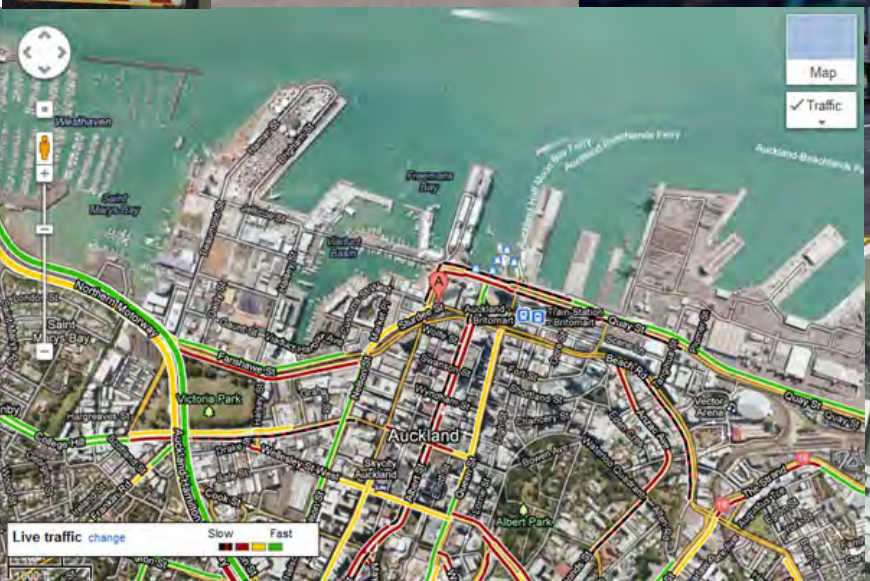
Auckland Transport

Generic Traffic Management Diagrams

November 2018



Generic Traffic Management Diagrams
Auckland Transport - Road Controlling Authority (RCA)

Introduction:

We trust that you will appreciate the work that has gone into this document. It is a consolidation of generic traffic management diagrams from the Code of Practice for Temporary Traffic Management (CoPTTM) and contractors working on the Auckland network, as they have evolved over the past several years.

Auckland Transport have reviewed the submissions by contractors to perform their work on our network and determined that, in the interest of consistency and best practice, we must be the one to provide the generic traffic management design. This set of drawings is consistent with the CoPTTM and the requirements of the Auckland network.

The standards and requirements of the CoPTTM remain unchanged. These generic drawings are merely supplemental to the CoPTTM, must form part of an applicable approved TMP and be managed by a suitably qualified competent STMS. Any deviation from the CoPTTM may incur a work stoppage order, notice(s) of non-conformance and associated fees.

Purpose:

The intended purpose for this document is for all contractors who wish to work on the Auckland Transport network, to first seek the appropriate applicable Generic Traffic Management Diagrams (GTMD) contained within this document.

By doing so, the required application process can be expedited through the Road Corridor Access team.

Feedback:

We believe these drawings to be thorough. However, we will consider your feedback and input as provided to the Road Corridor Access team. You can submit this to the manager at Laurence.Jones@at.govt.nz

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Generic Traffic Management Drawings
Section F
LOW VOLUME AND LEVEL 1

LEVEL LV LAYOUT DISTANCES TABLE

Permanent speed limit or RCA-designated operating speed (km/h)		≤50	60	70	80	90	100
Traffic signs							
A	Sign visibility distance (m)	50	60	70	80	90	100
B	Warning distance (m)	50 or 30*	80	105	120	135	150
C	Sign spacing (m)	25 or 15*	40	50	60	70	75
Safety zones							
D	Longitudinal (m)	0	0	0	0	0	0
E	Lateral (m)+	1	1	1	1	1	1
	Lateral behind barrier installation	As specified by the Installation Designer					
Tapers							
G	Taper length (m)#	25	30	35	40	45	50
Delineation devices							
Cone spacing in taper (m)		2.5	2.5	5	5	5	5
Cone spacing: working space (m)		10	10	20	20	20	20

* Larger minimum distances apply on all state highways. The smaller minimum distances may be applied on other roads to accommodate road environment constraints.

\+ On LV roads, the lateral safety zone may be reduced or eliminated in order to retain a single lane width. Positive traffic management and an appropriate TSL must be used.

\# On non-state highways with permanent speeds 50km/h or less, a **10m taper** (with cones at 1m centres) may be used when there are road environment constraints (eg intersections and commercial accesses).

On all roads where shoulder width is less than 2.5m and the activity does not affect the live lane, a **10m shoulder taper** is permitted (with at least 5 cones at no greater than 2.5m centres).

A **taper of 30m** (with cones at 2.5m centres) **must** be used where manual traffic control (stop/go), portable traffic signals or priority give way are employed.

Lane widths									
Speed (km/h)		30	40	50	60	70	80	90	100
F	Lane width (m)	2.75	2.75	3.0	3.0	3.25	3.25	3.5	3.5

Except for delineation device spacings, which are maximum values, the distances specified in the above tables are minimum values.

LV/low-risk roads

Working on roads designated as LV/low risk (less than 250 vehicles per day (vpd) - less than 20 vehicles per hour), with clear sight distance to the operation and an operating speed of less than 65km/h:

- use an appropriate advance warning sign (static installation) and amber flashing beacon on working vehicle when on the shoulder
- consider stop/go or give way control of traffic when activity encroaches onto lane.

If the above requirements cannot be achieved, the operation must be modified to comply with the requirements of a higher risk rating.

LEVEL 1 LAYOUT DISTANCES TABLE

	Permanent speed limit or RCA-designated operating speed (km/h)	≤50	60	70	80	90	100
Traffic signs							
A	Sign visibility distance (m)	50	60	70	80	90	100
B	Warning distance (m)	50 or 30*	80	105	120	135	150
C	Sign spacing (m)	25 or 15*	40	50	60	70	75
Safety zones							
D	Longitudinal (m)	10 or 5*	15	30	45	55	60
E	Lateral (m)	1	1	1	1	1	1
	Lateral behind barrier installation	As specified by the Installation Designer					
Tapers							
G	Taper length (m)#	30	50	70	80	90	100
K	Distance between tapers (m)	40	50	70	80	90	100
Delineation devices							
Cone spacing in taper (m)		2.5	2.5	5	5	5	5
Cone spacing: Working space (m)		5	5	10	10	10	10

* Larger minimum distances apply on all state highways and also on all multi-lane roads. The smaller minimum distances may be applied on other roads to accommodate road environment constraints.

\# On non-state highways with speeds 50km/h or less, a **10m taper** (with cones at 1m centres) may be used when there are road environment constraints (eg intersections and commercial accesses).

On all roads where shoulder width is less than 2.5m and the activity does not affect the live lane, a **10m shoulder taper** is permitted (with at least 5 cones at no greater than 2.5m centres).

A **taper of 30m** (with cones at 2.5m centres) **must** be used where manual traffic control (stop/go), portable traffic signals or priority give way are employed.

	Lane widths								
Speed (km/h)		30	40	50	60	70	80	90	100
F	Lane width (m)	2.75	2.75	3.0	3.0	3.25	3.25	3.5	3.5

Except for delineation device spacings, which are maximum values, the distances specified in the above tables are minimum values.

COMBINED LEVEL LV & LEVEL 1 LAYOUT DISTANCES TABLE

Permanent speed limit or RCA-designated operating speed (km/h)		≤50	60	70	80	90	100
Traffic signs							
A	Sign visibility distance (m)	50	60	70	80	90	100
B	Warning distance (m)	50 or 30*	80	105	120	135	150
C	Sign spacing (m)	25 or 15*	40	50	60	70	75
Safety zones							
D	Longitudinal (m)+	10 or 5*	15	30	45	55	60
E	Lateral (m)+	1	1	1	1	1	1
	Lateral behind barrier installation	As specified by the Installation Designer					
Tapers							
G	Taper length (m)#	30	50	70	80	90	100
G	**LV roads** taper length (m)#	25	30	35	40	45	50
K	Distance between tapers (m)	40	50	70	80	90	100
Delineation devices							
Cone spacing in taper (m)		2.5	2.5	5	5	5	5
Cone spacing: Working space (m)##		5	5	10	10	10	10

* Larger minimum distances apply on all state highways and also on all multi-lane roads. The smaller minimum distances may be applied on other roads to accommodate road environment constraints.

\+ On LV roads the longitudinal and lateral safety zones may be reduced, or eliminated, in order to retain a single lane width. Positive traffic management and an appropriate TSL must be used.

\# On non-state highways with speeds 50km/h or less, a **10m taper** (with cones at 1m centres) may be used when there are road environment constraints (eg intersections and commercial accesses).

On all roads where shoulder width is less than 2.5m and the activity does not affect the live lane, a **10m shoulder taper** is permitted (with at least 5 cones at no greater than 2.5m centres).

A **taper of 30m** (with cones at 2.5m centres) **must** be used where manual traffic control (stop/go), portable traffic signals or priority give way are employed.

LV roads: double the cone spacing alongside working space (eg 5 = 10, 10 = 20).

Lane widths									
Speed (km/h)		30	40	50	60	70	80	90	100
F	Lane width (m)	2.75	2.75	3.0	3.0	3.25	3.25	3.5	3.5

Except for delineation device spacings, which are maximum values, the distances specified in the above tables are minimum values.

LV/low risk roads

Working on roads designated as LV/low-risk roads (less than 250vpd - less than 20 vehicles per hour), with clear sight distance to the operation and an operating speed of less than 65km/h:

- use an appropriate advance warning sign (static installation) and amber flashing beacon(s) on working vehicle when on the shoulder
- consider stop/go or give way control of traffic when activity encroaches onto lane.

If the above requirements cannot be achieved, the operation must be modified to comply with the requirements of a higher risk rating.

SHOULDER AND BERM - LOW VOLUME
SHOULDER CLOSURE

ATF1-1

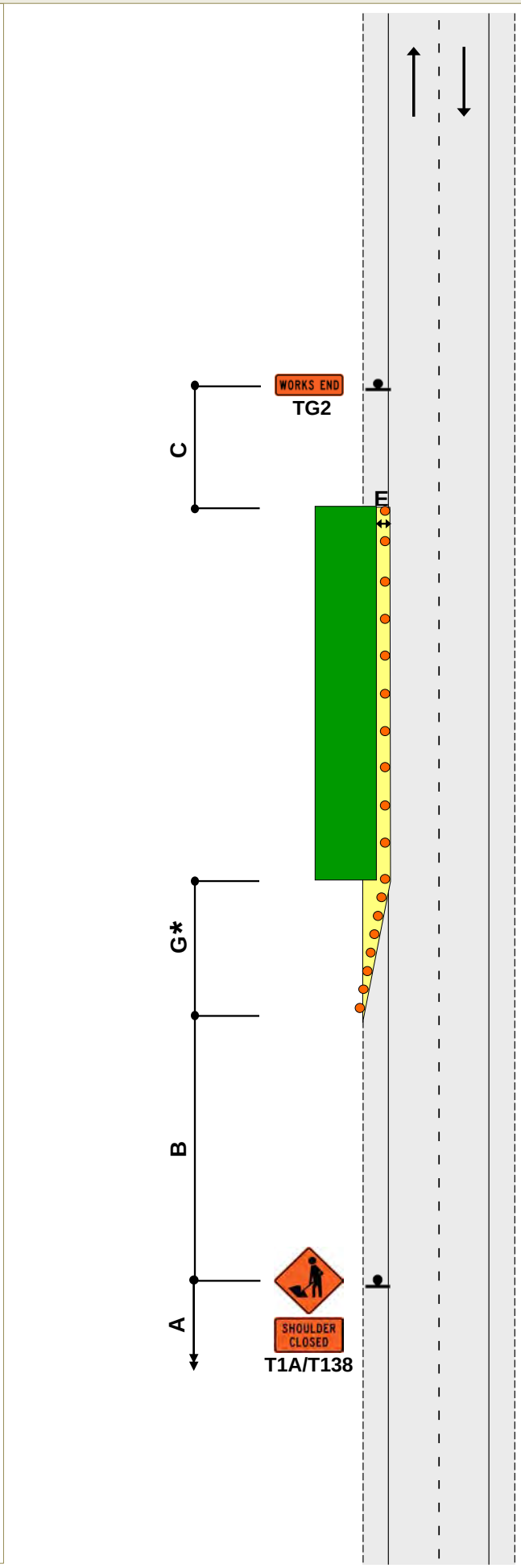
Notes

1. Cone spacing along side of working space on roads:
   - over 65km/h = 20m
   - under 65km/h = 10m
2. A 10m taper is allowed where shoulder width is less than 2.5m
3. *For shoulders exceeding 2.5m width, apply the following calculation; calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of shoulder

   G = Taper length in metres from the level LV layout distance table



Reference CoPTTM 4th Edition Section F Drawing F1.1

SHOULDER AND BERM - LOW VOLUME
SHOULDER CLOSURE

ATF1-1b

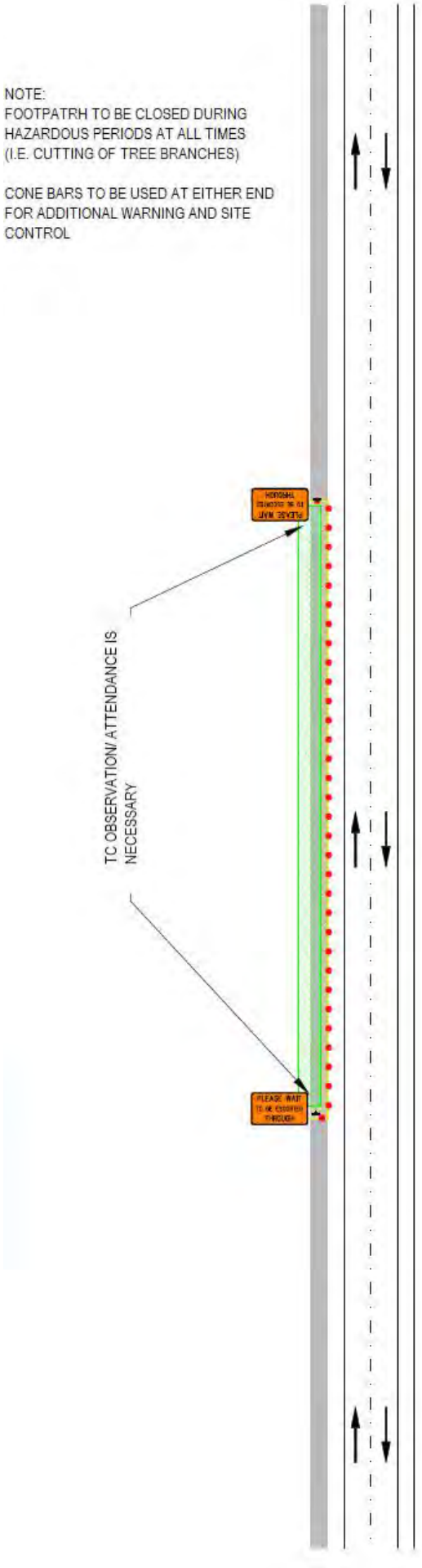
Notes

1. Cone spacing along side of working space on roads:
   - over 65km/h = 20m
   - under 65km/h = 10m
2. A 10m taper is allowed where shoulder width is less than 2.5m
3. *For shoulders exceeding 2.5m width, apply the following calculation; calculation of taper length for lateral shift of less than 3.5m is:

   $\frac{W \times G}{3.5}$

   W = Width of shoulder

   G = Taper length in metres from the level LV layout distance table



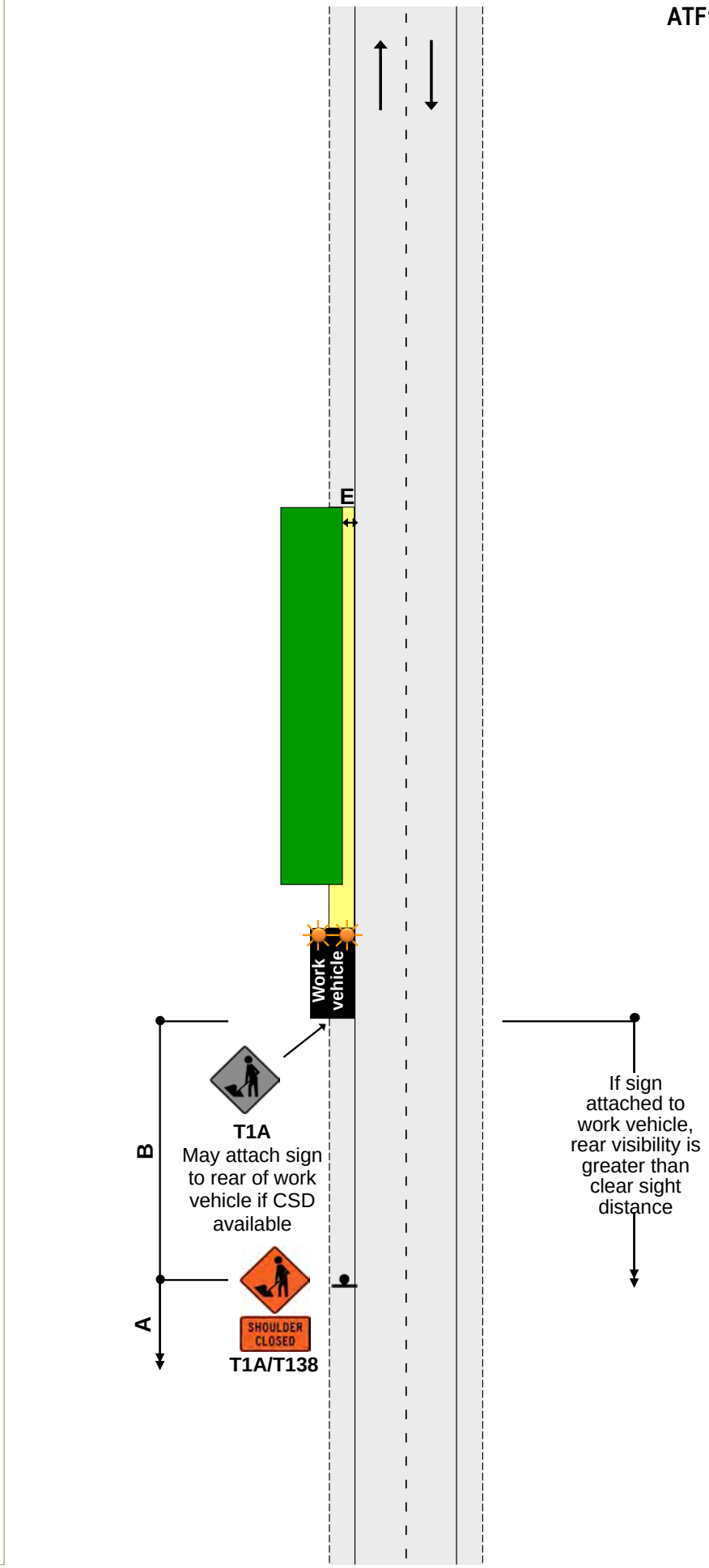
SHOULDER AND BERM - LOW VOLUME

SHOULDER CLOSURE -LOW RISK (UNDER 250vpd)

ATF1-2

Notes

1. If a static advance warning sign is installed, use sign visibility and warning distance
2. Advance warning sign may be attached to rear of a work vehicle if CSD is available
3. CSD is 3 X permanent speed in meters, or 75m on a level LV or level 1 non state highway with a permanent speed limit of less than 55km/h



Reference CoPTTM 4th Edition Section F Drawing F1.2

TWO-WAY TWO-LANE ROAD

LANE CLOSURE - LOW VOLUME (LV)

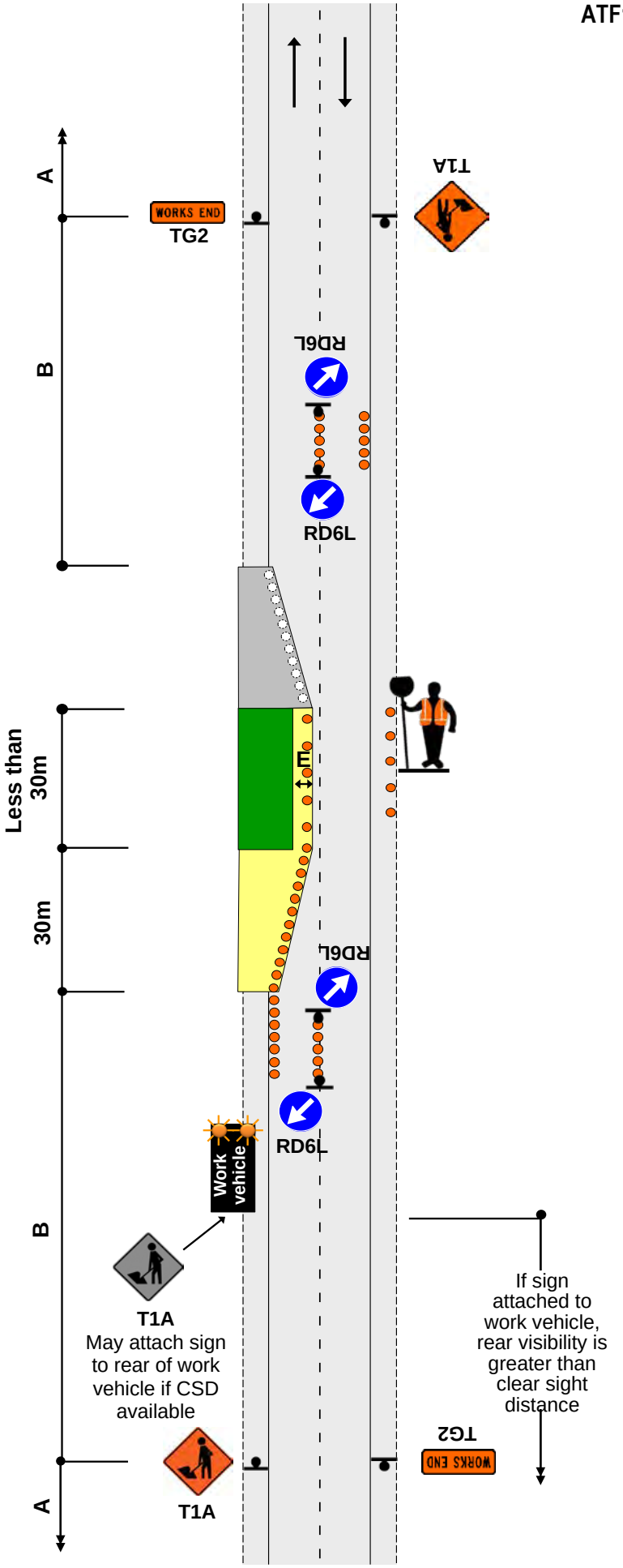
UNDER 65KM/H - MUST HAVE CSD IN BOTH DIRECTIONS

ATF1-3

Notes

1. If a static advance warning sign is installed, use sign visibility and warning distance from the layout distances table
2. Advance warning sign may be attached to rear of work vehicle if CSD is available
3. CSD is 3 X permanent speed in meters, or 75m on a level LV or level 1 non state highway with a permanent speed limit of less than 55km/h
4. If the working space is very short (less than 30m) then one MTC operating in the middle of the worksite may be used
5. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h
6. STOP/GO control may be replaced by GIVE WAY control
7. For closures of more than 1 day at same location use diagram F1.5 or similar
8. When road users are passing the working space in alternating flow, all construction equipment must be stopped on same side of the road if there is no separation from the live lane

Reference CoPTTM 4th Edition Section F Drawing F1.3

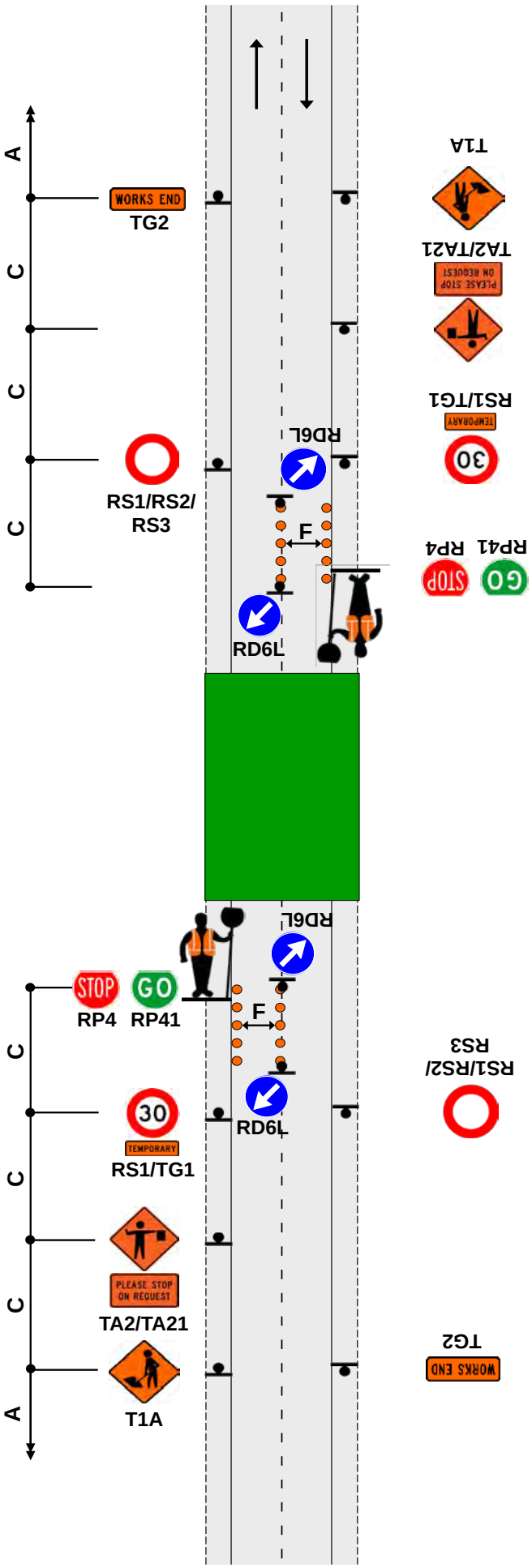


TWO-WAY TWO-LANE ROAD - LOW VOLUME (LV)
MANUAL TRAFFIC CONTROL
ALL TRAFFIC STOPPED TEMPORARILY

ATF1-4

Notes

1. Temporary delay period not to exceed the limit set or approved by the RCA
2. MTC with RP4/RP41 STOP/GO or RP4/RP42 STOP/SLOW paddle on road shoulder located between 1st and 2nd cone in the cone threshold closest to the working space
3. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h
4. MTCs must show same message to oncoming traffic (eg STOP/STOP or GO/GO)
5. Refer to C10.2.3 MTC essentials for further information
6. Traffic must be temporarily stopped in both directions of travel where the width of road is too narrow to cater for:
   - the work
   - delineation
   - safety zones, and
   - road user traffic



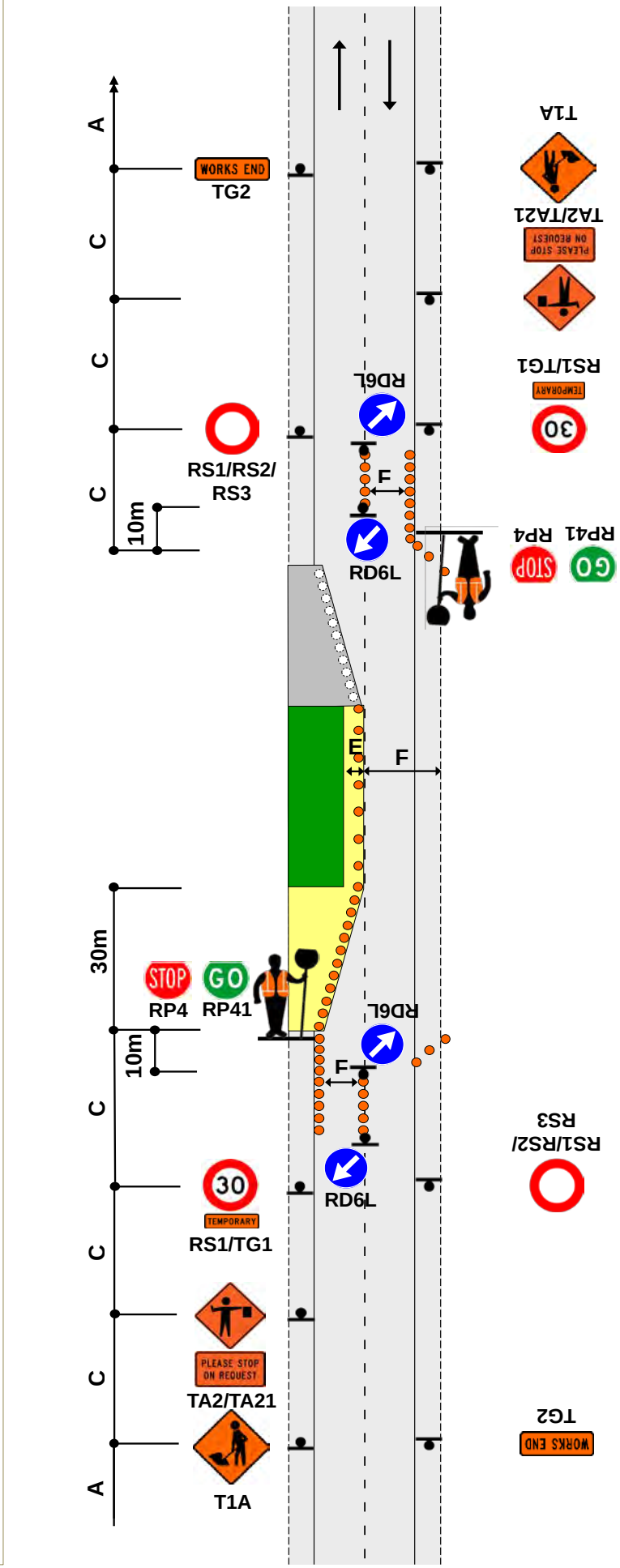
Reference CoPTTM 4th Edition Section F Drawing F1.4

TWO-WAY TWO-LANE ROAD - LOW VOLUME (LV)
MANUAL TRAFFIC CONTROL
SINGLE-LANE ALTERNATING FLOW

ATF1-5

Notes

1. Temporary delay period not to exceed the limit set or approved by the RCA
2. A 30m return taper at the end of the closure is optional
3. MTC with RP4/RP41 STOP/GO or RP4/RP42 STOP/SLOW paddle on road shoulder located between 1st and 2nd cone in the cone threshold closest to the working space
4. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h
5. When road users are passing the working space in alternating flow, all construction equipment must be stopped on same side of the road if there is no separation from the live lane
6. Refer to C10.2.3 MTC essentials for further information



Reference CoPTTM 4th Edition Section Drawing F1.5

TWO-WAY TWO-LANE ROAD - LOW VOLUME (LV)

PORTABLE TRAFFIC SIGNALS

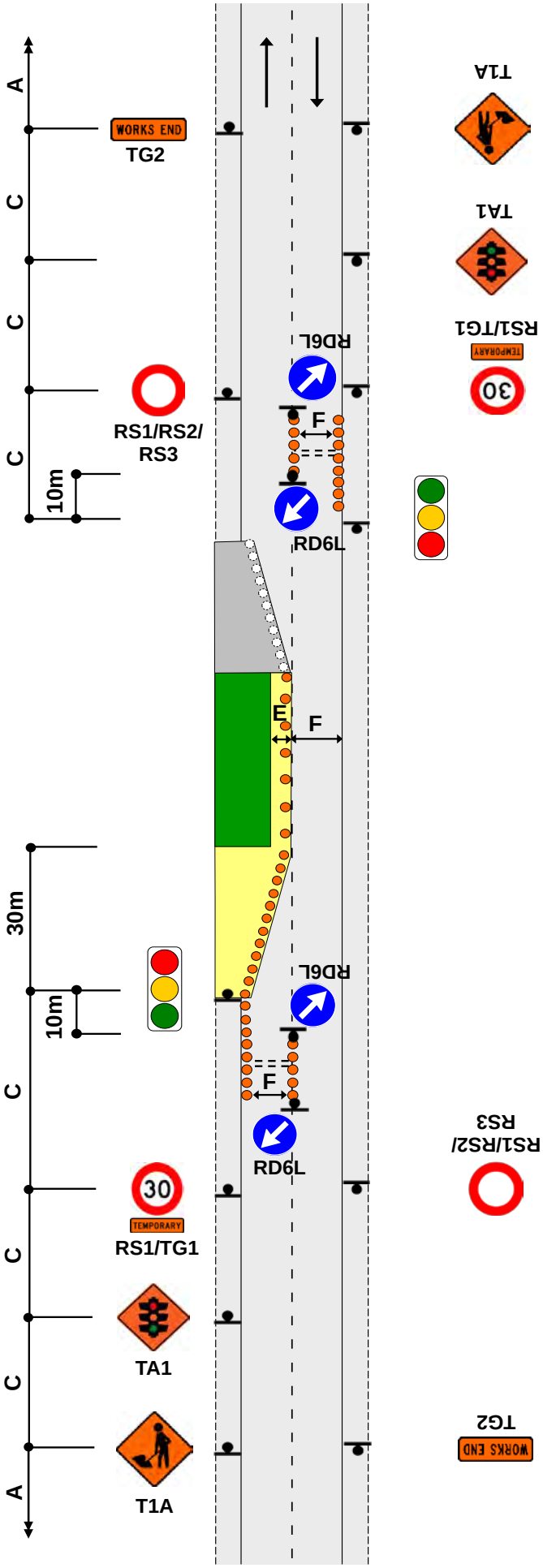
SINGLE-LANE ALTERNATING FLOW

ATF1-6

Notes

1. Use a full TMP form for this operation as it includes details of the portable traffic signals to be used
2. Install temporary limit lines or use RP61/RP62 signs

3. A 30m return taper at the end of the closure is optional
4. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h



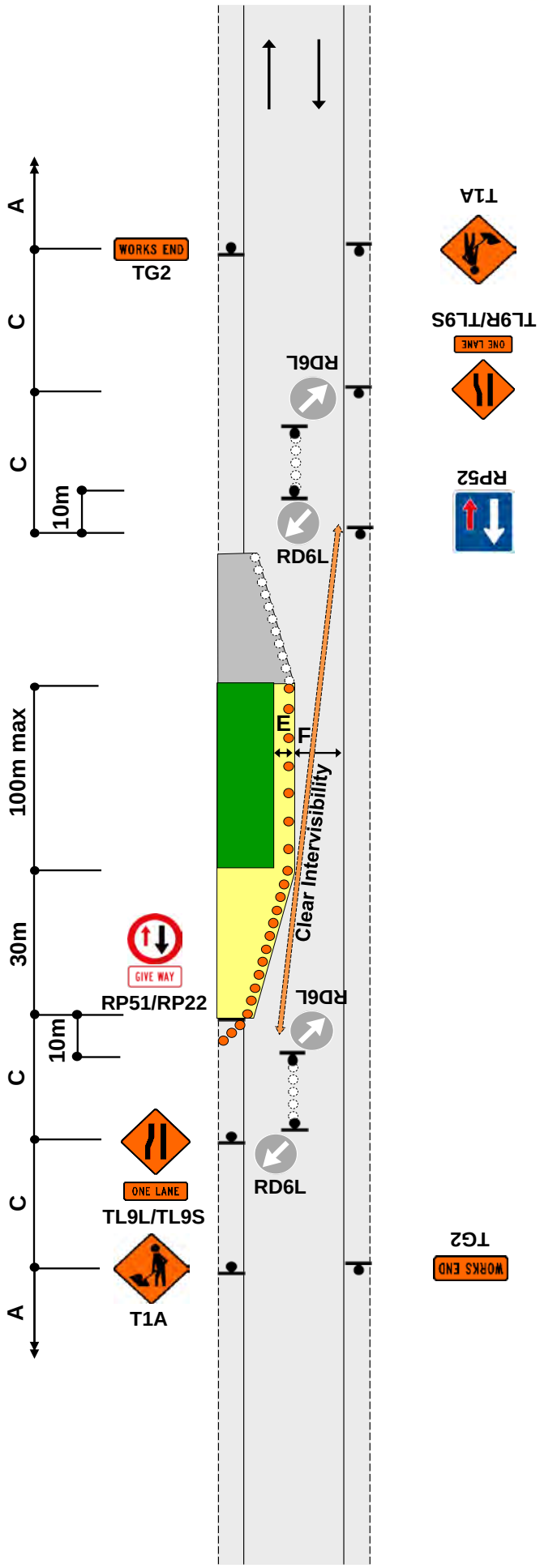
Reference CoPTTM 4th Edition
Section F Drawing F1.6

TWO-WAY TWO-LANE ROAD - LOW VOLUME (LV)
GIVE WAY CONTROL
SINGLE-LANE

ATF1-7

Notes

1. The RP51/RP22 and RP55 controls must be placed in the following priority order:
   - downhill traffic must give way to uphill traffic
   - traffic that has to cross into the opposing lane gives way
2. RS1/TG1 TSL signs and RS1/RS2/RS3 TSL derestriction signs may be installed if required
3. Working space to be less than 100m
4. Intervisibility is required as indicated on diagram. This means that a road user stopped at one priority sign has unimpeded line of sight to a road user at the other priority sign
5. A 30m return taper at the end of the closure and cones on the centre line are optional



Reference CoPTTM 4th Edition Section F Drawing F1.7

FOOTPATH - LEVEL 1

FOOTPATH DIVERTED ONTO THE BERM BEHIND WORK SPACE

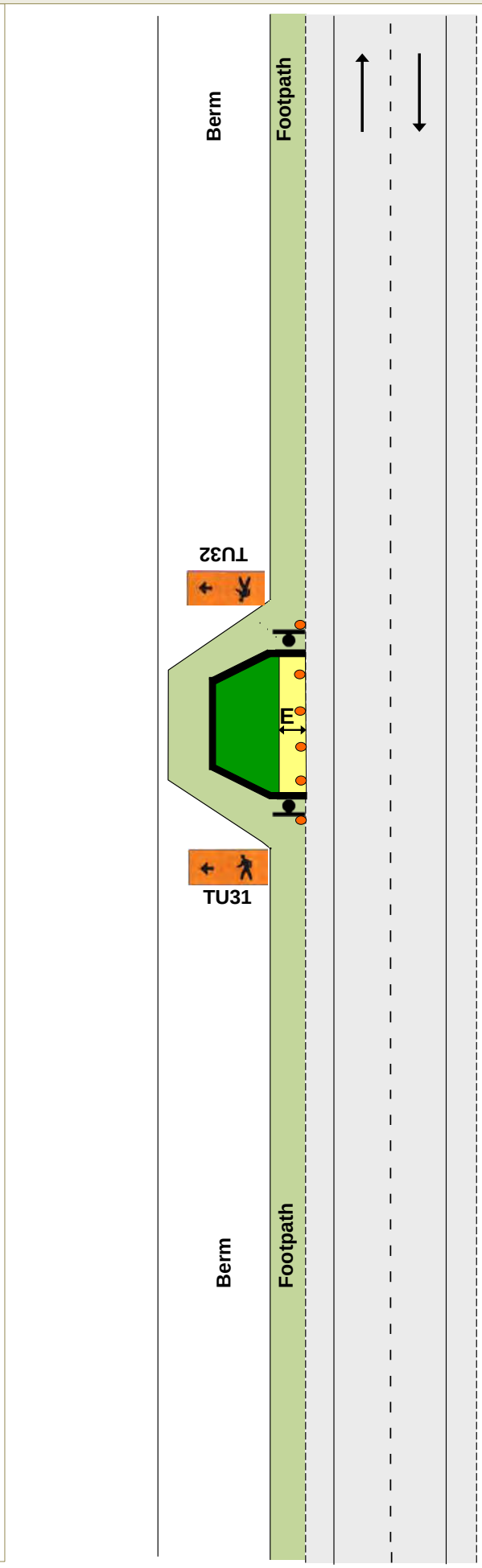
FIRST PREFRENCE

ATF2-1

Notes

1. Minimum pedestrian footpath widths:
   - Residential/Rural - 0.9m
   - Suburban Centre - 1.2m
   - CBD - 2m
2. Where the length of the temporary footpath exceeds 20m, these widths may have to be increased so footpath users do not have to wait to pass
3. Temporary footpath surfaces must be suitable for footpath users
4. Use safety fence to enclose the working space, or at **attended** worksites, cones connected with cone bars can be used to enclose the working space but only for a short period of time

   Note: Cone bars are not recommended where heavy equipment (eg a digger) is being used. A safety fence is preferred in these cases
5. This TMD must be used in conjunction with appropriate TTM for any work carried out on the shoulder or in the live lane



Reference CoPTTM 4th Edition
Section F Drawing F2.1

FOOTPATH - LEVEL 1

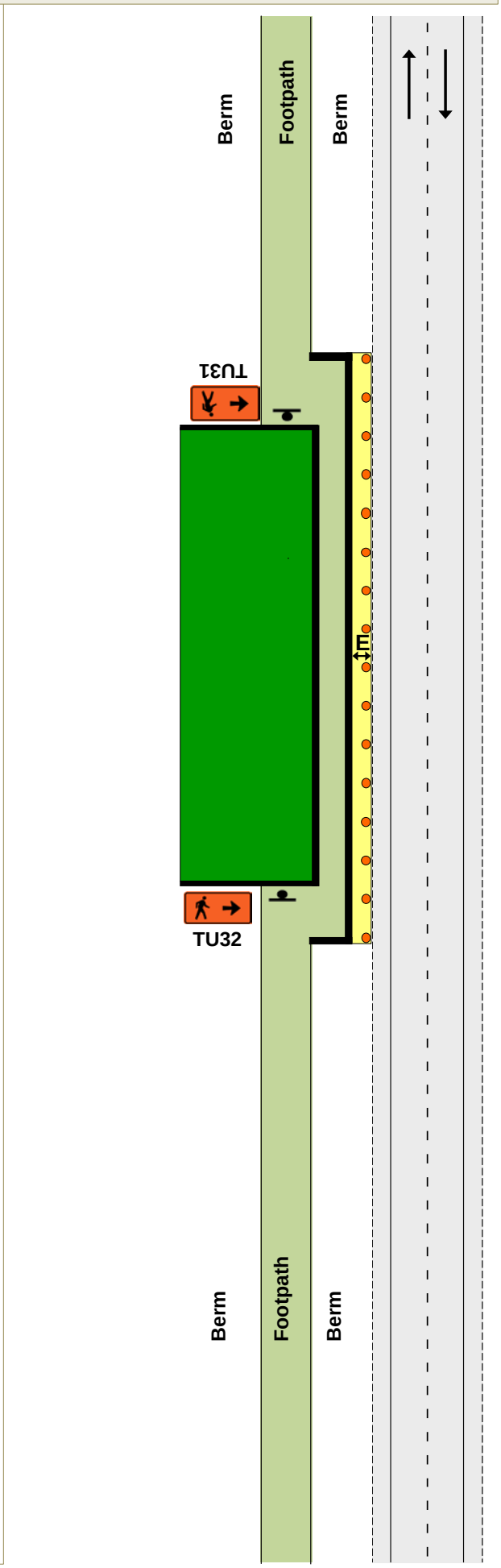
FOOTPATH DIVERTED ONTO THE BERM BETWEEN WORKING SPACE AND CARRIAGEWAY

SECOND PREFRENCE

ATF2-2

Notes

1. Minimum pedestrian footpath widths:
   - Residential/Rural - 0.9m
   - Suburban Centre - 1.2m
   - CBD - 2m
2. Where the length of the temporary footpath exceeds 20m, these widths may have to be increased so footpath users do not have to wait to pass
3. Temporary footpath surfaces must be suitable for footpath users
4. Use safety fence to enclose the working space, or at **attended** worksites, cones connected with cone bars can be used to enclose the working space but only for a short period of time
   Note: Cone bars are not recommended where heavy equipment (eg a digger) is being used. A safety fence is preferred in these cases
5. Use barrier or safety fence to delineate the traffic side of the footpath, or at **attended** worksites cones connected with cone bars can be used to delineate the traffic side of the footpath for a short period of time (not for use on state highways)
6. There must be a lateral safety zone between the traffic side of the footpath and the live lane:
   - **0.5m** for barrier
   - **1m** for safety fence or cone bars
7. This TMD must be used in conjunction with appropriate TTM for any work carried out on the shoulder or in the live lane



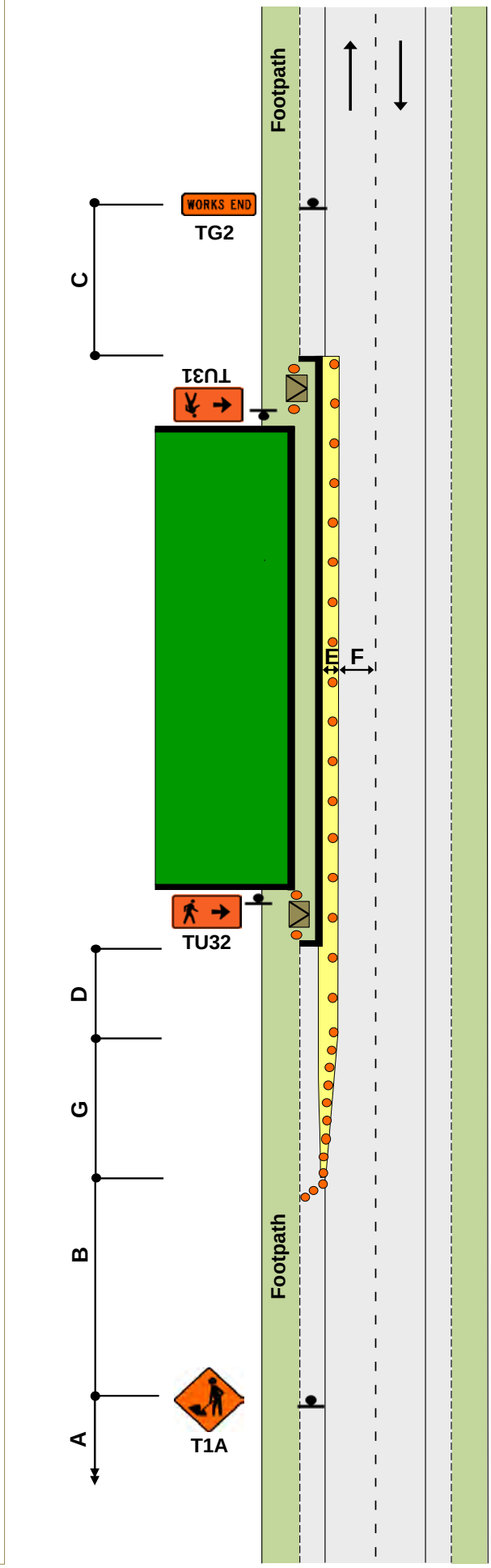
Reference CoPTTM 4th Edition
Section F Drawing F2.2

FOOTPATH - LEVEL 1
FOOTPATH DIVERTED ONTO CARRIAGEWAY
THIRD PREFRENCE

ATF2-3

Notes

1. Minimum pedestrian footpath widths:
   - Residential/Rural - 0.9m
   - Suburban Centre - 1.2m
   - CBD - 2m
2. Where the length of the temporary footpath exceeds 20m, these widths may have to be increased so footpath users do not have to wait to pass
3. Use safety fence to enclose the working space, or at **attended** worksites, cones connected with cone bars can be used to enclose the working space but only for a short period of time
   Note: Cone bars are not recommended where heavy equipment (eg a digger) is being used. A safety fence is preferred in these cases
4. Use barrier or safety fence to delineate the traffic side of the footpath, or at **attended** worksites cones connected with cone bars can be used to delineate the traffic side of the footpath for a short period of time (not for use on state highways)
5. There must be a lateral safety zone between the traffic side of the footpath and the live lane:
   - **0.5m** for barrier
   - **1m** for safety fence or cone bars
6. Use kerb ramps to assist mobility vehicles, pushchairs, etc
7. At night-time, corners of safety fence may be illuminated with flashing amber warning lights
8. This TMD must be used in conjunction with appropriate TTM for any work carried out on the shoulder or in the live lane



Reference CoPTTM 4th Edition
Section F Drawing F2.3

FOOTPATH - LEVEL 1

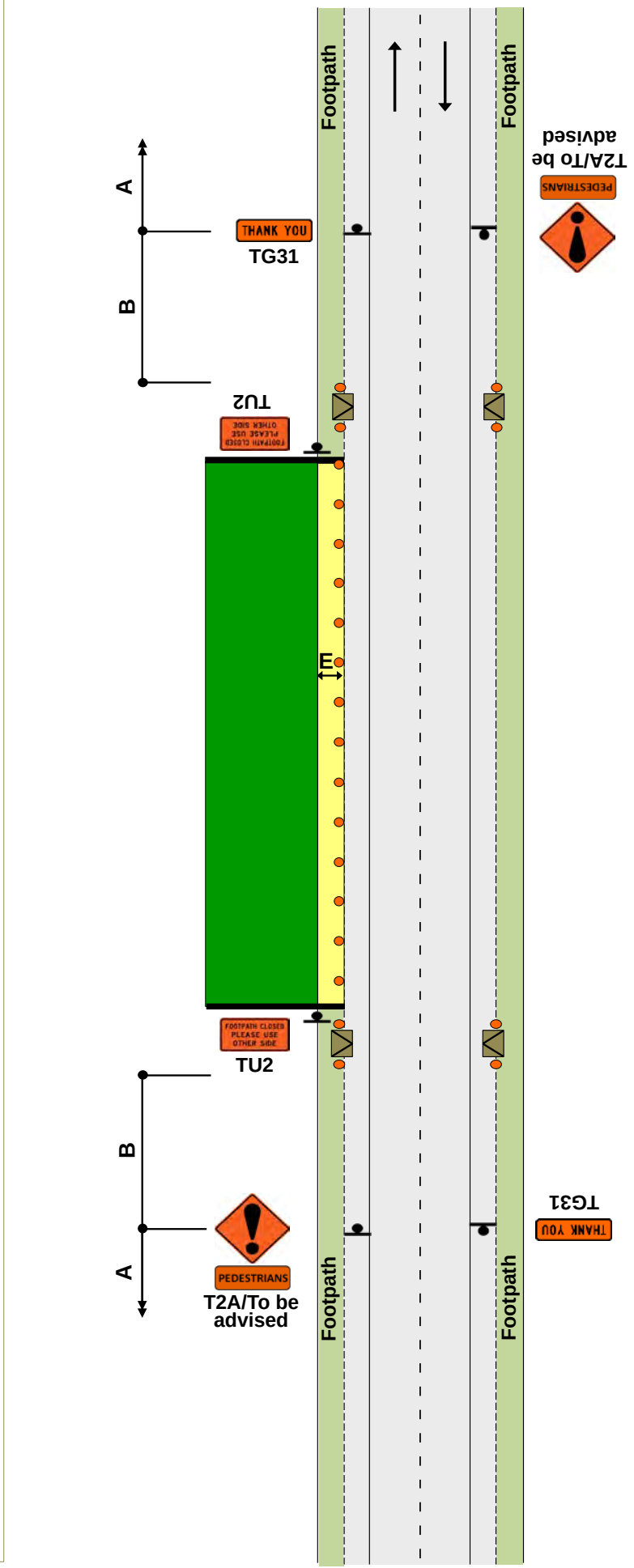
FOOTPATH CLOSED - PERMANENT SPEED LESS THAN 65KM/H

Fourth preference

ATF2-4

Notes

1. Use T2A and PEDESTRIANS supplementary plate to alert road users to the potential of footpath users crossing the carriageway
2. Use safety fence at each end of working space
3. Use kerb ramps
4. Use another TMD as well, where working space/safety zone encroaches on live lane
5. This TMD must be used in conjunction with appropriate TTM for any work carried out on the shoulder or in the live lane
6. Max 5000 vpd during periods of low pedestrian volumes only



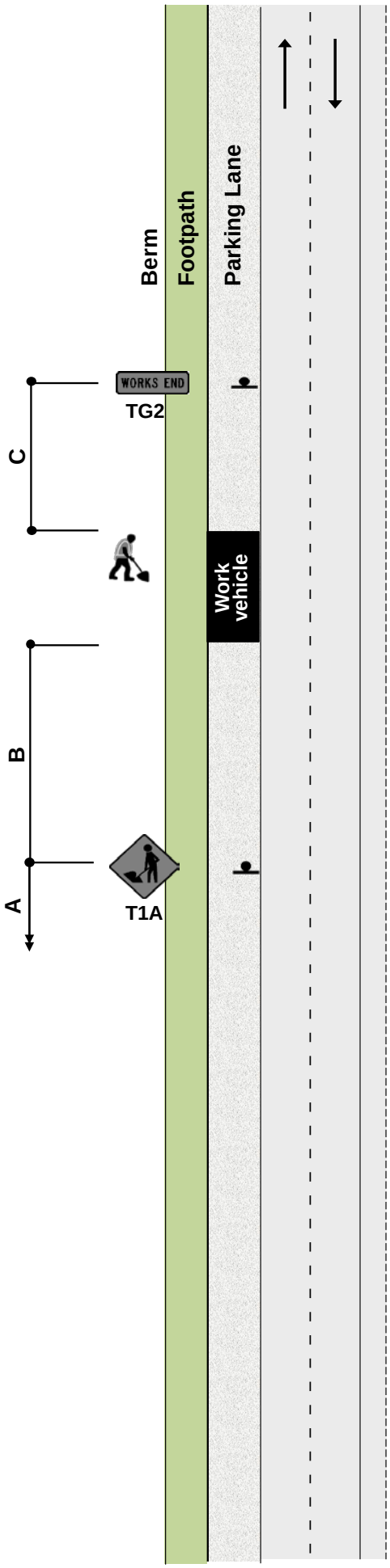
Reference CoPTTM 4th Edition Section F Drawing F2.4

SHOULDER AND ROADSIDE ACTIVITIES - LEVEL 1
WORK ON BERM AND FOOTPATH
PERMANENT SPEED LESS THAN 65KM/H

ATF2-5

Notes

1. Where work is carried out on the berm or footpath and a work vehicle is parked in a legal parallel car park, provided the vehicle is only accessed from the off traffic side, advance warning T1A road works and TG2 WORKS END are optional
2. Traffic management must be provided where footpath users or cyclists are affected
3. This layout may only be used during daylight hours
4. Large plant and machinery must not be used in this situation, a more substantial closure is required



Reference CoPTTM 4th Edition Section F Drawing F2.5

SHOULDER AND ROADSIDE ACTIVITIES - LEVEL 1 AND LEVEL 2LS

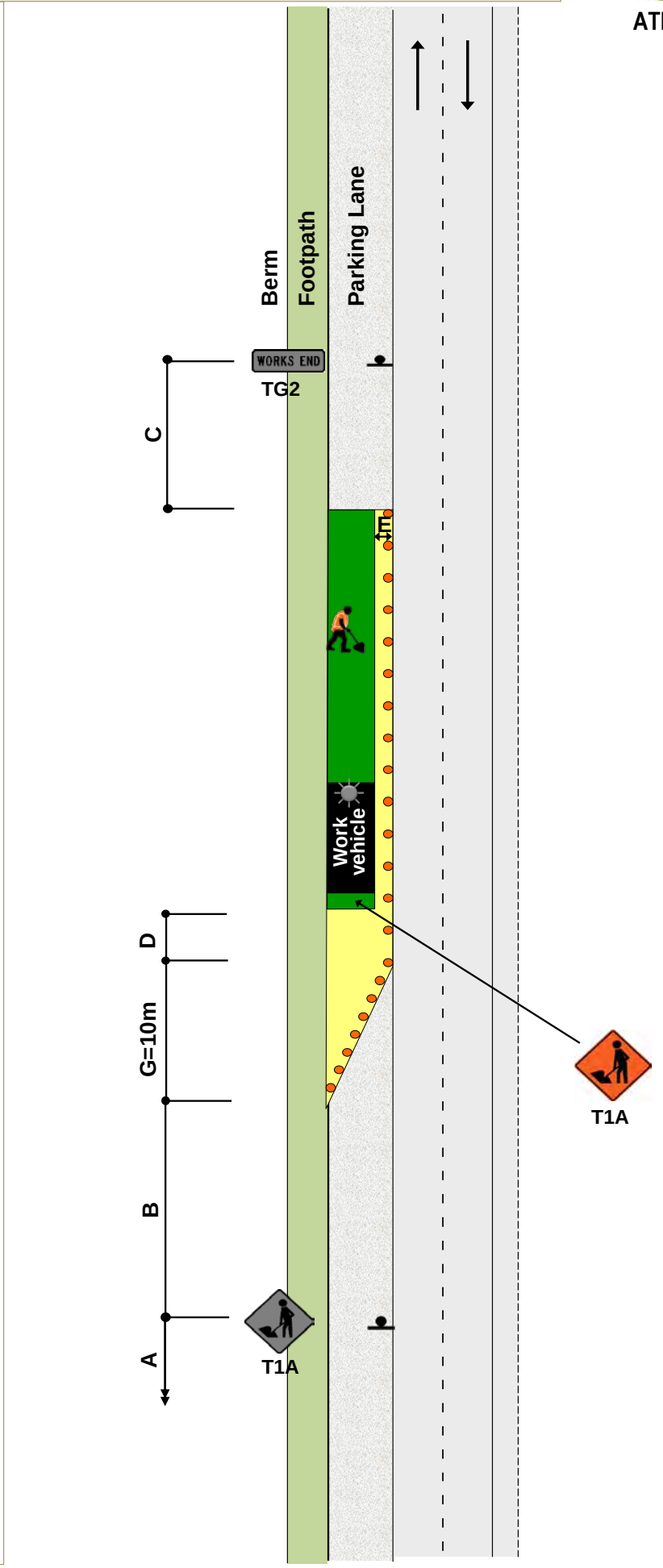
WORK IN PARKING LANES

PERMENANT SPEED LESS THAN 65KM/H

ATF2-6

Notes

1. Where work is carried out in the legal parking lane (a place where a vehicle would normally park with a footpath and/or kerb and channel alongside), the following minimum standard of TTM must be provided:
   - a 10m taper in front of the work vehicle
   - cones alongside the work vehicle and the working space
   - a longitudinal safety zone
   - a 1m lateral safety zone along the working space
   - a T1A (or other appropriate advance warning sign) mounted on the back of the work vehicle
2. T1A road works and TG2 WORKS END signs are optional
3. The work vehicle must be no larger than a light truck and may have an amber flashing beacon
4. Traffic management must be provided where footpath users or cyclists are affected
5. This layout may only be used during daylight hours
6. Large plant and machinery must not be used in this situation, a more substantial closure is required



Reference CoPTTM 4th Edition
Section F Drawing F2.6

SHOULDER AND ROADSIDE ACTIVITIES - LEVEL 1

WORK IN PARKING LANES

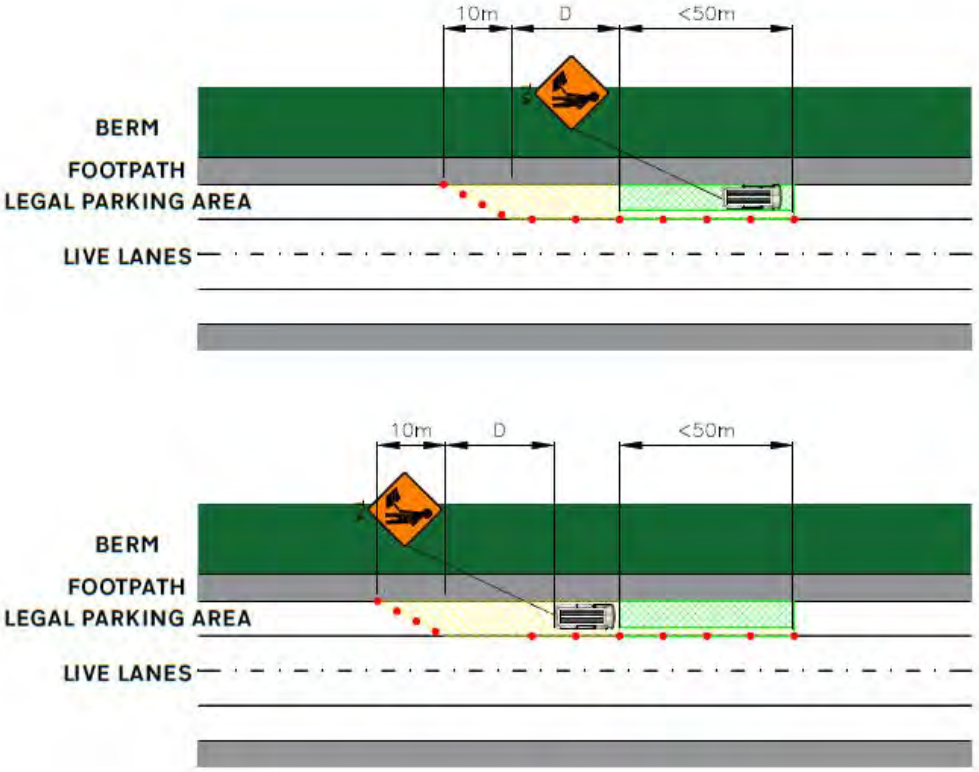
PERMENANT SPEED LESS THAN 65KM/H

ATF2-6b

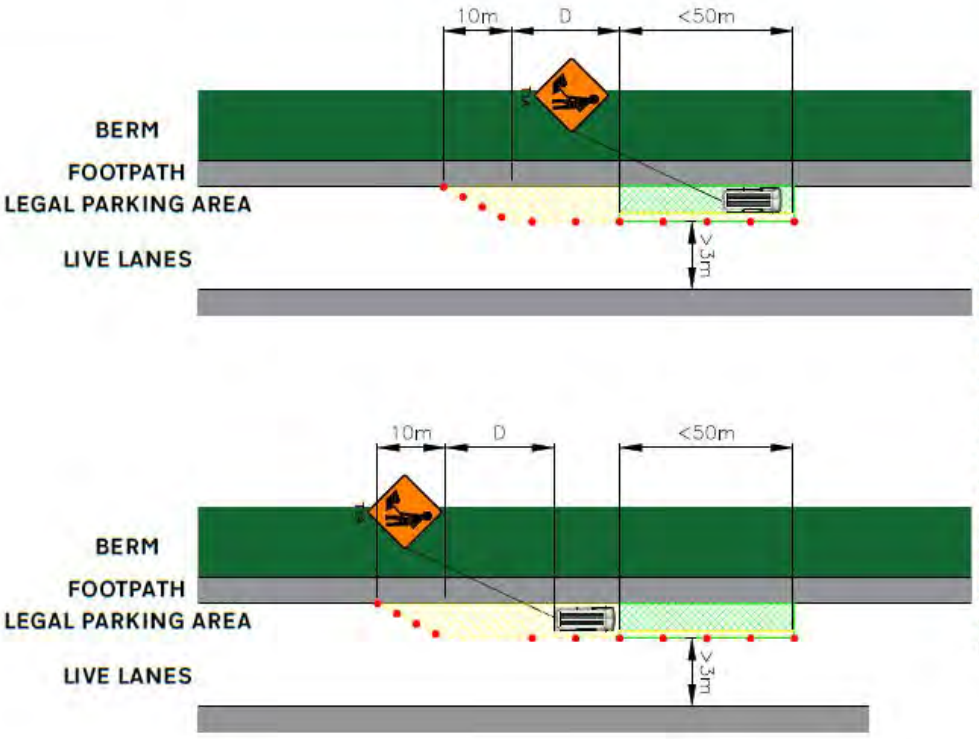
Notes

1. Where work is carried out in the legal parking lane (a place where a vehicle would normally park with a footpath and/or kerb and channel alongside), the following minimum standard of TTM must be provided:
   - a 10m taper in front of the work vehicle
   - cones alongside the work vehicle and the working space
   - a longitudinal safety zone
   - a 1m lateral safety zone along the working space
   - a T1A (or other appropriate advance warning sign) mounted on the back of the work vehicle
2. T1A road works and TG2 WORKS END signs are optional
3. The work vehicle must be no larger than a light truck and may have an amber flashing beacon
4. Traffic management must be provided where footpath users or cyclists are affected
5. This layout may only be used during daylight hours
6. Large plant and machinery must not be used in this situation, a more substantial closure is required

EXAMPLES WITH ROAD LINEMARKING



EXAMPLES WITHOUT ROAD LINEMARKING
CSD INTERVISIBILITY MUST BE MAINTAINED



SHOULDER AND ROADSIDE ACTIVITIES - LEVEL 1
SHOULDER CLOSURE

ATF2-7

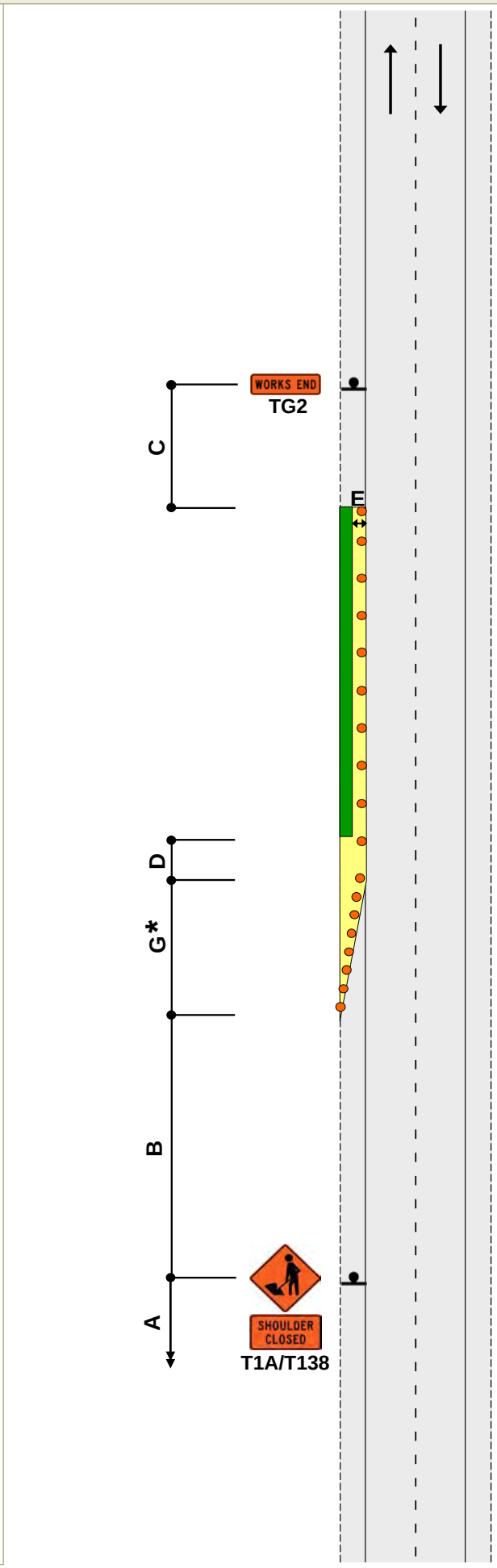
Notes

1. A 10m taper is allowed where shoulder width is less than 2.5m
2. *For shoulders exceeding 2.5m width, apply the following calculation; calculation of taper length for lateral shift of less than 3.5m is:

$$\frac{W \times G}{3.5}$$

W = Width of shoulder

G = Taper length in metres from the level 1 layout distance table



Reference CoPTTM 4th Edition Section F Drawing F2.7

CYCLE LANE
DIVERTED CYCLE LANE
TRAFFIC NOT CROSSING CENTRE LANE

ATF2-8

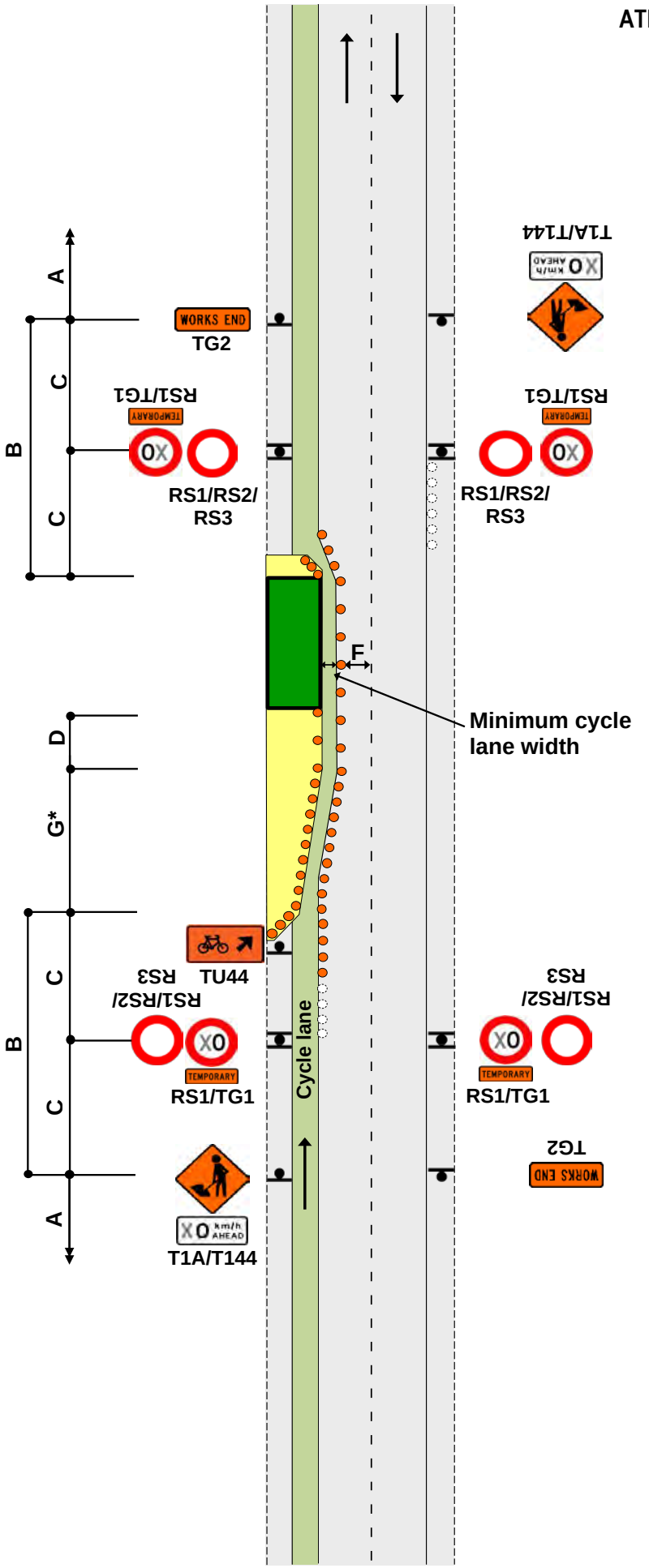
Notes

1. Minimum cycle lane width must be:
   - 1m - 50km/h or less
   - 1.5m - 60km/h or more
2. A minimum cycle lane width of 1.5m is required if the temporary cycle lane is uphill
3. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lateral shift

   G = Taper length in metres from the level 1 layout distance table
4. Use TSLs if required by TSL decision matrix
5. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition
Section F Drawing F2.8

CYCLE LANE - LEVEL 1

DIVERTED TRAFFIC LANE - CONED LANE CONTROL

TRAFFIC CROSSING ROAD CENTRE

ATF2-9

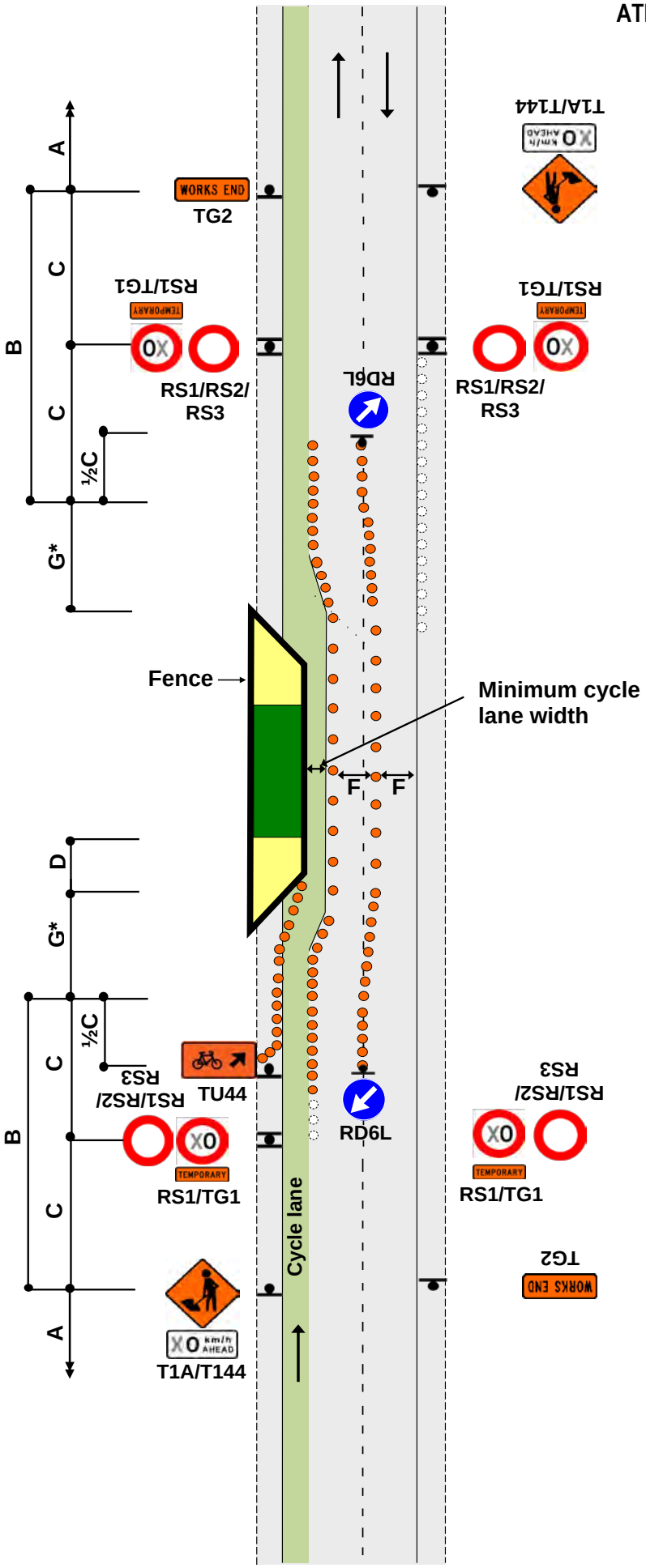
Notes

1. Minimum cycle lane width must be:
   - 1m - 50km/h or less
   - 1.5m - 60km/h or more
2. A minimum cycle lane width of 1.5m is required if the temporary cycle lane is uphill
3. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lateral shift

   G = Taper length in metres from the level 1 layout distance table
4. To allow heavy vehicles to manoeuvre, cones in the channel must be offset by at least 10m where the direction changes. Refer C8.2.12
5. Use TSLs if required by TSL decision matrix
6. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition Section D Drawing F2.9

CYCLE LANE - LEVEL 1

LANE CLOSED

TRAFFIC NOT CROSSING ROAD CENTRE CYCLE LANE CLOSED

ATF2-10

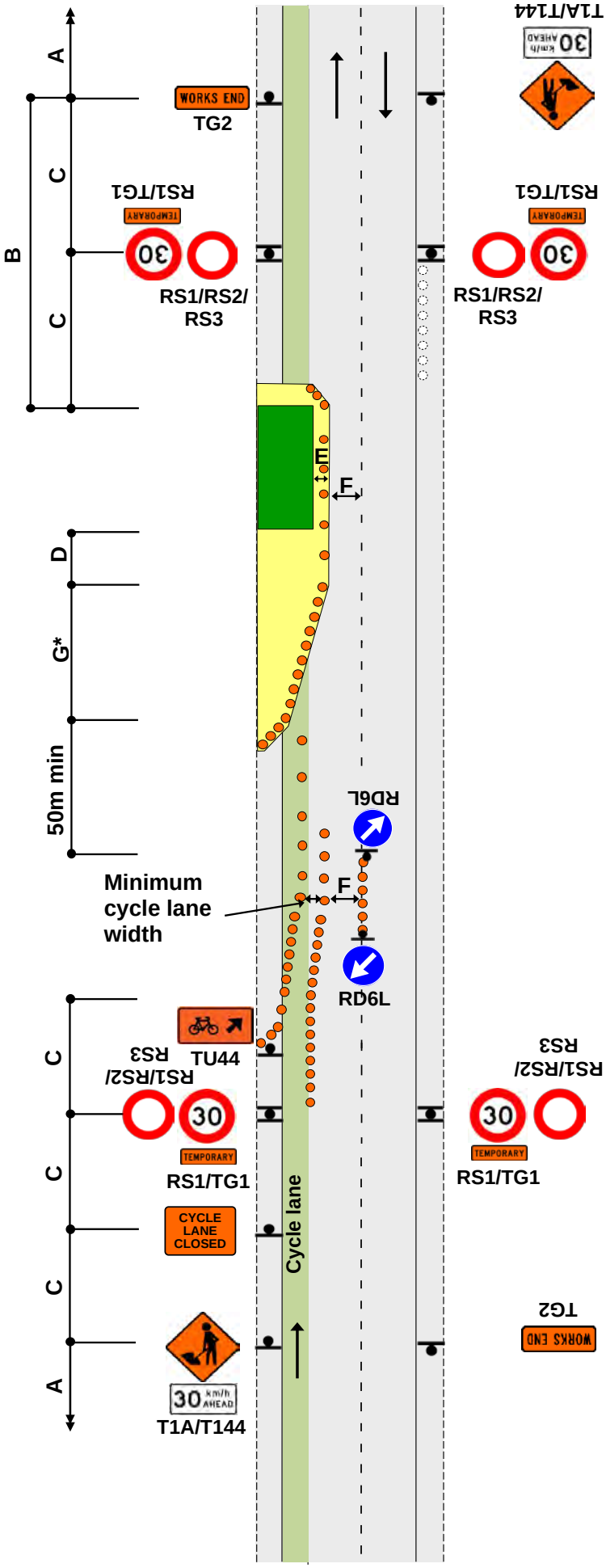
Notes

1. Only use this TMD if there is insufficient width to fit a replacement cycle lane
2. Minimum cycle lane width must be:
   - 1m - 50km/h or less
   - 1.5m - 60km/h or more
3. A minimum cycle lane width of 1.5m is required if the temporary cycle lane is uphill
4. Merge of cycle lane with live lane must be delineated
5. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lateral shift

   G = Taper length in metres from the level 1 layout distance table
6. The T144 30km/h AHEAD sign is optional



Reference CoPTTM 4th Edition
Section F Drawing F2.10

TWO-WAY TWO-LANE ROAD - LEVEL 1

TRAFFIC NOT CROSSING ROAD CENTRE

ATF2-11

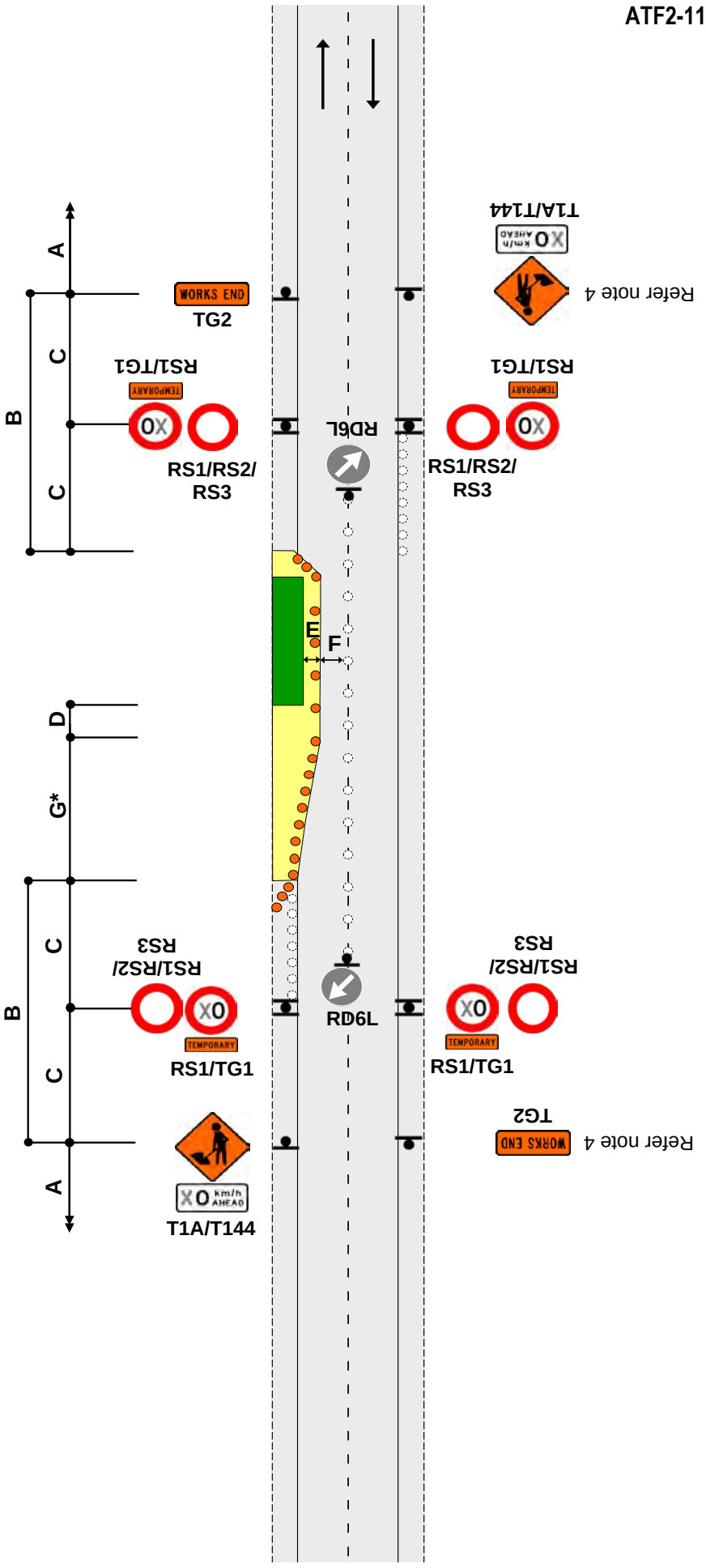
Notes

1. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lateral shift

   G = Taper length in metres from the level 1 layout distance table
2. If traffic likely to cross the centreline, place cones on the centreline with RD6L signs at each end
3. Use TSLs if required by TSL decision matrix
4. If TSLs not required, the T1A and TG2 signs on the right hand side of the road are also not required
5. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition
Section F Drawing F2.11

TWO-WAY TWO-LANE ROAD - LEVEL 1

SIGNS ON MEDIAN

TRAFFIC NOT CROSSING ROAD CENTRE

ATF2-12

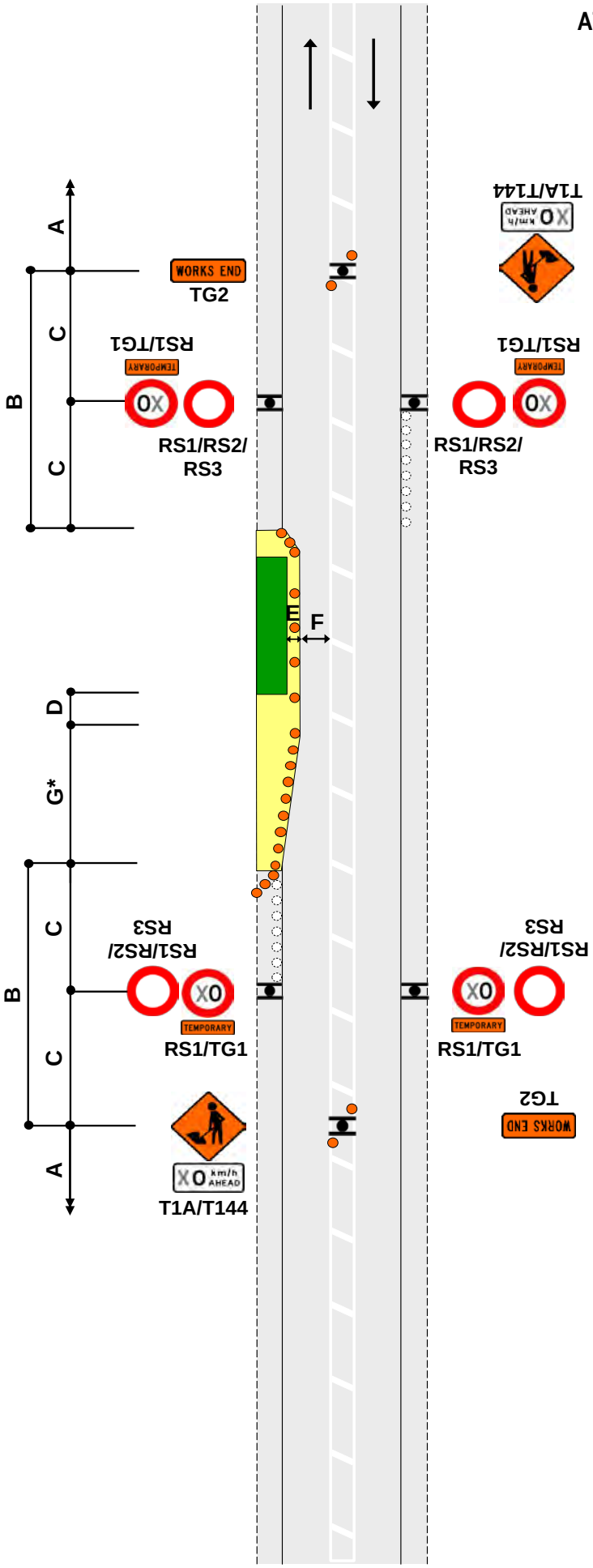
Notes

1. Use this diagram if signs will not be visible on left-hand side of road, or if it is safer to place signs on median and this will not interfere with turning traffic movements
2. Where a median exists which is more than 2m wide, the signs may be positioned on the median. Signs must be placed back-to-back unless on a solid median
3. Where there is a solid median, signs are not required in the opposing direction
4. *Calculation of taper length for lateral shift of less than 3.5m is:

   $\frac{W \times G}{3.5}$

   W = Width of lateral shift

   G = Taper length in metres from the level 1 layout distance table
5. Use TSLs if required by TSL decision matrix
6. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition
Section F Drawing F2.12

TWO-WAY TWO-LANE ROAD - LEVEL 1
TWO LANE DIVERSION
TRAFFIC CROSSING ROAD CENTRE

ATF2-13

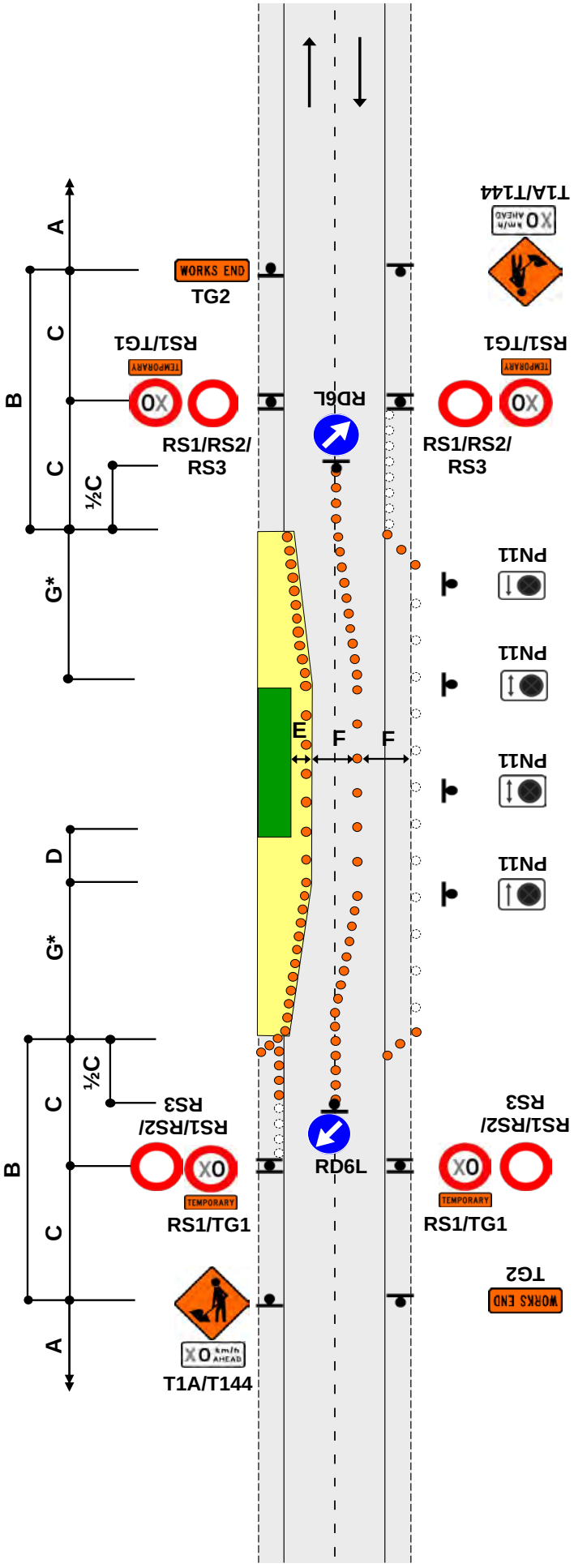
Notes

1. Cones are required on edge of the temporary lane opposite closure if road is not well defined
2. Return taper at end of closure may be shortened
3. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lateral shift

   G = Taper length in metres from the level 1 layout distance table
4. To allow heavy vehicles to manoeuvre, cones in the channel must be offset by at least 10m where the direction changes. Refer C8.2.12
5. Use PN11 No Stopping signs, if necessary
6. Use TSLs if required by TSL decision matrix
7. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition
Section F Drawing F2.13

