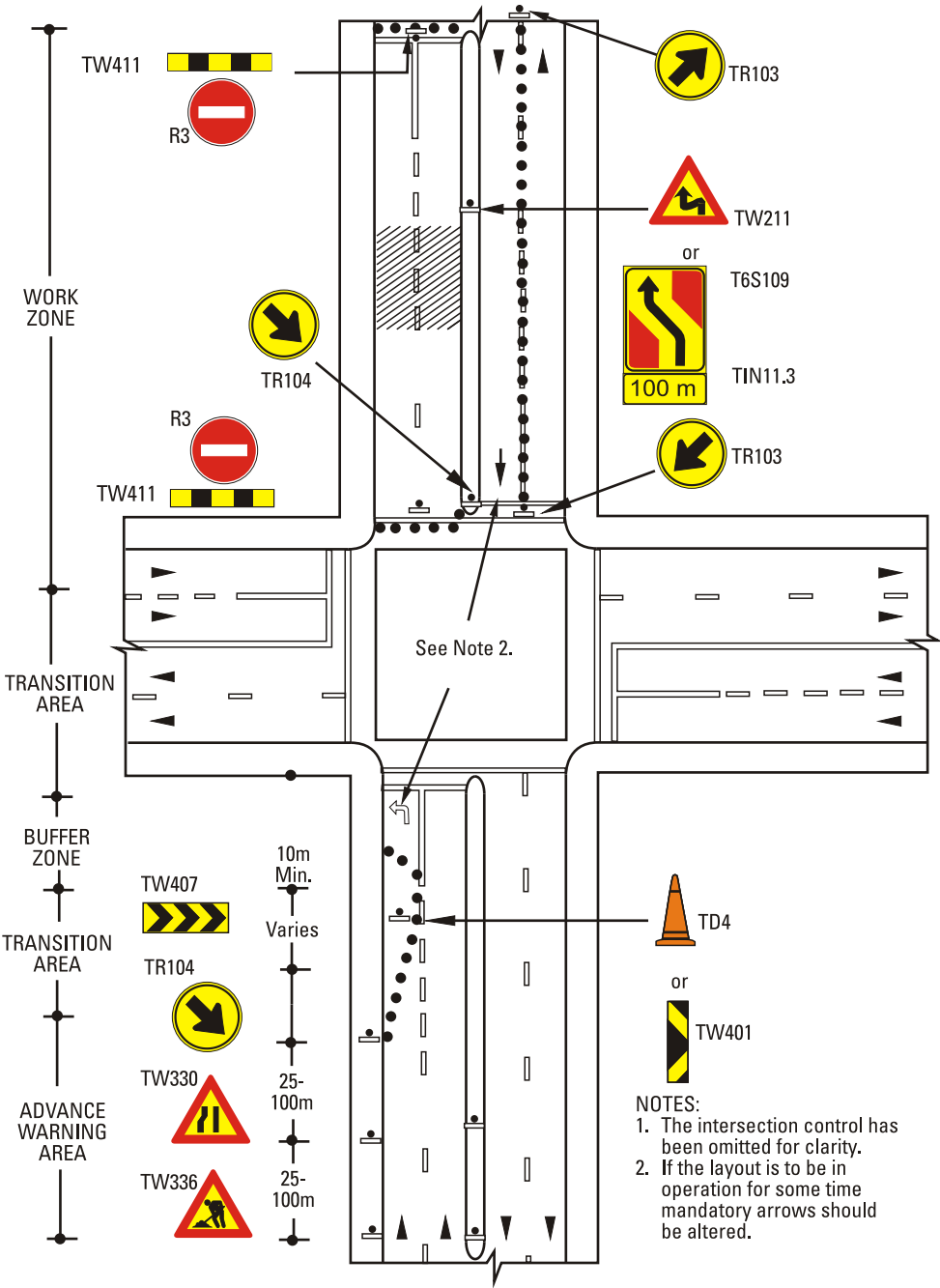


Figure 4.8: Road Closure - Dual Carriageway Street

## 5. SIGNING APPLICATIONS FOR FREEWAYS / DUAL CARRIAGEWAYS

Freeways and dual carriageway roads carry large volumes of traffic at the highest possible level of service. It is therefore imperative that the traffic management and temporary signing of such roads during roadworks be of the highest possible standard. The traffic management and signing techniques illustrated in the examples in this section have been used widely and when correctly operated, have proven to be effective.





Due to widely varying operating characteristics during a single 24-hour period, one freeway roadworks traffic management solution normally has to be effective for conditions ranging from severe congestion to high speed free-flowing traffic. Under these circumstances, accident levels are almost certain to be higher than those pertaining to prior the roadworks. Careful attention to detail and frequent monitoring of signs and conditions will ensure that any increase in the accident rate will be kept to a minimum.






In this manual, only the more common simple applications are shown for signage applications for roadworks on freeways / dual carriageways. For more complex situations, it is essential that the roadworks signage be designed by a registered professional traffic engineer.

## 5.1 LANE CLOSURE - DAY TIME ONLY

### CHECKLIST

- ☐ How many lanes are there on the section of road on which the lane is to be closed?
- ☐ What is the anticipated traffic approach speed during the period of lane closure?
- ☐ Can lane closure during peak traffic periods be avoided?
- ☐ Can the required level of signing be accommodated within the space available?
- ☐ Will the lane closure cross off and on ramps - or can this be avoided?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TR103 TR104	1200	1
	TR201-60 TR201-80 TR201-100	1200	3 2 2
	R201-120	1200	2
	TW336	1500	4

INVENTORY			
Sign	Code	Size (mm)	Qty
	TGS101	1200 X 1600	2
	TD4	750	#
	TIN 11.3	1200	2
	TIN 11.3	1500	2
	FLAGS	450 X 450	1

# 35 min plus 10 per 100m closed

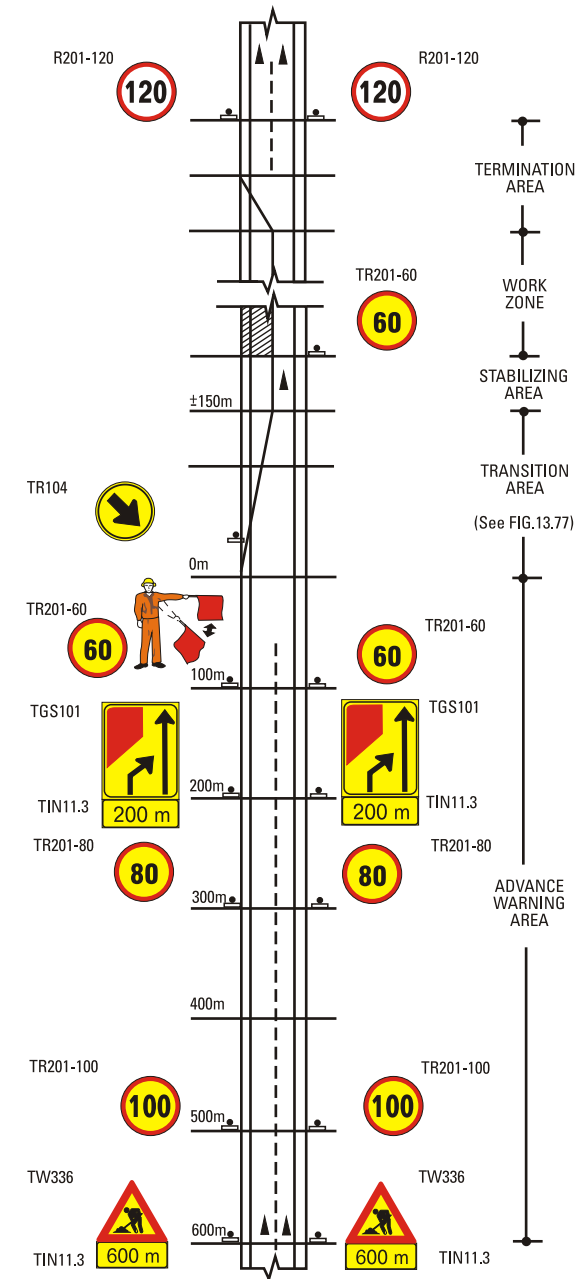








Figure 5.1.1: Drop Slow Lane

INVENTORY			
Sign	Code	Size (mm)	Qty
	TR103	1200	1 1
	TD4	750	#
	TW336	1500	1
	TW402		1

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW411	300 x 1800	1
	TR214	1500	1

