Traffic Control Devices Manual
Part 8

Code of practice for temporary traffic management (CoPTTM)

manual number: SP/M/010

Section H

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More information

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STATIC OPERATIONS

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MOBILE OPERATIONS

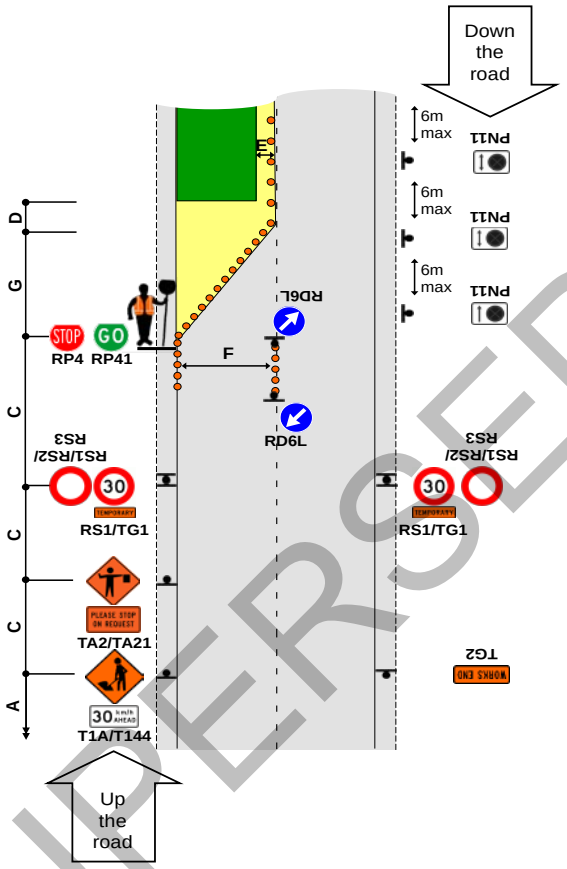
ONE-WAY MULTI-LANE ROAD		
H2.1	Work vehicle is more than five (5) metres from the edgeline - Zone A	
H2.2	Work vehicle is between two (2) and five (5) metres from the edgeline - Zone B	Rear visibility is GREATER than the clear sight distance
H2.3	Work vehicle is between two (2) and five (5) metres from the edgeline - Zone B	Rear visibility is LESS than the clear sight distance
H2.4	Work vehicle is between zero (0) and two (2) metres from the edgeline - Zone C	
H2.5	Work vehicle on live lane - Zone C	
H2.6	Work vehicle on live lane or within 2m from live lane - Zone C	No available shoulder width for AWVMS within 1,600m of work vehicle
H2.7	Work vehicle on live lane or within 2m from live lane - Zone C	Personnel on the live lane
H3.1	Semi-static closure	Left-lane closure
H3.2	Semi-static closure	Right and centre lane closure

READING A TMD

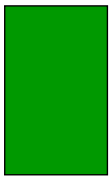
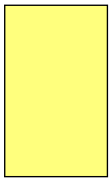
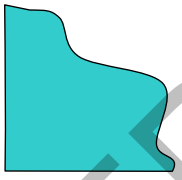
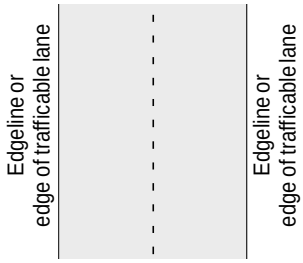
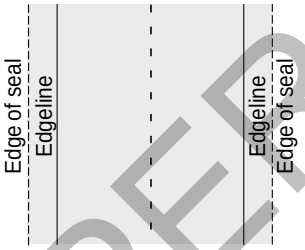
Usually contractors place the signs on left-hand side of the road first with the TMD the right way up. When signs are placed for the right-hand side of the road the contractor tips the TMD upside down and reads which signs have to be placed for that side of the road.

To make this process easier:

- signs going up the page are shown closest to the road
- signs going down the page are shown further away from the road
- sign icons and sign numbers for layout down the road (from top to bottom of the TMD) are turned upside down.



LEGEND FOR DIAGRAMS

Working space 	**Cones** 
Safety zones 	**Hazard area** 
Edgeline or edge of trafficable lane *(indicated by solid black lines)* 	**Barrier** 
Edgeline of Seal *(indicated by dotted line next to solid black lines)* 	**Chevron** 

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 concrete barrier	0.5	0.5
	3. Behind other barriers	As recommended by manufacturers	
Tapers			
H	Initial taper length per lane**	150	180
I	Subsequent taper length per lane***	80	100
K	Minimum distance between tapers	80	100
Delineation devices			
Spacing	All tapers	2.5	2.5
	Approaches, between tapers and around the working space	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 speeds less than 80km/h use the C2.5 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.

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

*** Only applicable where the taper is a sufficient distance from temporary speed restriction for motorists to have slowed down to the temporary speed.

Lane widths									
(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

General

Except for delineation device spacings, which are maximum values, the distances specified in the above table are minimum values. Approach signage and the initial taper must be based on the permanent speed limit. Any subsequent tapers, and the remainder of the worksite, are based on the applicable permanent or TSL.

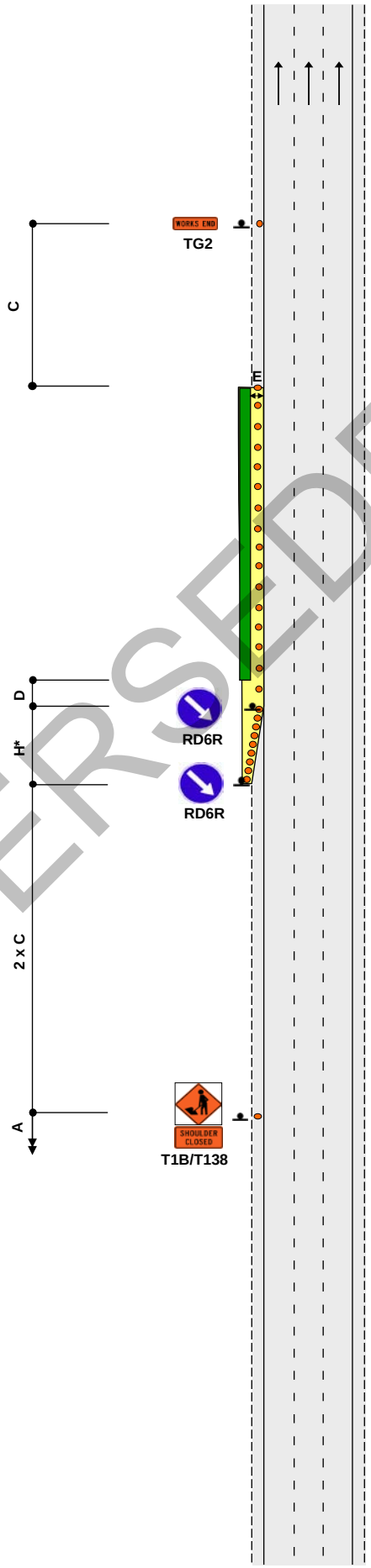
ONE-WAY MULTI-LANE ROAD
Shoulder closure
No temporary speed limit