TWO-WAY TWO-LANE ROAD - LEVEL 1

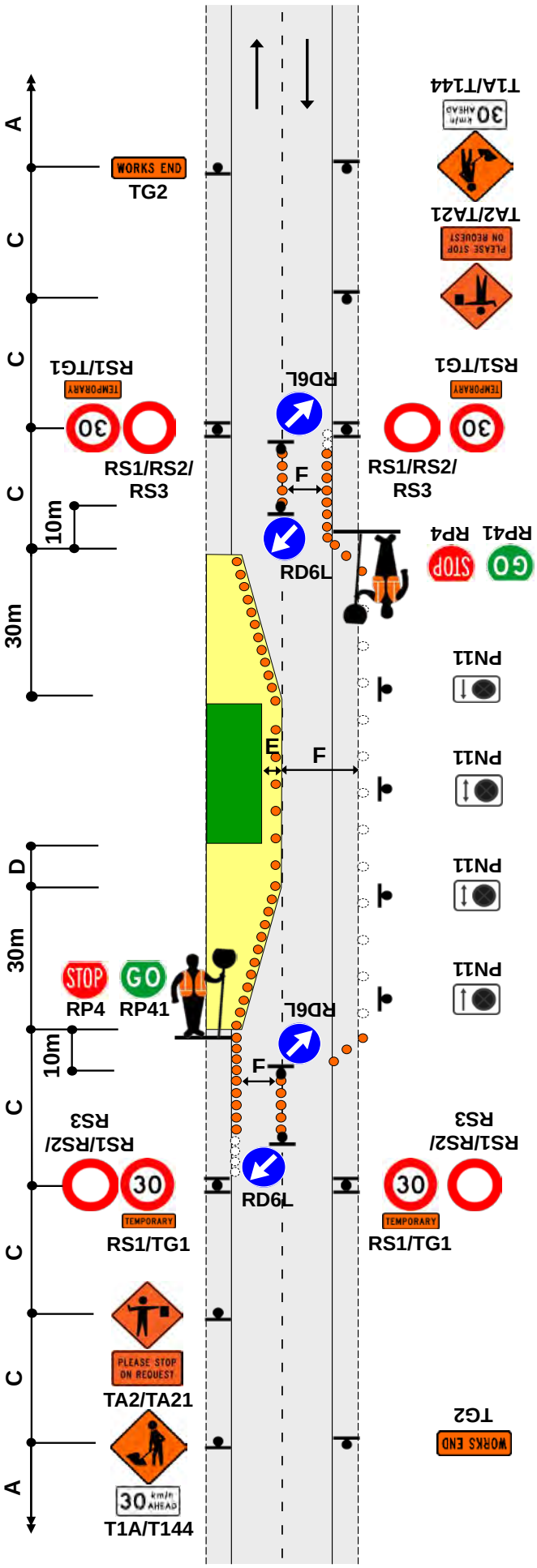
MANUAL TRAFFIC CONTROL (STOP/GO OR STOP/SLOW)

SINGLE-LANE ALTERNATING FLOW

ATF2-14

Notes

1. Extend or place extra advance warning signs towards on-coming traffic beyond any expected traffic queues
2. A 30m return taper at the end of the closure is mandatory
3. Cones are required on edge of the temporary lane opposite closure if road is not well defined
4. To allow heavy vehicles to manoeuvre, cones in the channel must be offset by at least 10m where the direction changes. Refer C8.2.12
5. Use PN11 no stopping signs, if necessary
6. MTC with RP4/RP41 STOP/GO or RP4/RP42 STOP/SLOW paddle on road shoulder located between 1st and 2nd cone in the cone threshold closest to the working space
7. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h
8. Refer to C10.2.3 MTC essentials for further information
9. Delays cannot exceed the time approved by the RCA (normally 5 to 10 minutes)
10. The T144 30km/h AHEAD sign is optional
11. <500vpd urban <65km/h and<3000rural >65km/h



Reference CoPTTM 4th Edition Section F Drawing F2.15

TWO-WAY TWO-LANE ROAD - LEVEL 1

MANUAL TRAFFIC CONTROL (STOP/GO OR STOP/SLOW)

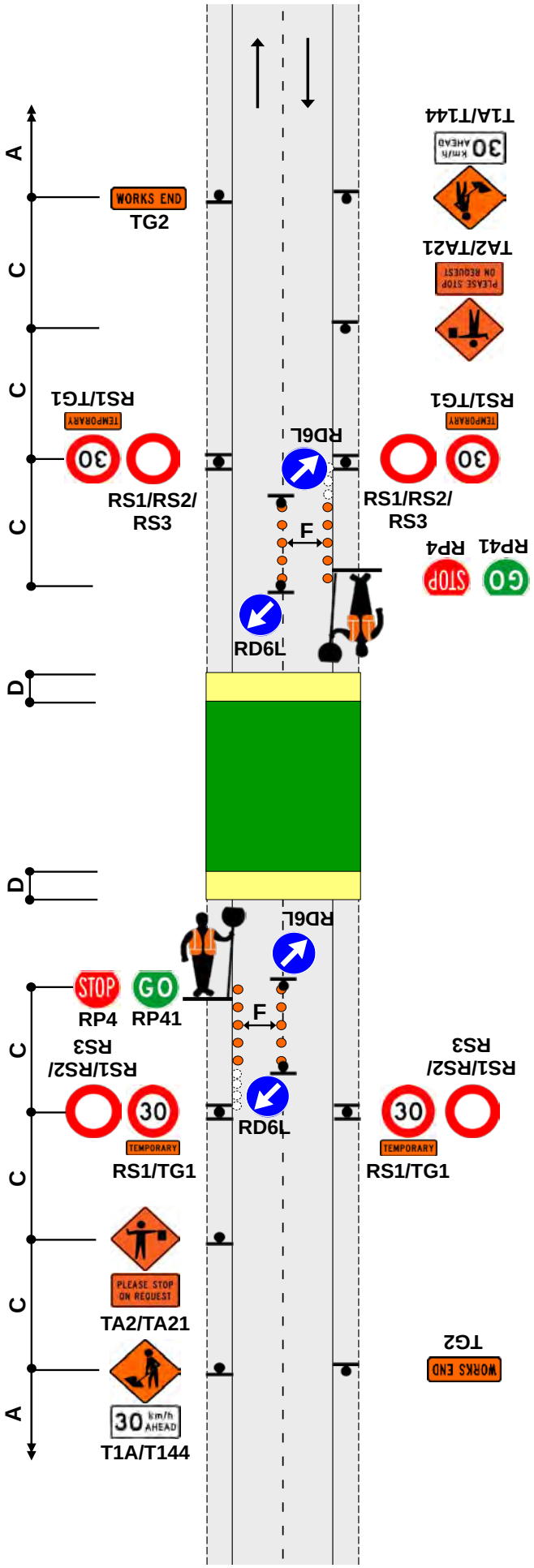
ALL TRAFFIC STOPPED TEMPORARILY

ATF2-15

Notes

1. Closure period not to exceed the limit set or approved by the RCA
2. Extend advance warning signs towards on-coming traffic beyond any expected traffic queues
3. MTC with RP4/RP41 STOP/GO or RP4/RP42 STOP/SLOW paddle on road shoulder located between 1st and 2nd cone in the cone threshold closest to the working space
4. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h
5. MTCs must show same message to oncoming traffic (eg STOP/STOP or GO/GO)
6. Refer to C10.2.3 MTC essentials for further information
7. When road users are passing the working space in alternating flow, all construction equipment must be stopped on same side of the road if there is no separation from the live lane
8. Where damage is likely to occur to passing traffic eg during sealing, traffic must be stopped in both directions
9. The T144 X0km/h AHEAD sign is optional
10. <5000vpd urban 65kh/h and 3000vpd rural >65lm/h

Reference CoPTTM 4th Edition Section F Drawing F2.15



TWO-WAY TWO-LANE ROAD - LEVEL 1

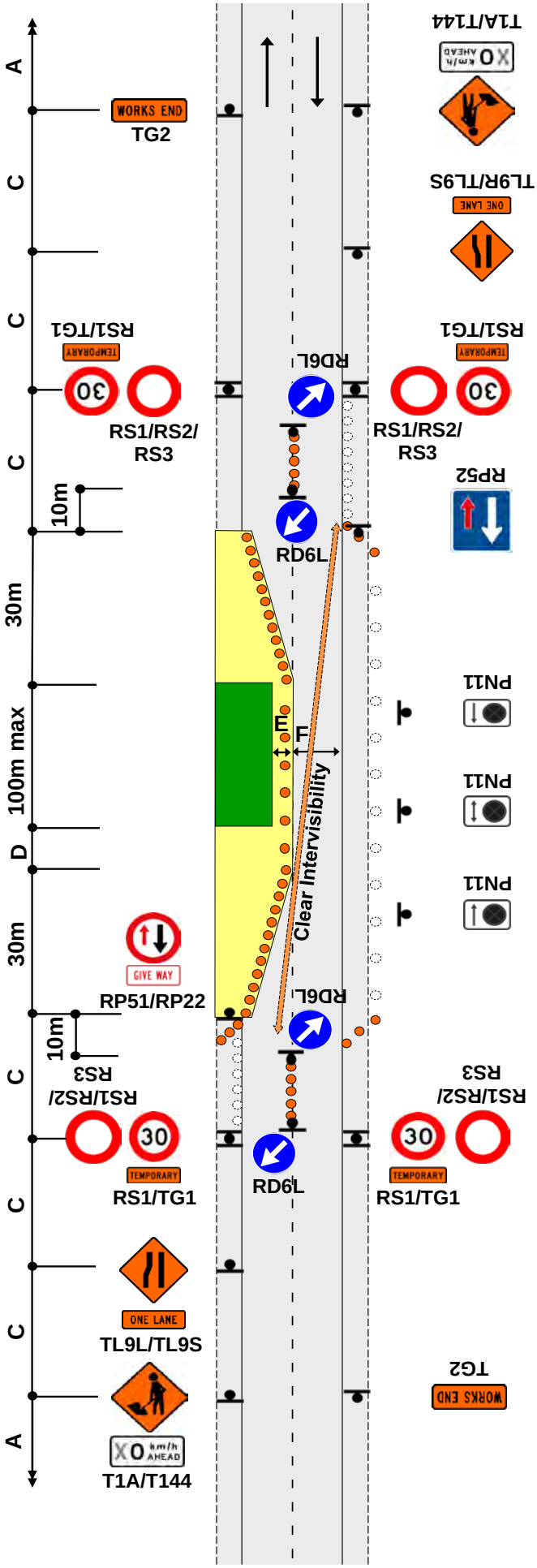
GIVE WAY CONTROL

SINGLE-LANE (TRAFFIC VOLUME LESS THAN 1000VPD-80VPD)

ATF2-16

Notes

1. The RP51/RP22 and RP52 controls must be placed in the following priority order:
   - downhill traffic must give way to uphill traffic
   - traffic that has to cross into the opposing lane gives way, however where visibility for this vehicle is marginal the contractor may require the other vehicle with better visibility to give way
2. Intervisibility is required as indicated on diagram. This means that a vehicle at one sign is able to see whether the way ahead is clear
3. A 30m return taper at the end of the closure is mandatory
4. Use PN11 No Stopping signs, if necessary
5. Cones are required on edge of the temporary lane opposite closure if road is not well defined
6. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition
Section F Drawing F2.16

TWO-WAY TWO-LANE ROAD

PORTABLE TRAFFIC SIGNALS

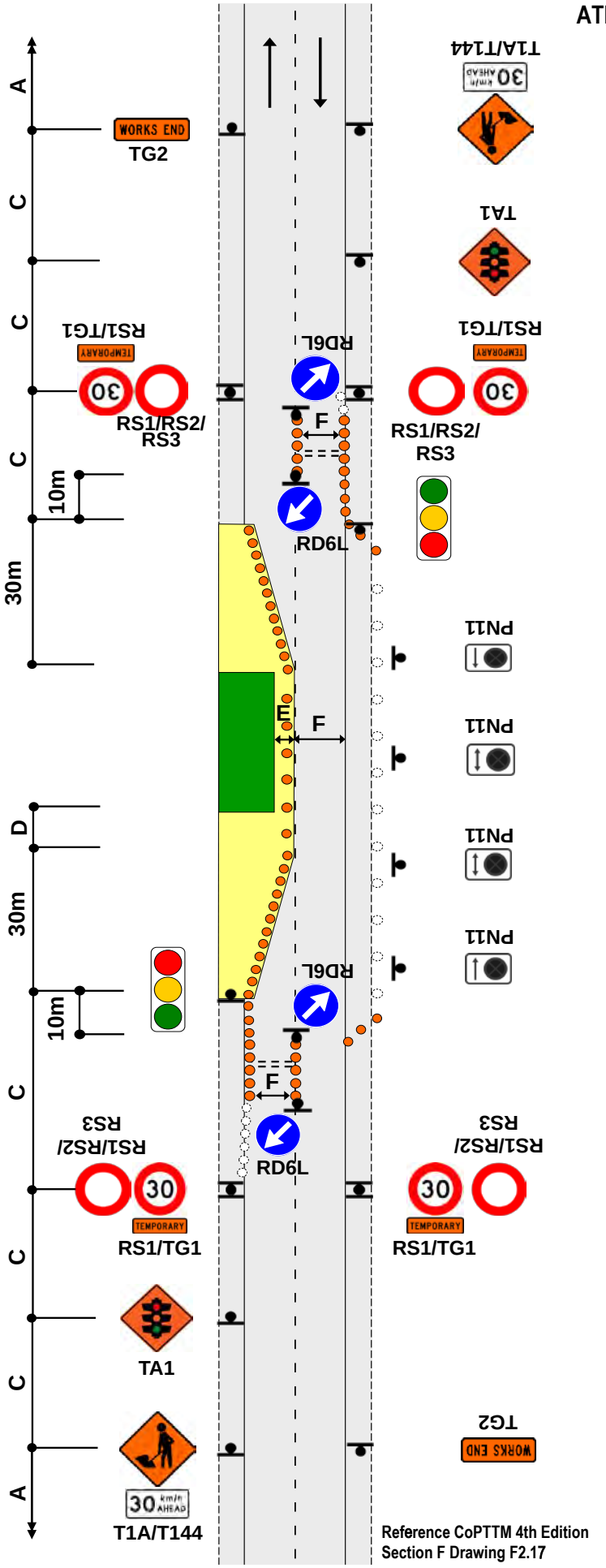
SINGLE-LANE ALTERNATING FLOW

ATF2-17

Notes

1. Provide details of make and model of portable traffic signals in the TMP
2. Install temporary limit lines (must be able to be removed upon completion) or use RP61/RP62 signs

3. Approved temporary speed humps may also be used. Consider use of MTC while speed humps are installed
4. A 30m return taper at the end of the closure is mandatory
5. Cones are required on edge of the temporary lane opposite closure if road is not well defined
6. Extend or place extra advance warning signs towards on-coming traffic beyond any expected traffic queues
7. Use PN11 No Stopping signs, if necessary
8. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h
9. The T144 30km/h AHEAD sign is optional
10. <5000 vpd urban <65km/h and <3000vpd rural >65km/h and <3000vpd rural >65km/h



Reference CoPTTM 4th Edition
Section F Drawing F2.17

TWO-WAY TWO-LANE ROAD - LEVEL 1

WORK IN THE CENTRE OF ROAD

ATF2-18

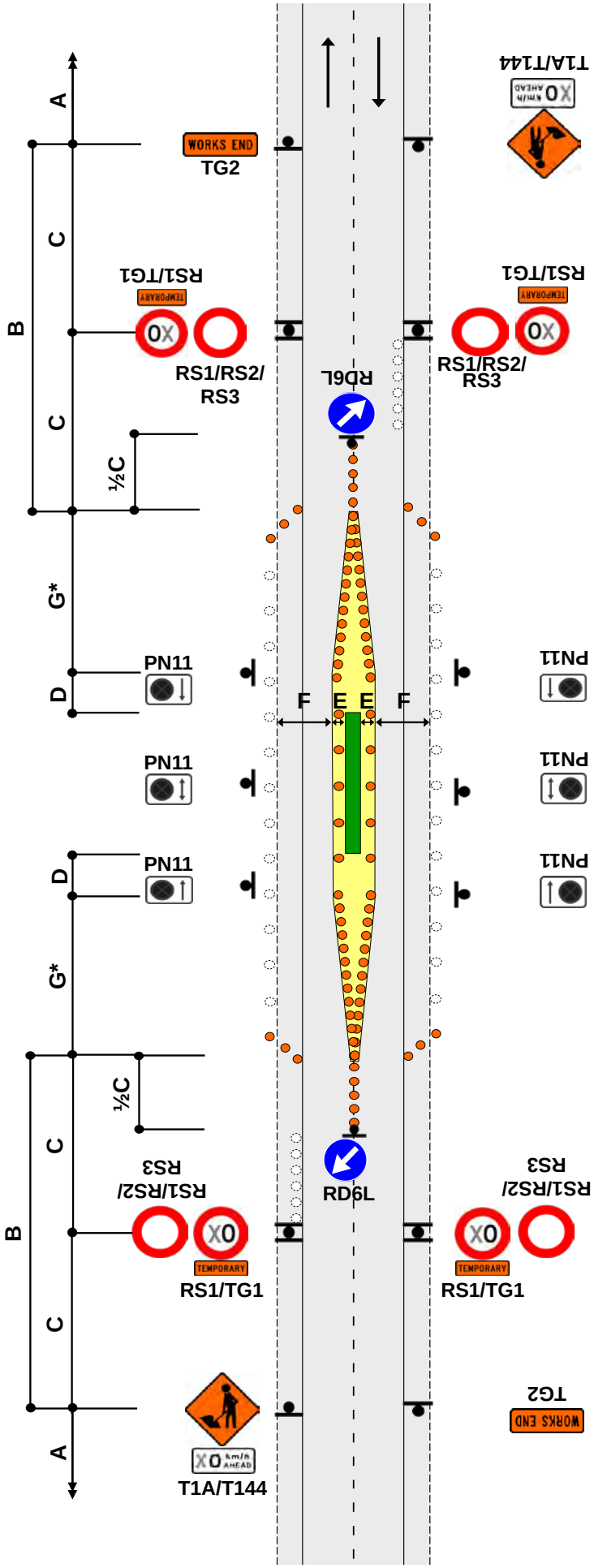
Notes

1. Cones are required on edge of the temporary lane opposite closure if road is not well defined
2. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lateral shift

   G = Taper length in metres from the level 1 layout distance table
3. Use PN11 no stopping signs, if necessary
4. Use TSLs if required by TSL decision matrix
5. The T144 X0km/h AHEAD sign is optional



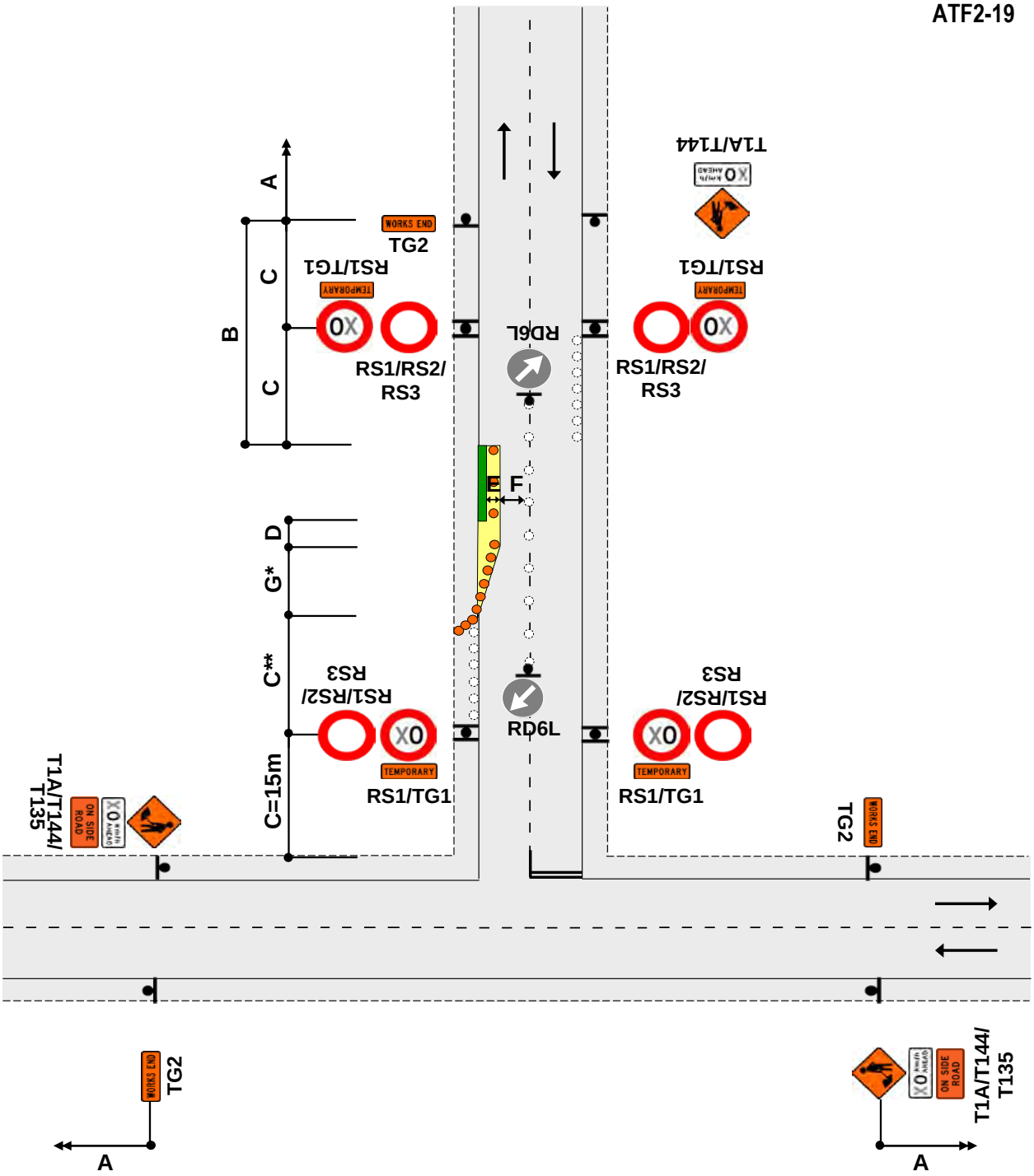
Reference CoPTTM 4th Edition
Section F Drawing F2.18

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)

ROAD WORKS ON SIDE ROAD AFTER INTERSECTION - TSL ON SIDE ROAD

TRAFFIC NOT CROSSING ROAD CENTRE

ATF2-19



Notes

1. Sign spacing of TSL at the intersection can be reduced as per the table shown below
2. Where minimum dimensions cannot be achieved TMD F2.20 is to be used
3. Advance warning signs on main road must be at least the warning distance away from first cone in taper
4. *Calculation of taper length for lateral shift of less than 3.5m is:
   W x G W = Width of lateral shift
   3.5 G = Taper length in metres from the level 1 layout distance table
5. If traffic likely to cross the centreline, place cones on the centreline with RD6L signs at each end
6. Use TSLs as required by TSL decision matrix
7. The T144 30km/h AHEAD sign is optional

Speed (PSL)	Intersection to TSL	C** TSL to taper	Total
<50km/h	15m	15m	30m
60km/h	15m	25m	40m
>70km/h	15m	40m	55m

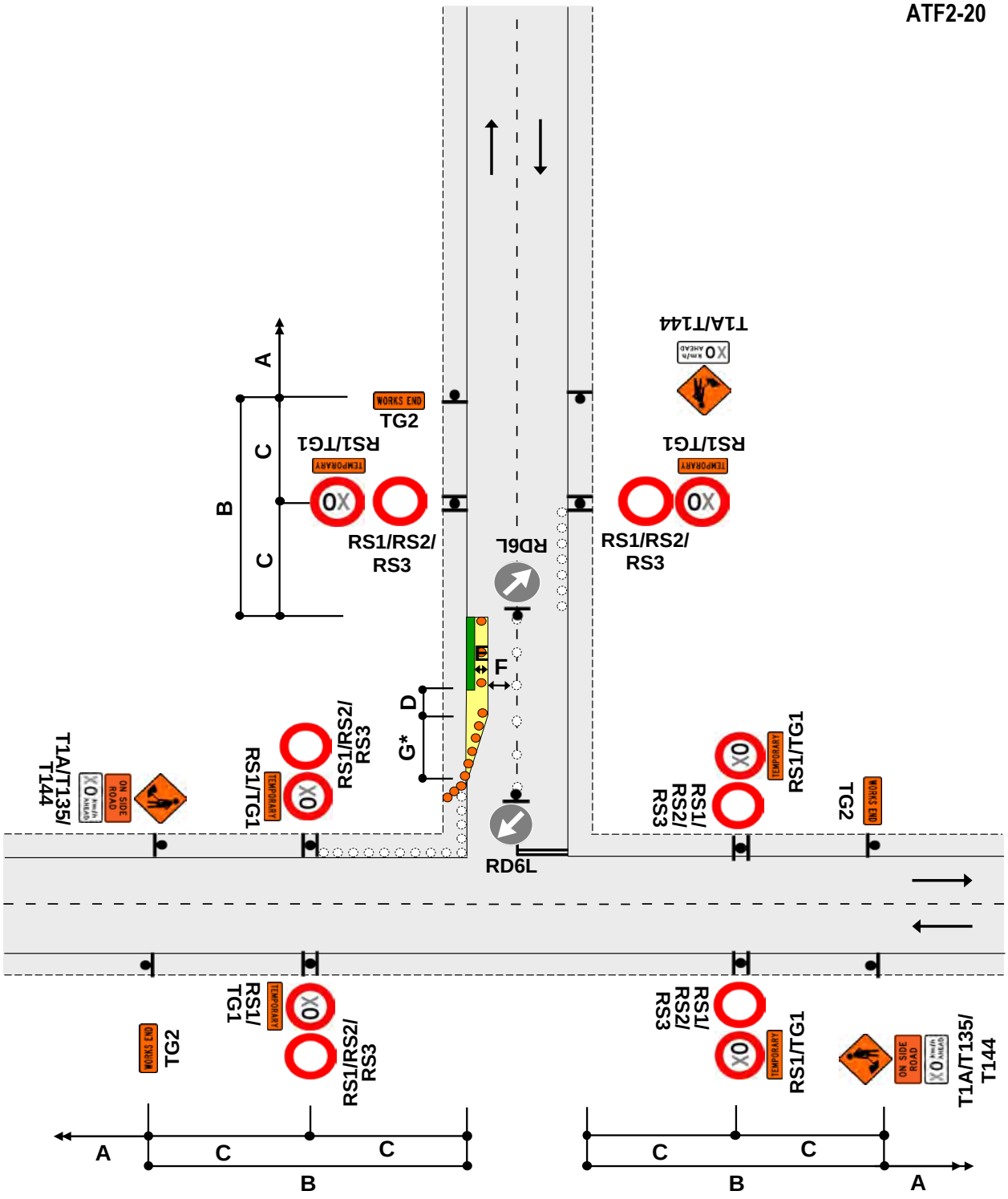
Reference CoPTTM 4th Edition Section F Drawing F2.19

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)

ROAD WORKS ON SIDE ROAD AFTER INTERSECTION - TSL ON MAIN ROAD

TRAFFIC NOT CROSSING ROAD CENTRE

ATF2-20



Notes

1.*Calculation of taper length for lateral shift of less than 3.5m is:

$$\frac{W \times G}{3.5}$$

W = Width of lateral shift

G = Taper length in metres from the level 1 layout distance table

2.If traffic likely to cross the centreline, place cones on the centreline with RD6L signs at each end

3.Use TSLs as required by TSL decision matrix

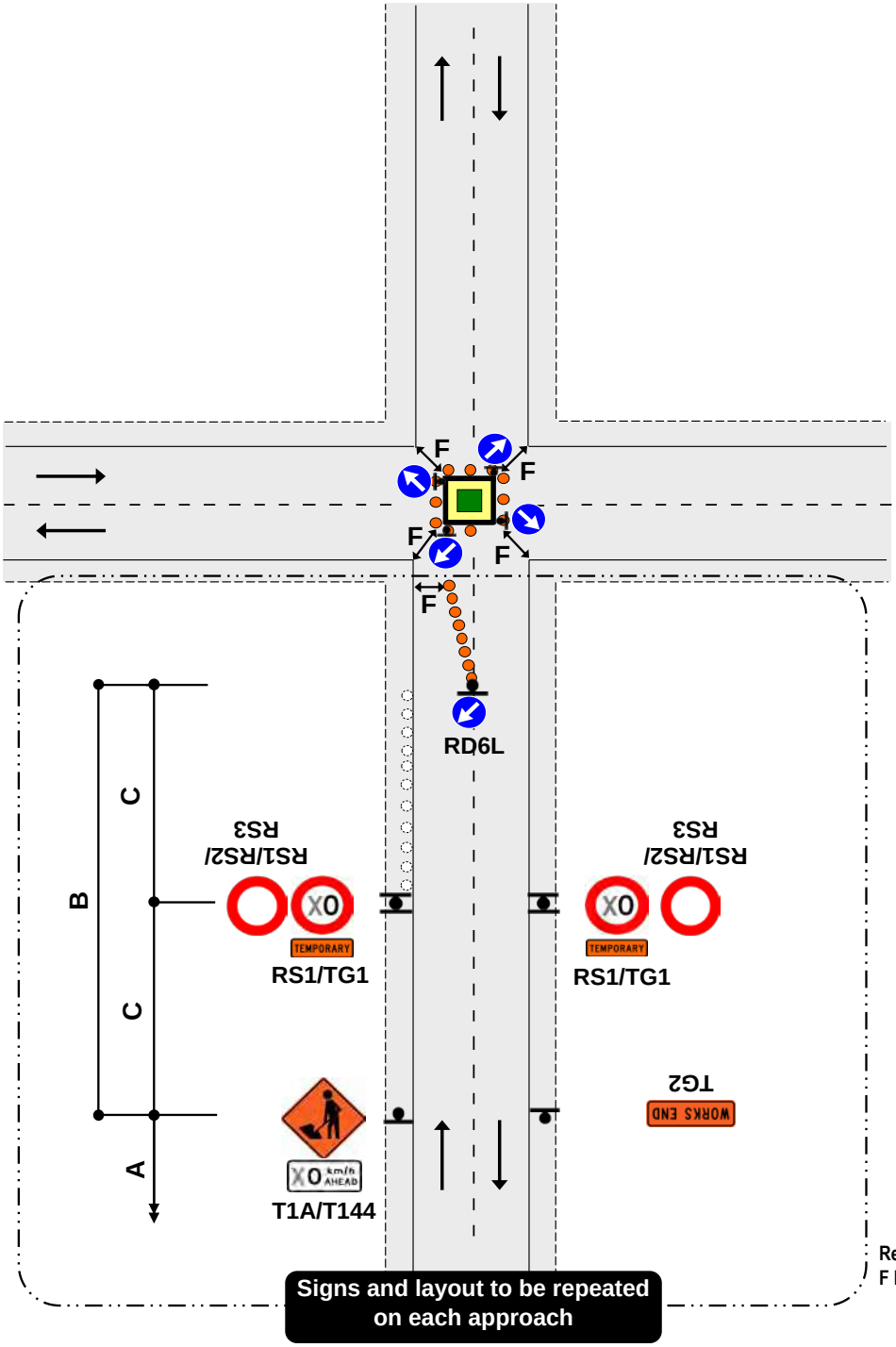
4.The T144 X0km/h AHEAD sign is optional

Reference CoPTTM 4th Edition Section F Drawing 2.20

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)

WORK IN THE MIDDLE OF INTERSECTION

ATF2-21



Reference CoPTTM 4th Edition Section F Drawing 2.21

Notes

1.This diagram may be used at a T intersection by removing any one of the roads

2.Signs and layout shown in the box at the bottom of the diagram is to be repeated on each approach

3.RD6L signs are not required at an existing roundabout

4.Cone tapers are optional at existing roundabouts

5.Lane widths, F, may need to be increased to allow for turning movements of larger vehicles

6.Use TSLs if required by TSL decision matrix

7.The T144 X0km/h AHEAD sign is optional

7.Not at signalised intersection unless under emergency or lights are faulty

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)

MANUAL TRAFFIC CONTROL (STOP/ GO OR STOP/ SLOW)

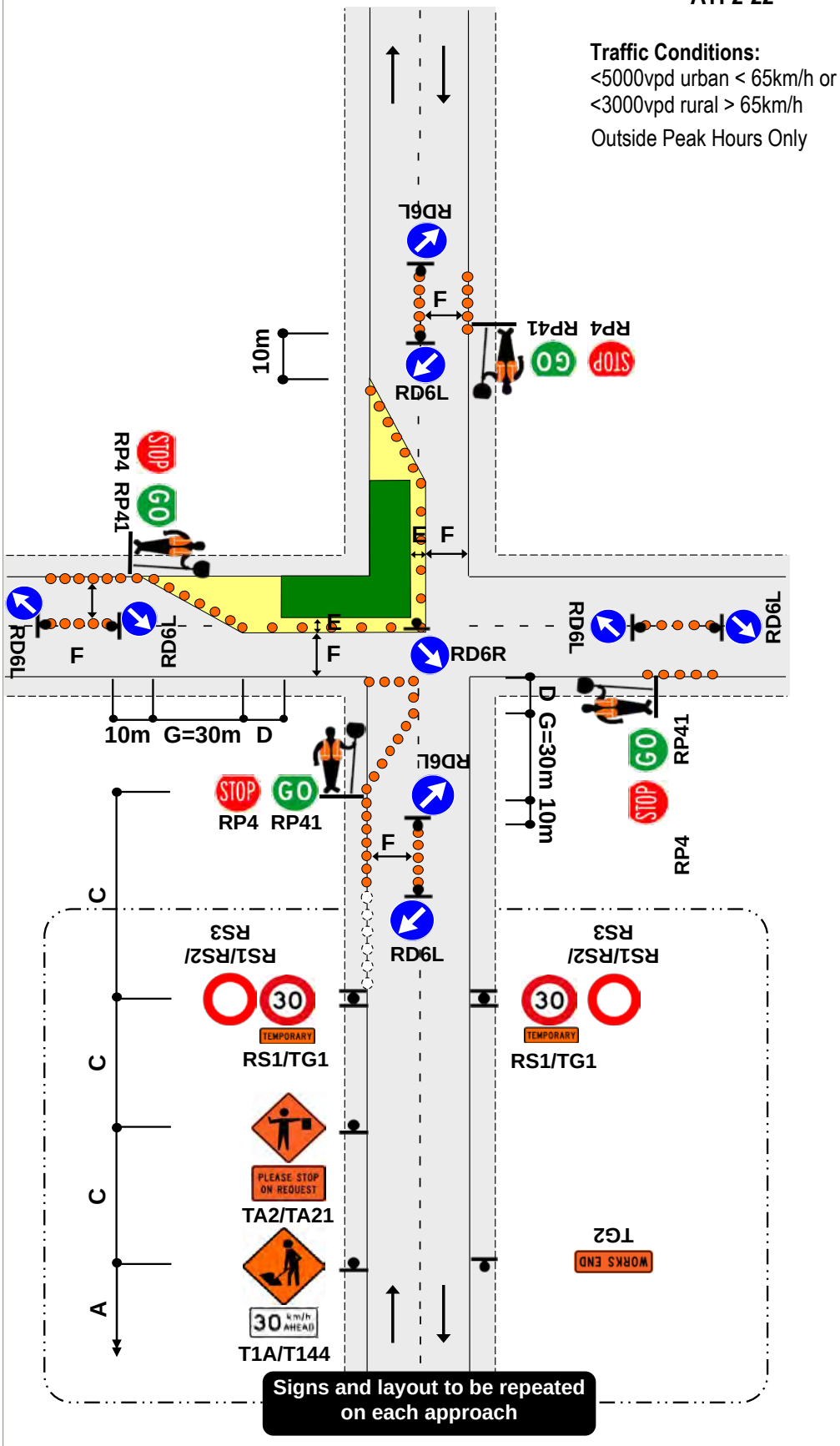
CLOSURE AT CORNER OF INTERSECTION

ATF2-22

Notes

1. This diagram may be used at a T intersection by removing any one of the roads
2. Signs and layout shown in the box at the bottom of the diagram is to be repeated on each approach
3. A 30m return taper at the end of the closure is mandatory
4. Use PN11 no stopping signs, if necessary
5. MTC with RP4/RP41 STOP/GO or RP4/RP42 STOP/SLOW paddle on road shoulder located between 1st and 2nd cone in the cone threshold closest to the working space
6. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h
7. Refer to C10.2.3 MTC essentials for further information
8. On roads with a permanent speed limit of 100km/h, cones are required from the TSL to the taper if the speed is reduced by more than 30km/h
9. The T144 30km/h AHEAD sign is optional

Reference CoPTTM 4th Edition Section F Drawing F2.22

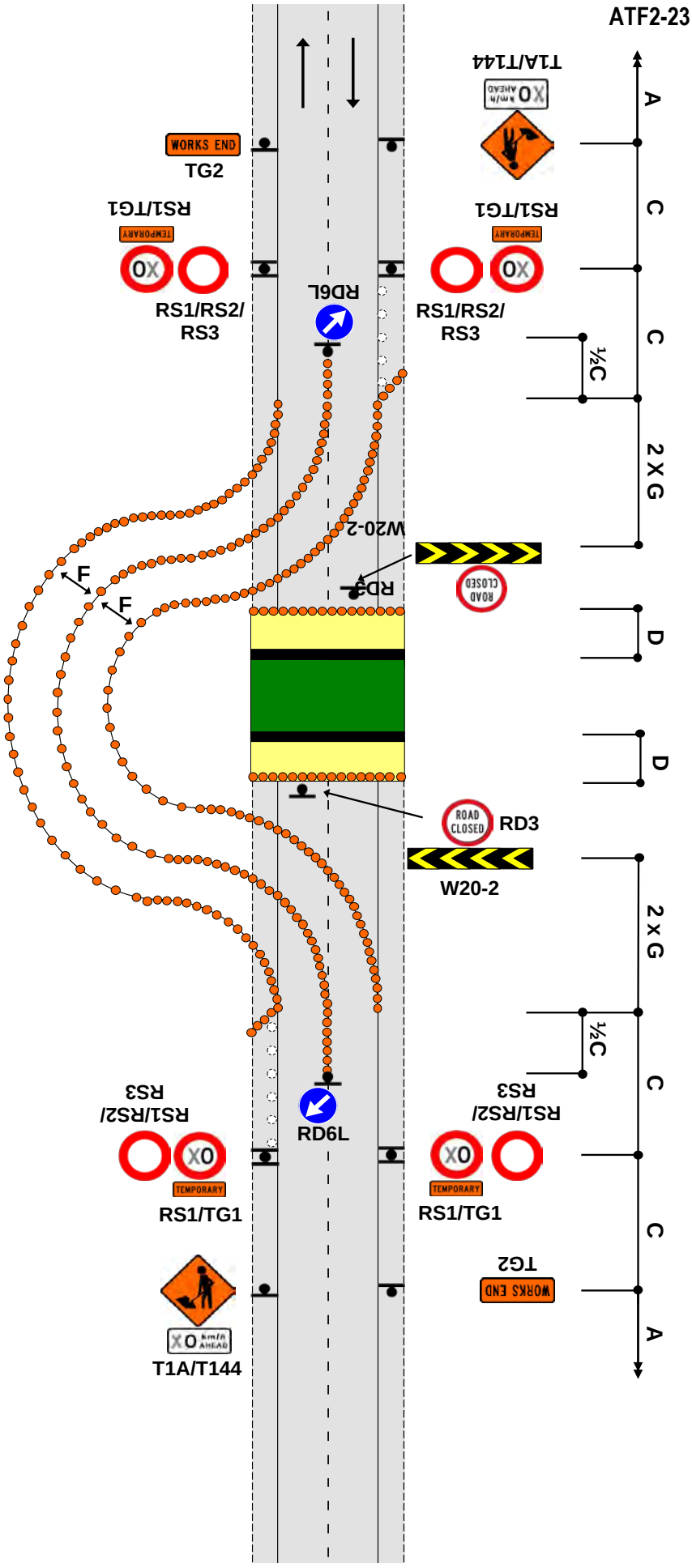


TWO-WAY TWO-LANE ROAD - LEVEL 1 (ROAD CLOSURES AND DETOURS)
ROAD CLOSURE
TEMPORARY ROUTE AROUND A HAZARD OR WORKSPACE

ATF2-23

Notes

1. Use TSLs if required by TSL decision matrix
2. To allow heavy vehicles to manoeuvre, cones in the channel must be offset by at least 10m where the direction changes. Refer C8.2.12
3. On roads with a permanent speed limit of 100km/h, cones are required from the TSL to the taper if the speed is reduced by more than 30km/h
4. The T144 X0km/h AHEAD sign is optional



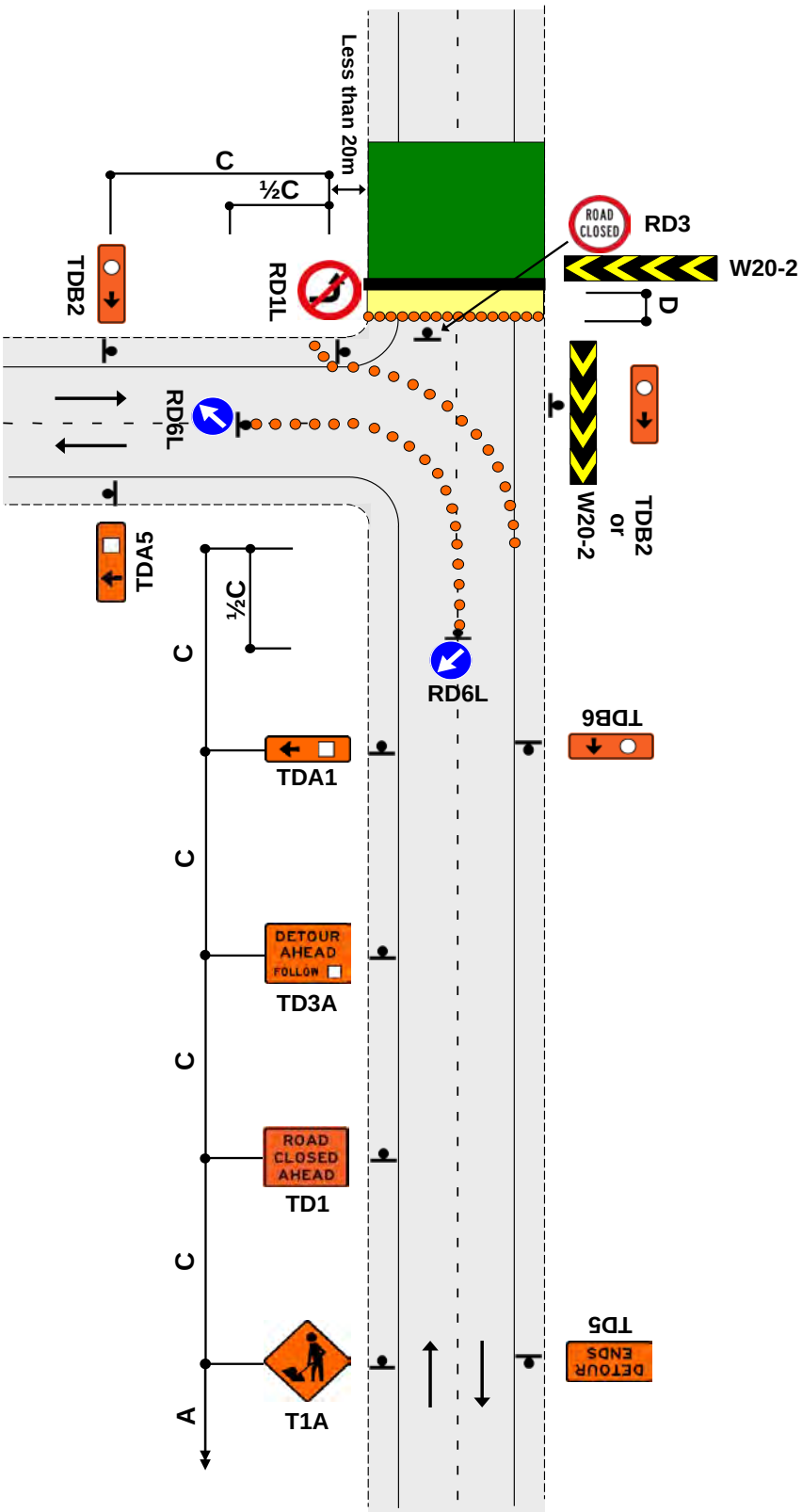
Reference CoPTTM 4th Edition Section F Drawing F2.23

TWO-WAY TWO-LANE ROAD - LEVEL 1 (EMERGENCY ONLY)
ROAD CLOSURE - DETOUR ROUTE

ATF2-24

Notes

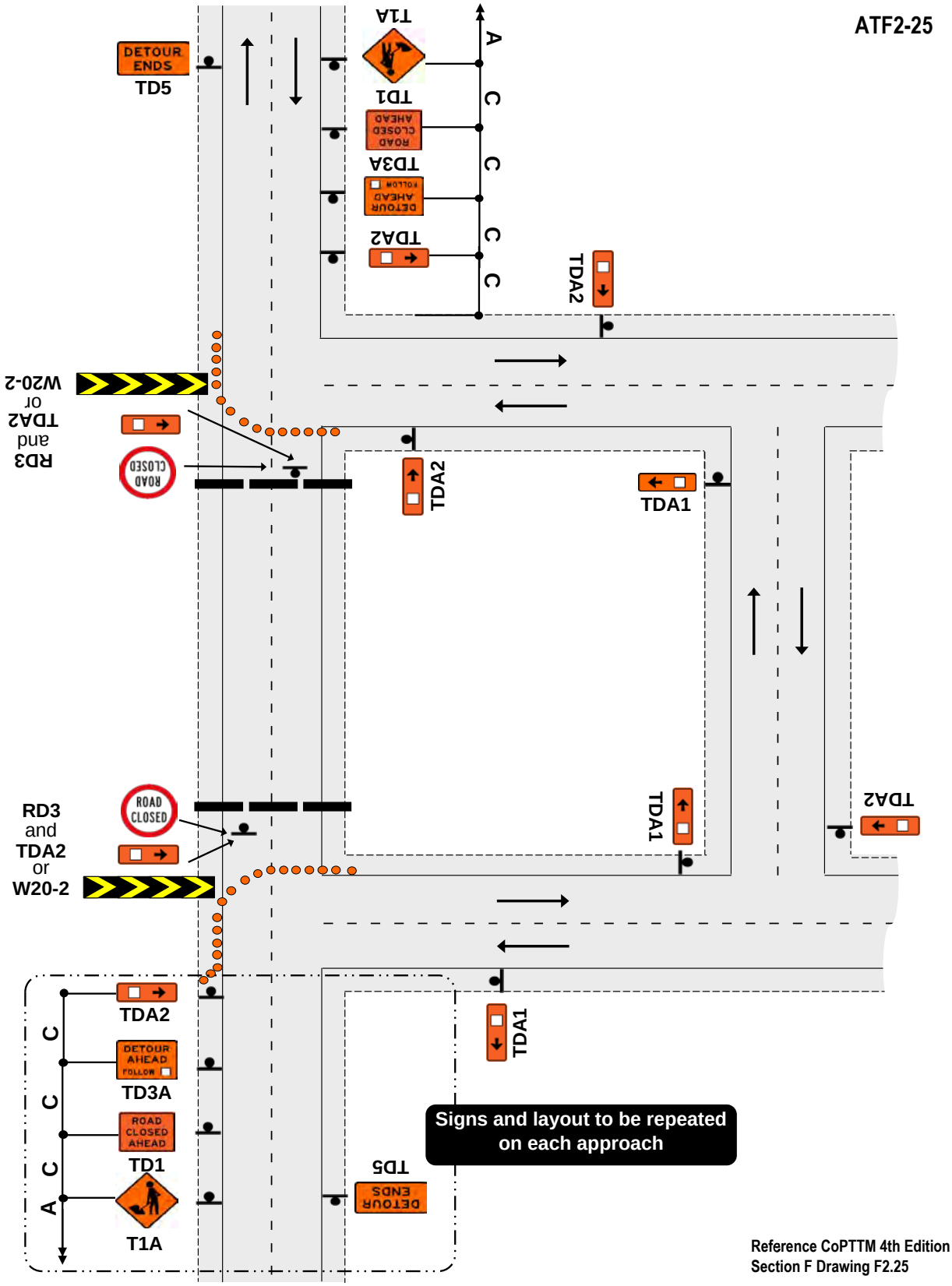
1. Block access to road with barricade
2. If a longer term site, use chevron sight board to direct traffic



Reference CoPTTM 4th Edition Section F Drawing F2.24

TWO-WAY TWO-LANE ROAD - LEVEL 1 (EMERGENCY ONLY)
ROAD CLOSURE AND DETOUR
TYPICAL DETOUR ROUTE SIGNING

ATF2-25



Reference CoPTTM 4th Edition
Section F Drawing F2.25

Notes

1. Signpost all intersections to return diverted traffic back to normal/intended route:
   - Use appropriate sign to indicate detour ahead (eg TD3A)
   - Use appropriate route signs before each intersection and on long straights (eg TDA1)
   - Use TD5 signs to advise end of detour
2. If detour to operate for more than 48 hours:
   - Use chevron sight board to direct traffic
   - Add destination signage as appropriate

TWO-WAY TWO-LANE ROAD - LEVEL 1

OTHER HAZARDS

FLOODING, WASHOUT, SLIPS, SLIPPERY SURFACE

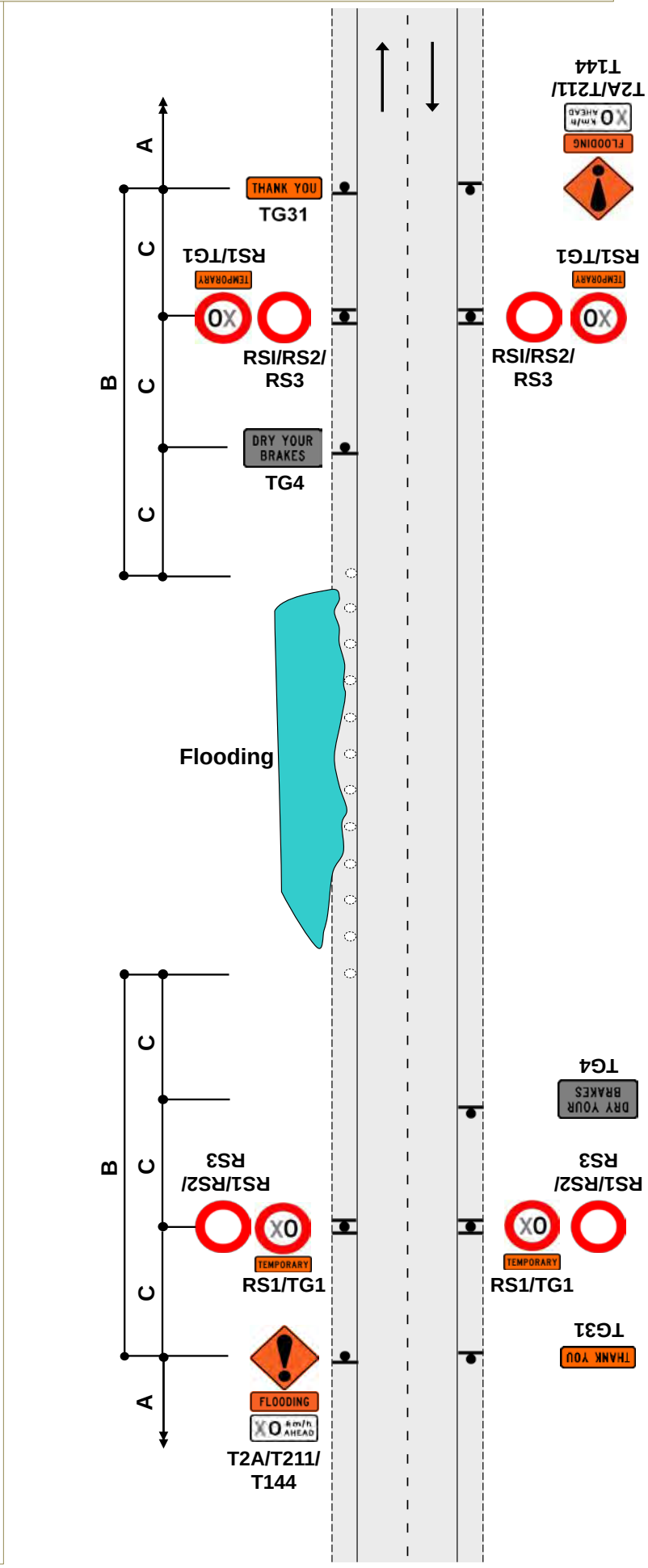
ATF2-26

Notes

1. This diagram is for initial response only. Appropriate long term TTM must be installed as soon as practical
2. Use one of the following signs and/or supplementary plates:

T211	FLOODING	Flooding
T212	WASHOUT	Washout
TR1L/R		Slips
TR2		Slippery Surface
TR4		Uneven Surface

3. If necessary, erect TG4 DRY YOUR BRAKES sign
4. Delineate hazard if hazard extends onto lane
5. Use TSLs if required by TSL decision matrix
6. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition
Section F Drawing 2.26

TWO-WAY TWO-LANE ROAD - LEVEL 1

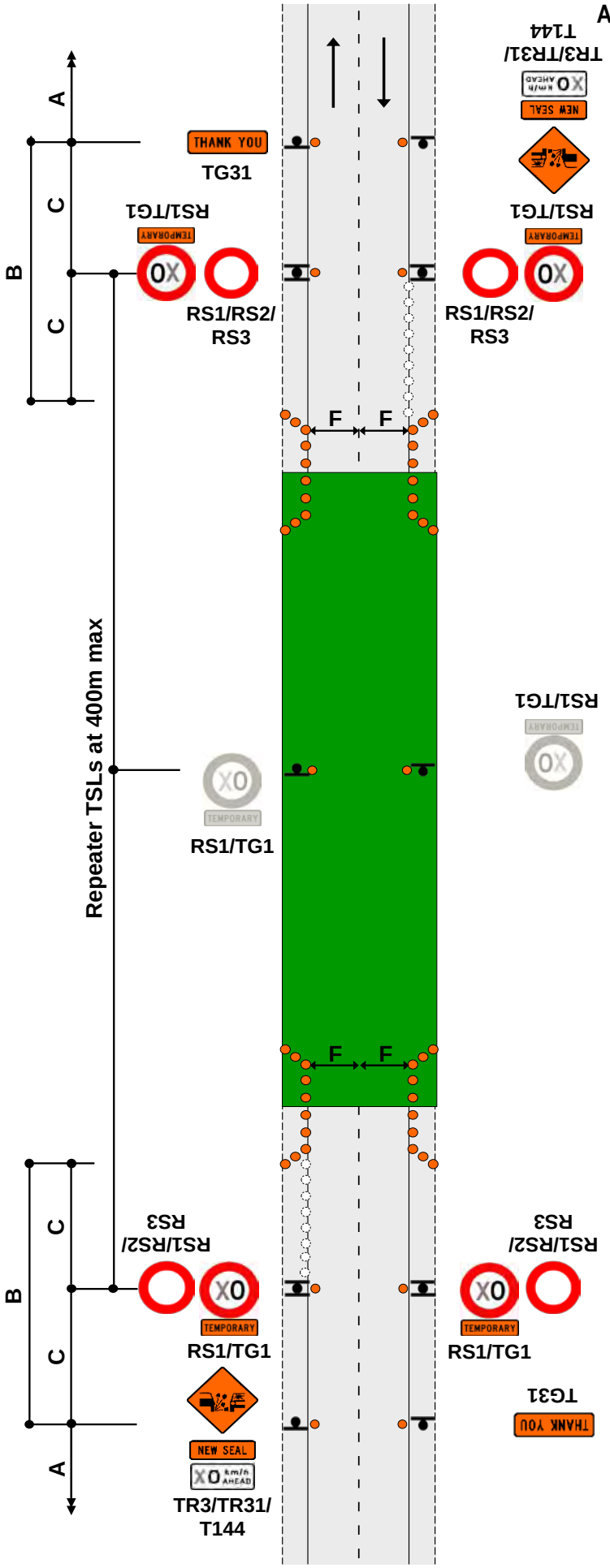
UNATTENDED WORK SITES

NEW SEAL - UNATTENDED/ OR UNSWEPT WORK SITE

ATF2-27

Notes

1. Use TSLs if required by TSL decision matrix
2. Worksites need positive traffic management to ensure all road users travel at the TSL
3. Use cones to form a threshold treatment at the start of the new seal. Minimum of 10 cones at 5m centres
4. Cones on the trafficked side of signs for sites to be left unattended overnight
5. TSLs to be repeated at not more than 400m intervals
6. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition Section F Drawing 2.27

TWO-WAY TWO-LANE ROAD - LEVEL 1
UNATTENDED WORK SITES
SURFACE HAZARD

ATF2-28

Notes

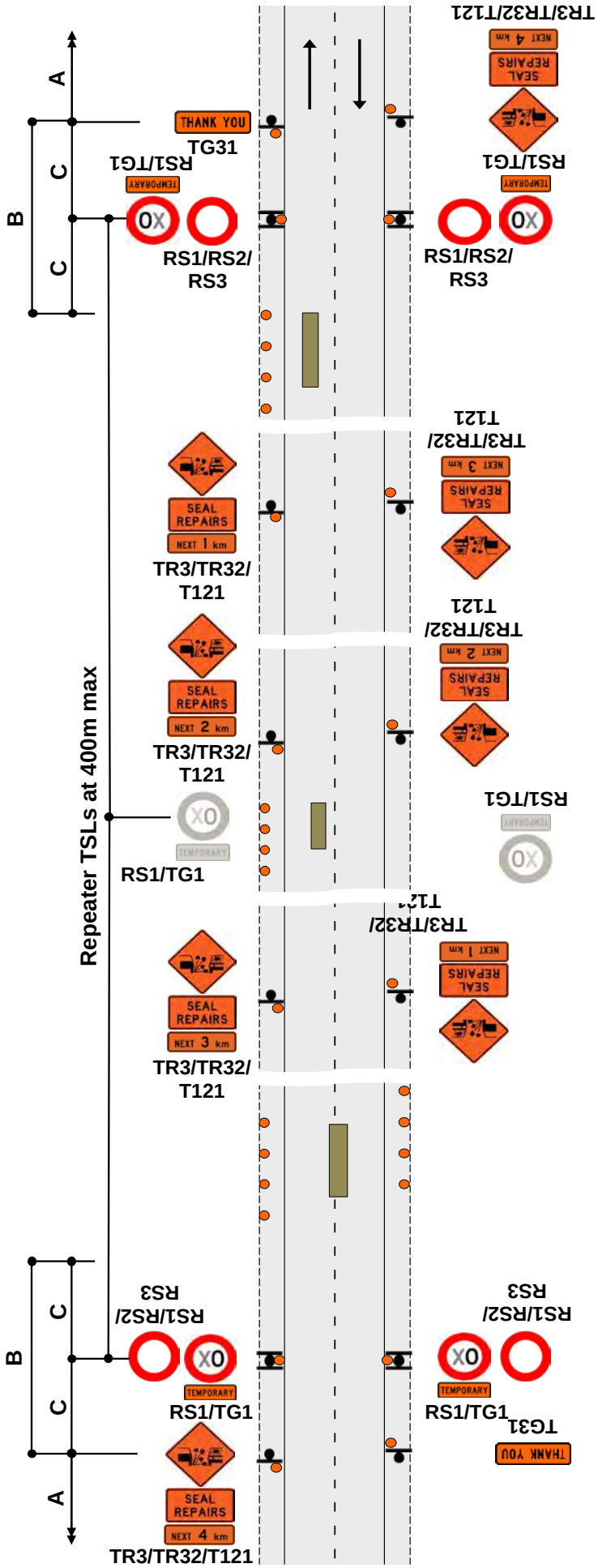
1. This layout must not be used on an alignment with horizontal curves (corners) or when repairs are carried out on or near horizontal curves. See TMD F2.29
2. On long worksites, use 'Next X km' plates, repeat temporary speed limit signs at not more than 400m intervals
3. Signs for some alternative situations:

TR4		Uneven Surface
TR2		Slippery Surface
TR3		Gravel/ Unsealed Surface
TR31	NEW SEAL	New Seal
TR32	SEAL REPAIRS	Seal Repairs

4. Cones to be placed on left of carriageway for full length of hazard at 10m centres or at least 3 cones, whichever is the greater
5. Cones on the trafficked side of signs for sites to be left unattended overnight
6. Worksites need positive traffic management to ensure all road users travel at the TSL
7. Use TSLs if required by TSL decision matrix
8. The T144 X0km/h AHEAD sign is optional
9. Alternative Sign to be used when there is no " ROAD MARKINGS"

T2A/ T2B
T218 NO ROAD MARKING

Reference CoPTTM 4th Edition Section F Drawing F2.28



TWO-WAY TWO-LANE ROAD - LEVEL 1

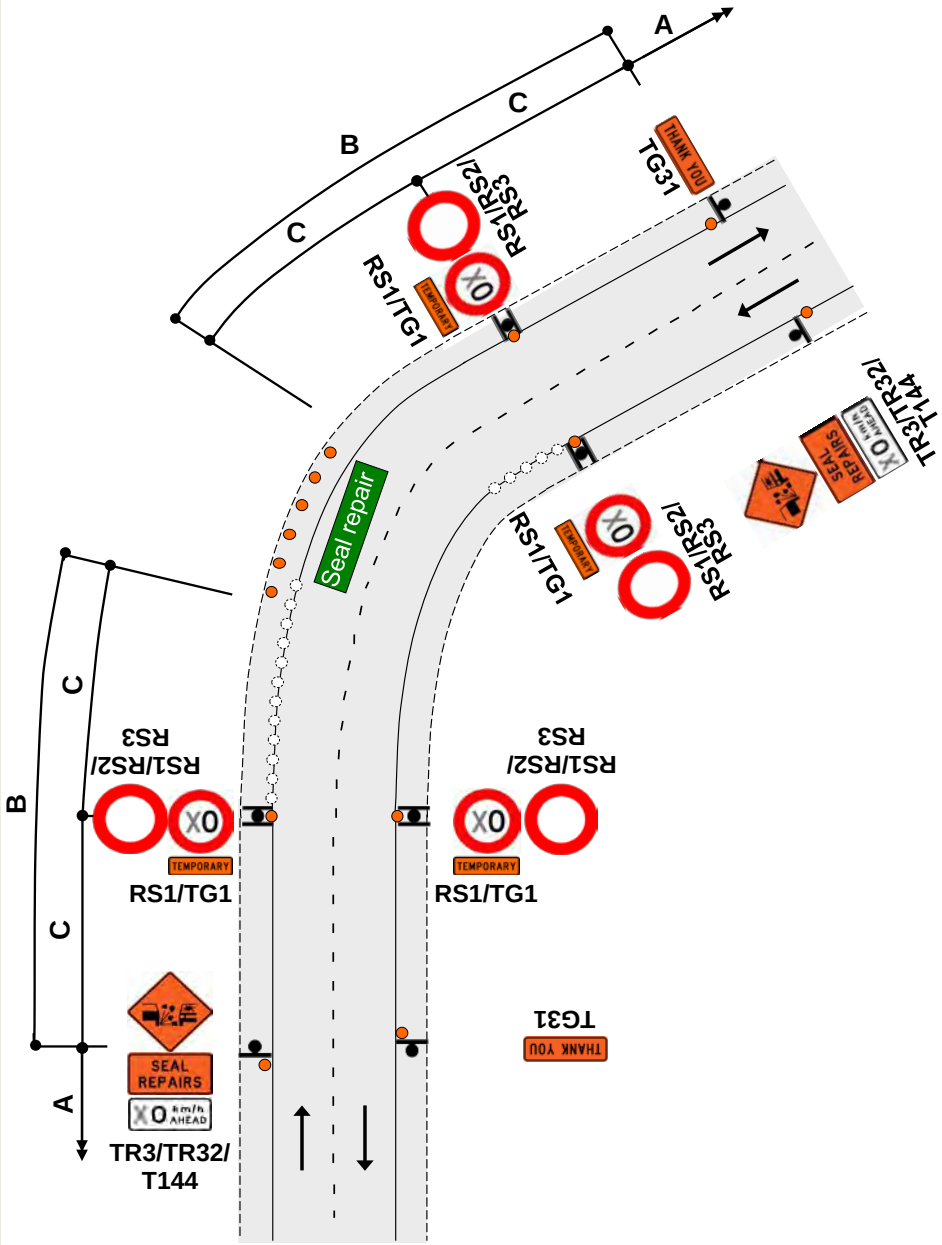
UNATTENDED WORK SITES

SEAL- REPAIRS ON A CURVE

ATF2-29

Notes

1. Cones on edge of seal - minimum 3 cones, maximum spacing 10m, next to each repair area
2. Cover any curve advisory speed sign that has a higher speed than the TSL
3. Use TSLs if required by TSL decision matrix
4. The T144 X0km/h AHEAD sign is optional
5. Alternative Sign to be used when there is no " ROAD MARKINGS"



Reference CoPTTM 4th Edition Section F Drawing 2.29

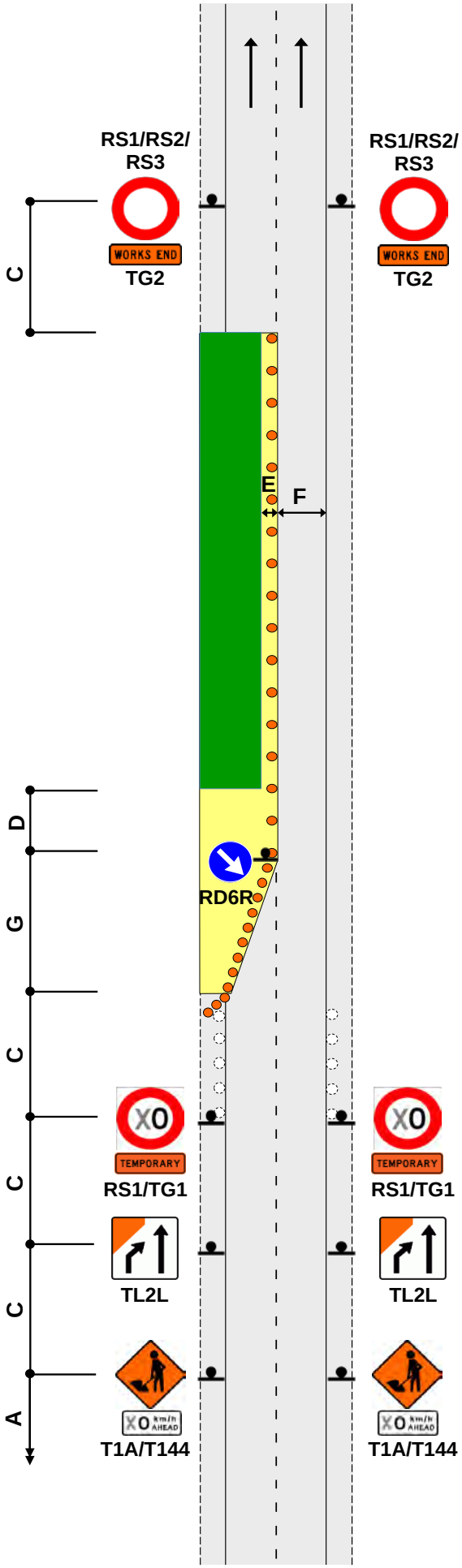
ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 1

LEFT LANE CLOSURE

ATF2-30

Notes

1. Use TSLs if required by TSL decision matrix
2. On roads with a permanent speed limit of 100km/h, cones are required from the TSL to the taper if the speed is reduced by more than 30km/h
3. The T144 X0km/h AHEAD sign is optional



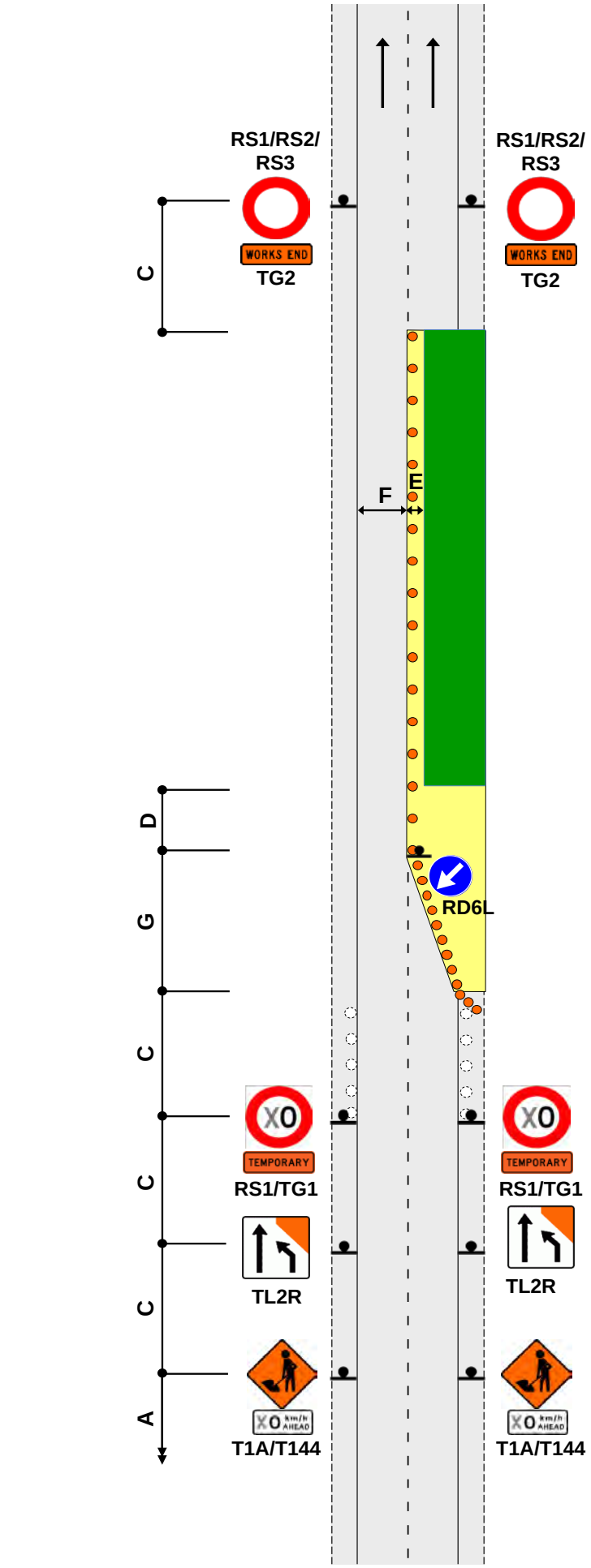
Reference CoPTTM 4th Edition
Section F Drawing F2.30

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 1
RIGHT LANE CLOSURE

ATF2-31

Notes

1. Use TSLs if required by TSL decision matrix
2. On roads with a permanent speed limit of 100km/h, cones are required from the TSL to the taper if the speed is reduced by more than 30km/h
3. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition
Section F Drawing F2.31

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 1

ONE-LANE CLOSURE

TEMPORARY TWO-LANE DIVERSION

ATF2-32

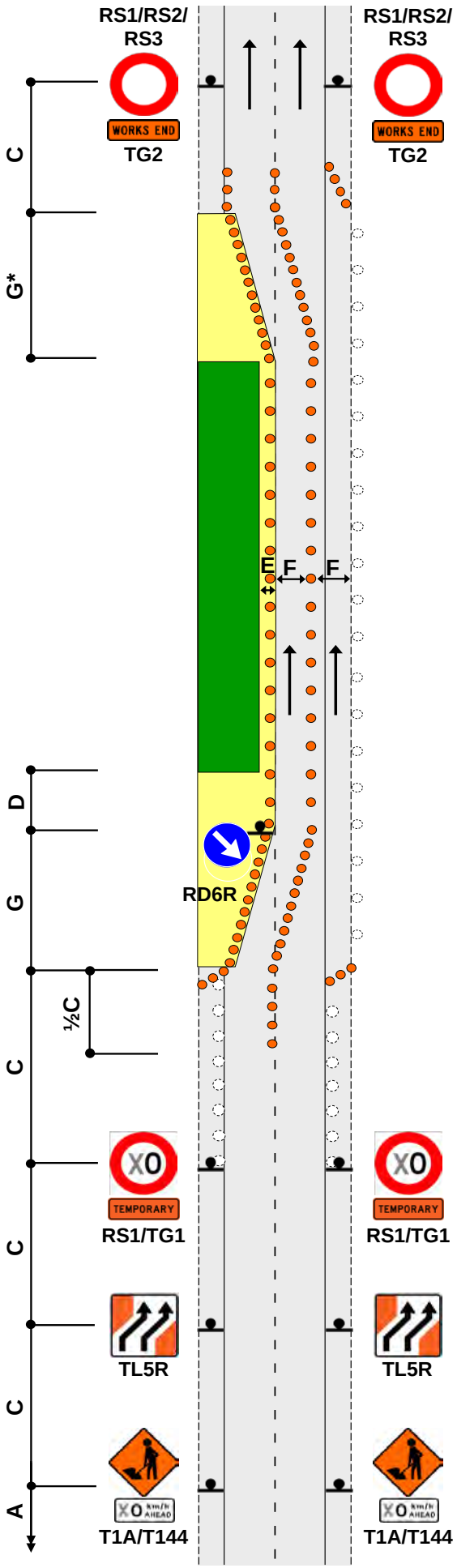
Notes

1. Cones required opposite closure if edge of carriageway not clearly defined
2. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lateral shift

   G = Taper length in metres from the level 1 layout distance table
3. To allow heavy vehicles to manoeuvre, cones in the channel must be offset by at least 10m where the direction changes. Refer C8.2.12
4. Use TSLs if required by TSL decision matrix
5. On roads with a permanent speed limit of 100km/h, cones are required from the TSL to the taper if the speed is reduced by more than 30km/h
6. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition
Section F Drawing 2.32

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 1
LANE DIVERSIONS IN BOTH DIRECTIONS

ATF2-33

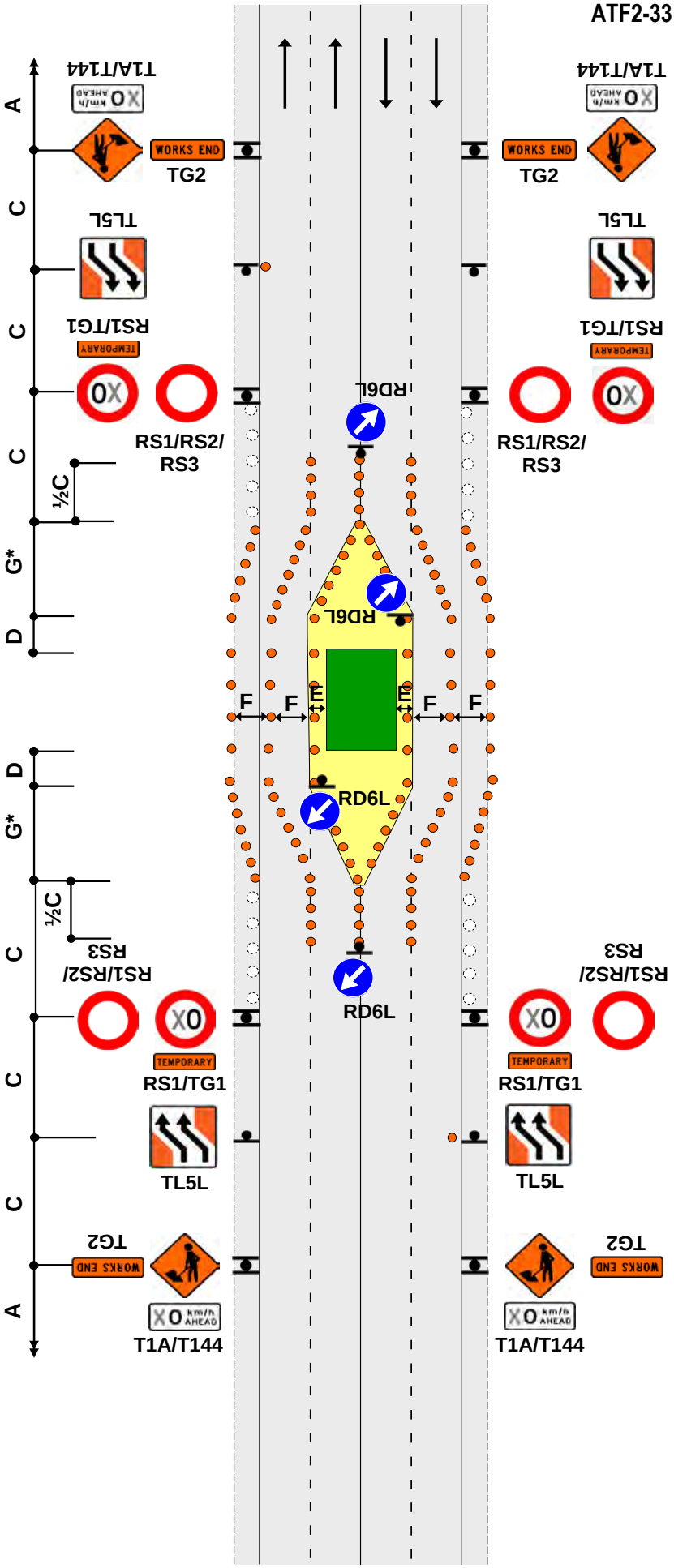
Notes

1. Where a physical centre median exists which is more than 2m wide, signs and cones may be positioned on the median
2. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lateral shift

   G = Taper length in metres from the level 1 layout distance table
3. Cones must be placed behind any away-facing signs for rear-side visibility
4. To allow heavy vehicles to manoeuvre, cones in the channel must be offset by at least 10m where the direction changes. Refer C8.2.12
5. Use PN11 No Stopping signs, if necessary
6. Use TSLs if required by TSL decision matrix
7. On roads with a permanent speed limit of 100km/h, cones are required from the TSL to the taper if the speed is reduced by more than 30km/h
8. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition Section F Drawing F2.33

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 1
WORK IN MIDDLE OF ROAD

ATF2-34

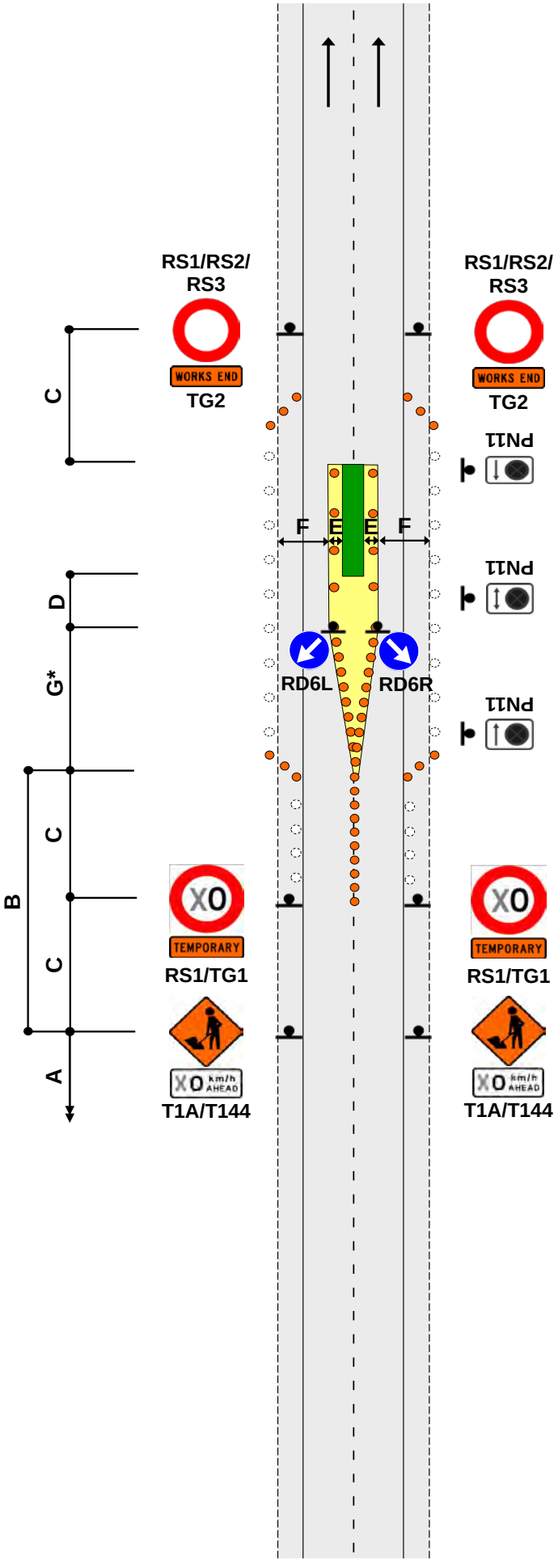
Notes

1. Use either TMD F2.32 or TMD F2.33 in preference to this TMD, unless their use would likely cause traffic delays
2. Cones are required on edge of the temporary lane opposite closure if road is not well defined
3. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lateral shift

   G = Taper length in metres from the level 1 layout distance table
4. To allow heavy vehicles to manoeuvre, cones in the channel must be offset by at least 10m where the direction changes. Refer C8.2.12
5. Use PN11 No Stopping signs, if necessary
6. Use TSLs if required by TSL decision matrix
7. On roads with a permanent speed limit of 100km/h, cones are required from the TSL to the taper if the speed is reduced by more than 30km/h
8. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition Section F Drawing F2.34

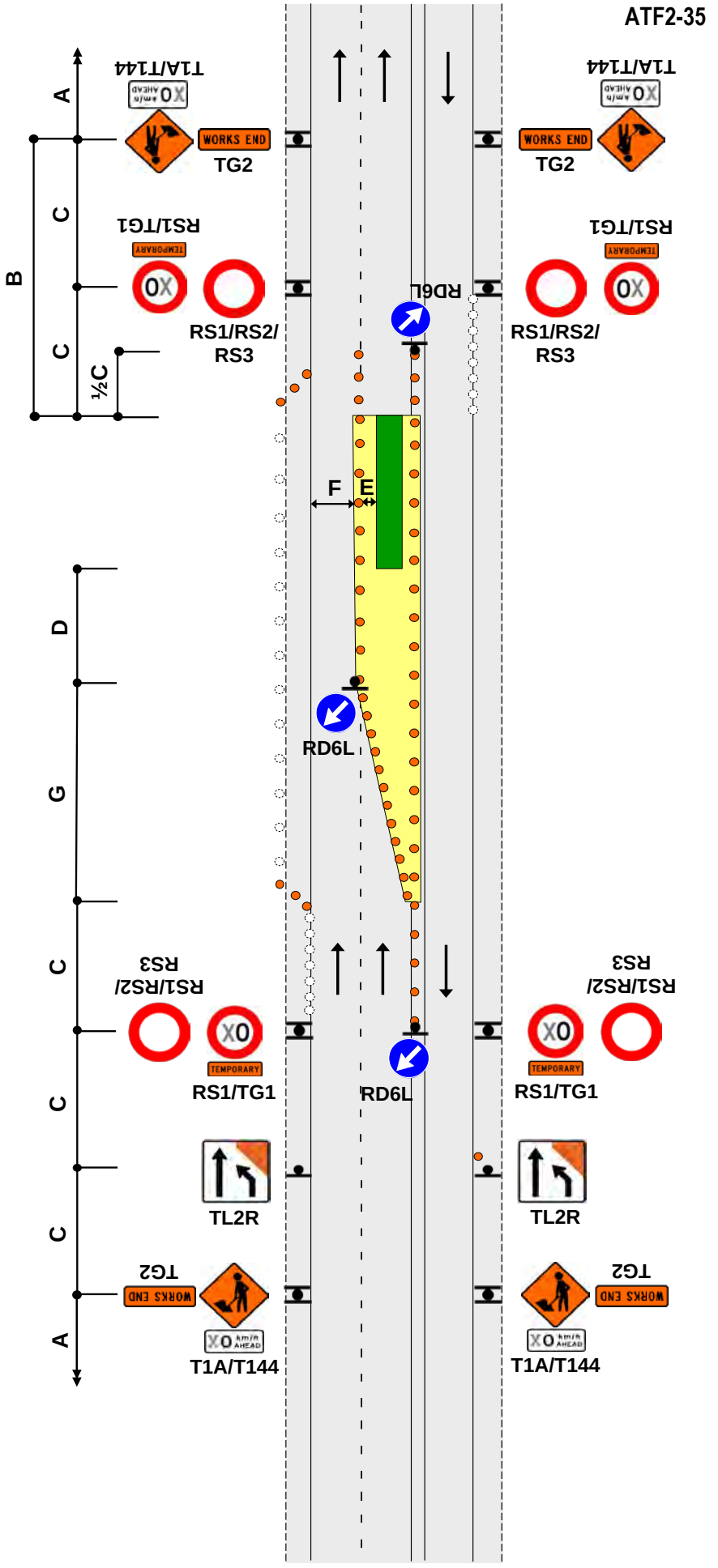
TWO-WAY THREE-LANE ROAD - LEVEL 1

2 x 1 CENTRE-LANE CLOSURE

ATF2-35

Notes

1. If the closure is on a passing lane, the start of the taper must be greater than 600m from the start of the passing lane (if this cannot be achieved then close the passing lane completely and cover all permanent passing lane signs)
2. If the end of the closure is within 600m of the end of a passing lane, continue to close the centre lane
3. Cones are required on edge of the temporary lane opposite closure if road is not well defined
4. Cones must be placed behind any away-facing signs for rear-side visibility
5. To allow heavy vehicles to manoeuvre, cones in the channel must be offset by at least 10m where the direction changes. Refer C8.2.12
6. Use TSLs as required by TSL decision matrix
7. On roads with a permanent speed limit of 100km/h, cones are required from the TSL to the taper if the speed is reduced by more than 30km/h
8. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition Section F Drawing F2.35

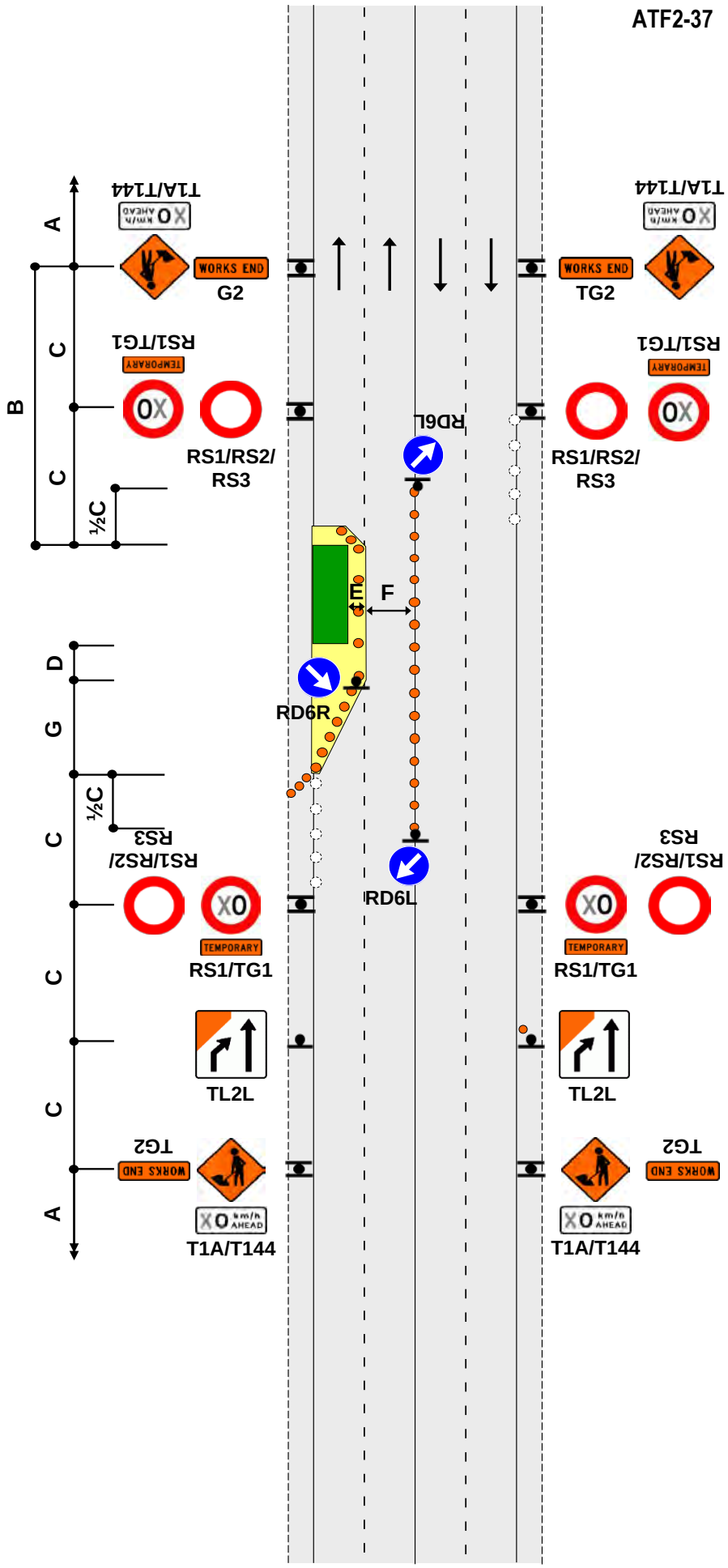
TWO-WAY FOUR-LANE ROAD - LEVEL 1

LEFT LANE CLOSURE

ATF2-37

Notes

1. Where a physical centre median exists which is more than 2m wide, signs and cones may be positioned on the median
2. Cones must be placed behind any away-facing signs for rear-side
3. Use TSLs if required by TSL decision matrix
4. On roads with a permanent speed limit of 100km/h, cones are required from the TSL to the taper if the speed is reduced by more than 30km/h
5. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition
Section F Drawing F2.37