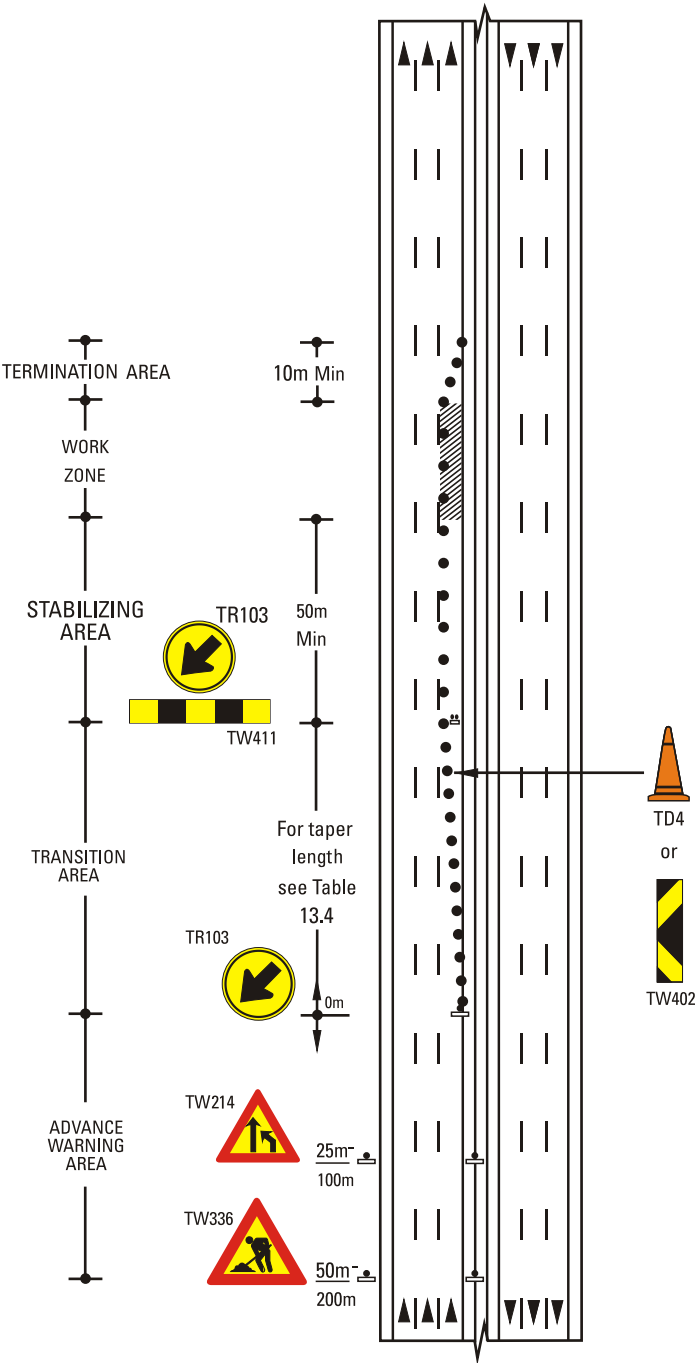







Figure 5.1.2: Drop Fast Lane



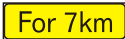

## 5.2 LANE CLOSURE - RIGHT LANE LONG TERM

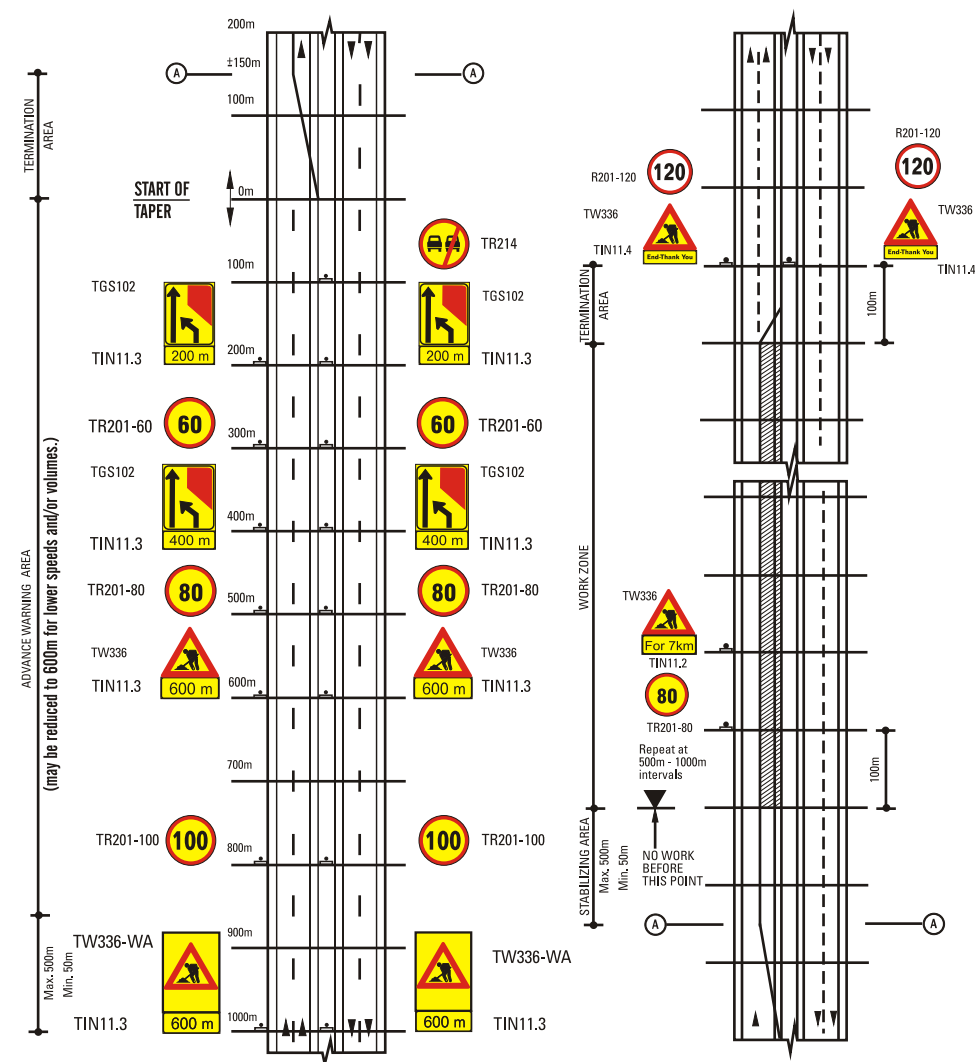
## CHECKLIST

- ☐ Can the ADVANCE WARNING AREA safely be shortened?
- ☐ Should a public relations message be placed ahead of the first sign?
- ☐ Is there more than one TRANSITION AREA?
- ☐ Have all required sign inventories been added together?
- ☐ Are there any interchanges within the WORK AREA?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336-WA	1200 X 1600	2
	TR201-60 TR201-80 TR201-100	1200	2 3 Min 2 (1)
	R202-120	1200	2
	TGS102	1200 X 1600	4
	TR214	1200	1

# The number of signs required will depend on the length of the work area.

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336	1500	#
	TIN 11.3	1200 1500	6 2
	TIN 11.2	1500	#
	TIN 11.4	1500	2













### Figure 5.2: Lane Closure - Right Lane Long Term

5.3 LANE CLOSURE - LEFT LANE LONG TERM

CHECKLIST

- ☐ Can the ADVANCE WARNING AREA safely be shortened?
- ☐ Should a public relations message be placed ahead of the first sign?
- ☐ Have all required sign inventories been added together?
- ☐ Are there any interchanges within the WORK AREA?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336-WA	1200 X 1600	2
	TR201-60 TR201-80 TR201-100	1200	2 3 2
	R201-120	1200	2
	TGS102	1200 X 1600	4
	TGS107	1200 X 1600	1

INVENTORY			
Sign	Code	Size (mm)	Qty
	TR214	1200	1
	TW336	1500	5
	TIN 11.3	1200 1500	7 2
	TIN 11.2	1500	1
	TIN 11.4	1500	2