H1.1
Level 3

Notes
1. A 10m taper, with a minimum of 4 cones, is allowed where shoulder width is 2.5m or less
2. If a 10m taper is used, an RD6R is only required at the head of the taper
3. *For shoulders exceeding 2.5m width, apply the calculation of taper length for lateral shift of less than 3.5m:

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

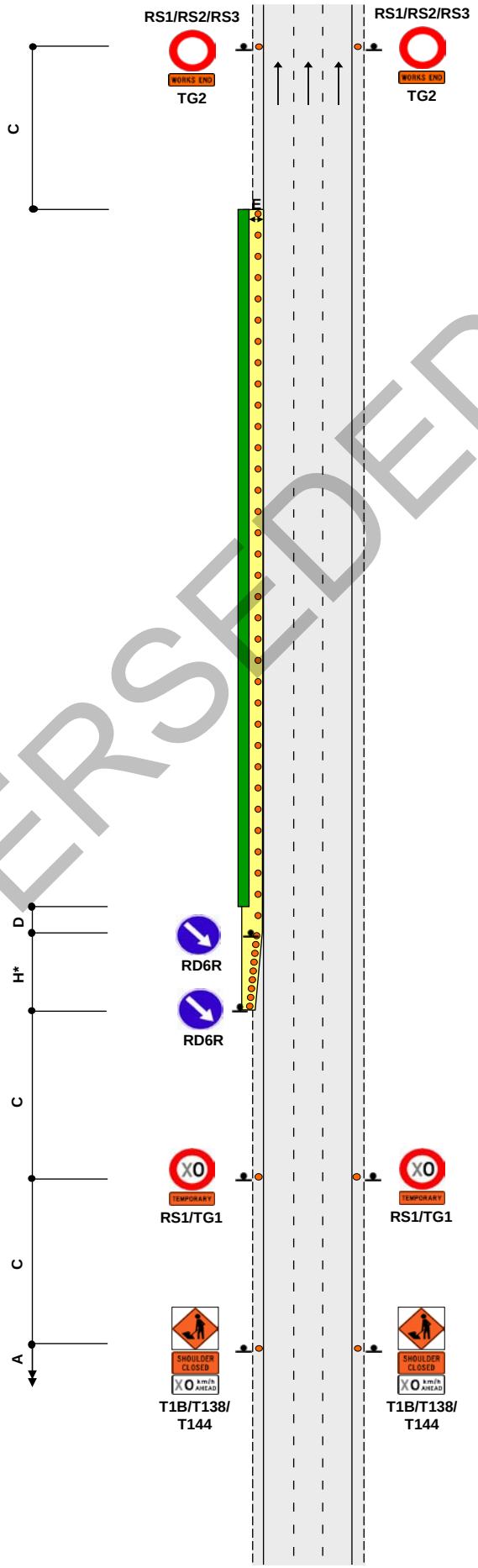
W = Width of lateral shift
H = Taper length in metres from the level 3 layout distance table



ONE-WAY MULTI-LANE ROAD
Shoulder closure
Temporary speed limit

H1.2
Level 3

Notes
1. A 10m taper, with a minimum of 4 cones, is allowed where shoulder width is 2.5m or less
2. If a 10m taper is used, an RD6R is only required at the head of the taper
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 3 layout distance table
4. A TSL would normally not be needed for shoulder closure. Use a TSL if required by the TSL decision matrix. When a TSL is used all signs must be gated



EXAMPLE ONLY

This drawing must not be used as a TMP diagram

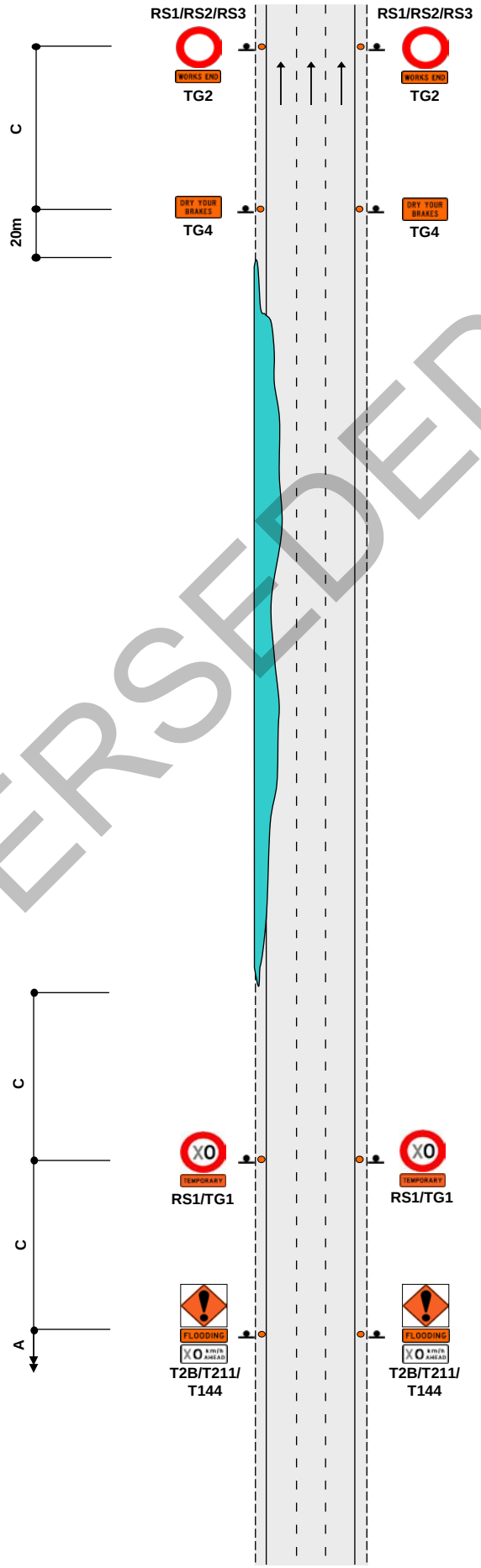
ONE-WAY MULTI-LANE ROAD
Other hazard
Flooding, slips, slippery surface

H1.3
Level 3

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. The advance warning sign may be any one of the following:

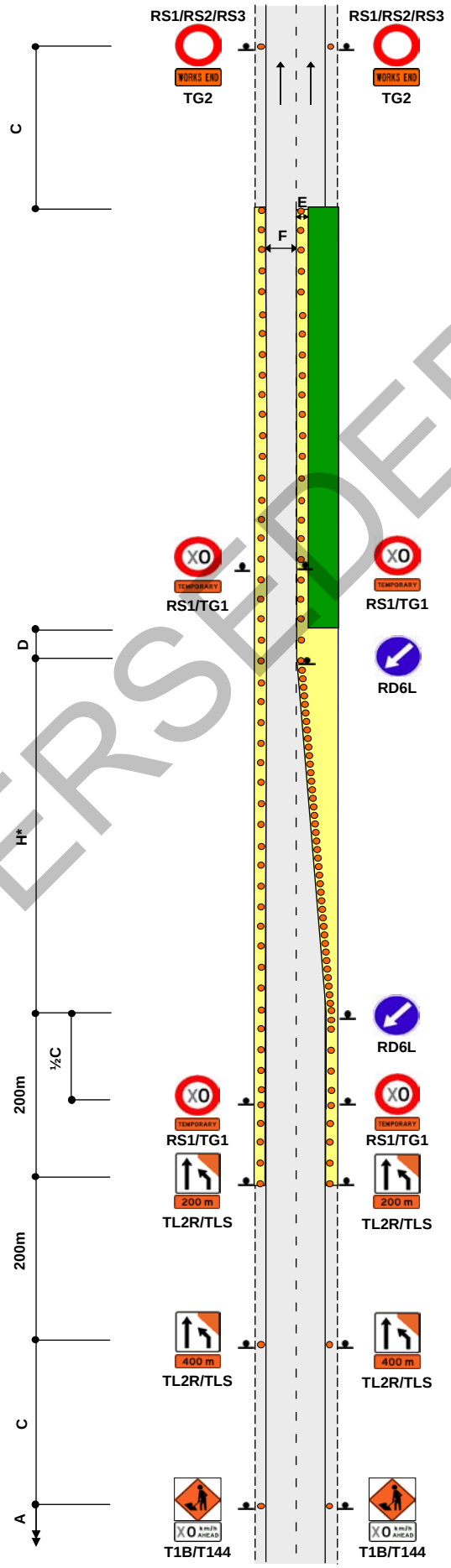
4. If necessary, erect TG4 DRY YOUR BRAKES sign
5. If TSLs are not required, the warning distance must be at least 2 x C



ONE-WAY TWO-LANE ROAD
Right-lane closure

H1.4
Level 3

Notes
1. *Calculation of taper length for lateral shift of less than 3.5m is:
   W x H
   3.5
   W = Width of lateral shift
   H = Taper length in metres from the level 3 layout distance table
2. TSLs to be repeated at 400m maximum centres
3. C.4.3.1 - On level 3 roads cones are required from the TSL sign to the start of the taper or hazard area where no taper is installed. Where the edgeline is well defined (ie by a clean kerb and channel) the line of cones is not required



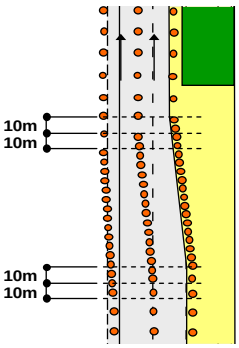
ONE-WAY TWO-LANE ROAD
Two-lane closure
One-lane temporary diversion using shoulder

H1.5
Level 3

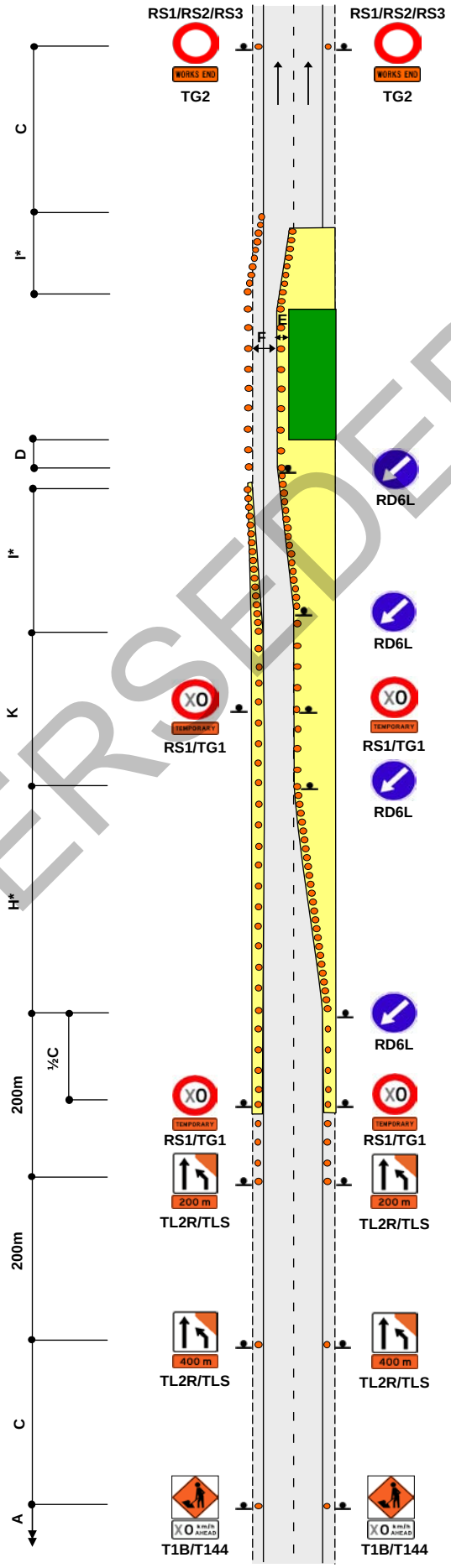
Notes

1. *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 3 layout distance table
2. TSLs to be repeated at 400m maximum centres
3. If delays are likely, add a T143 DELAYS POSSIBLE sign either 1km or 2km in advance of the worksite

4. Where there is a lane shift, a 10m minimum offset should be used to enable heavy vehicles to make the shift



5. C.4.3.1 - On level 3 roads cones are required from the TSL sign to the start of the taper or hazard area where no taper is installed. Where the edgeline is well defined (ie by a clean kerb and channel) the line of cones is not required



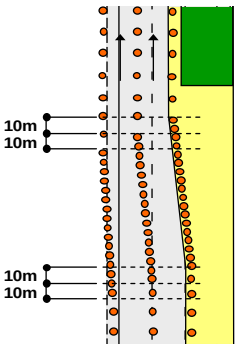
ONE-WAY TWO-LANE ROAD
Left-lane closure
Chicane layout