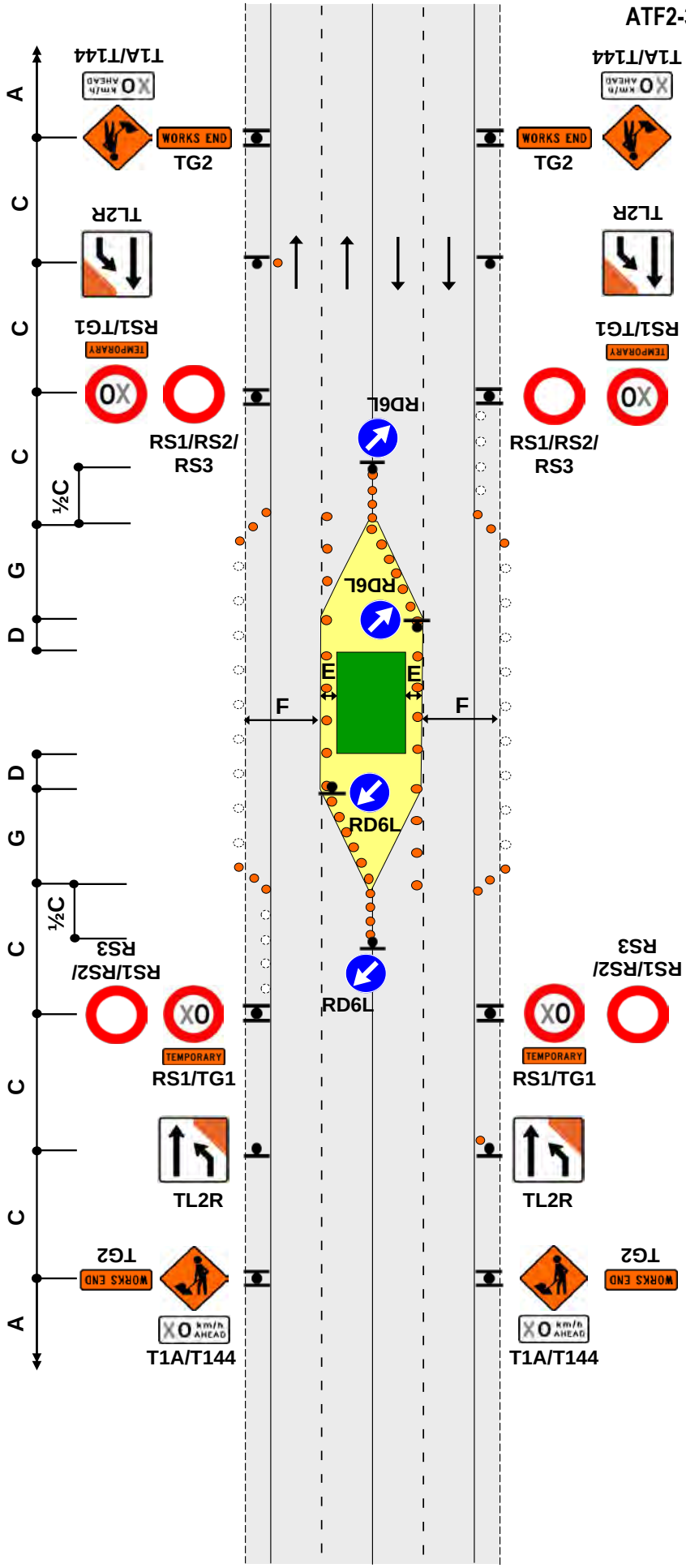
TWO-WAY FOUR-LANE ROAD - LEVEL 1

2 x 2 CENTRE LANE CLOSURE

ATF2-39

Notes

1. Cones must be placed behind any away-facing signs for rear-side visibility
2. Cones are required on edge of the temporary lane opposite closure if road is not well defined
3. To allow heavy vehicles to manoeuvre, cones in the channel must be offset by at least 10m where the direction changes. Refer C8.2.12
4. Use TSLs if required by TSL decision matrix
5. On roads with a permanent speed limit of 100km/h, cones are required from the TSL to the taper if the speed is reduced by more than 30km/h
6. The T144 X0km/h AHEAD sign is optional

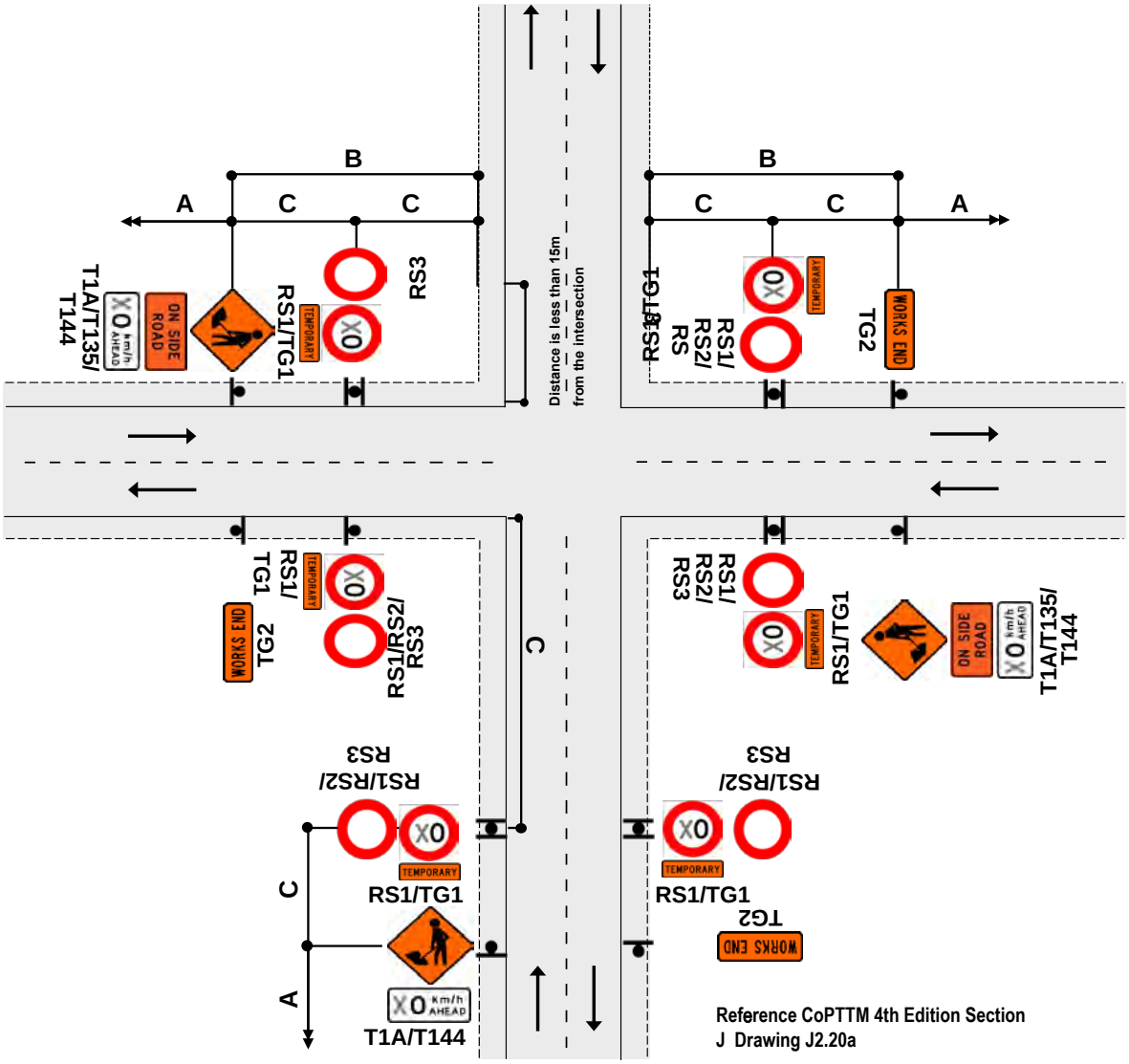


Reference CoPTTM 4th Edition
Section F Drawing F2.39

STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL LV AND LEVEL 1 (INTERSECTION OR ROUNDABOUT)
AFTER INTERSECTION - NO TSL ON SIDE ROAD

ATF2-40



Notes

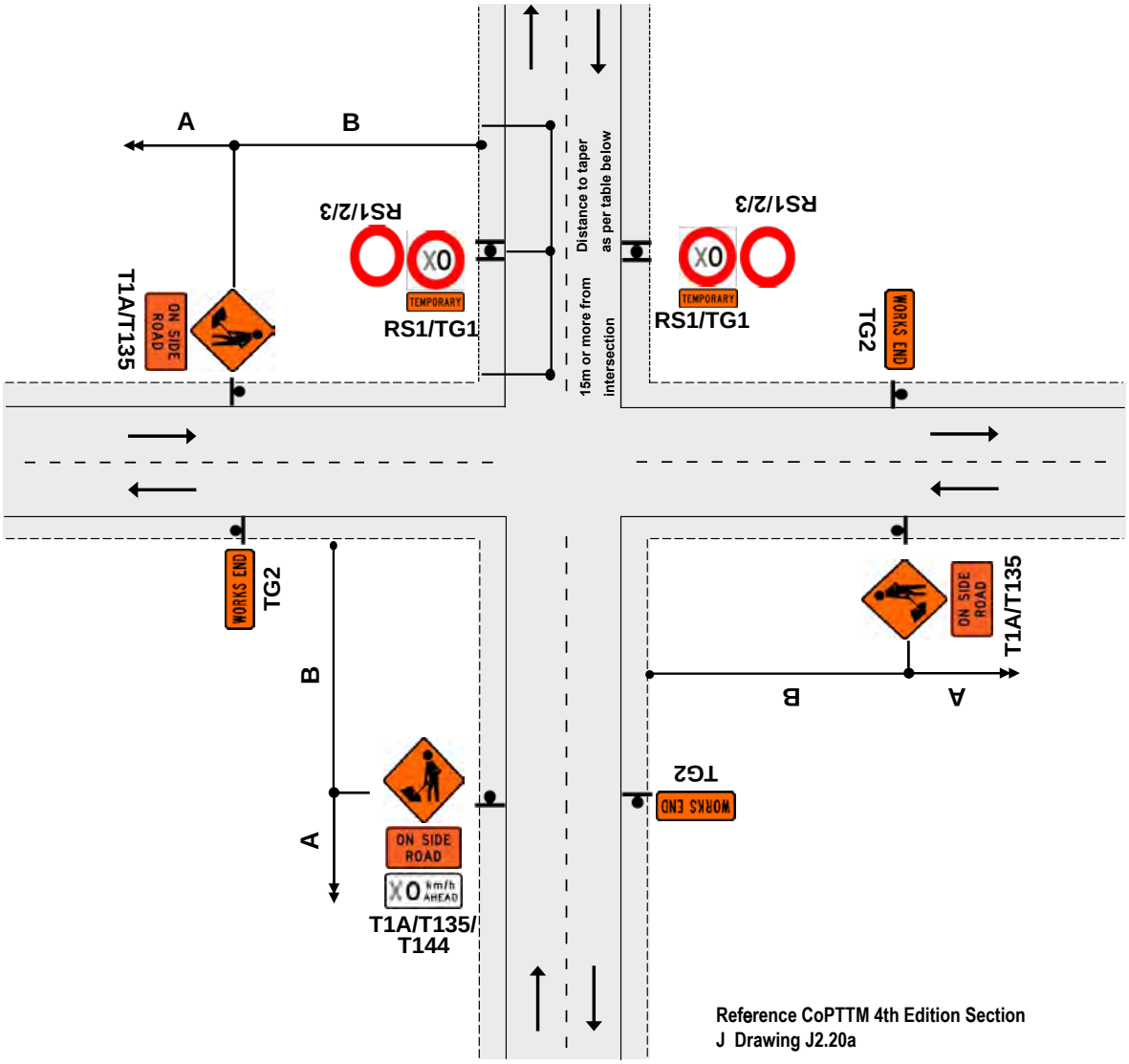
1. This diagram may be used at a T intersection by removing any one of the roads
2. TSL sign is less than 15m from the intersection
3. Use TSLs if required by TSL decision matrix or remaining lane width available F
4. The T144 X0km/h AHEAD sign is optional
5. This to be used in conjunction with other Generic Drawings
6. All drawings for the closure to be recorded on the On-Site record sheet on the day
7. All Changes to be recorded on the On-Site record

Speed (PSL)	Intersection to TSL	TSL to taper	Total
<50km/h	15m	15m	30m
60km/h	15m	25m	40m
>70km/h	15m	40m	55m

REFRENCE COPTTM 2017 4th EDITION
SECTION C 4.3.2

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)
AFTER INTERSECTION - PLACEMENT OF TSL AFTER THE INTERSECTION

ATF2-41



Reference CoPTTM 4th Edition Section J Drawing J2.20a

Notes

1. This diagram may be used at a T intersection by removing any one of the roads
2. TSL 15m or from the intersection
3. Use TSLs if required by TSL decision matrix or remaining lane width available F
4. The T144 X0km/h AHEAD sign is optional
5. This to be used in conjunction with other Generic Drawings
6. All drawings for the closure to be recorded on the On-Site record sheet on the day
7. All Changes to be recorded on the On-Site record

Speed (PSL)	Intersection to TSL	TSL to taper	Total
<50km/h	15m	15m	30m
60km/h	15m	25m	40m
>70km/h	15m	40m	55m

REFRENCE COPTTM 2017 4th EDITION
SECTION C 4.3.2

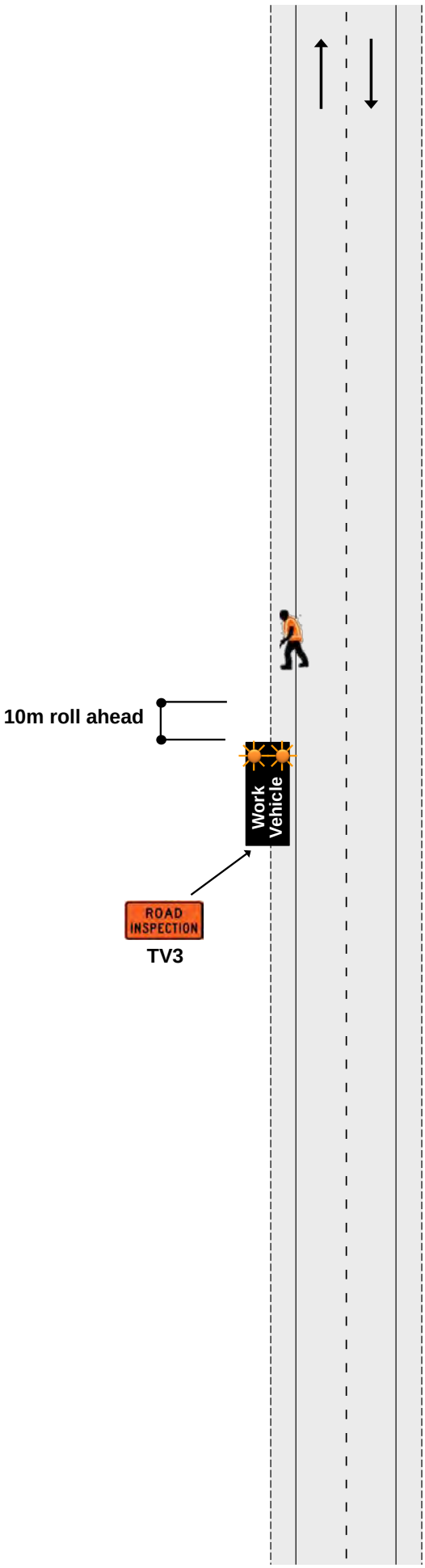
TWO-WAY TWO-LANE ROAD - LOW VOLUME

ROAD INSPECTIONS ACTIVITIES

ATF3-1

Notes

1. Work vehicle must be parked clear of the live lane and must have one, preferably two, flashing beacons operating
2. The work vehicle must have a rear mounted sign indicating the type of activity taking place
3. Rear mounted sign recommended but not mandatory on level LV
4. Activities taking place in front of the work vehicle must allow for a 10m roll ahead zone
5. Inspector can proceed onto the live lane if CSD exists and activity takes no longer than 5 minutes
6. The inspector must have CSD if on the live lane. A spotter can be used to attain CSD



Reference CoPTTM 4th Edition Section F Drawing F3.1

TWO-WAY TWO-LANE ROAD - LOW VOLUME

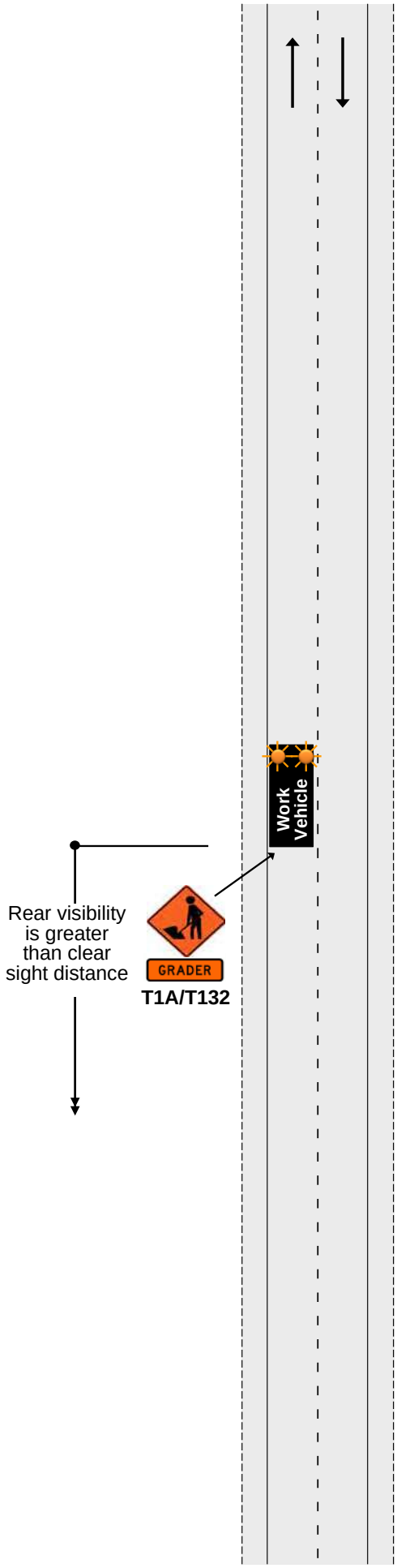
VEHICLE IN A LANE

WITH CSD - ON LV (LOW-RISK) ROADS (ANY SPEED) AND LV ROAD UNDER 65KM/H

ATF3-2

Notes

1. This TMD can be used if the work vehicle is on shoulder, berm or live lane
2. The only signage required is a T1A sign with appropriate supplementary plate mounted on the rear of the work vehicle



TWO-WAY TWO-LANE ROAD - LOW VOLUME

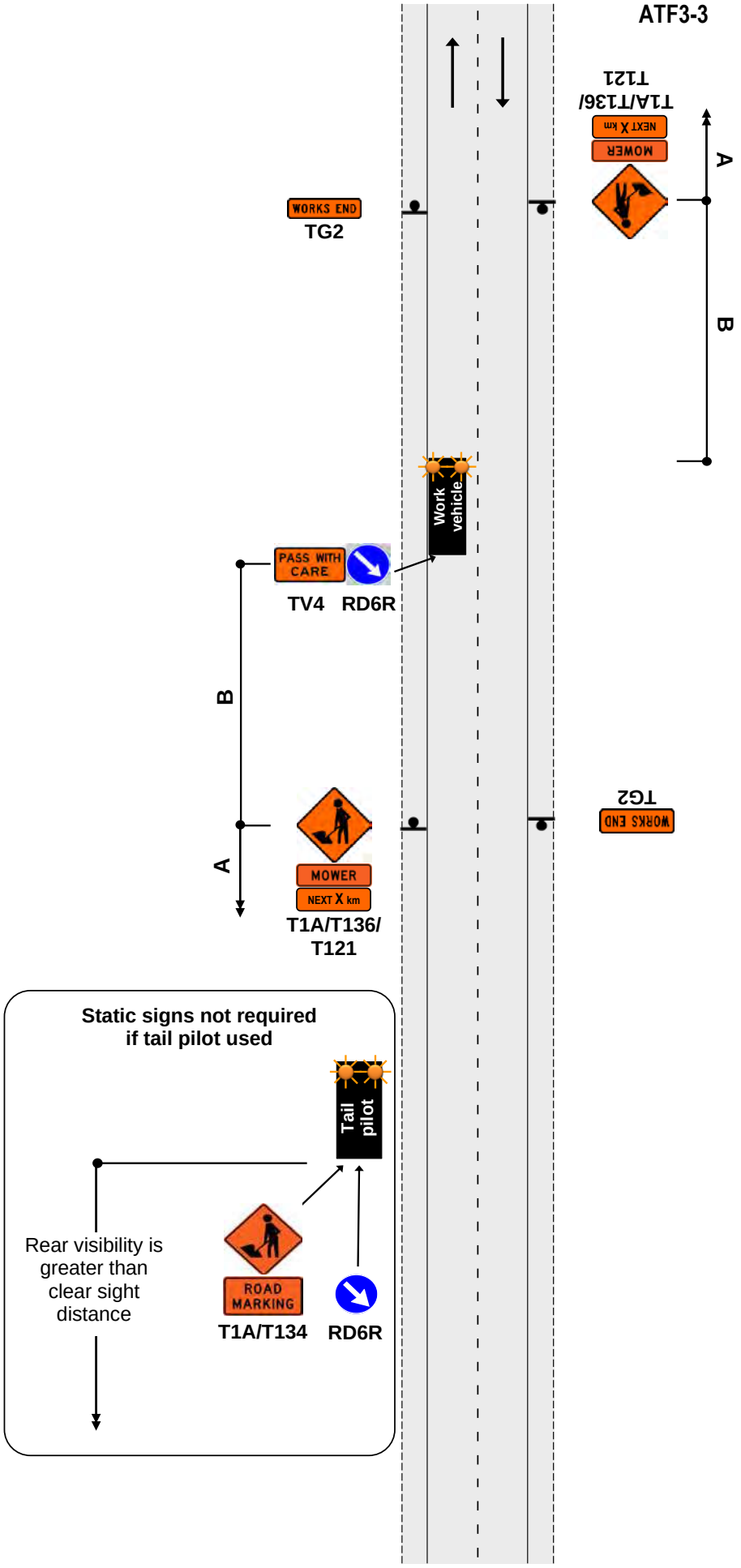
WORK ON BERM, SHOULDER OR LANE

NO CSD

ATF3-3

Notes

1. This TMD can be used if the work vehicle is berm, shoulder or live lane
2. For long worksites, the T1A advance warning sign must be repeated throughout the worksite at intervals not greater than 4km
3. A tail pilot vehicle equipped with T1A advance warning sign and a supplementary plate (T132, T133, T136, T137) can be used to **replace all static signs**



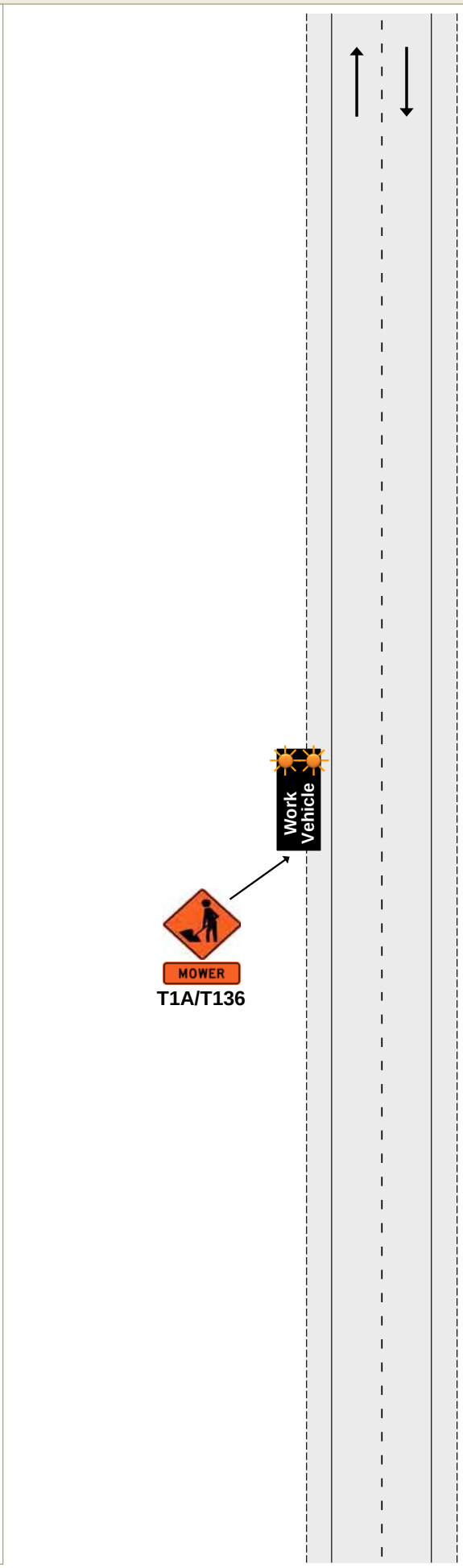
Reference CoPTTM 4th Edition
Section F Drawing F3.3

TWO-WAY TWO-LANE ROAD - LOW LEVEL
WORK VEHICLE ON SHOULDER OR BERM - CLEAR OF LIVE LANE
CSD NOT REQUIRED

ATF3-4

Notes

1. The only signage required is a T1A sign with appropriate supplementary plate mounted on the rear of the work vehicle



T1A/T136

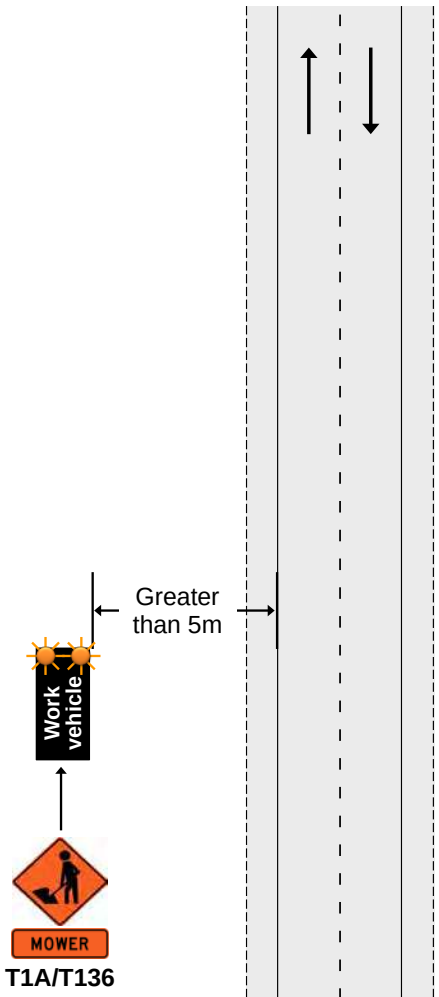
Reference CoPTTM 4th Edition Section F Drawing F3.4

TWO-WAY TWO-LANE ROAD - LEVEL 1

ANY SPEED

WORK VEHICLE IS MORE THAN FIVE (5) METERS FROM THE EDGELINE

ATF4-1



T1A/T136

Reference CoPTTM 4th Edition
Section F Drawing F4.1

TWO-WAY TWO-LANE ROAD - LEVEL 1

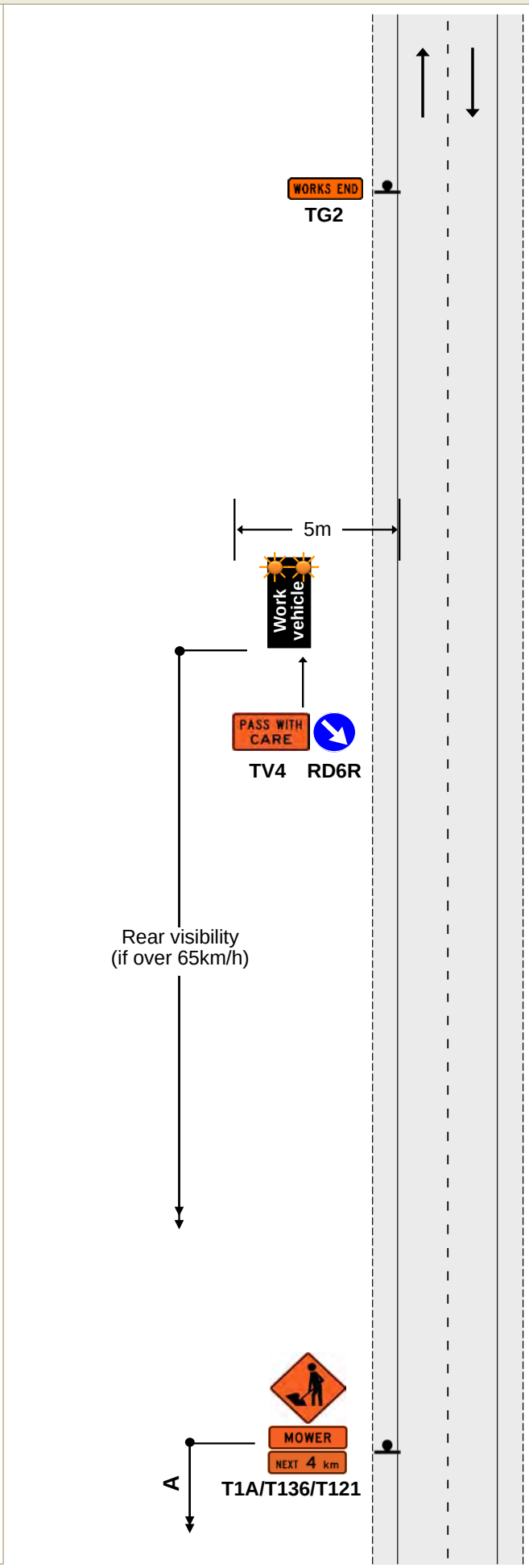
CSD TO WORK VEHICLE - NOT REQUIRED UNDER 65KM/H, REQUIRED OVER 65KM/H

WORK VEHICLE WITHIN FIVE (5) METERS OF THE EDGE LINE

ATF4-2

Notes

1. If permanent speed is **under** 65km/h, rear visibility to the work vehicle is **not** required
2. If permanent speed is **over** 65km/h, rear visibility to the work vehicle is required
3. A tail pilot vehicle equipped with T1A advance warning sign, appropriate supplementary plate and RD6R may replace the static signs if the permanent speed is under 65km/h (see TMD F4.3)



Reference CoPTTM 4th Edition Section F Drawing F4.2

TWO-WAY TWO-LANE ROAD - LEVEL 1

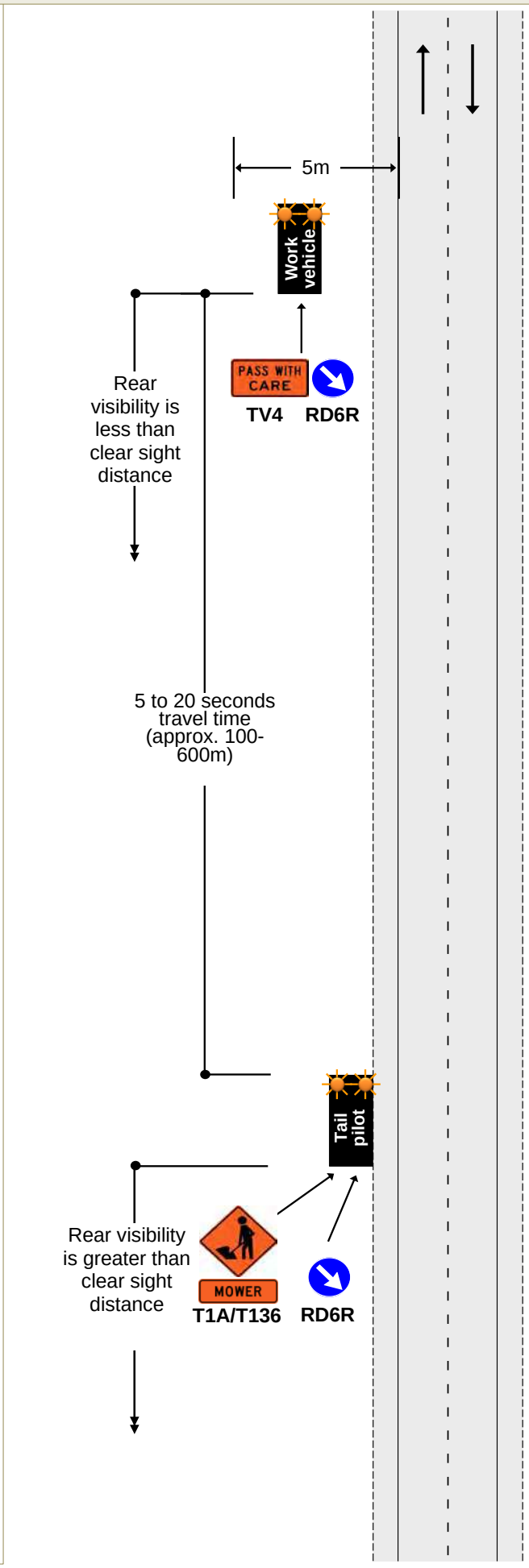
WORK VEHICLE IS WITHIN FIVE (5) METERS OF THE EDGELINE

SPEED LIMIT OVER 65KM/H - THE REAR VISIBILITY IS LESS THAN CSD

ATF4-3

Notes

1. This TMD can replace TMD F4.2 when permanent speed is under 65km/h. In these situations, static signs are not required



Reference CoPTTM 4th Edition Section F Drawing F4.3

TWO-WAY TWO-LANE ROAD - LEVEL 1

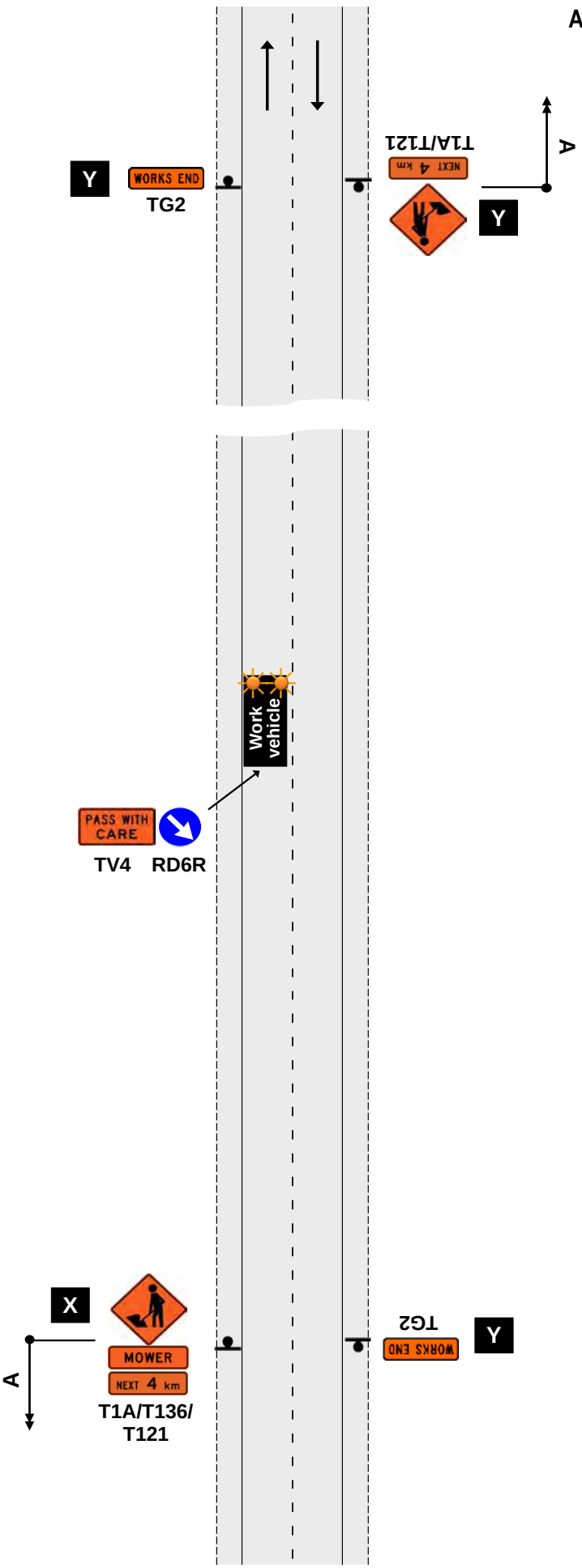
WORK VEHICLE IN A LIVE LANE

PERMANENT SPEED UNDER 65KM/H

ATF4-4

Notes

1. Advance warning sign **X** may be replaced by tail pilot equipped with T1A advance warning sign and appropriate supplementary plate
2. In this case, signs marked with **Y** do not need to be erected



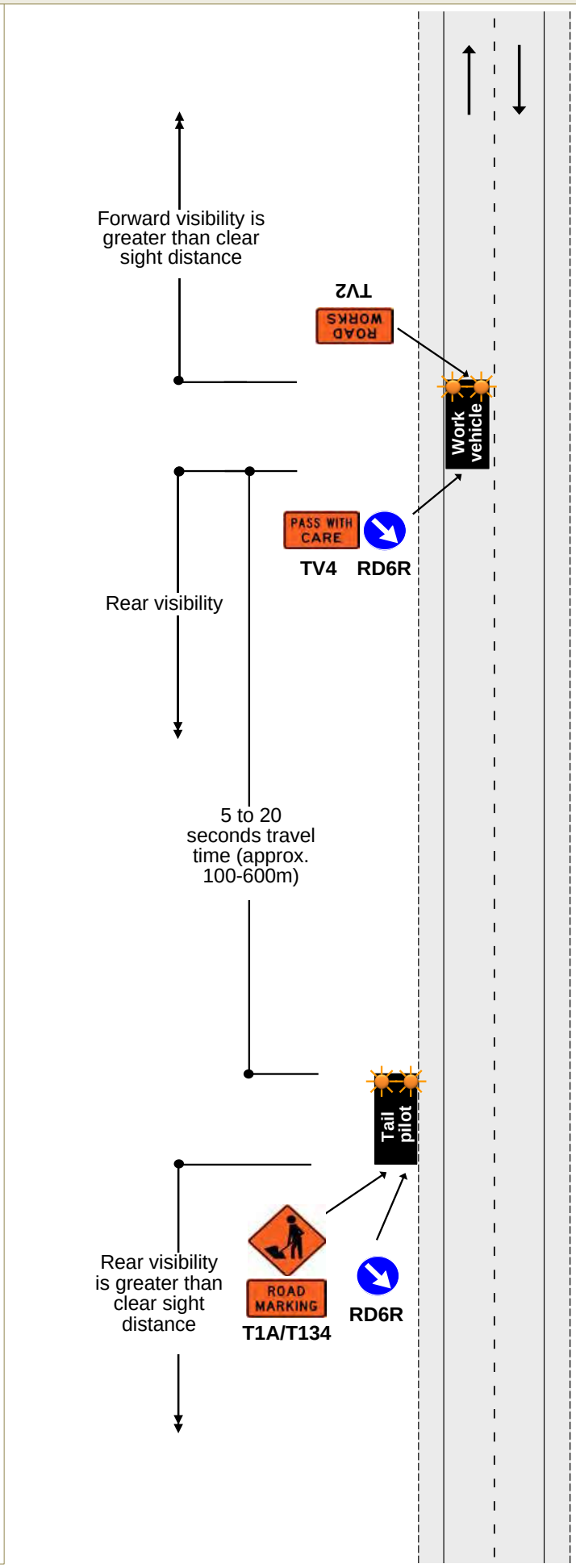
Reference CoPTTM 4th Edition
Section F Drawing F4.4

TWO-WAY TWO-LANE ROAD

WORK VEHICLE IN A LIVE LANE

PERMANENT SPEED OVER 65KM/H - CSD FORWARD VISIBILITY TO WORK VEHICLE

ATF4-5



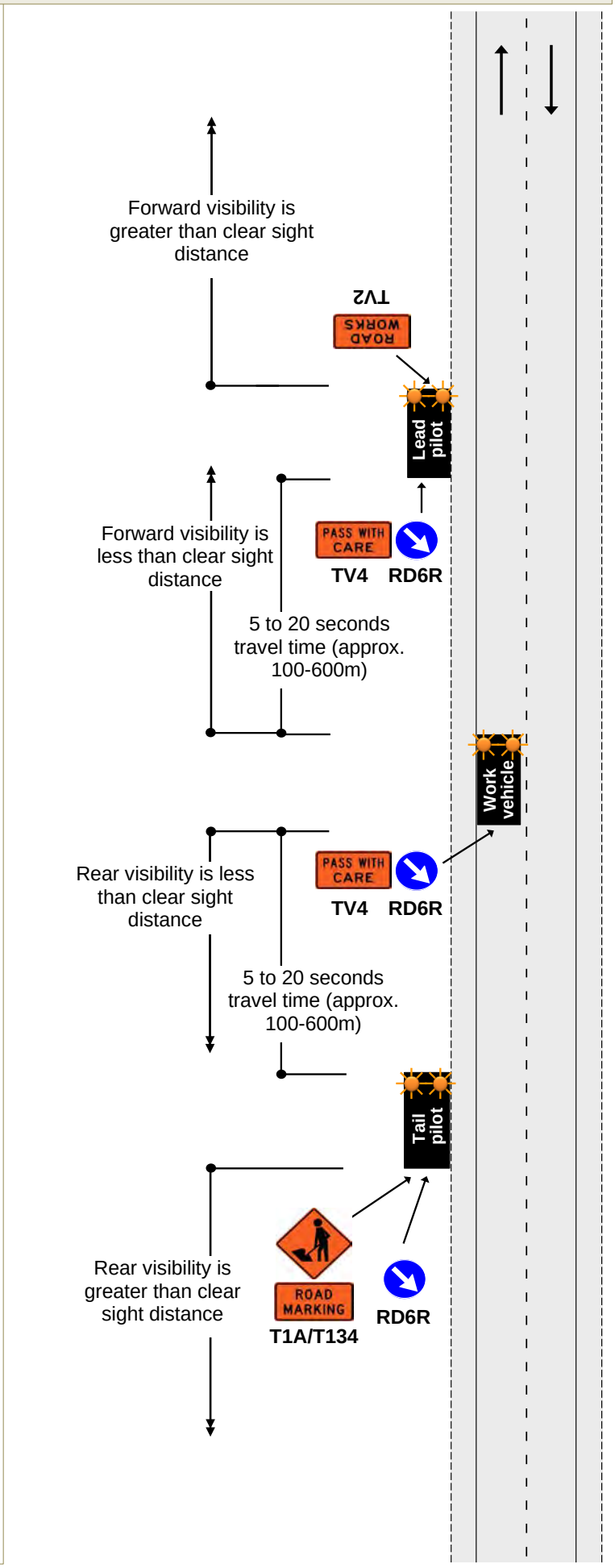
Reference CoPTTM 4th Edition
Section F Drawing F3.5

TWO-WAY TWO-LANE ROAD - LEVEL 1
WORK VEHICLE IN A LIVE LANE
PERMANENT SPEED OVER 65KM/H - NO CSD TO WORK VEHICLE

ATF4-6

Notes

1. Both forward and rear visibility is less than the clear sight distance continuously for 1km to the work vehicle



Reference CoPTTM 4th Edition
Section F Drawing F4.6

TWO-WAY TWO-LANE ROAD - LEVEL 1

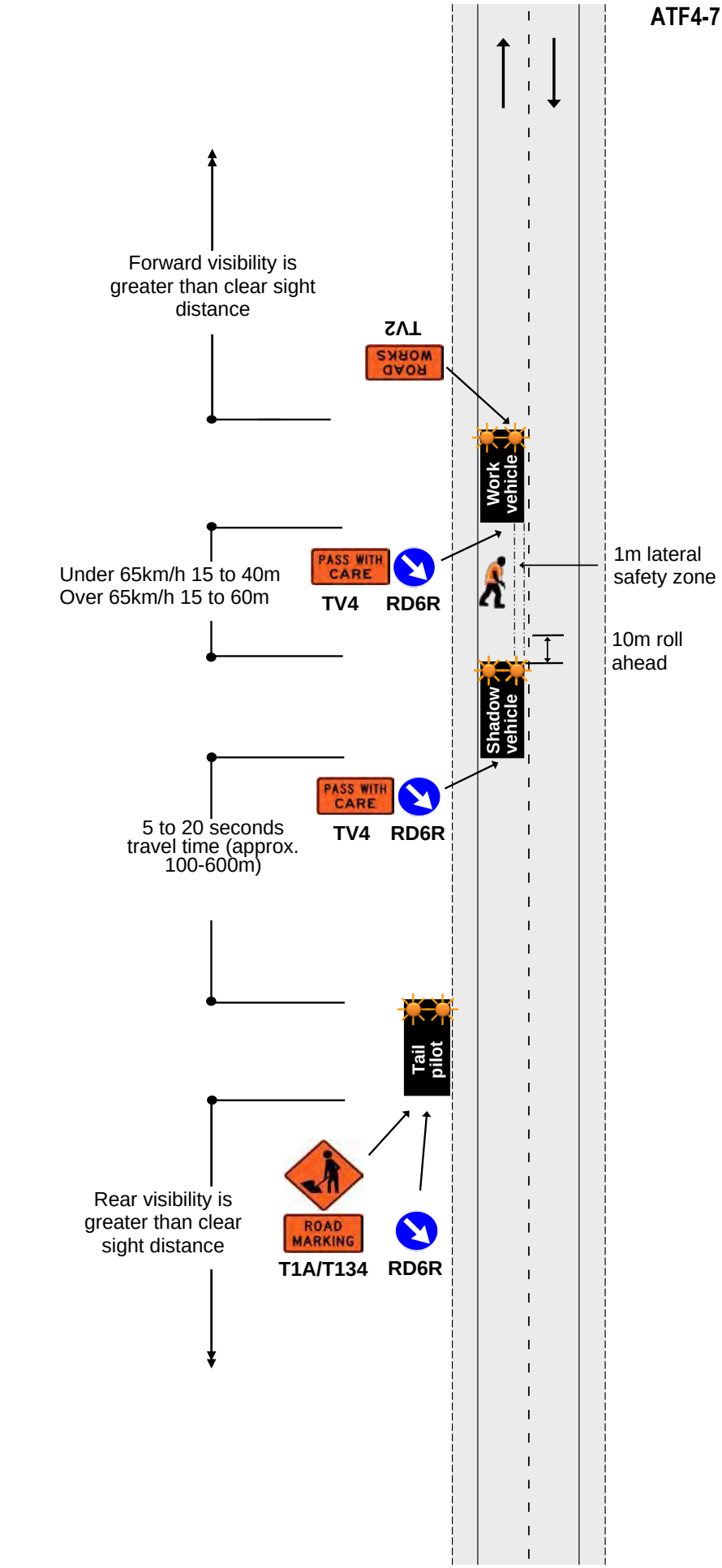
PERSONAL ON THE ROAD

ANY SPEED

ATF4-7

Notes

1. If the permanent speed is under 65km/h, the tail pilot vehicle may be replaced with static signs (T1A with appropriate supplementary plate and TG2)



Reference CoPTTM 4th Edition Section F Drawing F4.7

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD LEVEL 1

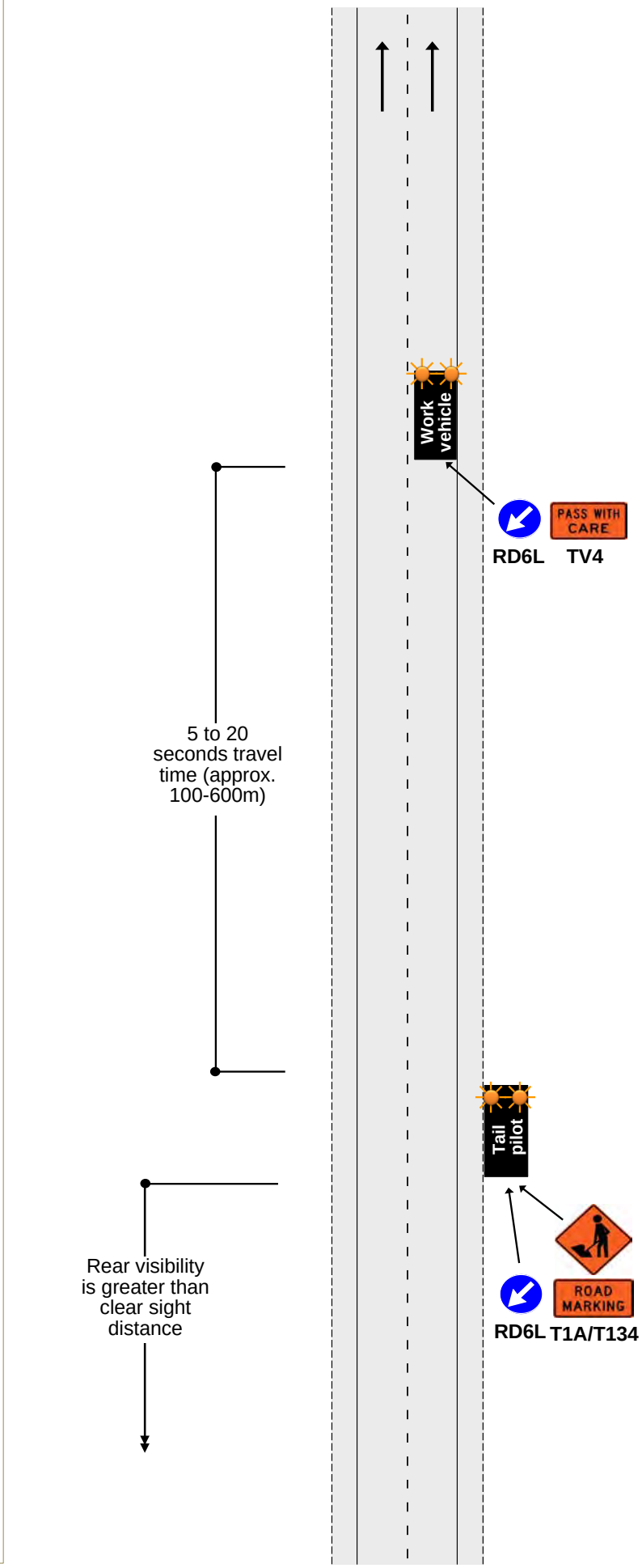
WORK VEHICLE IN THE RIGHT LANE

PERMANENT SPEED OVER 65KM/H

ATF4-8

Notes

1. If the permanent speed is under 65km/h, the tail pilot vehicle may be replaced with static signs (T1A with appropriate supplementary plate and TG2) on both sides of the carriageway



Reference CoPTTM 4th Edition Section F Drawing F4.8

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 1

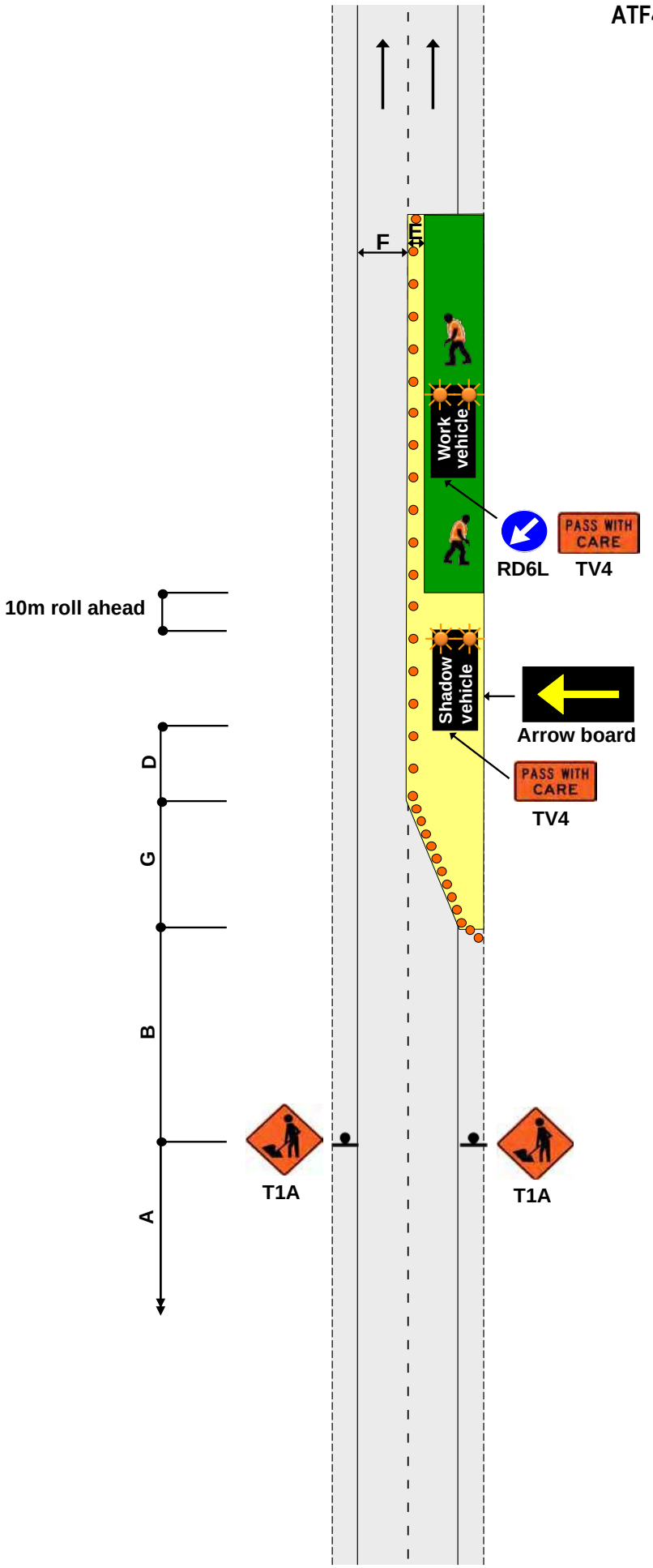
SEMI STATIC CLOSURE - WORK FOR UP TO 1 HOUR

PART OF OR ALL OF A LANE OCCUPIED

ATF4-9

Notes

1. Only use this TMD when activity can be completed within 1 hour (excluding set up and removal of worksite)
2. The T1A advance warning signs may be replaced by a tail pilot vehicle with a T1A sign, appropriate supplementary plate and a RD6R/L
3. If shadow vehicle is fitted with a TMA, the longitudinal safety zone (D) is not required



Reference CoPTTM 4th Edition Section F Drawing F4.9

Auckland Transport

Generic Traffic Management Drawings Section G

LEVEL 2

LEVEL 2 LAYOUT DISTANCES TABLE

Permanent/TSL (km/h)		≤50	60	70	80	90/100
Traffic signs						
A	Sign visibility distance (m)	60/50+	70/60+	80	100	120
B	Warning distance (m)	100/75+	120/90+	140	160	200
C	Sign spacing (m)	50/35+	60/45+	70	80	100
Safety zones						
D	Longitudinal (m)*	15	20	30	45	60
E	Lateral (m)					
	1. Behind cones	1	1	1	1	1
	2. Behind barrier installations	As specified by the Installation Designer				
Tapers						
H	Initial taper length per lane (m)**	90/50+	100/60+	120	150	180
I	Subsequent taper length per lane (m)	50	60	70	80	100
K	Minimum distance between tapers (m)	50	60	70	80	100
Delineation device						
Spacing (centres)	All tapers (m)	2.5	2.5	2.5	2.5	2.5
	Cones parallel to the lane (eg between tapers and alongside the working space) (m)	5	5	10	10	10
	At merge and diverge points for ramps and slip lanes, intersecting road entry and exit points, and worksite access points	2.5m for 10m either side of a change in alignment		2.5m for 20m either side of a change in alignment		

* A longitudinal safety zone is not required when a barrier completely protects the approach end of the worksite.

** Taper length is based on a single lane shift of 3.5m.

\+ The longer distance is the desirable distance, the shorter distance is the minimum distance required. The longer distances must be used wherever possible. The shorter distances may only be used where there are road environment constraints.

Lane widths									
Speed (km/h)		30	40	50	60	70	80	90	100
F	Lane width (m)	2.75	2.75	3.0	3.0	3.25	3.25	3.5	3.5

Except for delineation device spacings, which are maximum values, the distances specified in the above tables are minimum values.

Approach sign distances and spacings, the initial taper(s) and any longitudinal safety zone associated with that taper must be based on the permanent speed limit. The layout distances of the remainder of the worksite, including any subsequent tapers, may be based on the TSL, provided the TSL is applied prior to the first taper.

STATIC OPERATION

FOOTPATH - LEVEL 2

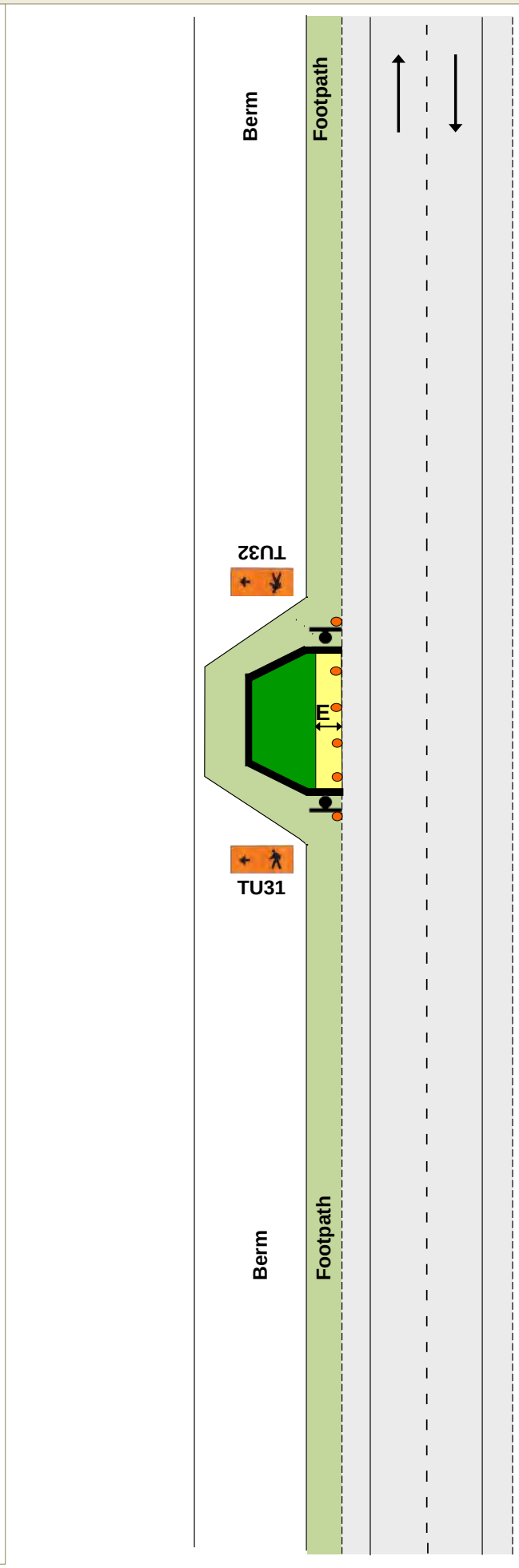
FOOTPATH DIVERTED ONTO THE BERM BEHIND THE WORK SPACE

FIRST PREFERENCE

ATG1-1

Notes

1. Minimum pedestrian footpath widths:
   - Residential/Rural - 0.9m
   - Suburban Centre - 1.2m
   - CBD - 2m
2. Where the length of the temporary footpath exceeds 20m, these widths may have to be increased to allow footpath users to pass
3. Refer to C13.2.3 for temporary footpath surface requirements
4. Use a safety fence to enclose the working space, or at attended worksites, cones connected with cone bars can be used to enclose the working space but only for a short period of time. Refer C13.2.5 and C13.2.6
5. This TMD must be used in conjunction with appropriate TTM for any work carried out on the shoulder or in the live lane



Reference CoPTTM 4th Edition Section G Drawing G1.1

STATIC OPERATION

FOOTPATH - LEVEL 2

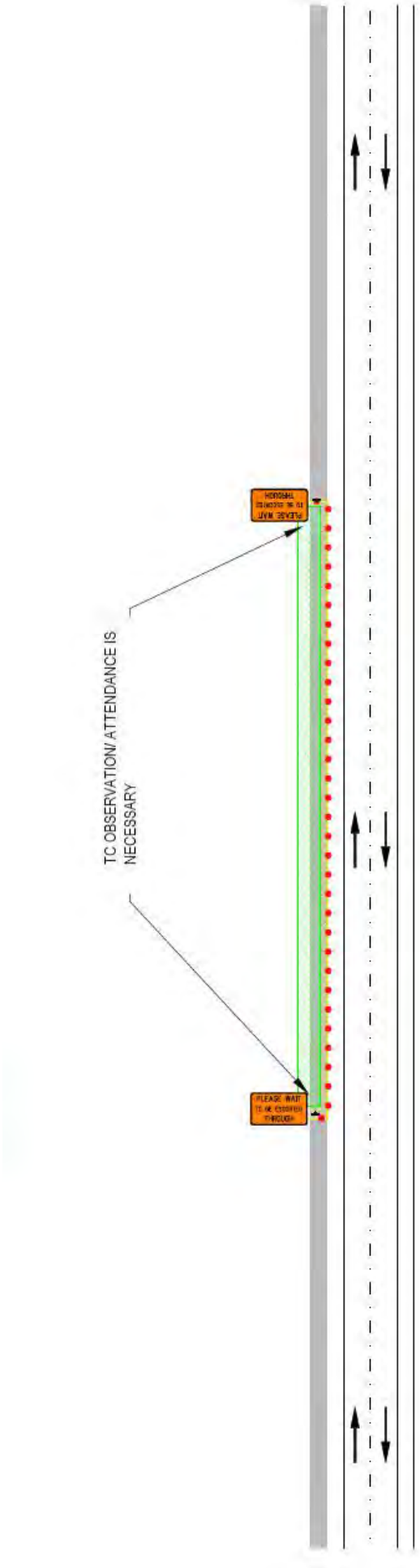
FOOTPATH DIVERTED ONTO THE BERM BEHIND THE WORK SPACE

FIRST PREFERENCE (ALTERNATIVE)

ATG1-1b

Notes

1. For footpath acceptable conditions please refer to CoPTTM Section C13.2.3 for temporary footpath surface requirements
2. This TMD must be used in conjunction with appropriate TTM for any work carried out on the shoulder or in the live lane
3. Footpath to be closed during hazardous periods (i.e. when tree branches are being cut)
4. Cone bars to be used at either end at all times for additional warning and site control

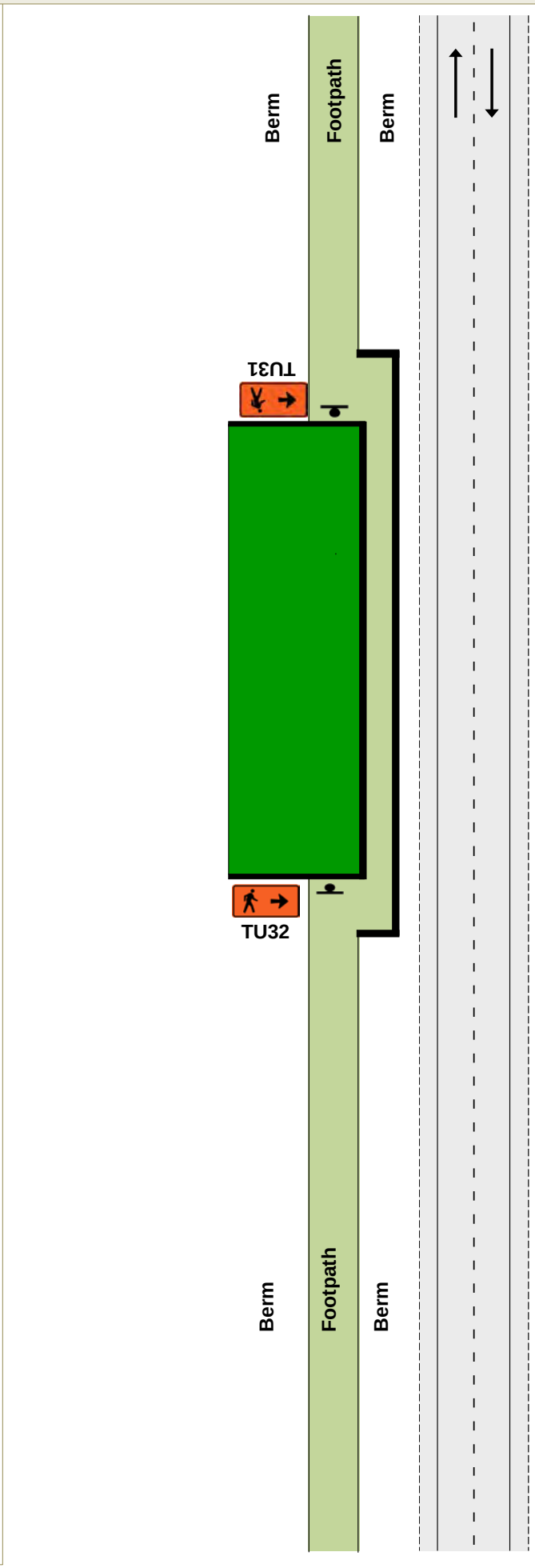


FOOTPATH - LEVEL 2
FOOTPATH DIVERTED ONTO THE BERM BETWEEN THE WORKING SPACE AND CARRIAGEWAY
SECOND PREFRENCE

ATG1-2

Notes

1. Minimum pedestrian footpath widths:
   - Residential/Rural - 0.9m
   - Suburban Centre - 1.2m
   - CBD - 2m
2. Where the length of the temporary footpath exceeds 20m, these widths may have to be increased to allow footpath users to pass
3. Refer to C13.2.3 for temporary footpath surface requirements
4. Use a safety fence to enclose the working space. At **attended** worksites, cones connected with cone bars can be used to enclose the working space. Refer C13.2.5
5. Use barrier or safety fence to delineate the traffic side of the temporary footpath. For temporary barrier requirements. Refer to C18
6. This TMD must be used in conjunction with appropriate TTM for any work carried out on the shoulder or in the live lane



Reference CoPTTM 4th Edition
Section G Drawing G1.2

FOOTPATH - LEVEL 2 (EMERGENCY ONLY)

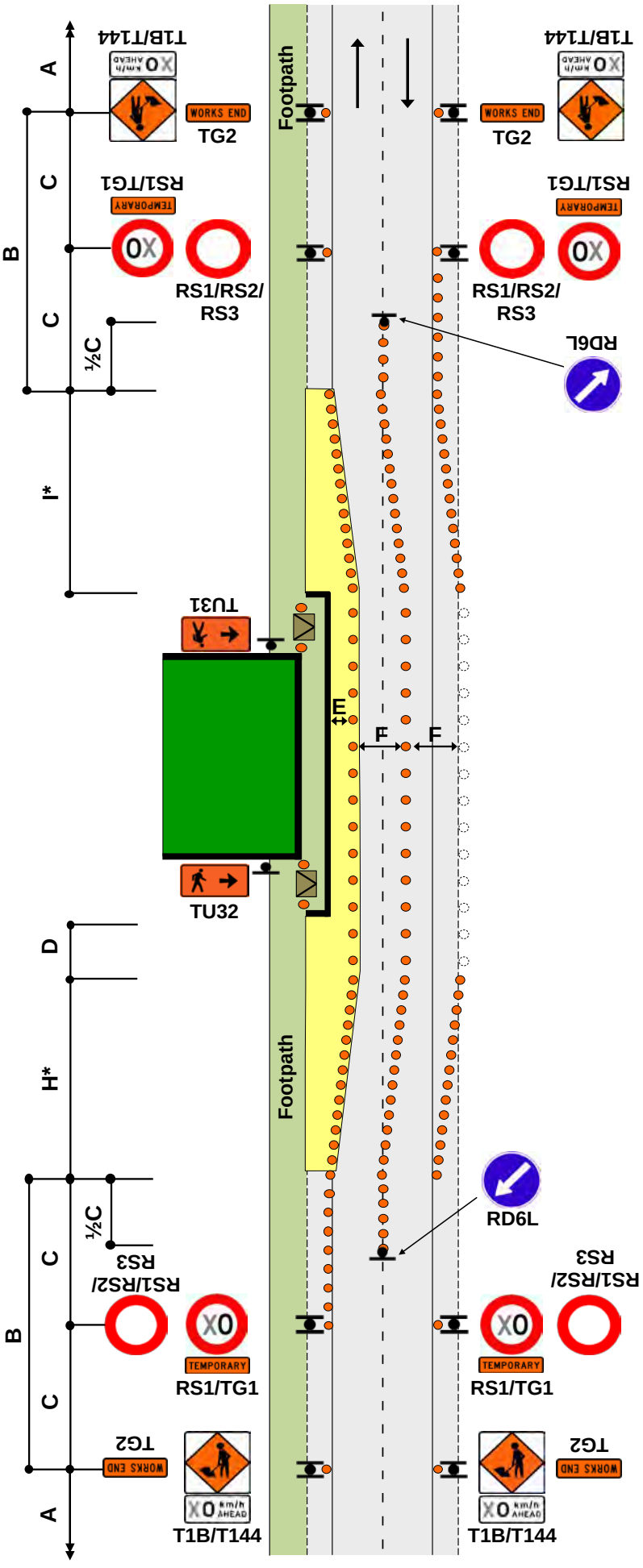
FOOTPATH DIVERTED ONTO THE CARRIAGEWAY

THIRD PREFRENCE

ATG1-3

Notes

1. Minimum pedestrian footpath widths:
   - Residential/Rural - 0.9m
   - Suburban Centre - 1.2m
   - CBD - 2m
2. Where the length of the temporary footpath exceeds 20m, these widths may have to be increased to allow footpath users to pass
3. Use a safety fence to enclose the working space, or at attended worksites, cones connected with cone bars can be used to enclose the working space but only for a short period of time. Refer C13.2.5 and C13.2.6
4. Use temporary barrier or safety fence to delineate the traffic side of the temporary footpath. For temporary barrier requirements refer to C18. For safety fence requirements refer to C13.2.6
5. There must be a lateral safety zone between the traffic side of the temporary footpath and the live lane:
   - **0.5m** for temporary barrier
   - **1m** for safety fence or cone bars
6. Use kerb ramps to assist mobility vehicles, pushchairs, etc.
7. At night, corners of safety fence may be illuminated with flashing amber warning lights
8. This TMD must be used in conjunction with appropriate TTM for any work carried out on the shoulder or in the live lane

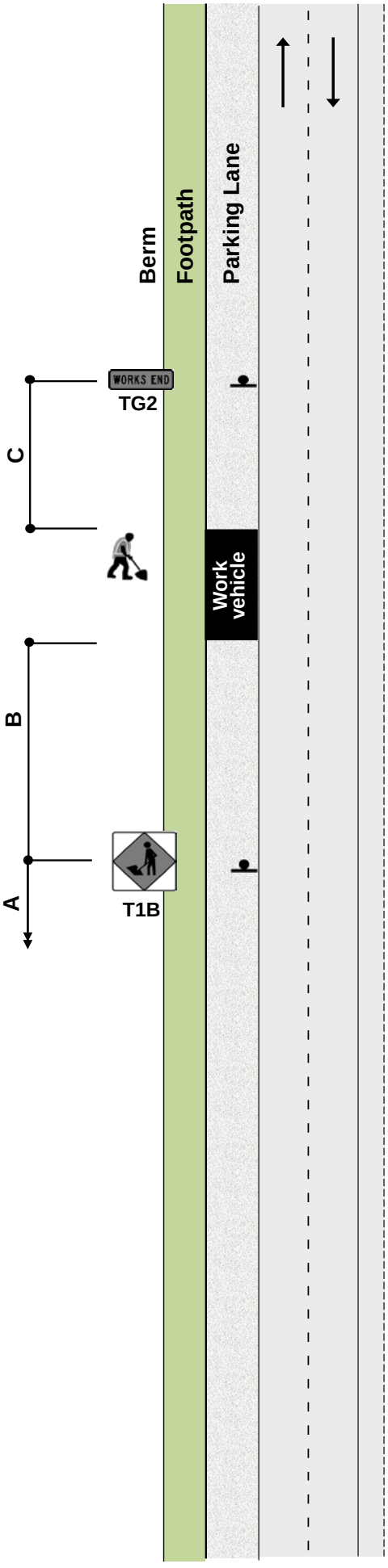


Reference CoPTTM 4th Edition
Section G Drawing G1.3

SHOULDER AND ROADSIDE ACTIVITIES - LEVEL 2
WORK ON BERM AND/OR FOOTPATH
PERMANENT SPEED LESS THAN 65KM/H

ATG1-4

1. Where work is carried out on the berm or footpath and a work vehicle is parked in a legal parallel car park, provided the vehicle is only accessed from the off traffic side, advance warning T1B and WORKS END TG2 are optional
2. The work vehicle can have a registration classification of either Class MA, MB, MC or NA
3. Traffic management must be provided where footpath users or cyclists are affected
4. This layout may only be used during daylight hours
5. Refer to section C13 and C8 for further information



Reference CoPTTM 4th Edition Section G Drawing G1.4

SHOULDER AND ROADSIDE ACTIVITY - LEVEL 2
WORK ON BERM OR FOOTPATH
PERMANENT SPEED LESS THAN 65KM/H

ATG1-5

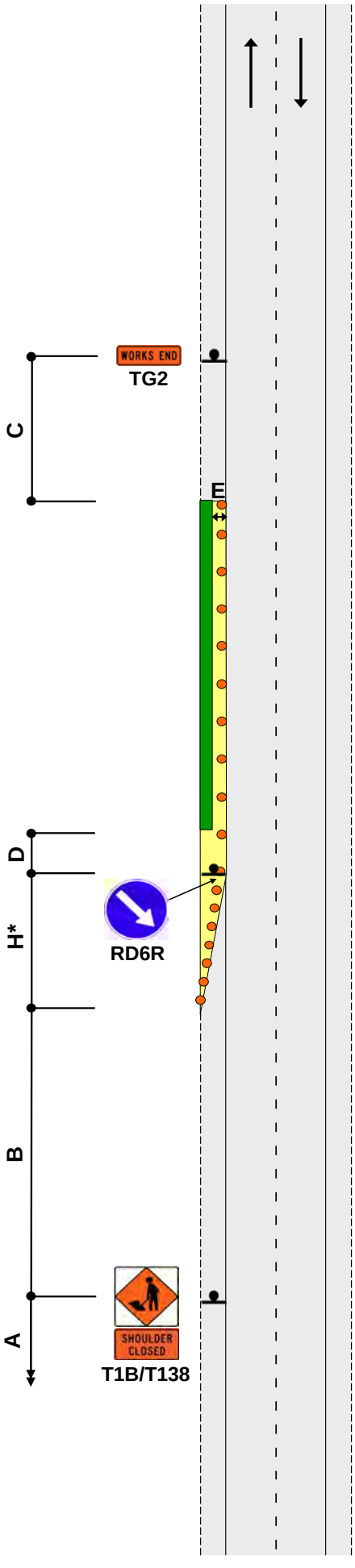
Notes

1. A 10m taper is allowed where shoulder width is less than 2.5m
2. The taper is a minimum of 5 cones at 2.5m centres
3. *For shoulders exceeding 2.5m width, apply the calculation of taper length for lateral shift of less than 3.5m:

$$\frac{W \times H}{3.5}$$

W = Width of lateral shift

H = Taper length in metres from the level 2 layout distance table



Reference CoPTTM 4th Edition Section G Drawing G1.5

CYCLE LANE - LEVEL 2 (EMERGENCY ONLY)

DIVERTED CYCLE LANE - CONES LANE CONTROL

TRAFFIC CROSSING ROAD CENTRE

ATG1-6

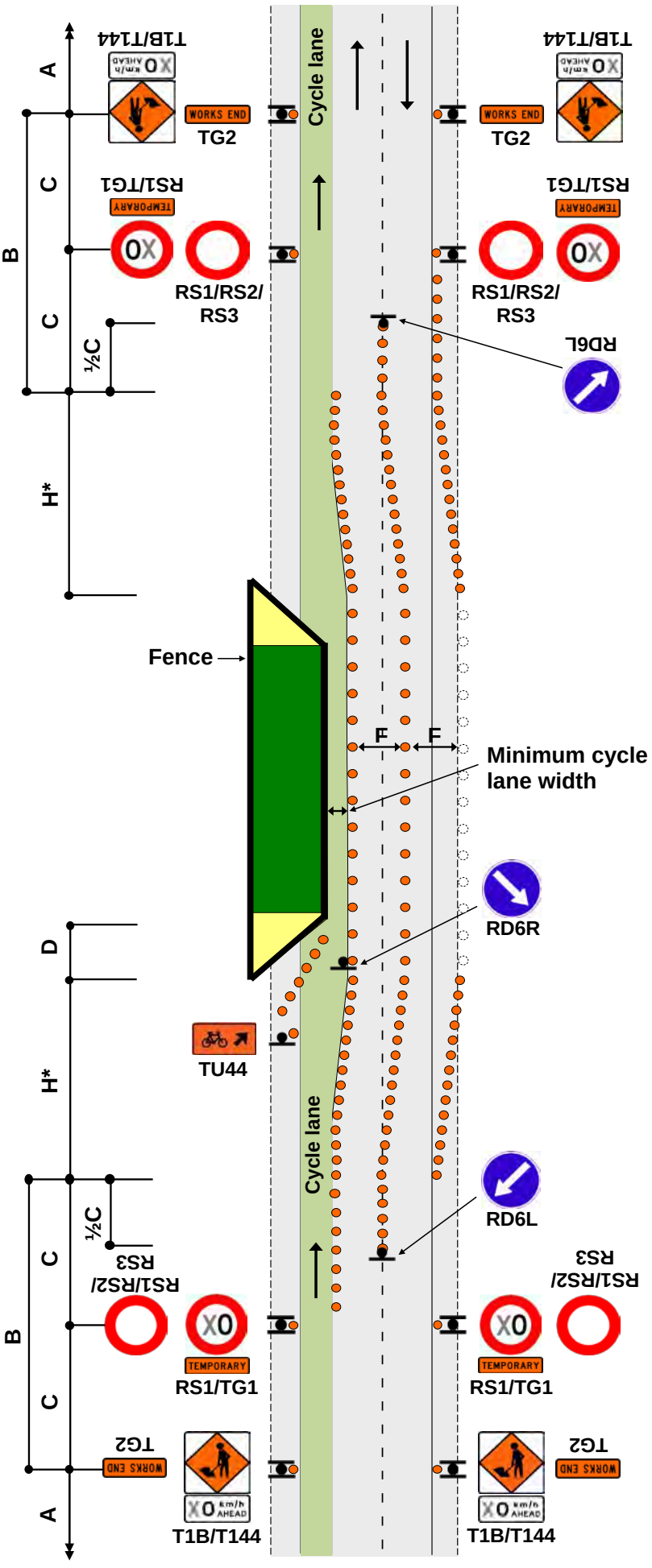
Notes

1. Minimum cycle lane width must be:
   - 1m - 50km/h or less
   - 1.5m - 60km/h or more
2. A minimum cycle lane width of 1.5m is required if the temporary cycle lane is uphill
3. Cones are required on edge of temporary lane opposite closure if road is not well defined
4. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times H}{3.5}$$

   W = Width of lateral shift

   H = Taper length in metres from the level 2 layout distance table
5. Use TSLs if required by TSL decision matrix



Reference CoPTTM 4th Edition
Section G Drawing G1.6

CYCLE LANE - LEVEL 2 (EMERGENCY ONLY)

CYCLE LANE CLOSED

TRAFFIC CROSSING ROAD CENTRE

ATG1-7

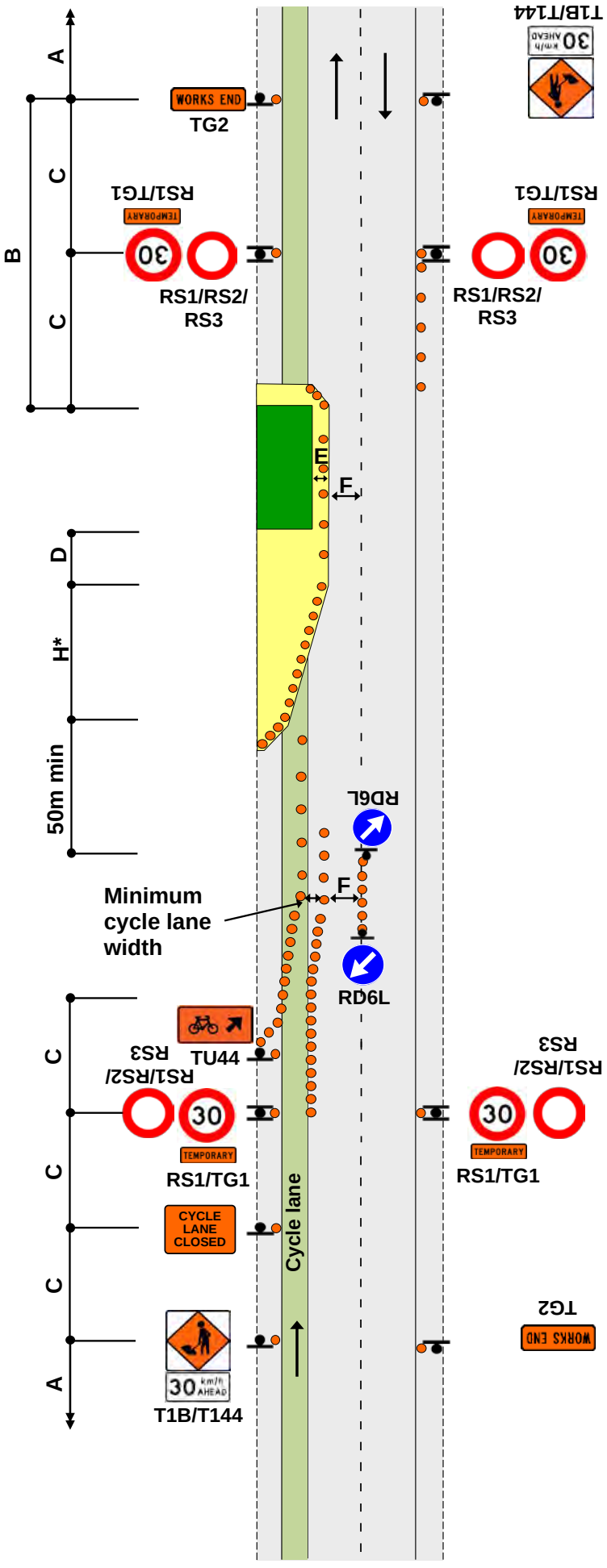
Notes

1. Only use this TMD if there is insufficient width to fit a replacement cycle lane
2. Minimum cycle lane width must be:
   - 1m - 50km/h or less
   - 1.5m - 60km/h or more
3. A minimum cycle lane width of 1.5m is required if the temporary cycle lane is uphill
4. Merge of cycle lane with live lane must be delineated
5. *Calculation of taper length for lateral shift of less than 3.5m is:

   $\frac{W \times H}{3.5}$

   W = Width of lateral shift

   H = Taper length in metres from the level 2 layout distance table



Reference CoPTTM 4th Edition
Section G Drawing G1.7

TWO-WAY TWO-LANE ROAD (EMERGENCY ONLY)

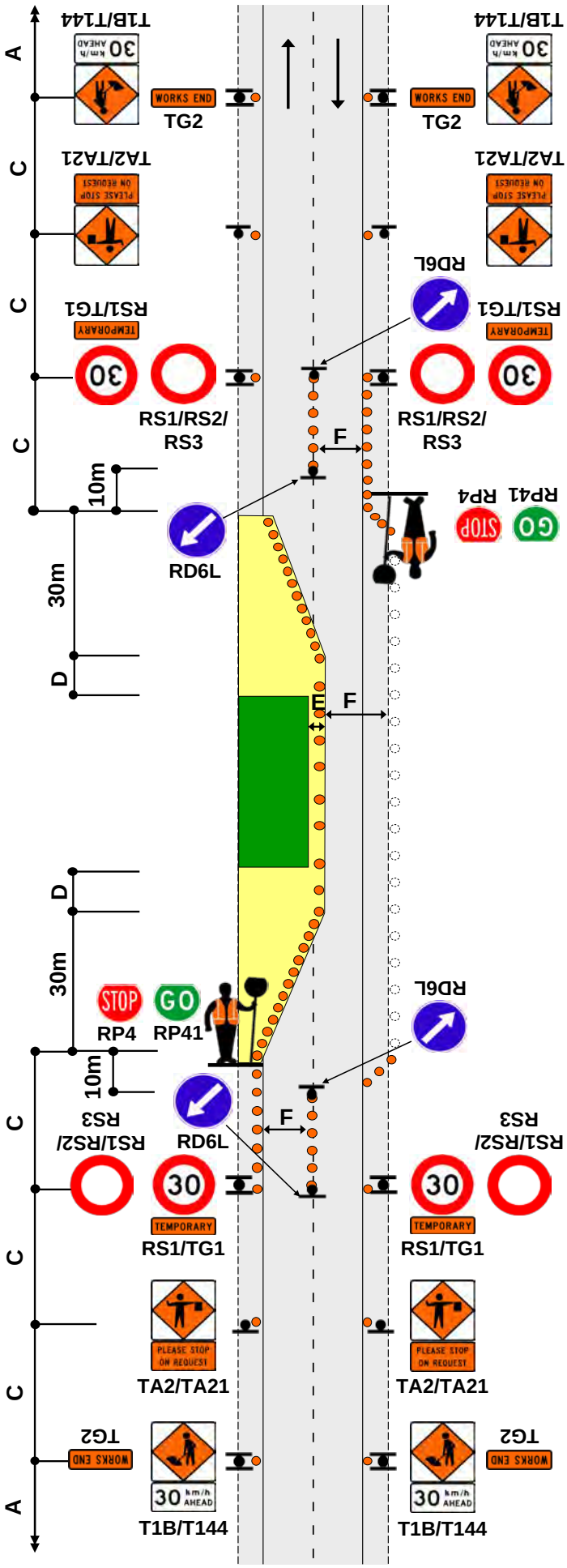
MANUAL TRAFFIC CONTROL (STOP/GO OR STOP/SLOW)

SINGLE LANE ALTERNATING FLOW

ATG1-8

Notes

1. Extend or place extra advance warning signs towards on-coming traffic beyond the end of any expected traffic queues
2. A 30m return taper at the end of the closure is mandatory
3. Cones are required on edge of temporary lane opposite closure if road edge is not well defined
4. Use PN11 no stopping signs, if necessary
5. MTC with RP4/RP41 STOP/GO or RP4/RP42 STOP/SLOW paddle on road shoulder located between 1st and 2nd cone in the cone threshold closest to the working space
6. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h
7. Refer to C10.2.3 for further information



Reference CoPTTM 4th Edition
Section G Drawing G1.8

TWO-WAY TWO-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)

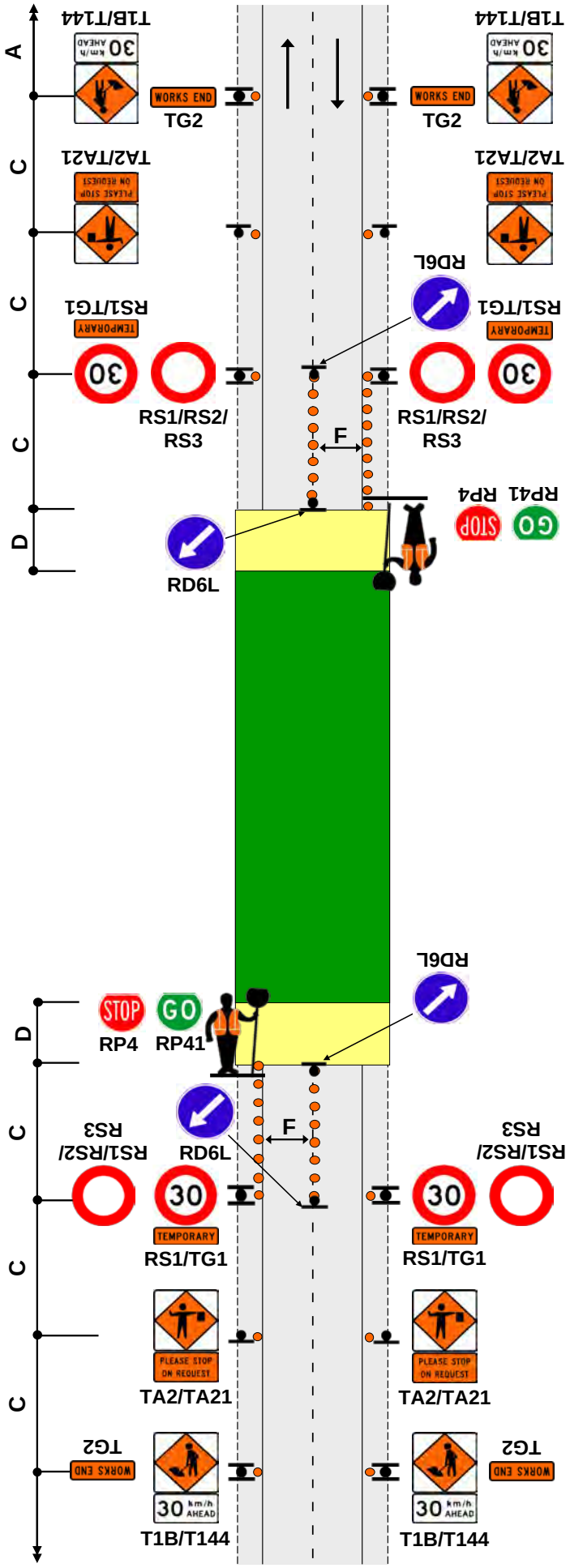
MANUAL TRAFFIC CONTROL (STOP/GO OR STOP/SLOW)

ALL TRAFFIC STOPPED TEMPORARILY

ATG1-9

Notes

1. Closure period not to exceed the limit set or approved by the RCA
2. Extend or place extra advance warning signs towards on-coming traffic beyond any expected traffic queues
3. MTC with RP4/RP41 STOP/GO or RP4/RP42 STOP/SLOW paddle on road shoulder located between 1st and 2nd cone in the cone threshold closest to the working space
4. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h
5. MTCs must show same message to oncoming traffic (eg STOP/STOP or GO/GO)
6. Refer to C10.2.3 for further information
7. Work vehicle movement must cease whenever road users are moving through the site unless there is full delineation separating the closure and the traffic



Reference CoPTTM 4th Edition Section G Drawing G1.9

TWO-WAY TWO-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)

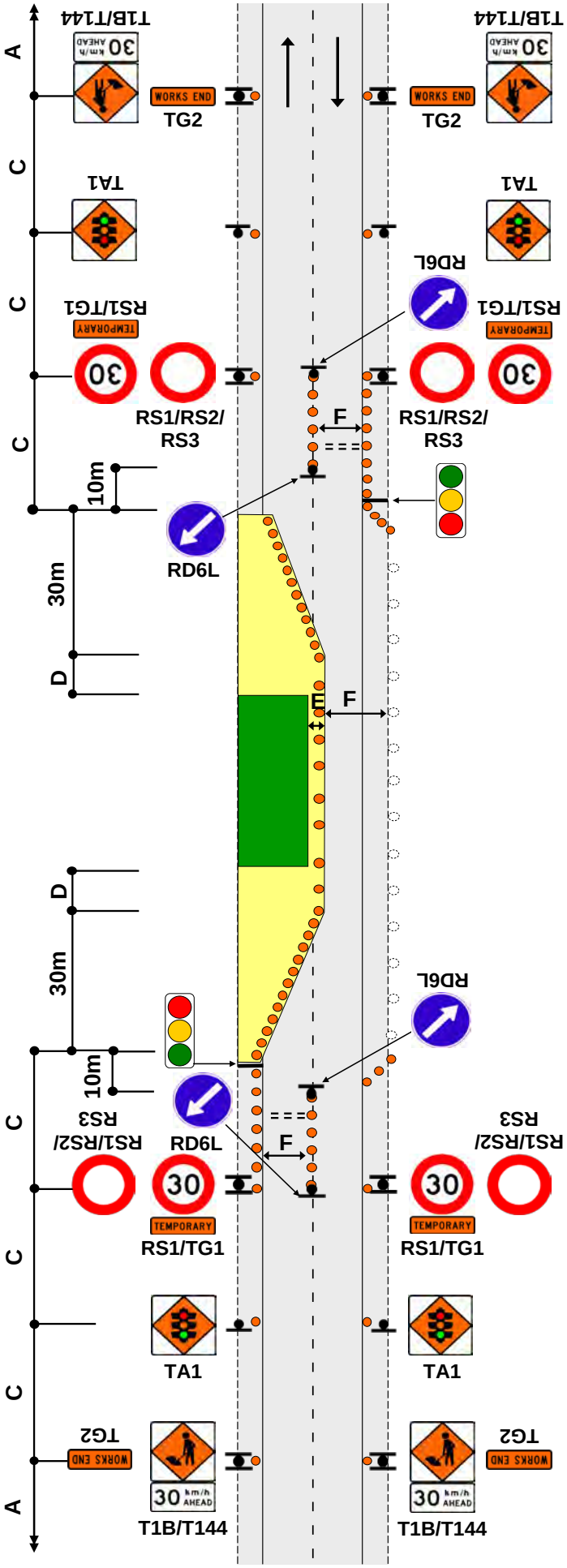
SINGLE-LANE ALTERNATING FLOW

PORTABLE TRAFFIC LIGHTS

ATG1-10

1. Provide details of make and model of portable traffic signals in the TMP
2. Install temporary limit lines (must be able to be removed upon completion) or use RP61/RP62 signs