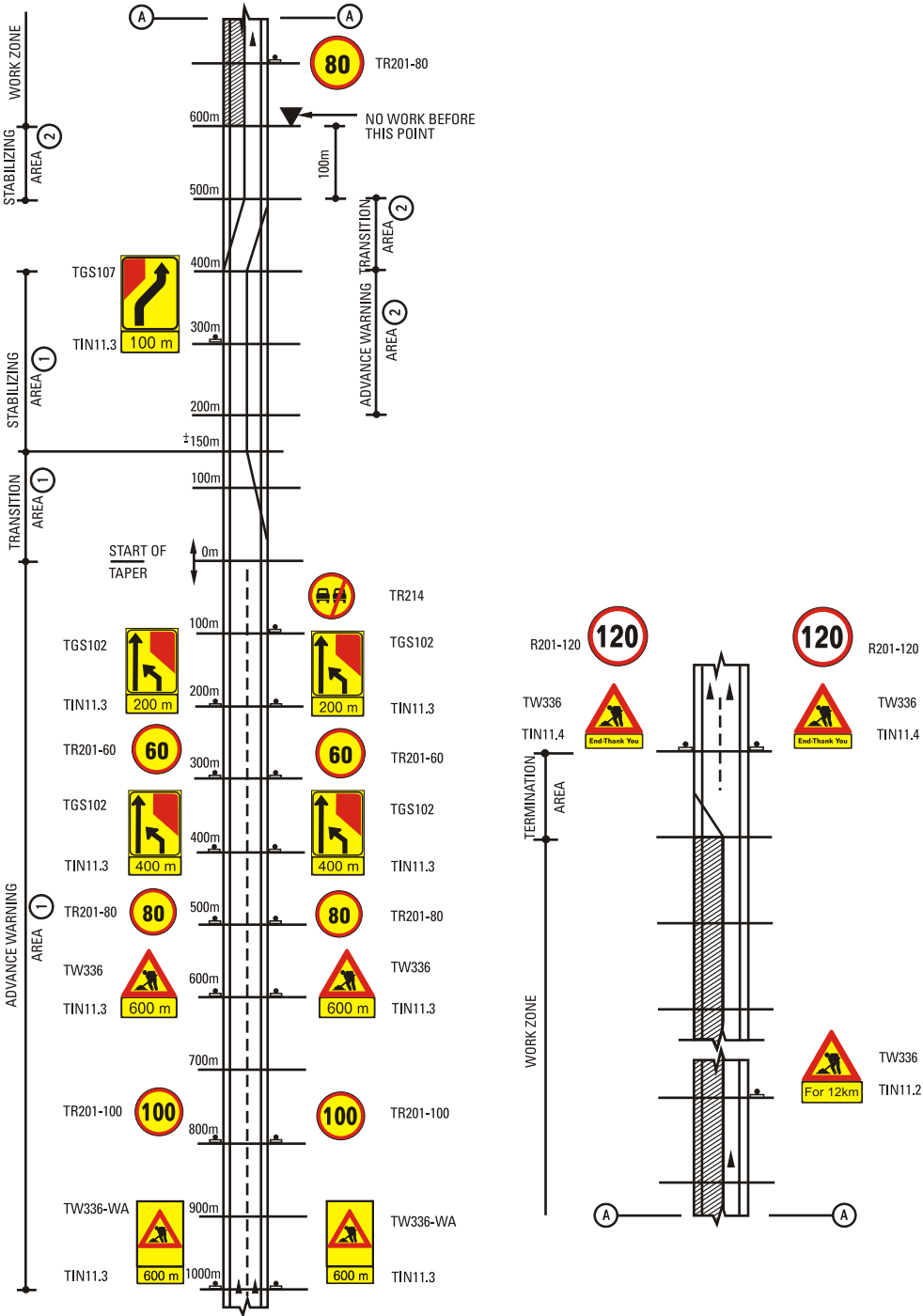


Figure 5.3: Lane Closure - Left Lane Long Term

5.4 WORK IN MEDIAN

CHECKLIST

- Can access points be sited where visibility is good even if this means that construction traffic may travel some distance on the median?
- Can exit points from the median be sited so that construction vehicle drivers have clear sight in order to judge gaps in traffic?
- If gaps in traffic are likely to be very limited can traffic be effectively slowed by a flagman to allow construction vehicles entry?
- Is the use of special grades of high luminance fluorescent/retroreflective material warranted to assist identification of entry/exit points?
- Are there several entry points and will it be of assistance to number these?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TR201-60 TR201-80	1200	4 <sub>4</sub> (2)
	R201-120	1200	(2) 2
	TW344 TW345	1500	3 3
	TGS131	1200 X 1600	4 to 6
	TW402	150 X 600 200 X 800 300 X 1200	#

INVENTORY			
Sign	Code	Size (mm)	Qty
	TIN 11.2	1200	2
	TIN 11.3	1200	4
	TIN 11.4	1500	4
	TIN 11.5	1500	2
	FLAGS	450 X 450	6

- (1) This installation is for use within a roadworks site. Extra advance signs will be required if used on its own.
- (2) Speeds according to site.
- (3) Special text supplementary plates.

# 60 Plus 4 per 100m site length

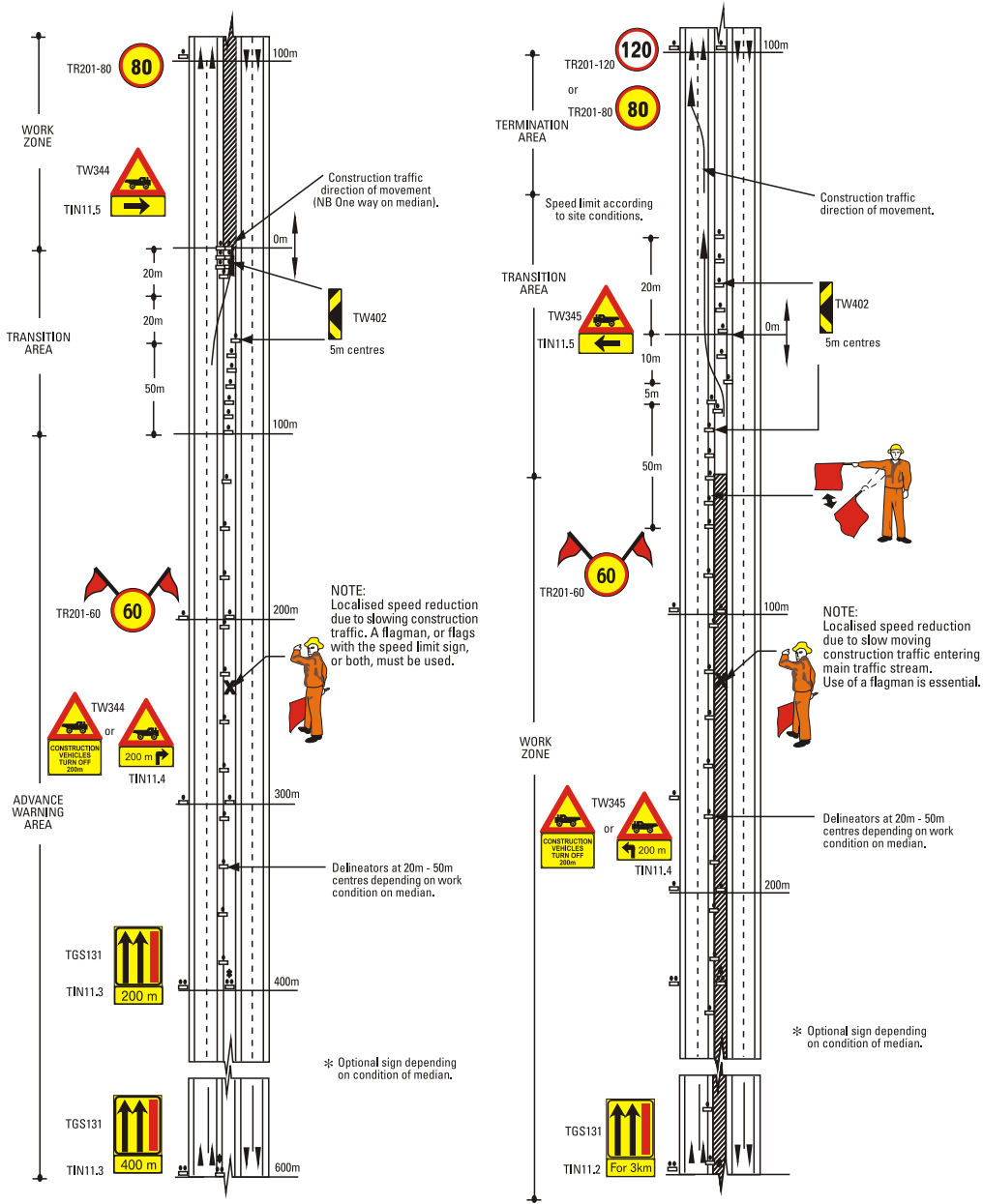












Figure 5.4: Work in Median

5.5 TWO LANES CLOSED

CHECKLIST

- Can two lanes adequately accommodate all the traffic?
- Is there sufficient space to provide the required STABLIZING AREA?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW336-WA	1200 X 1600	2
	TR201-80 TR201-100	1200	9 2
	R201-120	1200	2
	TGS106	1500 X 1600	6
	TGS104	1200 X 1600	4

INVENTORY			
Sign	Code	Size (mm)	Qty
	TGS131	1200 X 1600	2
	TW336	1500	2
	TIN 11.3	1200 1500	4 6
	TIN 11.2	1200	2
	TIN 11.4	1500	2