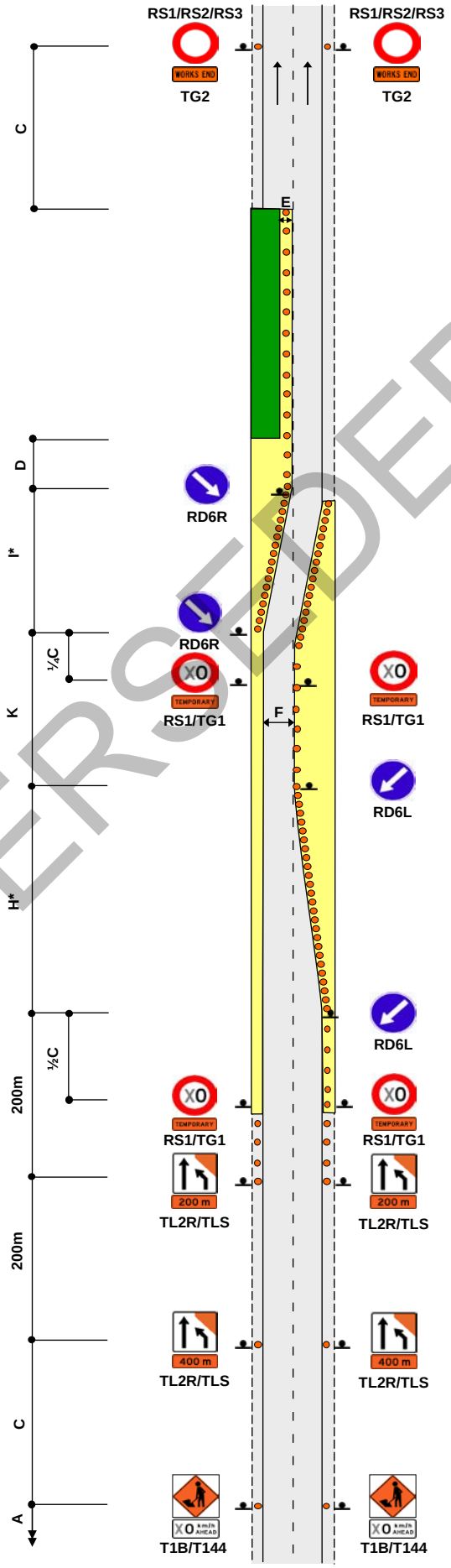
H1.6
Level 3

Notes

1. *Calculation of taper length for lateral shift of less than 3.5m is:
   W x H
   3.5
   W = Width of lateral shift
   H = Taper length in metres from the level 3 layout distance table
2. TSLs to be repeated at 400m maximum centres
3. If delays are likely, add a T143 DELAYS POSSIBLE sign either 1km or 2km in advance of the worksite

4. Where there is a lane shift, a 10m minimum offset should be used to enable heavy vehicles to make the shift

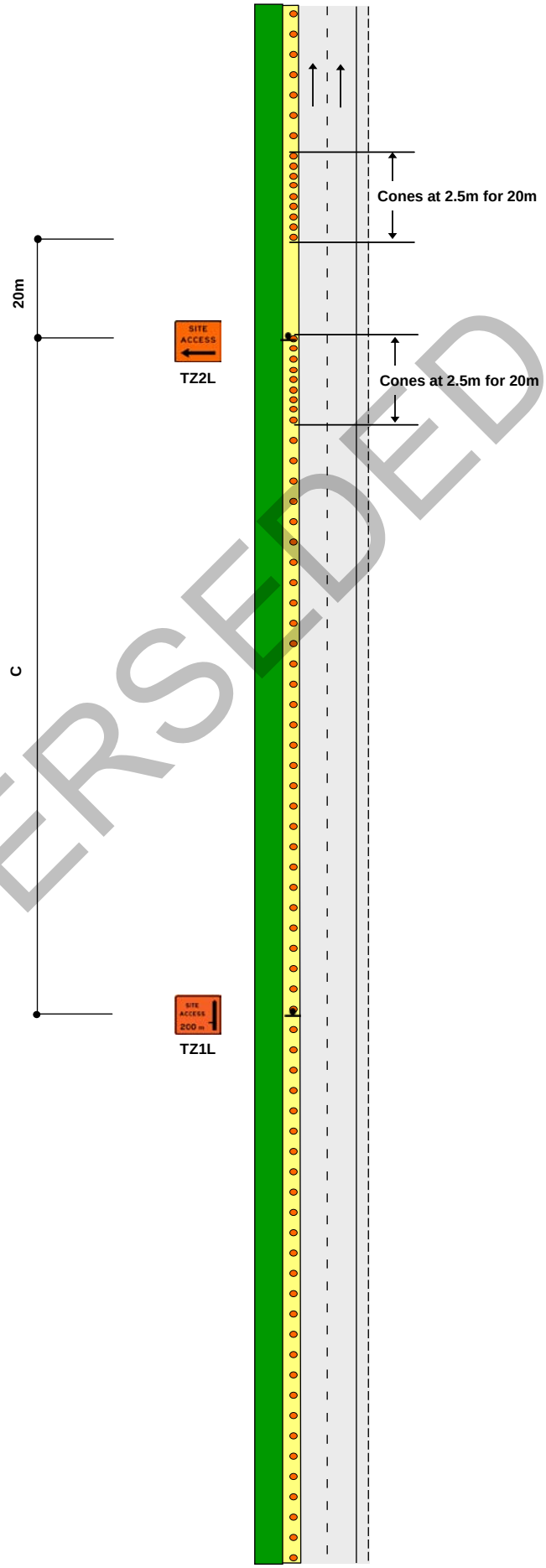




ONE-WAY MULTI-LANE ROAD
Site access

H1.7
Level 3

Notes
1. This diagram is designed to show only the site access of a worksite

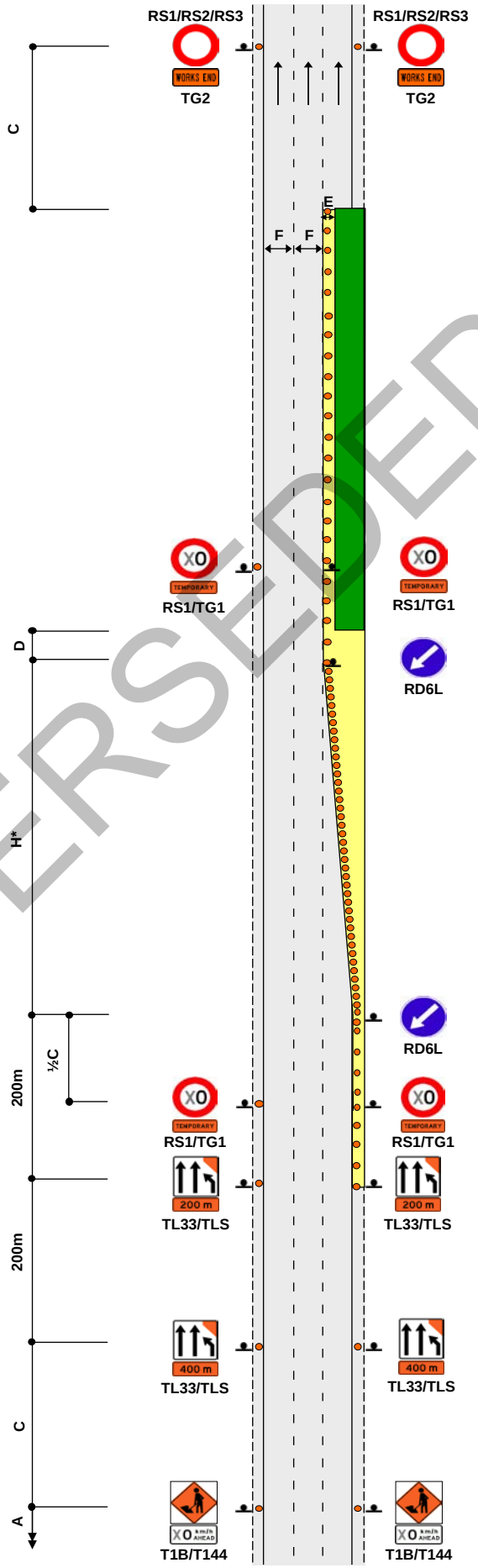


ONE-WAY MULTI-LANE ROAD
Right-lane closure

H1.8
Level 3

Notes

1. *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 3 layout distance table
2. TSLs to be repeated at 400m maximum centres
3. If delays are likely, add a T143 DELAYS POSSIBLE sign either 1km or 2km in advance of the worksite