3. Approved temporary speed humps may also be used
4. A 30m return taper at the end of the closure is mandatory
5. Cones are required on edge of temporary lane opposite closure if road is not well defined
6. The STMS should monitor queues during the worksite operation and extend or place extra advance warning signs towards on-coming traffic beyond the end of any expected traffic queues
7. Use PN11 No Stopping signs, if necessary
8. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h



Reference CoPTTM 4th Edition Section G Drawing G1.10

TWO-WAY TWO-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)

WORK IN THE CENTRE OF ROAD

ATG1-11

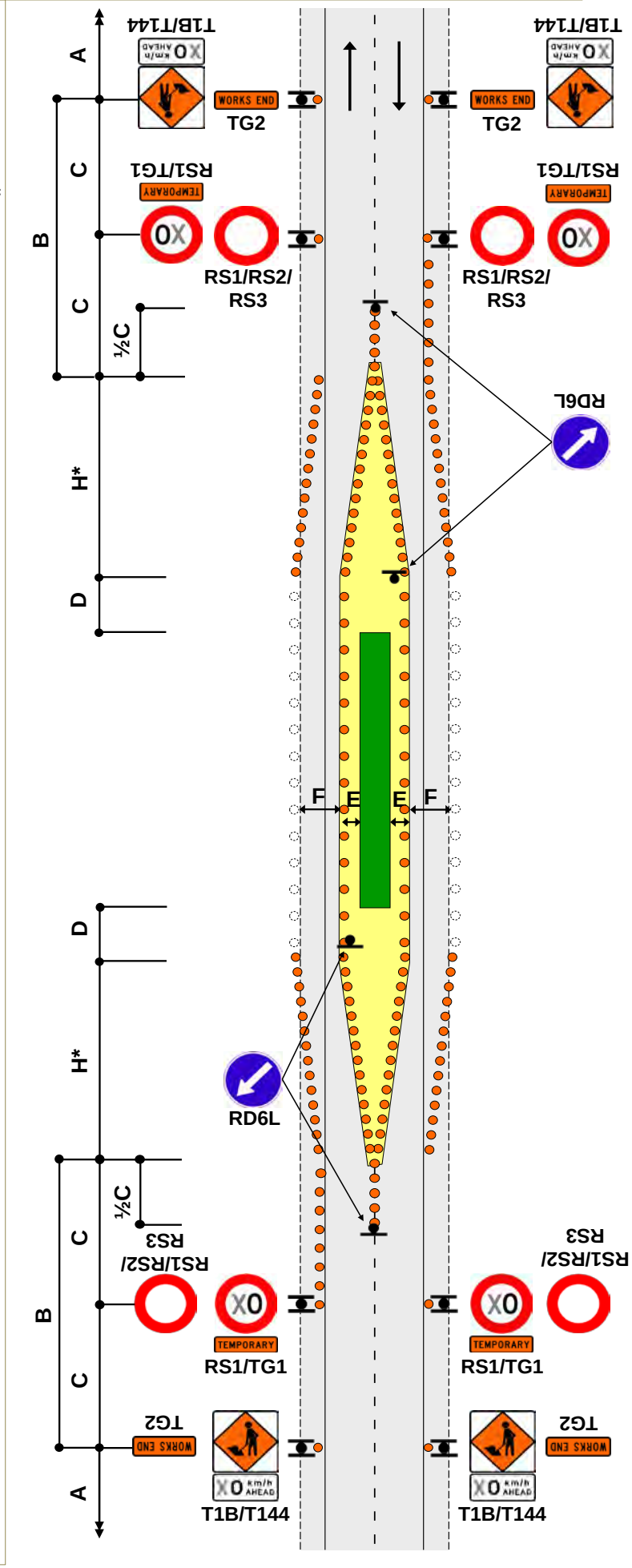
Notes

1. Cones are required on edge of temporary lane opposite closure if road is not well defined
2. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times H}{3.5}$$

   W = Width of lateral shift

   H = Taper length in metres from the level 2 layout distance table
3. Use PN11 No Stopping signs, if necessary
4. Use TSLs if required by TSL decision matrix



Reference CoPTTM 4th Edition
Section G Drawing G1.11

TWO-WAY TWO-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)

OTHER HAZARDS

SHALLOW FLOODING, SLIPS, SLIPPERY SURFACE

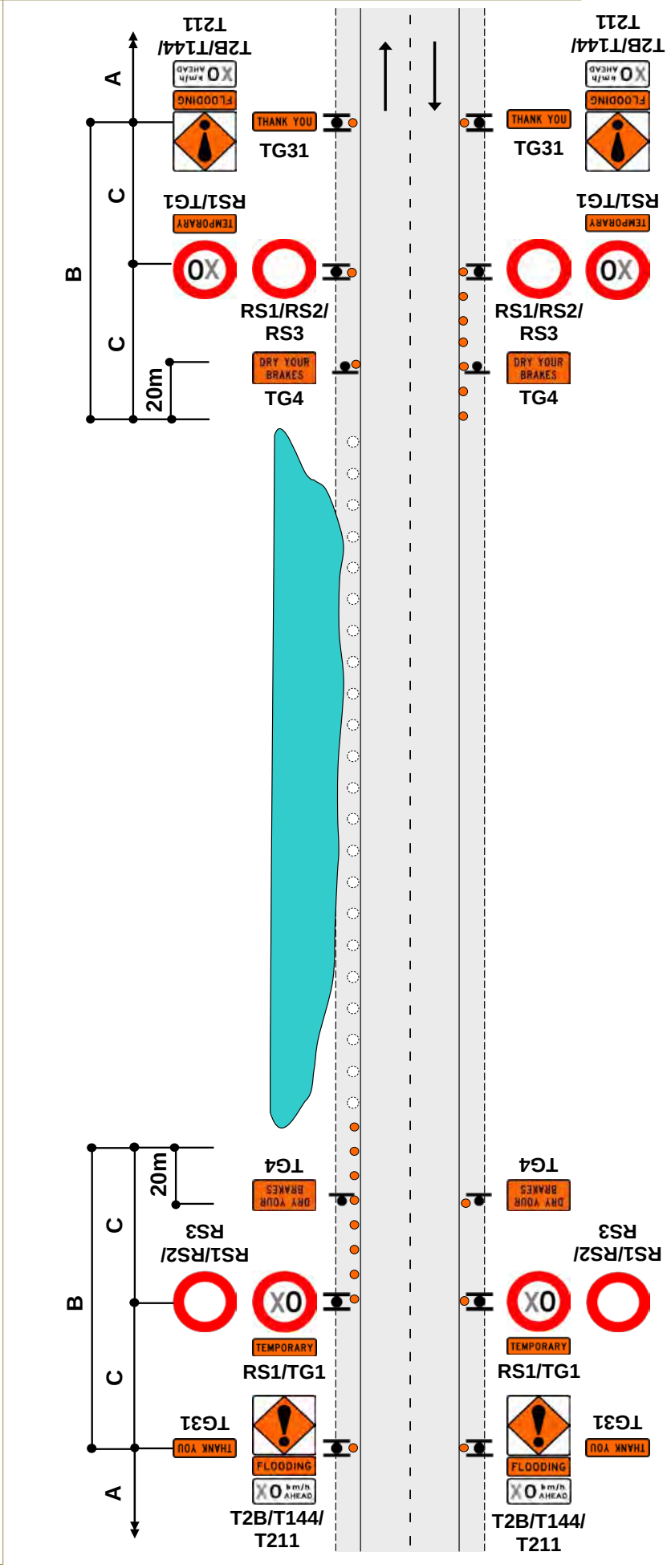
ATG1-14

Notes

1. Shallow flooding that can be safely traversed by vehicles
2. This diagram is for initial response only. Appropriate long term TTM must be installed as soon as practical
3. The advance warning sign may be any one of the following:

T2B		Other hazard
T211		Flooding
TR1L/R		Slips
TR2		Slippery Surface
TR4		Uneven Surface

4. If necessary, erect TG4 DRY YOUR BRAKES sign
5. Delineate hazard if hazard extends onto lane
6. Use TSLs if required by TSL decision matrix



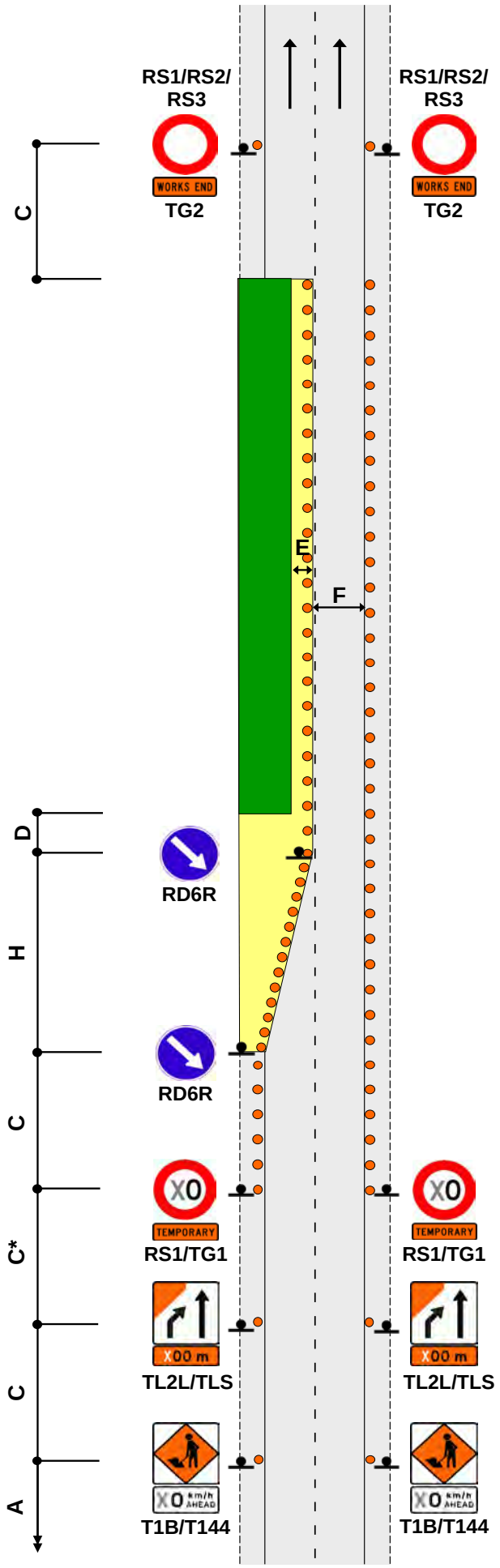
Reference CoPTTM 4th Edition Section G Drawing G1.14

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)
LEFT LANE CLOSURE

ATG1-17

Notes

1. C* - the TL2L/TLS signs are to be either 100m or 200m in advance of the start of the taper
2. Cones are required from TSL to taper (or hazard area where no taper is installed) unless the edgeline is well defined
3. Use TSLs if required by TSL decision matrix



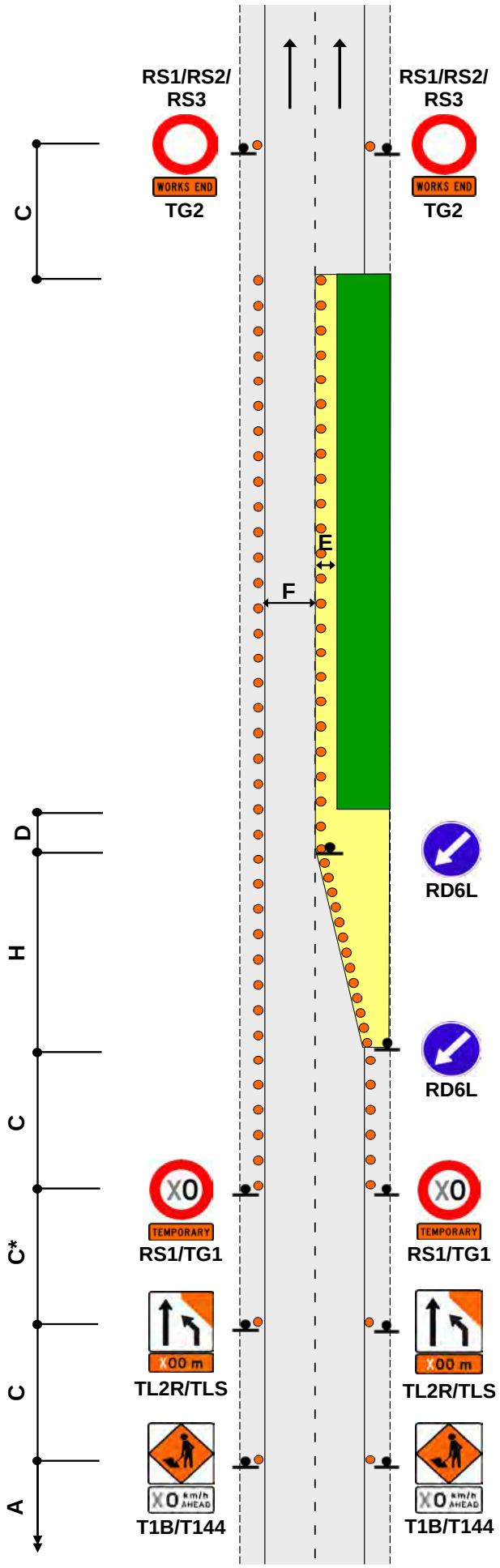
Reference CoPTTM 4th Edition
Section G Drawing G1.17

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)
RIGHT LANE CLOSURE

ATG1-18

Notes

1. C* - the TL2R/TLS signs are to be either 100m or 200m in advance of the start of the taper
2. Cones are required from TSL to taper (or hazard area where no taper is installed) unless the edgeline is well defined
3. Use TSLs if required by TSL decision matrix



Refrence CoPTTM 4th Edition
Section G Drawing G1.18

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)
RIGHT LANE CLOSURE
ONE-LANE TEMPORARY DIVERSION

ATG1-19

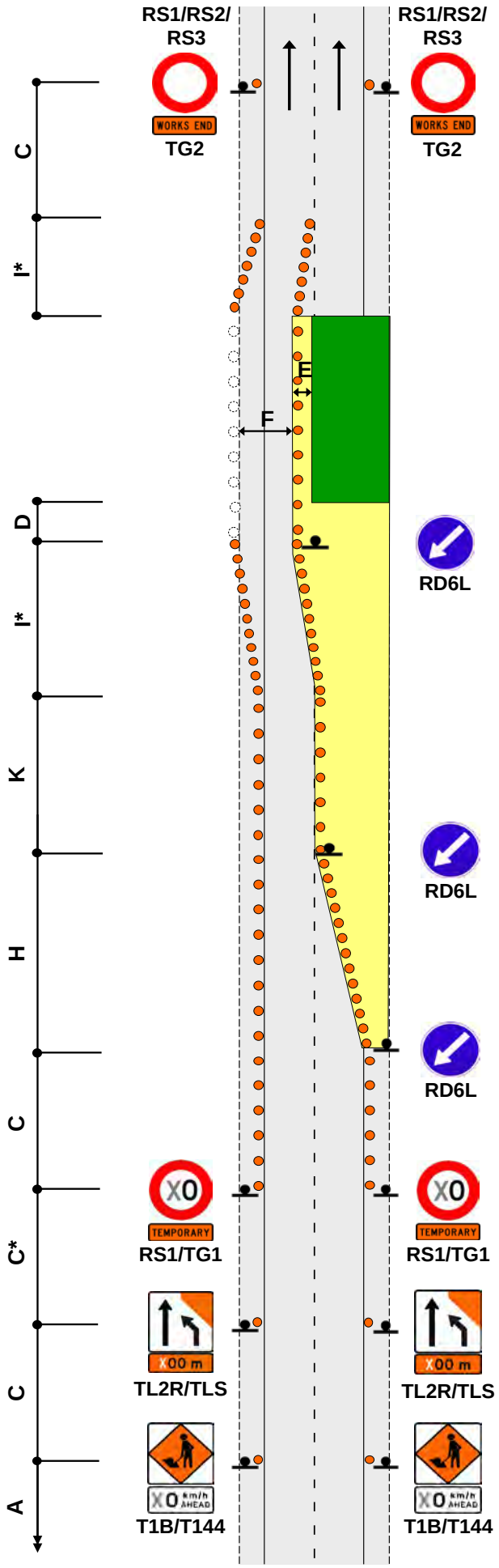
Notes

1. The longitudinal safety zone is based on the temporary speed limit
2. C* - the TL2R/TLS signs are to be either 100m or 200m in advance of the start of the taper
3. Cones are required from TSL to taper (or hazard area where no taper is installed) unless the edgeline is well defined
4. *Calculation of taper length for lateral shift of less than 3.5m is:

   $\frac{W \times I}{3.5}$

   W = Width of lateral shift

   I = Taper length in metres from the level 2 layout distance table
5. Cones are required on edge of temporary lane opposite closure if road edge is not well defined
6. Use TSLs if required by TSL decision matrix



Reference CoPTTM 4th Edition
Section G Drawing G1.19

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)
ONE LANE CLOSURE
TWO-LANE TEMPORARY DIVERSION

ATG1-20

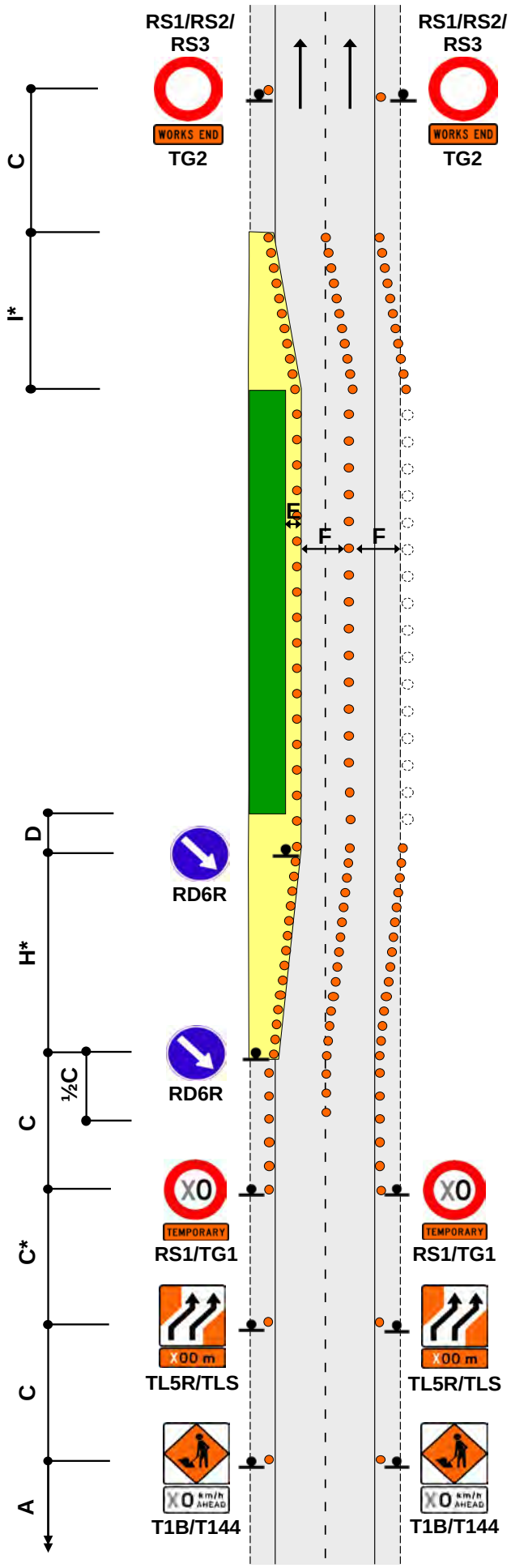
Notes

1. C* - the TL5R/TLS signs are to be either 100m or 200m in advance of the start of the taper
2. Cones are required from TSL to taper (or hazard area where no taper is installed) unless the edgeline is well defined
3. *Calculation of taper length for lateral shift of less than 3.5m is:

   $\frac{W \times (H \text{ or } I)}{3.5}$

   W = Width of lateral shift

   H or I = Taper length in metres from the level 2 layout distance table
4. Cones are required on edge of temporary lane opposite closure if road edge is not well defined
5. Use TSLs if required by TSL decision matrix



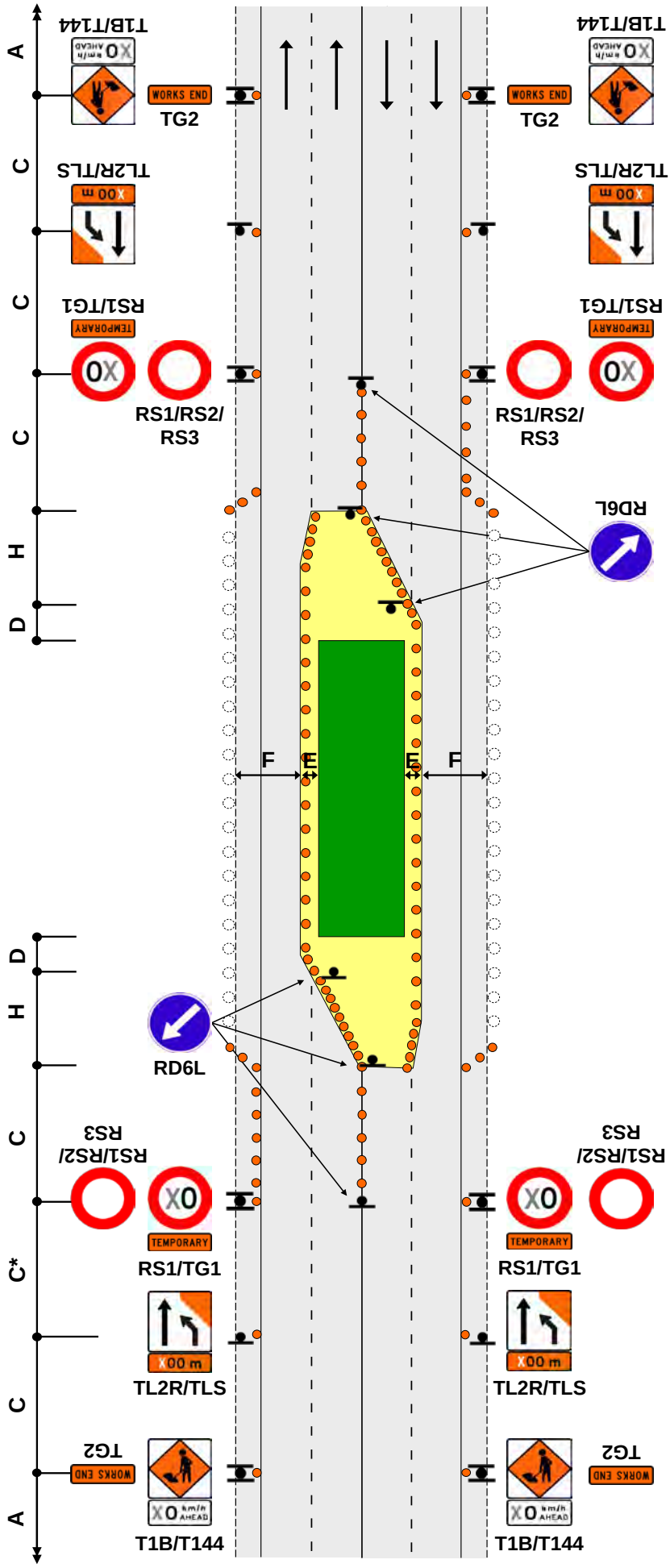
Reference CoPTTM 4th Edition
Section G Drawing G1.20

TWO-WAY FOUR-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)
CENTRE-LANE CLOSURE

ATG1-23

Notes

1. C* - the TL3L/TLS signs are to be either 100m or 200m in advance of the start of the taper
2. Cones are required from TSL to taper (or hazard area where no taper is installed) unless the edgeline is well defined
3. Cones are required on edge of temporary lane opposite closure if road is not well defined
4. Use PN11 no stopping signs, if necessary
5. Use TSLs if required by TSL decision matrix
6. This drawing must not be used as a TMP diagram



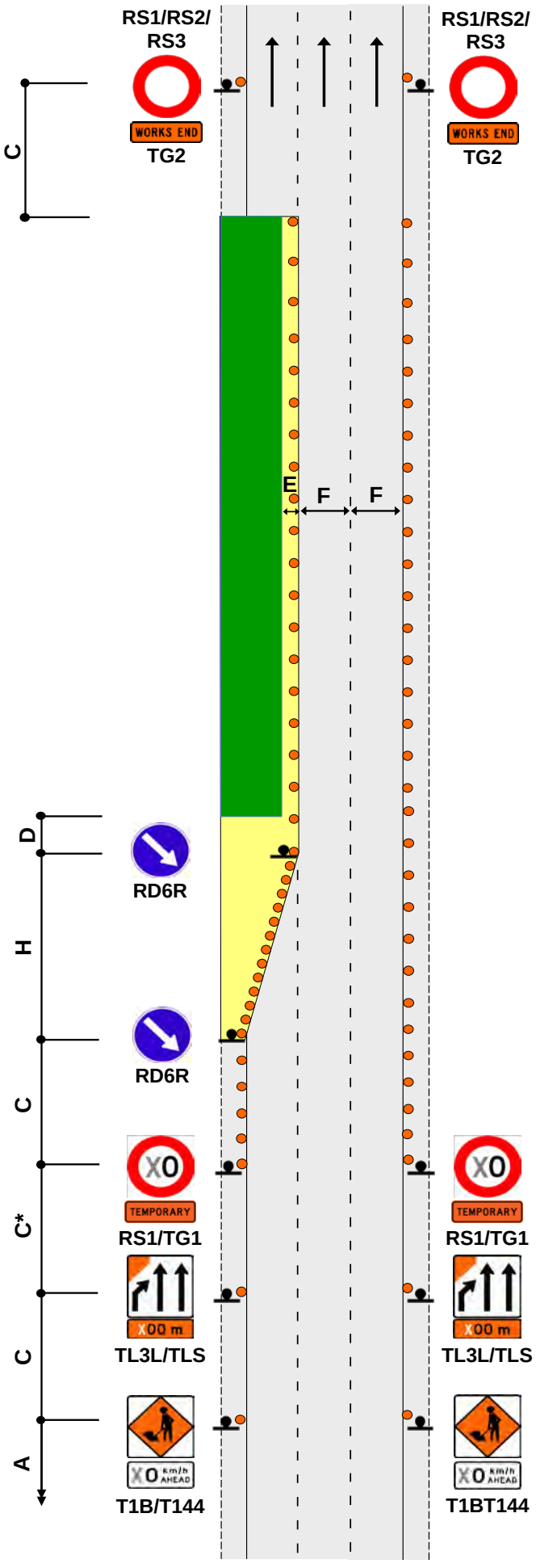
Refrence CoPTTM 4th Edition
Section G Drawing G1.23

ONE-WAY THREE-LANE DIVIDED OR THREE-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)
ONE-LANE CLOSURE
LEFT LANE

ATG1-24

Notes

1. C* - the TL3L/TLS signs are to be either 100m or 200m in advance of the start of the taper
2. Cones are required from TSL to taper (or hazard area where no taper is installed) unless the edgeline is well defined
3. Full end taper may be added if required
4. Use TSLs if required by TSL decision matrix



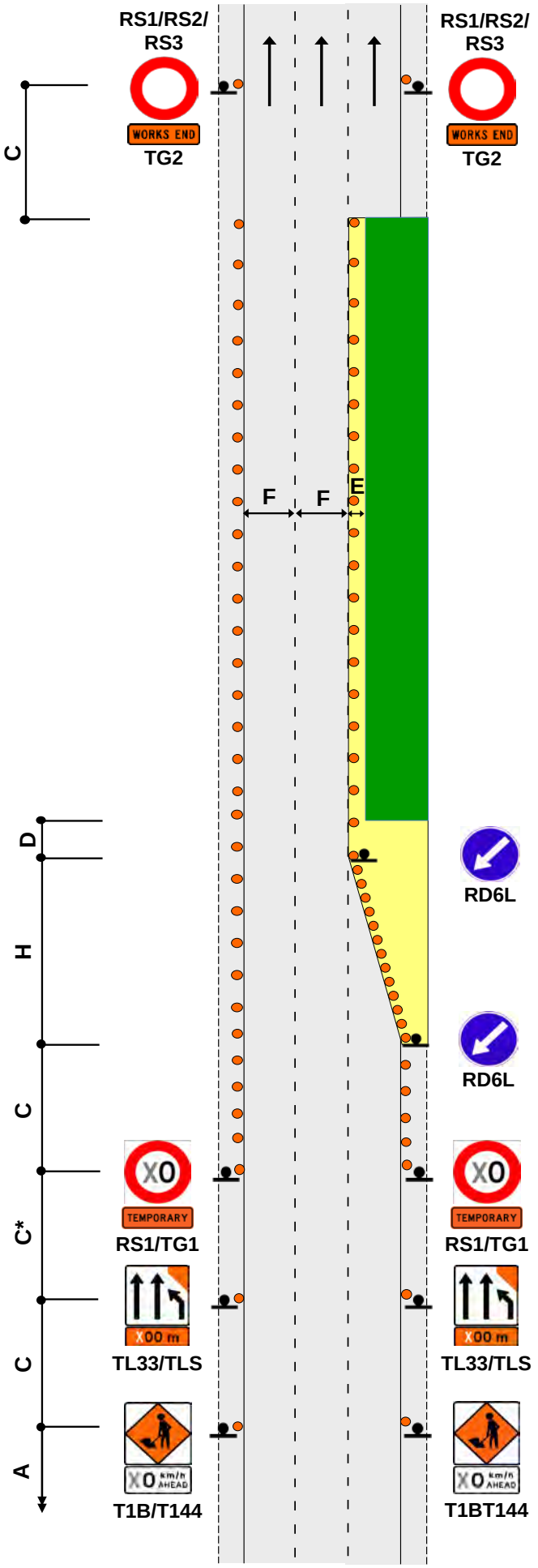
Reference CoPTTM 4th Edition Section G Drawing G1.24

ONE-WAY THREE-LANE DIVIDED OR THREE-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)
ONE-LANE CLOSURE
RIGHT LANE

ATG1-25

Notes

1. C* - the TL33/TLS signs are to be either 100m or 200m in advance of the start of the taper
2. Cones are required from TSL to taper (or hazard area where no taper is installed) unless the edgeline is well defined
3. Full end taper may be added if required
4. Use TSLs if required by TSL decision matrix



Reference CoPTTM 4th Edition
Section G Drawing G1.25

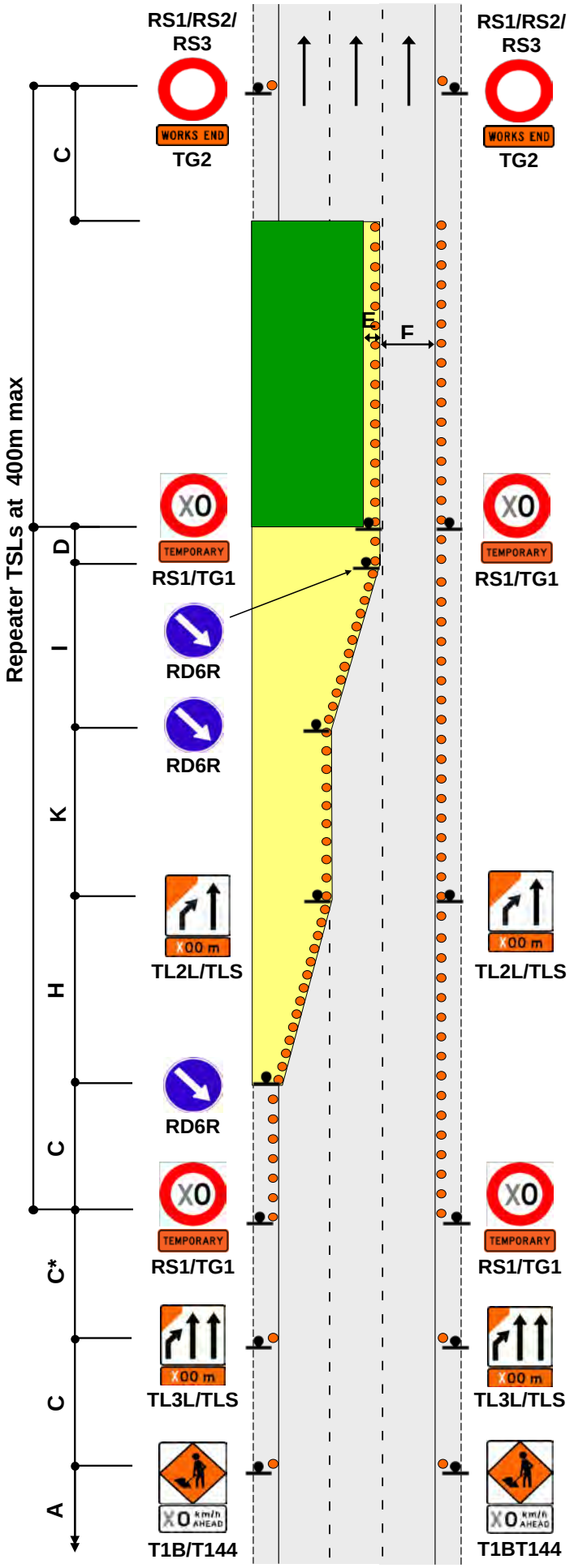
ONE-WAY THREE-LANE DIVIDED OR THREE-LANE ROAD - LEVEL 2 (EMERGENCY ONLY) TWO LANE CLOSURE

LEFT AND CENTRE LANES

ATG1-26

Notes

1. C* - the TL3L/TLS signs are to be either 100m or 200m in advance of the start of the taper
2. Distance K must be extended to match the distance shown on any supplementary plate used with the TL2L sign
3. Cones are required from TSL to taper (or hazard area where no taper is installed) unless the edgeline is well defined
4. Full end taper may be added if required
5. Use TSLs if required by TSL decision matrix
6. TSLs to be repeated at 400m maximum centres



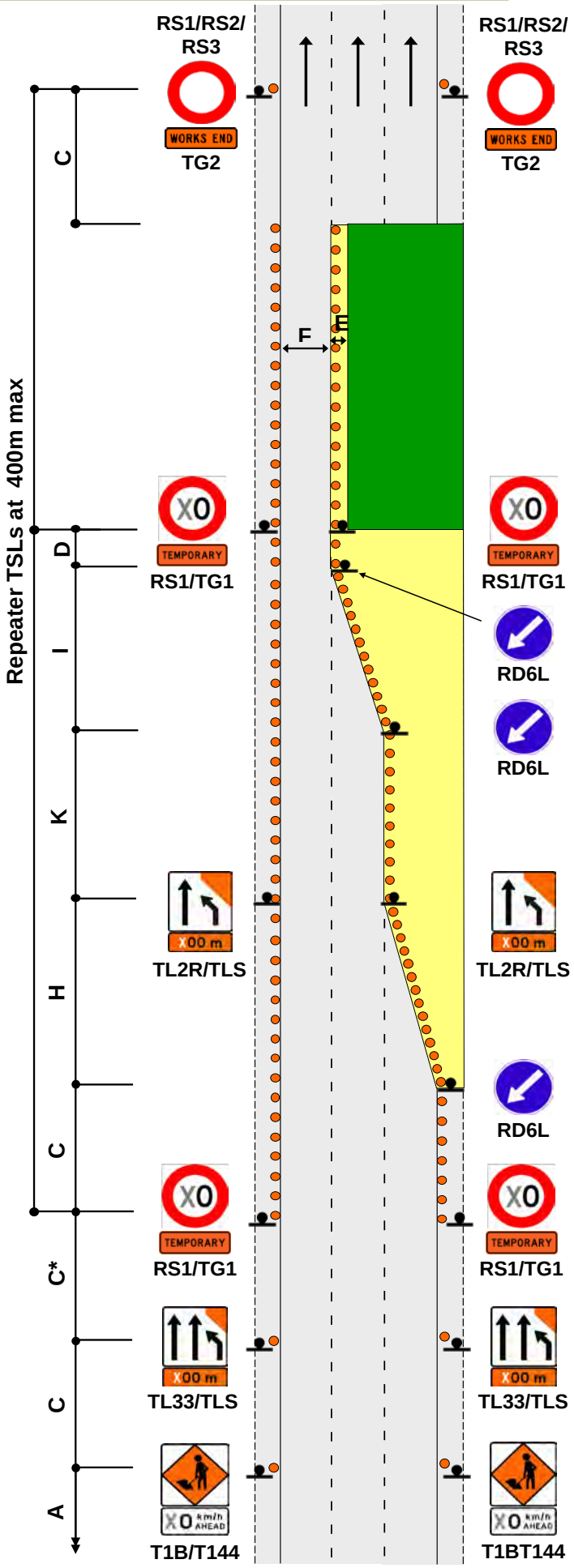
Reference CoPTTM 4th Edition Section G Drawing G1.26

ONE-WAY THREE-LANE DIVIDED OR THREE-LANE ROAD - LEVEL 2 (EMERGENCY ONLY)
TWO LANE CLOSURE
RIGHT AND CENTRE LANES

ATG1-27

Notes

1. C* - the TL33/TLS signs are to be either 100m or 200m in advance of the start of the taper
2. Distance K must be extended to match the distance shown on any supplementary plate used with the TL2L sign
3. Cones are required from TSL to taper (or hazard area where no taper is installed) unless the edgeline is well defined
4. Full end taper may be added if required
5. Use TSLs if required by TSL decision matrix
6. TSLs to be repeated at 400m maximum centres



Reference CoPTTM 4th Edition
Section G Drawing G1.27

TWO-WAY TWO-LANE ROAD - LEVEL 2

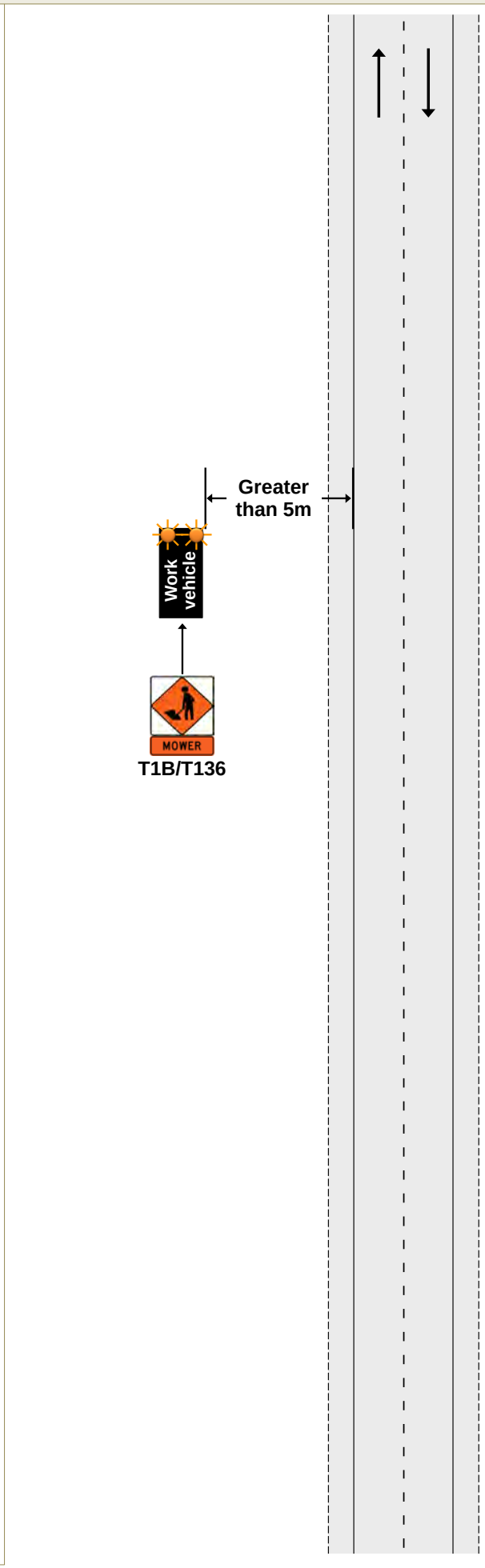
WORK IS MORE THAN FIVE (5) METERS FROM THE EDGE OF THE EDGE LINE

ANY SPEED

ATG2-1

Notes

1. This layout will also apply to a multiple laned two-way road without a permanent median barrier T



Reference CoPTTM 4th Edition Section G Drawing G2.1

TWO-WAY TWO-LANE ROAD - LEVEL 2

WORK VEHICLE BETWEEN TWO (2) AND FIVE (5) METERS FROM THE EDGELINE

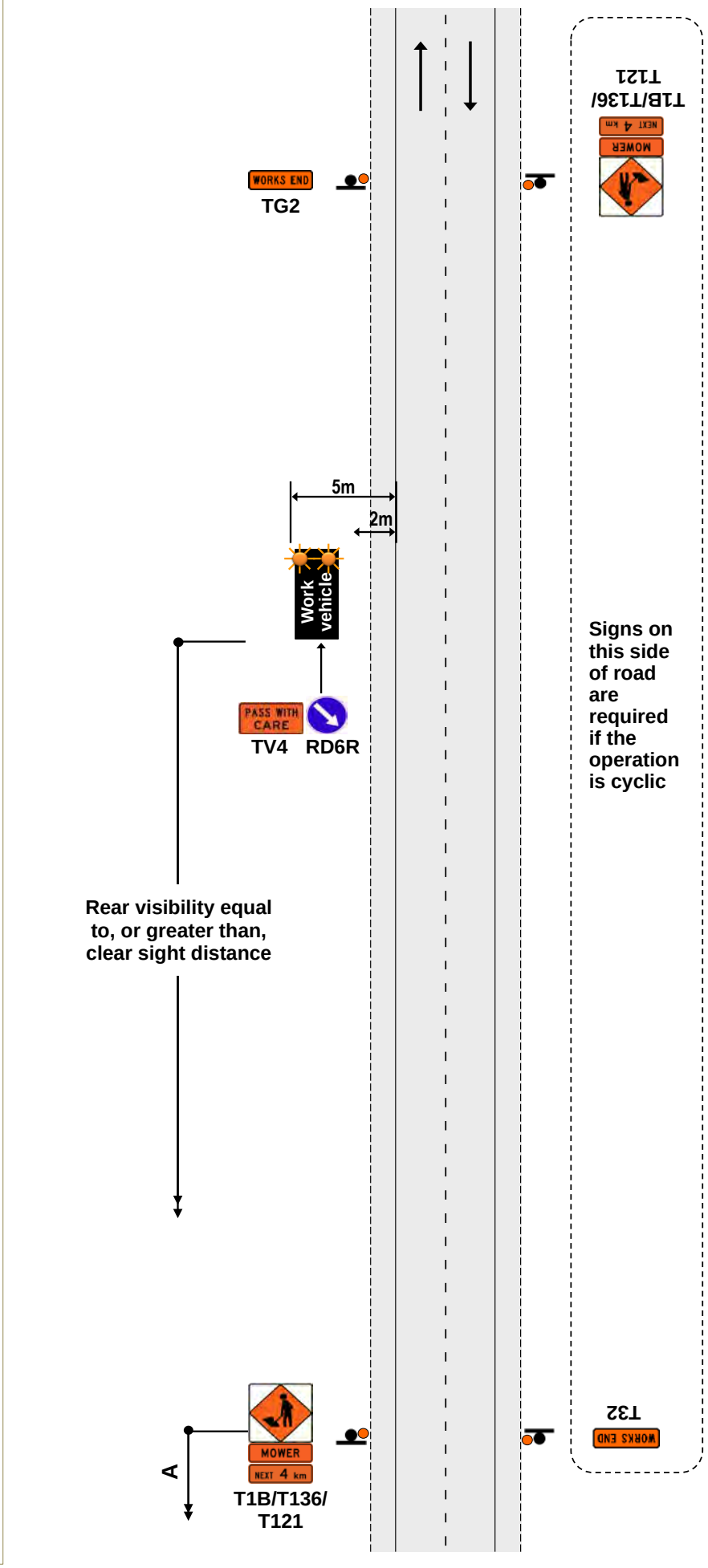
ATG2-2

Notes

1. This layout may also be used on multiple laned roads
2. Rear visibility is more than clear sight distance or rear visibility is less than clear sight distance with the permanent speed of less than 65km/h
3. The T1B sign and supplementary plates must be repeated throughout the length of the worksite at intervals no greater than 4km
4. The static signs may be replaced by an AWVMS if used as a tail pilot

For non-state highways

5. The static signs may be replaced by a tail pilot vehicle with T1B and RD6R/L signs



Reference CoPTTM 4th Edition Section G Drawing G2.2

TWO-WAY TWO-LANE ROAD - LEVEL 2

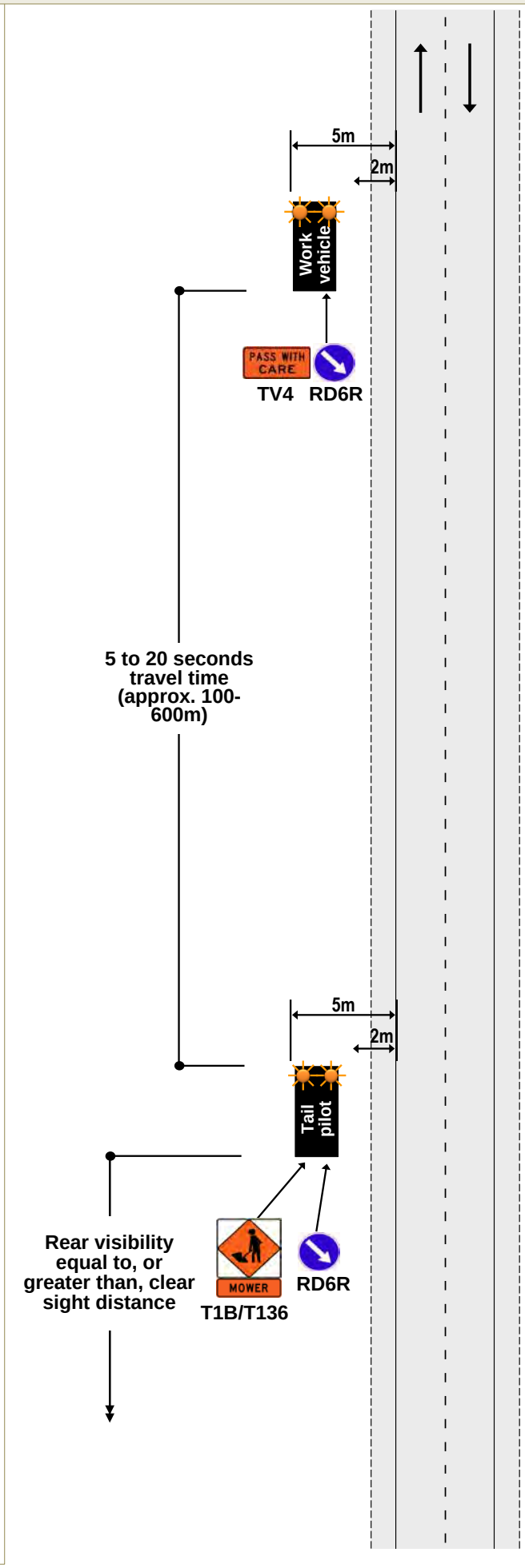
WORK VEHICLE IS BETWEEN TWO (2) AND FIVE (5) METERS OF THE EDGELINE

PERMANENT SPEED GREATER THAN 65KM/H

ATG2-3

Notes

1. This layout will also apply to a multiple laned two-way road without a permanent median barrier



Reference CoPTTM 4th Edition Section G Drawing G2.3

TWO-WAY TWO-LANE ROAD - LEVEL 2

WORK VEHICLE IS BETWEEN ZERO (0) AND TWO (2) METERS OF THE EDGELINE

PERMANENT SPEED LESS THAN 65KM/H

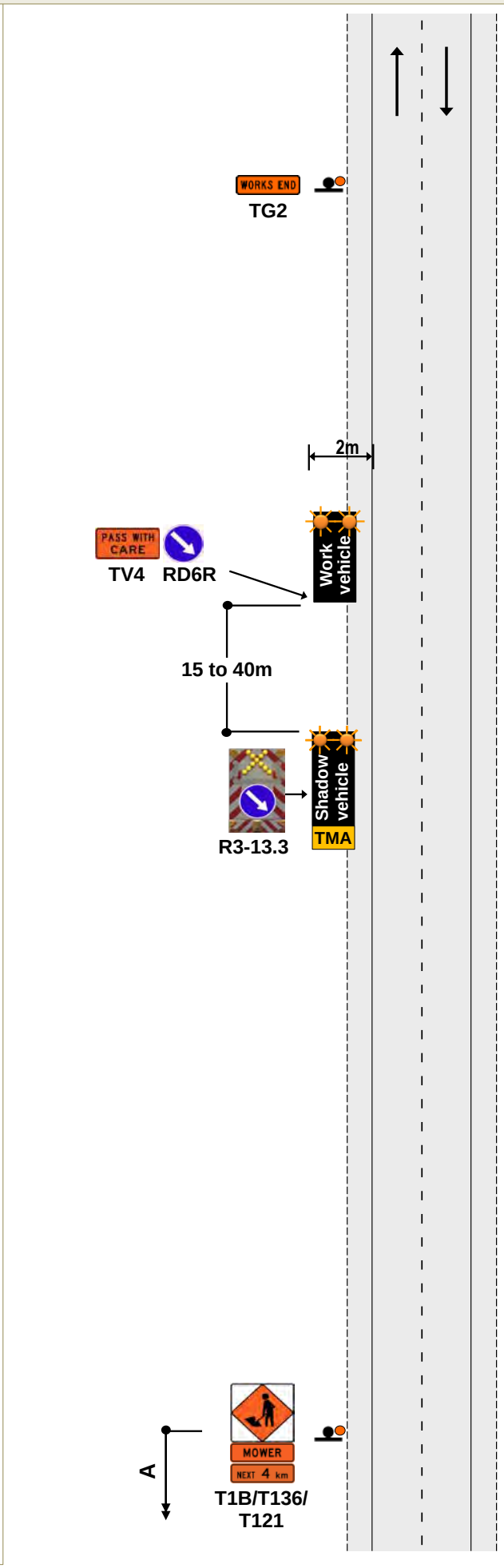
ATG2-4

Notes

1. This layout may also be used on multiple laned roads
2. The T1B sign and supplementary plates must be repeated throughout the length of the worksite at intervals no greater than 4km
3. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
4. The static signs may be replaced by an AWVMS if used as a tail pilot

For non-state highways

5. With the relevant RCA's permission, the TMA shadow vehicle may have a horizontal arrowboard and a TV4 PASS WITH CARE sign instead of the LAS
6. The static signs may be replaced by a tail pilot vehicle with a TMA, horizontal arrow board, T1B and RD6R/L signs



Reference CoPTTM 4th Edition Section G Drawing G2.4

TWO-WAY TWO-LANE ROAD - LEVEL 2

WORK VEHICLE IS BETWEEN (0) AND TWO (2) METERS OF THE EDGELINE

PERMANENT SPEED GREATER THAN 65KM/H

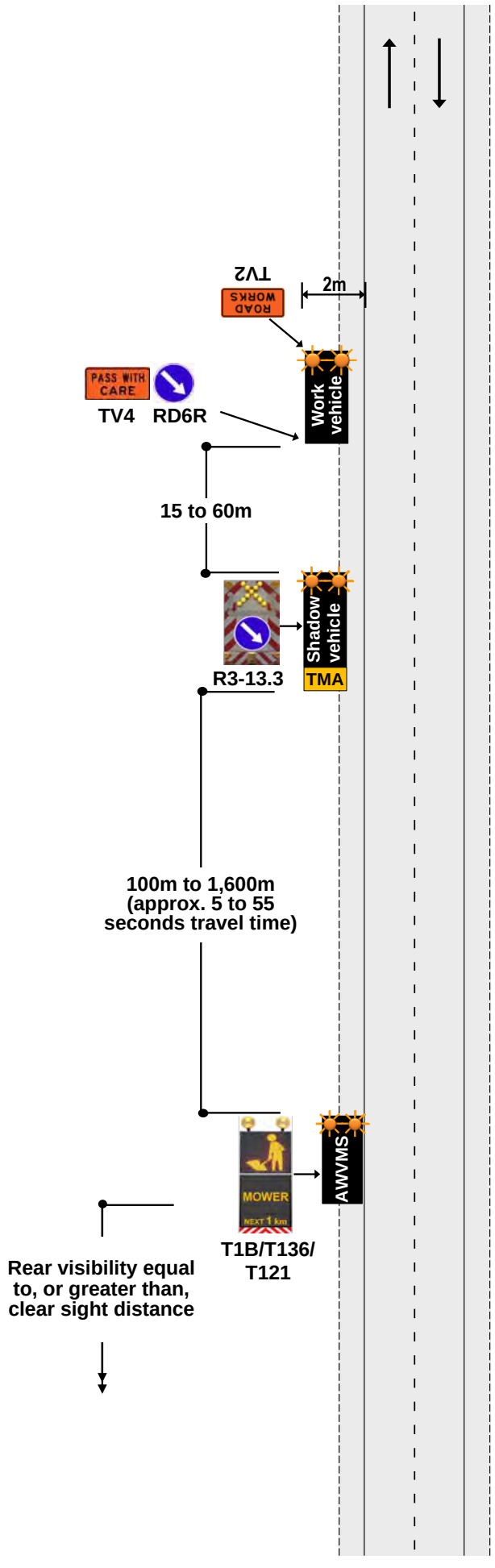
ATG2-5

Notes

1. This layout may also be used on multiple laned roads
2. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
3. Where the work is on a two-lane two-way road the leading work vehicle must be fitted with a front-mounted TV2 ROAD WORKS sign unless a lead pilot is required

For non-state highways

4. With the relevant RCA's permission, the TMA shadow vehicle may have a horizontal arrowboard and a TV4 PASS WITH CARE sign instead of the LAS
5. The AWVMS may be replaced by a tail pilot vehicle with a TMA, horizontal arrow board, T1B and RD6R/L signs



Reference CoPTTM 4th Edition
Section G Drawing G2.5

TWO-WAY TWO-LANE ROAD - LEVEL 2
WORK VEHICLE IN THE LIVE LANE
PERMANENT SPEED LESS THAN THE 65KM/H

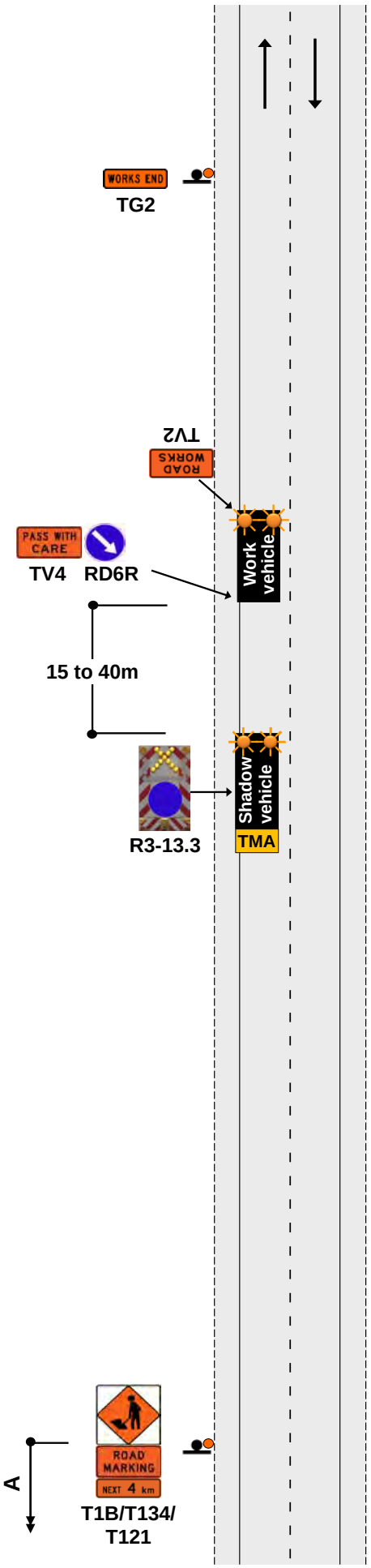
ATG2-6

Notes

1. This layout may also be used on multiple laned roads
2. The T1B sign and supplementary plates must be repeated throughout the length of the worksite at intervals no greater than 4km
3. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
4. The static sign may be replaced by an AWVMS if used as a tail pilot

For non-state highways

5. With the relevant RCA's permission, the TMA shadow vehicle may have a horizontal arrowboard and a TV4 PASS WITH CARE sign instead of the LAS
6. The static sign may be replaced by a tail pilot vehicle with a TMA, horizontal arrow board, T1B and RD6R/L signs



Reference CoPTTM 4th Edition
Section G Drawing G2.6

TWO-WAY TWO-LANE ROAD - LEVEL 2
WORK VEHICLE IN THE LIVE LANE
PERMANENT SPEED GREATER THAN 65KM/H

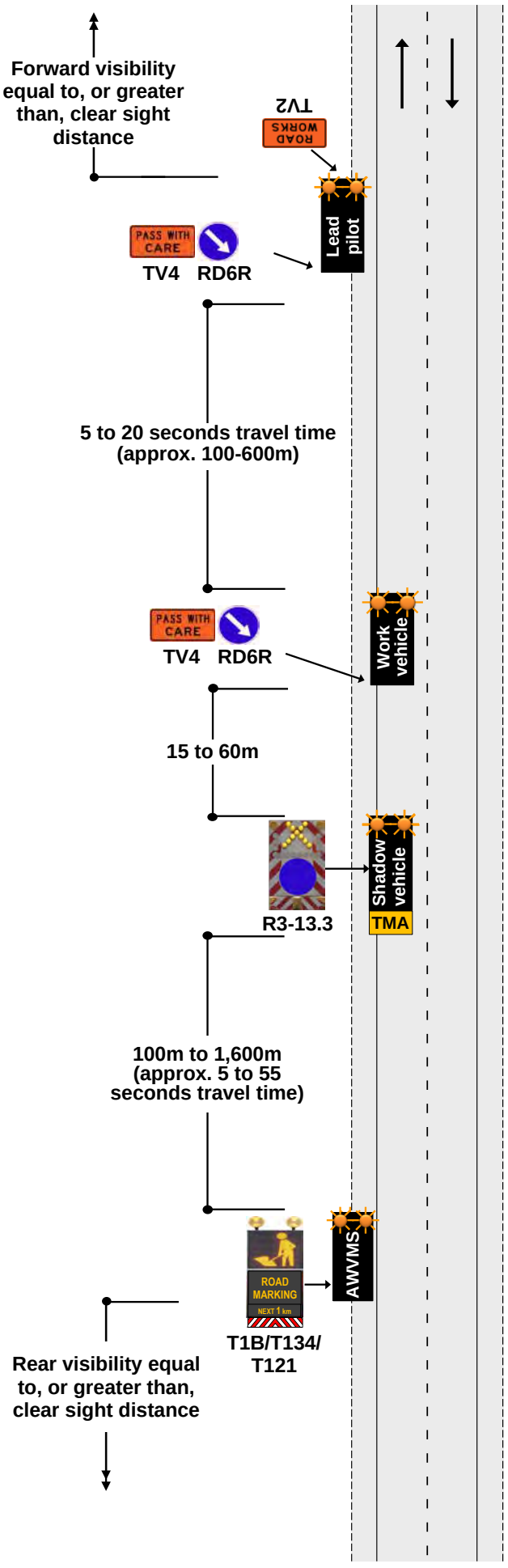
ATG2-7

Notes

1. A lead pilot vehicle must be used on undivided two-way roads with permanent speed limits greater than 65km/h when:
   - visibility to the work vehicle is less than CSD continuously for more than 1km, or
   - the operation crosses the centre line
2. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R

For non-state highways

3. With the relevant RCA's permission, the TMA shadow vehicle may have a horizontal arrowboard and a TV4 PASS WITH CARE sign instead of the LAS
4. The AWVMS may be replaced by a tail pilot vehicle with a TMA, horizontal arrow board, T1B and RD6R/L signs



Reference CoPTTM 4th Edition Section G Drawing G2.7

TWO-WAY TWO-LANE ROAD - LEVEL 2

PERSONAL IN THE LIVE LANE

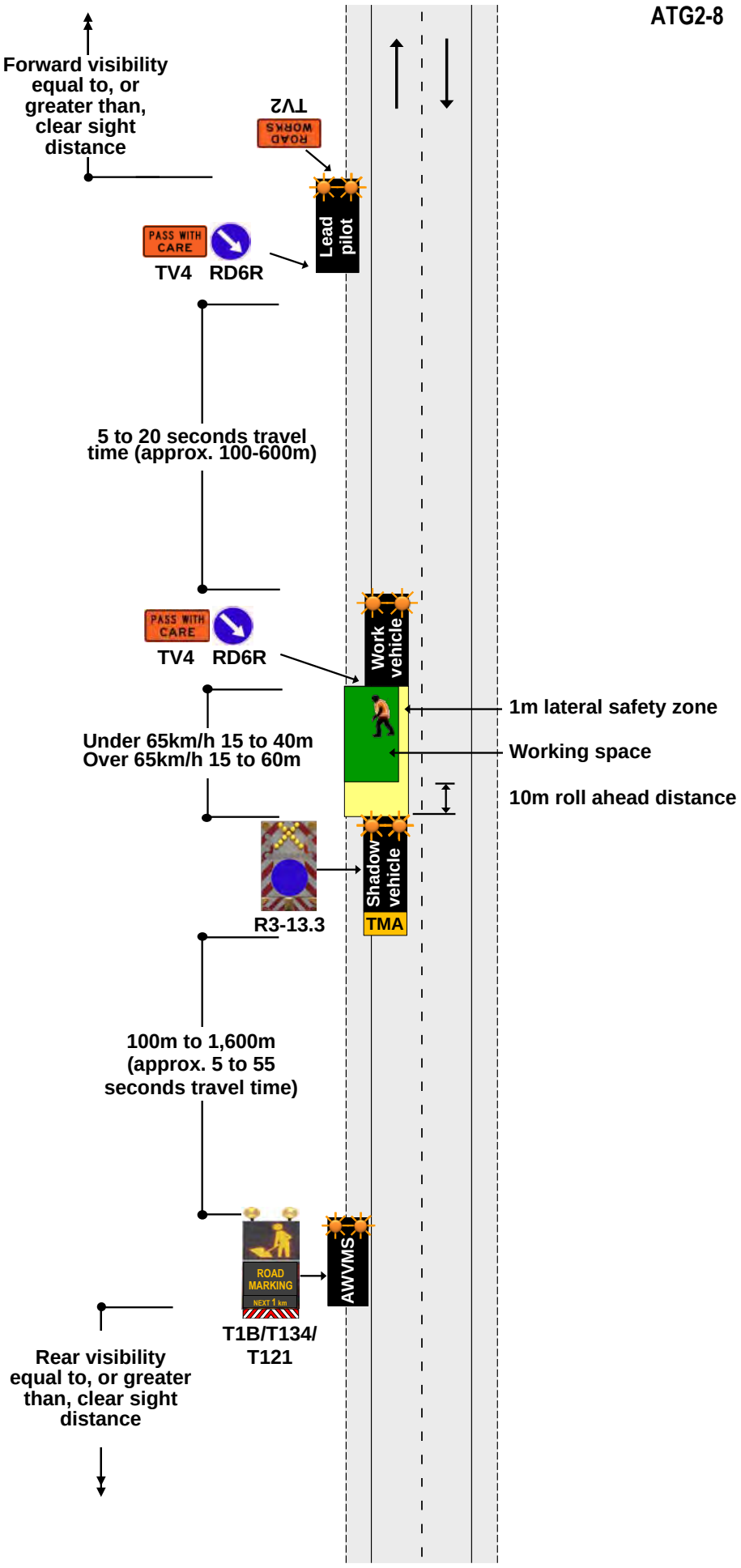
ATG2-8

Notes

1. A lead pilot vehicle must be used on undivided two-way roads with permanent speed limits greater than 65km/h when:
   - visibility to the work vehicle is less than CSD continuously for more than 1km, or
   - the operation crosses the centre line
2. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R

For non-state highways

3. With the relevant RCA's permission, the TMA shadow vehicle may have a horizontal arrowboard and a TV4 PASS WITH CARE sign instead of the LAS
4. The AWVMS may be replaced by a tail pilot vehicle with a TMA, horizontal arrow board, T1B and RD6R/L signs



Reference CoPTTM 4th Edition Section G Drawing G2.8

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 2
WORK VEHICLE IS BETWEEN ZERO (0) AND TWO (2) METERS FROM THE EDGELINE
PERMANENT SPEED IS LESS THAN 65KM/H

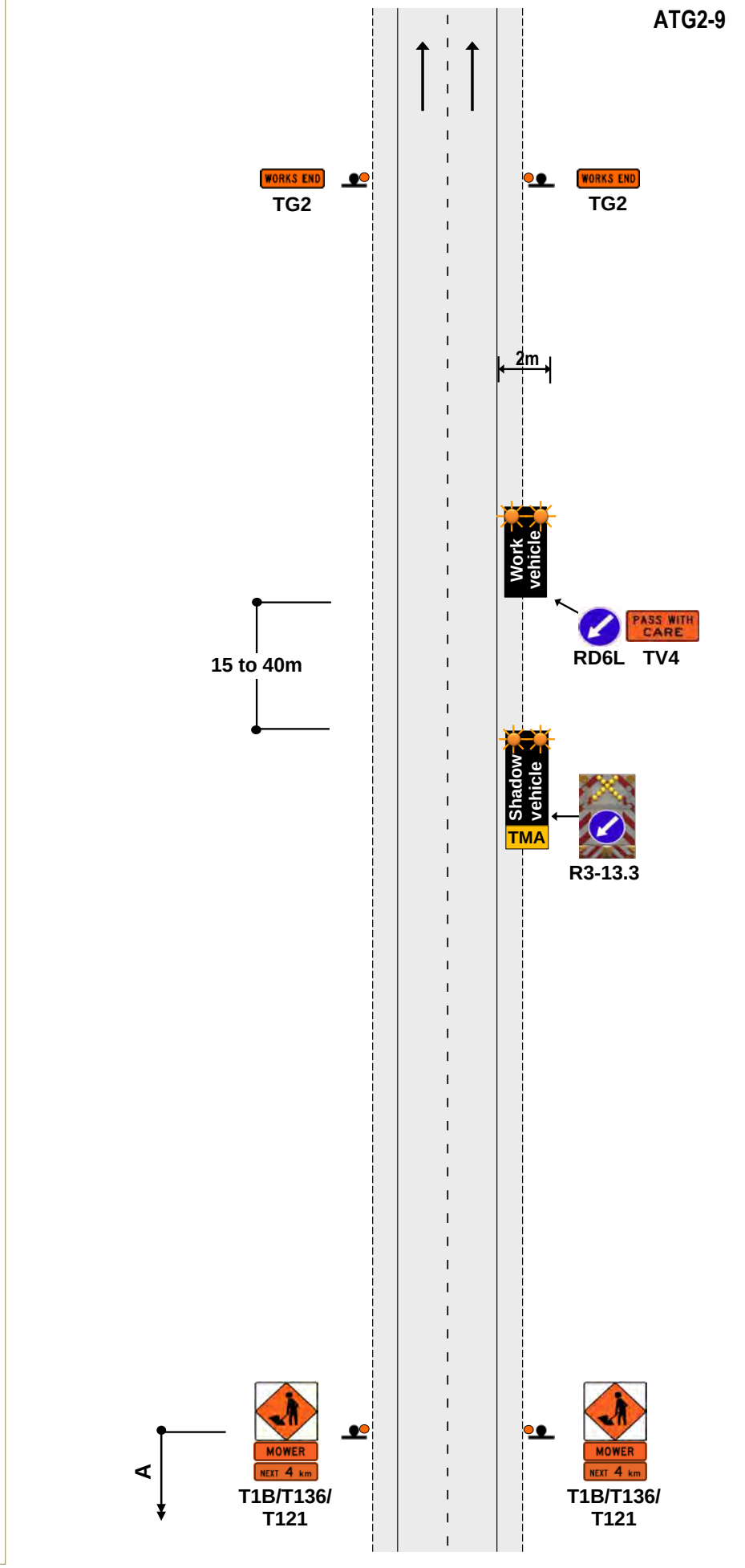
ATG2-9

Notes

1. The T1B sign and supplementary plates must be repeated throughout the length of the worksite at intervals no greater than 4km
2. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
3. The static sign may be replaced by an AWVMS if used as a tail pilot

For non-state highways

4. With the relevant RCA's permission, the TMA shadow vehicle may have a horizontal arrowboard and a TV4 PASS WITH CARE sign instead of the LAS
5. The static signs may be replaced by a tail pilot vehicle with a TMA, horizontal arrow board, T1B and RD6R/L signs



Reference CoPTTM 4th Edition Section G Drawing G2.9

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 2
WORK VEHICLE IS BETWEEN ZERO (0) AND TWO (2) METERS OF THE EDGELINE
PERMANENT SPEED GREATER THAN 65KM/H

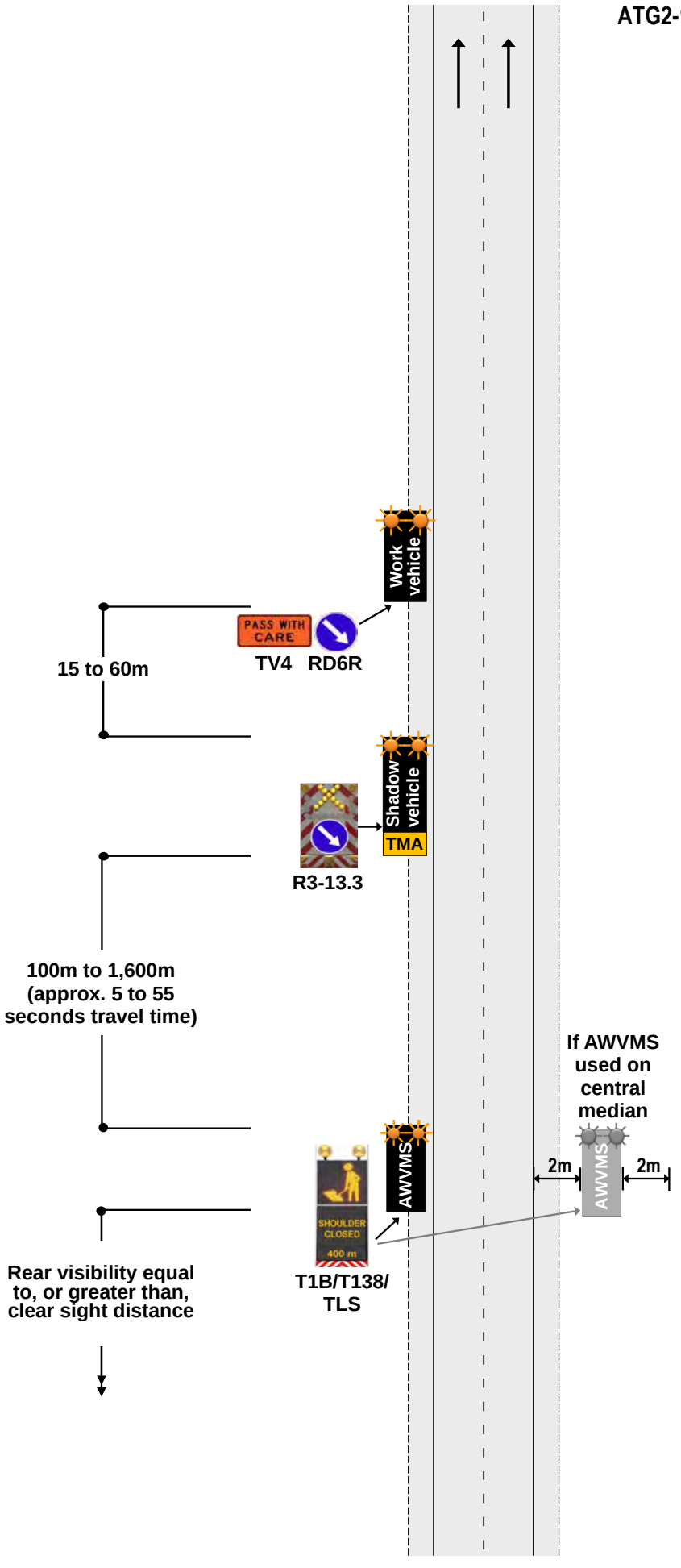
ATG2-10

Notes

1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
2. If used on a central median, the AWVMS is to be positioned at least 2m clear of the edgeline of both carriageways
3. With a right hand closure where there is no available shoulder on the right hand median, the AWVMS can be positioned on the left hand side clear of the edgeline showing a right hand lane drop

For non-state highways

4. With the relevant RCA's permission, the TMA shadow vehicle may have a horizontal arrowboard and a TV4 PASS WITH CARE sign instead of the LAS
5. The AWVMS may be replaced by a tail pilot vehicle with a TMA, horizontal arrow board, T1B and RD6R/L signs



Reference CoPTTM 4th Edition Section G Drawing G2.10

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 2

WORK VEHICLE IN THE LIVE LANE

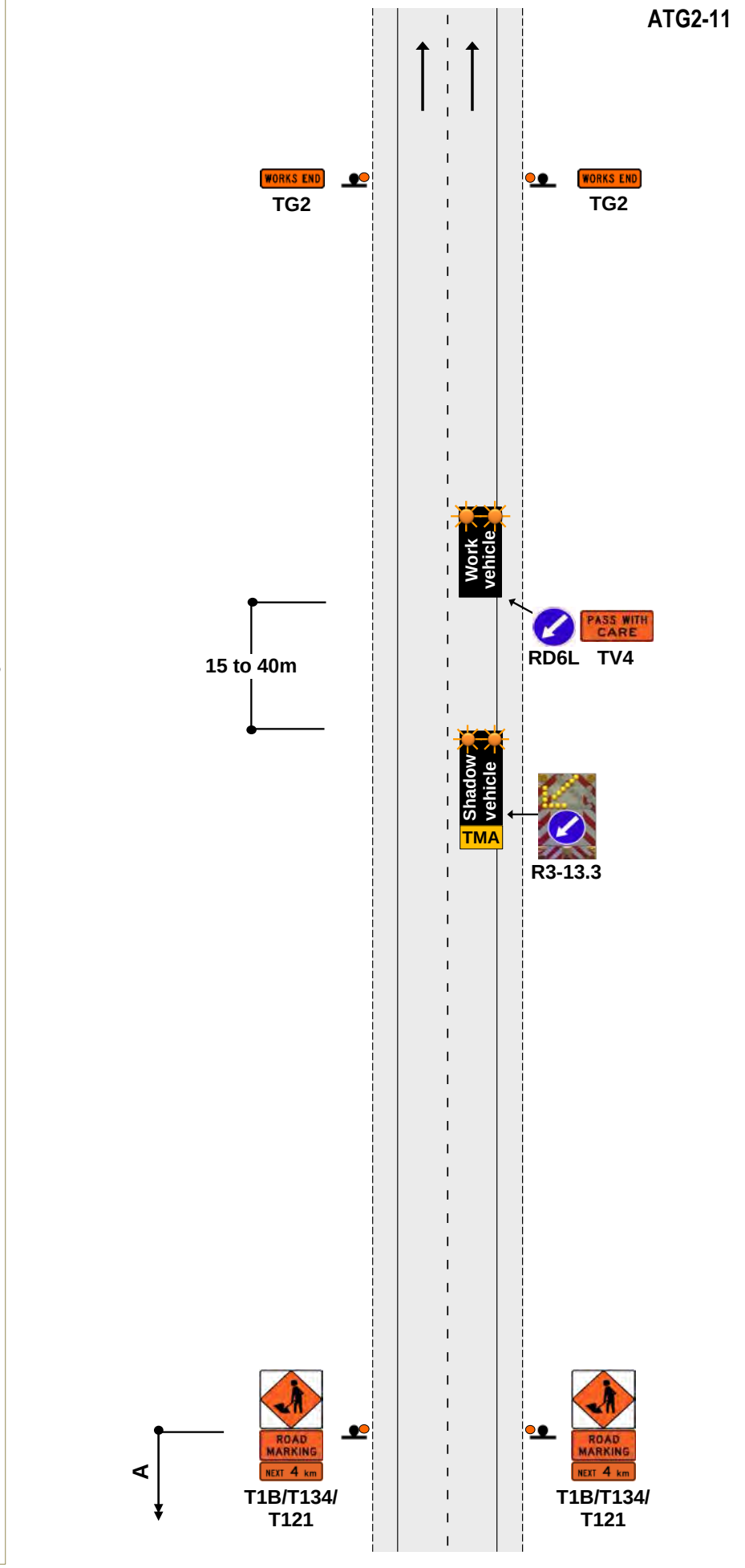
PERMANENT SPEED LESS THAN 65KM/H

ATG2-11

1. The T1B sign and supplementary plates must be repeated throughout the length of the worksite at intervals no greater than 4km
2. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
3. The static signs may be replaced by an AWVMS if used as a tail pilot

For non-state highways

4. With the relevant RCA's permission, the TMA shadow vehicle may have a horizontal arrowboard and a TV4 PASS WITH CARE sign instead of the LAS
5. The static signs may be replaced by a tail pilot vehicle with a TMA, horizontal arrow board, T1B and RD6R/L signs



Reference CoPTTM 4th Edition Section G Drawing G2.11

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 2

WORK VEHICLE IN THE LIVE LANE

PERMANENT SPEED GREATER THAN 65KM/H

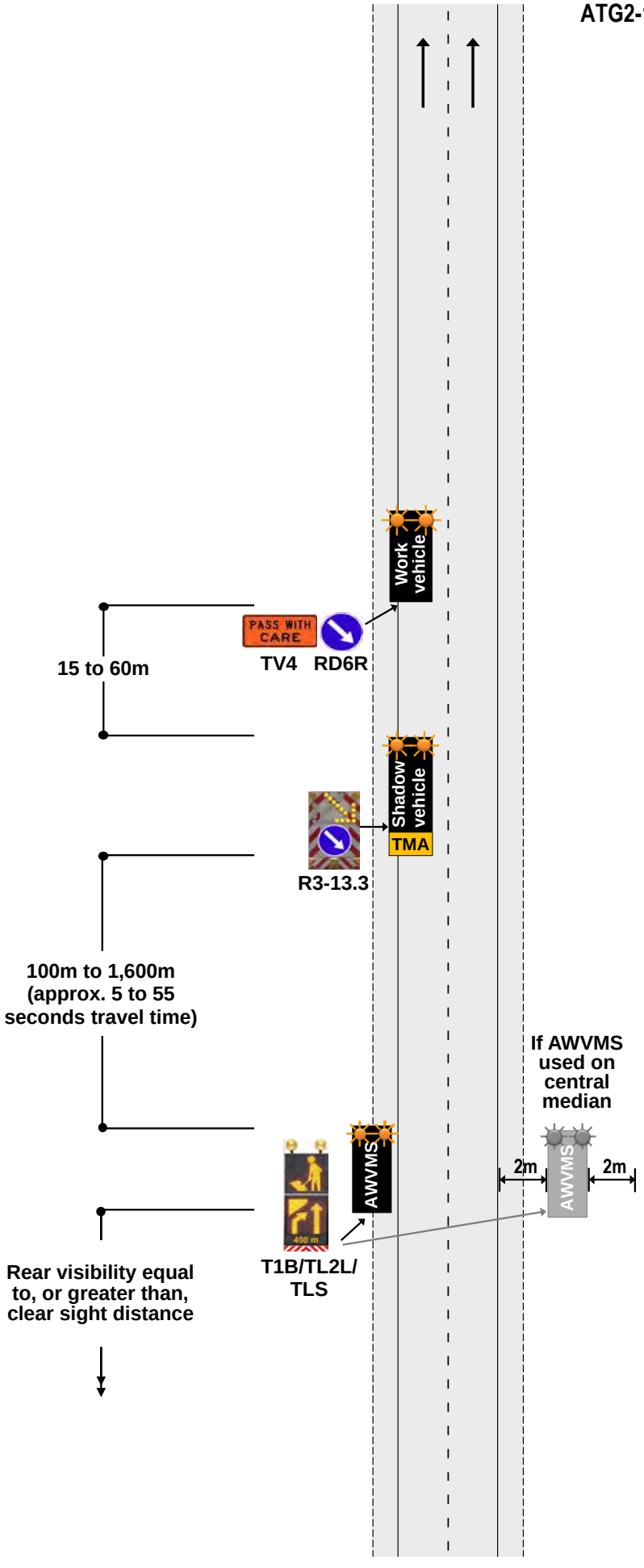
ATG2-12

Notes

1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
2. If used on a central median, the AWVMS is to be positioned at least 2m clear of the edgeline of both carriageways
3. With a right hand closure where there is no available shoulder on the right hand median, the AWVMS can be positioned on the left hand side clear of the edgeline showing a right hand lane drop

For non-state highways

4. With the relevant RCA's permission, the TMA shadow vehicle may have a horizontal arrowboard and a TV4 PASS WITH CARE sign instead of the LAS
5. The AWVMS may be replaced by a tail pilot vehicle with a TMA, horizontal arrow board, T1B and RD6R/L signs



Reference CoPTTM 4th Edition Section G Drawing G2.12

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 2
SEMI STATIC CLOSURE - WORK FOR UP TO 1 HOUR
PERMANENT SPEED IS LESS THAN 65KM/H (PART OR ALL LANES OCCUPIED)

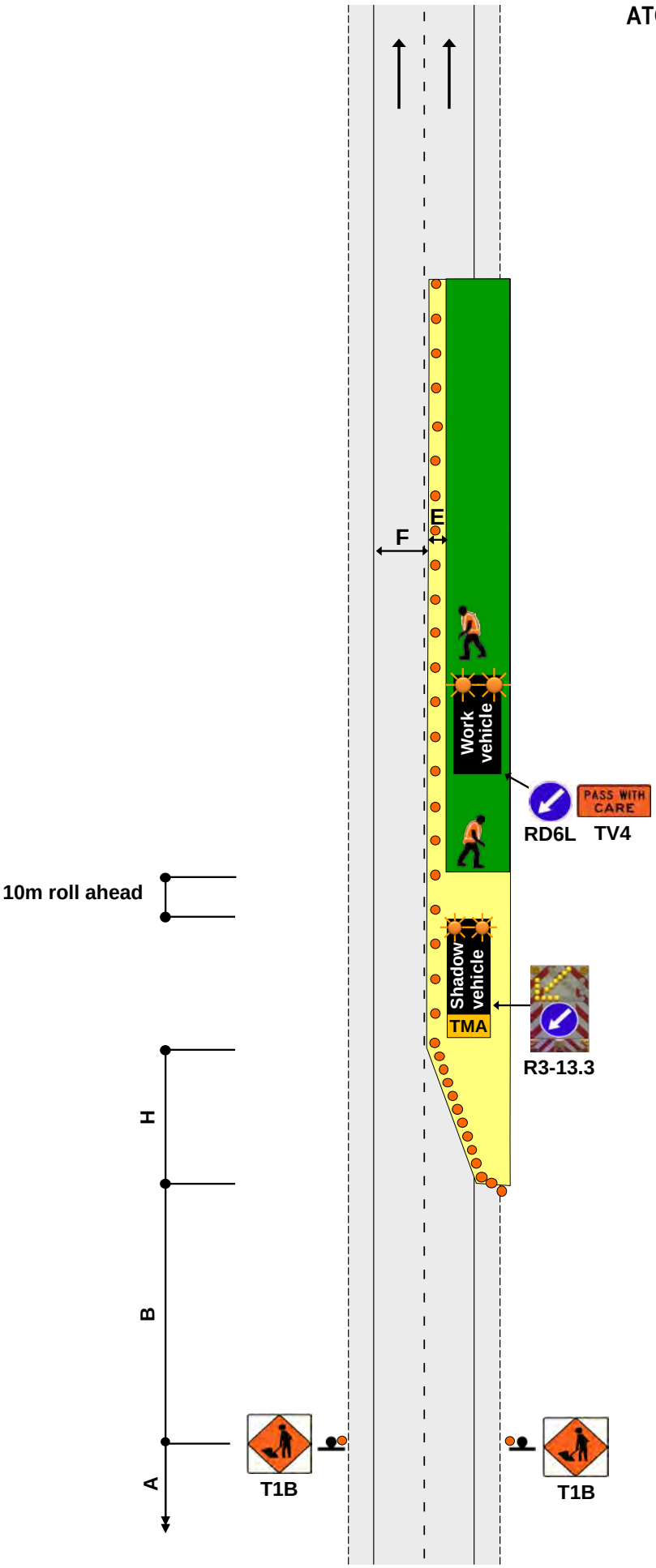
ATG2-13

Notes

1. This layout applies when the work activity can be completed within one hour (excluding TTM set up and TTM removal from the worksite)
2. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
3. The static signs may be replaced by an AWVMS. Use TMD G2.14 in this case

For non-state highways

4. With the relevant RCA's permission, the TMA shadow vehicle may have a horizontal arrowboard and a TV4 PASS WITH CARE sign instead of the LAS
5. The static sign on the right-hand side of the road may be replaced by a tail pilot vehicle with a TMA, horizontal arrow board, T1B and RD6L sign



Reference CoPTTM 4th Edition Section G Drawing G2.13

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 2

SEMI STATIC CLOSURE - WORK FOR UPTO 1 HOUR

PERMANENT SPEED GREATER THAN 65KM/H (PART OR ALL LANES OCCUPIED)

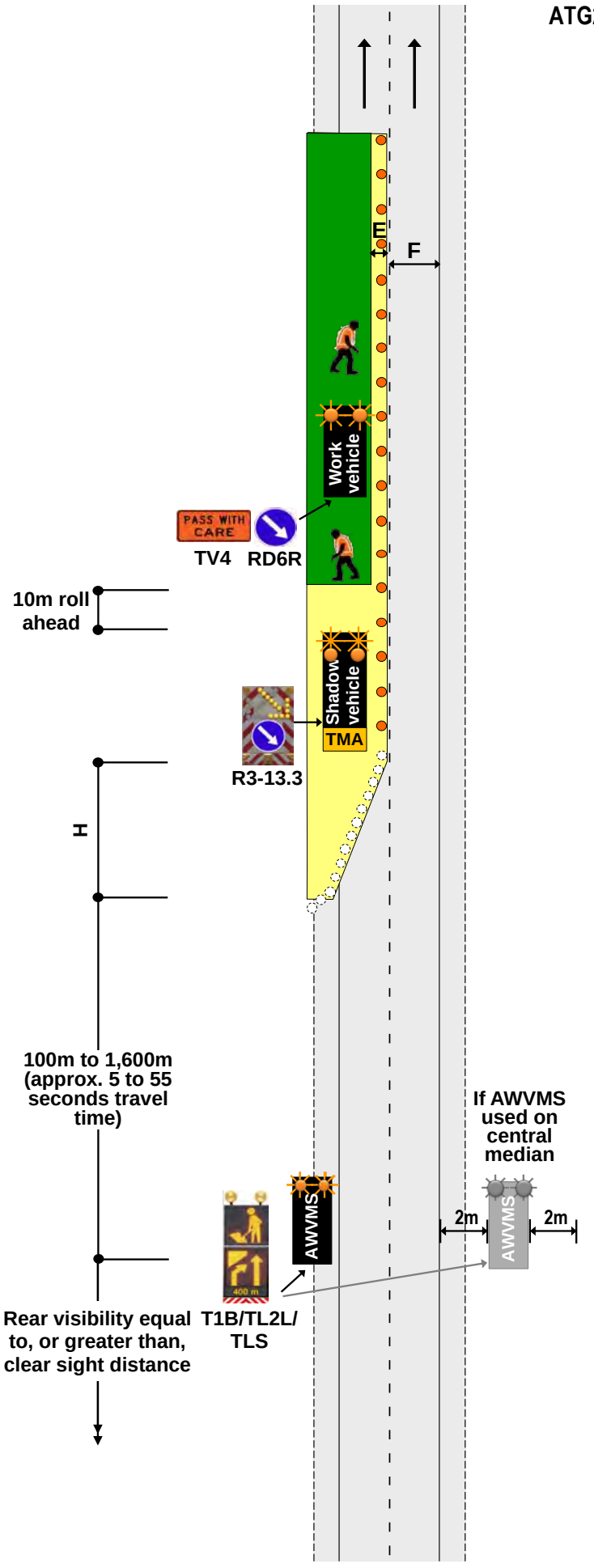
ATG2-14

Notes

1. This layout applies when the work activity can be completed within one hour (excluding TTM set up and TTM removal from the worksite)
2. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
3. The AWVMS can be located either side of the road depending on availability of space to park the AWVMS
4. If used on a central median, the AWVMS is to be positioned at least 2m clear of the edgeline of both carriageways
5. With a right hand closure where there is no available shoulder on the right hand median, the AWVMS can be positioned on the left hand side clear of the edgeline showing a right hand lane drop
6. Where an AWVMS is used, a cone taper (H) is optional

For non-state highways

7. With the relevant RCA's permission, the TMA shadow vehicle may have a horizontal arrowboard and a TV4 PASS WITH CARE sign instead of the LAS
8. The AWVMS may be replaced by a tail pilot vehicle with a TMA, horizontal arrow board, T1B and RD6L sign



Reference CoPTTM 4th Edition Section G Drawing G2.14

Auckland Transport

Generic Traffic Management Drawings
Section H
LEVEL 3

LEVEL 3 LAYOUT DISTANCES TABLE

Permanent/TSL (km/h)		◆80	100
Traffic signs			
A	Sign visibility distance (m)	100	120
C	Sign spacing (m) - **Desirable**	160	200
❖	Sign spacing (m) - **Minimum**	80	100
Safety zones			
D	Longitudinal (m)*	45	60
E	Lateral (m)		
	1. Behind cones etc	1	1
	2. Behind barrier installations	As specified by the Installation Designer	
Tapers			
H	Initial taper length per lane (m)**	150	180
I	Subsequent taper length per lane (m)	80	100
K	Minimum distance between tapers (m) ***	80	100
Delineation devices			
Spacing (centres)	All tapers (m)	2.5	2.5
	Cones parallel to the lane (eg between tapers and alongside the working space) (m)	10	10
	At merge and diverge points for ramps and slip lanes, intersecting road entry and exit points, and worksite access points	2.5m for 20m either side of a change in alignment	

◆ For temporary and permanent speeds less than 80km/h use the C2.6 Level 2 worksite layout distances table.