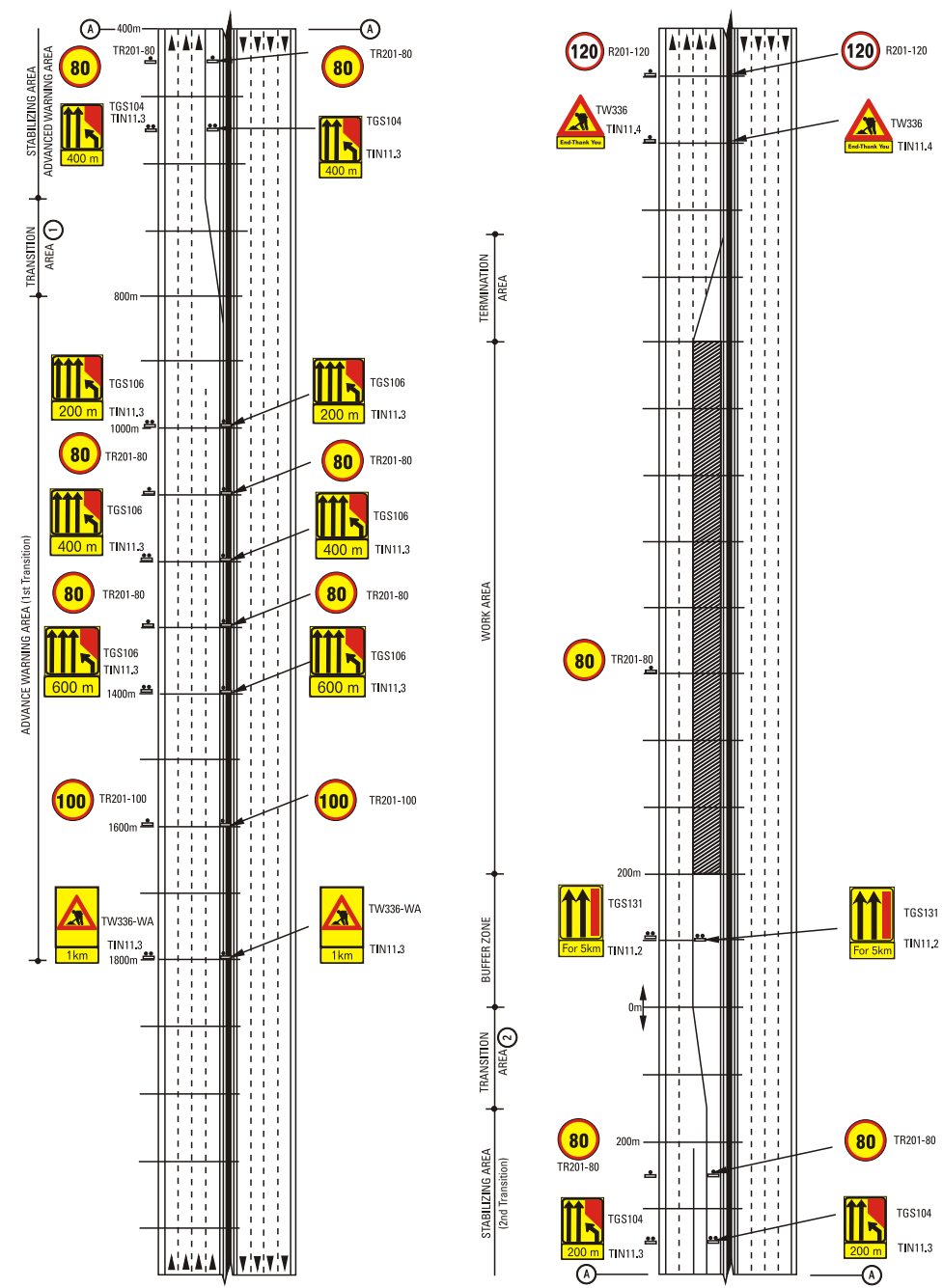


Figure 5.5: Two Lanes Closed







## **6. ENLARGED STANDARD DETAILS - ALL APPLICATIONS**

The details in this section are individual elements from many of the examples given in previous sections. They are depicted to a larger scale than has been possible in the more general figures so that the specific details of their arrangement, or setting out on the roadway, may be clearer.

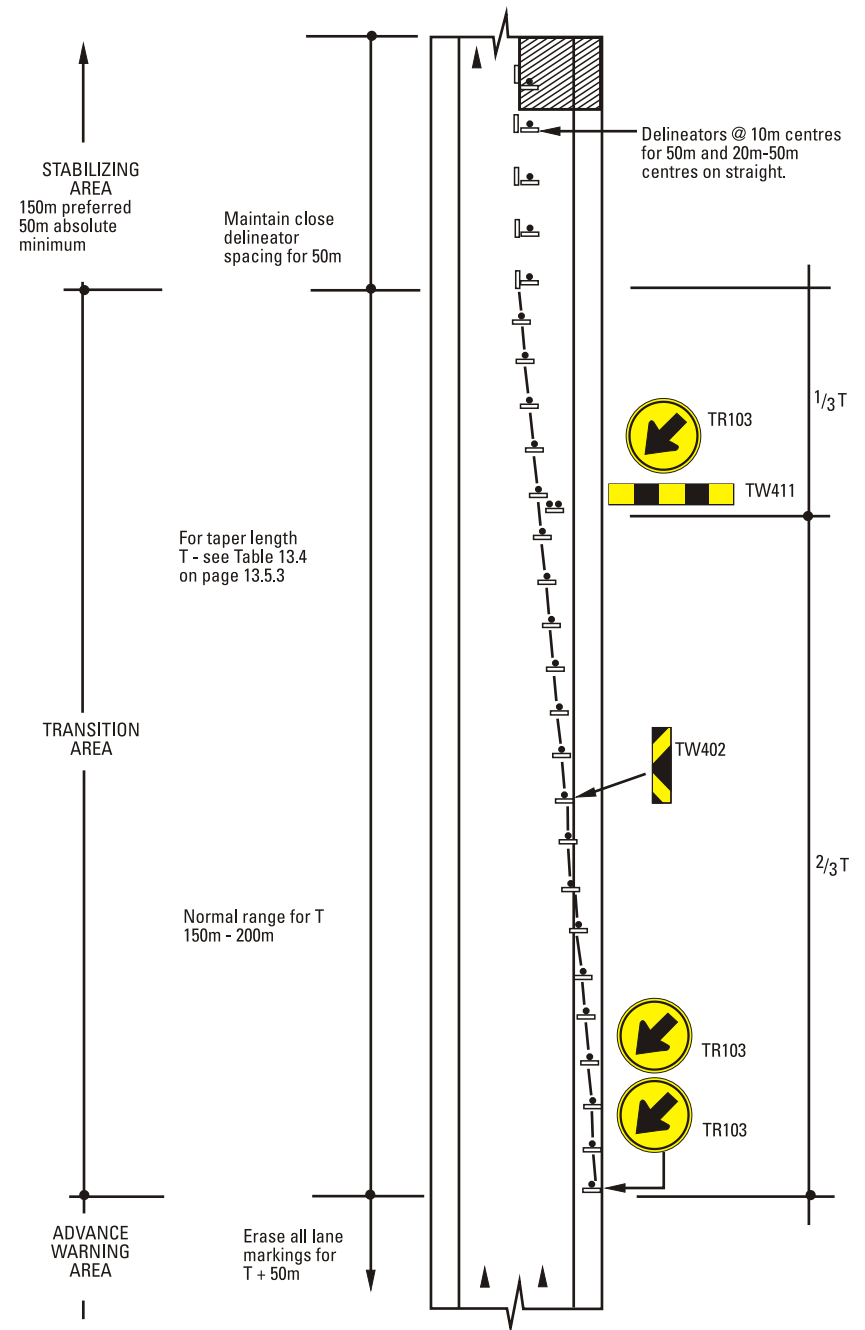
## 6.1 LANE DROP TAPER - UPSTREAM TRANSITION AREA

## CHECKLIST

- ☐ Has the number of delineators or cones required for each taper been included in the sign quantities derived from the appropriate figure or figures being used to design the traffic accommodation?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW402	150 X 600 200 X 800 250 X 1000 300 X 1200	#
	TD4	450 750	#
	TR103 TR104	900 (URBAN) 1200 (RURAL)	2 to 5
	TW411	300 X 1800 (URBAN) 400 X 2400 (RURAL)	1 to 3

# 12 to 15 for 3,5m lane plus 5 for shoulder







**Figure 6.1: Lane Drop Taper - Upstream Transition Area**

## 6.2 TAPER - DOWNSTREAM TERMINATION AREA

### CHECKLIST

- ☐ Is the termination area at the end of the roadworks site or is it simply at a change from one restricted state to less restricted state?
- ☐ Has there been a reduction of speed limit within the site?
- ☐ Is it advisable to remove 60m to 100m of lane line from the start of the taper?

TYPICAL SIGN REQUIREMENTS			
Sign	Code	Size (mm)	Qty
	TW402	150 X 600 200 X 800 250 X 1000 300 X 1200	#
	R201-120	900 (URBAN) 1200 (RURAL)	2
	TW336	900 (URBAN) 1200 (RURAL)	2
	TIN 11.4	300 X 1800 (URBAN) 400 X 2400 (RURAL)	2