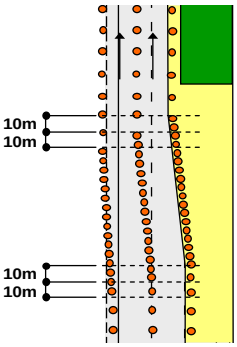
ONE-WAY MULTI-LANE ROAD
Left-lane closure
Chicane layout

H1.9
Level 3

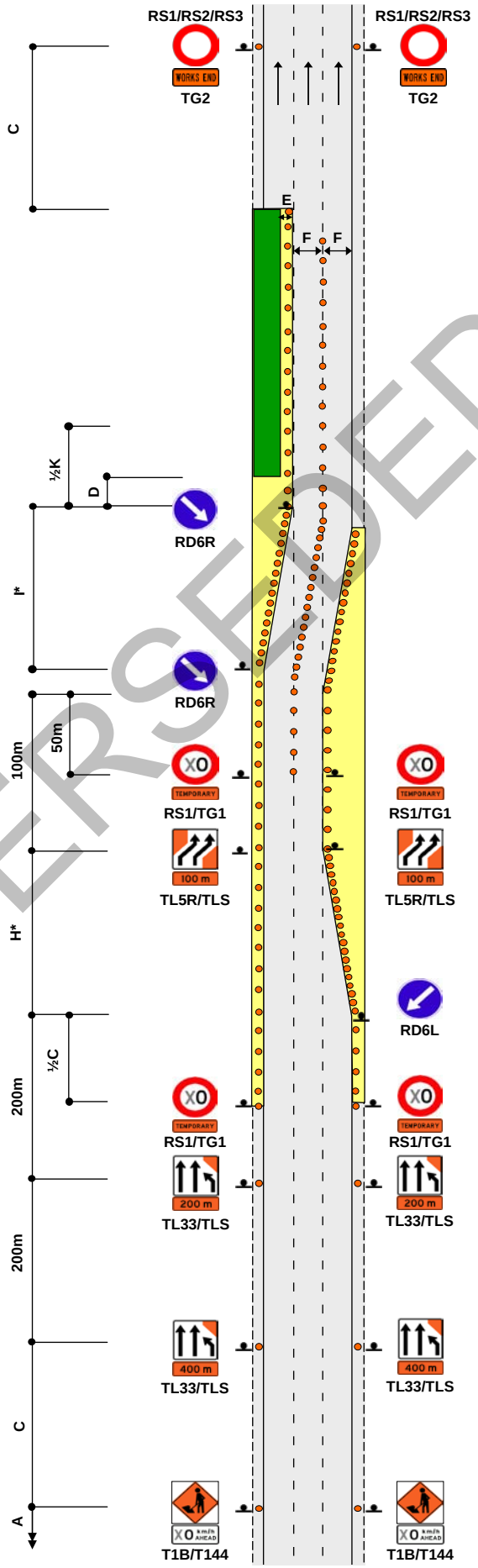
Notes

1. *Calculation of taper length for lateral shift of less than 3.5m is:
   W x (H or I)
   3.5
   W = Width of lateral shift
   H = Taper length in metres from the level 3 layout distance table
2. TSLs to be repeated at 400m maximum centres
3. If delays are likely, add a T143 DELAYS POSSIBLE sign either 1km or 2km in advance of the worksite

4. Where there is a lane shift, a 10m minimum offset should be used to enable heavy vehicles to make the shift



5. For the centre median, tubular delineators temporarily fixed to the surface may be used, or for a long term situation a new centreline may be applied



EXAMPLE ONLY

This drawing must not be used as a TMP diagram

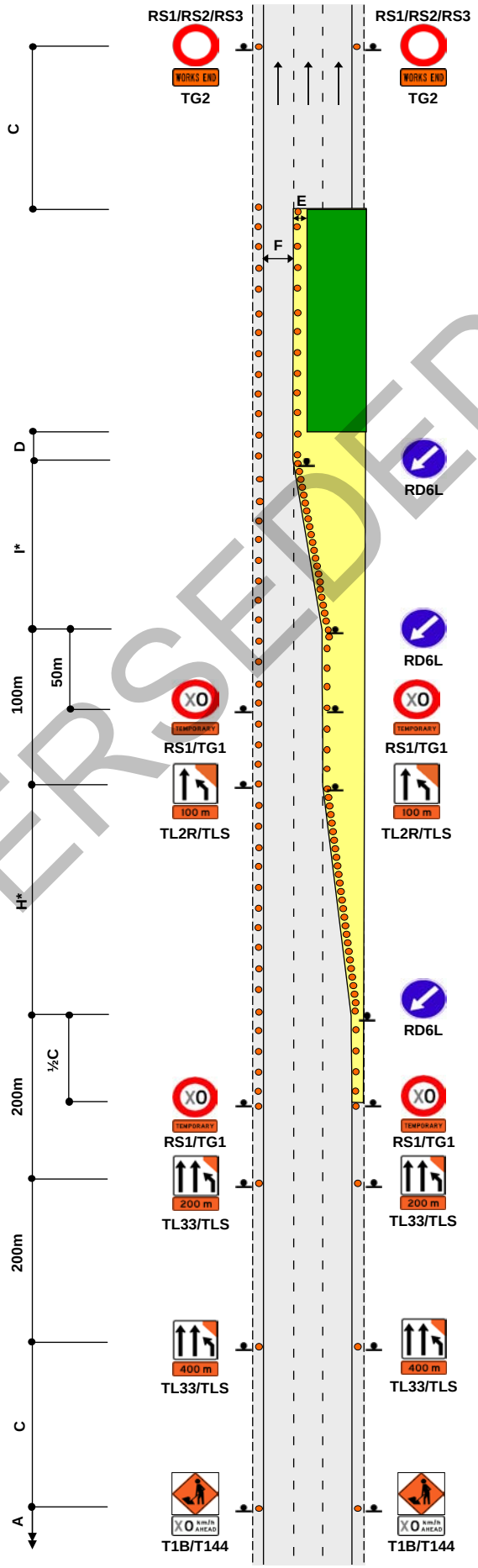
ONE-WAY MULTI-LANE ROAD
Right and centre lane closure

H1.10
Level 3

Notes

1. *Calculation of taper length for lateral shift of less than 3.5m is:
   W x (H or I)
   3.5
   W = Width of lateral shift
   H = Taper length in metres from the level 3 layout distance table
2. TSLs to be repeated at 400m maximum centres
3. If delays are likely, add a T143 DELAYS POSSIBLE sign either 1km or 2km in advance of the worksite

4. C.4.3.1 - On level 3 roads cones are required from the TSL sign to the start of the taper or hazard area where no taper is installed. Where the edgeline is well defined (ie by a clean kerb and channel) the line of cones is not required