❖ The desirable sign spacing distance must be used wherever possible. The minimum sign spacing distance may only be used where there are road environment constraints.
Where only one sign is erected in advance of the start of a cone taper the distance from the sign to the start of the taper must be 2xC.

* A longitudinal safety zone is not required when a barrier completely protects the approach end of the worksite. Refer subsections H1.17 and H1.18

** Taper length is based on a single lane shift of 3.5m.

*** Must be altered if required to meet the supplementary TLS distance.

Lane widths

Speed (km/h)		30	40	50	60	70	80	90	100
F	Lane width (m)	2.75	2.75	3.0	3.0	3.25	3.25	3.5	3.5

Except for delineation device spacings, which are maximum values, the distances specified in the above table are minimum values. Approach sign distances and spacings, the initial taper(s) and any longitudinal safety zone associated with that taper must be based on the permanent speed limit. The layout distances of the remainder of the worksite, including any subsequent tapers, may be based on the TSL, provided the TSL is applied prior to the first taper.

STATIC OPERATION

ONE-WAY MULTI-LANE ROAD - LEVEL 3 (EMERGENCY ONLY)
OTHER HAZARDS
FLOODING, SLIPS,SLIPPERY SURFACE

ATH1-2

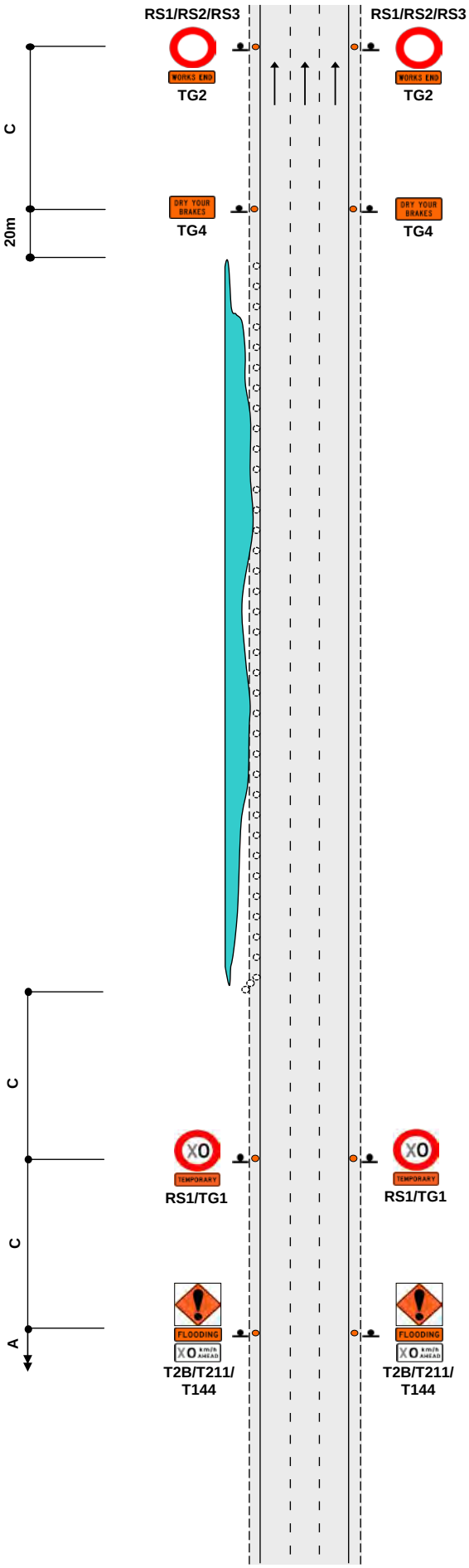
Notes

1. This diagram is for initial response only. Appropriate long term TTM must be installed as soon as practical
2. This layout should only be used for shallow flooding that vehicles can traverse while remaining in their correct lane(s)
3. A 10m taper, with a minimum of 5 cones, is allowed where shoulder width is 2.5m or less
4. The advance warning sign may be any one of the following:

T2B		Other hazard
T211		Flooding
TR1L/R		Slips
TR2		Slippery Surface

5. If necessary, erect TG4 "DRY YOUR BRAKES" sign
6. If TSLs are not required, the warning distance must be at least 2 x C

Refrence CoPTTM 4th Edition Section H Drawing H1.2



MOBILE OPERATION

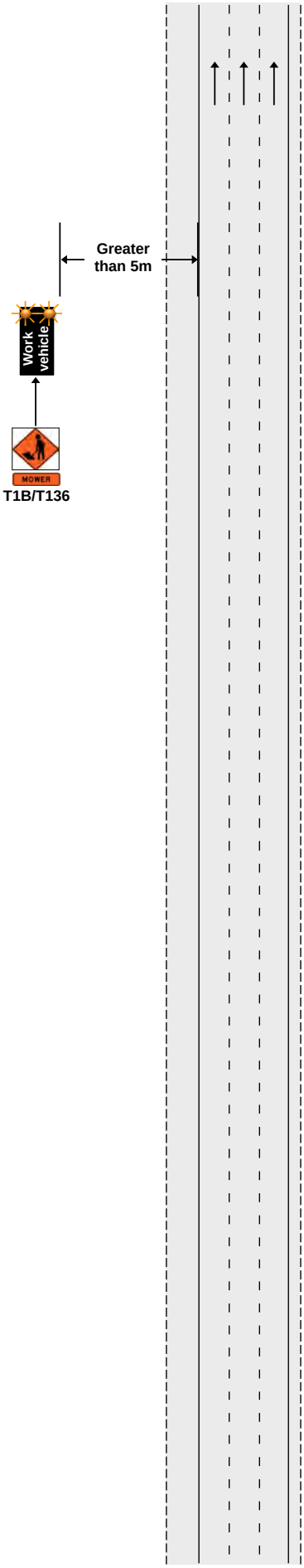
ONE-WAY MULTI-LANE ROAD - LEVEL 3

WORK VEHICLE IS MORE THAN FIVE (5) METERS FROM THE EDGELINE - ZONE A

ATH2-1

Notes

1. Worksite can be managed by a level 2/3 STMS-NP



Reference CoPTTM 4th Edition Section H Drawing H2.1

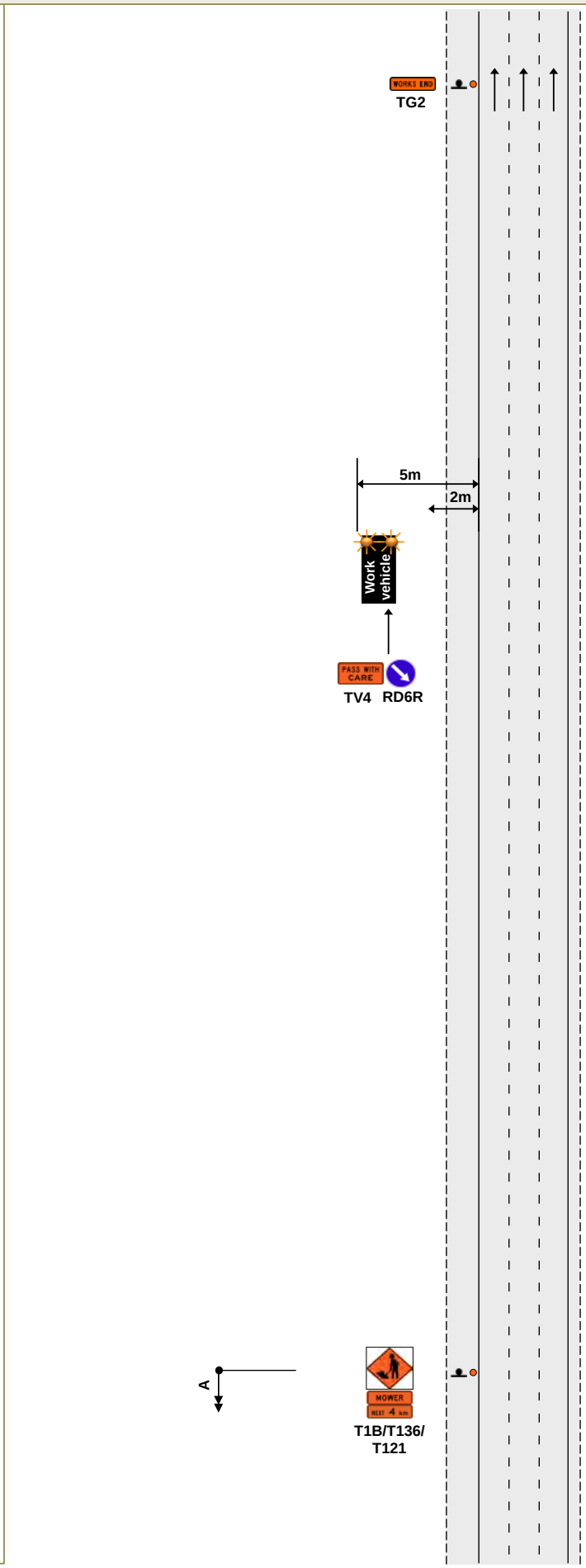
MOBILE OPERATION

ONE-WAY MULTI-LANE ROAD - LEVEL 3
REAR VISIBILITY IS GREATER THAN THE CLEAR SIGHT DISTANCE
WORK VEHICLE IS BETWEEN TWO(2) AND FIVE (5) METERS FROM THE EDGE LINE - ZONE B

ATH2-2

Notes

1. The T1B sign and supplementary plates must be repeated throughout the length of the worksite at intervals no greater than 4km
2. The static signs may be replaced by an AWVMS. In this case CSD will be required (see H2.3



Refrence CoPTTM 4th Edition Section H Drawing H2.2

MOBILE OPERATION

ONE-WAY MULTI-LANE ROAD - LEVEL 3

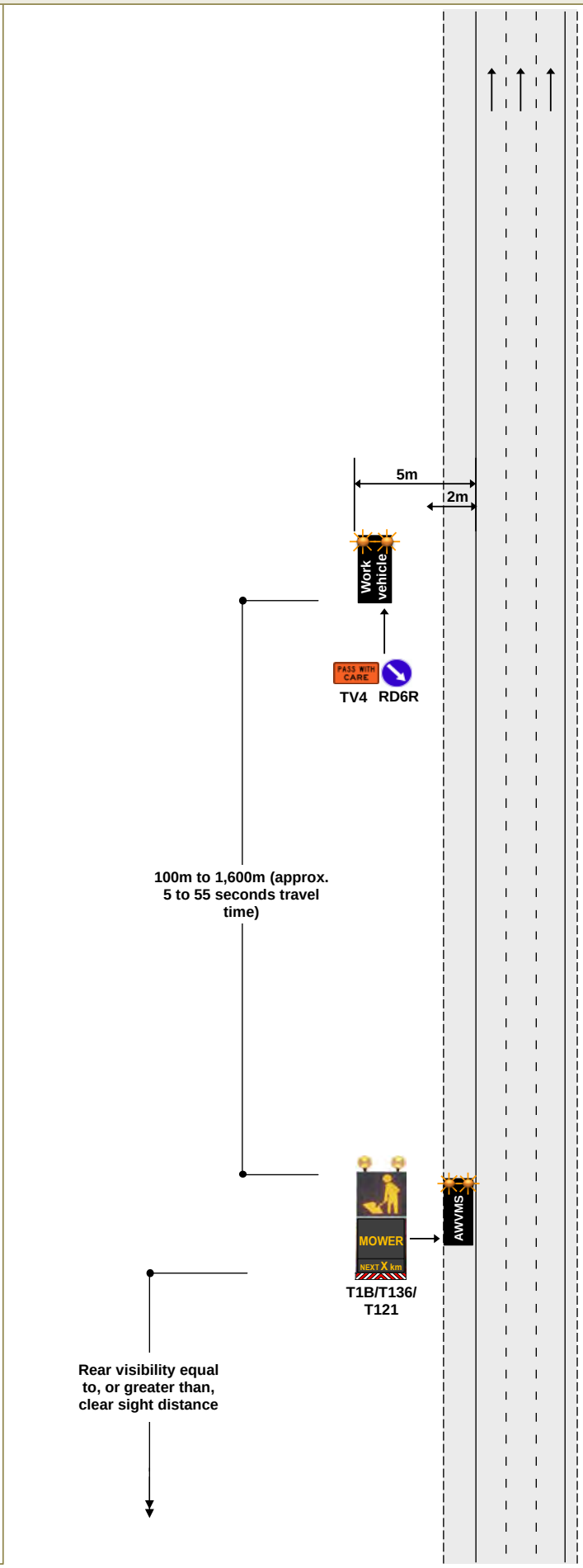
WORK VEHICLE IS BETWEEN TWO (2) AND FIVE (5) METERS FROM THE EDGELINE - ZONE B

REAR VISIBILITY IS LESS THAN THE CLEAR SIGHT DISTANCE

ATH2-3

Notes

1. Always try to use the shortest distance where a range is displayed (eg 100m to 1,600m, try for 100m)



Refrence CoPTTM 4th Edition Section H Drawing H2.3

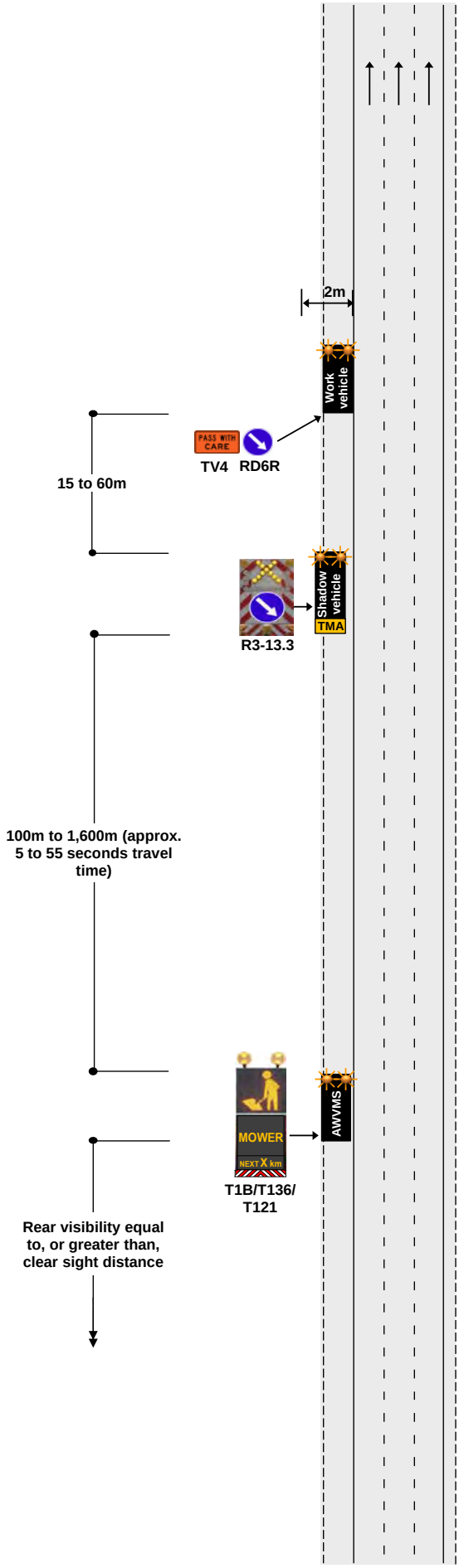
MOBILE OPERATION

ONE-WAY MULTI-LANE ROAD - LEVEL 3
WORK VEHICLE IS BETWEEN ZERO (0) AND TWO (2) METERS FROM THE EDGELINE - ZONE C

ATH2-4

Notes

1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
2. Always try to use the shortest distance where a range is displayed (eg 100m to 1,600m, try for 100m)



Refrence CoPTTM 4th Edition Section H Drawing H2.4

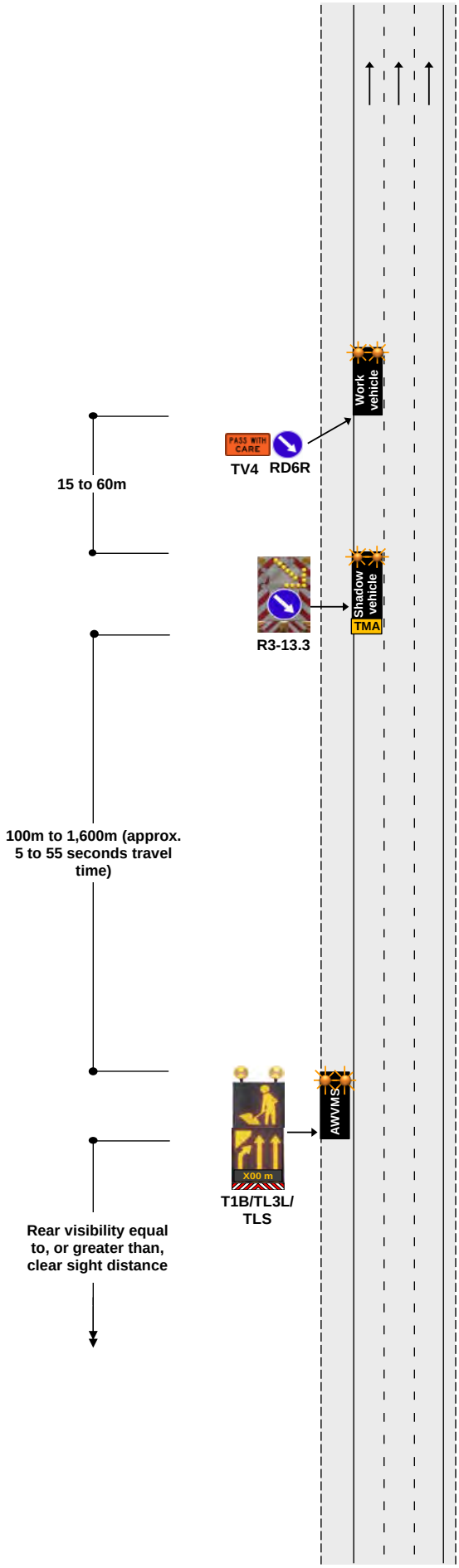
MOBILE OPERATION

ONE-WAY MULTI-LANE ROAD - LEVEL 3
WORK VEHICLE IN LIVE LANE - ZONE C

ATH2-5

Notes

1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
2. Always try to use the shortest distance where a range is displayed (eg 100m to 1,600m, try for 100m)



Reference CoPTTM 4th Edition Section H Drawing H2.5

MOBILE OPERATION

ONE-WAY MULTI-LANE ROAD - LEVEL 3

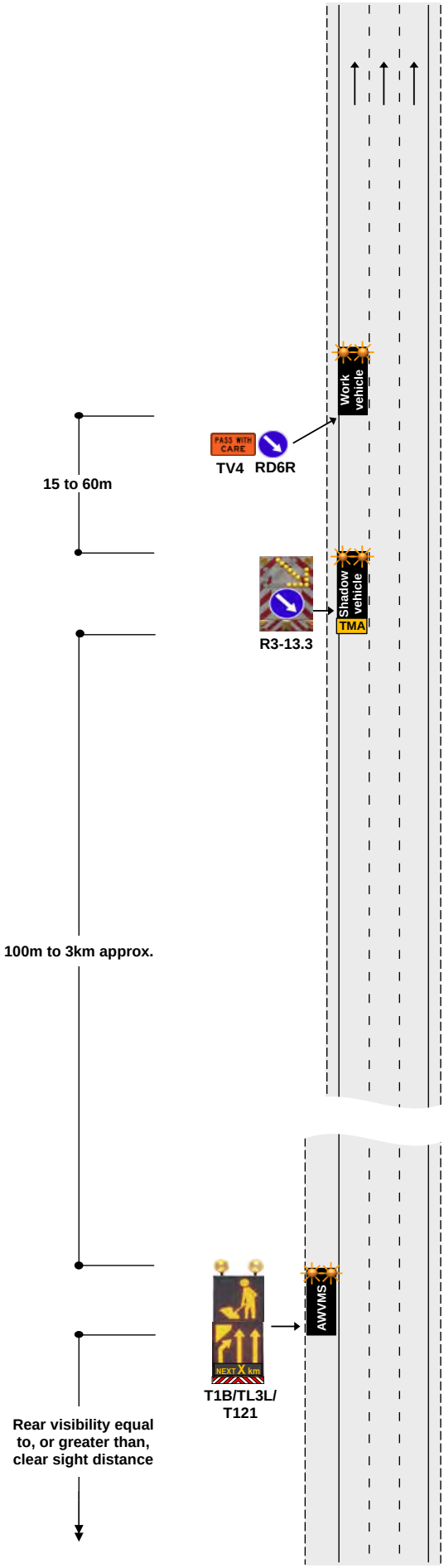
WORK VEHICLE IN LIVE LANE OR WITHIN TWO (2) METERS FROM THE LIVE LANE - ZONE C

NO AVAILABLE SHOULDER WIDTH FOR AWVMS WITHIN 1600m OF WORK VEHICLE

ATH2-6

Notes

1. To provide advance warning, the AWVMS may be located more than 1,600m from the work vehicle
2. The shadow vehicle must be fitted wit TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
3. Always try to use the shortest distance where a range is displayed (eg 100m to 1600m, try for 100m)
4. AWVMS may be up to 3km behind shadow vehicle where there is insufficient shoulder width within 1,600m



Reference CoPTTM 4th Edition Section H Drawing H2.6

ONE-WAY MULTI-LANE ROAD - LEVEL 3

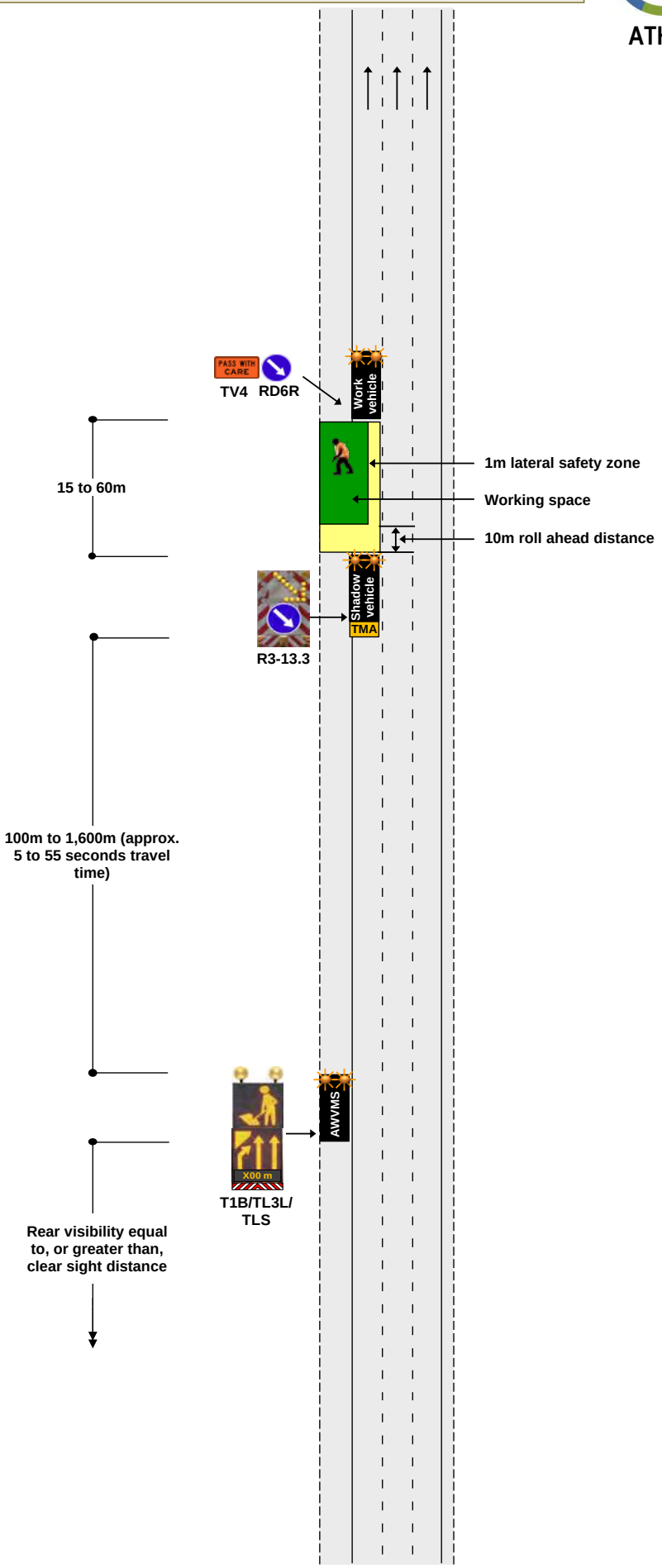
WORK VEHICLE IN THE LIVE LANE OR WITHIN TWO (2) METERS OF THE LIVE LANE - ZONE C

PERSONAL IN THE LIVE LANE

ATH2-7

Notes

1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
2. Always try to use the shortest distance where a range is displayed (eg 100m to 1,600m, try for 100m)



Reference CoPTTM 4th Edition Section H Drawing H2.7

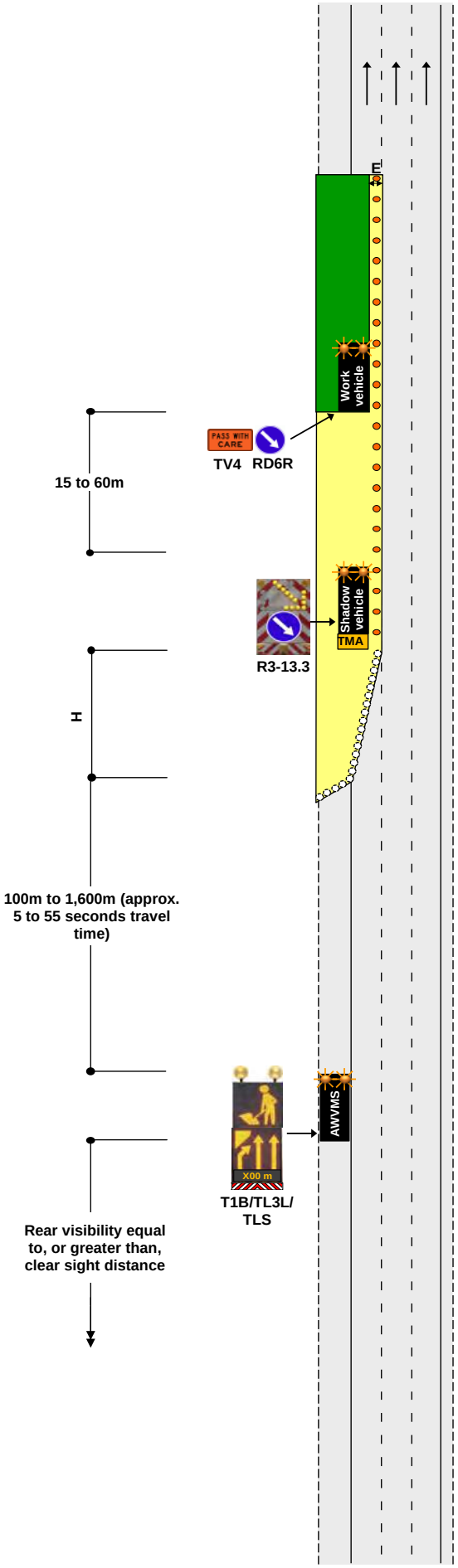
MOBILE OPERATION

ONE-WAY MULTI-LANE ROAD - LEVEL 3
SEMI STATIC CLOSURE
LEFT -LANE CLOSURE

ATH3-1

Notes

1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
2. The AWVMS may replaced by T1B signs installed on both sides of the road
3. Where an AWVMS is used,cone taper (H) is optional
4. Always try to use the shortest distance where a range is displayed (eg 100m to 1,600m, try for 100m)



Reference CoPTTM 4th Edition Section H Drawing H3.1

Auckland Transport

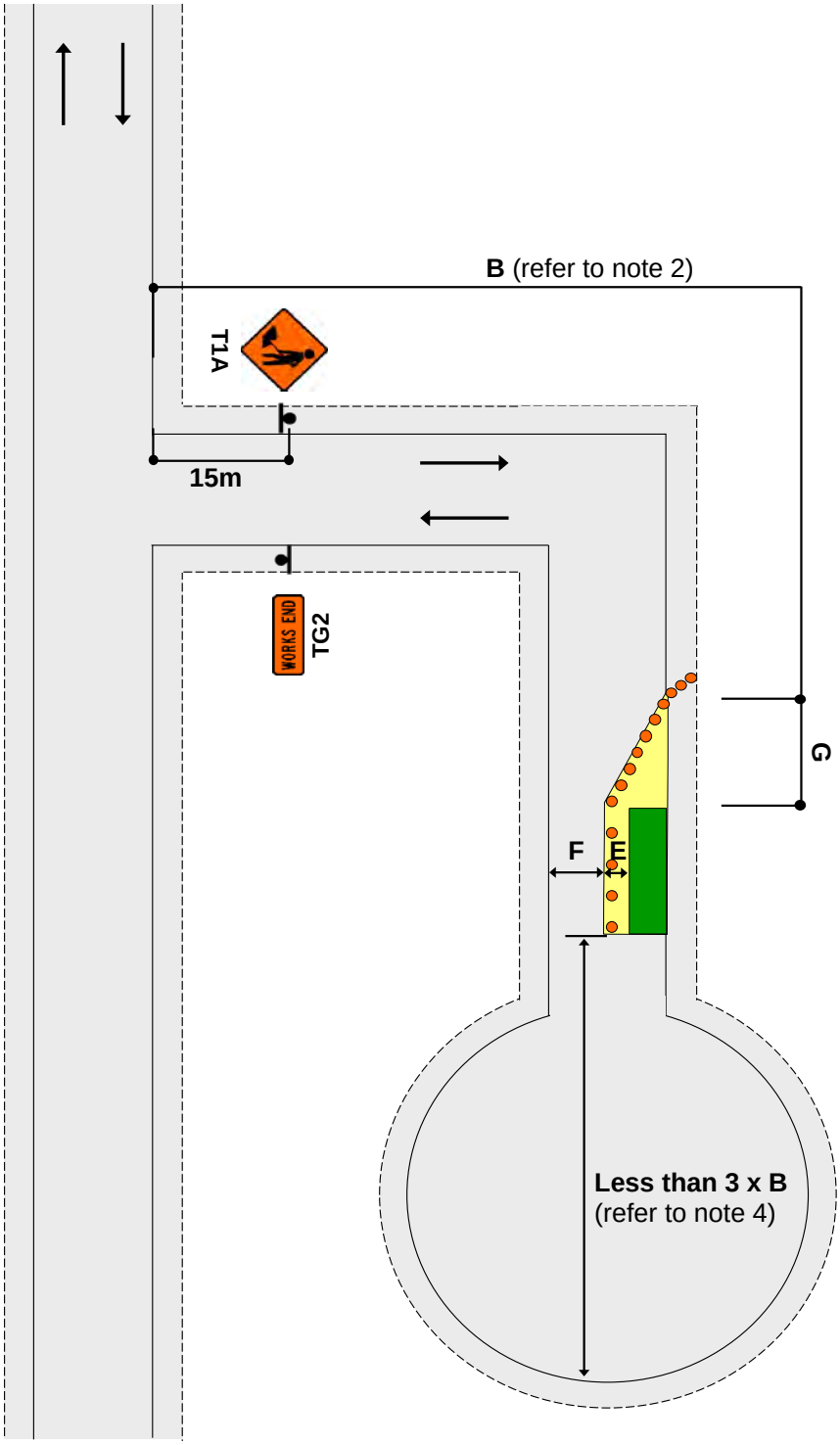
Generic Traffic Management Diagrams Section J

STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LOW VOLUME AND LEVEL 1

SHORT NO EXIT ROAD

ATJ2-16a



Notes

1. T1A sign to be placed at least 15m from the intersection
2. Where less than B, T1A/T135 and TG2 signs required on main road
3. Working space to be less than 100m
4. Signage is not required past the worksite where there is less than 3 x B from the end of the working space to the end of the road

Reference CoPTTM 4th Edition Section J Drawing J2.16a

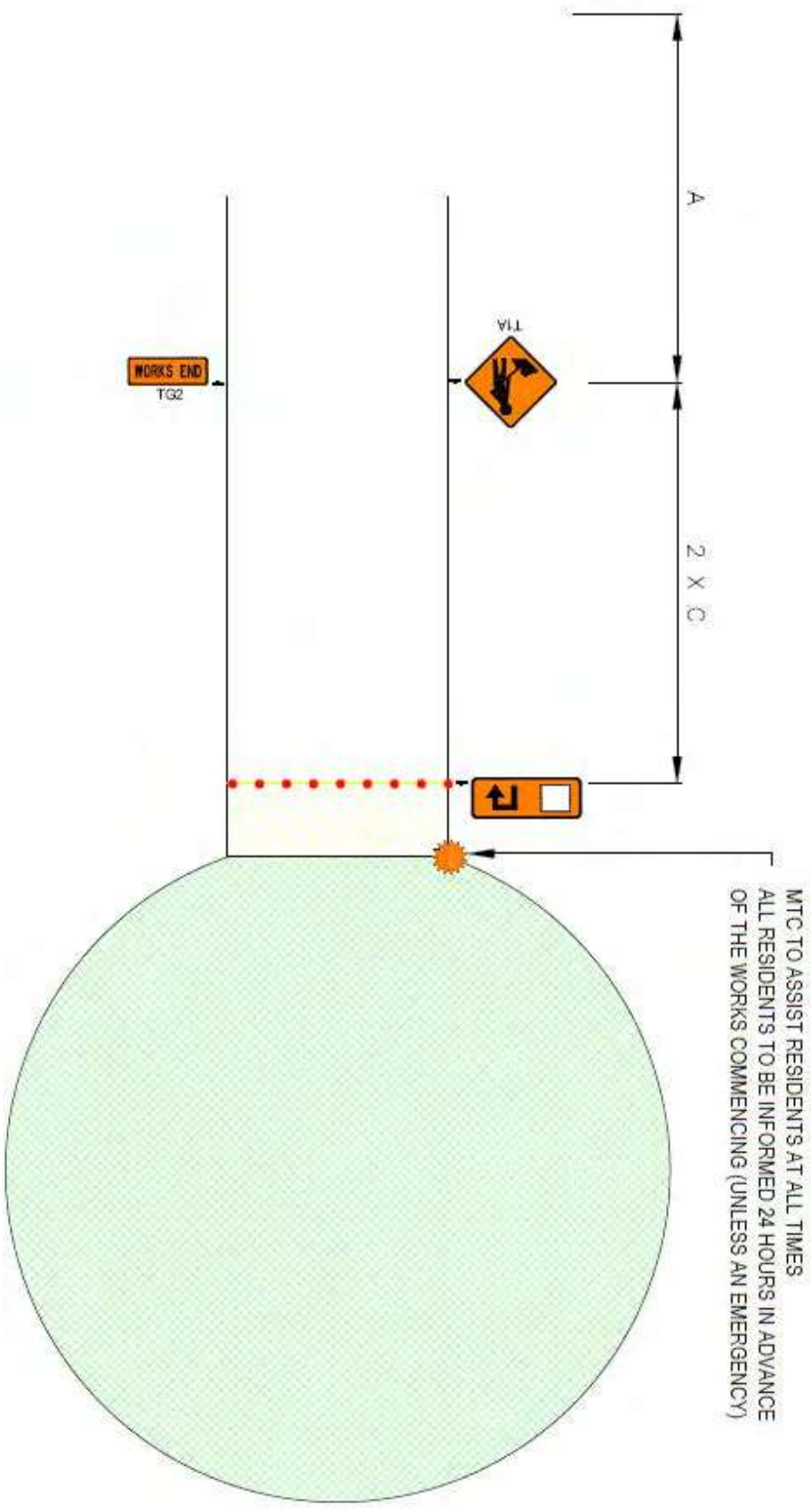
TWO-WAY TWO-LANE ROAD - LOW VOLUME AND LEVEL 1

SHORT NO EXIT

ATJ2-16b

Notes

1. T1A sign to be placed at least 15m from the intersection
2. Where less than B, T1A/T135 and TG2 signs required on main road
3. Working space to be less than 100m
4. Signage is not required past the work site where there is less than 3 x B from the end of road

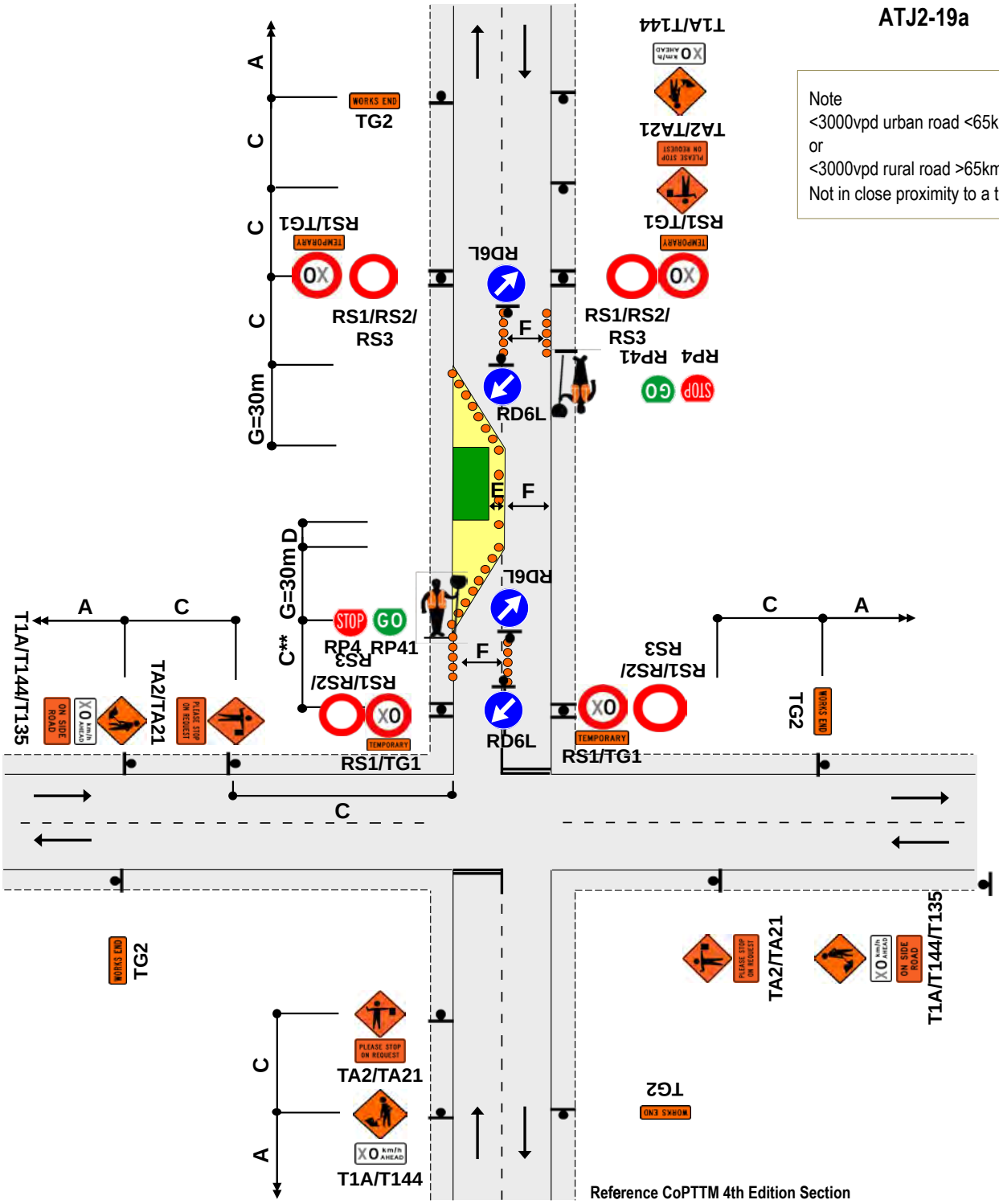


STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)
MAJOR OBSTRUCTION CLOSE TO INTERSECTION
ALLOW SHORTER SIGN SPACING AND MTC OPERATION

ATJ2-19a

Note
<3000vpd urban road <65km/h
or
<3000vpd rural road >65km/h
Not in close proximity to a traffic signal



Reference CoPTTM 4th Edition Section J Drawing J2.19a

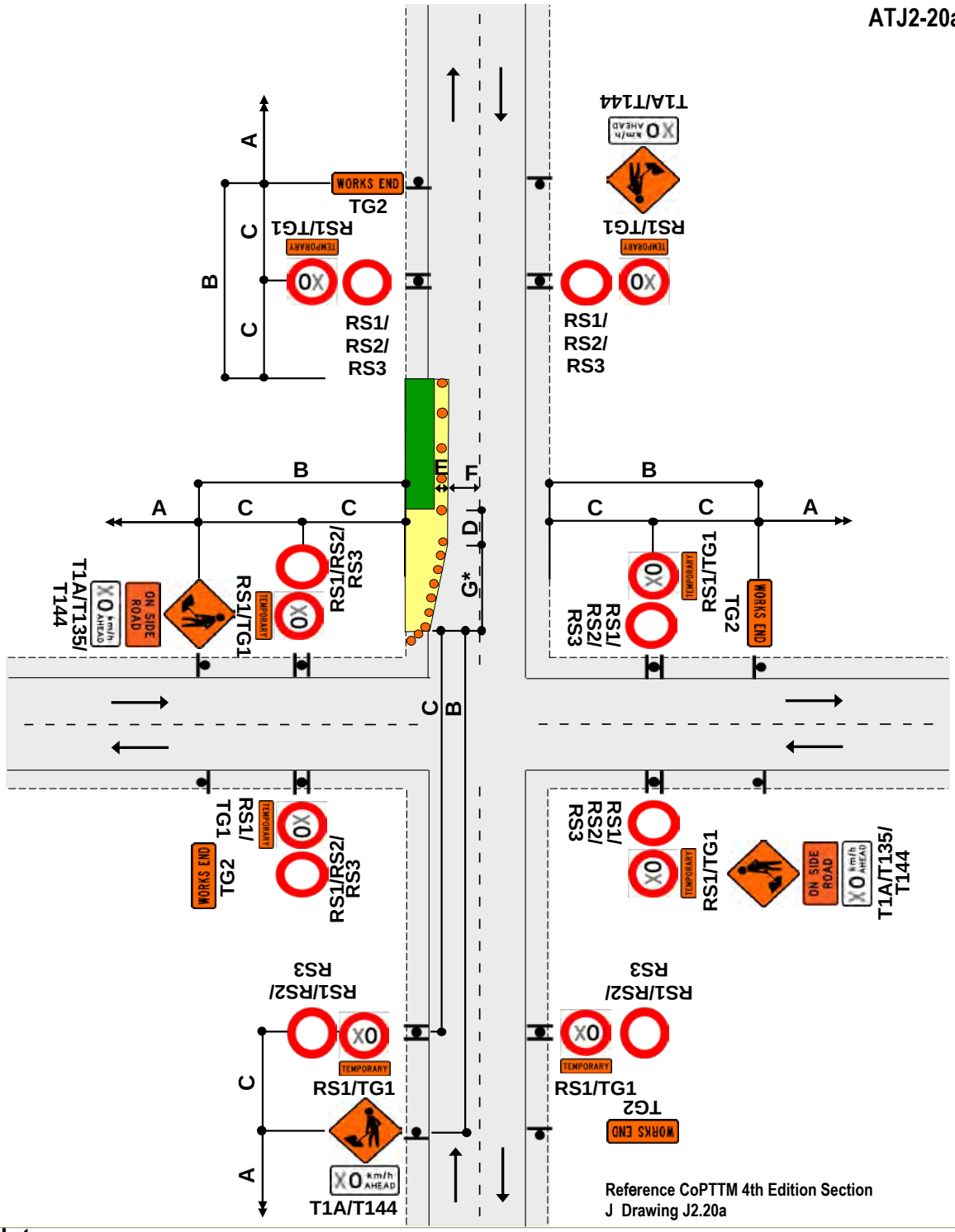
Notes
1. Sign spacing of TSL at the intersection can be reduced as per the table shown
2. This diagram may be used at a T intersection by removing any one of the roads
3. MTC at intersection to be in charge of MTC operation
4. Use TSLs as required by TSL decision matrix
5. The T144 30km/h AHEAD sign is optional

C**	DISTANCE		
Speed (PSL)	Intersection to TSL	TSL to taper	Total
<50km/h	15m	15m	30m
60km/h	15m	25m	40m
>70km/h	15m	40m	55m

STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)
AFTER INTERSECTION - TRAFFIC NOT CROSSING THE CENTRE

ATJ2-20a



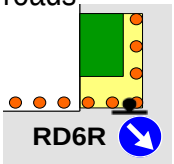
Reference CoPTTM 4th Edition Section J Drawing J2.20a

Notes

1. This diagram may be used at a T intersection by removing any one of the roads
2. Taper length may be reduced by adding a RD6R sign
3. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of Shoulder G = Taper length in metres from the level 1 layout distance table
4. Use TSLs if required by TSL decision matrix
5. The T144 X0km/h AHEAD sign is optional



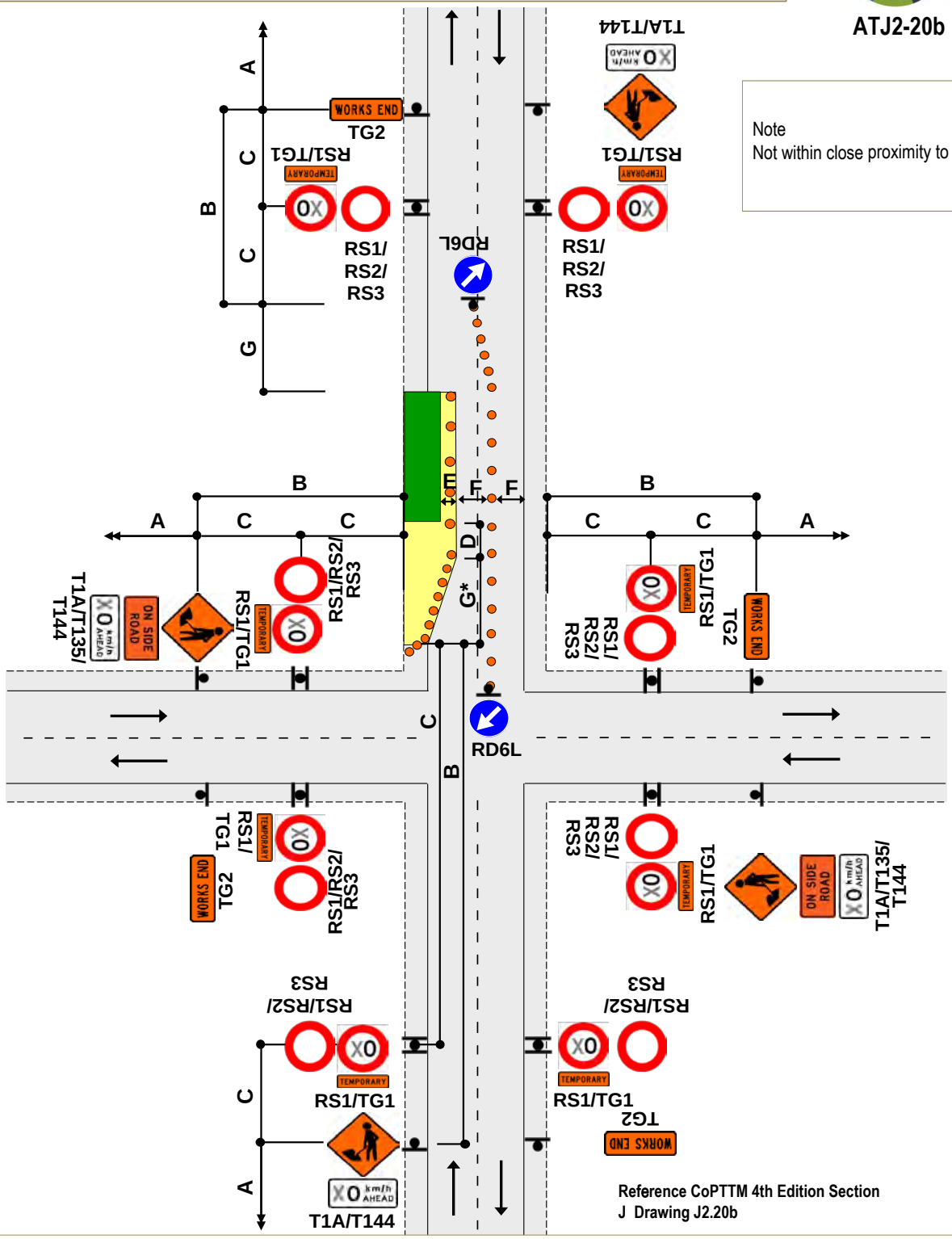
STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)

AFTER INTERSECTION - TRAFFIC CROSSING ROAD CENTRE

ATJ2-20b

Note
Not within close proximity to a traffic signal



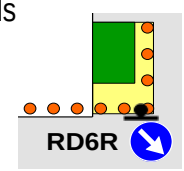
Reference CoPTTM 4th Edition Section J Drawing J2.20b

Notes

1. This diagram may be used at a T intersection by removing any one of the roads
2. Taper length may be reduced by adding a RD6R sign
3. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of Shoulder G = Taper length in metres from the level 1 layout distance table
4. Use TSLs if required by TSL decision matrix
5. The T144 X0km/h AHEAD sign is optional



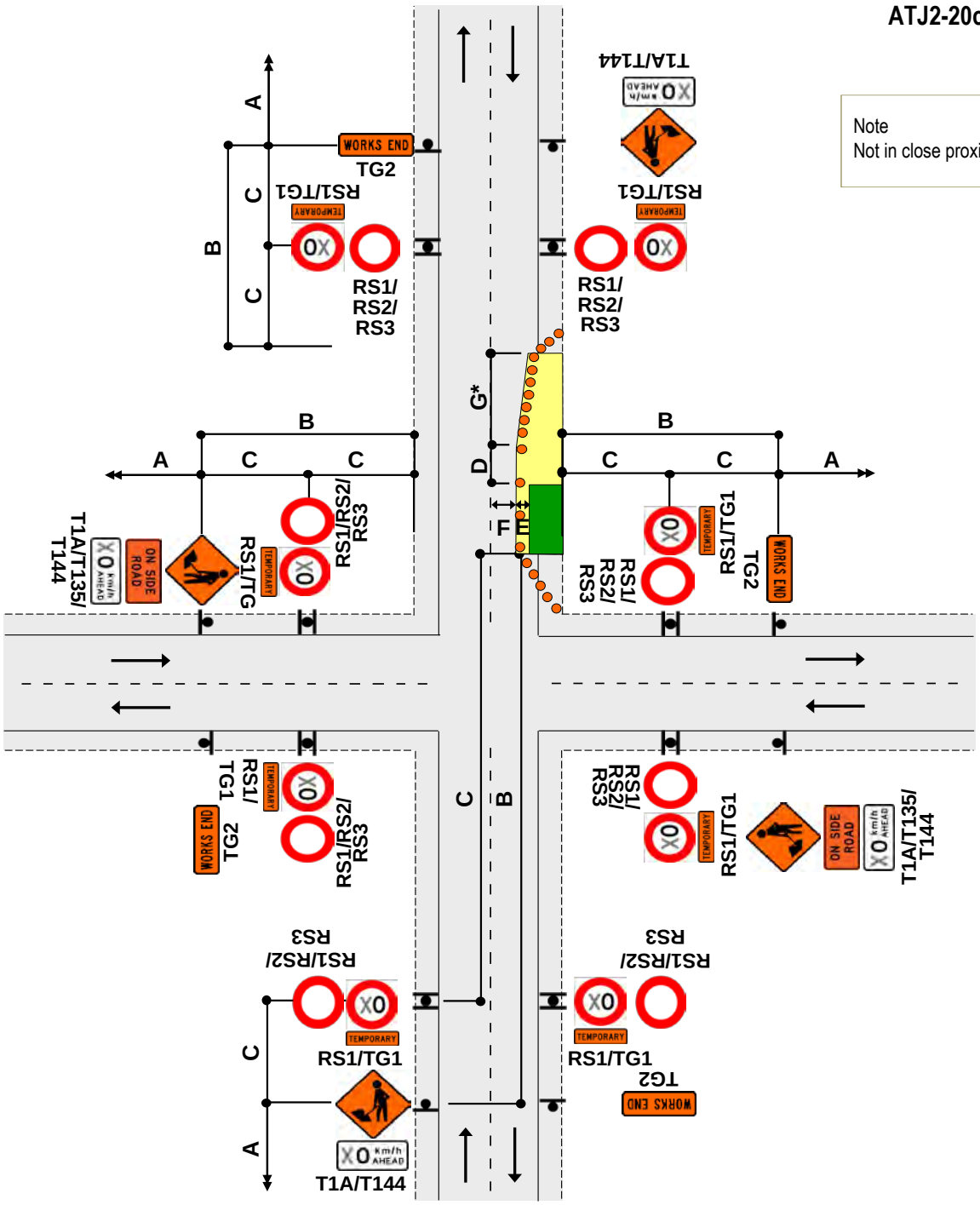
STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)

BEFORE INTERSECTION - TRAFFIC NOT CROSSING ROAD CENTRE

ATJ2-20c

Note
Not in close proximity to a traffic signal

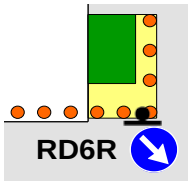


Notes

1. This diagram may be used at a T intersection by removing any one of the roads
2. Taper length may be reduced by adding a RD6R sign
3. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of Shoulder G = Taper length in metres from the level 1 layout distance table
4. Use TSLs if required by TSL decision matrix
5. The T144 X0km/h AHEAD sign is optional



Reference CoPTTM 4th Edition Section J Drawing J2.20c

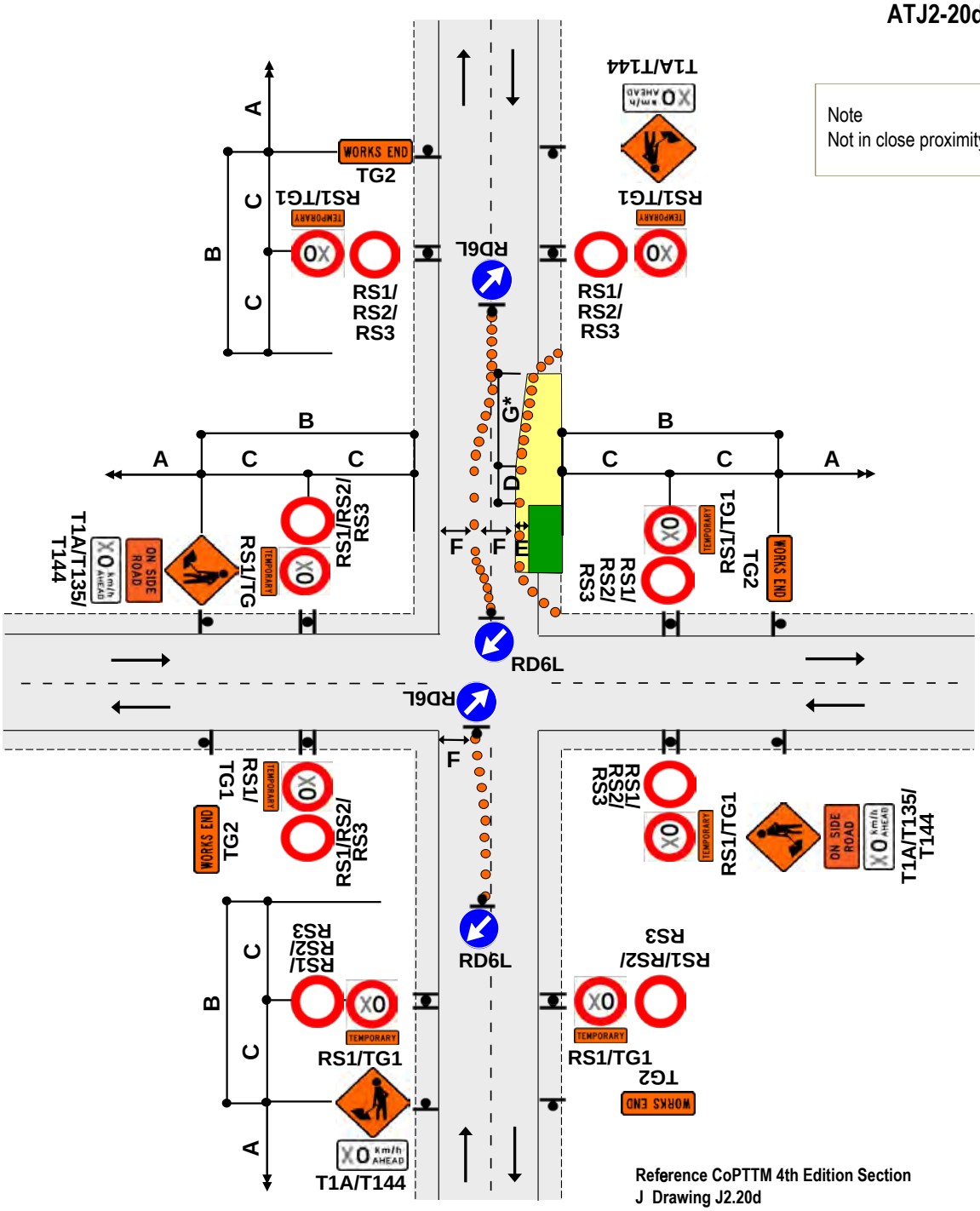
STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)

BEFORE INTERSECTION - TRAFFIC CROSSING ROAD CENTRE

ATJ2-20d

Note
Not in close proximity to a traffic signal



Notes

1. This diagram may be used at a T intersection by removing any one of the roads
2. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lane G = Taper length in metres from the level 1 layout distance table
3. Install shifting taper to move road users into the new alignment
4. Use TSLs if required by TSL decision matrix
5. The T144 X0km/h AHEAD sign is optional

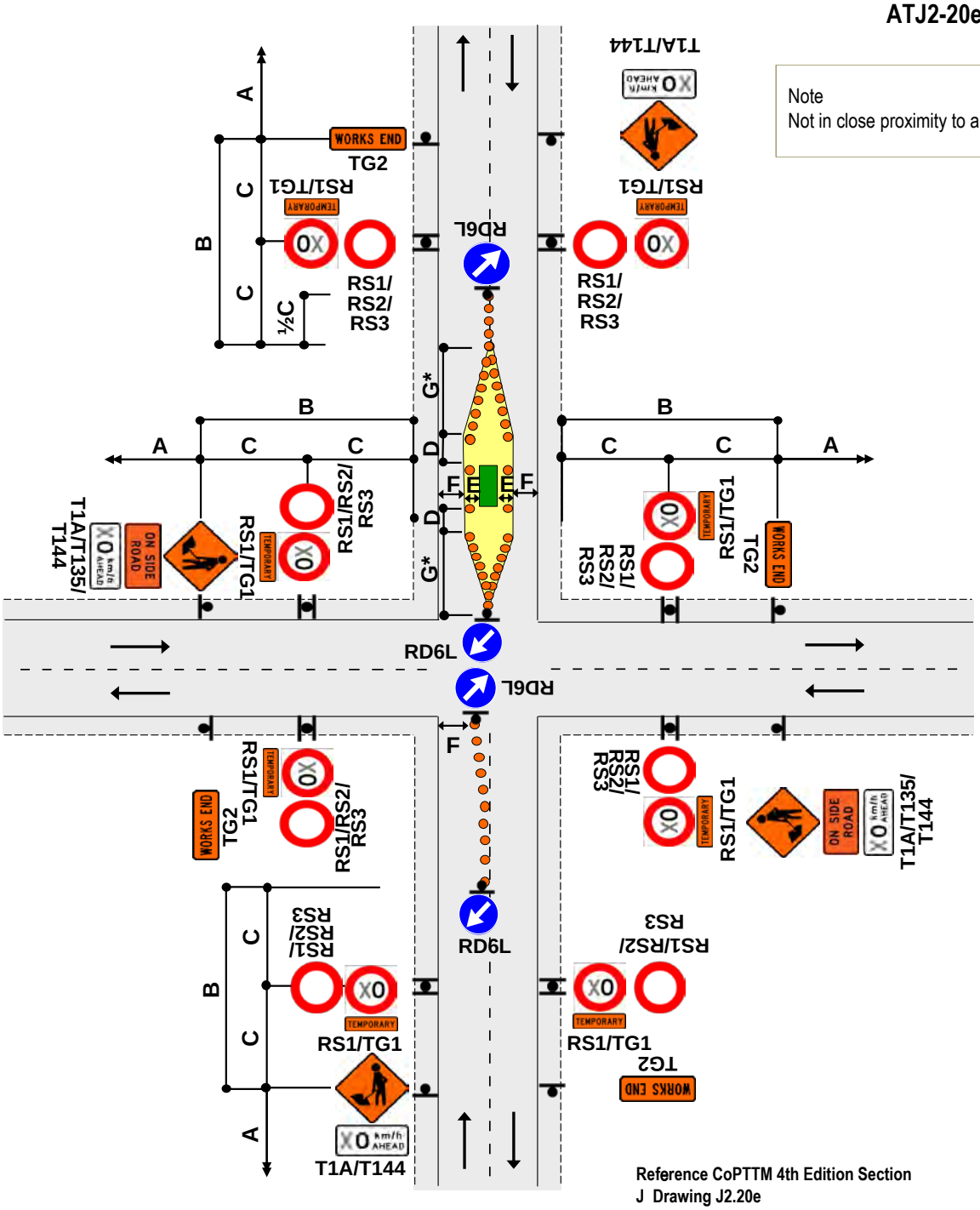
STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)

ON MEDIAN NEAR INTERSECTION

ATJ2-20e

Note
Not in close proximity to a traffic signal



Reference CoPTTM 4th Edition Section J Drawing J2.20e

Notes

1. This diagram may be used at a T intersection by removing any one of the roads
2. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

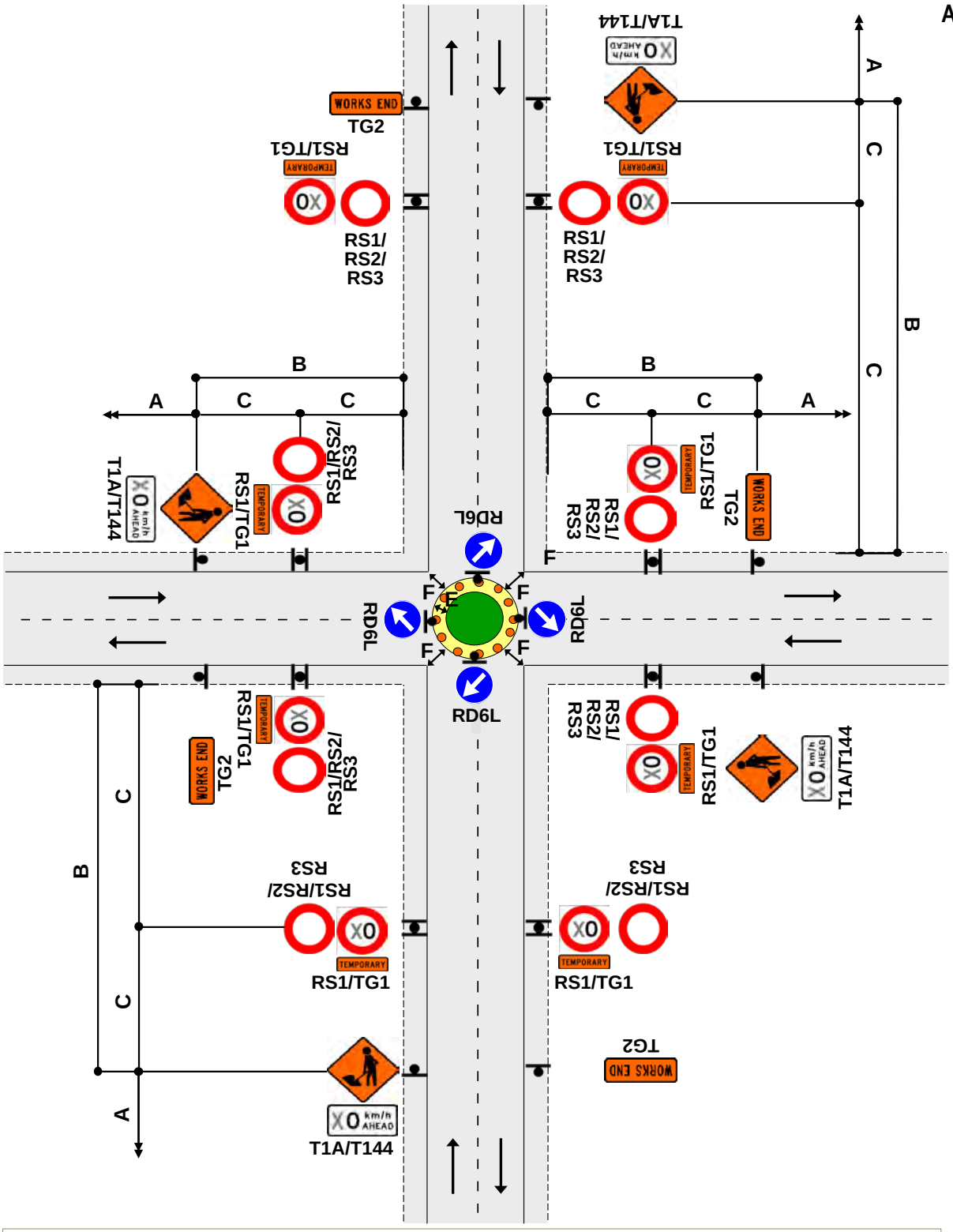
   W = Width of lane G = Taper length in metres from the level 1 layout distance table
3. Install shifting taper to move road users into the new alignment
4. Use TSLs if required by TSL decision matrix
5. The T144 X0km/h AHEAD sign is optional

STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 1 (INTERSECTION OR ROUNDABOUT)

WORK ON EXISTING ROUNDABOUT

ATJ2-21a



Notes

1. This diagram may be used at a T intersection by removing any one of the roads
2. RD6L signs not required at an existing roundabout which already has RD6Ls
3. Lane widths, F, may need to be increased to allow for turning movements of larger vehicles
4. Use TSLs if required by TSL decision matrix
5. The T144 X0km/h AHEAD sign is optional

Reference CoPTTM 4th Edition Section J Drawing J2.21a

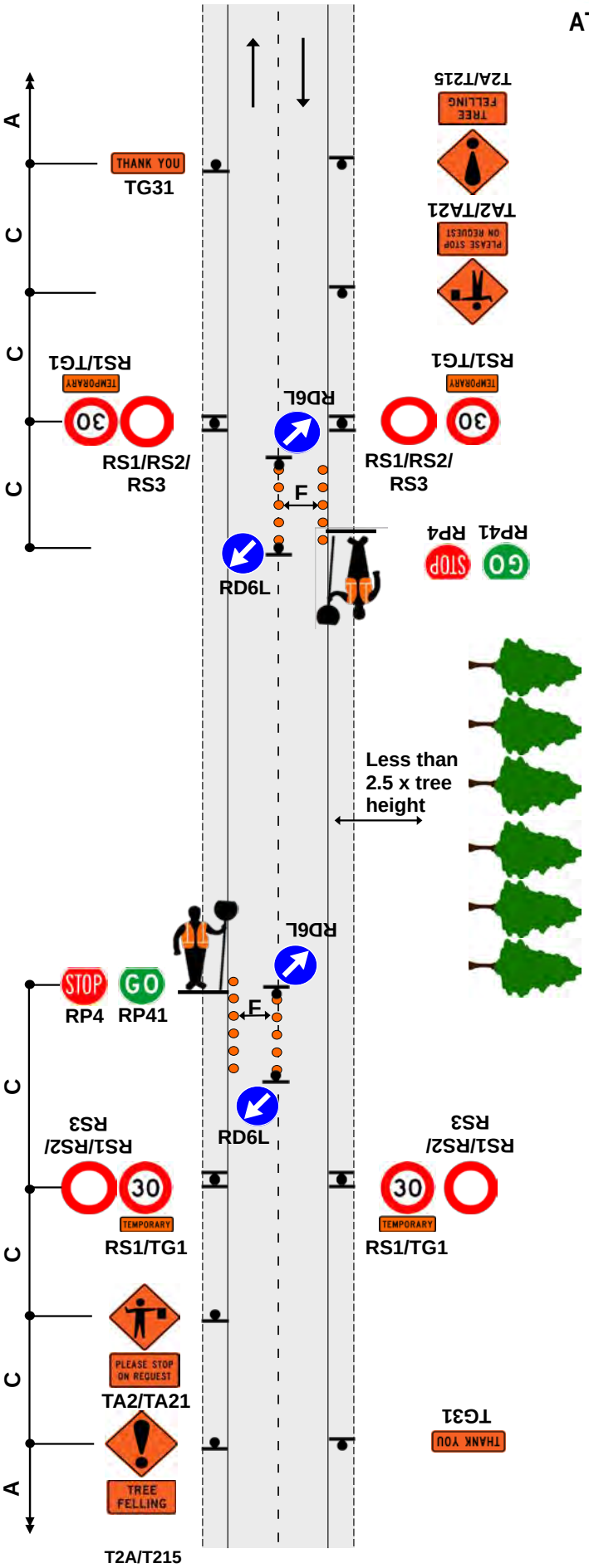
STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 1 (OTHER HAZARDS)
TREE FELLING
LESS THAN 2 x TREE HEIGHT

ATJ2-26a

Notes

1. Extend advance warning signs towards on-coming traffic beyond any expected traffic queues
2. Use supplementary T121 sign "NEXT XXkm" for long tree worksites
3. Off peak hours only
4. <5000vpd urban road <65km/h
   or
   <3000vpd rural road >65km/h

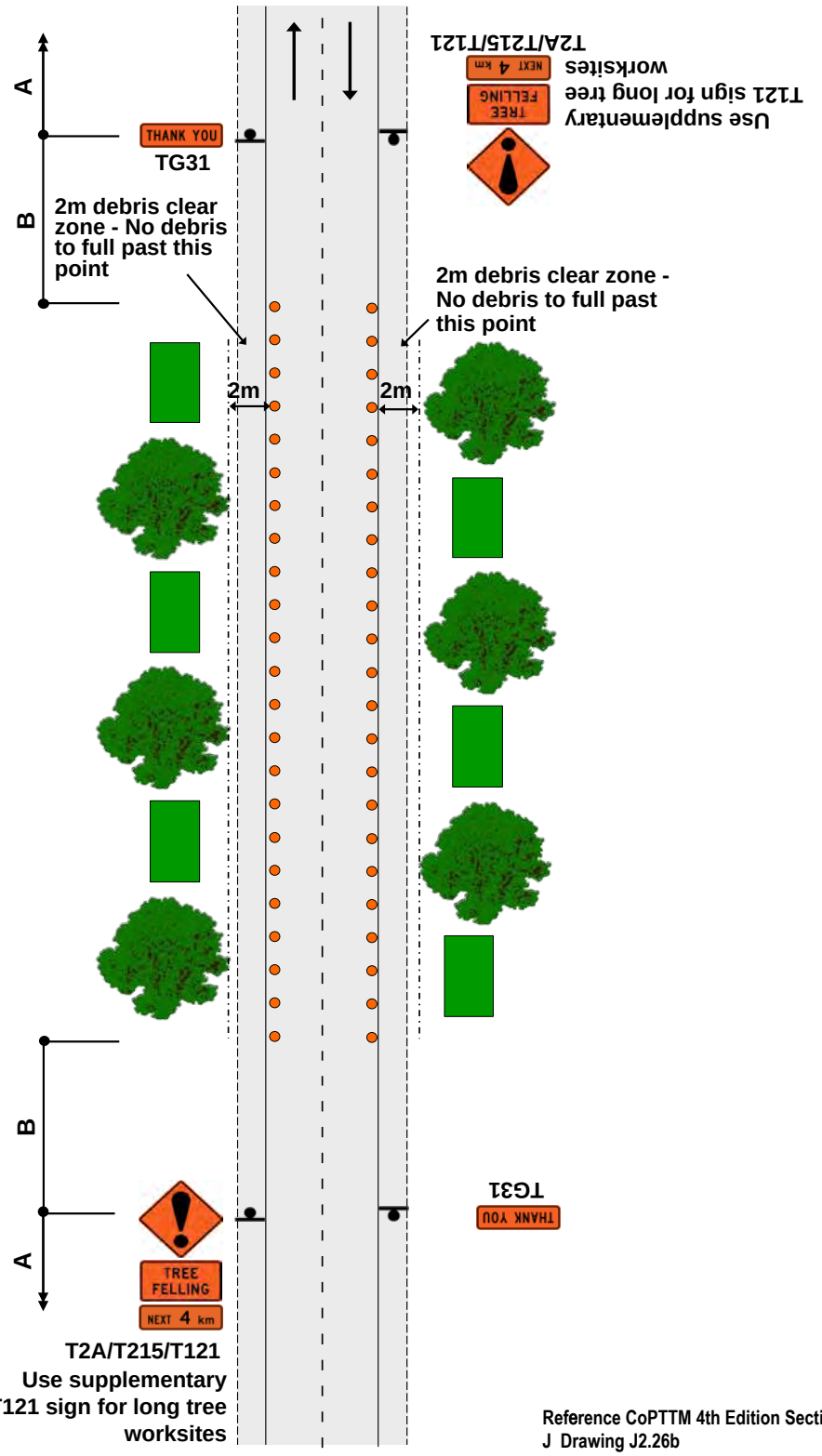


Reference CoPTTM 4th Edition Section J Drawing J2.26a

STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 1 (OTHER HAZARDS)
MOWING AND GARDENING OPERATIONS
TREE PRUNING/ TRIMMING IN BERM ONLY

ATJ2-26b



Reference CoPTTM 4th Edition Section J Drawing J2.26b

Notes

1. Create pedestrian protection where needed – use barricades/cones
2. Instruct all staff to watch for, and control, pedestrians
3. All plant to use amber flashing beacon
4. Staff to wear high-visibility vests
5. Use RP4/RP41and TA2/TA21 signs, Stop/Go paddle operators to control traffic where needed, e.g. felling into/near live lane. TSL signage (30km/h) in tandem with Stop/Go operation
6. Keep road users away from trees when felling (2.5 x tree height distance)

STATIC OPERATION

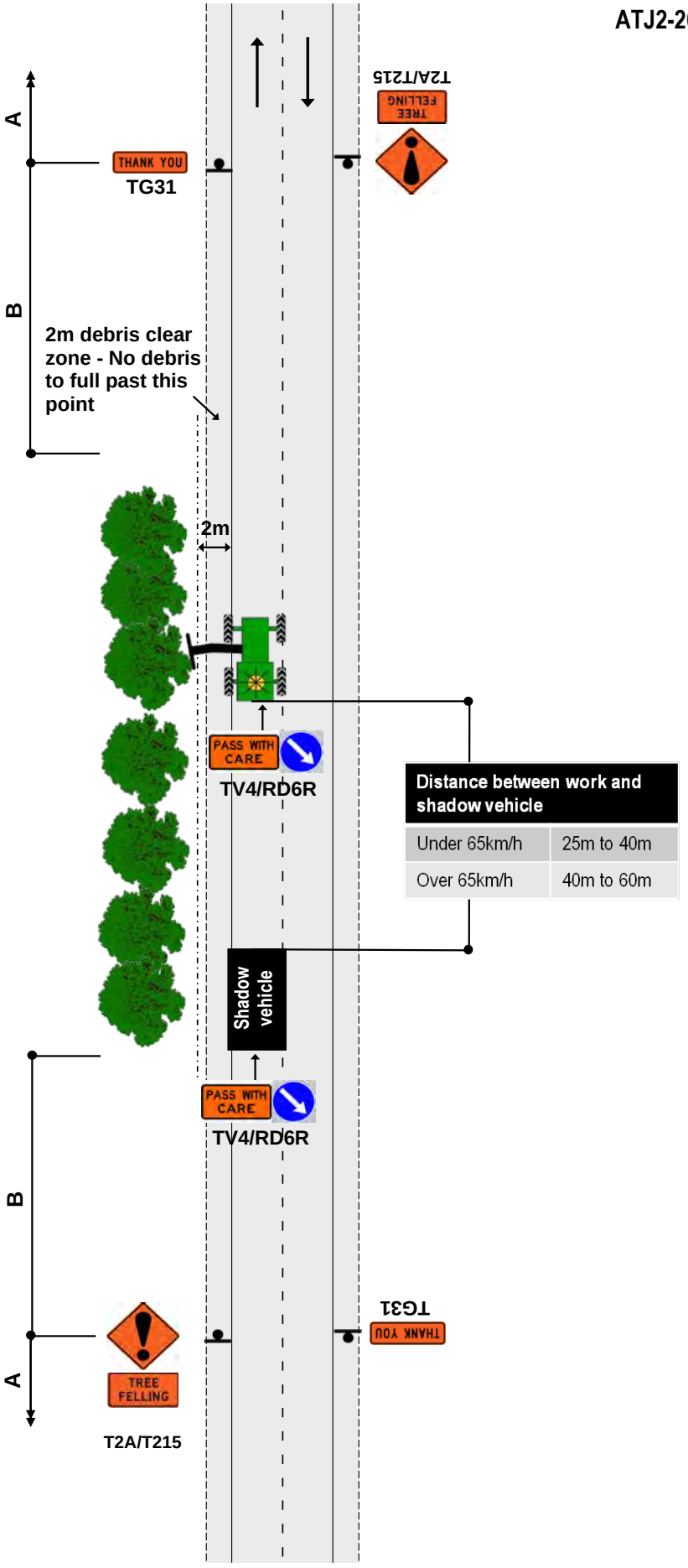
TWO-WAY TWO-LANE ROAD - LEVEL 1 (OTHER HAZARDS)

SHELTER BELT TRIMMING

ATJ2-26c

Notes

1. Approval required from TMC where permanent speed exceeds 50km/h
2. All plant to use amber flashing beacon(s)
3. High-visibility jackets to be worn at all times
4. Shadow vehicle required when any part of the operation encroaches onto the shoulder and/or carriageway



Reference CoPTTM 4th Edition
Section J Drawing J2.26c

TWO-WAY TWO-LANE ROAD - LEVEL 1
UNATTENDED WORKSITE
MANHOLE WORK

ATJ2-28a

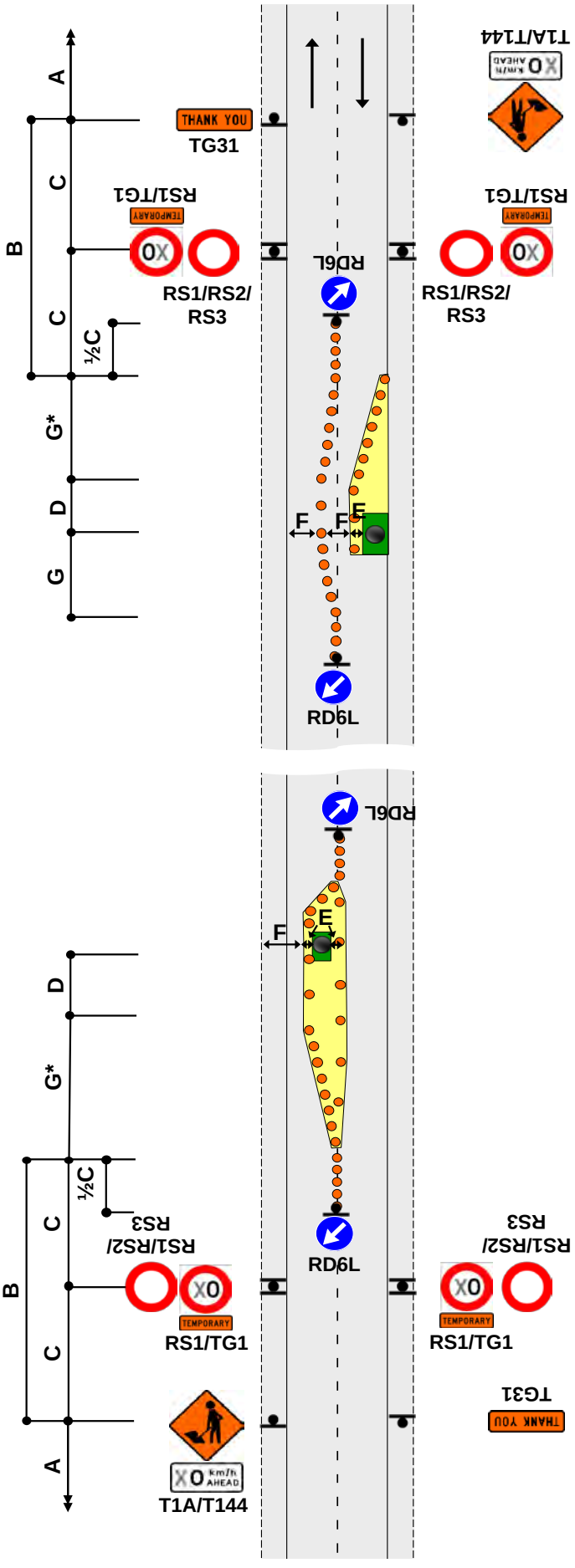
Notes

1. For work such as raised service covers which need protection while concrete sets
2. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lane

   G = Taper length in metres from the level 1 layout distance table
3. Use TSLs if required by TSL decision matrix
4. The T144 "XXkm/h AHEAD" sign is optional



Reference CoPTTM 4th Edition
Section J Drawing J2.28a

STATIC OPERATION

TWO-WAY FOUR-LANE - LEVEL 1

RIGHT LANE CLOSURE

ATJ2-39a

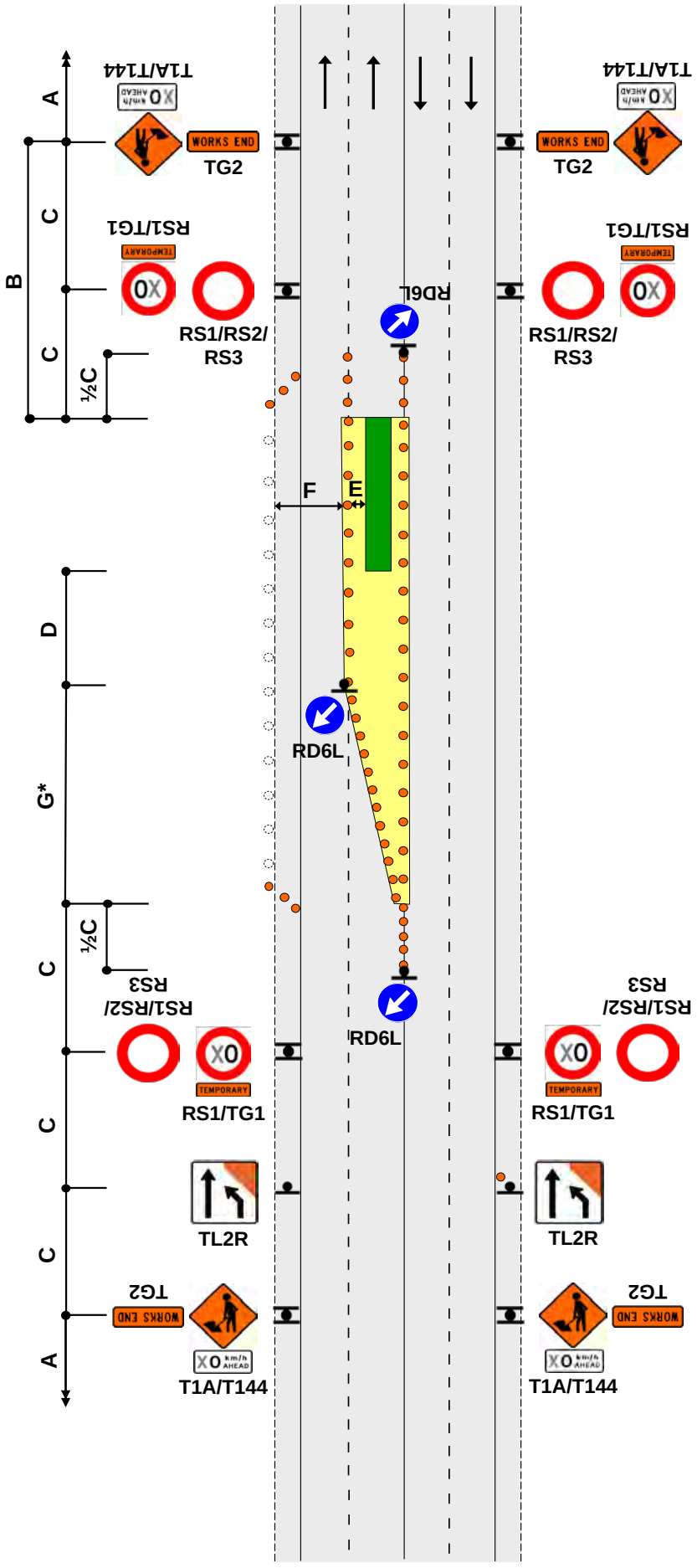
Notes

1. Where a physical centre median exists which is more than 2m wide, signs and cones may be positioned on the median
2. *Calculation of taper length for lateral shift of less than 3.5m is:

   $$\frac{W \times G}{3.5}$$

   W = Width of lateral shift

   G = Taper length in metres from the level 1 layout distance table
3. If the closure is on a passing lane, the start of the taper must be greater than 600m after the start of the passing lane (if this cannot be achieved then close the passing lane completely and cover all permanent passing lane signs)
4. If the end of the closure is within 600m of the end of a passing lane, continue to close the centre lane
5. Cones must be placed behind any away-facing signs for rear-side visibility
6. Use TSLs as required by TSL decision matrix
7. Cones from TSL to taper are mandatory at over 65km/h (for positive traffic management)
8. The T144 "XXkm/h AHEAD" sign is optional



Reference CoPTTM 4th Edition Section J
Drawing J2.39a

ONE-WAY TWO-LANE DIVIDED OR TWO-LANE ROAD - LEVEL 1

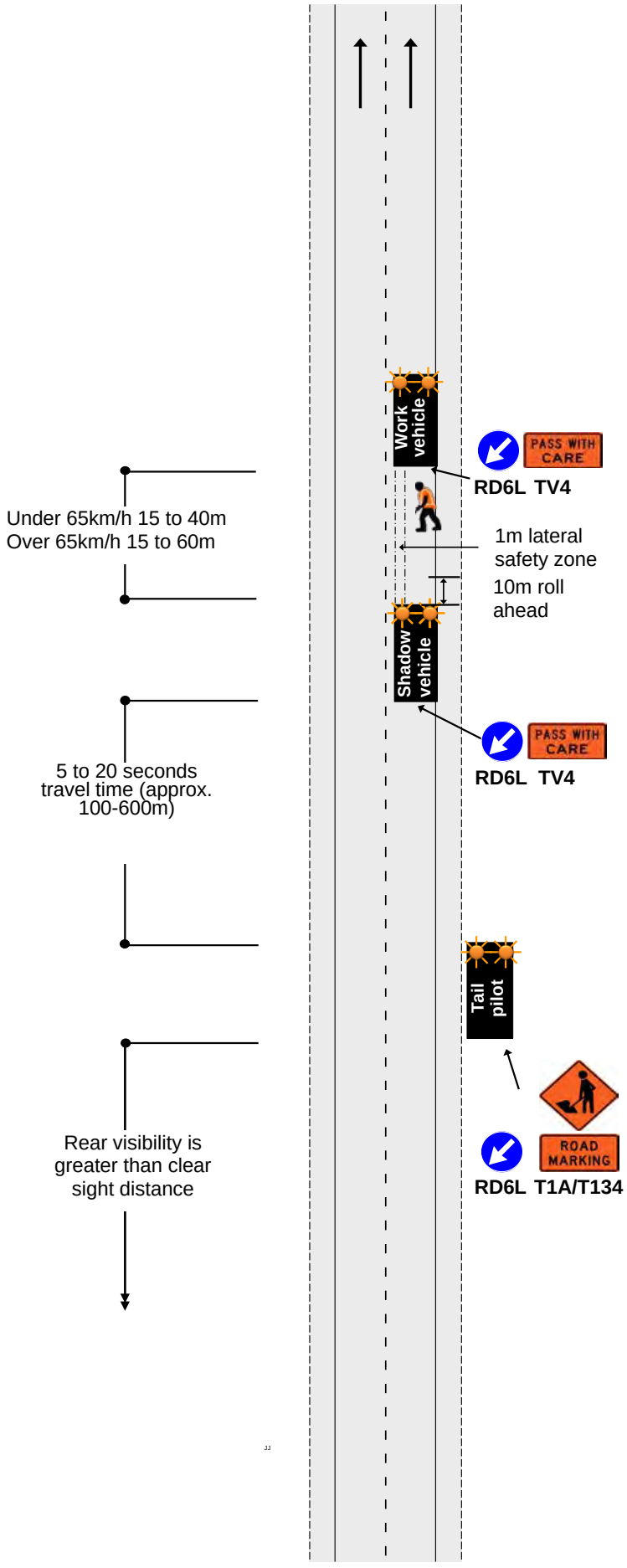
PERSONAL IN THE LIVE LANE

ANY SPEED

ATJ4-8a

Notes

1. If the permanent speed is under 65km/h, the tail pilot vehicle may be replaced with static signs (T1A with appropriate supplementary plate and TG2)



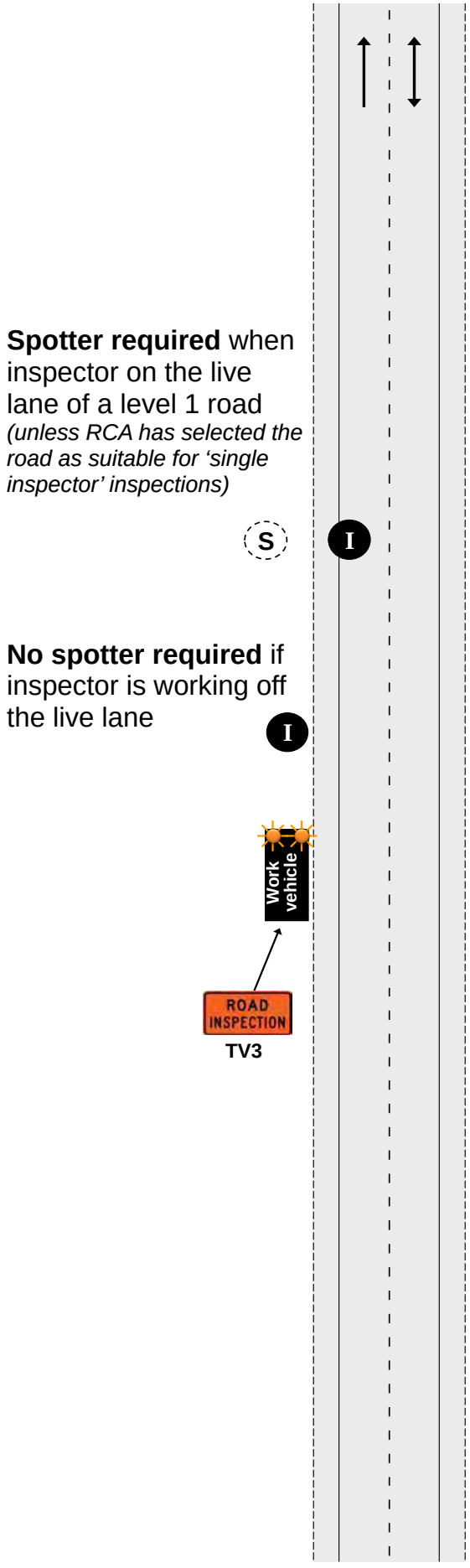
Reference CoPTTM 4TH Edition
Section J Drawing J4.8a

INSPECTION ACTIVITIES - LEVEL 1
ON SHOULDER AND IN THE LIVE LANE

ATJ4-10

Notes

1. Inspectors must move to avoid traffic. They must not expect traffic to move or slow down to avoid them
2. On busy roads where traffic volumes and speed affect access to the live lane, peak periods should be avoided or a higher level of TTM considered
3. Advance warning in the form of an inspection vehicle fitted with one and preferable two amber flashing beacons and a rear-mounted sign indicating the type of activity taking place must be positioned in advance of the inspection site
4. A vehicle is not required on a level LV or level 1 road with a permanent speed of less than 65km/h if the inspector remains on a footpath
5. On roads with a permanent speed of less than 65km/h an amber flashing beacon is not required on the vehicle if the inspector or non-invasive works is on an unsealed shoulder (or further away from the carriageway - including a footpath)
6. A spotter is not required for inspections and non-invasive works on level LV roads
7. Where no LV roads have been designated, the RCA can select level 1 roads for 'single inspector' inspections
8. Where an unaccompanied inspector is not able to maintain adequate attention (eg due to work tasks or poor visibility), a spotter person will be required or another type of traffic management operation used



Reference CoPTTM 4TH Edition
Section J Drawing J4.10

Auckland Transport

Generic Traffic Management Diagrams
Section L

STATIC OPERATION

TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION

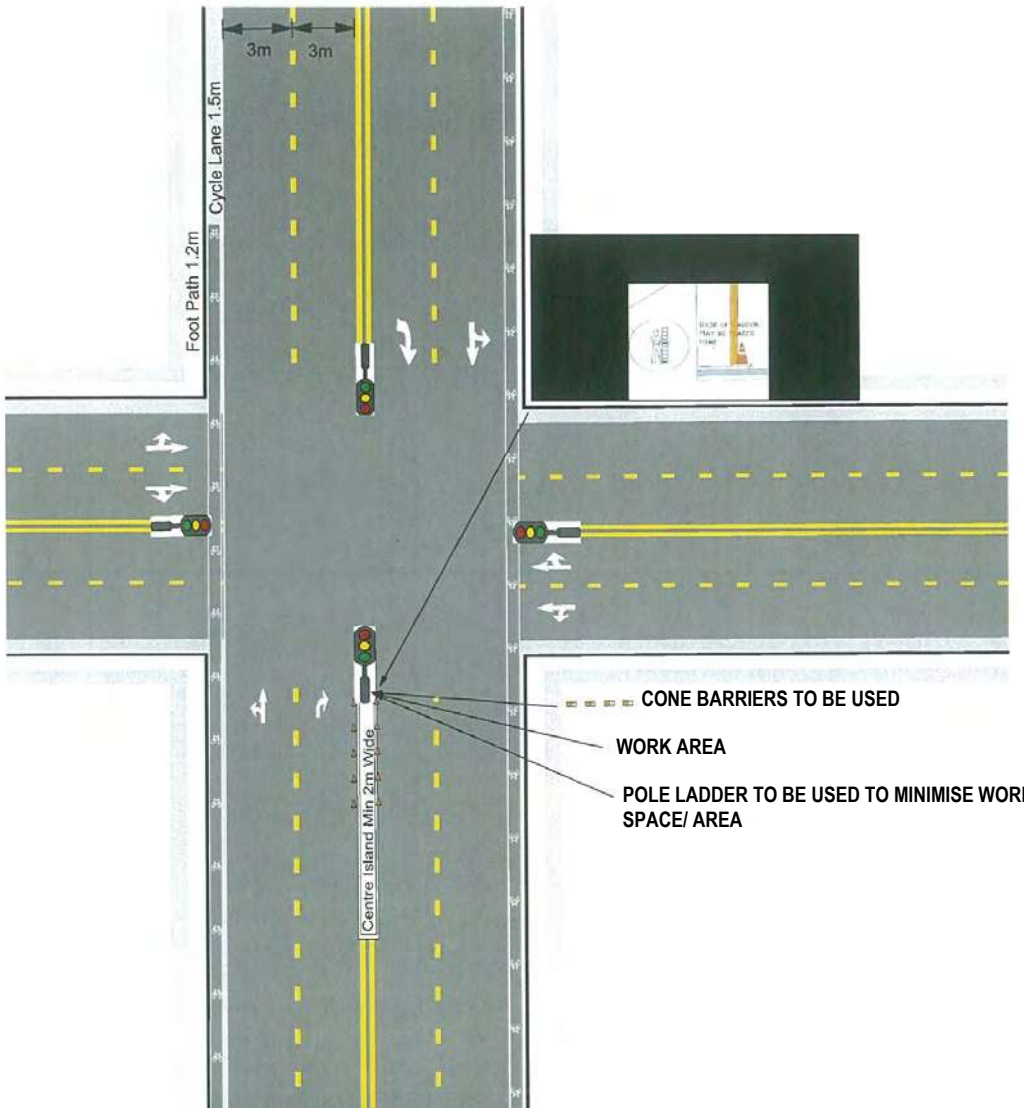
LANE DROP - SIGNALISED MAINTENANCE ONLY

CHANGING OF SHADES, BULBS, LANTERNS, LOOP CUTTING

ATLC1-1

Notes

1. Works on the centre island
2. Maximum Time allowed is 60 minutes unless stated otherwise by the RCA
3. Island to be less than 2m wide
4. All works to comply to CoPTTM Lay out tables and any other requirements as requested by the approving RCA
5. Pedestrian access must be maintained at all times



STATIC OPERATION

TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION

LANE DROP - SIGNALISED MAINTENANCE ONLY

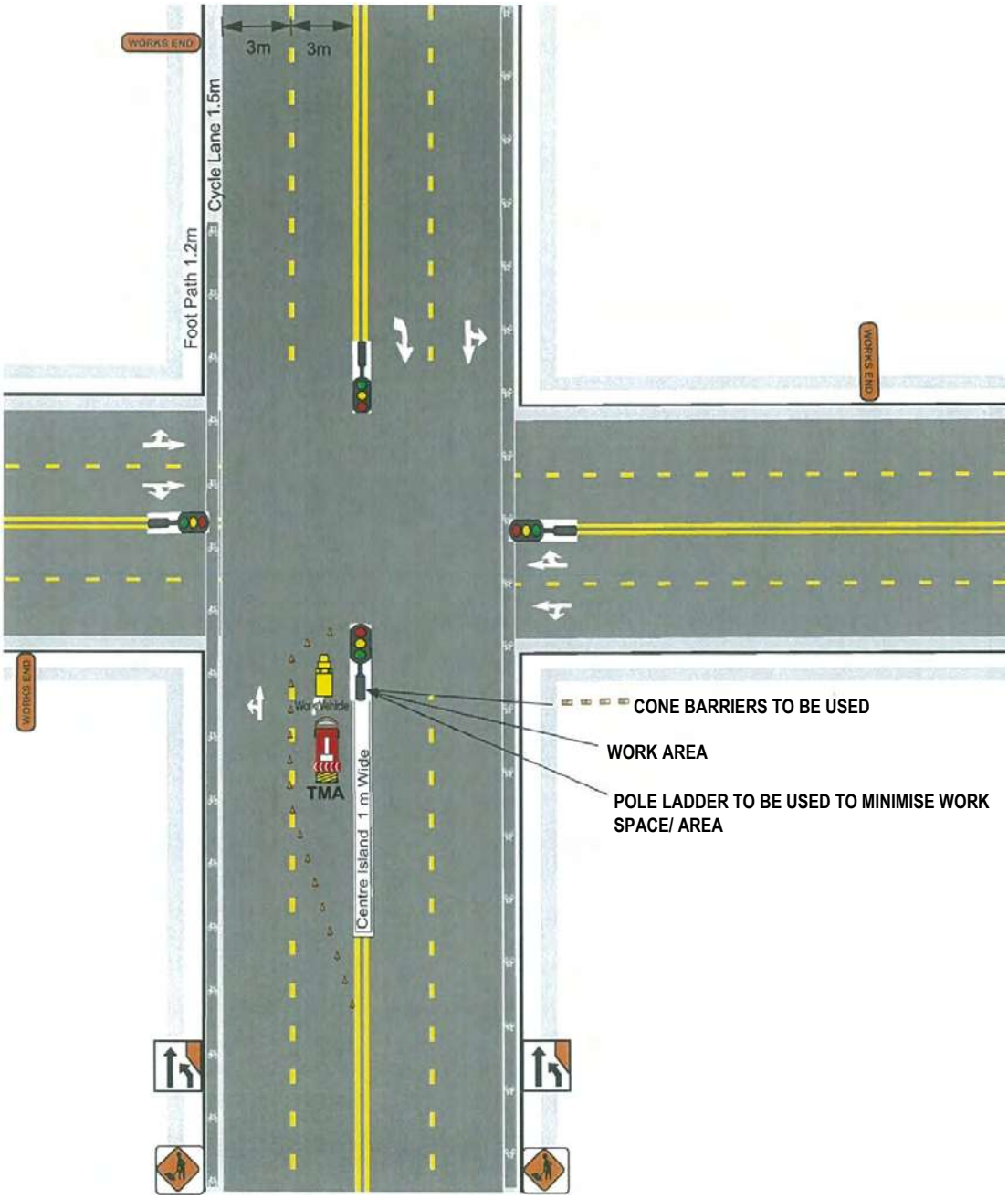
CHANGING OF SHADES, BULBS, LANTERNS, LOOP CUTTING

ATLC1-2

Notes

1. Works on the centre island
2. Work could take longer than 1 hour depending on the nature of the repair works
3. Island be less than 2m wide
4. All works to comply to CoPTTM Lay out tables and any other requirements as requested by the approving RCA
5. Pedestrian access must be maintained at all times
6. CoPTTM D4.1.1

   A shadow vehicle is used to provide close protection from the rear for personnel on foot and/or work vehicles in the working space. The driver of the shadow vehicle must remain in the cab of the vehicle while working as part of a mobile operation.