# 12 to 15 for 3,5m lane plus 5 for shoulder

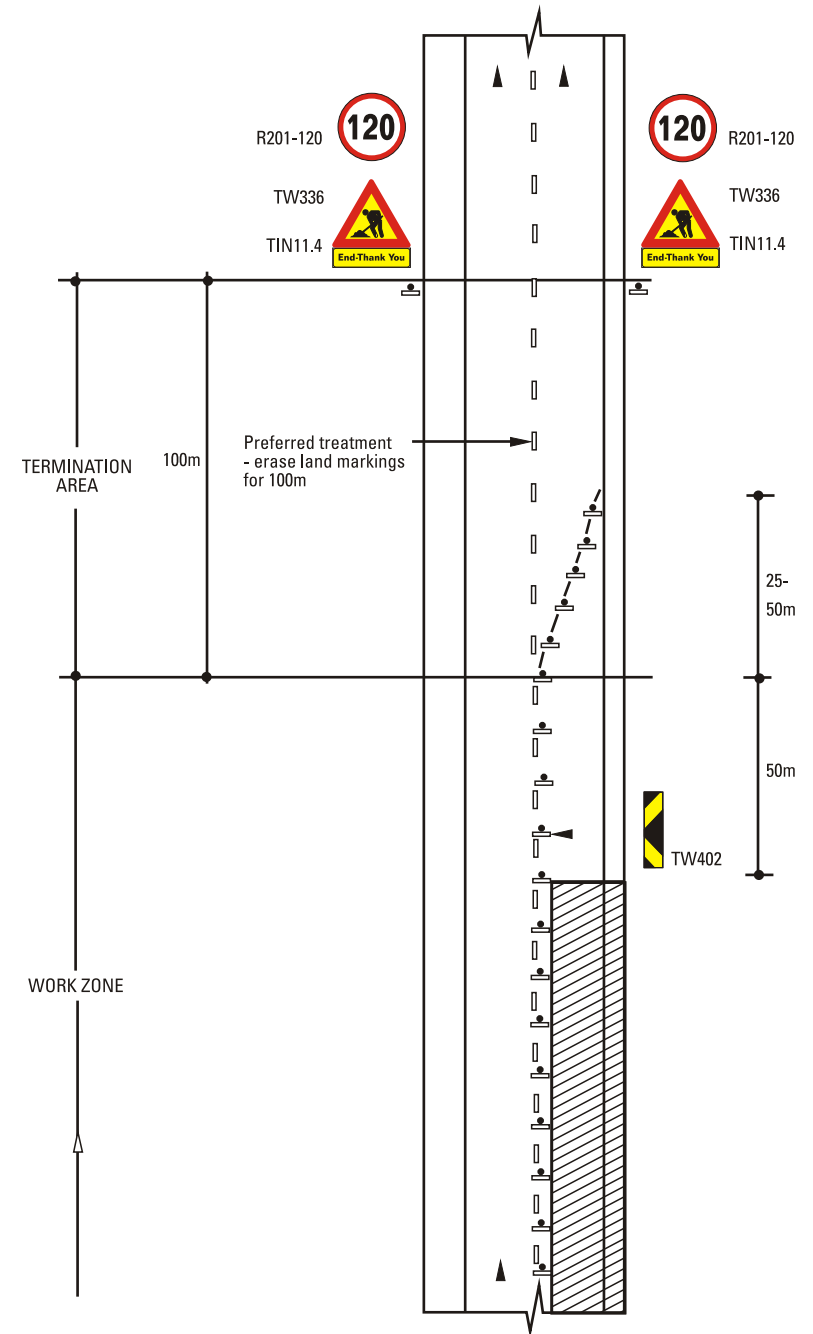





Figure 6.2: Downstream Termination Area

6.3 LANE SHIFT TAPER - TRANSITION AREA

CHECKLIST

- ☐ Are traffic cones provided with retroreflective sleeves?
- ☐ Are delineators more appropriate than cones?
- ☐ Have road markings been erased within the shifted lane?
- ☐ Are temporary edge line markings and/or roadstuds warranted?

TYPICAL SIGN REQUIREMENTS			
Sign	Code	Size (mm)	Qty
	TW401 TW402	150 X 600 200 X 800 250 X 1000 300 X 1200	#
	TR104	900 (URBAN) 1200 (RURAL)	3
	TW411	300 X 1800 (URBAN) 400 X 2400 (RURAL)	1

# 12 to 15 for 3,5m lane plus 5 for shoulder

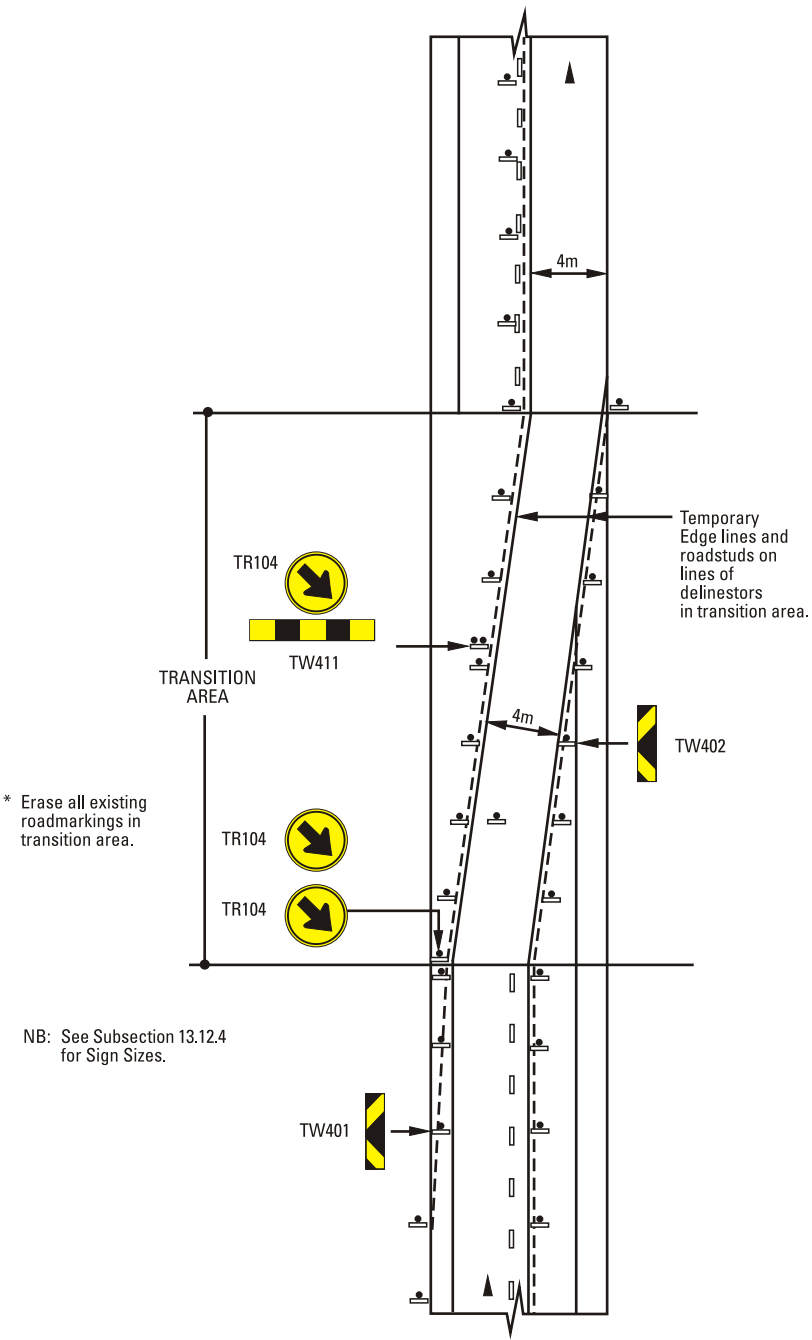


Figure 6.3: Lane Shift Taper - Transition Area

6.4 DOUBLE LANE DROP TAPERS -  
UPSTREAM TRANSITION AREA

CHECKLIST

- ☐ Check to see that the sign inventory is not duplicated in the main application inventory?
- ☐ Can the single remaining lane adequately accommodate traffic?
- ☐ Is the site a short term one or long-term one?

INVENTORY			
Sign	Code	Size (mm)	Qty
	TGS104	1200 X 1600	4
	TGS102	1200 X 1600	4
	TR201-60	1200	2
	TR103	1200	6
	TR214	1200	1

INVENTORY			
Sign	Code	Size (mm)	Qty
	TW411	300 X 1800 (URBAN) 400 X 2400 (RURAL)	2
	TW402	800 x 200	#
	TIN 11.3	1200	8

# 30 taper plus 5 per 100m

NOTE:  
1. The detail shown here is applicable to freeway or other high speed dual carriageway roadways for work lasting more than 24 hours.