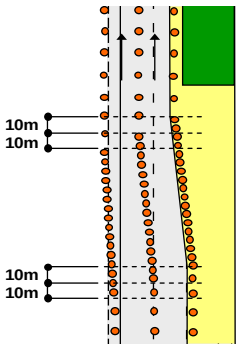
ONE-WAY MULTI-LANE ROAD
Left and centre lane closure
Chicane layout

H1.11
Level 3

Notes

1. *Calculation of taper length for lateral shift of less than 3.5m is:
   W x (H or I)
   3.5
   W = Width of lateral shift
   H = Taper length in metres from the level 3 layout distance table
2. TSLs to be repeated at 400m maximum centres
3. If delays are likely, add a T143 DELAYS POSSIBLE sign either 1km or 2km in advance of the worksite

4. Where there is a lane shift, a 10m minimum offset should be used to enable heavy vehicles to make the shift



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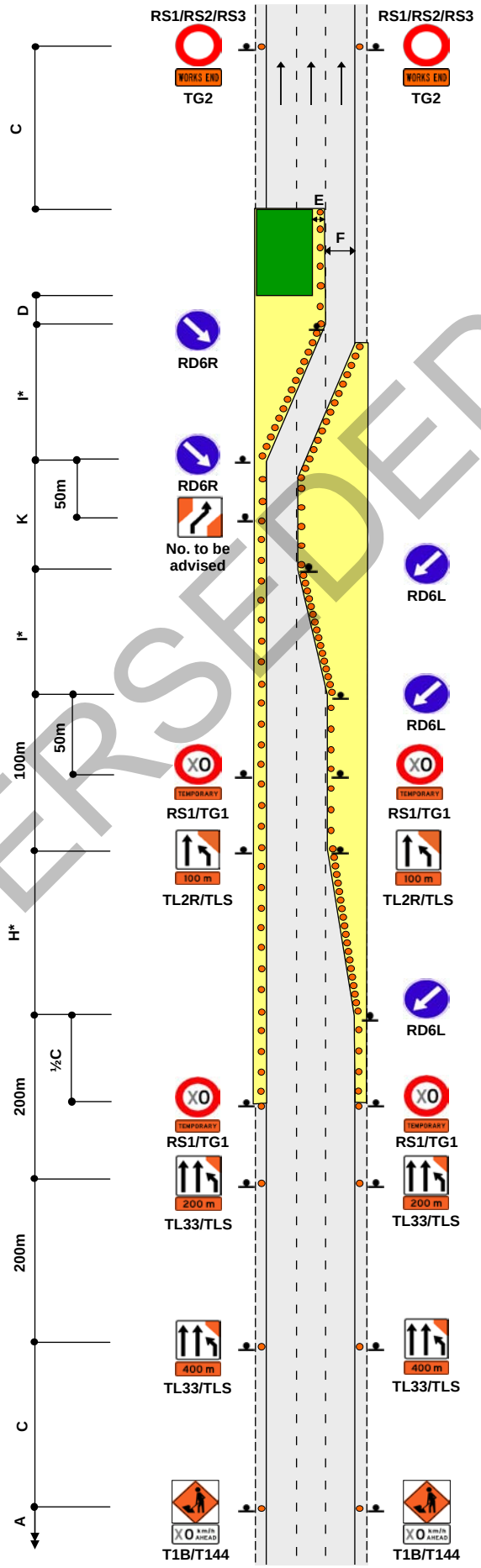


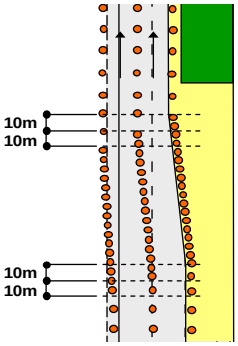
ONE-WAY MULTI-LANE ROAD
Right and centre lane closure
Two lane temporary diversion

H1.12
Level 3

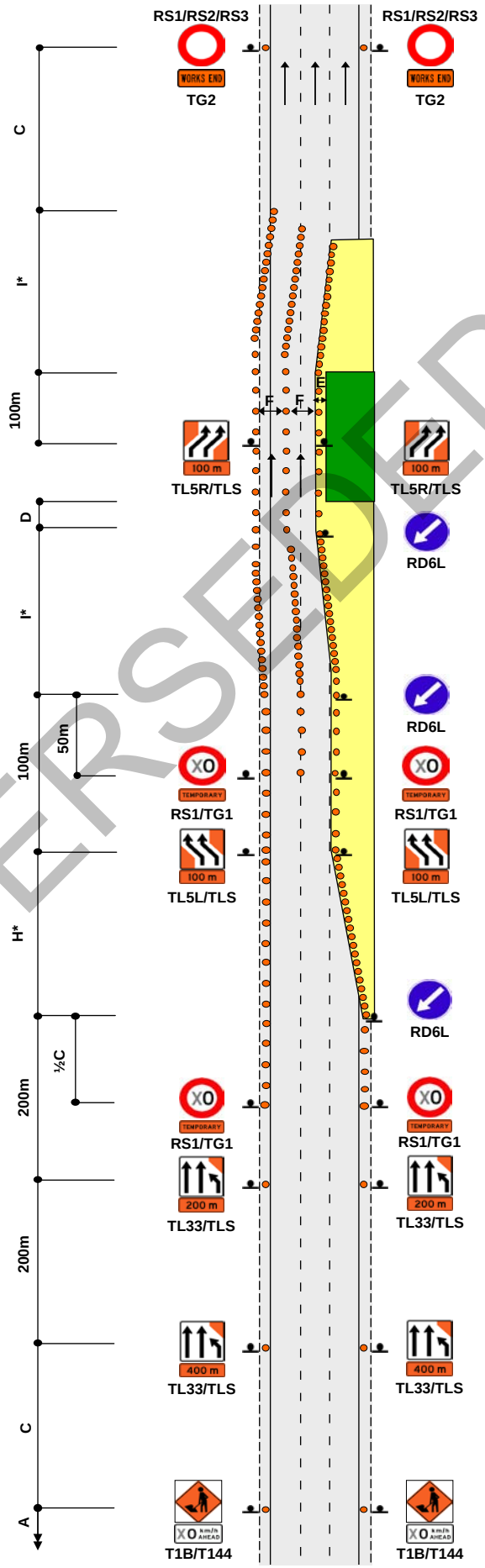
Notes

1. *Calculation of taper length for lateral shift of less than 3.5m is:
   W x (H or I)
   3.5
   W = Width of lateral shift
   H = Taper length in metres from the level 3 layout distance table
2. TSLs to be repeated at 400m maximum centres
3. If delays are likely, add a T143 DELAYS POSSIBLE sign either 1km or 2km in advance of the worksite