STATIC OPERATION

TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION
LANE DROP - SIGNALISED MAINTENANCE ONLY
CHANGING OF SHADES, BULBS, LANTERNS, LOOP CUTTING

ATLC1-3

Notes

1. Works on the footpath signal
2. Work could take longer than 1 hour depending on the nature if the repair works
3. Island be less than 1m wide
4. All works to comply to CoPTTM Lay out tables and any other requirements as requested by the approving RCA
5. Pedestrian access to be maintained at all times
6. CoPTTM D4.1.1

   A shadow vehicle is used to provide close protection from the rear for personnel on foot and/or work vehicles in the working space. The driver of the shadow vehicle must remain in the cab of the vehicle while working out of a vehicle operation.

RESCINDED

NOTE:

This plan has been removed due to it not being compliant in regard to cycleway treatment. Any previous approval of this plan is rescinded.

STATIC OPERATION

TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION
CYCLE LANE/ FOOTPATH - SIGNALISED MAINTENANCE ONLY
CHANGING OF SHADES, BULBS, LANTERNS, LOOP CUTTING

ATLC1-4

Notes

1. Works on the footpath signal
2. Maximum Time allowed is 60 minutes unless stated otherwise by the RCA
3. All works to comply to CoPTTM Lay out tables and any other requirements as requested by the approving RCA
4. Pedestrian access must be maintained at all times

RESCINDED

NOTE:

This plan has been removed due to it not being compliant in regard to cycleway treatment. Any previous approval of this plan is rescinded.

STATIC OPERATION

TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION

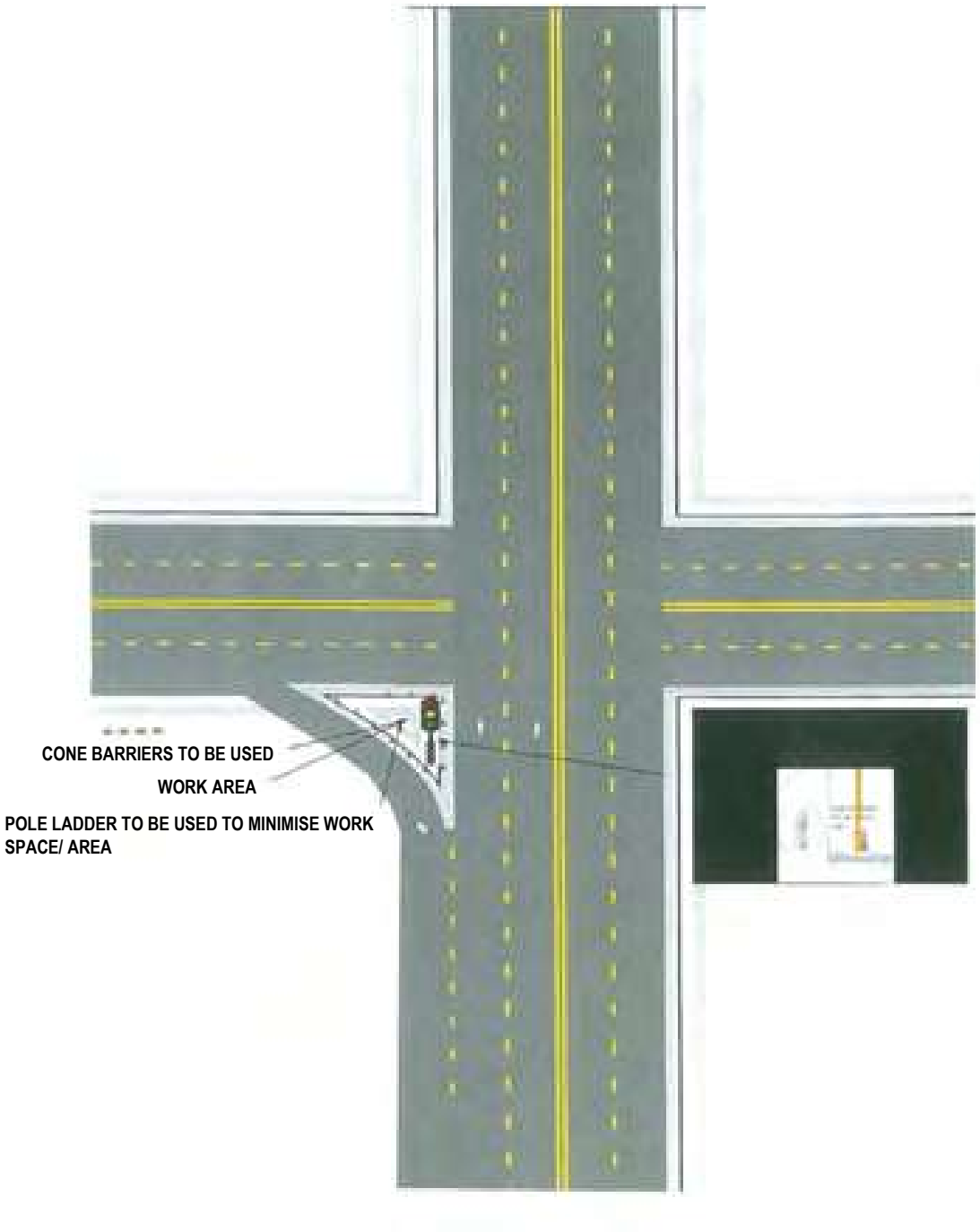
ISLAND WORKS - SIGNALISED MAINTENANCE ONLY

CHANGING OF SHADES, BULBS, LANTERNS, LOOP CUTTING

ATLC1-5

Notes

1. Works on island signals
2. Maximum Time allowed is 60 minutes unless stated otherwise by the RCA
3. All works to comply to CoPTTM Lay out tables and any other requirements as requested by the approving RCA
4. Pedestrian access must remain clear at all times



STATIC OPERATION

TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION

ISLAND WORKS - SIGNALISED MAINTENANCE ONLY

CHANGING OF SHADES, BULBS, LANTERNS, LOOP CUTTING

ATLC1-6

Notes

1. Works on island signals
2. Work could take longer than 1 hour depending on the nature if the repair works
3. All works to comply to CoPTTM Lay out tables and any other requirements as requested by the approving RCA
4. Pedestrian access must always be maintained at all times

RESCINDED

NOTE:

This plan has been removed due to it not being compliant in regard to clash of pedestrians and left turning traffic, pending solution. Any previous approval of this plan is rescinded.

STATIC OPERATION

TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION

SEMI STATIC AND STATIC - SIGNALISED MAINTENANCE ONLY (ISLAND WORKS)

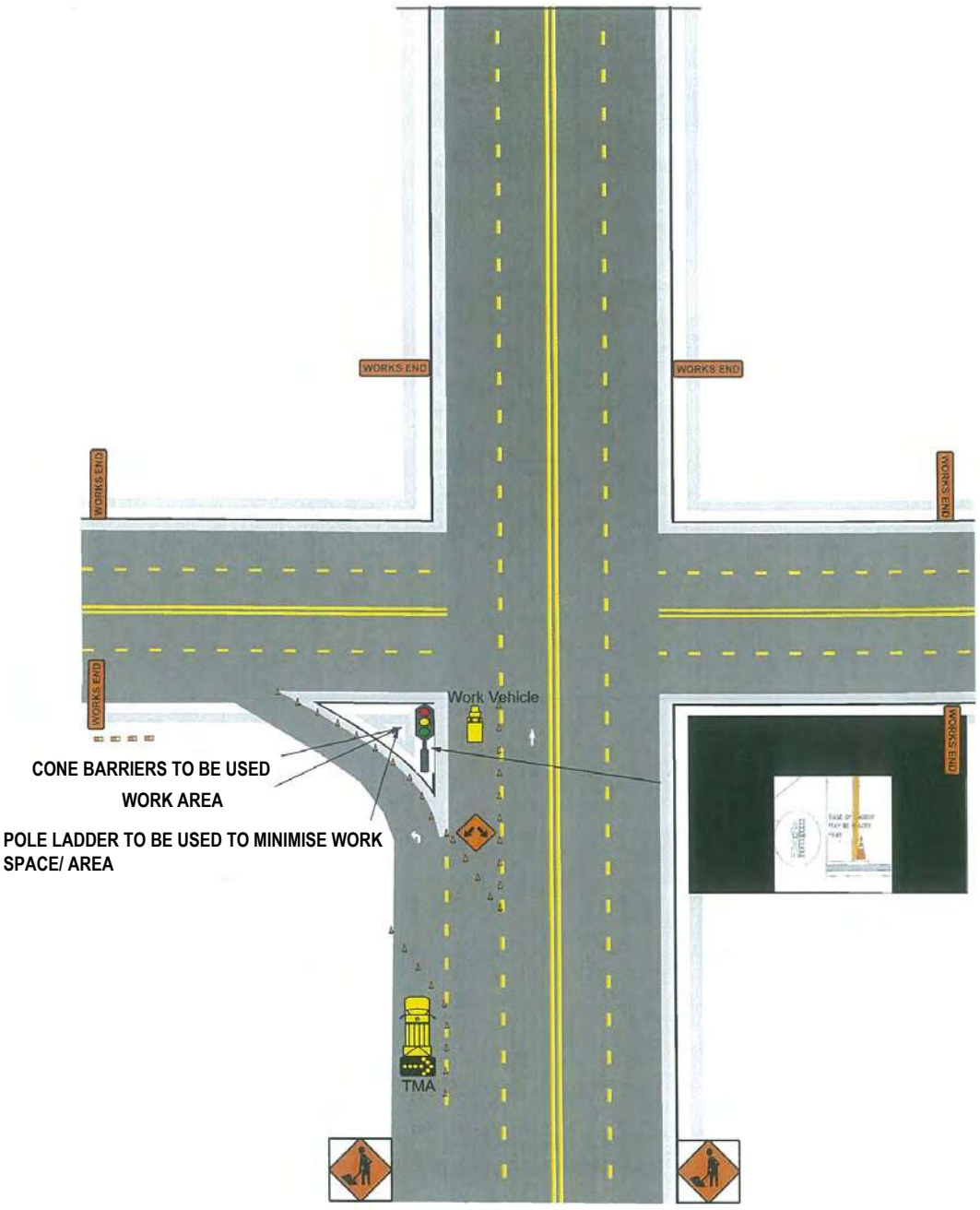
CHANGING OF SHADES, BULBS, LANTERNS, LOOP CUTTING

ATLC1-7

Notes

1. Works on island signals
2. Maximum Time allowed is 60 minutes uless stated otherwise by the RCA
3. All works to comply to CoPTTM Lay out tables and any other requirements as requested by the approving RCA
4. Pedestrian access must always remain clear at all times
5. CoPTTM D4.1.1

A shadow vehicle is used to provide close protection from the rear for personnel on foot and/or work vehicles in the working space. The driver of the shadow vehicle must remain in the cab of the vehicle while working as part of a mobile operation.



Refrence TSL Generic TMP Drawing 07

MOBILE OPERATION

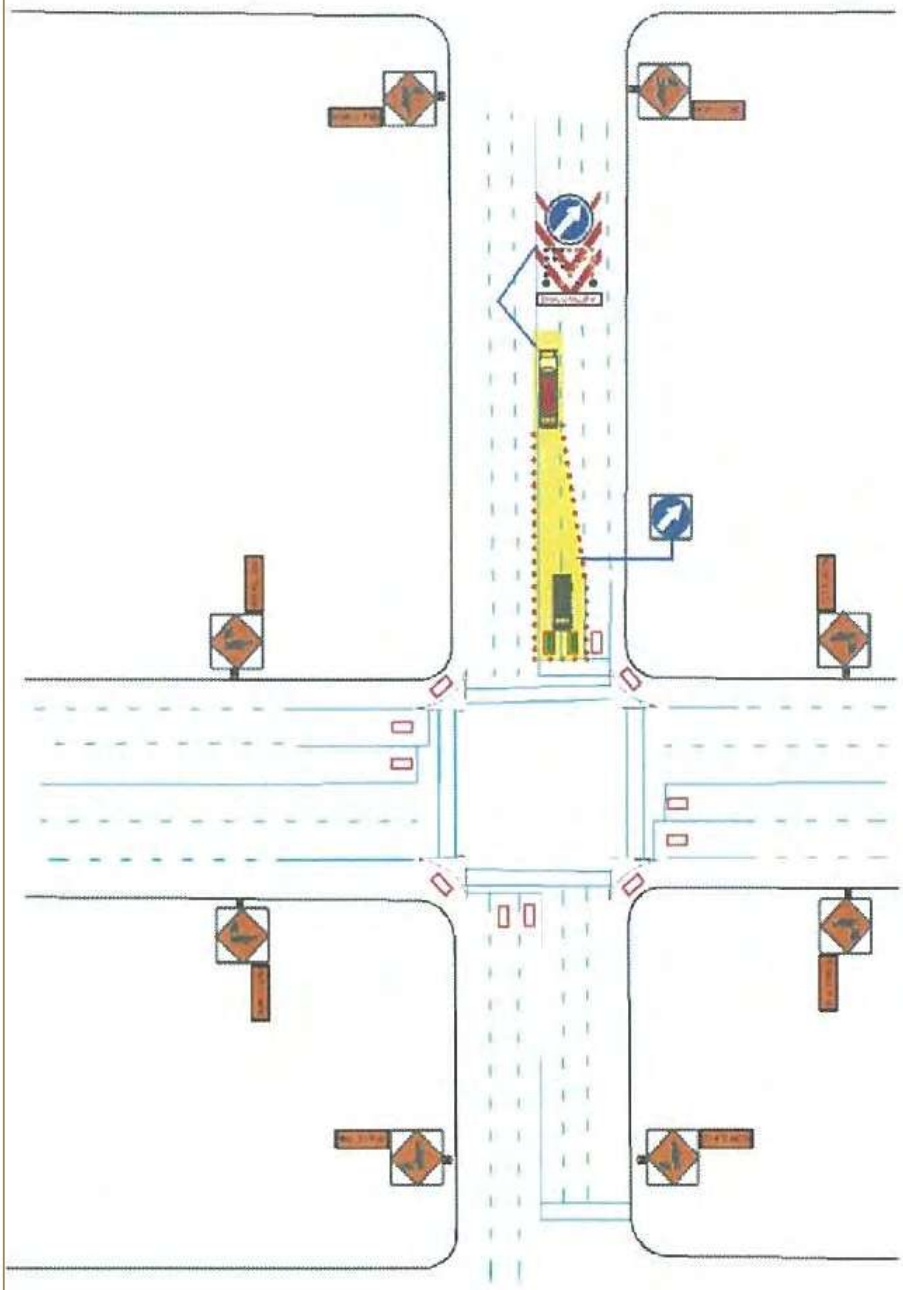
TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION
LANE CLOSURES - SIGNALISED MAINTENANCE ONLY
LOOP CUTTING

ATLC1-8

SCOPE NOTES

1. STMS to contact SCATS prior to the works commencing
2. STMS to be in constant communication with SCATS during the works
3. STMS to inform SCATS when the works have been completed
4. Pedestrian access must always be maintained at all times
5. CoPTTM D4.1.1

A shadow vehicle is used to provide close protection from the rear for personnel on foot and/or work vehicles in the working space. The driver of the shadow vehicle must remain in the cab of the vehicle while working as part of a mobile operation.



STATIC OPERATION

TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION
LANE CLOSURES - SIGNALISED MAINTENANCE ONLY
LOOP CUTTING

ATLC1-9

SCOPE NOTES

1. STMS to contact SCATS prior to the works commencing
2. STMS to be in constant communication with SCATS during the works
3. STMS to inform SCATS when the works have been completed
4. Pedestrian access must always be maintained at all times
5. Work could take longer than 1 hour depending on the nature if the repair works

RESCINDED

NOTE:

This plan has been removed due to it not being compliant in regard to clash of pedestrians and left turning traffic, pending solution. Any previous approval of this plan is rescinded.

MOBILE OPERATION

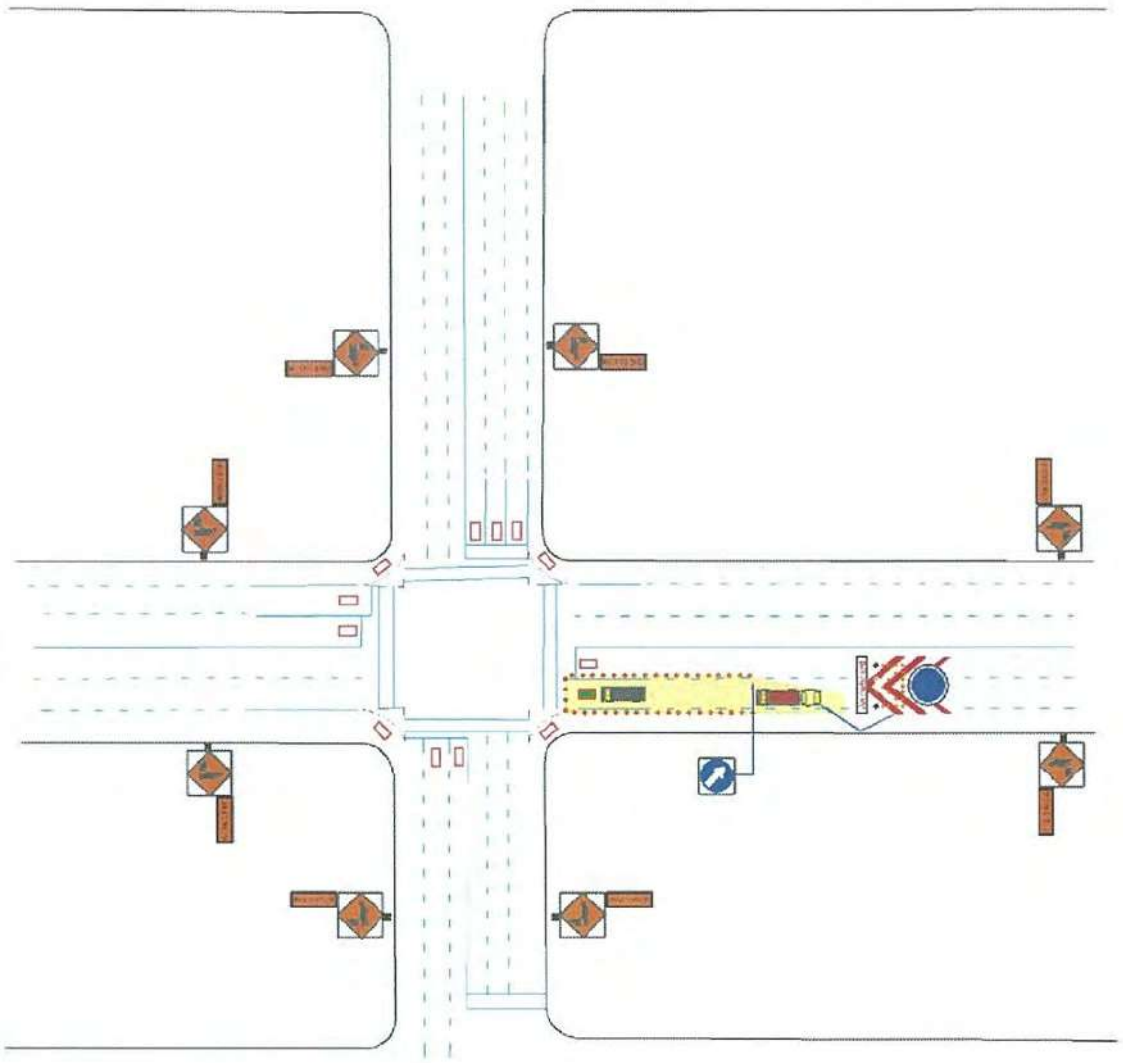
TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION
LANE CLOSURES - SIGNALISED MAINTENANCE ONLY
LOOP CUTTING

ATLC1-10

Notes

1. STMS to contact SCATS prior to the works commencing
2. STMS to be in constant communication with SCATS during the works
3. STMS to inform SCATS when the works have been completed
4. Pedestrian access must be maintained at all times
5. CoPTTM D4.1.1

   A shadow vehicle is used to provide close protection from the rear for personnel on foot and/or work vehicles in the working space. The driver of the shadow vehicle must remain in the cab of the vehicle while working as part of a mobile operation.



Refrence TSL Generic TMP Drawing work area 11

MOBILE OPERATION

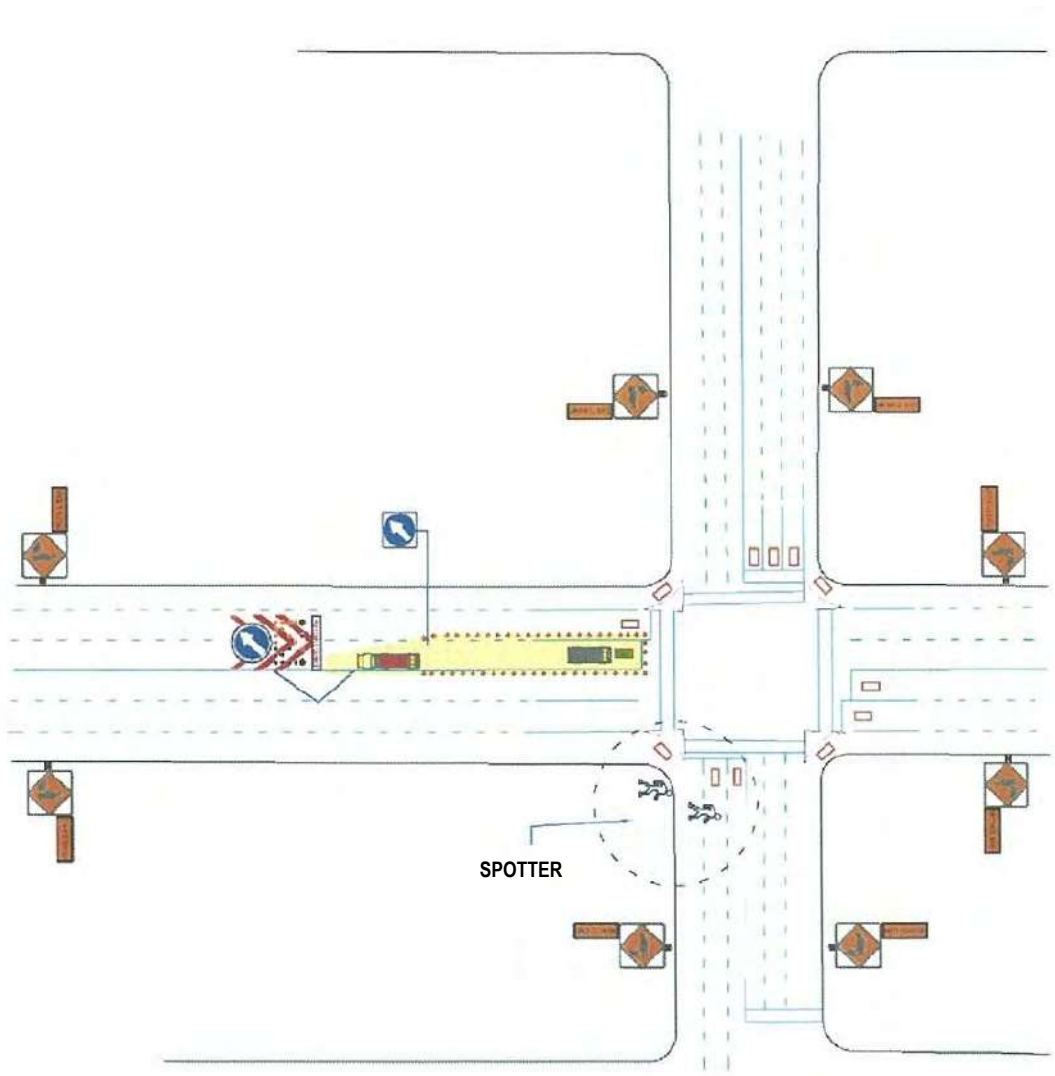
TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION
LANE CLOSURES - SIGNALISED MAINTENANCE ONLY
LOOP CUTTING

ATLC1-11

Notes

1. STMS to contact SCATS prior to the works commencing
2. STMS to be in constant communication with SCATS during the works
3. STMS to inform SCATS when the works have been completed
4. Pedestrian access must be maintained at all times
5. CoPTTM D4.1.1

A shadow vehicle is used to provide close protection from the rear for personnel on foot and/or work vehicles in the working space. The driver of the shadow vehicle must remain in the cab of the vehicle while working as part of a mobile operation.



Refrence TSL Generic TMP Drawing work area 13

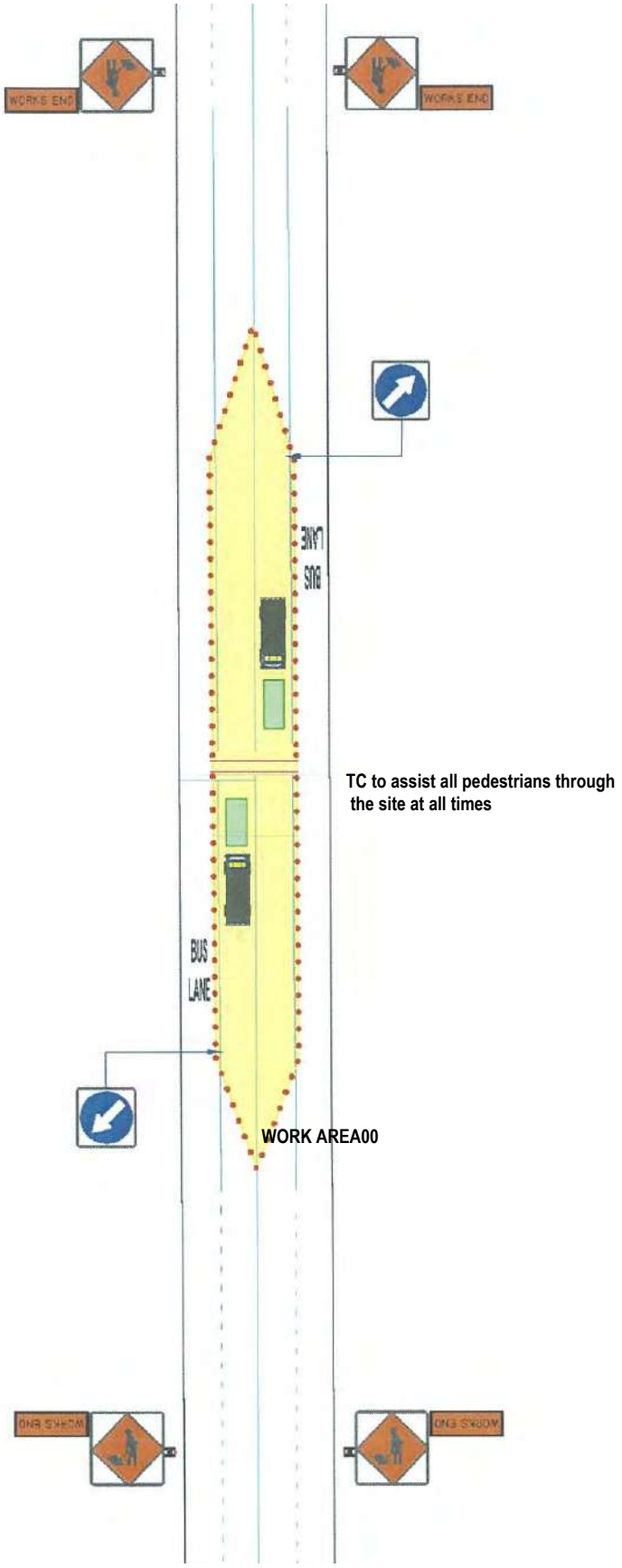
STATIC OPERATION

TWO-WAY MULTI-LANE ROAD - SIGNALISED INTERSECTION
LANE CLOSURES - SIGNALISED MAINTENANCE ONLY
LOOP CUTTING

ATLC1-12

SCOPE NOTES

1. STMS to contact SCATS prior to the works commencing
2. STMS to be in constant communication with SCATS during the works
3. STMS to inform SCATS when the works have been completed
4. Pedestrian access must be maintained at all times
5. Work could take longer than 1 hour depending on the nature if the repair works
6. TMP will only be actve after midnight unless stated otherwise by the RCA



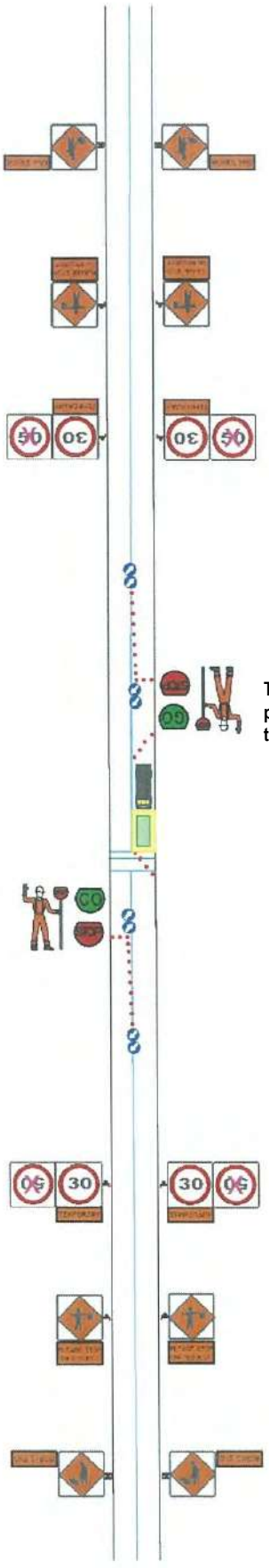
STATIC OPERATION

TWO-WAY SINGLE-LANE ROAD - SIGNALISED INTERSECTION
LANE CLOSURES - SIGNALISED MAINTENANCE ONLY
LOOP CUTTING

ATLC1-13

Notes

1. STMS to contact SCATS prior to the works commencing
2. STMS to be in constant communication with SCATS during the works
3. STMS to inform SCATS when the works have been completed
4. Pedestrian access must be maintained at all times
5. Work could take longer than 1 hour depending on the nature if the repair works
5. This drawing can be used for either side of the road provided the approach to the the planned work area is the same-just before the pedestrian crossing/ signalised intersection



TC to assist all pedestrians through the site at all times

Auckland Transport

Generic Traffic Management Diagrams
Section R

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

TWO-LANE TWO WAY ROAD

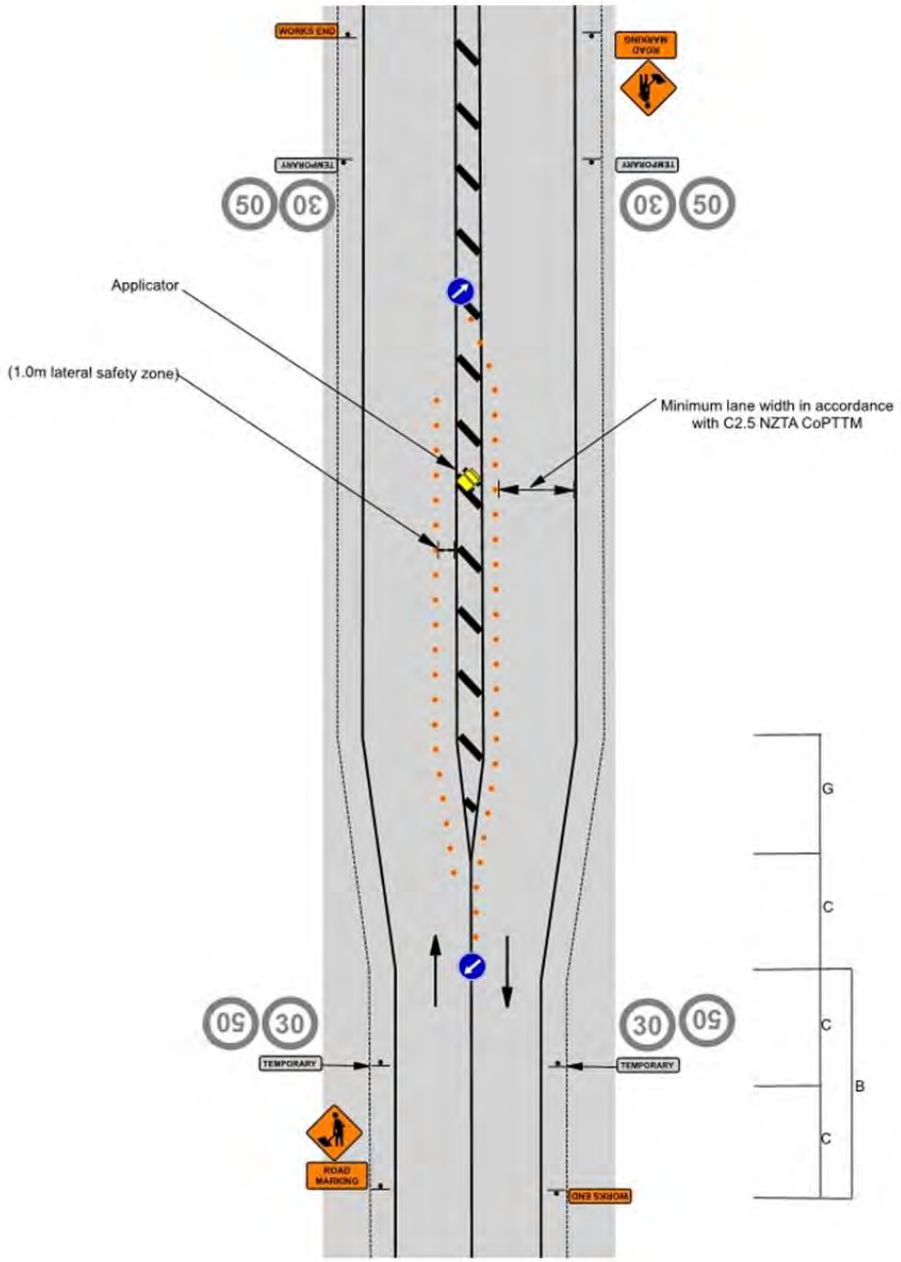
MARKING OUTSIDE TRAFFIC LANE - FLUSH MEDIAN

ATRM1-1

Notes

1. STMS to refer to CoPTTM for the appropriate spacings according to the road level
2. Vehicle that has the correct signs mounted appropriate for the works may be substituted for any fix signs. The signs must be covered if the site is not active
3. All set out distance to be in accordance with CoPTTM Table C2.2 refer to page 33
4. Marking Vehicle must not enter the Safety Zone or the Live Lane

F - Lane Widths	
Posted Speed Limit (km/h)	Minimum Lane Width (m)
40	2.75
50	3.0
60	3.0
70	3.25
80	3.25
90	3.5
100	3.5
TSL will be required where lane widths are not available	



Refrence Line Marking Generic TMP Page 13

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

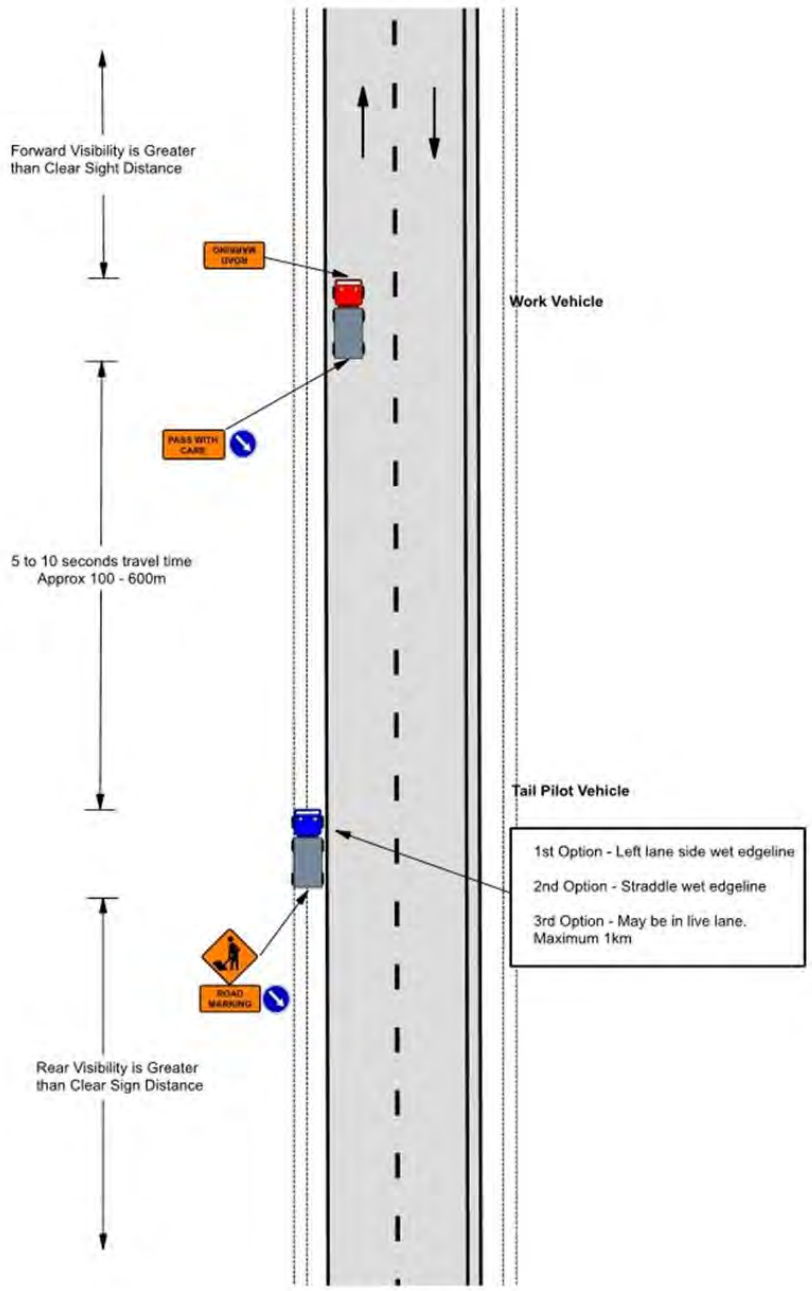
TWO-LANE TWO WAY ROAD

MARKING IN TRAFFIC LANE - EDGELINE

ATRM1-2

Notes

1. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level
2. RD6L is interchangeable with arrowboard as per CoPTTM refer to table B1.4.2



Refrence Line Marking Generic TMP LM1.2

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

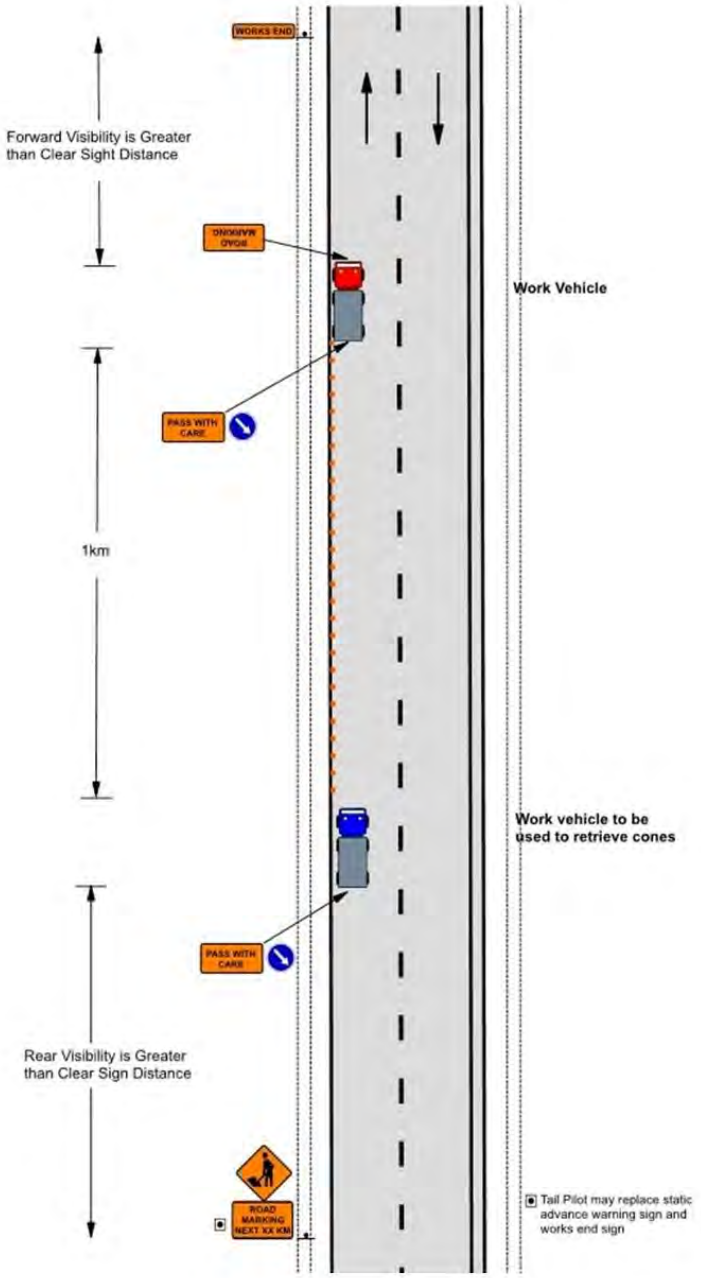
TWO-LANE TWO WAY ROAD

MARKING IN TRAFFIC LANE - EDGELINE IN AREAS LESS THAN 65KM/H

ATRM1-3

Notes

1. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level
2. "MARKING NEXT XX KM" is to be used to a maximum of 4km
3. RD6L is interchangeable with arrowboard as per CoPTTM refer to table B1.4.2
4. Side roads which are volume roads a Tail Pilot is required at all times unless agreed in advance with the RCA



Refrence Line Marking Generic TMP LM1.3

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

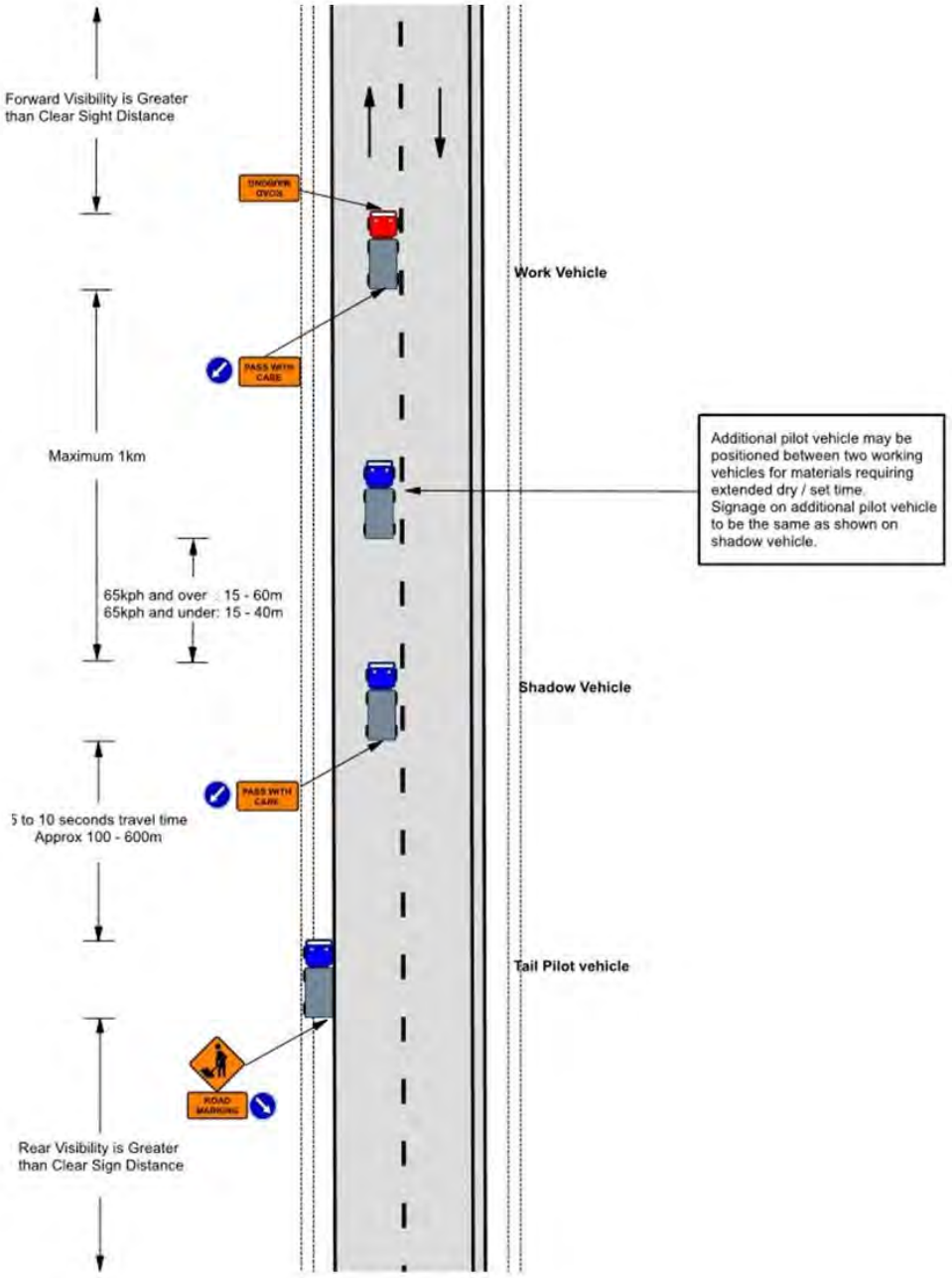
TWO-LANE TWO WAY ROAD

MARKING IN TRAFFIC LANE - CENTRELINE

ATRM1-4

Notes

1. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level
2. RD6L is interchangeable with arrowboard as per CoPTTM refer to table B1.4.2



Refrence Line Marking Generic TMP LM1.4

STATIC OPERATION

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

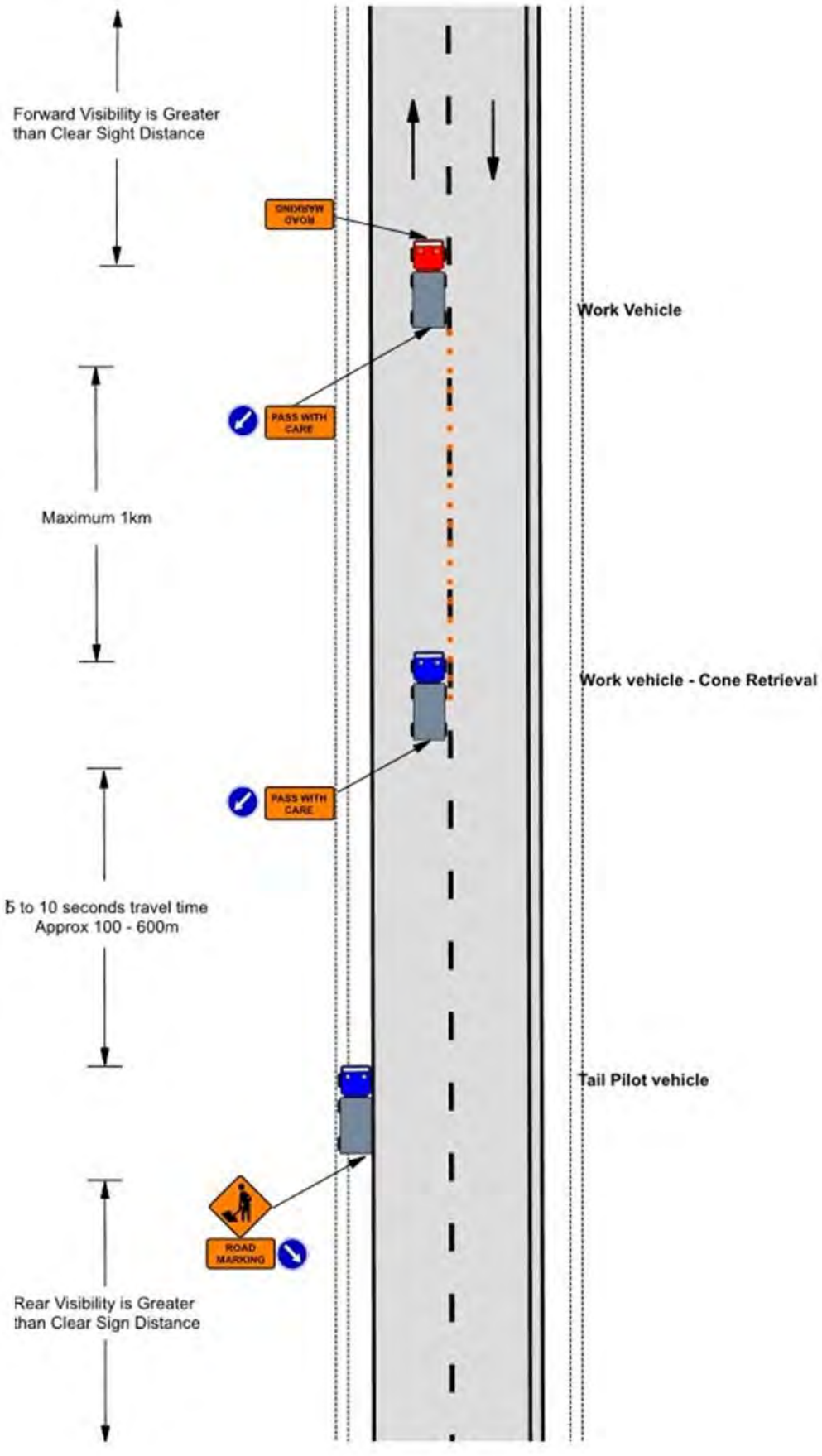
TWO-LANE TWO WAY ROAD

MARKING IN TRAFFIC LANE - CENTRELINE

ATRM1-5

Notes

1. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level
2. RD6L is interchangeable with arrowboard as per CoPTTM refer to table B1.4.2
3. If required an additional Work Vehicle may be positioned between the two Work Vehicles for materials required for additional drying time



Refrence Line Marking Generic TMP LM1.5

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

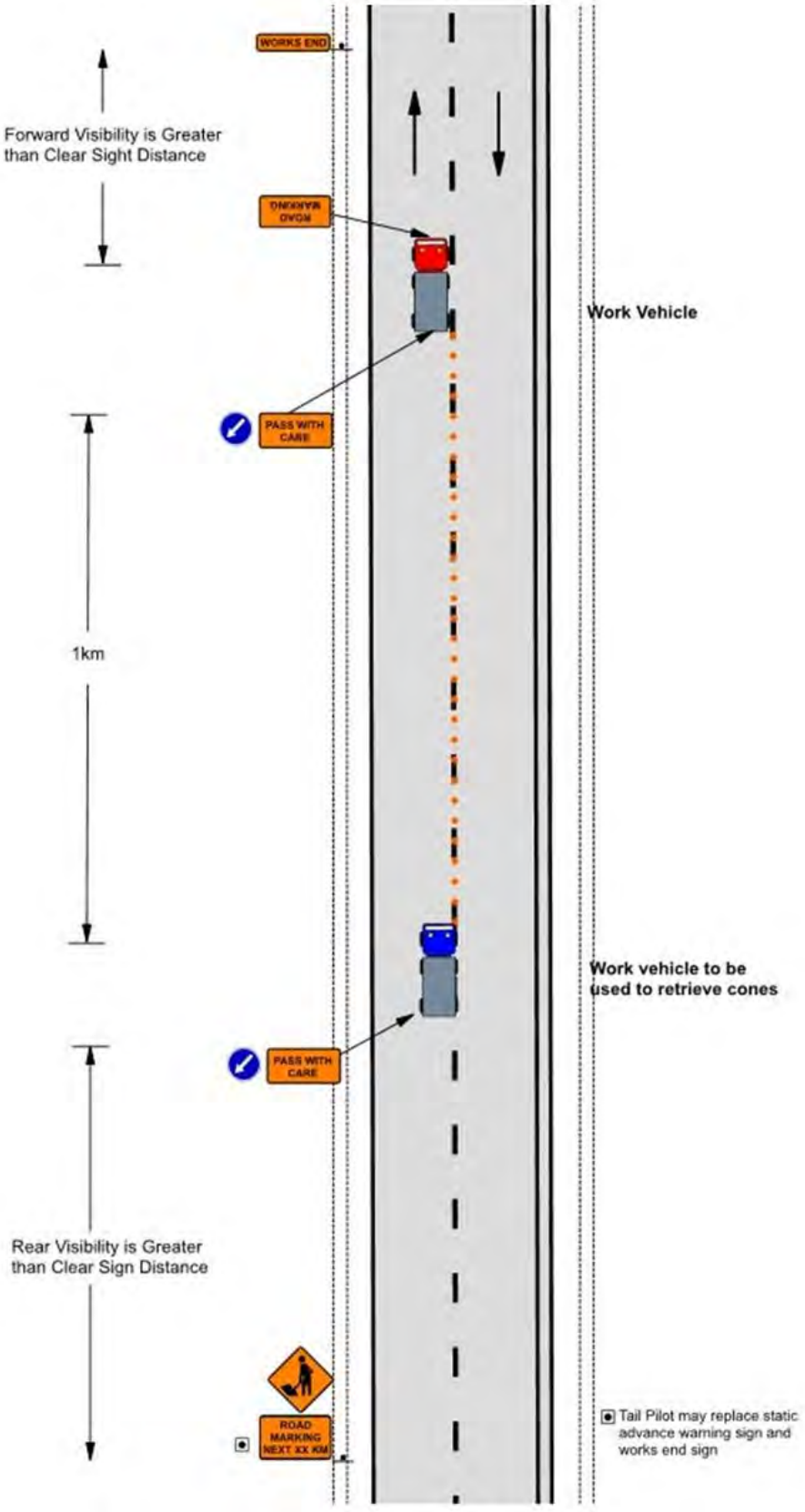
TWO-LANE TWO WAY ROAD

MARKING IN TRAFFIC LANE - CENTRELINE LESS THAN 65KM/H

ATRM1-6

Notes

1. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level
2. Side roads which are high volume roads a Tail Pilot is required at all times unless agreed in advance with the RCA
3. "ROAD MARKING NEXT XXKM" to be used to a maximum 4km
4. RD6L is interchangeable with arrowboard as per CoPTTM refer to table B1.4.2



Refrence Line Marking Generic TMP LM1.6

TWO-LANE TWO WAY ROAD - LEVEL 1

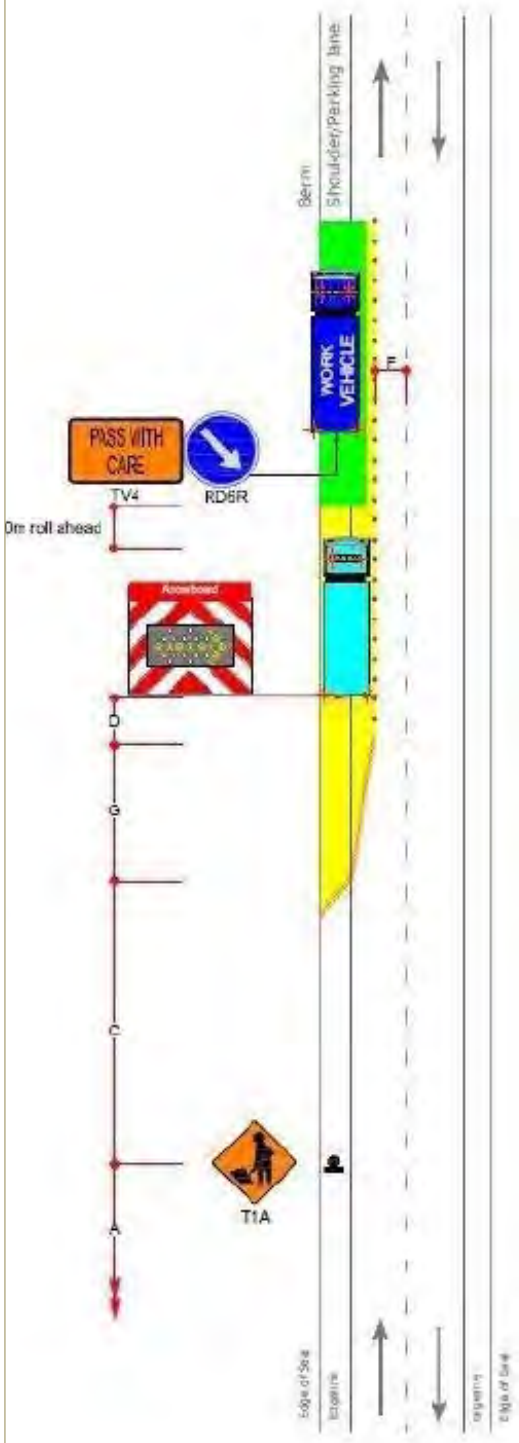
SEMI STATIC - UP TO 1 HOUR

MARKING IN TRAFFIC LANE

ATRM1-7

Notes

1. This drawing only to be used when the works can be completed within 1 hour (60 minutes) this excludes setting up and removal of the worksite
2. The T1A Advance Warning sign can be replaced by the **Tail Pilot** Vehicle with a T1A sign and supplement plate and RD6R/L
3. If the **Shadow** Vehicle is fitted with a TMA the Longitudinal Safety (D) is not required



C - Sign spacing

≤50km/h	50 (m)
60km/h	60 (m)
70km/h	70 (m)
80km/h	80 (m)
100km/h	100 (m)

D - Longitudinal Safety zones

≤50km/h	5 or 10* (m)
60km/h	15 (m)
70km/h	30 (m)
80km/h	45 (m)
90km/h	55 (m)
100km/h	60 (m)

* Larger minimum distance apply where there is more than one lane each way and on all state highways.

F - Lane widths

30km/h	2.75 (m)
40km/h	2.75 (m)
50km/h	3.0 (m)
60km/h	3.0 (m)
70km/h	3.25 (m)
80km/h	3.25 (m)
90km/h	3.5 (m)
100km/h	3.5 (m)

G - Initial taper lengths

≤50km/h	30 (m)
60km/h	50 (m)
70km/h	70 (m)
80km/h	80 (m)
90km/h	90 (m)
100km/h	100 (m)

Refrence Line Marking
Generic TMP LM Page 28

TWO-LANE TWO WAY ROAD - LEVEL 2

SEMI STATIC - UP TO 1 HOUR

MARKING IN TRAFFIC LANE - PERMANENT SPEED LESS THAN 65KM/H

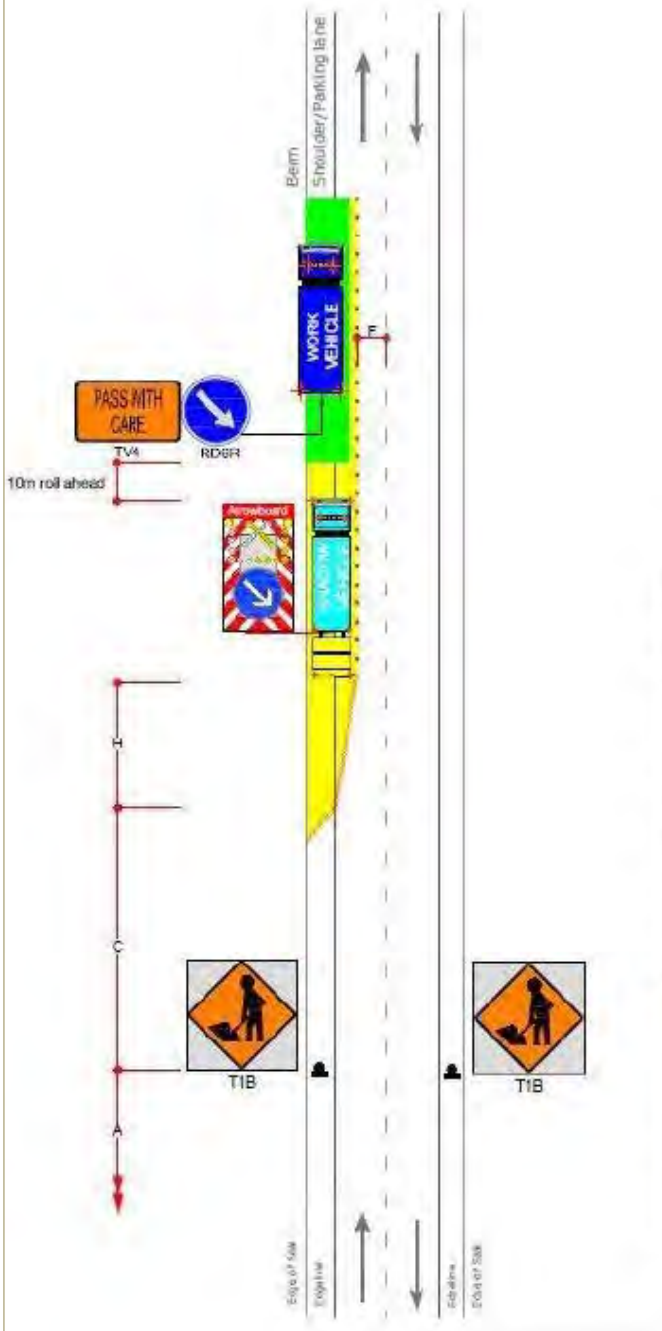
ATRM1.8

Notes

1. This drawing only to be used when the works can be completed within 1 hour (60 minutes) this excludes setting up and removal of the worksite
2. Static signs can be replaced by an AWVMS If the Shadow Vehicle must be fitted
3. with a TMA and the T3-13.3 sign with red and white Class 1 reflective material, a RD6T light arrow board, and a blue disk with a RD6L/R white arrow

For non State Highways

4. With the RCA's permission the **Shadow Vehicle** may have a horizontal arrow board and a TV4 "PASS WITH CARE" instead of the LAS



A - Sign visibility distance

≤50km/h	60/50* (m)
60km/h	70/60* (m)

C - Sign spacing

≤50km/h	50 (m)
60km/h	60 (m)

F - Lane widths

30km/h	2.75 (m)
40km/h	2.75 (m)
50km/h	3.0 (m)
60km/h	3.0 (m)

H - Initial taper lengths

50km/h	90/50* (m) taper
60km/h	100/60* (m) taper

* Larger minimum distance is desirable distance, the shorter distance is the minimum distance required. The longer distance must be used wherever possible. The shorter distances may only be used where there are road environment constraints.

Refrence Line Marking
Generic TMP LM Page 29

TWO-LANE TWO WAY ROAD - LEVEL 2

SEMI STATIC - UP TO 1 HOUR

MARKING IN TRAFFIC LANE - PERMANENT SPEED LESS THAN 65KM/H

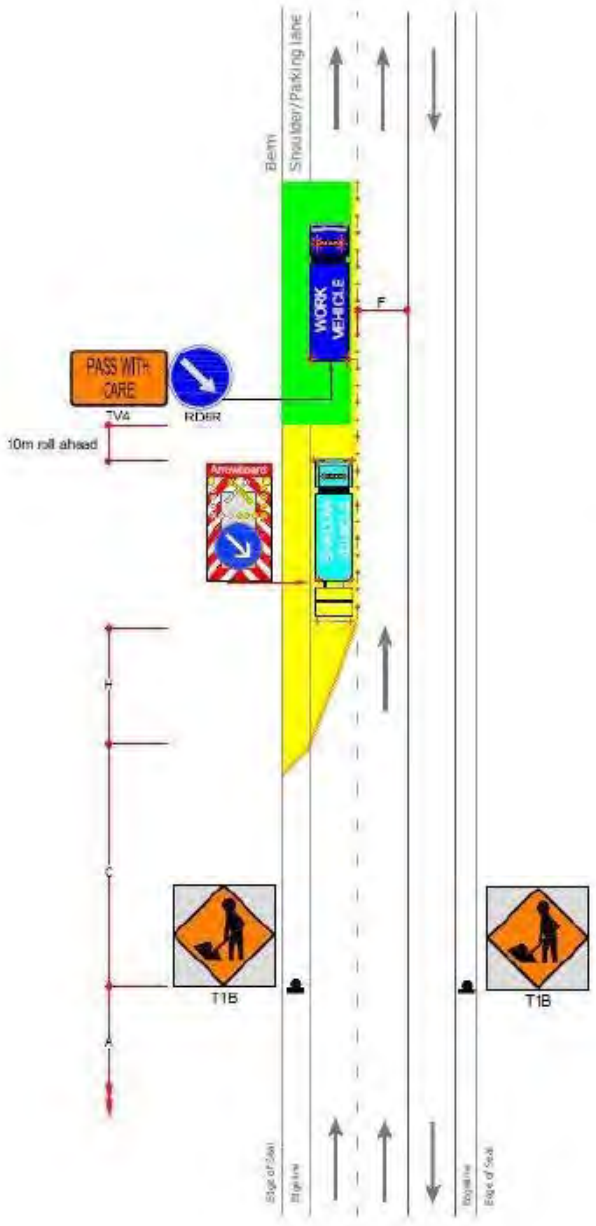
ATRM1-9

Notes

1. This drawing only to be used when the works can be completed within 1 hour (60 minutes) this excludes setting up and removal of the worksite
2. Static signs can be replaced by an AWVMS
3. The **Shadow** Vehicle must be fitted with a TMA and the T3-13.3 sign with red and white Class 1 reflective material, a RD6T light arrow board, and a blue disk with a RD6L/R white arrow

For non State Highways

4. With the RCA's permission the **Shadow Vehicle** may have a horizontal arrow board and a TV4 "PASS WITH CARE" instead of the LAS



A - Sign visibility distance	
≤50km/h	60/50* (m)
60km/h	70/60* (m)

C - Sign spacing	
≤50km/h	50 (m)
60km/h	60 (m)

F - Lane widths	
30km/h	2.75 (m)
40km/h	2.75 (m)
50km/h	3.0 (m)
60km/h	3.0 (m)

H - Initial taper lengths	
50km/h	90/50* (m) taper
60km/h	100/60* (m) taper

* Larger minimum distance is desirable distance, the shorter distance is the minimum distance required. The longer distance must be used wherever possible. The shorter distances may only be used where there are road environment constraints.

Refrence Line Marking
Generic TMP Page 30

TWO-LANE TWO WAY ROAD - LEVEL 2

SEMI STATIC - UP TO 1 HOUR

MARKING IN TRAFFIC LANE - PERMANENT SPEED LESS THAN 65KM/H

ATRM1-20

Notes

1. This drawing only to be used when the works can be completed within 1 hour (60 minutes) this excludes setting up and removal of the worksite
2. Static signs can be replaced by an AWVMS
3. The **Shadow** Vehicle must be fitted with a TMA and the T3-13.3 sign with red and white Class 1 reflective material, a RD6T light arrow board, and a blue disk with a RD6L/R white arrow

For non State Highways

4. With the RCA's permission the **Shadow Vehicle** may have a horizontal arrow board and a TV4 "PASS WITH CARE" instead of the LAS

A - Sign visibility distance	
<50km/h	60/50* (m)
60km/h	70/60* (m)

C - Sign spacing	
<50km/h	50 (m)
60km/h	60 (m)

F - Lane widths	
30km/h	2.75 (m)
40km/h	2.75 (m)
50km/h	3.0 (m)
60km/h	3.0 (m)

H - Initial taper lengths	
50km/h	90/50* (m) taper
60km/h	100/60* (m) taper

* Larger minimum distance is desirable distance, the shorter distance is the minimum distance required. The longer distance must be used wherever possible. The shorter distances may only be used where there are road environment constraints.