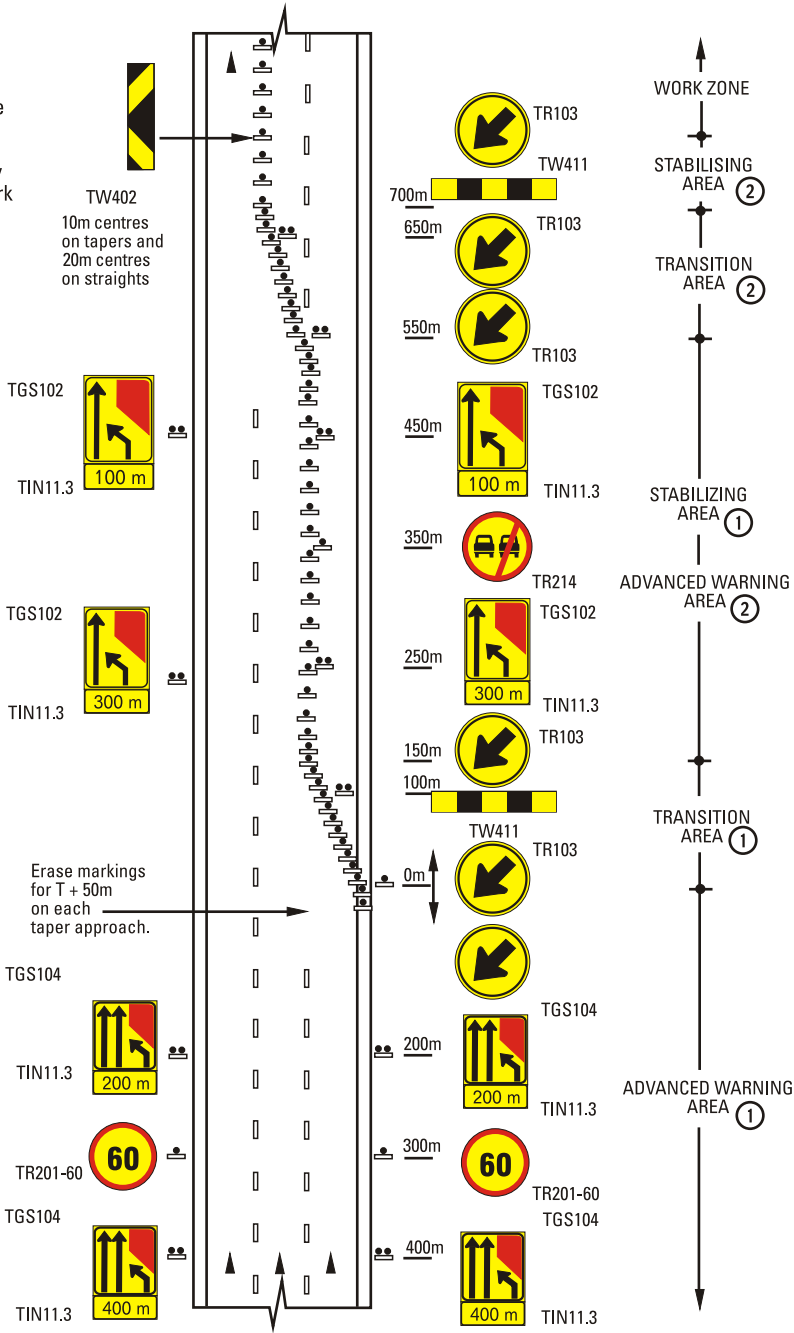


Figure 6.4: Double Lane Drop Tapers -  
Upstream Transition Area

## This image shows a full page of a handwriting practice worksheet. It consists of multiple sets of three horizontal dashed lines, providing a guide for letter height and placement. The lines are evenly spaced across the entire page, which is otherwise blank.

## This image shows a full page of white paper with horizontal dashed lines, typical of primary-ruled notebook paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



## HUMAN SETTLEMENTS, ENGINEERING AND TRANSPORT CLUSTER

### eThekweni Transport Authority Unit

30 Archie Gumede Place, Durban, 4001  
PO Box 680, Durban, 4000  
Tel: 031 311 7337 / 083 448 7794

#### APPLICATION FOR OCCUPATION OF ROAD SPACE FOR CONSTRUCTION RELATED ACTIVITY

APPLICANT'S DETAILS	Name of Organization		
	Designated Representative		
APPLICANT'S ADDRESS			
CONTACT No.			
SITE ADDRESS (specific location)			
DATE(S) OF ACTIVITY		TIMES	
PROJECT DESCRIPTION			

#### THE TRAFFIC MANAGEMENT PLAN (TMP)

(To be inserted as an ANNEXURE to this application and to include, amongst others, the following details)

- Type of activity to be undertaken,
- Period of activity,
- Times of activity,
- Layout plan indicating section of road space required (lanes, parking bays and/or loading zones, sidewalks, verges, etc),
- Traffic guidance schemes i.e. proposed method/s of road closure to be implemented, indicating any traffic deviations and associated traffic signs, etc (e.g. STOP/GO; DETOUR, etc),
- Alternative routes (if applicable),
- Pedestrian management,
- Affected services management e.g. deliveries, waste collection, etc,
- Any correspondence / notifications / press releases, and
- Contact details of site supervisor, safety officer, main contractor.

**NOTE:** The applicant to ensure that the TMP is prepared and signed by an official with the appropriate traffic management skills / expertise and that the TMP is in accordance with the guidelines provided in the SADC Road Traffic Signs Manual (SARTSM), Vol 2, Ch 13.

Upon inspection and sanctioning of the TMP by the department, a permit for the occupation of the respective road space will be issued to the applicant, after having signed the relevant indemnity.

The application may be submitted to:

eMail	Rajen.Govender@durban.gov.za
Delivered	30 Archie Gumede Place, 1 <sup>st</sup> Floor, Room 126, Traffic Operations Branch, ETA

# **TRAFFIC MANAGEMENT PLANS**

## **1. WHAT IS A TRAFFIC MANAGEMENT PLAN**

A Traffic Management Plan (TMP) is an overarching document covering proposals to be adopted for accommodation of traffic during construction work or other road related activity. It involves planning and controlling the movement of people and goods within an area. This can include stationary and moving traffic, employees, pedestrians, cyclists, and vehicles. The goal of traffic management is to keep this movement orderly and efficiently to minimise risk at the workplace. A TMP is a tool that helps you to do this. A TMP must be approved by a local transport authority prior to any roadworks and activities. A TMP must be read in conjunction with the SADC Road Traffic Signs Manual, in particular Chapter 13.

## **2. WHAT IS THE PURPOSE OF A TRAFFIC MANAGEMENT PLAN?**

The overall objectives of the TMP are to ensure that optimal and safe flow of traffic is maintained during construction, and to reduce road accidents during all the phases of the project and to minimize personal exposure and property damage.

A TMP also supports workers by determining what safety equipment is needed to protect the affected people such as traffic cones, fences, barricades, traffic lights, road signs, and other equipment to ensure that work zones are properly and distinctively established. By doing so, traffic management teams will be able to create a protective zone to organize traffic alongside the work being done simultaneously. A TMP is also vital to ensure that road construction plans and projects are being done safely without disrupting the normal traffic flow.

The purpose of a TMP is to ensure the safety of all effected parties by undertaking the following:

- Providing, maintaining and updating an effective TMP,
- Meeting the requirements of the client and project site,
- Ensuring traffic is accommodated for optimal flow and safety during construction,
- Achieving zero incidents,
- Achieving zero environmental incidents,
- Defining clear tasks, authorities and responsibilities with regard to the control of hazards,
- Ensuring compliance with legal and other project site requirements,
- Keeping traffic delays to a minimum,
- Maintaining satisfactory property access,
- Minimising disruption to businesses,
- Minimising disturbance to the environment,
- Providing accessibility to emergency rescue vehicles,
- Providing accessibility to vehicles serving any affected businesses.

## **3. ELEMENTS OF A TRAFFIC MANAGEMENT PLAN**

A TMP typically includes several elements, such as identifying the types of traffic present, determining the routes they will take, and putting measures to control traffic flow in place. When developing a TMP, it is essential to consider all potential hazards, as even minor problems can cause major disruptions if not properly addressed. A TMP does not only cover how workers can be safe when a road project is being completed, but it also contains information on the workaround prepared for cyclists, pedestrians, and other road users. It must contain the specifics of the project as it is completed, such as the location, time shifts, workers involved, the work processes, contact details, as well as traffic management design plans.



The complexity of a TMP will depend on several factors, including:

- Expected worksite hazard rating (High or Low),
- Whether the works are on an arterial road or on a local road, and
- The location of the work area (on or off road) and as a result the required traffic management strategy.

A TMP should cover the major elements including:

### **3.1 Design plan**

This should illustrate how the traffic would look like during the operation. Having this would help ensure the safe movements of the vehicles alongside the roadwork equipment that separates the work area and the established protective zone for road users.

Potential hazards in the area should be identified, and suitable traffic flow should be suggested. Also, it is important to determine the types of vehicles that usually pass through so that proper measurements and distances, such as the width and turning radius, can be considered between the work zone and the main road. Lastly, parking, nearby establishments, and other significant places where people stay or pass-through should also be considered when creating the design plan.

### **3.2 Implementation**

Aside from the guidance scheme from the design plans, it should also state the details of when the workers begin doing road construction until they also leave. During the implementation, persons in charge of performing high-risk tasks should possess and secure the right licenses, registrations, and permits before operating. Compliance documents such as site, legislative, organization, health and safety, and emergency documentation should also be prepared to ensure that the work zone meets all of these requirements. In addition, incidents should also be reported and kept for safety purposes.

### **3.3 Maintenance**

Maintenance of the TMPS can evolve in 3 design phases. Each phase gives developmental opportunities for traffic planning designers to coordinate the plans to key people.

- The first phase design involves rough outlines including the plan notes detailing the sequence of construction and traffic management control.
- The second phase should cover the major components of the TMP such as advance signing layouts, detour area, and geometry, temporary markings in transitions, intersections, gore areas, barrier wall needs, and special equipment.
- The third phase is the completing stage of the maintenance which involves pay items.

### **3.4 Alteration or removal of temporary traffic management**

This should cover how temporal traffic arrangements are altered or removed at the conclusion of the job. This includes the removal of all regulatory signs and equipment, speed restriction signs, barrier systems, temporary markings, and delineation devices. All TTM must be removed in reverse order. Removal might be an easier task compared to planning, installation, and maintenance. However, it should also be planned and performed in a safe manner.