4. Where there is a lane shift, a 10m minimum offset should be used to enable heavy vehicles to make the shift



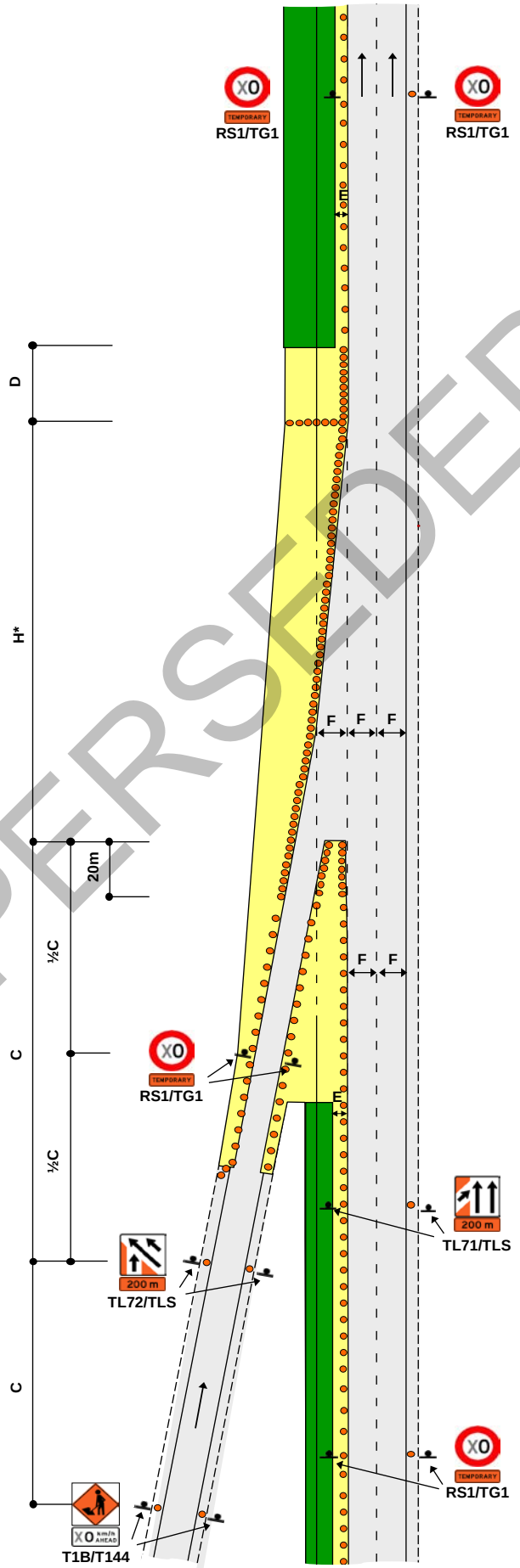
5. For the centre median, tubular delineators temporarily fixed to the surface may be used, or for a long term situation a new centreline may be applied



ONE-WAY MULTI-LANE ROAD
Left-lane closure
On-ramp within worksite

H1.13
Level 3

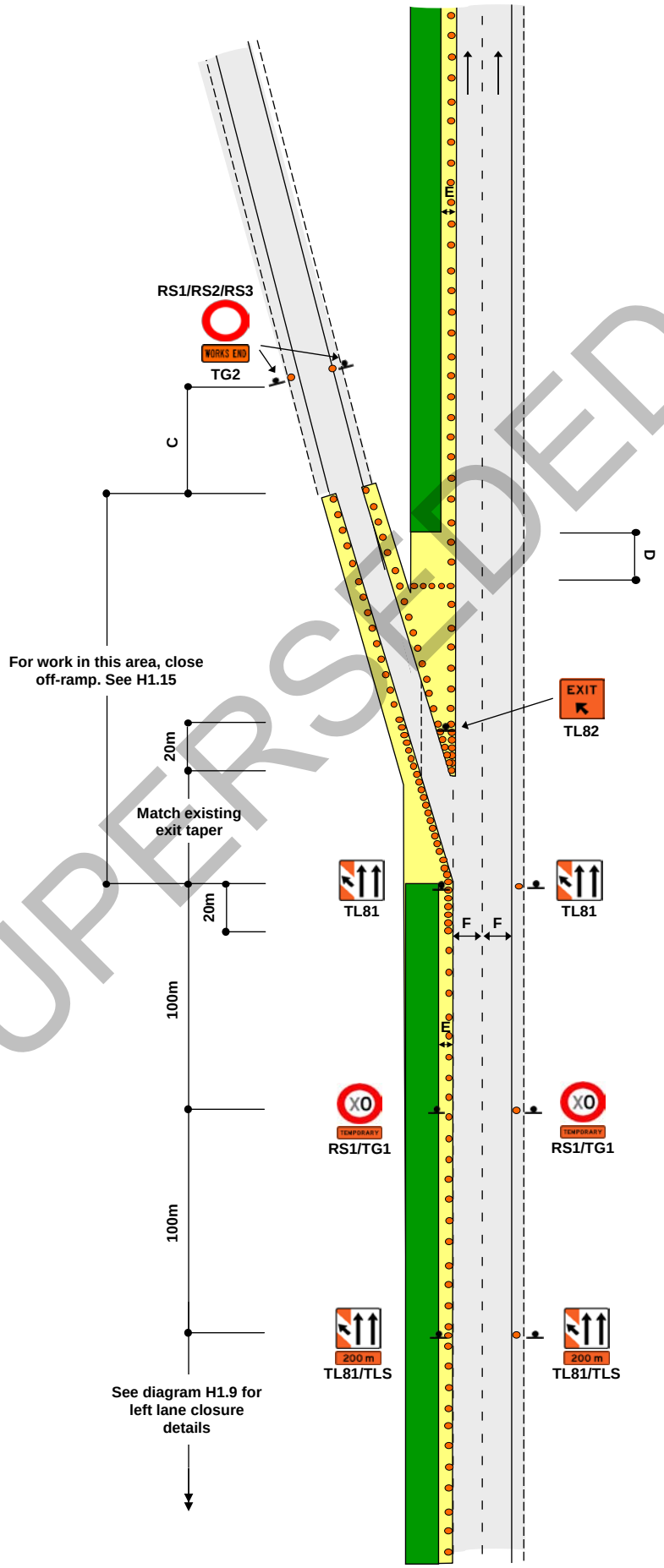
Notes
1. This diagram is designed to show only the on-ramp within the worksite
2. Secondary row of cones in front of the longitudinal safety zone are to be placed at 1m centres