Refrence Line Marking Generic
TMP LM Page 31

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

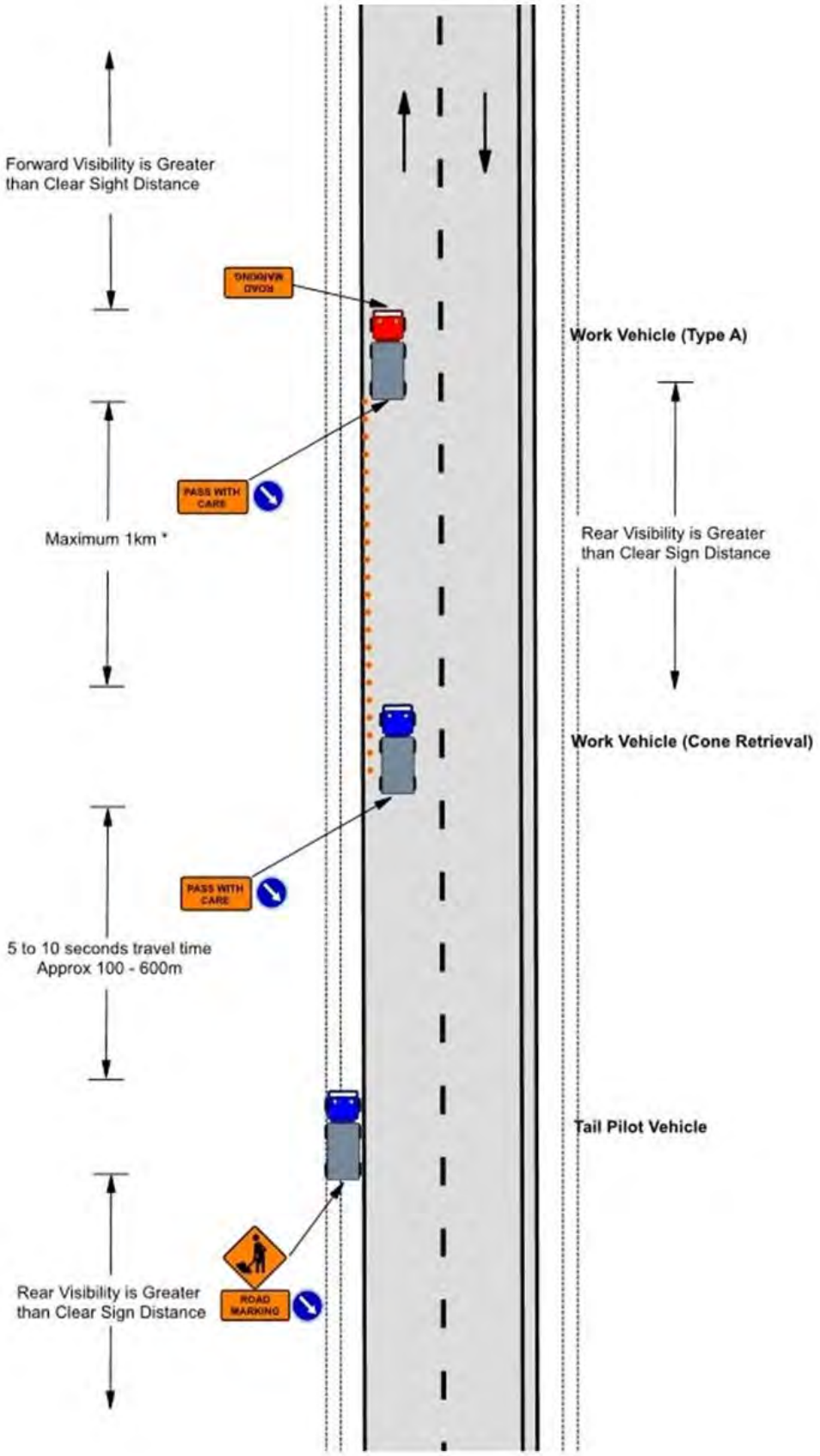
TWO-LANE TWO WAY ROAD

MARKING IN TRAFFIC LANE - EDGELINE WITH CONE PICK UP VEHICLE

ATRM1-21

Notes

1. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level
2. RD6L is interchangeable with arrowboard as per CoPTTM refer to table B1.4.2
3. If required an additional Work Vehicle may be positioned between the two Work Vehicles for materials required for additional drying time
4. Where the **CSD** (Clear Sight Distance) is good the distance between Vehicle A and the vehicle picking up the cones must not exceed 1km



Refrence Line Marking Generic TMP LM1.2 (second drawing)

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2 LOW SPEED

TWO-LANE TWO WAY ROAD (OFF PEAK TIMES ONLY)

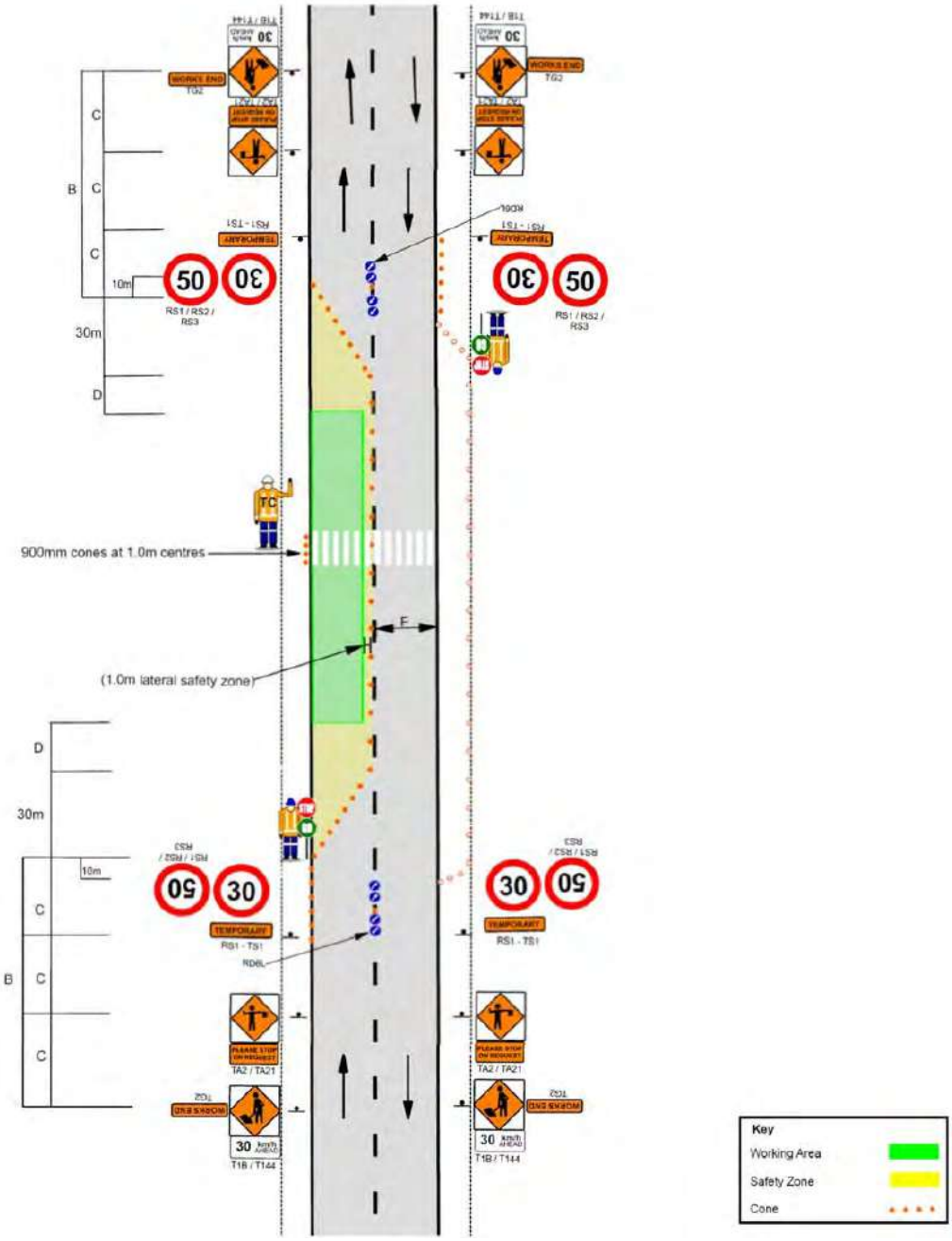
LINE MARKING IN TRAFFIC LANES OR PEDESTRIAN CROSSINGS

ATRM1-22

Notes

1. STMS to refer to CoPTTM fir the appropriate spacings according to the road level
2. TMP can be used for either side of the carriageway
3. Refer to C.10.2.3 MTC essentials for further information
4. "NO STOPPING" (PN11) to be used if required/ necessary
5. Cones will be required on the edge of the live lane opposite of the closure if the road edge is not well defined
6. A 30m return taper at the end of the closure is mandatory
7. A minimum of 5 cones required for the Cone Threshold
   Cones to be at 2.5m from centre <65km/h roads
8. MTC with RP4/RP41 STOP/ GO or TP4/RP42 STOP/ SLOW paddle on road shoulder located between 1st and 2nd cone closest to the working space
9. Extend or place additional warning signs for on-coming traffic before any expected traffic queues STMS to ensure they are monitoring traffic ques at all times
10. All paddles must be on "STOP"and the Pointsman to assist all pedestrians accros the/ through the worksite at all times
11. **Lane Width: CoPTTM**
    In accordance with Table C2.7
    Sign Height: CoPTTM
    In accordance with Table C3.4.2 **Sign Spacing: CoPTTM**
    In accordance with Table C2.3. C2.4, C2.5, C2.6 and Level 2 Low Speed
    Safety Zone: CoPTTM
    In accordance with C6.2.2 Longitudinal (lead in) Safety Zones

PLAN 3



Auckland Council Line Marking Generic TMP Plan 3

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2 (1000VPD OR EQUIVALANT)

TWO-LANE TWO WAY ROAD (DAY SHIFT OFF PEAK TIMES ONLY)

LINE MARKING IN TRAFFIC LANES, SPEED HUMPS, PRIORITY GIVE WAY

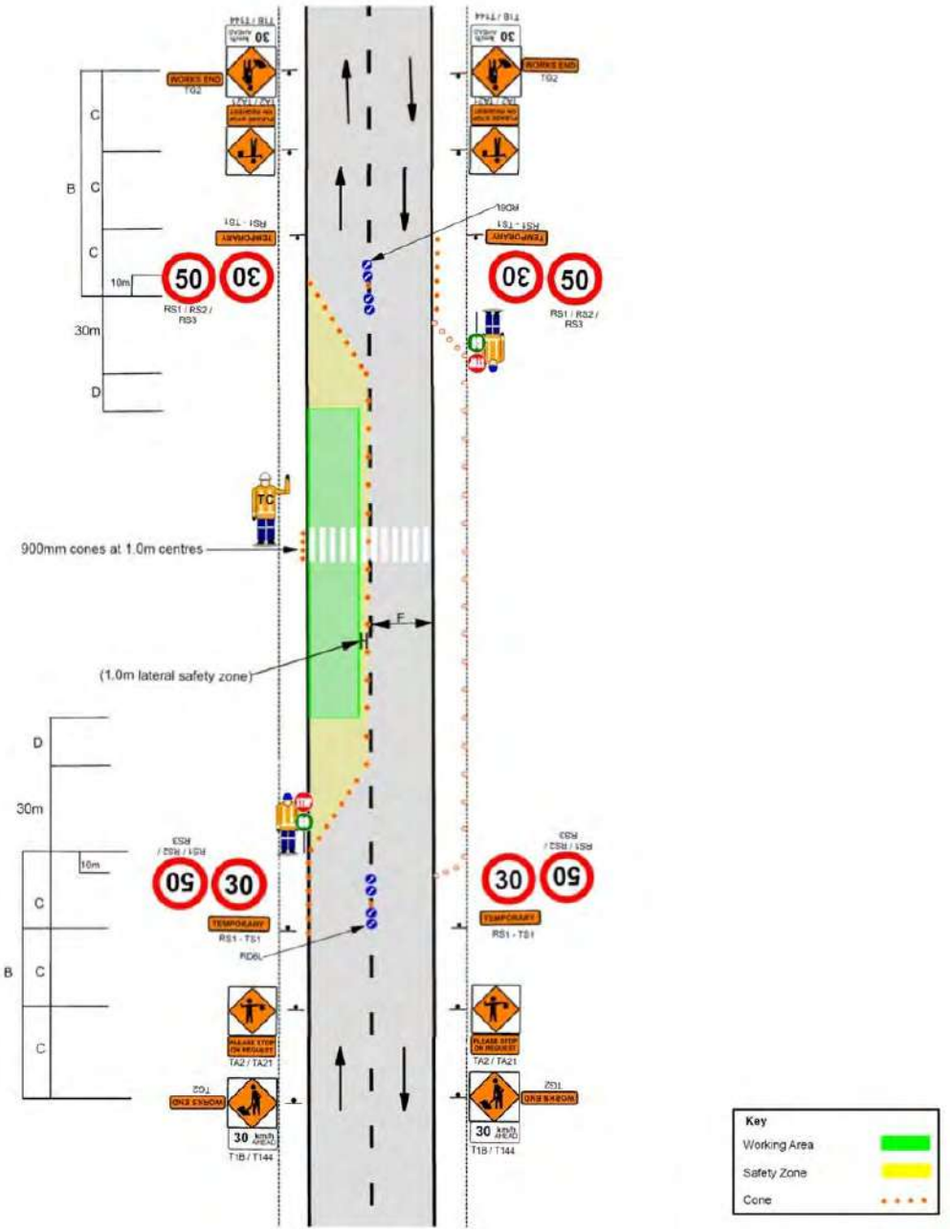
ATRM1-23

Notes

1. Minimum lane width in accordance with CoPTTM C.2.3 and C.2.4 "Worksite Layout". Refer to page 34-35
2. Inter-visibility is required. This means that a vehicle at one sign is able to see whether the way ahead is clear
3. Traffic that has to cross the centre of the lane onto the opposite side of the road is to give way/ priority. But if the visibility for the car is better than that of the vehicle required give way/ priority the contractor can then request that the vehicle with the better visibility to give way/ priority
4. STMS is to ensure that the site is checked prior to setting up the site
5. **Sign Spacing: CoPTTM**
   In accordance of C.2.3, C.2.4 and C.2.6 and Level Low Speed **Taper Length: CoPTTM**
   In accordance of C.7.3.3
   Safety Zone: CoPTTM
   To be in accordance with section C.6.2.2 Longitudinal (lead in) Safety Zones

Auckland Council Line Marking Generic TMP Plan 5

PLAN 5



LINE MARKING - LEVEL 1 AND LEVEL 2

TWO-LANE TWO WAY ROAD

LINE MARKING IN TRAFFIC LANES CENTRE LINES SPEED LESS THAN 65KM/H

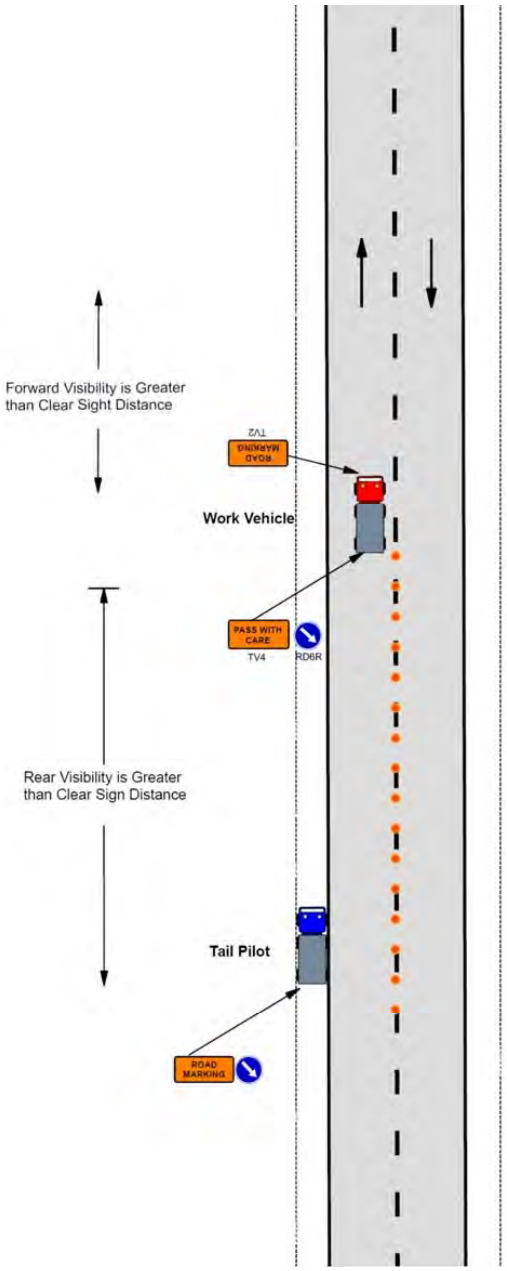
ATRM1-24

Notes

1. STMS to refer to Work Site Layout Tables CoPTTM for the appropriate spacings for the road level
2. RD6L is interchangeable with arrowboard as per CoPTTM Table B1.4.2
3. "Road Marking Next xxkm" to be used to a maximum 4km
4. Side roads which are volume roads a Tail Pilot is required at all times unless agreed in advance with the RCA
5. The maximumu distance between the **Pilot Vehicle** and the nearest **Work Vehicle** is between 5 and 20 seconds at normal travel time. This is approximately 100m-600m travelling at 100km/h
6. If Visibility is restricted, the **Lead Pilot** vehicle is to advance further ahead to a position where **CSD** (Clear Sight Distance) is achieved
7. **Lead Pilot Vehicle** to operate as per CoPTTM Section D3.2
8. **Lead Pilot** Vehicle to be used where **CSD** (Clear Sight Distance) is less than 100m
9. **Tail Pilot** Vehicle may replace static advance warning signs or "Work End" signs
10. Where **CSD** (Clear Sight Distance) is not acheivable a **Lead Pilot** Vehcile must be used
11. Personal on the back of the work vehicle must have a **Shadow** Vehicle at all times

Auckland Council Line Marking Generic TMP Plan 6

PLAN 6



LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

TWO-LANE TWO WAY ROAD

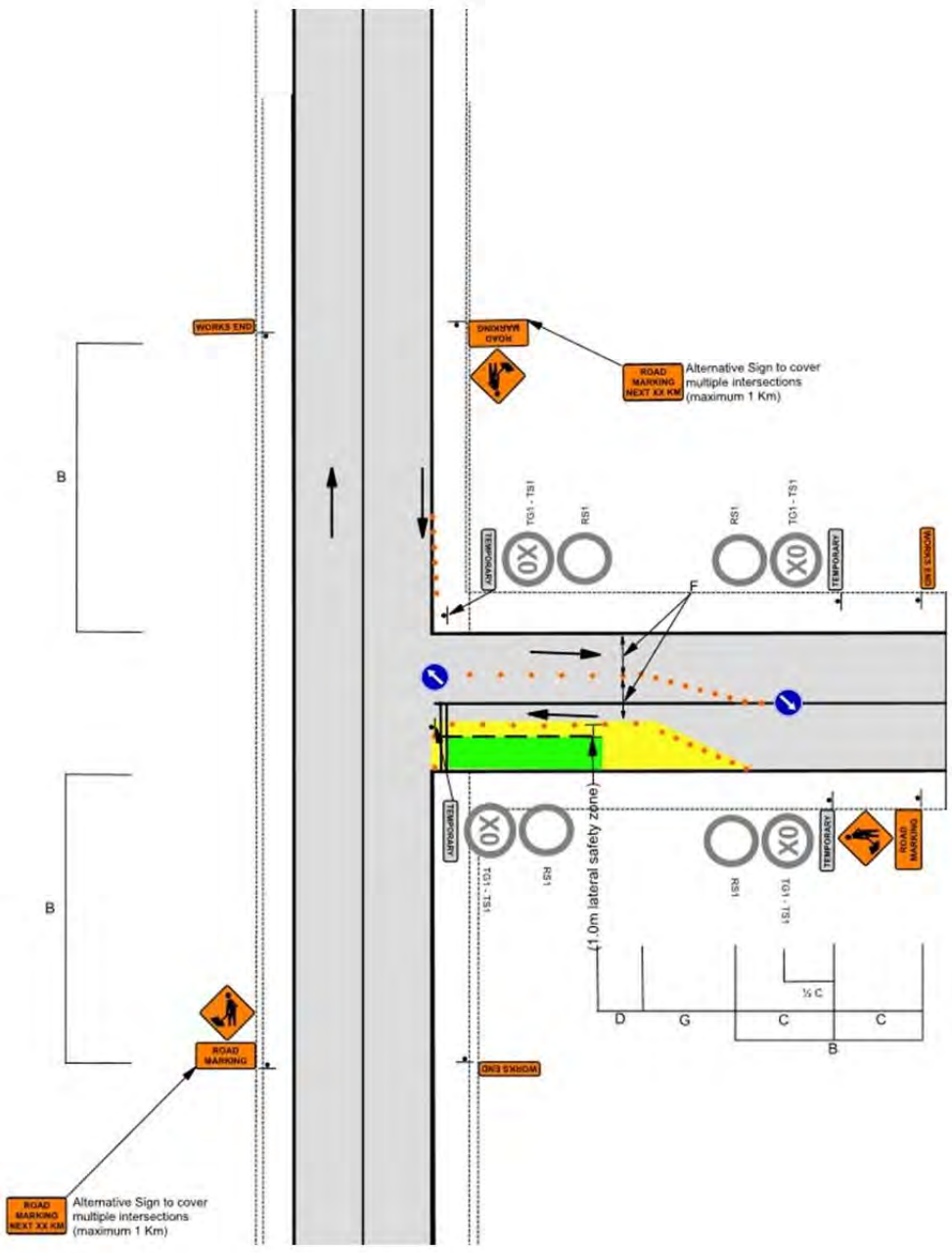
MARKING IN TRAFFIC LANE - INTERSECTION LETTERS AND SYMBOLS

ATRM2-1

Notes

1. All Set out distance to be in accordance with CoPTTM C2.2 refer to page 33
2. Length of taper to be in accordance of CoPTTM Table C7.3.3 refer to page 36
3. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level
4. Minumum Lane Width in accordance with CoPTTM Table C2.3 and C2.4 refer to page 34 and 35
5. "ROAD MARKING NEXT XXKM" to be used to a maximum 1km

F - Lane Widths	
Posted Speed Limit (km/h)	Minimum Lane Width (m)
30	2.75
40	2.75
50	3.0
60	3.0
70	3.25
80	3.25
90	3.5
100	3.5
TSL will be required where lane widths are not available	



Refrence Line Marking Generic TMP LM2.1

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

TWO-LANE TWO WAY ROAD

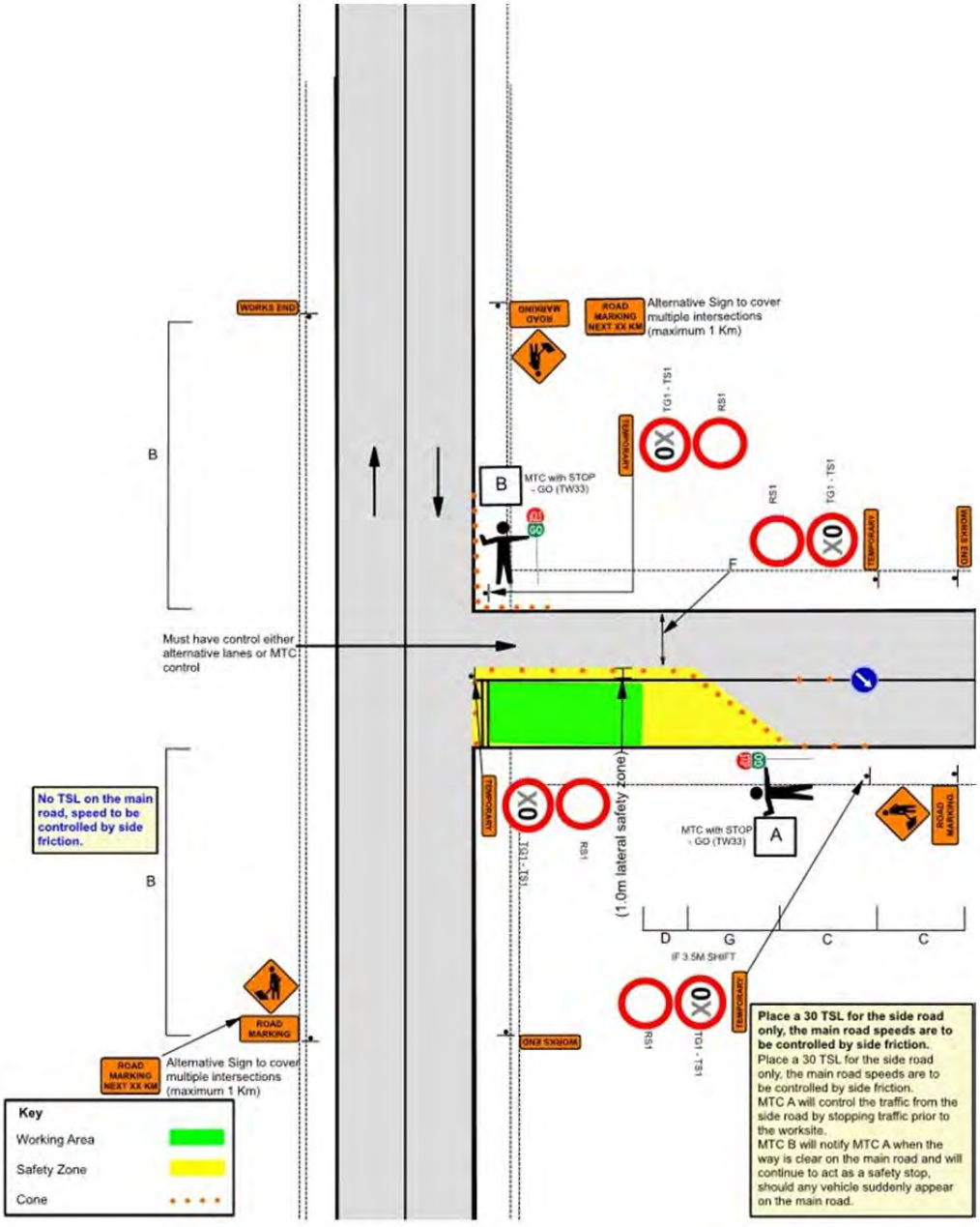
MARKING IN TRAFFIC LANE - INTERSECTION LIMIT LINES

ATRM2-2

Notes

1. All Set out distance to be in accordance with CoPTTM C2.2 refer to page 33
2. Length of taper to be in accordance of CoPTTM Table C7.3.3 refer to page 36
3. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level
4. Minumum Lane Width in accordance with CoPTTM Table C2.3 and C2.4 refer to page 34 and 35
5. "ROAD MARKING NEXT XXKM" to be used to a minimum of 1km

F - Lane Widths	
Posted Speed Limit (km/h)	Minimum Lane Width (m)
30	2.75
40	2.75
50	3.0
60	3.0
70	3.25
80	3.25
90	3.5
100	3.5
TSL will be required where lane widths are not available	



RefrenceLine Marking
Generic TMP LM2.2

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

TWO-LANE TWO WAY ROAD

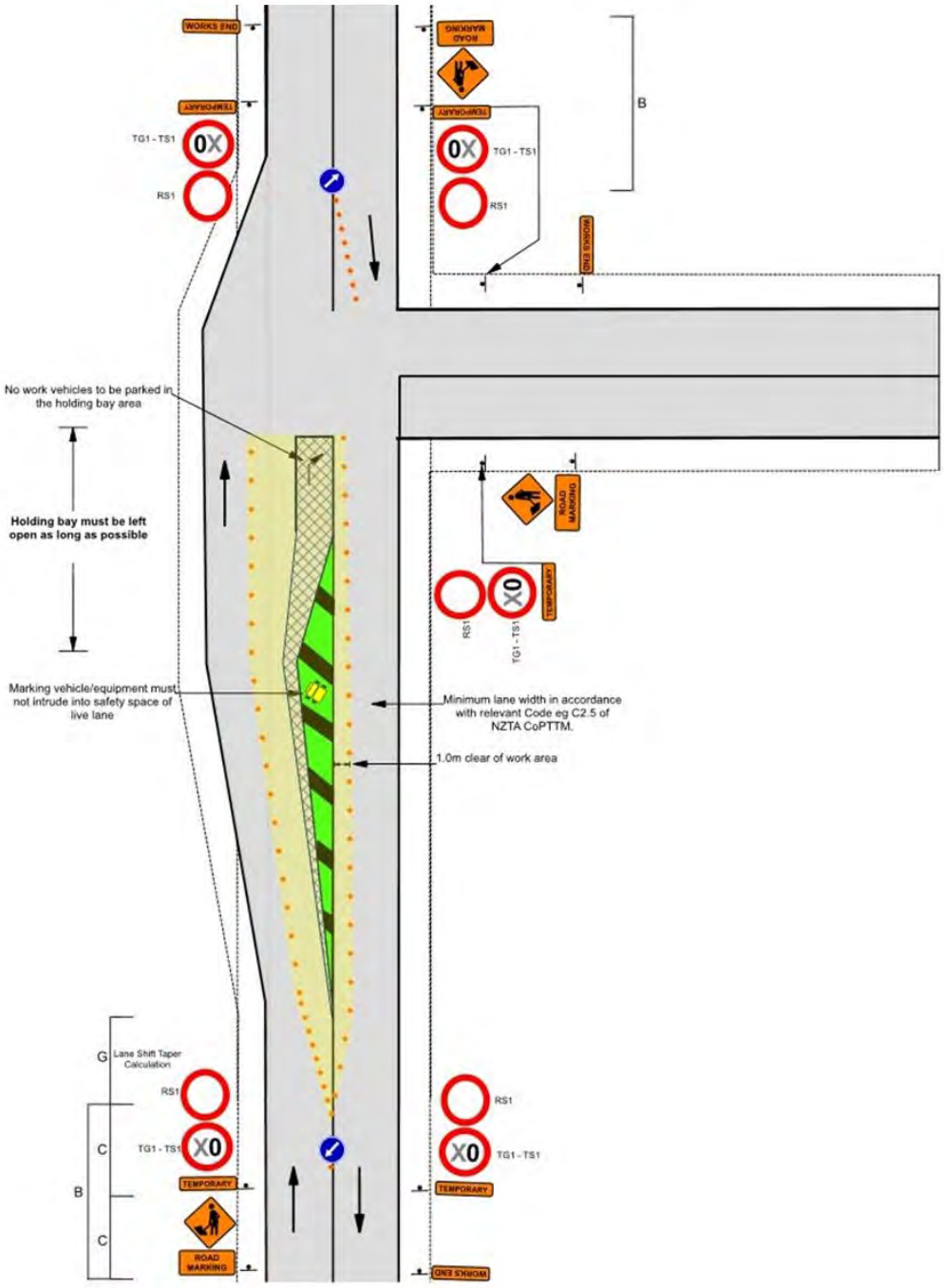
MARKING IN TRAFFIC LANE - INTERSECTION RIGHT TURN BAY

ATRM3-1

Notes

1. All Set out distance to be in accordance with CoPTTM C2.2 refer to page 33
2. Length of taper to be in accordance of CoPTTM Table C7.3.3 refer to page 36
3. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level
4. Minumum Lane Width in accordance with CoPTTM Table C2.3 and C2.4 refer to page 34 and 35
5. Vehicle that has the correct signs mounted appropriate for the works may be substituted for any fix signs. The signs must be covered if the site is not active

F - Lane Widths	
Posted Speed Limit (km/h)	Minimum Lane Width (m)
30	2.75
40	2.75
50	3.0
60	3.0
70	3.25
80	3.25
90	3.5
100	3.5
TSL will be required where lane widths are not available	



Refrence Line Marking Generic TMP LM3.1

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

TWO-LANE TWO WAY ROAD 65KM/H OR HIGHER

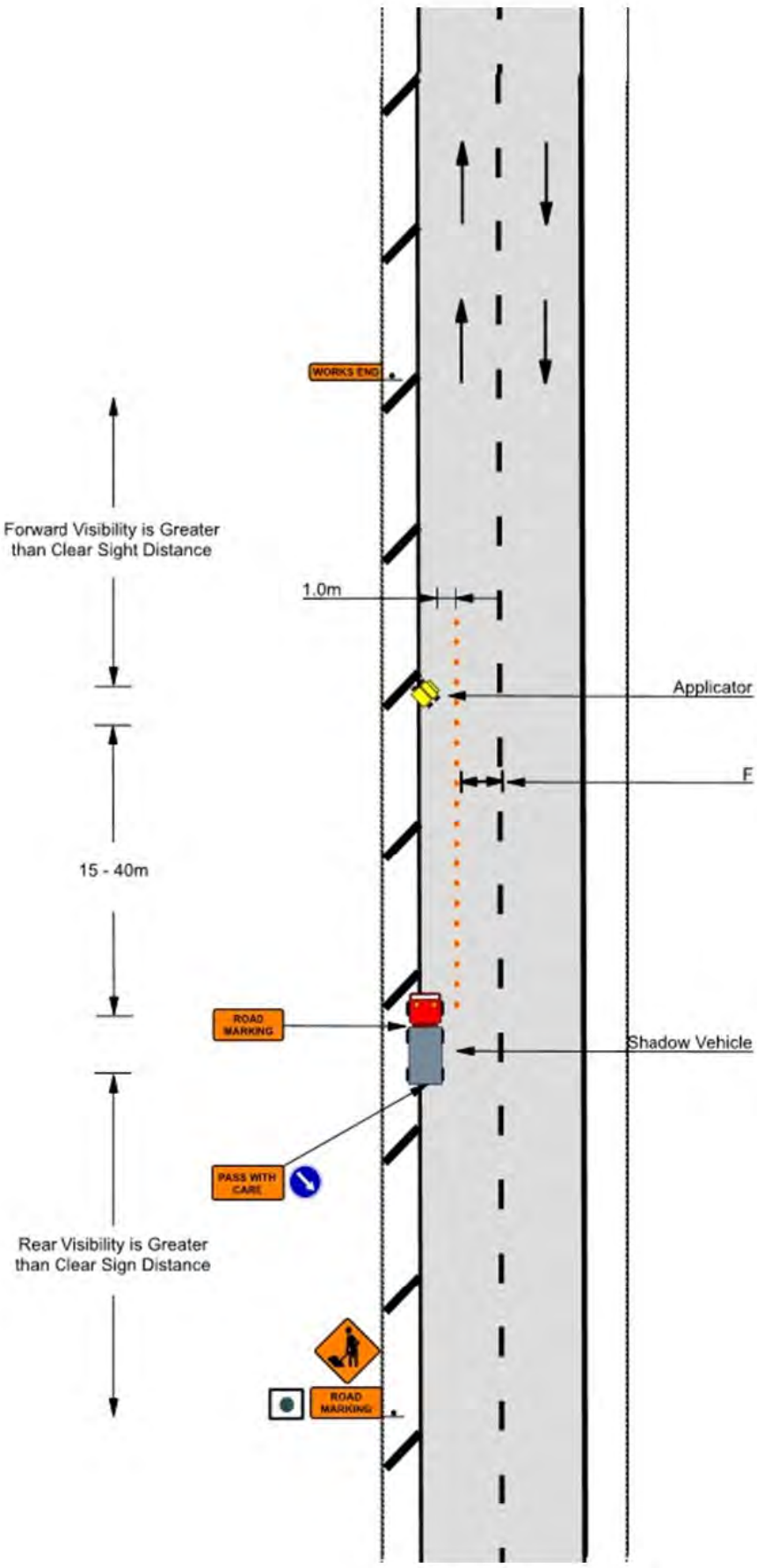
MARKING OUTSIDE TRAFFIC LANE - SHOULDER BAR

ATRM3-3

Notes

1. STMS to refer to CoPTTM for the appropriate spacings according to the road level

F - Lane Widths	
Posted Speed Limit (km/h)	Minimum Lane Width (m)
70	3.25
80	3.25
90	3.5
100	3.5



Refrence Line Marking Generic TMP LM3.3

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

TWO-LANE TWO WAY ROAD UNDER 65KM/H

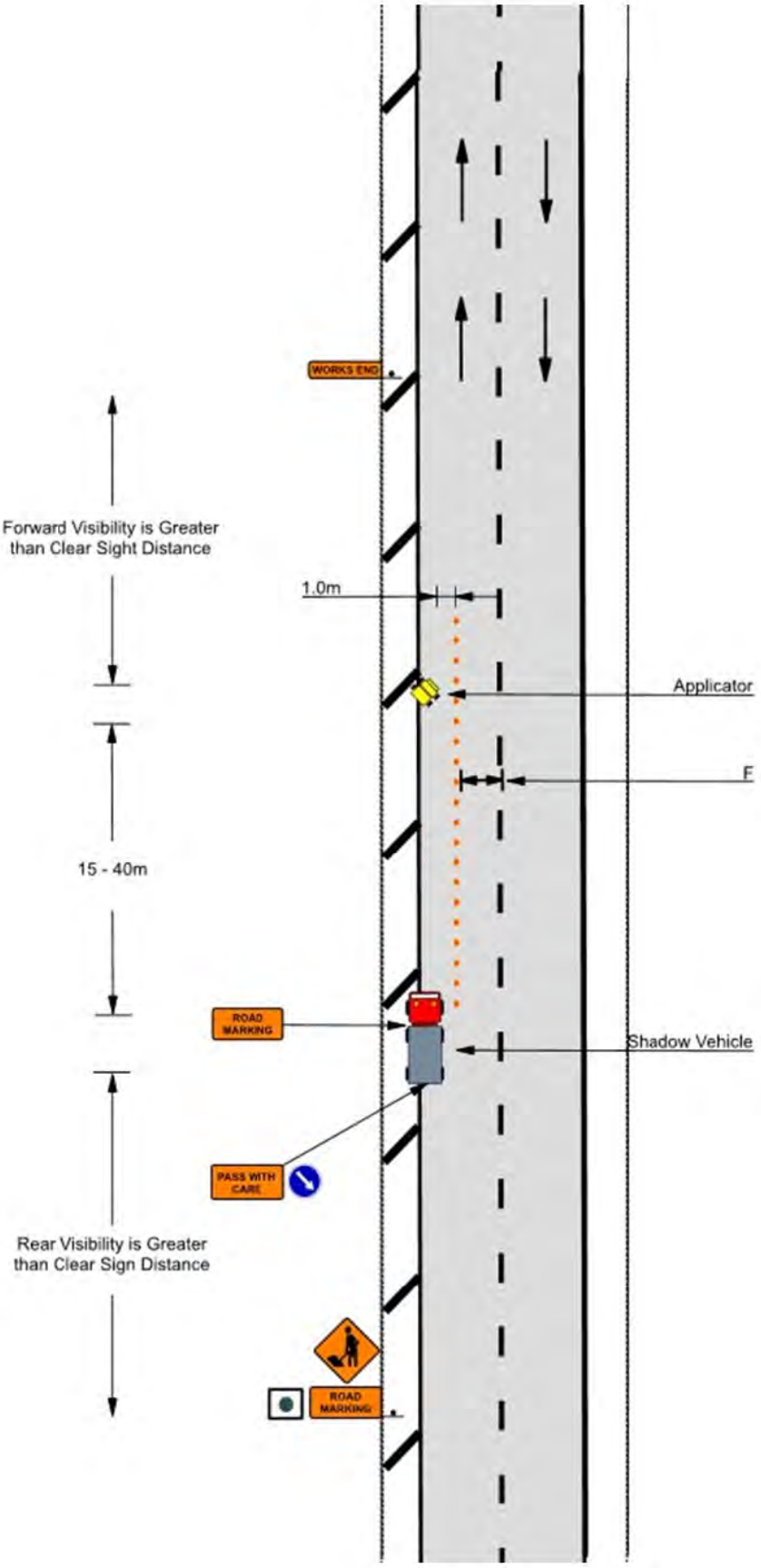
MARKING OUTSIDE TRAFFIC LANE - SHOULDER BAR

ATRM3-4

Notes

1. STMS to refer to CoPTTM for the appropriate spacings according to the road level
2. Vehicle that has the correct signs mounted appropriate for the works may be substituted for any fix signs. The signs must be covered if the site is not active
3. **Tail Pilot** Vehicle is requirted where **CSD** (Clear Sight Distance) is not achievable/ compromised
4. **Tail Pilot** Vehicle can replace static advance warning signs and "Work End" signs

F - Lane Widths	
Posted Speed Limit (km/h)	Minimum Lane Width (m)
50	3.0
60	3.0
70	3.25
80	3.25
90	3.5
100	3.5



Refrence Line Marking Generic TMP LM3.4

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

TWO-LANE TWO WAY ROAD

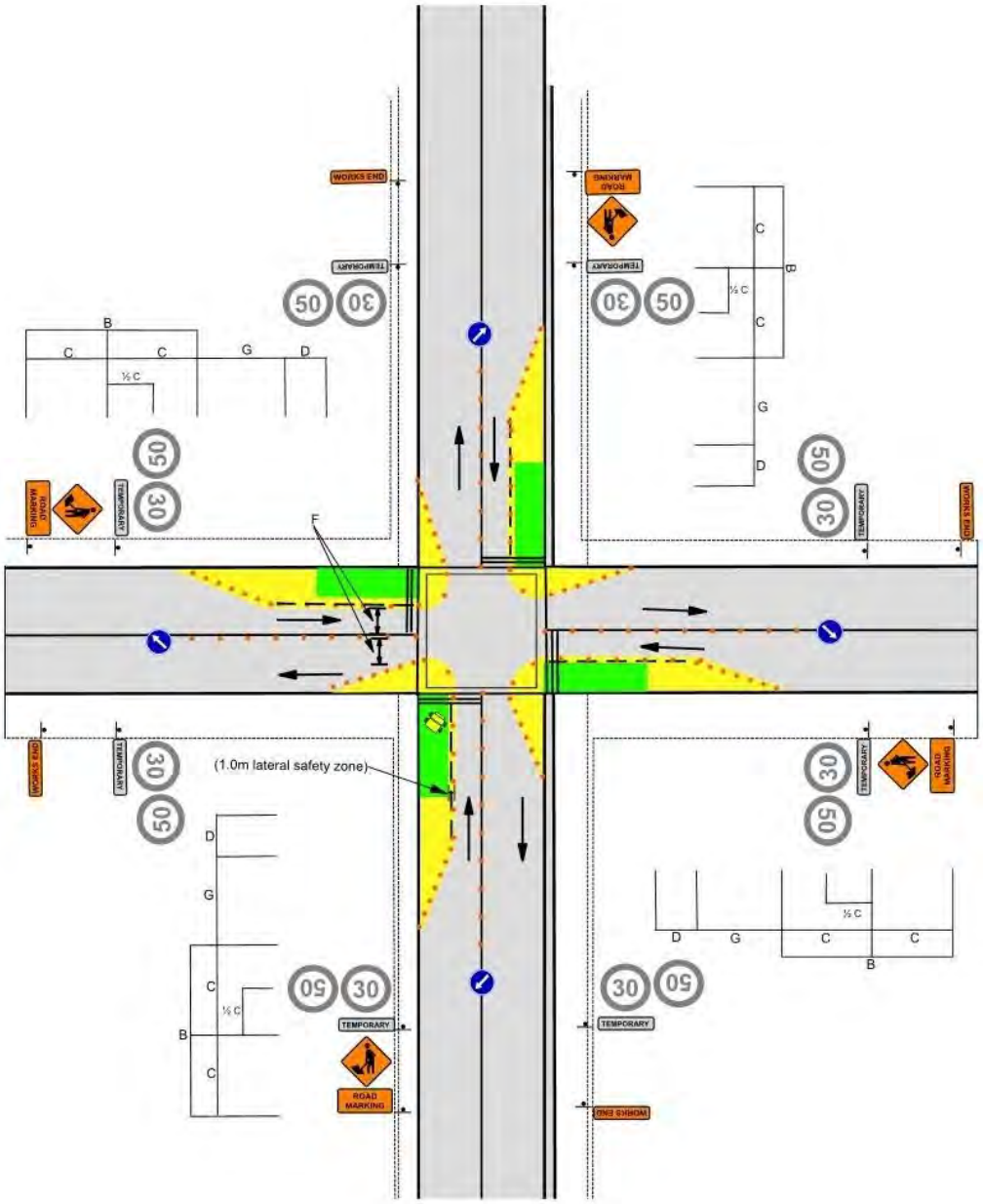
MARKING IN TRAFFIC LANE - INTERSECTION (FIRST PHASE)

ATRM4-1

Notes

1. All Set out distance to be in accordance with CoPTTM C2.2 refer to page 33
2. Length of taper to be in accordance of CoPTTM Table C7.3.3 refer to page 36
3. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level
4. Minumum Lane Width in accordance with CoPTTM Table C2.3 and C2.4 refer to page 34 and 35

F - Lane Widths	
Posted Speed Limit (km/h)	Minimum Lane Width (m)
30	2.75
40	2.75
50	3.0
60	3.0
70	3.25
80	3.25
90	3.5
100	3.5
TSL will be required where lane widths are not available	



Refrence Line Marking Generic TMP LM4.1

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

TWO-LANE TWO WAY ROAD

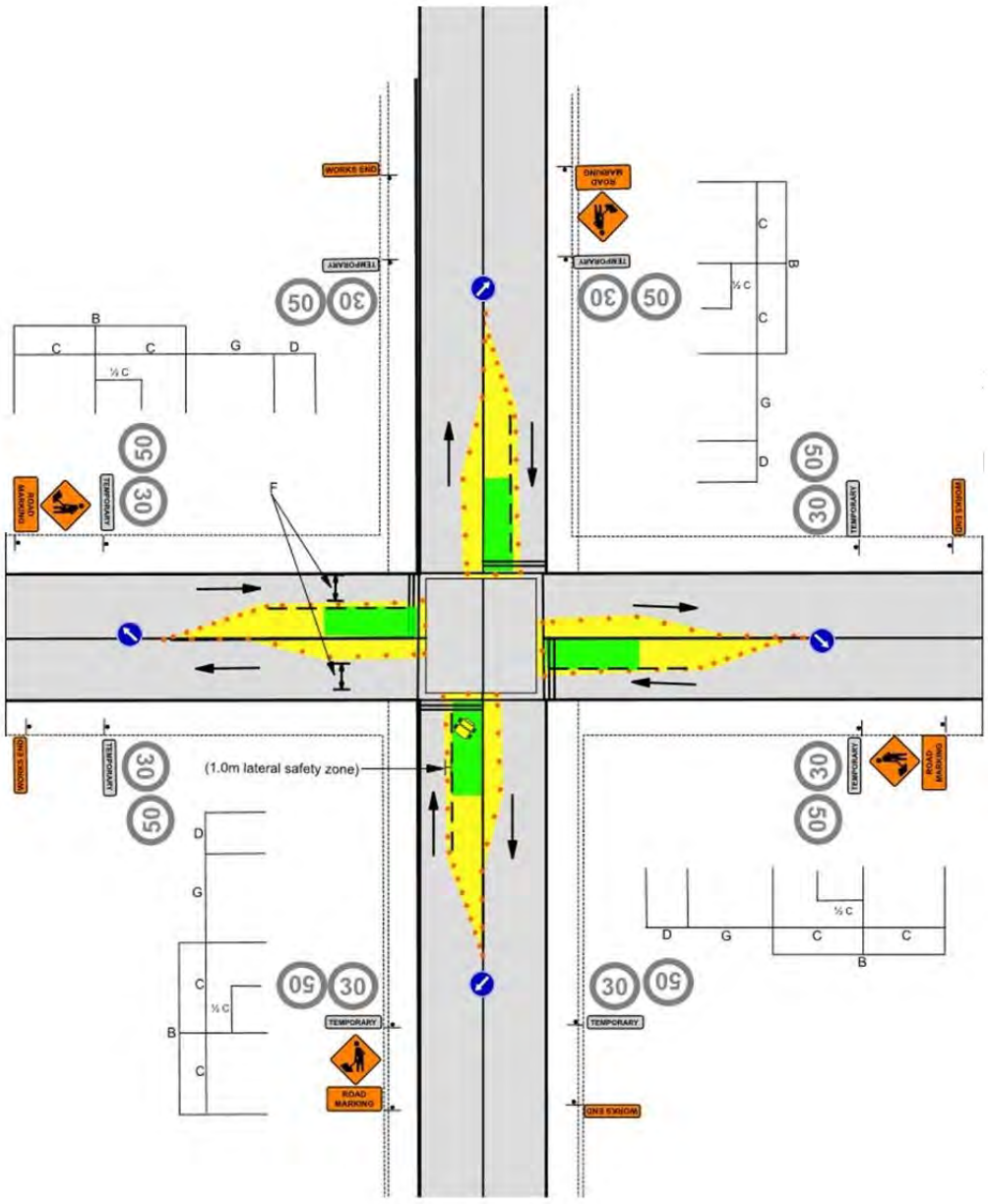
MARKING IN TRAFFIC LANE - INTERSECTION (SECOND PHASE)

ATRM4-11

Notes

1. All Set out distance to be in accordance with CoPTTM C2.2 refer to page 33
2. Length of taper to be in accordance of CoPTTM Table C7.3.3 refer to page 36
3. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level
4. Minumum Lane Width in accordance with CoPTTM Table C2.3 and C2.4 refer to page 34 and 35

F - Lane Widths	
Posted Speed Limit (km/h)	Minimum Lane Width (m)
30	2.75
40	2.75
50	3.0
60	3.0
70	3.25
80	3.25
90	3.5
100	3.5
TSL will be required where lane widths are not available	



Refrence Line Marking Generic TMP LM4.1 (Second Drawing)

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

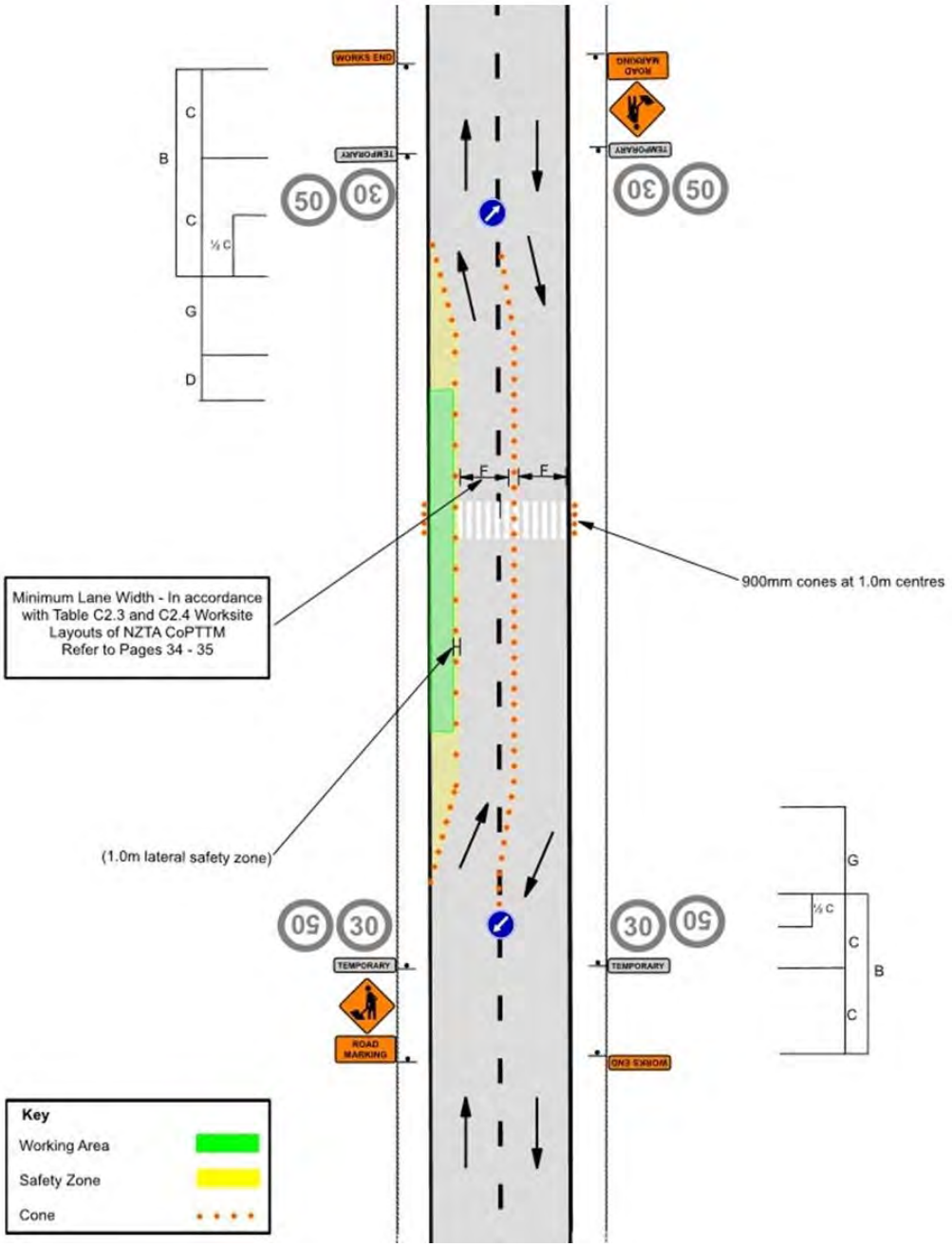
TWO-LANE TWO WAY ROAD

PEDESTRIAN CROSSING - FIRST PHASE

ATRM5-1

Notes

1. All Set out distance to be in accordance with CoPTTM C2.2 refer to page 33
2. Length of taper to be in accordance of CoPTTM Table C7.3.3 refer to page 36
3. Maximum Lane Width in accordance with CoPTTM Table C2.3 and C2.4 Worksite Layouts page 34 and35



Refrence Line Marking Generic TMP LM5.1

LINE MARKING - LOW VOLUME, LEVEL 1 AND LEVEL 2

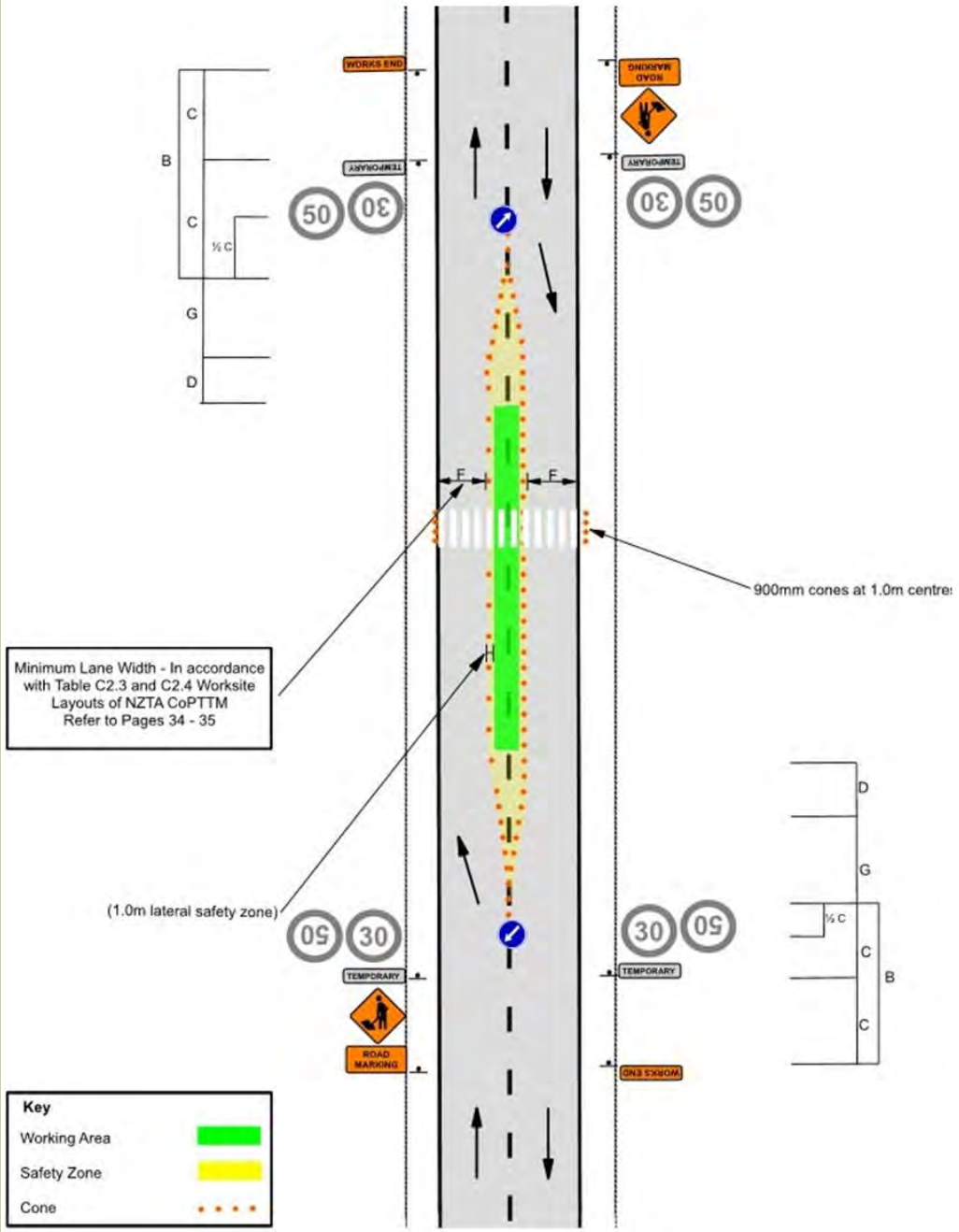
TWO-LANE TWO WAY ROAD

MARKING IN TRAFFIC LANE - PEDESTRAIN CROSSING (SECONE PHASE)

ATRM5-2

Notes

1. All Set out distance to be in accordance with CoPTTM C2.2 refer to page 33
2. Length of taper to be in accordance of CoPTTM Table C7.3.3 refer to page 36
3. STMS to refer to Work Site Layout Tables for appropriate spacings for the road level



Refrence Line Marking
Generic TMP LM5.2

Auckland Transport

Generic Traffic Management Diagrams
Section Z

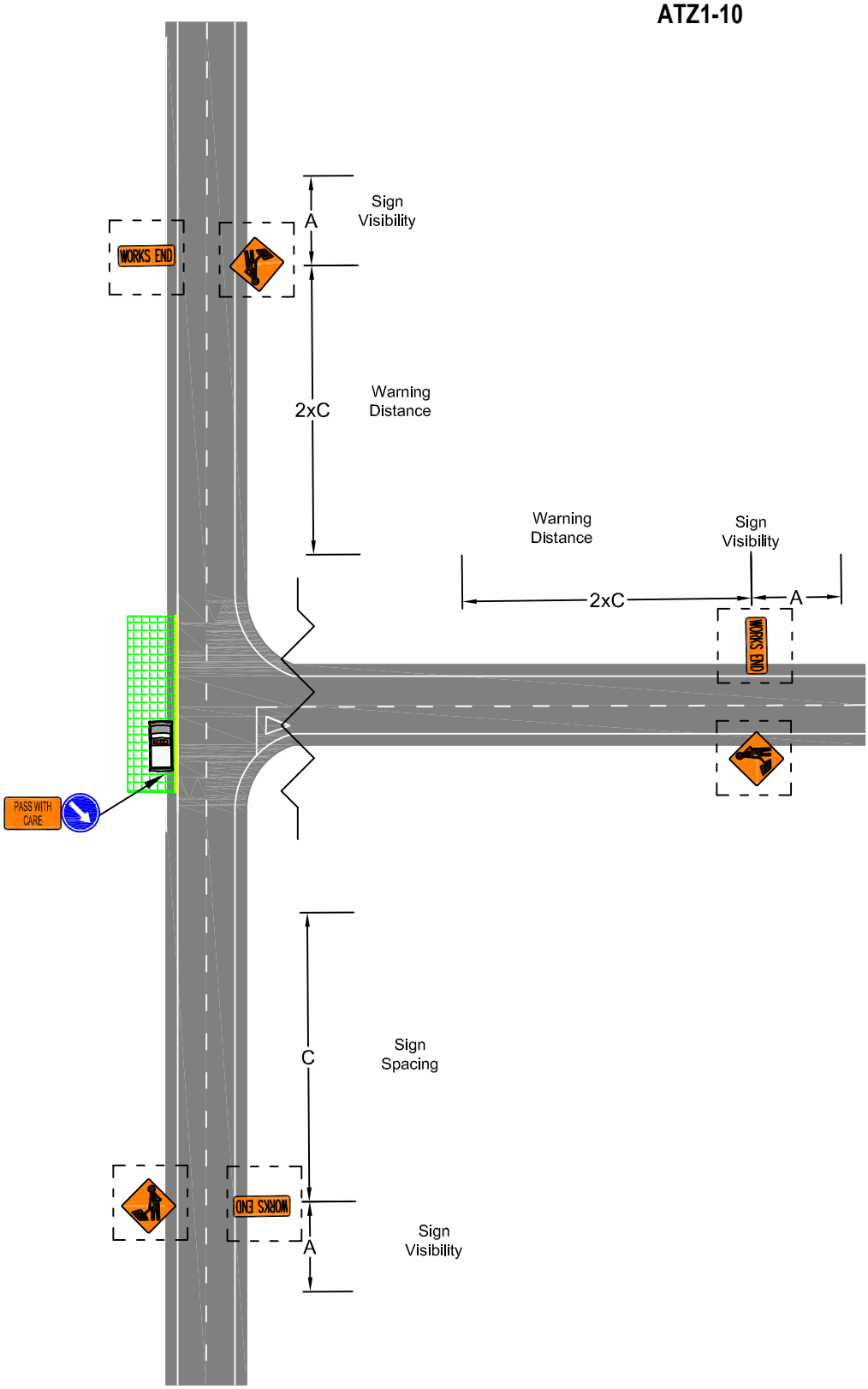
TWO-WAY TWO-LANE ROAD - LOW VOLUME AND LEVEL 1 SHOULDER - AT INTERSECTION (T-INTERSECTION)

WORK VEHICLE ON SHOULDER OR BERM - LESS THAN 65KM/H

ATZ1-10

Notes

1. All works to be clear of the live lane at all times
2. Advance not required for works in the shoulder or berm
3. For all works where cyclists and/ or pedestrians are affected temporary traffic management is required
4. T1A/B (TW-1) TG2 (work end) signs are not required when: the Work Vehicle (small truck) is parked in a legal parrallel parking or the vehicle is accessed from the off traffic side
5. All Set out distance to be in accordance with CoPTTM
6. Non excavation works only



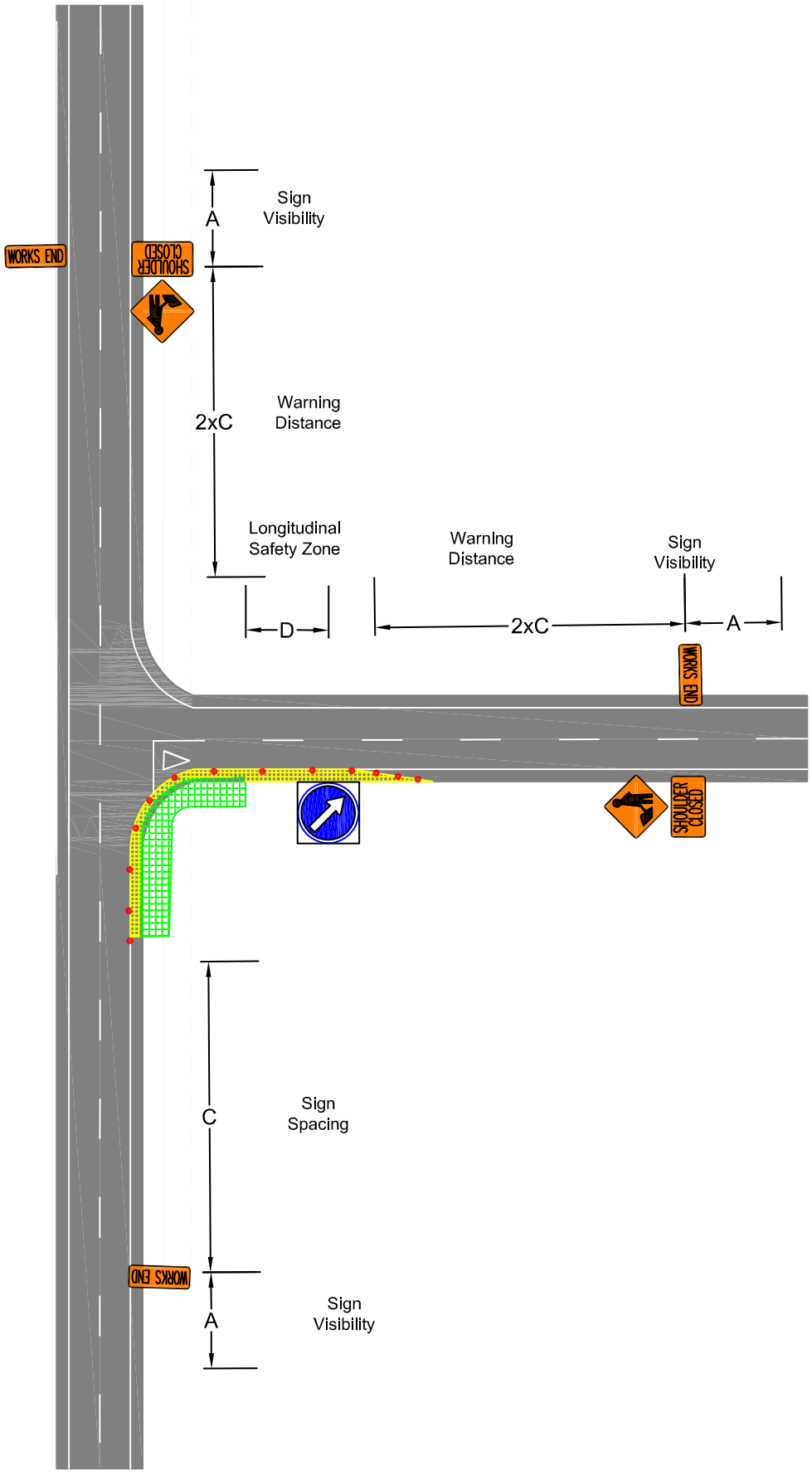
STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LOW VOLUME AND LEVEL 1
SHOULDER AND FOOTPATH- AT INTERSECTION (T-INTERSECTION)
WORK VEHICLE ON SHOULDER, BERM OR FOOTPATH - LESS THAN 65KM/H

ATZ1-11

Notes

1. All works to be clear of the live lane at all times
2. Advance not required for works in the shoulder or berm
3. For all works where cyclists and/ or pedestrians are affected temporary traffic management is required
4. T1A/B (TW-1) TG2 (work end) signs are not required when: the Work Vehicle (small truck) is parked in a legal parrallel parking or the vehicle is accessed from the off traffic side
5. All Set out distance to be in accordance with CoPTTM
6. Non excavation works



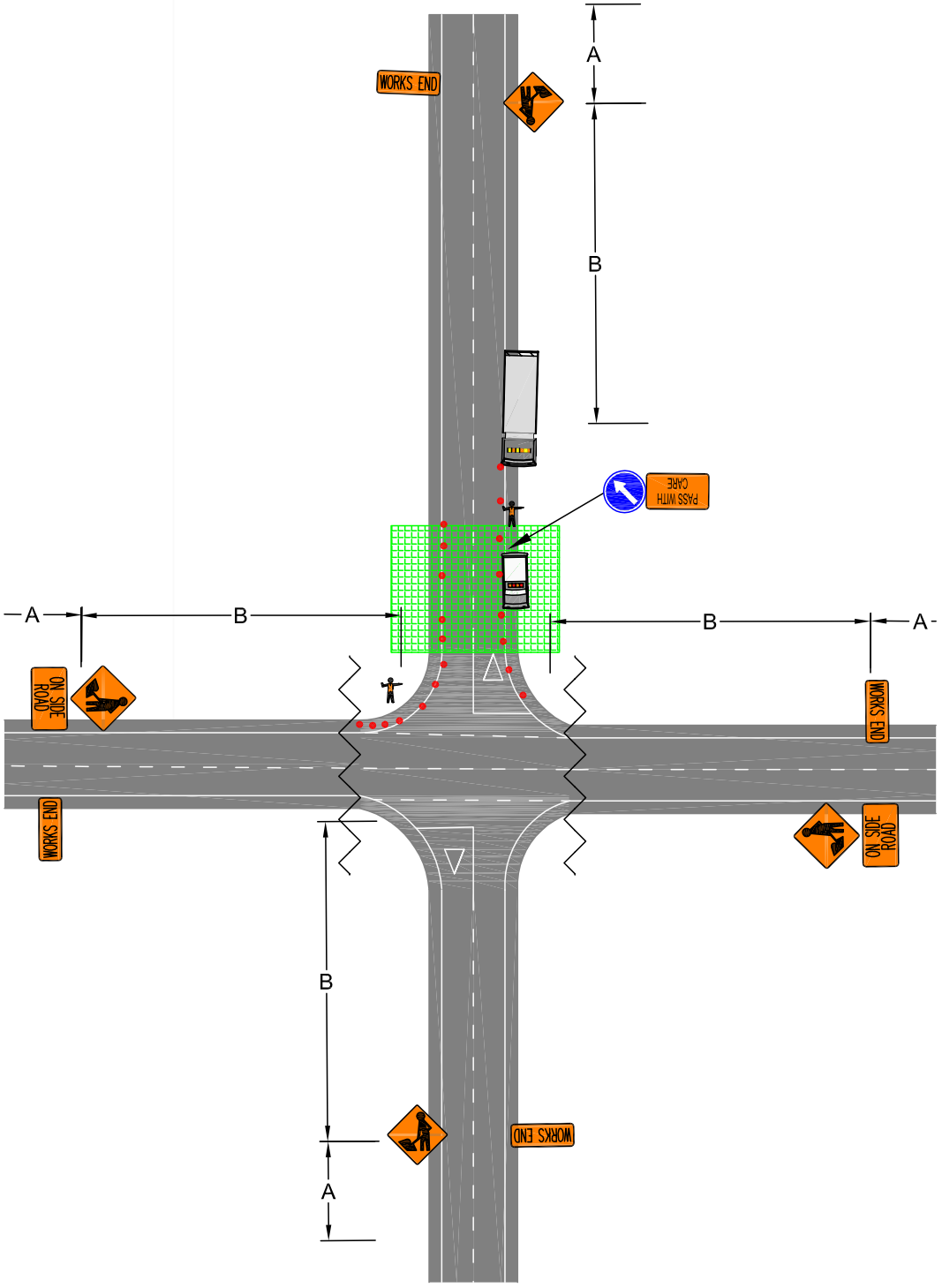
STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LOW VOLUME AND LEVEL 1
SHOULDER AND FOOTPATH- AT INTERSECTION (T-INTERSECTION)
WORK VEHICLE ON SHOULDER, BERM OR FOOTPATH

ATZ1-12

Notes

1. All works to be clear of the live lane at all times
2. Advance not required for works in the shoulder or berm
3. For all works where cyclists and/ or pedestrians are affected temporary traffic management is required
4. T1A/B (TW-1) TG2 (work end) signs are not required when: the Work Vehicle (small truck) is parked in a legal parrallel parking or the vehicle is accessed from the off traffic side
5. All Set out distance to be in accordance with CoPTTM
6. Non excavtion works



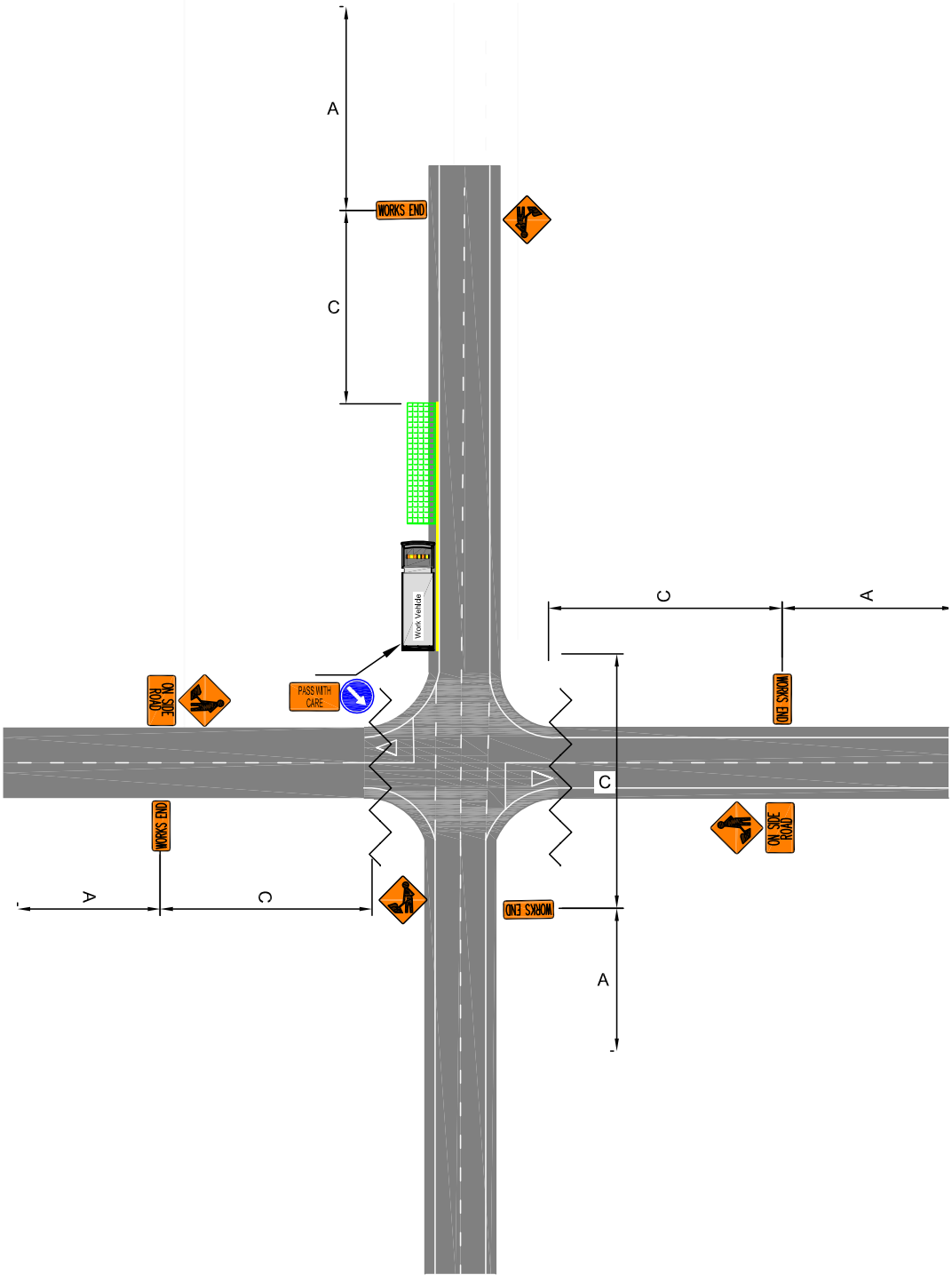
STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LOW VOLUME AND LEVEL 1
SHOULDER AND FOOTPATH- AT INTERSECTION (T-INTERSECTION)
WORK VEHICLE ON SHOULDER, BERM OR FOOTPATH

ATZ1-13

Notes

1. All works to be clear of the live lane at all times
2. Advance not required for works in the shoulder or berm
3. For all works where cyclists and/ or pedestrians are affected temporary traffic management is required
4. T1A/B (TW-1) TG2 (work end) signs are not required when: the Work Vehicle (small truck) is parked in a legal parrallel parking or the vehicle is accessed from the off traffic side
5. All Set out distance to be in accordance with CoPTTM
6. Non excavation works



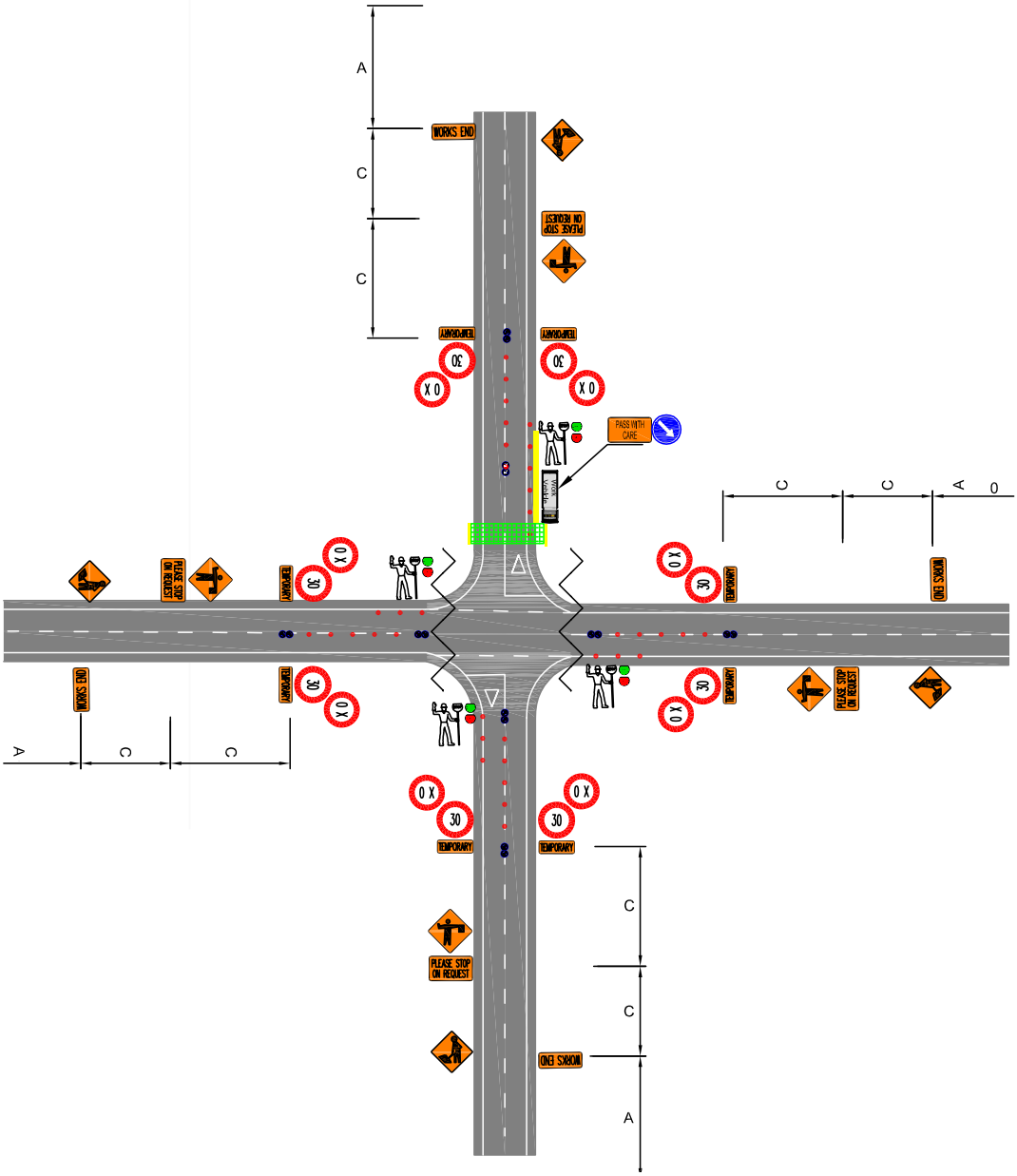
STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LOW VOLUME AND LEVEL 1
STOP/ GO AT INTERSECTION (AND STRAIGHT T-INTERSECTION)
WORK VEHICLE ON SHOULDER, BERM OR FOOTPATH

ATZ1-14

Notes

1. All works to be clear of the live lane at all times
2. Advance not required for works in the shoulder or berm
3. For all works where cyclists and/ or pedestrians are affected temporary traffic management is required
4. T1A/B (TW-1) TG2 (work end) signs are not required when: the Work Vehicle (small truck) is parked in a legal parrallel parking or
   the vehicle is accessed from the off traffic side
5. All set out distance to be in accordance with CoPTTM
6. Non excavation works

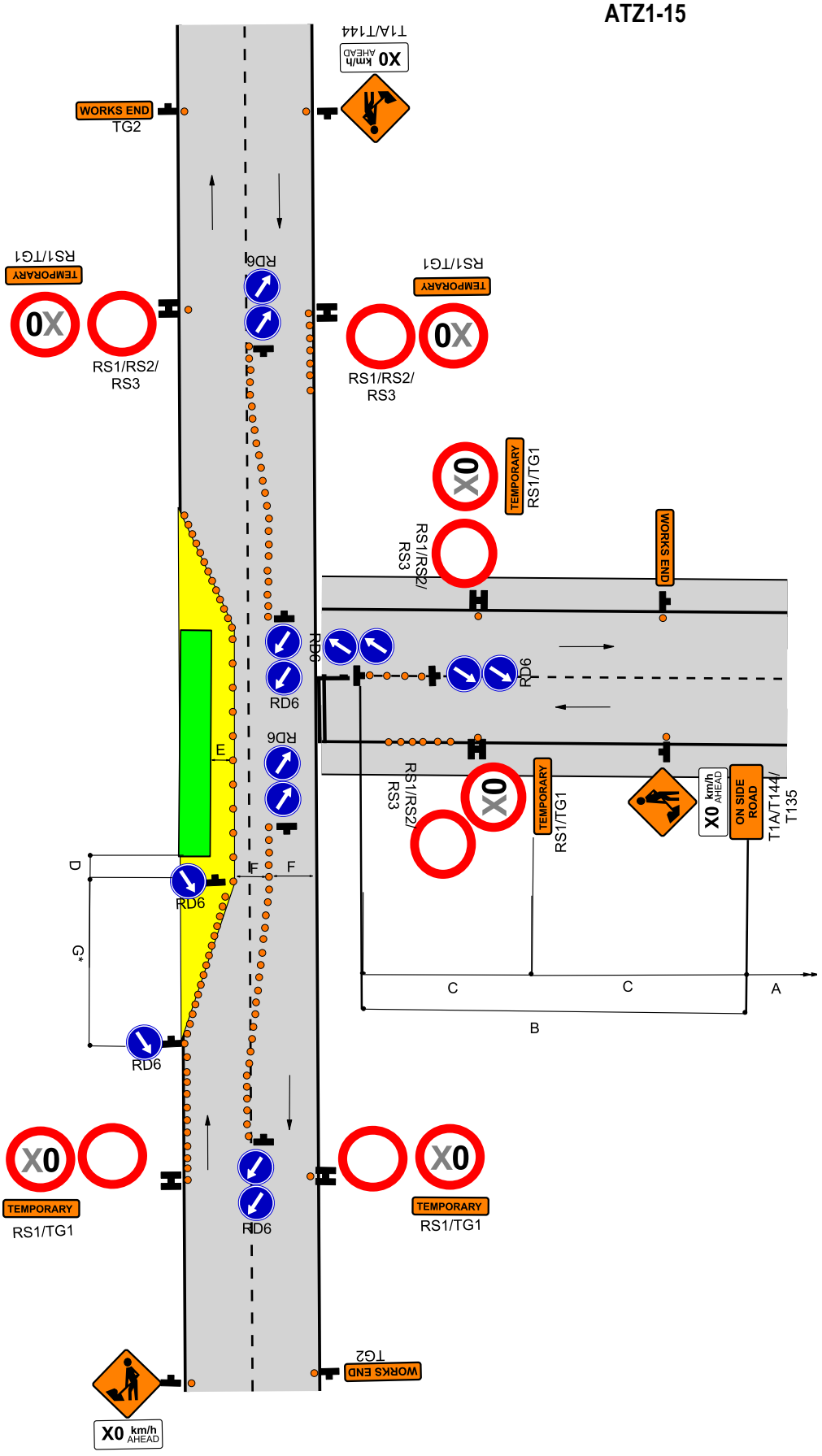


TWO-WAY TWO-LANE ROAD - LOW VOLUME AND LEVEL 1
CONTRAFLOW - AT INTERSECTION
TRAFFIC CROSSING CENTRELINE

ATZ1-15

Notes

1. A 30m return taper at the end of the closure is mandatory
2. PN11 "NO STOPPING" signs to be used if required
3. On roads with a permanent speed limit of 100km/h cones are to be placed along the edgeline from the TSL to the taper when the spped is reduced by more than 30km/h
4. If traffic is required to cross the centreline, cones are to be placed on the centreline with RD6L signs at each leading end
5. T144 "30KM/H AHEAD" sign is optional
6. When using a TSL for the closure the TSL Matric CoPTTM must be used to intstall the correct TSL for the closure
7. Calculation of Taper Length for lateral shift or less than 3.5m is :
   W X G = Width of Lateral Shift
   3.5
   G = Taper length in meters from the Level 1 Layout Distance Table CoPTTM

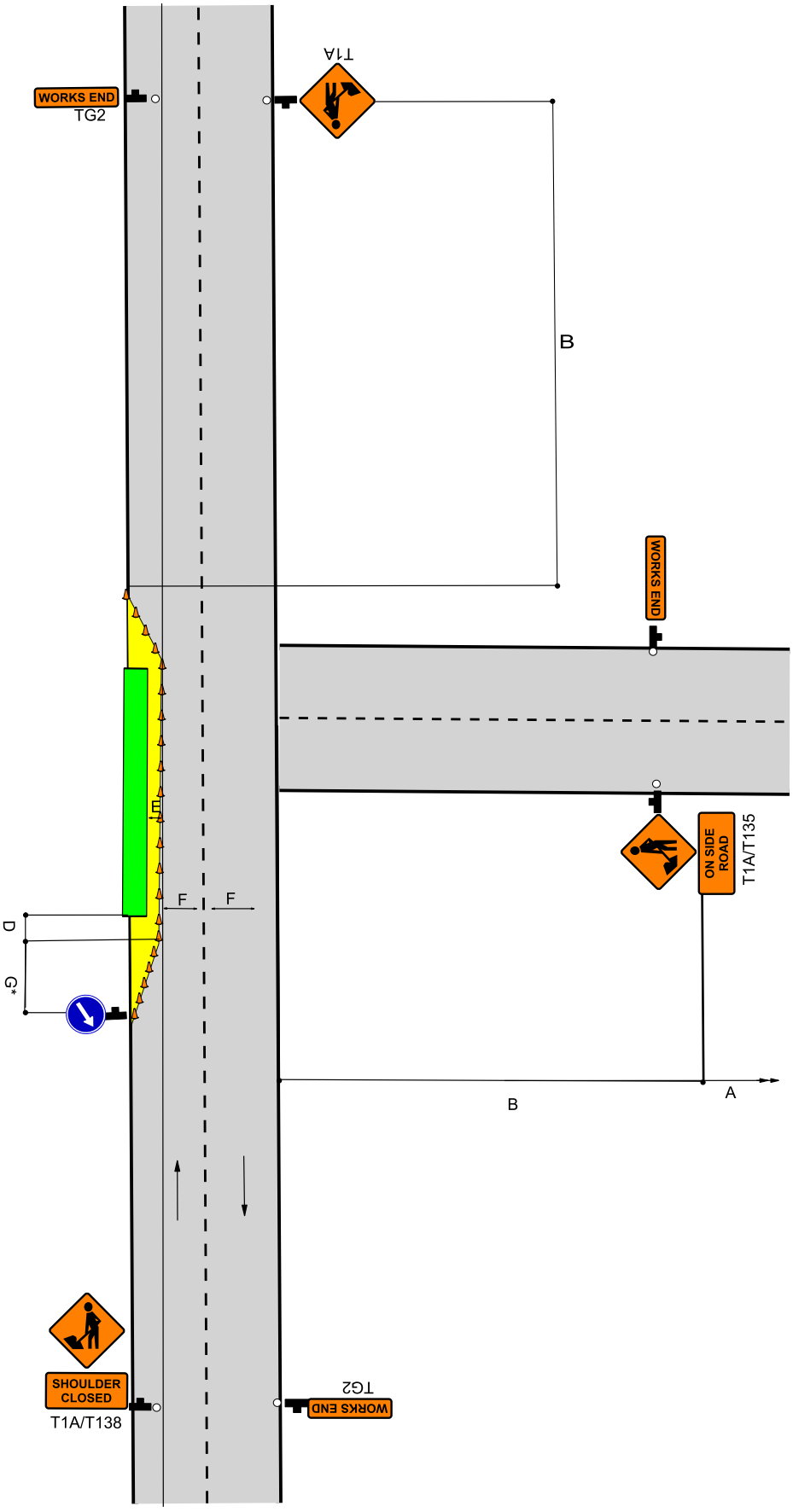


TWO-WAY TWO-LANE ROAD - LOW VOLUME AND LEVEL 1
SHOULDER - AT INTERSECTION

ATZ1-16

Notes

1. Cone spacing along side of work space:
   20m from the centre of cone for Permanent speed limit of 65km/h or greater
   10m from the centre of cone for Permanent speed limit less than 65km/h
2. A 10m taper is allowed where the shoulder is less than 2.5m
3. For shoulders greater than 2.5m the following taper calculation to be applied. Calculation of Taper Length for lateral shift or less than 3.5m is :
   W X G = Width of Lateral Shift 3.5
   G = Taper length in meters from the Level 1 Layout Distance Table CoPTTM



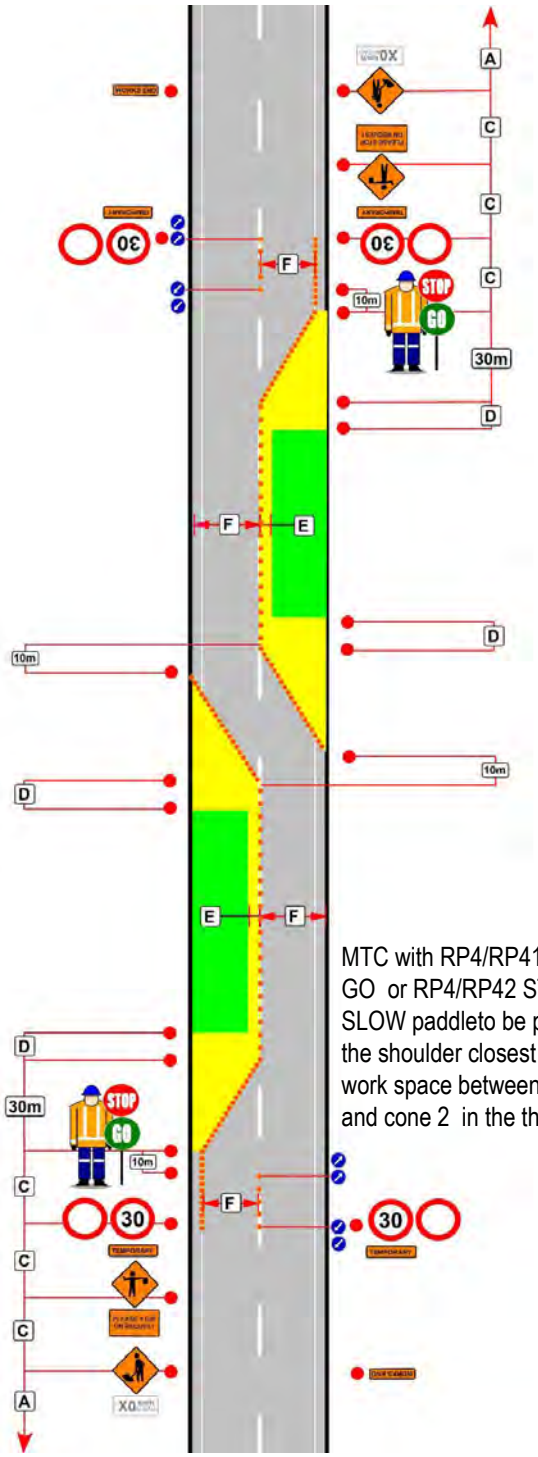
STATIC OPERATION

TWO-WAY TWO-LANE ROAD - LOW VOLUME AND LEVEL 1
CHICANE - WITH STOP/ GO
OFF PEAK HOURS ONLY

ATZ1.17

Notes

1. Cones are required on the edge of the temporary lane opposite the closure if road is not well defined
2. To allow heavy vehicles to manoeuvre cones in the channel to be offset by at least 10m where the direction changes refer to C8.2.12 CoPTTM
3. T144 "X0km/h" sign is optional
4. Extend or place extra advance warning signs towards on-coming traffic beyond any expected traffic queues
5. 30m return taper at the end of the closure is mandatory
6. Minimum 5 cones at all times in the cone threshold at :
   2.5m centres less than 65km/h
   5m centres 65km/h greater
7. When dropping the speed limit greater than 30km/h on a 100km/h road cones are to be placed along the edgeline from the TSL to the MTC or taper
8. Refer to C10.2.3 CoPTTM MTC essentials for further information
9. Delays cannot exceed the time approved by the RCA (between 5 and 10 minutes)
10. Appropriate sinage/ MTC are to be installed on all approaches within the TA/TB
11. Multiple work zones may be installed within the closure as long as the longitudinal safety zone can be maintained from each approach
12. The TSL signage is not required to be gated on LV roads



MTC with RP4/RP41 STOP/ GO or RP4/RP42 STOP/ SLOW paddleto be placed on the shoulder closest to the work space between cone 1 and cone 2 in the threshold

To be used on the road the meet the following requirements:

<5000vpd urban road <65km/h or <3000vpd rural road >65km/h

Off Peak Hours Only

TWO-WAY FOUR-LANE - LOW VOLUME AND LEVEL 1

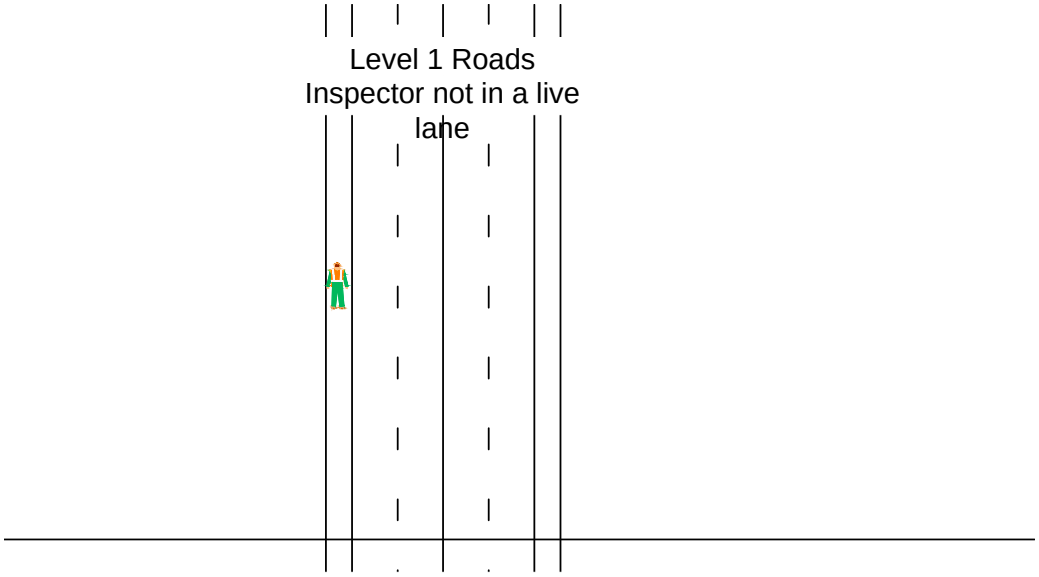
MOBILE OPERATION

INSPECTIONS

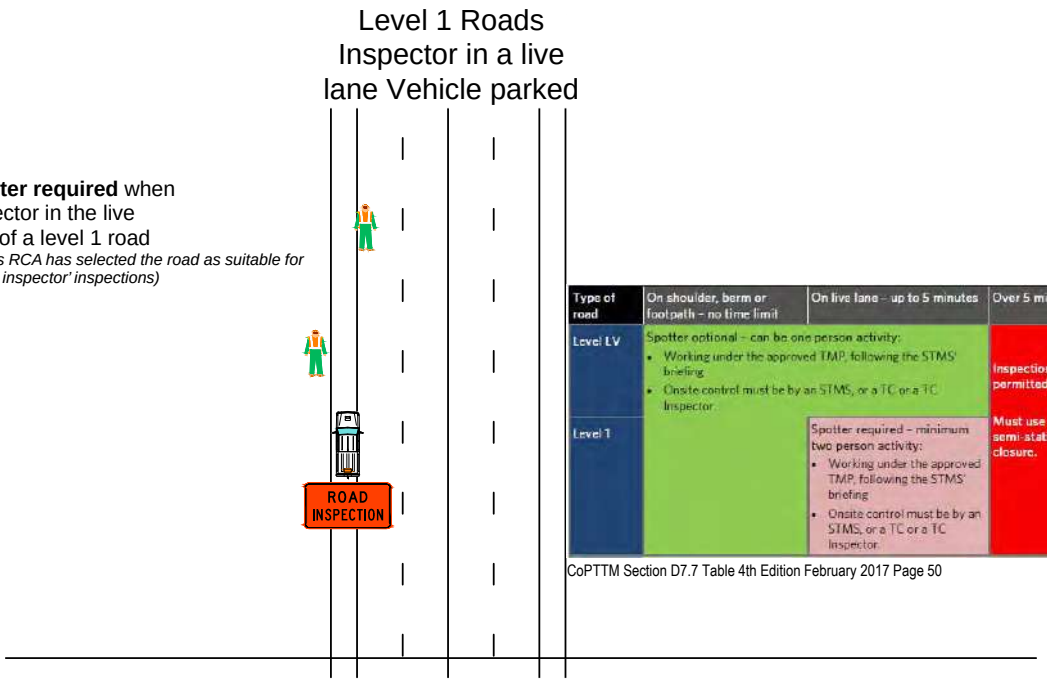
ATZ2-0

Notes

1. Inspectors in the carriageway must remain alert and move for traffic.
2. Stopping traffic or requiring them to alter course to avoid the inspection activity is not permitted
3. Inspectors are permitted onto the carriageway for a maximum of 5 min on LV1 road as long as a spotter is in place



Level 1 Roads
Inspector not in a live lane

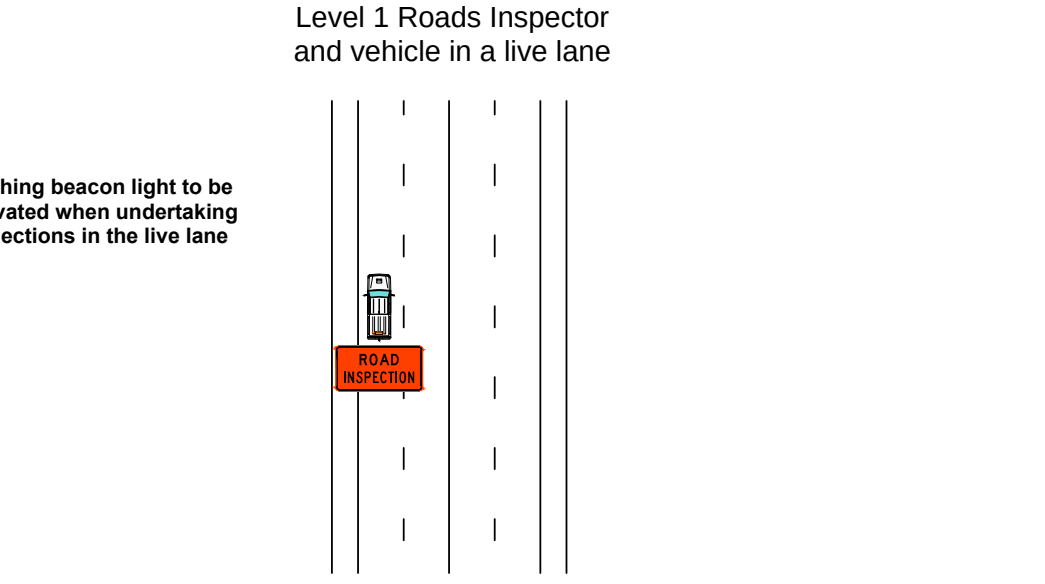


Level 1 Roads
Inspector in a live lane Vehicle parked

Spotter required when inspector in the live lane of a level 1 road
(unless RCA has selected the road as suitable for 'single inspector' inspections)

Type of road	On shoulder, berm or footpath – no time limit	On live lane – up to 5 minutes	Over 5 minutes
Level LV	Spotter optional – can be one person activity: • Working under the approved TMP, following the STMS' briefing • Onsite control must be by an STMS, or a TC or a TC Inspector.		Inspection not permitted.
Level 1		Spotter required – minimum two person activity: • Working under the approved TMP, following the STMS' briefing • Onsite control must be by an STMS, or a TC or a TC Inspector.	Must use a mobile, semi-static, or static closure.

CoPTTM Section D7.7 Table 4th Edition February 2017 Page 50



Level 1 Roads Inspector and vehicle in a live lane

Flashing beacon light to be activated when undertaking inspections in the live lane

Refrence Auckland Council Inspection TMP INS-1

TWO-WAY FOUR-LANE - LEVEL 2

MOBILE OPERATION

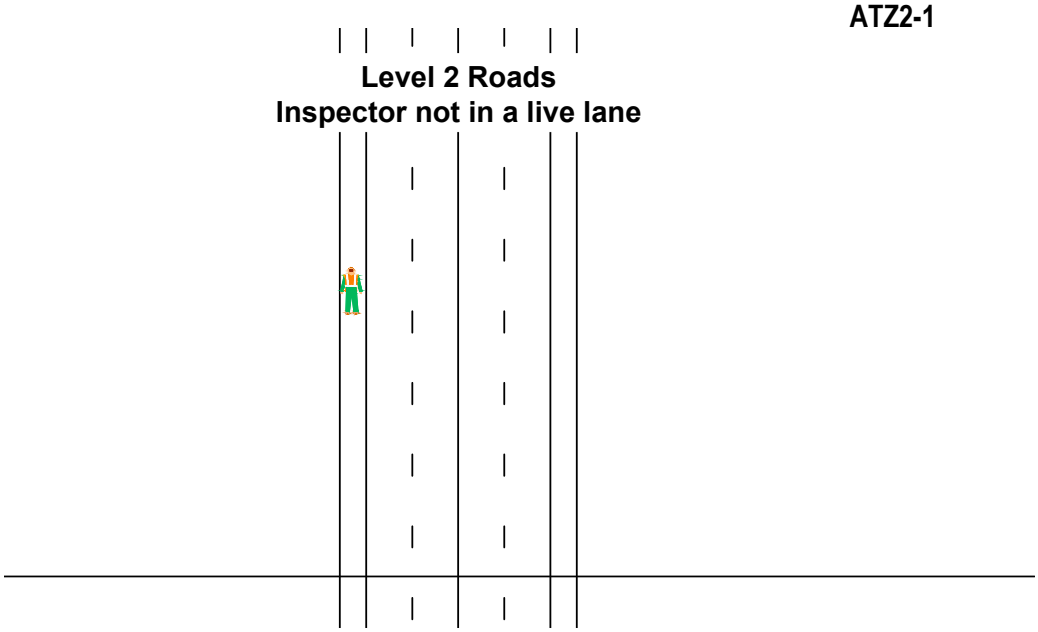
INSPECTIONS

ATZ2-1

Notes

1. Inspectors in the carriageway must remain alert and move for traffic
2. Stopping traffic or requiring them to alter course to avoid the inspection activity is not permitted

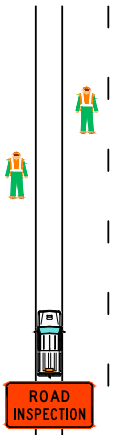
Level 2 Roads
Inspector not in a live lane



Level 2 Roads Inspector in a live lane Off peak times only

Under 65km/h - Spotter required at all times (2 person activity)

Over 65km/h - Spotter required at all times (2 person activity)
Must have RCA approval to do the inspections and may be subject to Special Conditions (as set out by the RCA)



Type of road	On shoulder, berm or	On live lane – up to 5 minutes	Over 5 minutes
Level 2 under 65km/h	Spotter optional – can be one person activity: • Working under the approved TMP, following the STMS' briefing • Onsite control must be by an STMS L2/3, or an STMS-NP or a TC Inspector.	Spotter required – minimum two person activity: • Working under the approved TMP, following the STMS' briefing • Onsite control must be by an STMS L2/3, or an STMS-NP or a TC Inspector.	Inspection not permitted. Must use a mobile, semi-static, or static closure.
Level 2 over 65km/h		Inspection must only be carried out with RCA approval and may be subject to RCA conditions (eg locations, times). Spotter required – minimum two person activity: • Working under the approved TMP, following the STMS' briefing • Onsite control must be by an STMS L2/3 or an STMS-NP.	