A Traffic Management Plan must include:

- A fully dimensioned site specific or generic Traffic Guidance Scheme (TGS) (See attached examples),
- Set out standard operating procedures,
- Nature and duration of activity/works,
- Worksite or location of the activity,
- Site specific risk assessment (including for each TGS),
- Details of arrangement of traffic control devices, including for each stage of works for both daytime and night-time,
- Proposed speed reductions,
- Provisions for: Public transport, other traffic such as vehicular traffic, pedestrians, cyclists and persons with disabilities,
- Measures included to control identified risks, and
- Clearance between traffic and persons conducting works,

Additional items that must be included in the Traffic Management Plan include:

- Safety of the workers at the worksite,
- Overall traffic management strategy,
- Emergency access (for workers and emergency services),
- Any unusual hazards,
- Use of alternative routes,
- Provision for over-dimensional vehicles,
- Provision for access to abutting properties,
- Arrangements to address and monitor the risk of end-of-queue collisions,
- Traffic management installation sequence,
- Emergency contact details,
- Communication arrangements, and
- Record keeping.

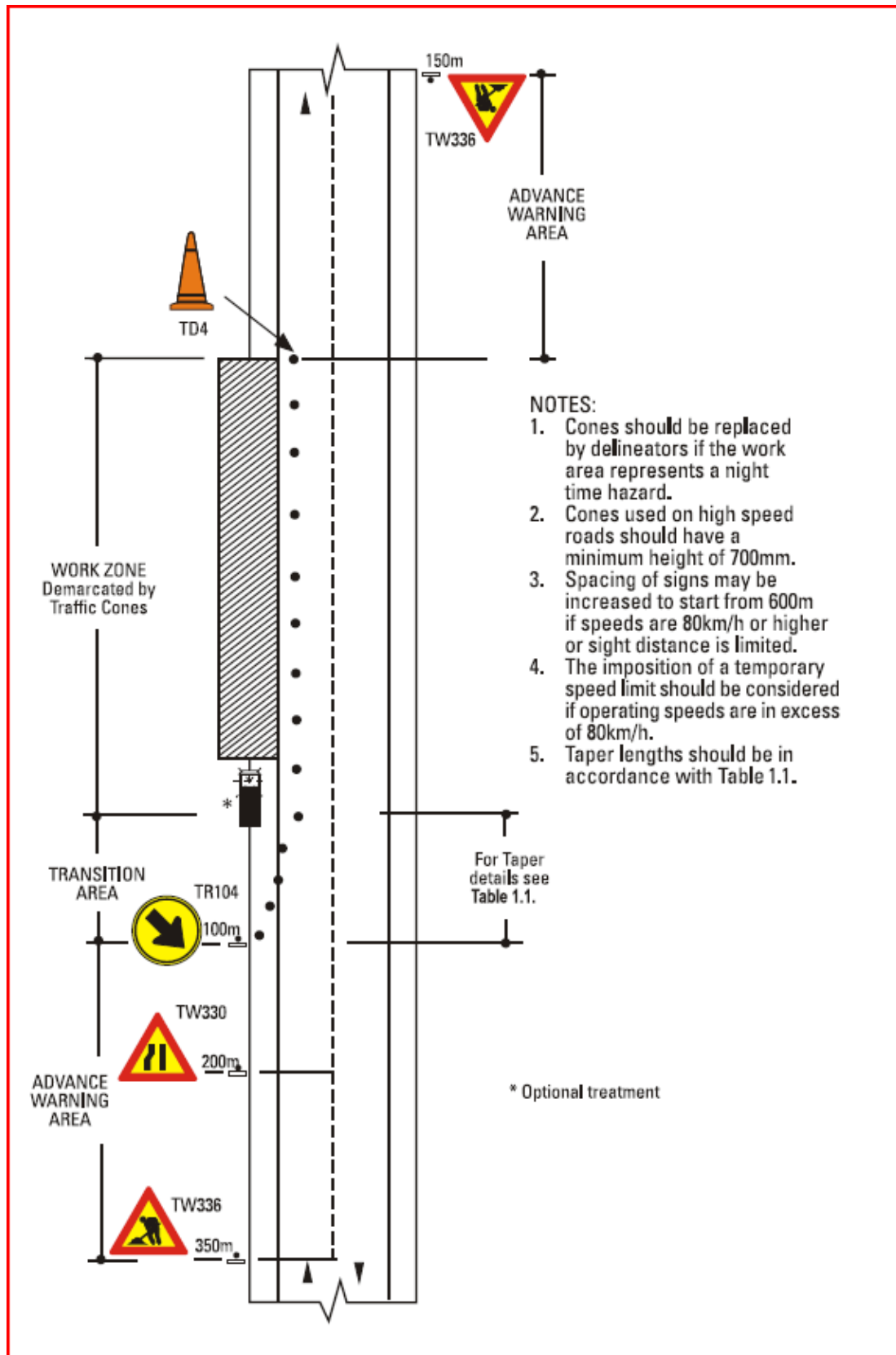
#### **4. REVISION OF A TRAFFIC MANAGEMENT PLAN**

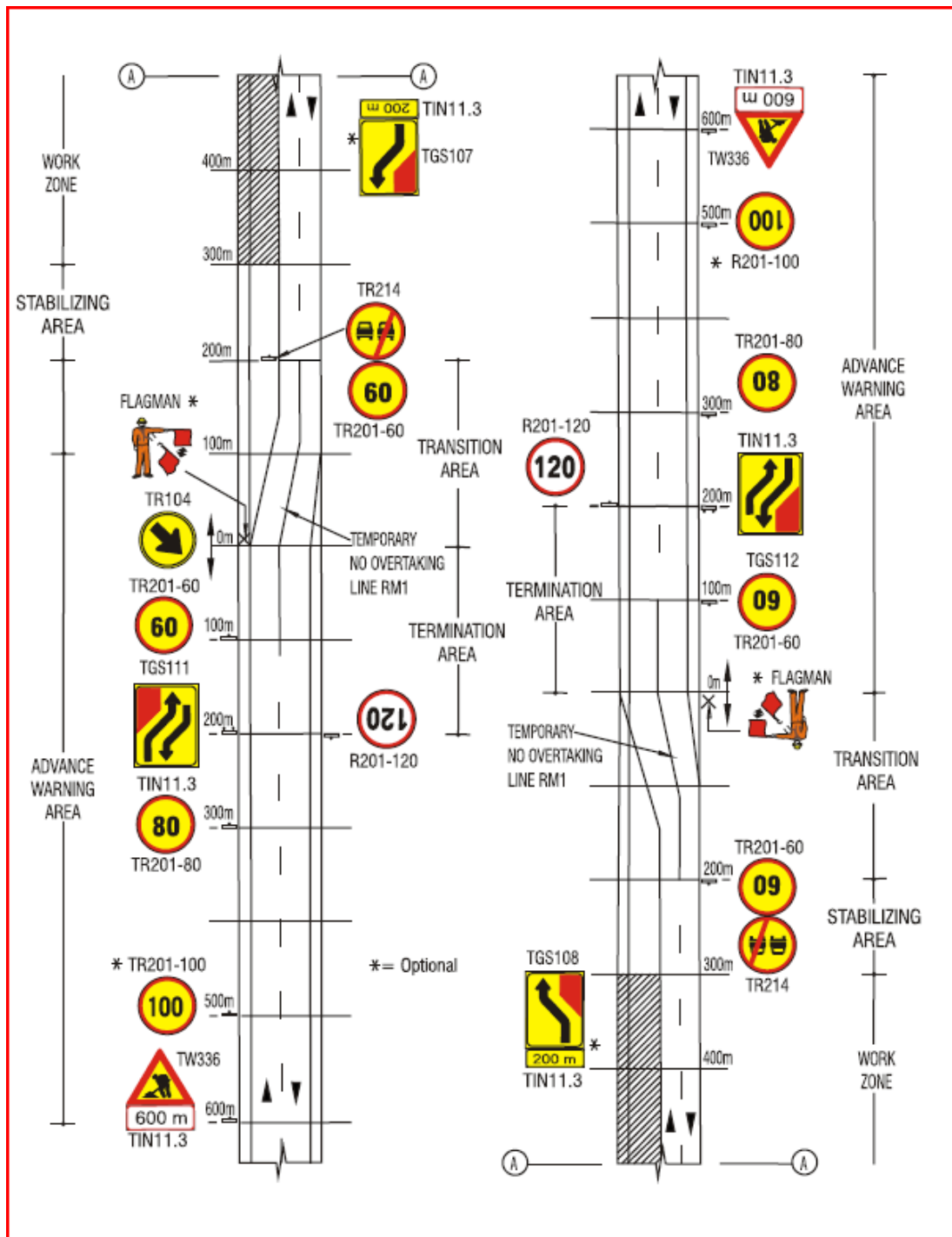
It must be noted that a TMP is a living document and will be updated when necessary and in particular during construction to reflect new developments on a project. The appointed Contractor must, on a regular basis, monitor the effectiveness of traffic management during the contract against the specifications in the approved traffic management plan, and initiate appropriate amendments/corrective measures should they be required so as to minimise travel delays to the public, maintain a safe traffic way and minimise the risk of pedestrian/motor vehicle accidents.

**Rajen Govender**  
**March 2024**

## EXAMPLES OF TYPICAL TRAFFIC GUIDANCE SCHEMES

(Extracted from Chapter 13 of the SADC Road Traffic Signs Manual)









<Title of Works>

# TRAFFIC MANAGEMENT PLAN

<Add Details of Works>

<Add TMP Number>

Template prepared by:  
**RAJEN GOVENDER**  
eThekwin Transport Authority  
[Rajen.Govender@durban.gov.za](mailto:Rajen.Govender@durban.gov.za)  
March 2024

<b>Prepared by:</b> <insert name>; <insert position>		
<b>Approved by:</b>		
<b>Name:</b> <insert name> <insert position>	<b>Name:</b> <insert name> <insert position>	<b>Name:</b> <insert name> <insert position>
<b>Signature:</b>     <insert date>	<b>Signature:</b>     <insert date>	<b>Signature:</b>     <insert date>

Table of Modifications			
Revision	Date	Modifications to content	Author



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# 1 Overview

## 1.1 Introduction

<insert information on the scope and location of the project/s and detail what the TMP will address>

## 1.2 Purpose of this Plan

The purpose of this Traffic Management Plan (TMP) is to address the traffic management provisions that will be implemented in order to execute this plan while minimising disruption to all stakeholders.

This plan can potentially affect, but is not limited to:

- Road users
- Businesses
- Local residents
- Pedestrians
- Cyclists
- Emergency services
- Heavy vehicles
- Public transport

## 1.3 Legislative Requirements

<insert specific legislative requirements specific to the project>

# 2 Project Overview

<insert overview of the Project>

## 2.1 Works Overview

The TMP is required for works that include:

- <add roadworks, asphalting, events, etc>

# 3 Location of Works

The proposed works are on:

<insert street>	between	<add street to/from>	<add direction>
<insert street>	between	<add street to/from>	<add direction>
<insert street>	between	<add street to/from>	<add direction>

## 3.1 Road Occupancy Approval

<insert relevant information on the approval to occupy the road>

## 4 Existing Conditions

There **<are/are not>** any existing works or events in the area that will affect plans detailed in this TMP. The following works and restrictions have been identified in the area.

### 4.1 **<add area/location/event>**

Impacts identified are:

- **<add details>**

### 4.2 **<add area/location/event>**

Impacts identified are:

- **<add details>**

### 4.3 **<add area/location/event>**

Impacts identified are:

- **<add details>**

## 5 Project Impacts to Traffic & Transport

### 5.1 Work Hours

**<insert street/s> Closure**

Duration: **<insert hours>** hours

Timing: **<insert dates/times>**

Date and Times of Works	Traffic Plan No. (refer to Appendices for detailed plans)

### 5.2 Operating Conditions

Refer to Traffic Plans in Appendix **<insert Appendix No.>**.

### 5.3 Impact on Traffic Flow

**<insert Traffic Plan No.>**

The proposed closure **<is/is not>** expected to cause any traffic delays.

Delays are expected on:

<b>&lt;insert street&gt;</b>	between <b>&lt;add street&gt;</b>	<b>&lt;add direction&gt;</b>
<b>&lt;insert street&gt;</b>	between <b>&lt;add street&gt;</b>	<b>&lt;add direction&gt;</b>
<b>&lt;insert street&gt;</b>	between <b>&lt;add street&gt;</b>	<b>&lt;add direction&gt;</b>

The closure **<will/will not>** impact on local access. There **<will/will not>** be a signposted detour.

**<insert Traffic Plan No.>**

The proposed closure **<is/is not>** expected to cause any traffic delays.

Delays are expected on:

<b>&lt;insert street&gt;</b>	between <b>&lt;add street&gt;</b>	<b>&lt;add direction&gt;</b>
<b>&lt;insert street&gt;</b>	between <b>&lt;add street&gt;</b>	<b>&lt;add direction&gt;</b>
<b>&lt;insert street&gt;</b>	between <b>&lt;add street&gt;</b>	<b>&lt;add direction&gt;</b>

The closure **<will/will not>** impact on local access. There **<will/will not>** be a signposted detour.

#### 5.4 Impacts on Transport

**<insert any impact and mitigations on Transport>**. The relevant Transport Authorities **<have/have not>** been notified of the impacts.

#### 5.5 Parking

Parking for construction vehicles **<will/will not>** be available on site.

Proposed street parking changes are:

Street	Location	Direction	Current Signage	Proposed Signage
<b>&lt;insert street&gt;</b>	between <b>&lt;add street&gt;</b>	<b>&lt;add direction&gt;</b>	<b>&lt;current signage&gt;</b>	<b>&lt;new signage&gt;</b>
<b>&lt;insert street&gt;</b>	between <b>&lt;add street&gt;</b>	<b>&lt;add direction&gt;</b>	<b>&lt;current signage&gt;</b>	<b>&lt;new signage&gt;</b>

#### 5.6 Emergency Services

Emergency service **<will/will not>** be impacted by the works. Emergency vehicles **<will/will not>** be allowed to continue through the site at all times during the occupation.

Access to the site will be via **<insert gate,street & direction>** and egress via **<insert gate, street & direction>**.

Alternate route for emergency vehicles will be via **<insert direction left/right>** or refer to **<insert Appendix No.>** for Emergency Services Map.

#### 5.7 Pedestrians

Pedestrians **<will/will not>** be managed through or around the worksite. A signposted pedestrian detour route **<will/will not>** be in place guiding pedestrians on the preferred route. Refer to **<add Traffic Plan No. or Map>** for detailed plans.

The crossing located at **<insert location>** will be moved to **<insert location>**.

#### 5.8 Cyclists

Cyclists **<will/will not>** be affected by the works. Cyclists will need to follow the diversion route detailed in Appendix **<insert Appendix No.>**.

#### 5.9 Heavy Vehicles

Heavy vehicles **<will/will not>** be suitable for the signposted detour routes. **<insert any special arrangments>**. Refer to Appendix **<insert Appendix No.>** for detailed route map.

## 5.10 Resident/Business Impacts

<Residents and/or Businesses will/will not> be impacted by the Project. <Insert any special arrangements>.

## 5.11 Construction Site Entry/Exit

Entry to site will be via:

<insert street>	at <add street/location>	<add direction>
<insert street>	at <add street/location>	<add direction>

Exit from site will be via:

<insert street>	at <add street/location>	<add direction>
<insert street>	at <add street/location>	<add direction>

# 6 Traffic Control Devices

## 6.1 Signage and Infrastructure

Temporary <add roadwork,closure,detour,etc> signposting will be implemented as per the detailed traffic plans. Refer to Appendix <insert Appendix No.> for the detailed plans.

## 6.2 Line Marking

There <will/will not> be a change to line marking as a result of the works. Any line marking removed during the works <will/will not> be replaced.

## 6.3 Speed Zoning

There <will/will not> be a change to the speed limits as a result of the works.

## 6.4 Intelligent Transport System (ITS) Devices

### 6.4.1 Traffic Signal Modifications

There <will/will not> be modifications to the operation of traffic signals. Refer to Appendix <insert Appendix No.> for the detailed changes.

### 6.4.2 Temporary Traffic Signals

There <will/will not> be temporary traffic signals used on this project. Refer to Appendix <insert Appendix No.> for the detailed plans and locations.

### 6.4.3 Variable Message Signs (VMS)

Variable Message Signs <will/will not> be implemented for the works. Refer to Appendix <insert Appendix No.> for detailed messaging and locations.

### 6.4.4 Radar Activated Speed Signs

Radar activated speed signs <will/will not> be implemented for the works. Refer to Appendix <insert Appendix No.> for detailed plans and locations.

#### 6.4.5 Live Tracking Resources

There <will/will not> be live tracking of resources through or around the site.

### 6.5 Incident Response / Management

There <will/will not> be incident response provided for the Project. The response will include:

- <insert details>
- <insert details>

## 7 Risk Assessment

<insert assessment/s>

## 8 Communications Strategy

### 8.1 Worksite Communications

There <will/will not> be two-way radio communications throughout the worksite to assist with traffic management of vehicles travelling into, through and/or around the worksite.

### 8.2 Stakeholder Works Notifications

Notifications <will/will not> be provided to all impacted stakeholders.

### 8.3 Emergency Services Notification

Emergency Services will be informed in a timely manner of relevant activities proposed within this TMP. Regular updates will be provided to emergency services, including changes to road network configurations, changes to road conditions and worksite access locations.

## 9 Contact Details

### 9.1 Key Contacts

Name	Position	Contact No.

### 9.2 Onsite Contacts

Name	Position	Contact No.

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## 10 References

This TMP has been prepared with reference to the following documents:

- <insert document reference>

## 11 Abbreviations & Definitions

Abbreviation	Definition

## 12 Appendices

### Appendix 1 – Traffic Plans

#### Traffic Plan Index

##### <add Dates/Times>

- <add Traffic Plan No.>
- <add Traffic Plan No.>
- <add Traffic Plan No.>

##### <add Dates/Times>

- <add Traffic Plan No.>
- <add Traffic Plan No.>
- <add Traffic Plan No.>

### Appendix 2 – Detour Map

### Appendix 3 – Road Closure Map

### Appendix 4 – Parking Restriction Map

### Appendix 5 – Heavy Vehicle Detour Map

### Appendix 6 – Pedestrian Detour Map

### Appendix 7 – Cyclists Detour Map

### Appendix 8 – <insert title>

### Appendix 9 – <insert title>

### Appendix 10 – <insert title>