CoPTTM Section D7.7 Table 4th Edition February 2017 Page 50

Level 2 Roads
Moving inspection vehicle

Flashing beacon light to be activated when undertaking inspections in the live lane

Reference Auckland Council Inspection TMP - INS-2

ONE WAY TWO-LANE ROAD SAME DIRECTION - LEVEL 3

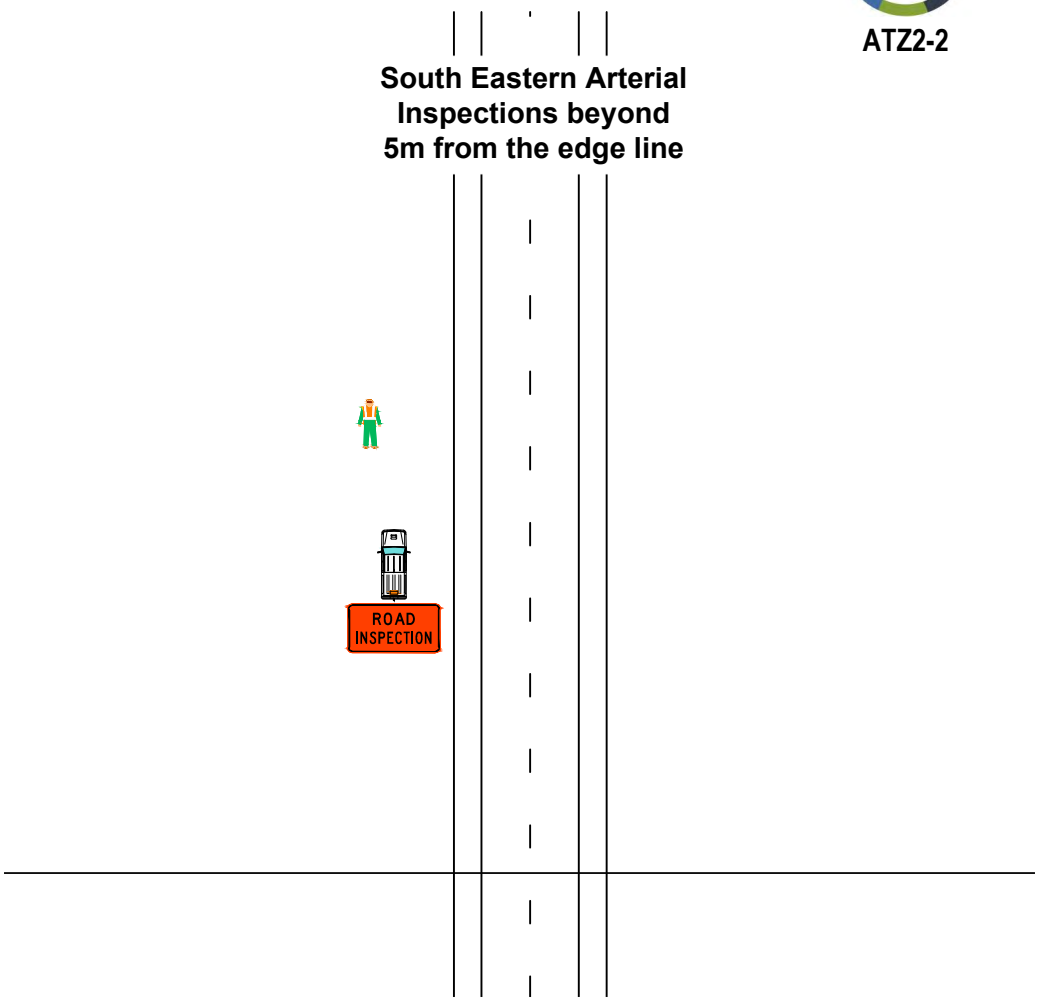
MOBILE OPERATION

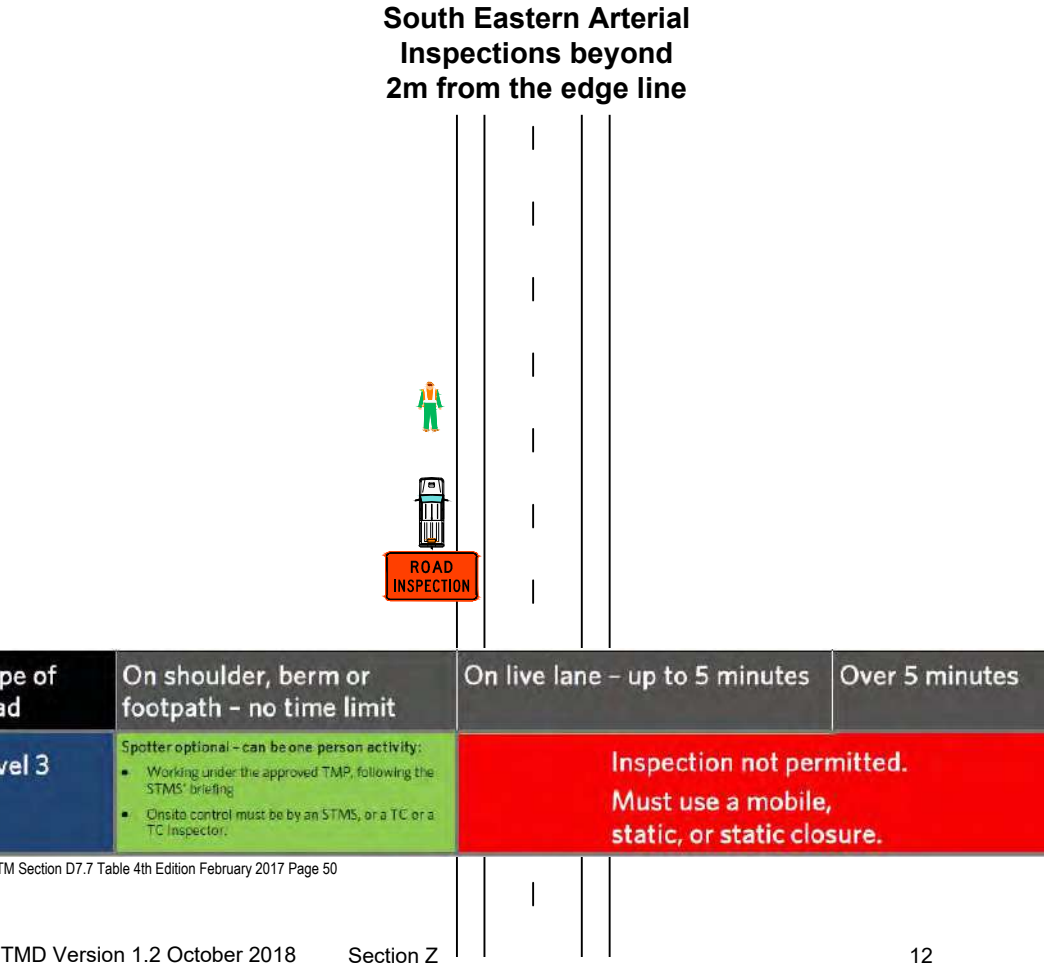
INSPECTION

ATZ2-2

Notes

1. Inspectors in the carriageway must remain alert and move for traffic.
2. Stopping traffic or requiring them to alter course to avoid the inspection activity is not permitted





Type of road	On shoulder, berm or footpath – no time limit	On live lane – up to 5 minutes	Over 5 minutes
Level 3	Spotter optional – can be one person activity: • Working under the approved TMP, following the STMS' briefing • Onsite control must be by an STMS, or a TC or a TC Inspector.	Inspection not permitted. Must use a mobile, static, or static closure.	

Reference Auckland Council Inspection TMP - INS-3

CoPTTM Section D7.7 Table 4th Edition February 2017 Page 50

MOBILE OPERATION

NON INVASSIVE WORKS - LEVEL 1 AND LEVEL 2

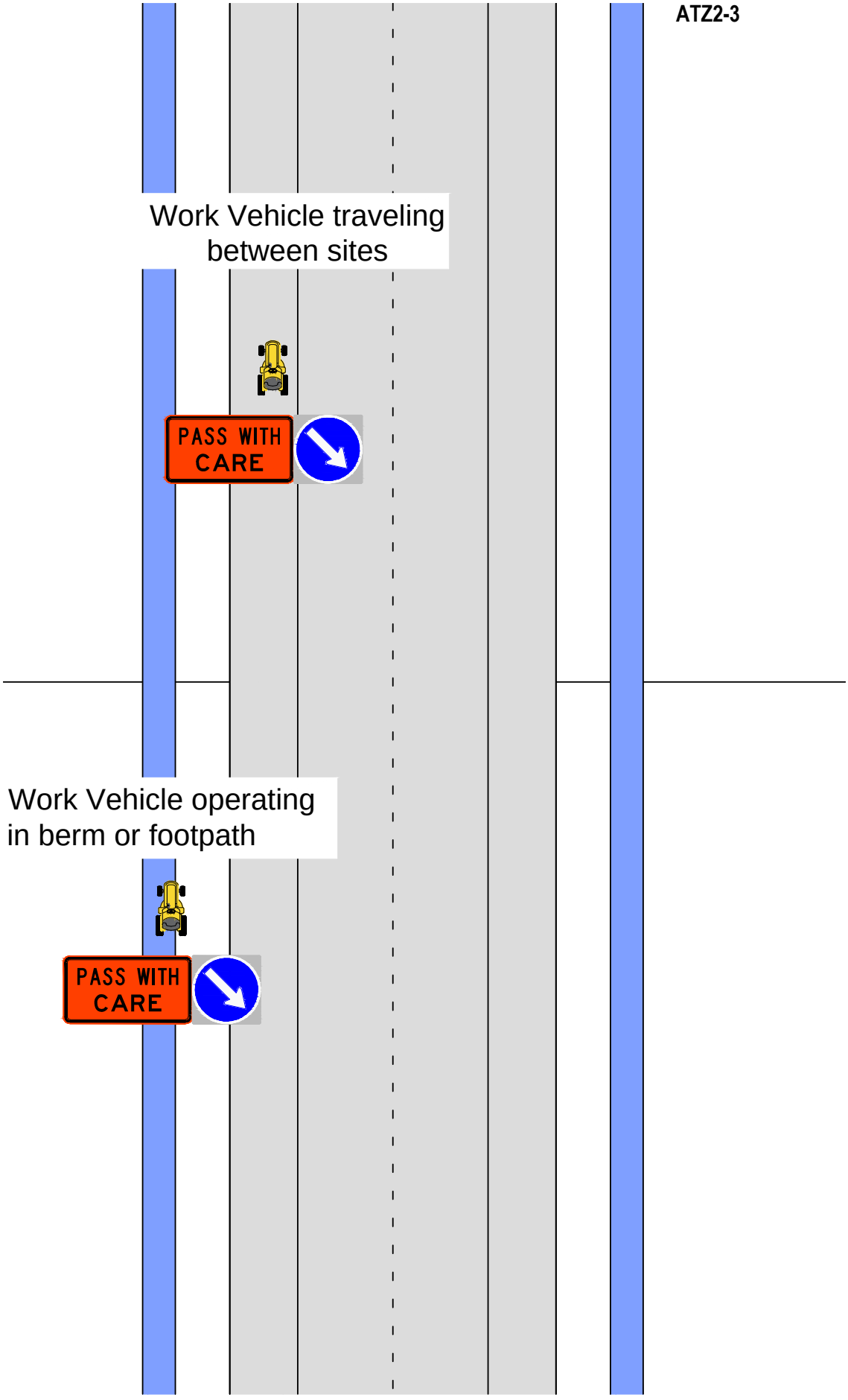
MOBILE OPERATION

PERMANENT SPEED 50KM/H OR LESS

ATZ2-3

Notes

1. This drawing is intended for use by operators of small maintenance vehicles. The work vehicle must be checked for suitability to operate on a footpath or berm without posing an undue hazard to pedestrians
2. Examples of suitable vehicles include:
   Compact mowers
   Quad bikes
   Compact sweepers
3. Examples of suitable vehicles include: Compact mowers Quad bikes Compact sweepers
4. Vehicles may not operate as a work vehicle on the carriageway under this drawing. Vehicles may travel between sites unescorted provided they comply with the normal road rules



Reference Auckland Council Inspection TMP NI-1

NON INVASSIVE WORKS - LEVEL 1 AND LEVEL 2

MOBILE OPERATION

MINOR WORKS ON FOOT

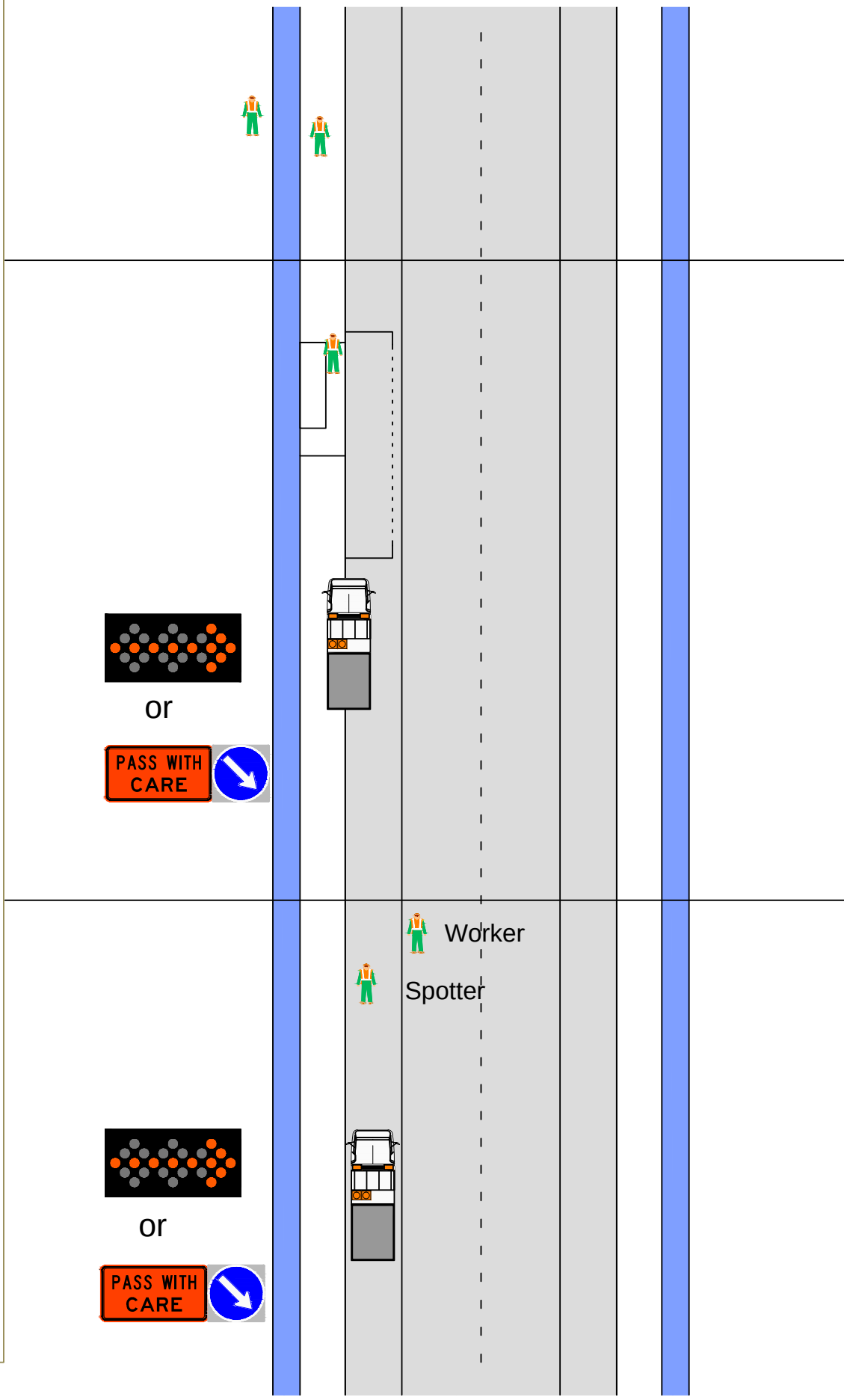
ATZ2-4

Notes

1. Workers on foot may operate in the footpath or berm without a work vehicle present or with the vehicle parked in a legal space or on a side road

2. Work crew on the footpath or berm. Vehicle parked on the berm or footpath (Duration of 5 min or less where footpath is blocked).

3. Work crew on the road, vehicle parked on in shoulder or parking bay. Minor works only where the crew can move to avoid traffic.



Reference Auckland Council Inspection TMP
NI-2

MOBILE OPERATION

INSPECTION - LOW VOLUME AND LEVEL 1

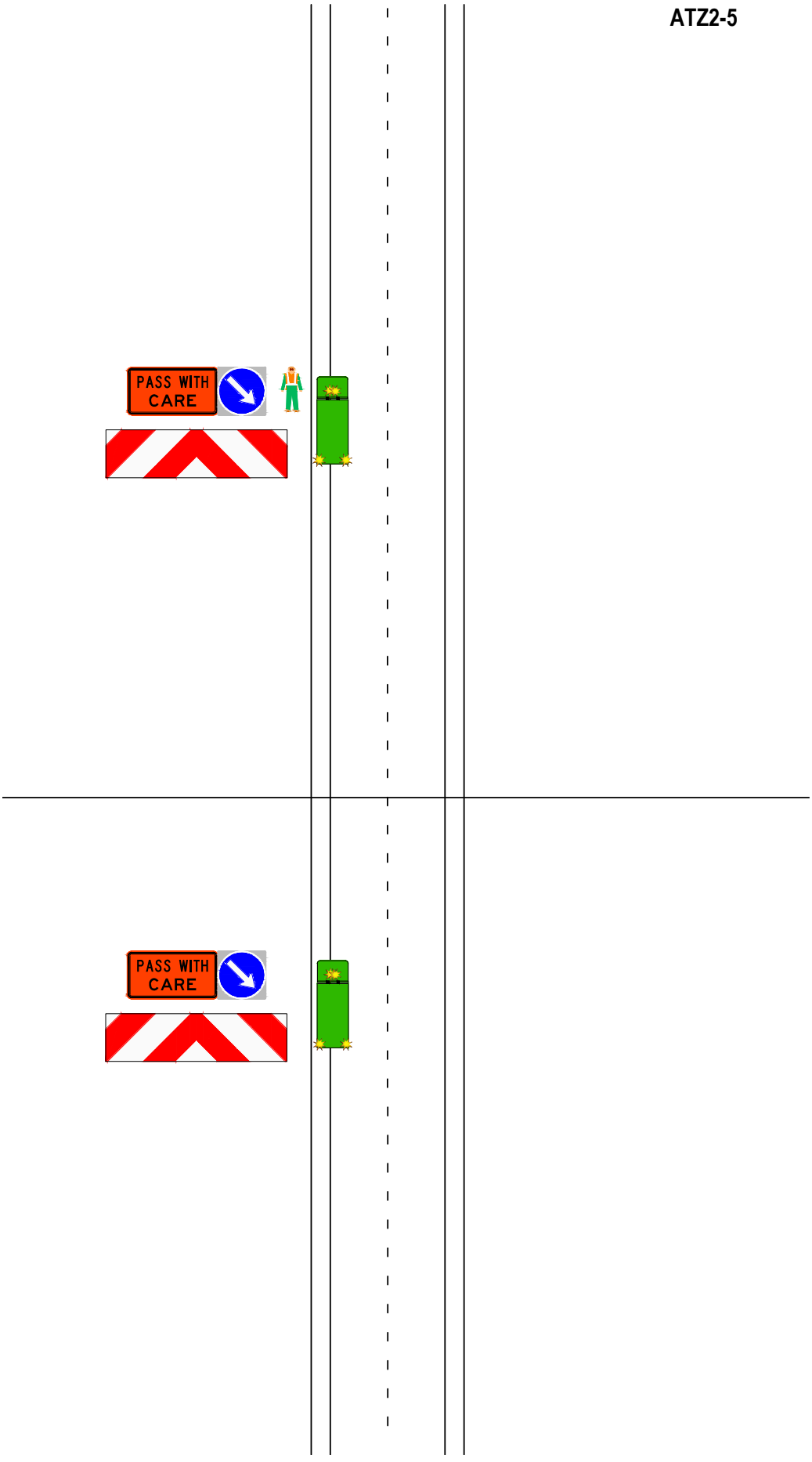
MOBILE OPERATION - KERBSIDE WASTE COLLECTION

STREET SWEEPING AND CATCHPIT CLEANING

ATZ2-5

Notes

1. Road sweeping is to be undertaken as a Kerbside Waste Collection Activity as specified in COPTTM D7.3
2. Each team is required to have a staff member qualified as either the appropriate level of STMS for the road on which they are operating or as a KCTL
3. Vehicles must display the red and white reflective panel and TV-4 pass with care sign



Reference Auckland Council Inspection SW-1

MOBILE OPERATION

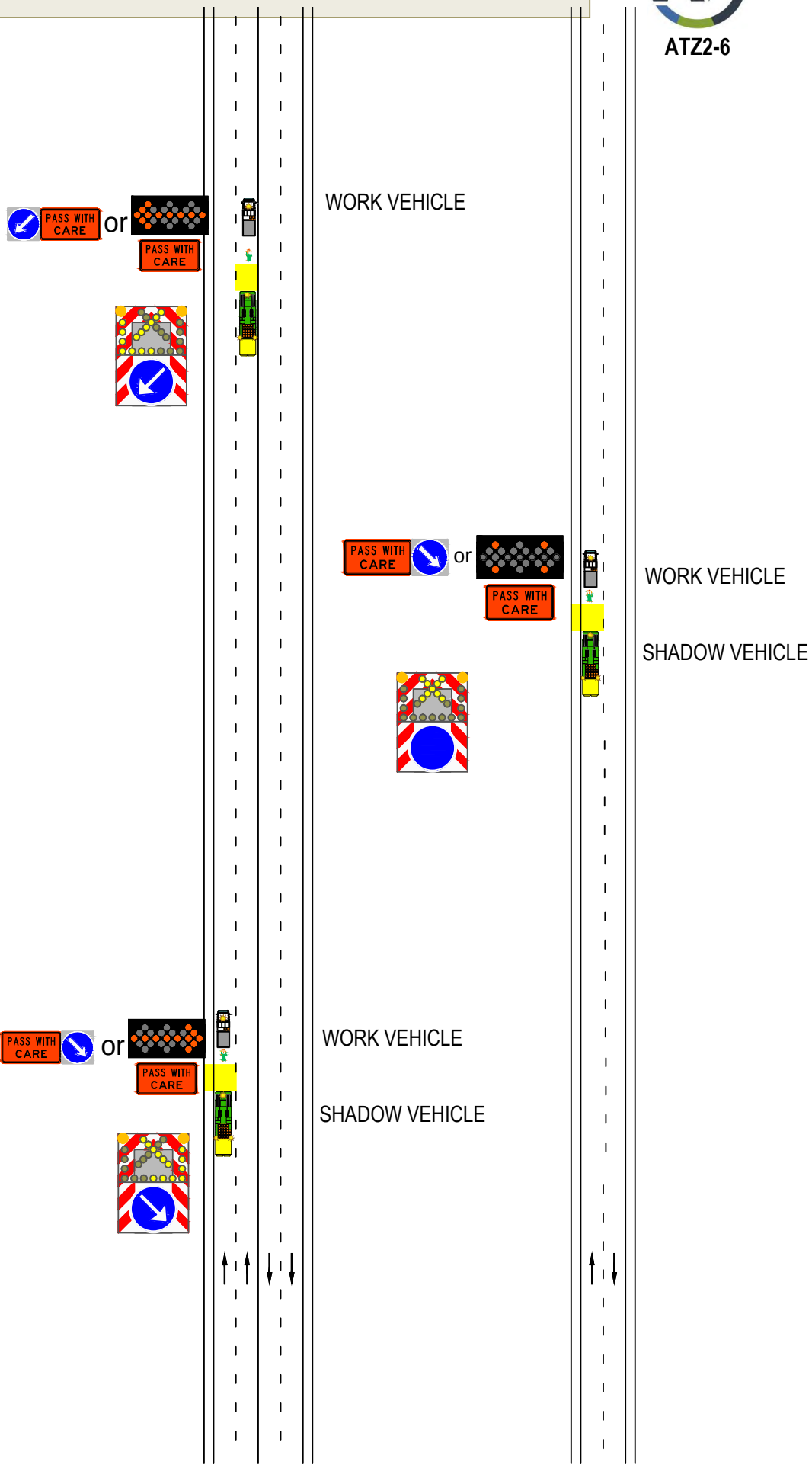
MOBILE OPERATION - LEVEL 2

MAX STOP 10 MINUTES (1 MINUTE ON 2 LANE 3 WAY ROAD)

ATZ2-6

Notes

1. Shadow vehicles must be equipped with a TMA
2. Personnel on foot must be between the shadow vehicle and work vehicle and must not enter the 10m roll ahead distance in front of the shadow vehicle
3. LAS arrow boards must display an X symbol only on 2 lane, 2 way roads



Reference Auckland Council Inspection TMP L2-M-1

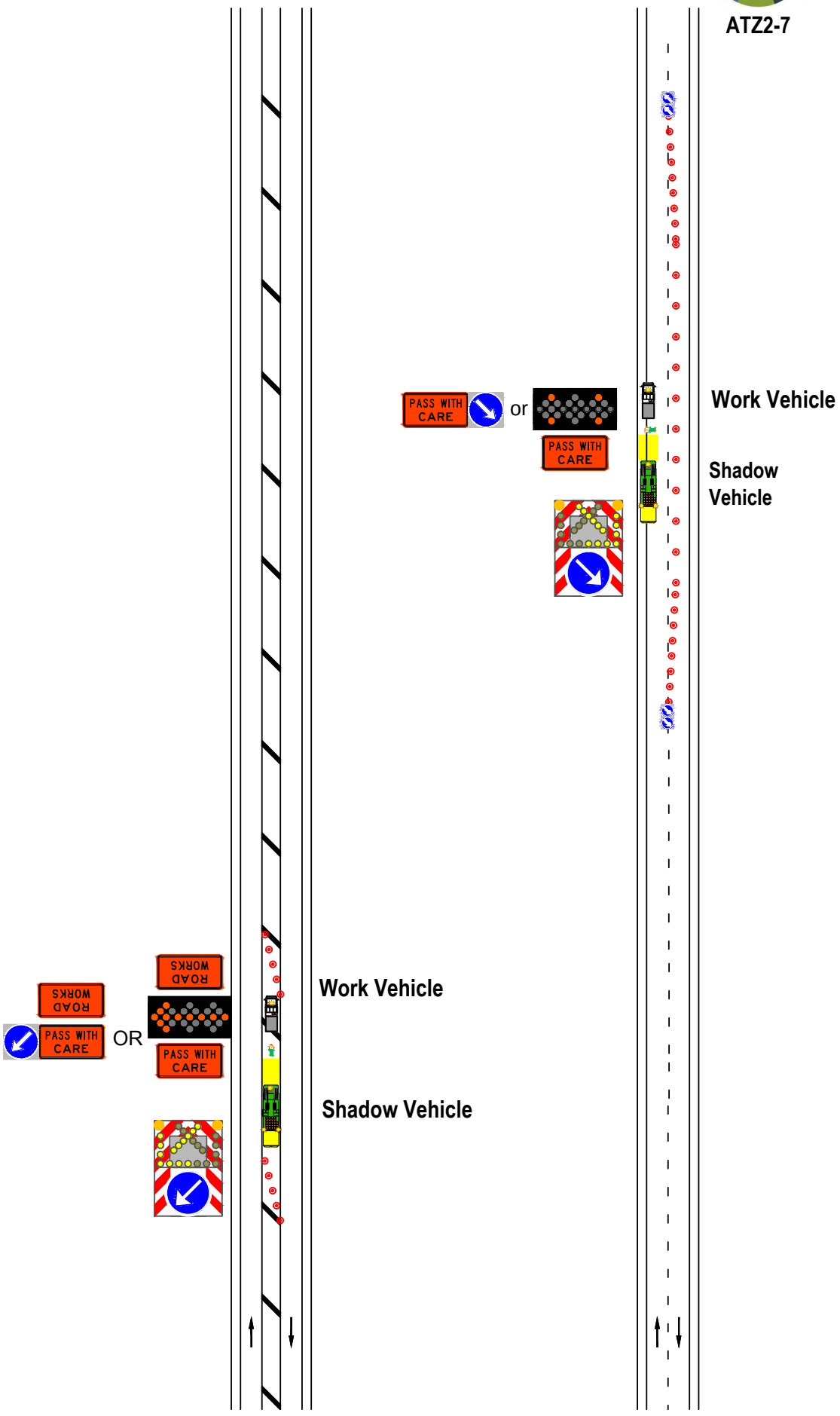
MOBILE OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 2
SEMI-STATIC CLOSURE
1 HOUR (60 MINUTES)

ATZ2-7

Notes

1. Shadow vehicles must be equipped with a TMA
2. Personnel on foot must be between the shadow vehicle and work vehicle and must not enter the 10m roll ahead distance in front of the shadow vehicle
3. Centreline cones to be installed with standard mobile operation as per ATZ2.6
4. Taper length and cone spacings to be as per CoPTTM layout distances table for Level 2 roads
5. The lane width in each direction of travel must comply with CoPTTM minimum layout distances table
6. Tapers to be installed with standard mobile operation as per ATZ2.6
6. Taper length and cone spacings to be as C layout distances table for Level 2 roads
7. The lane width in each direction of travel must comply with the minimum layout distances table as per CoPTTM



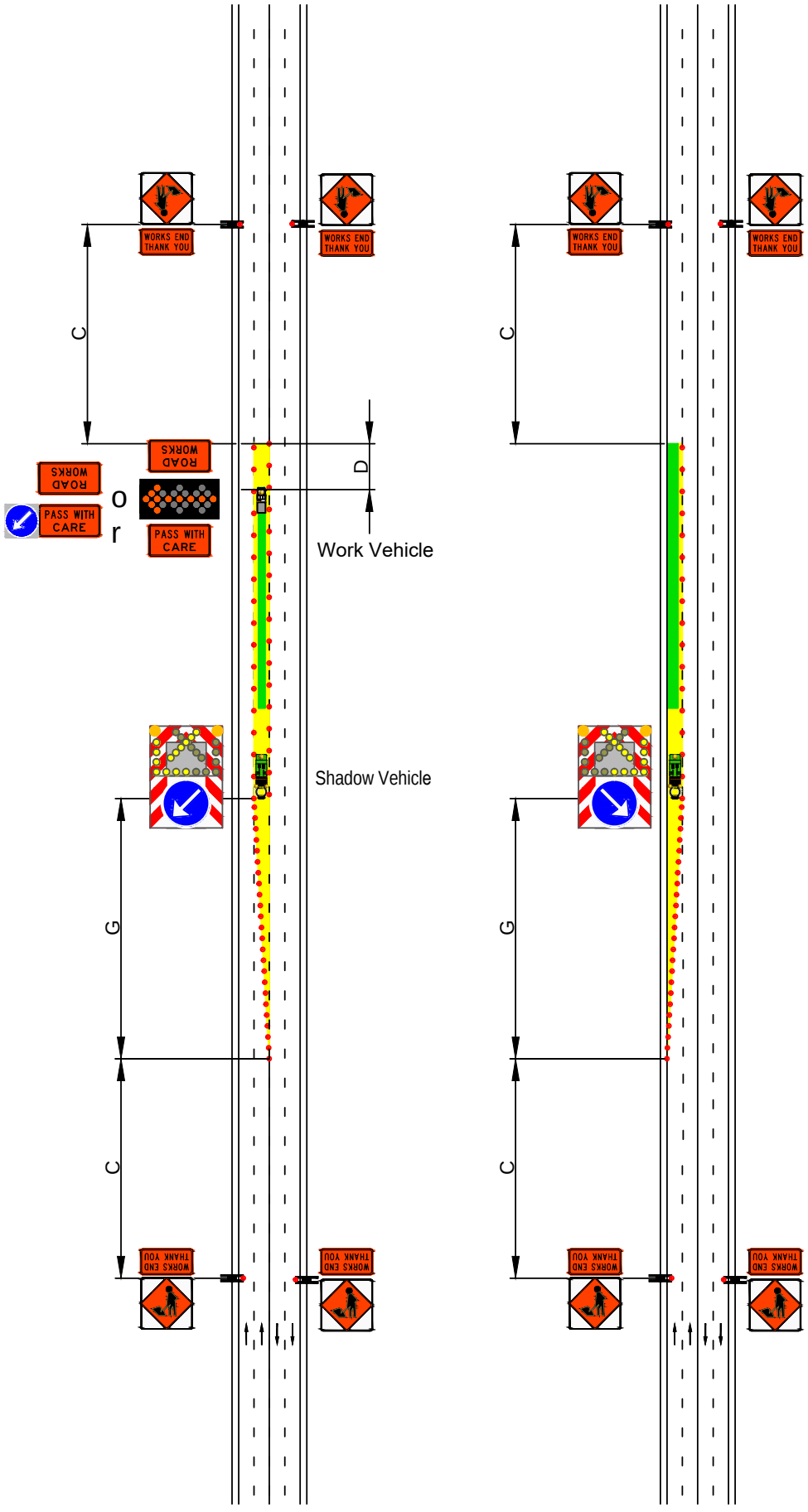
MOBILE OPERATION

TWO-WAY FOUR-LANE ROAD - LEVEL 2
SEMI-STATIC CLOSURE
1 HOUR (60 MINUTES)

ATZ2-8

Notes

1. Shadow vehicles must be equipped with a TMA
2. Personnel on foot must be between the shadow vehicle and work vehicle and must not enter the 10m roll ahead distance in front of the shadow vehicle
3. Centreline cones to be installed with standard mobile operation as per ATZ2.6
4. Taper length and cone spacings to be as per the attached layout distances table for Level 2 roads
5. The lane width in each direction of travel must comply with the minimum in the attached layout distances table
6. Tapers to be installed with standard mobile operation as per ATZ2.6
7. Taper length and cone spacings to be as per the attached layout distances table for Level 2 roads
8. The lane width in each direction of travel must comply with the minimal layout distance table in CoPTTM



MOBILE OPERATION

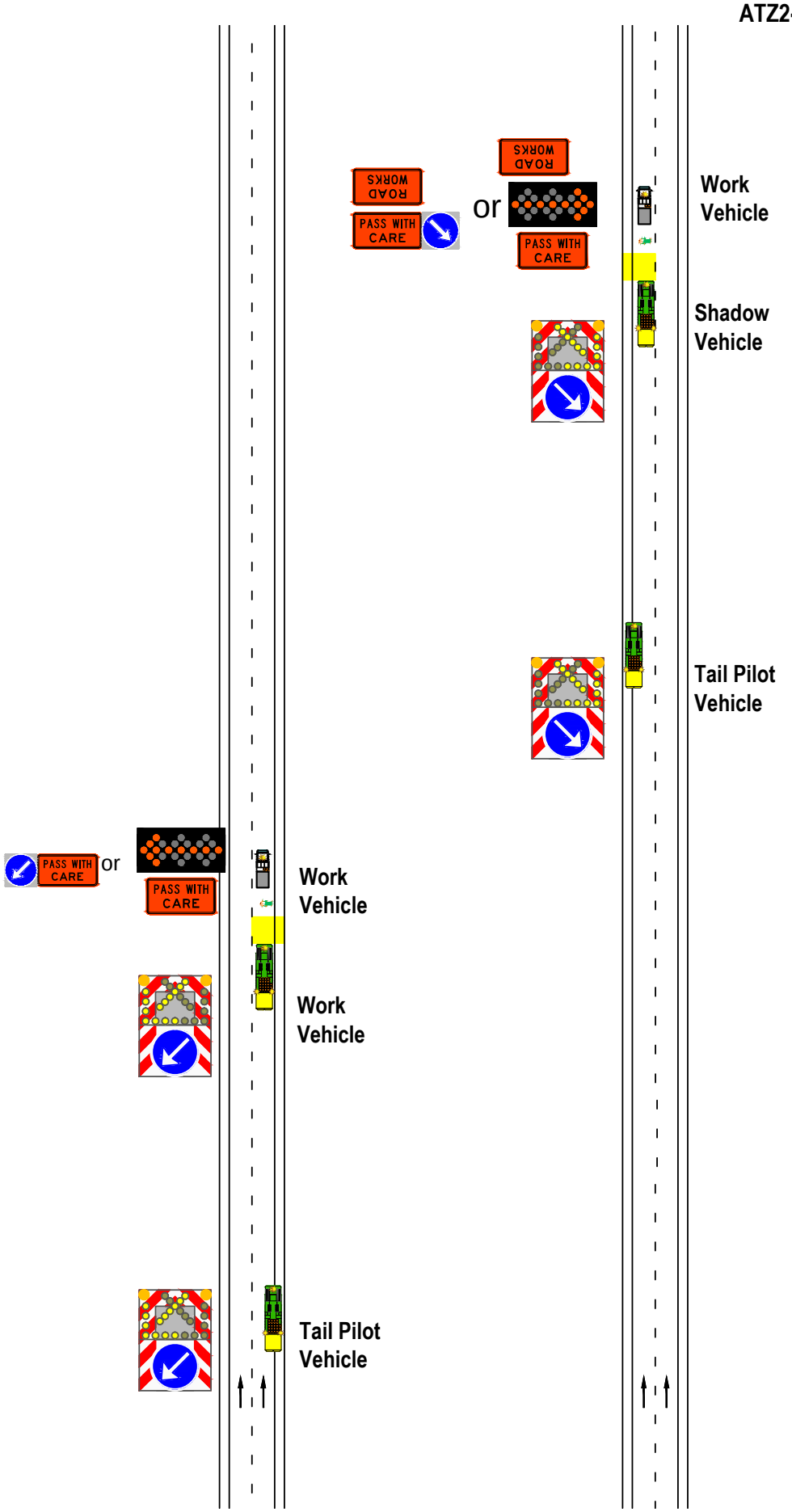
ONEWAY TWO-LANE ROAD - LEVEL 3

MOBILE OPERATION - 10 MINUTES ONLY

ATZ2-9

Notes

1. Shadow vehicles must be equipped with a TMA
2. Personnel on foot must be between the shadow vehicle and work vehicle and must not enter the 10m roll ahead distance in front of the shadow vehicle
3. LAS arrow boards must display an X symbol with the appropriate RD6 sign displayed (Left or right) when operating in the shoulder



Refrence Auckland Council Inspection TMP L3-M-1

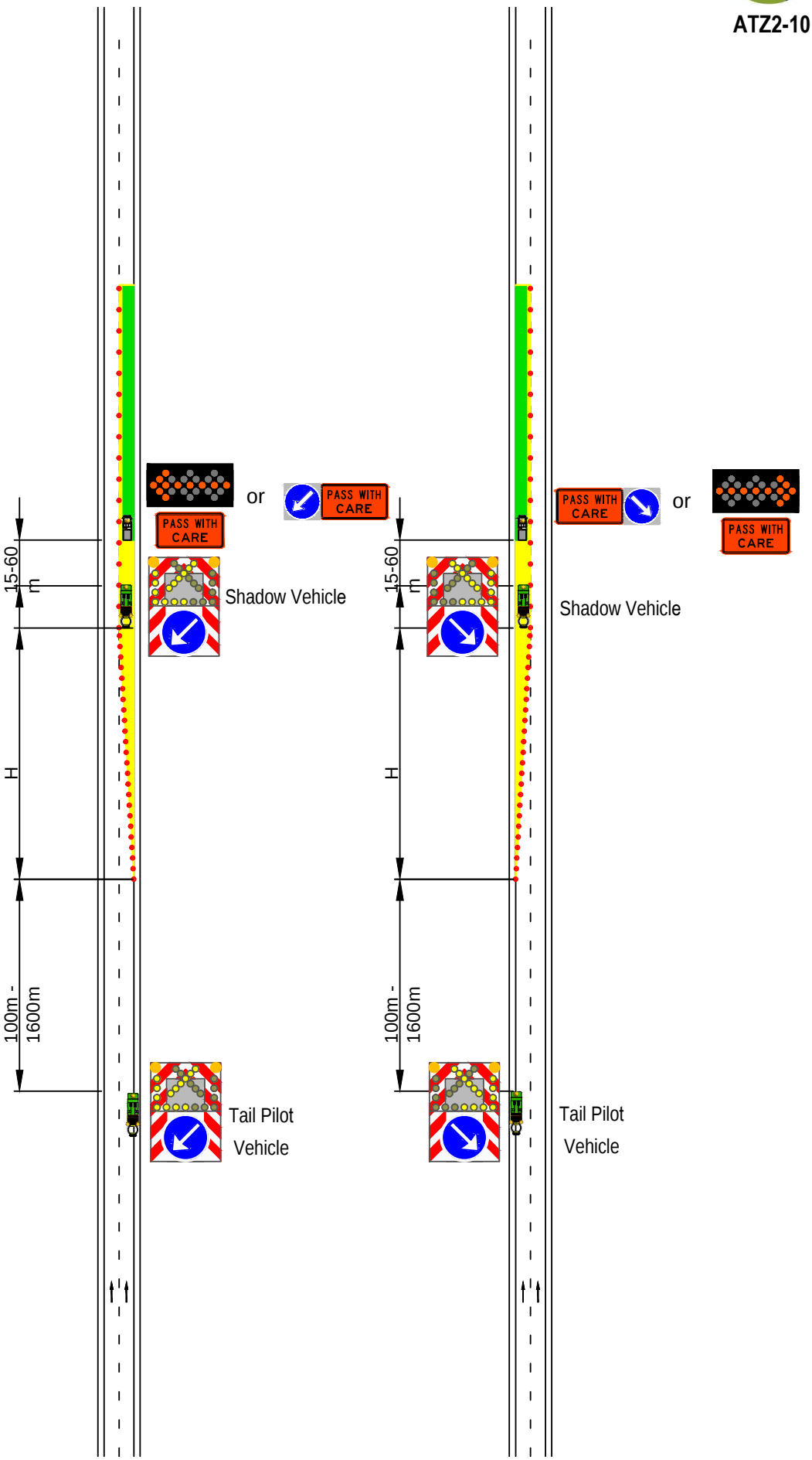
MOBILE OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 3
SEMI-STATIC CLOSURE
1 HOUR (60 MINUTES)

ATZ2-10

Notes

1. Shadow vehicles must be equipped with a TMA
2. Tail pilot vehicle may be replaced with an AWVMS where it can be positioned fully outside the edgeline. Otherwise the tail pilot vehicle must be equipped with a TMA
3. Personnel on foot must be between the shadow vehicle and work vehicle and must not enter the 10m roll ahead distance in front of the shadow vehicle
4. LAS arrow boards must display an X symbol with the appropriate RD6 arrow (Left or right) when the vehicle is positioned outside the edgeline.



Reference Auckland Council

Inspection TMP L3-M-2

MOBILE OPERATION

TWO-WAY TWO-LANE ROAD - LOW VOLUME, LEVEL 1 AND LEVEL 2

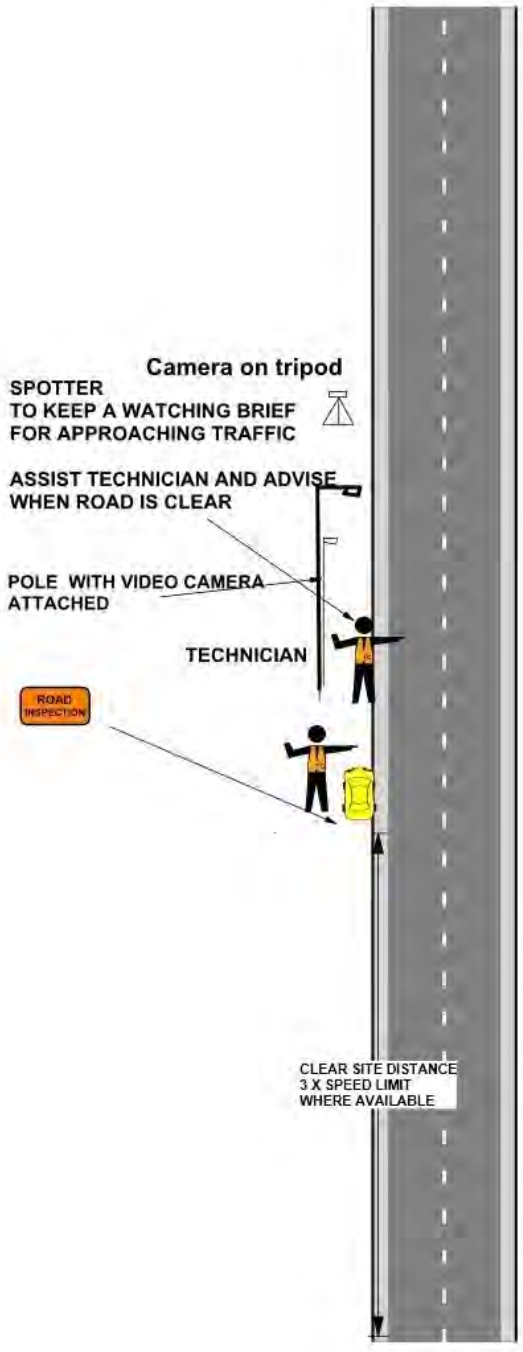
INSPECTION

TRAFFIC CAMERA AND MONITORING DATA RETRIEVAL

ATZ2-11

Notes

1. Vehicle to park more than 1m from the edgeline where possible
2. All works undertaken using this TMP mst be done in accordance of CoPTTM D7.6
3. All works undertakenusing this TMP mst be done in accordance of CoPTTM D7.6 including vehicle requirements



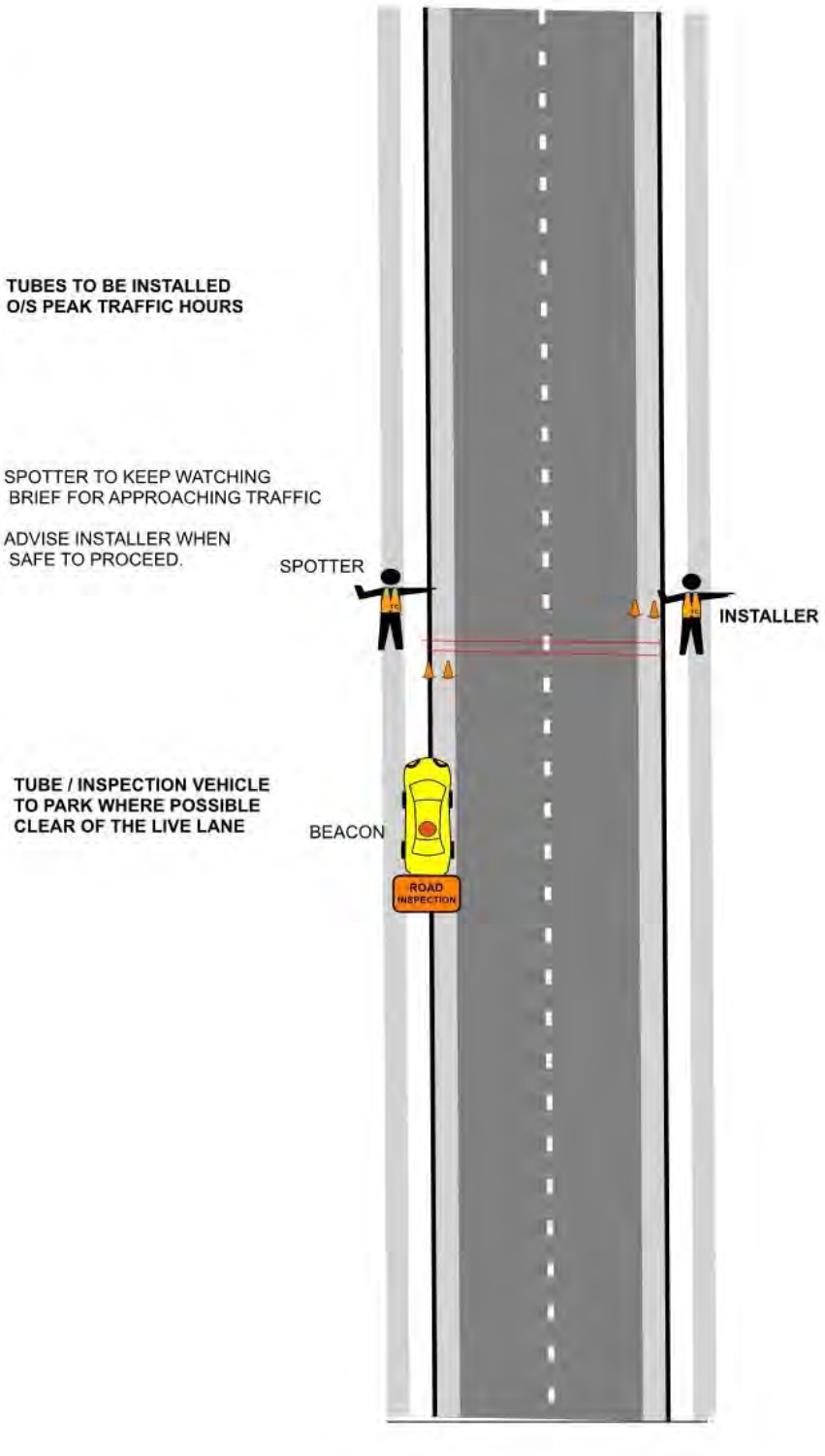
Reference Auckland Council Inspection TMP

TWO-WAY TWO-LANE ROAD - LOW VOLUME, LEVEL 1 AND LEVEL 2
INSPECTION - LOOPS
SPEED < 65KM/H

ATZ2-12

Notes

1. Vehicle to park more than 1m from the edgeline where possible
2. All works undertaken using this TMP mst be done in accordance of CoPTTM D7.6



Reference Auckland Council Inspection TMP 01

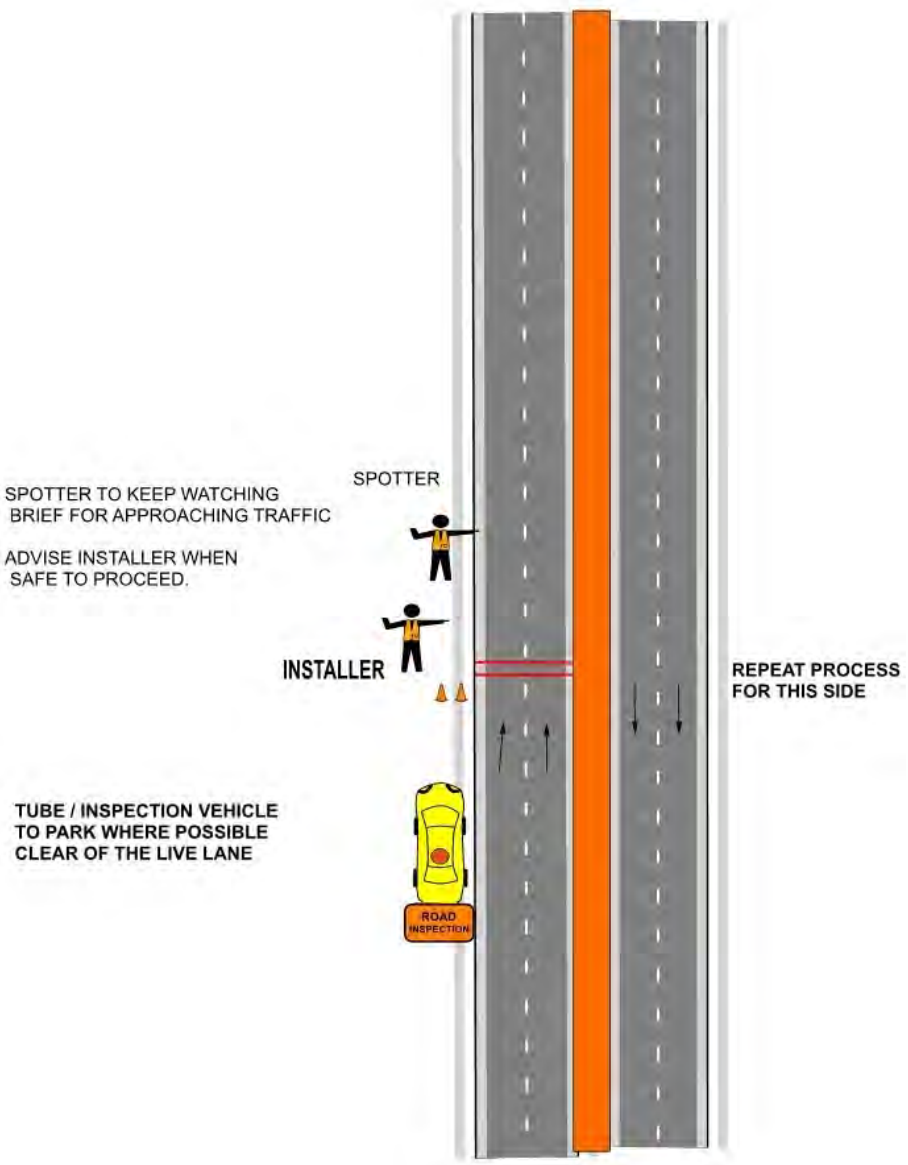
MOBILE OPERATION

TWO-WAY FOUR-LANE ROAD - LOW VOLUME, LEVEL 1 AND LEVEL 2
INSPECTION - LOOPS
SPEED < 85KM/H - CENTRE MEDIAN

ATZ2-13

Notes

1. Vehicle to park more than 1m from the edgeline where possible
2. All works undertaken using this TMP mst be done in accordance of CoPTTM D7.6
3. Works to be undertaken outside peak hour times unless ageed in advance with the RCA
4. No personal to walk across live lanes at all times unless the appropriate TTM is in place to do so



Reference Auckland Council Inspection TMP 04

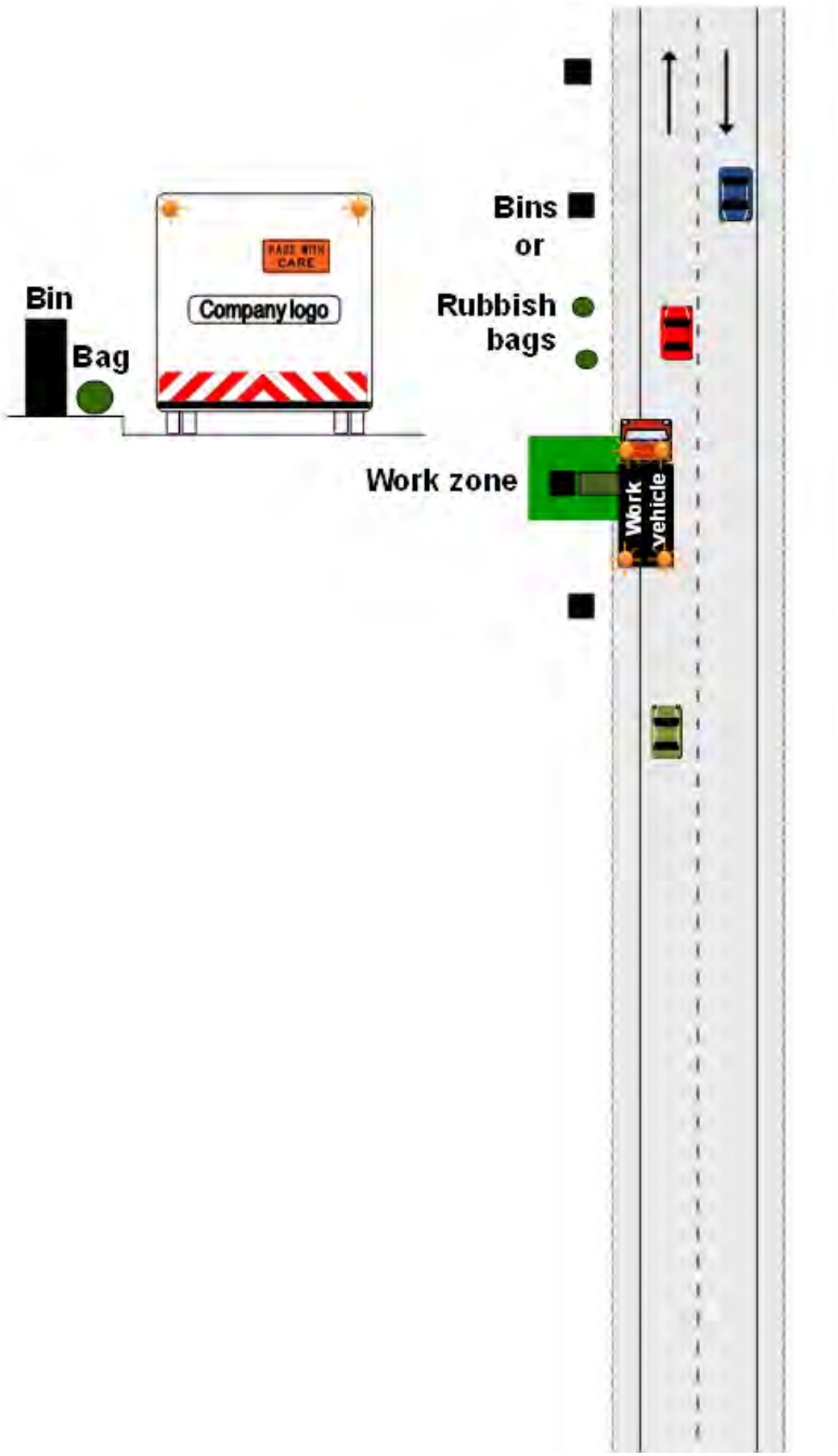
MOBILE OPERATION

TWO-WAY TWO-LANE ROAD - LEVEL 1 ALL SPEEDS
KERBSIDE COLLECTION
SIDE LOADER BIN OR BAG

ATZ3-01

Notes

1. Side loader bin or bag **only**
2. The amber flashing beacons mounted to the vehicle must be clearly visible to the road user
3. NZTA compliant chevrons to be fitted (as shown on the rear of the vehicle) if vehicle design allows for this - vehicle dependent
4. TV4 "PASS WITH CARE" must be placed displayed on the rear of the vehicle



Reference CoPTTM 4th Edition
Section I Drawing KC1

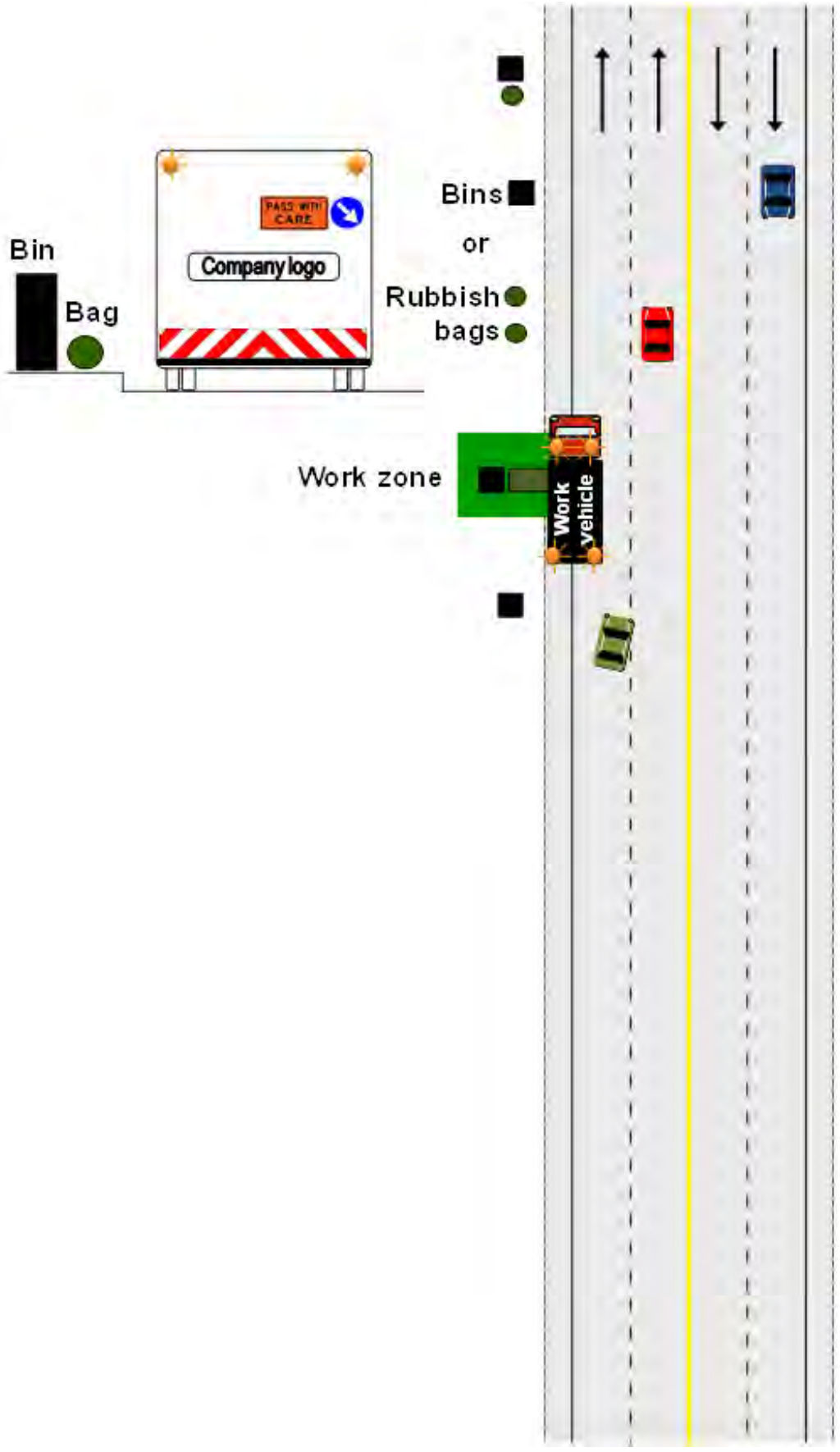
MOBILE OPERATION

TWO-WAY FOUR LANE ROAD - LEVEL 1 ALL SPEEDS
KERBSIDE COLLECTION
SIDE LOADER BIN OR BAG

ATZ3-02

Notes

1. Side loader bin or bag **only**
2. The amber flashing beacons mounted to the vehicle must be clearly visible to the road user
3. NZTA compliant chevrons to be fitted (as shown on the rear of the vehicle) if vehicle design allows for this - vehicle dependent
4. TV4 "PASS WITH CARE" must be placed displayed on the rear of the vehicle



Reference CoPTTM 4th Edition
Section I Drawing KC2

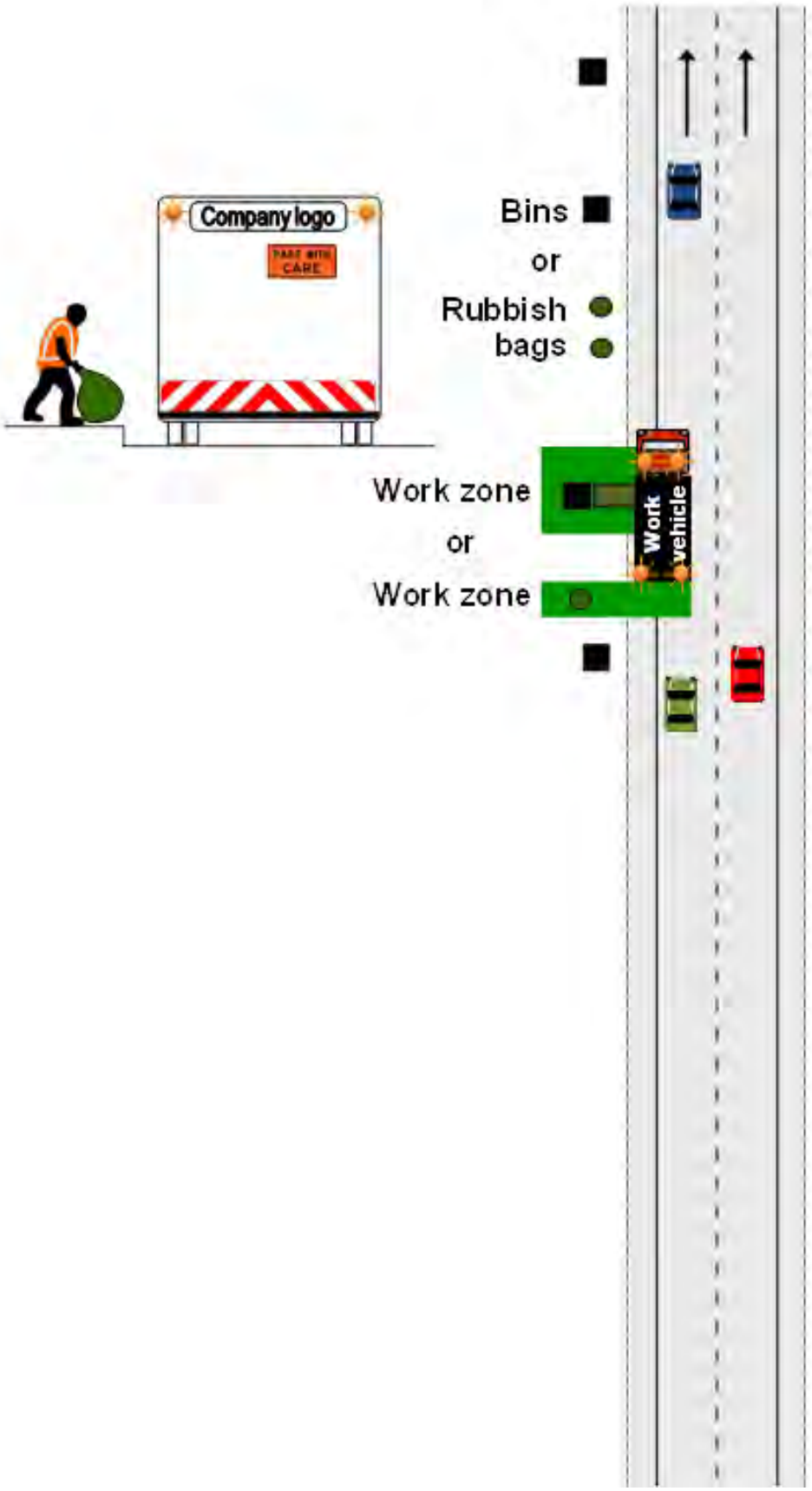
MOBILE OPERATION

ONE-WAY TWO-LANE ROAD - LEVEL 1ALL SPEEDS(OPERATING IN LANE 1)
KERBSIDE COLLECTION
SIDE LOADER BIN OR BAG

ATZ3-03

Notes

1. Side or rear loader bin or bag
2. The amber flashing beacons mounted to the vehicle must be clearly visible to the road user
3. NZTA compliant chevrons to be fitted (as shown on the rear of the vehicle) if vehicle design allows for this - vehicle dependent
4. TV4 "PASS WITH CARE" must be placed displayed on the rear of the vehicle



Reference CoPTTM 4th Edition Section I Drawing KC3

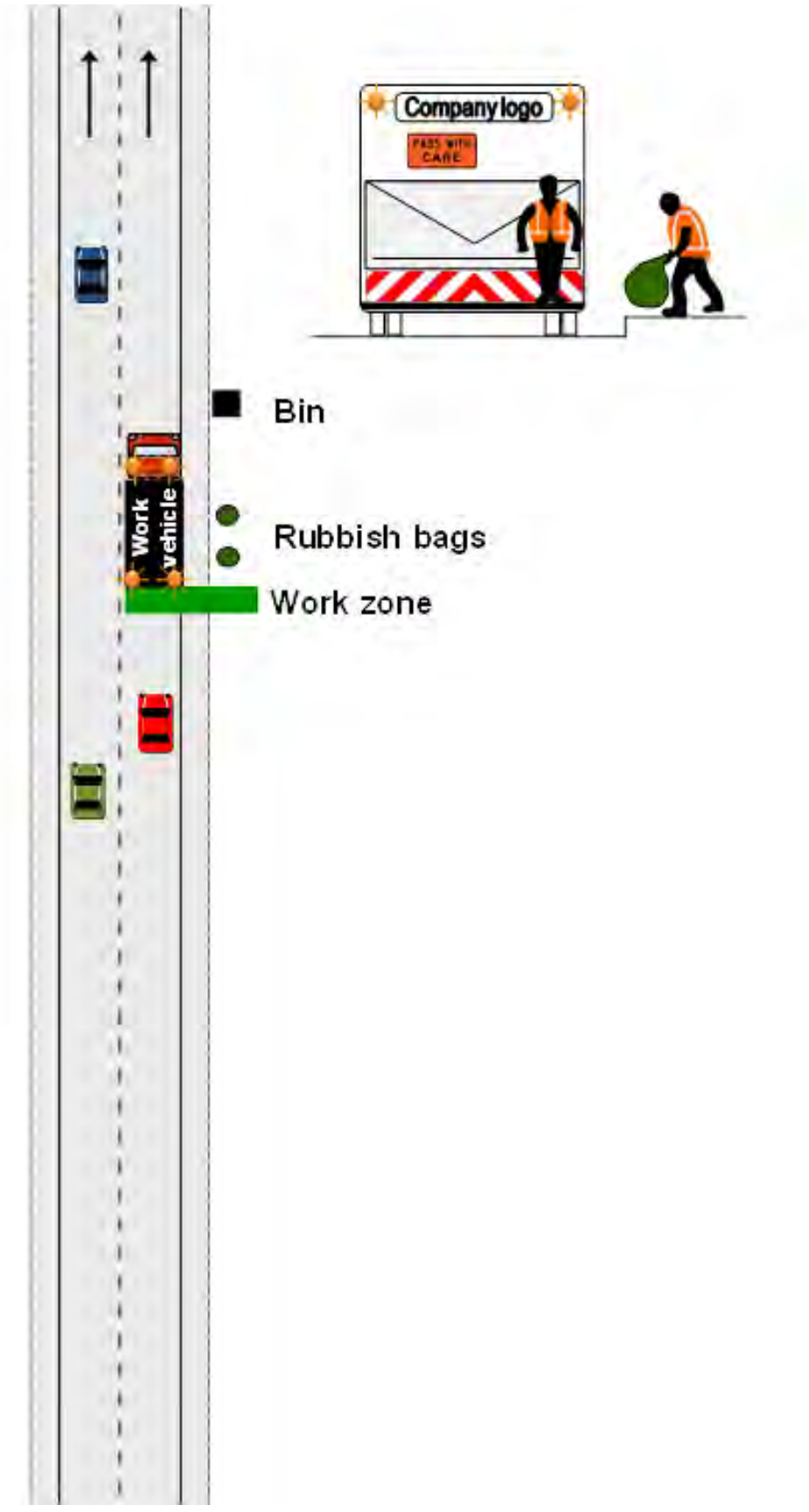
MOBILE OPERATION

ONE-WAY TWO-LANE ROAD - LEVEL 1 AND LEVEL 2 ALL SPEEDS (OPERATING IN LANE 2)
KERBSIDE COLLECTION
REAR LOADING ACTIVITY ONLY OR RIGHT SIDE MANUAL LOADING ACTIVITY

ATZ3-04

Notes

1. Rear loading activity **only** or right side manual load activity
2. The use of a left side operated disposal system should not be used for this activity
3. NZTA compliant chevrons to be fitted (as shown on the rear of the vehicle) if vehicle design allows for this - vehicle dependent
4. TV4 "PASS WITH CARE" must be placed displayed on the rear of the vehicle
5. The amber flashing beacons fitted to the vehicle must be clearly visible to the road users



Reference CoPTTM 4th Edition Section I Drawing KC4

MOBILE OPERATION

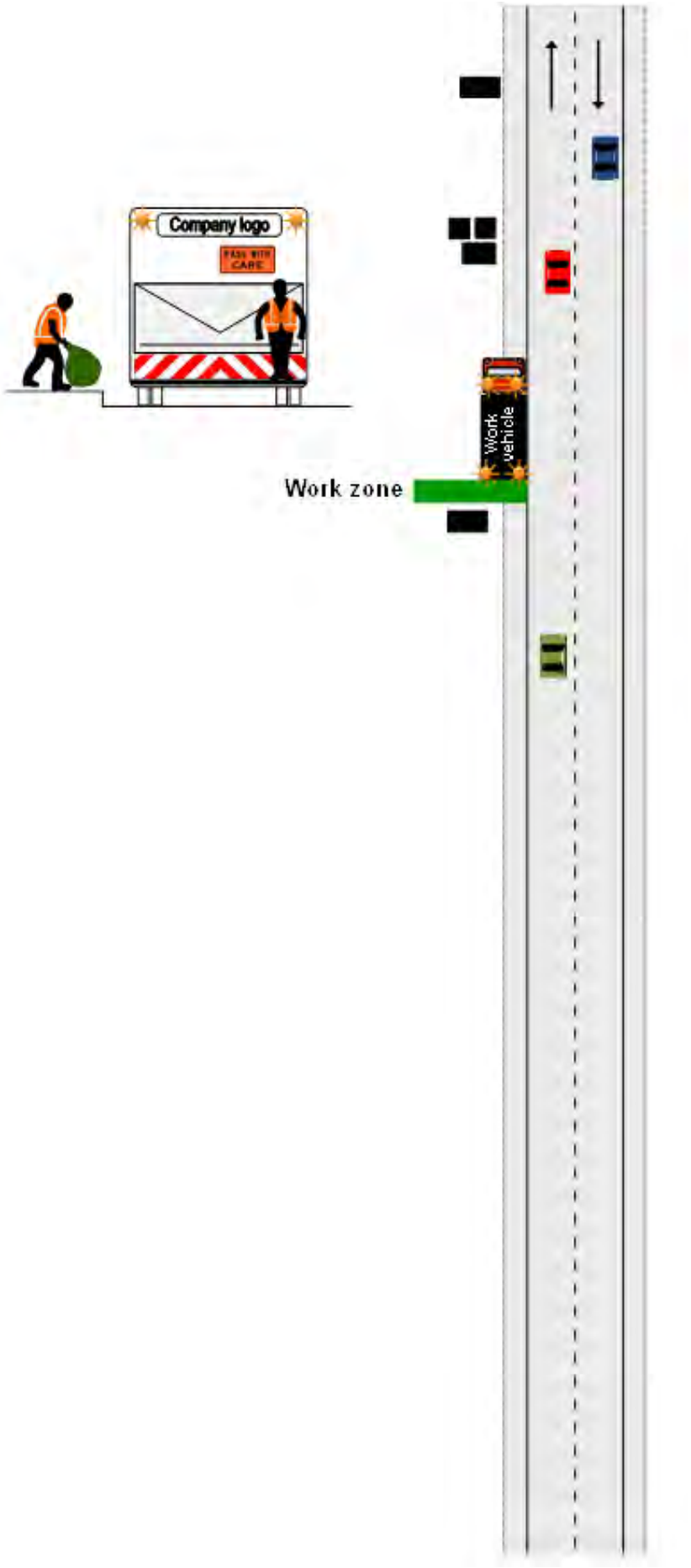
TWO-WAY TWO-LANE ROAD - LEVEL 2 (OVER 65KM/H)
KERBSIDE COLLECTION
INORGANIC REAR LOADER WASTE COLLECTION ONLY

ATZ3-05

Notes

1. Rear loader inorganic waste collection only
2. The amber flashing beacons mounted to the vehicle must be clearly visible to the road user
3. NZTA compliant chevrons to be fitted (as shown on the rear of the vehicle) if vehicle design allows for this - vehicle dependent
4. TV4 "PASS WITH CARE" must be placed displayed on the rear of the vehicle
5. There must be a 20m maximum safety zone between the edge of the work zone and the shadow vehicle
6. The RCA may decide if other temporary traffic management (e.g. a shadow vehicle) is required where the kerbside collection vehicle:
   - stops for more than 10 mins
   - is not able to stop safely in a position away from the traffic lane

Reference CoPTTM 4th Edition Section I Drawing KC5



MOBILE OPERATION

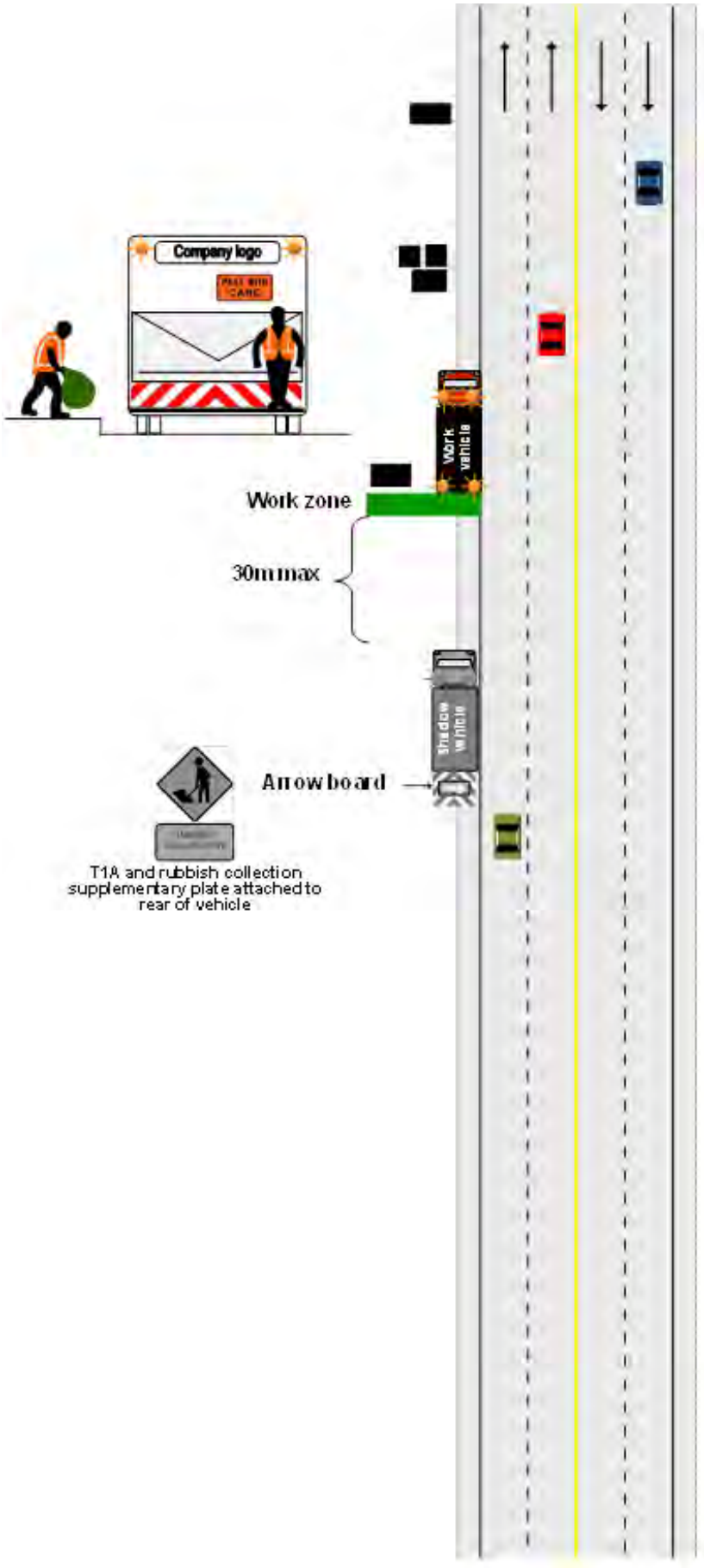
TWO-WAY FOUR-LANE ROAD - LEVEL 2 (OVER 65KM/H)
KERBSIDE COLLECTION
INORGANIC REAR LOADER WASTE COLLECTION ONLY

ATZ3-06

Notes

1. Rear loader inorganic waste collection **only**
2. The amber flashing beacons mounted to the vehicle must be clearly visible to the road user
3. NZTA compliant chevrons to be fitted (as shown on the rear of the vehicle) if vehicle design allows for this -vehicle dependent
4. TV4 "PASS WITH CARE" must be placed displayed on the rear of the vehicle
5. There must be a 20m maximum safety zone between the edge of the work zone and the shadow vehicle
6. The RCA may decide if other temporary traffic management (e.g. a shadow vehicle) is required where the kerbside collection vehicle:
   - stops for more than 10 mins
   - is not able to stop safely in a position away from the traffic lane
7. If a shadow vehicle is used there must be a 30m maximum safety zone between the edge of the work zone and the shadow vehicle
8. The shadow vehicle may have a horizontal arrow board mounted on the rear of the vehicle

Reference CoPTTM 4th Edition Section I Drawing KC6

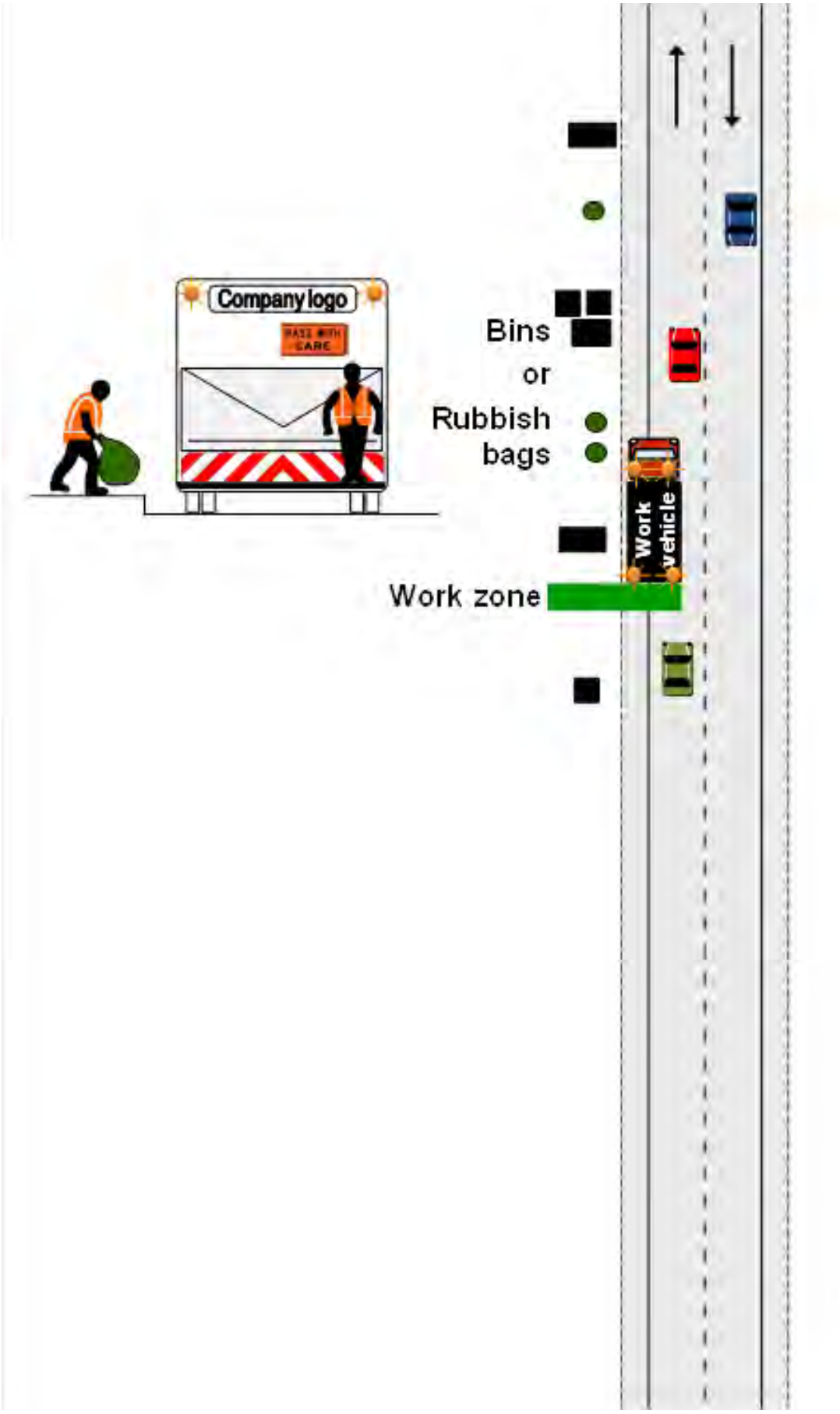


TWO-WAY TWO-LANE ROAD - LEVEL 1 ALL SPEEDS
KERBSIDE COLLECTION
REAR LOADER BIN OR BAG

ATZ3-07

Notes

1. Rear loader bin or bag
2. The amber flashing beacons mounted to the vehicle must be clearly visible to the road user
3. NZTA compliant chevrons to be fitted (as shown on the rear of the vehicle) if vehicle design allows for this - vehicle dependent
4. TV4 "PASS WITH CARE" must be placed displayed on the rear of the vehicle



Reference CoPTTM 4th Edition Section I Drawing KC7

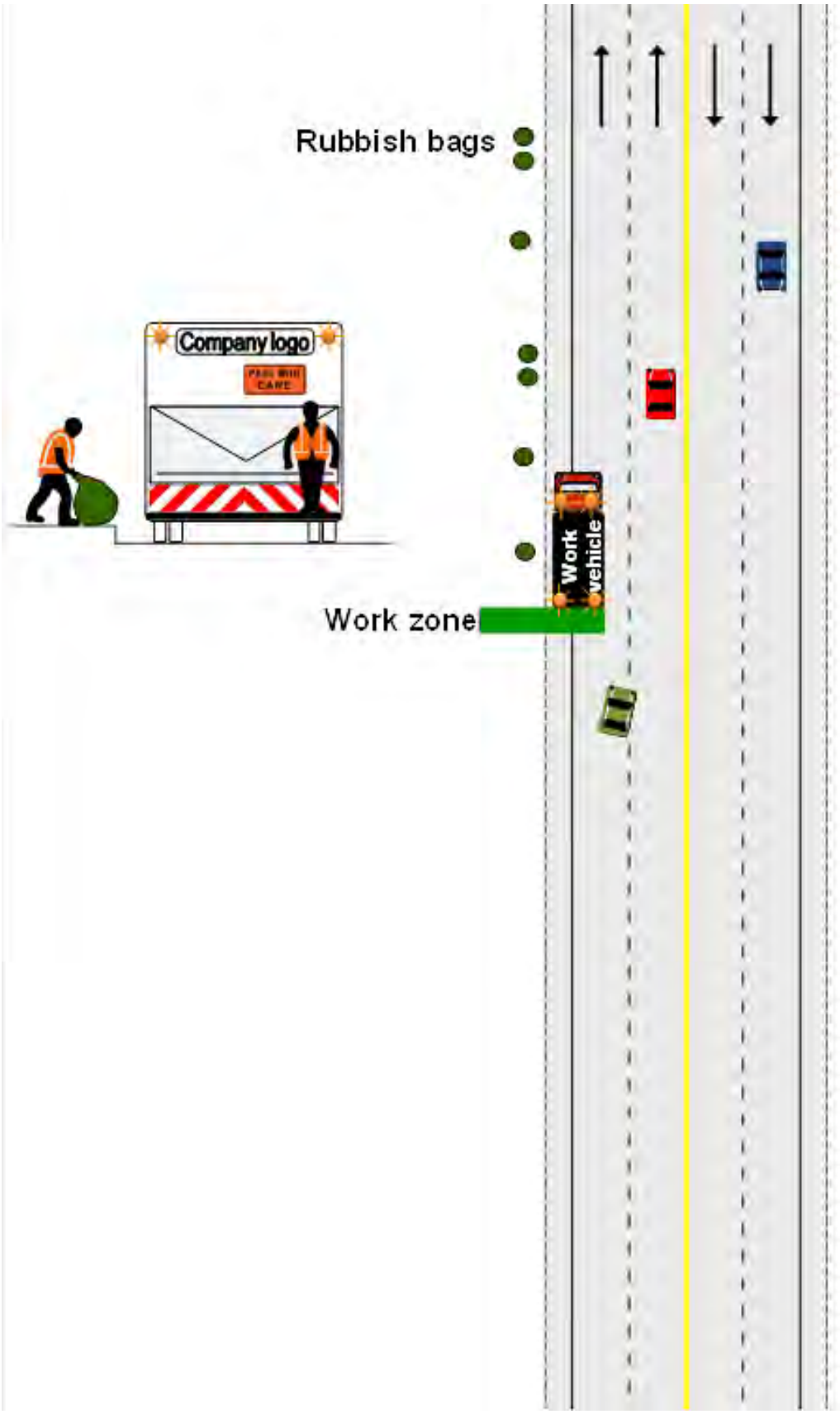
MOBILE OPERATION

TWO-WAY FOUR LANE ROAD - LEVEL 2 ALL SPEEDS
KERBSIDE COLLECTION
REAR LOADER BIN OR BAG

ATZ3-08

Notes

1. Rear loader bag **only**
2. The amber flashing beacons mounted to the vehicle must be clearly visible to the road user
3. NZTA compliant chevrons to be fitted (as shown on the rear of the vehicle) if vehicle design allows for this - vehicle dependent
4. TV4 "PASS WITH CARE" must be placed displayed on the rear of the vehicle



Reference CoPTTM 4th Edition
Section I Drawing KC8