ONE-WAY MULTI-LANE ROAD
Left-lane closure
Off-ramp within worksite

H1.14
Level 3

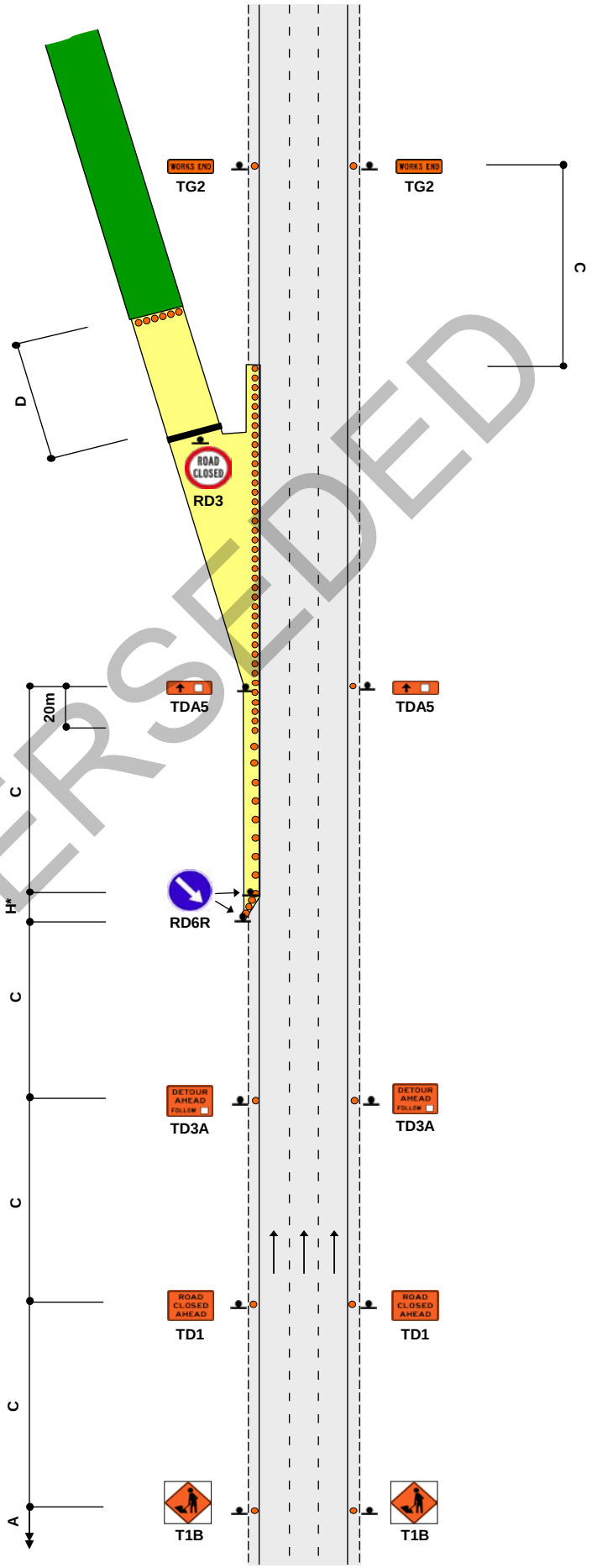
Notes
1. This diagram is designed to show only the off-ramp within the worksite
2. Secondary row of cones in front of the longitudinal safety zone are to be placed at 1m centres



ONE-WAY MULTI-LANE ROAD
Off-ramp closure

H1.15
Level 3

Notes
1. A 10m taper, with a minimum of 4 cones, is allowed where shoulder width is 2.5m or less
2. If a 10m taper is used, an RD6R is only required at the head of the taper
3. *For shoulders exceeding 2.5m width, apply the calculation of taper length for lateral shift of less than 3.5m:
   W x (H or I)
   3.5
   W = Width of lateral shift
   H = Taper length in metres from the level 3 layout distance table
4. Cones used to close off-ramp to be placed at 1m centres
5. Secondary line of cones at end of longitudinal safety zone to be placed at 1m centres
6. Block access to road with barricade/barrier



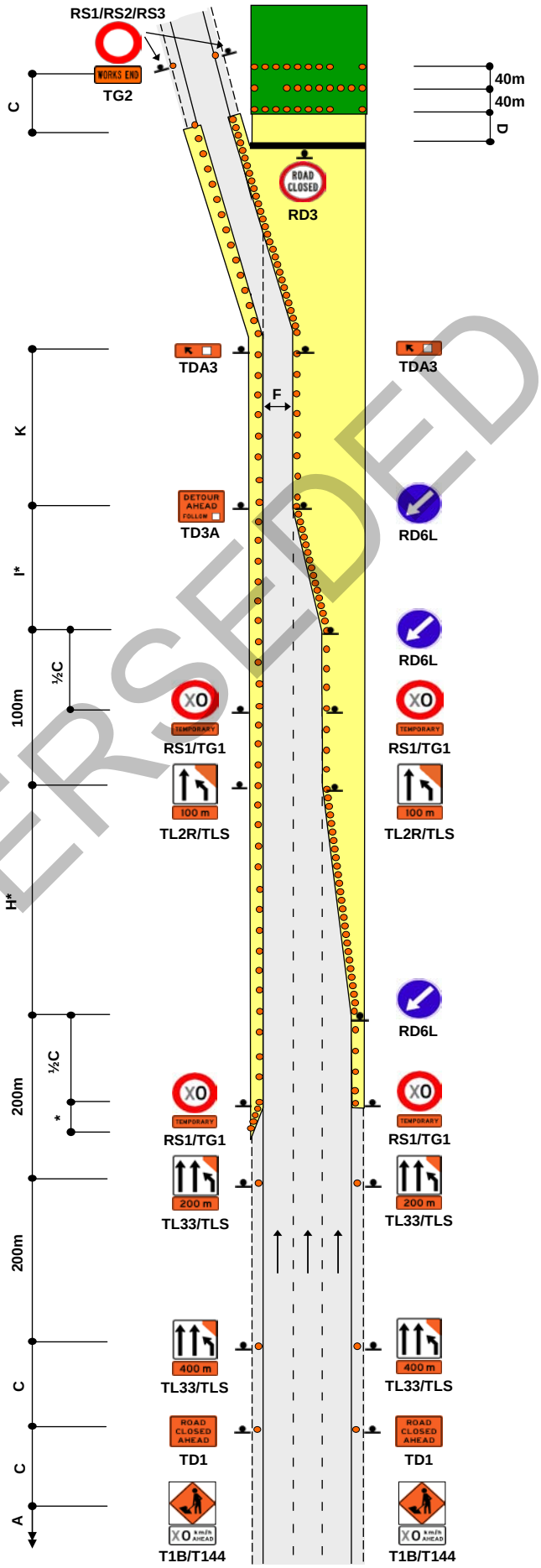
ONE-WAY MULTI-LANE ROAD
Road closure
Detour via off ramp

H1.16
Level 3

Notes

1. A 10m taper, with a minimum of 4 cones, is allowed where shoulder width is 2.5m or less
2. If a 10m taper is used, an RD6R is only required at the head of the taper
3. *Calculation of taper length for lateral shift of less than 3.5m is:
   W x (H or I)
   3.5
   W = Width of lateral shift
   H = Taper length in metres from the level 3 layout distance table
4. Block access to road with barricade/barrier
5. At the beginning of the working space place three lines of cones 40m apart accross lanes and shoulder. Cones to be placed at 1m centres. Leave a 2.5m gap in opposite ends of each line of cones to allow site access
6. TSLs to be repeated at 400m maximum centres
7. If delays are likely, add a T143 DELAYS POSSIBLE sign either 1km or 2km in advance of the worksite

8. C.4.3.1 - On level 3 roads cones are required from the TSL sign to the start of the taper or hazard area where no taper is installed. Where the edgeline is well defined (ie by a clean kerb and channel) the line of cones is not required

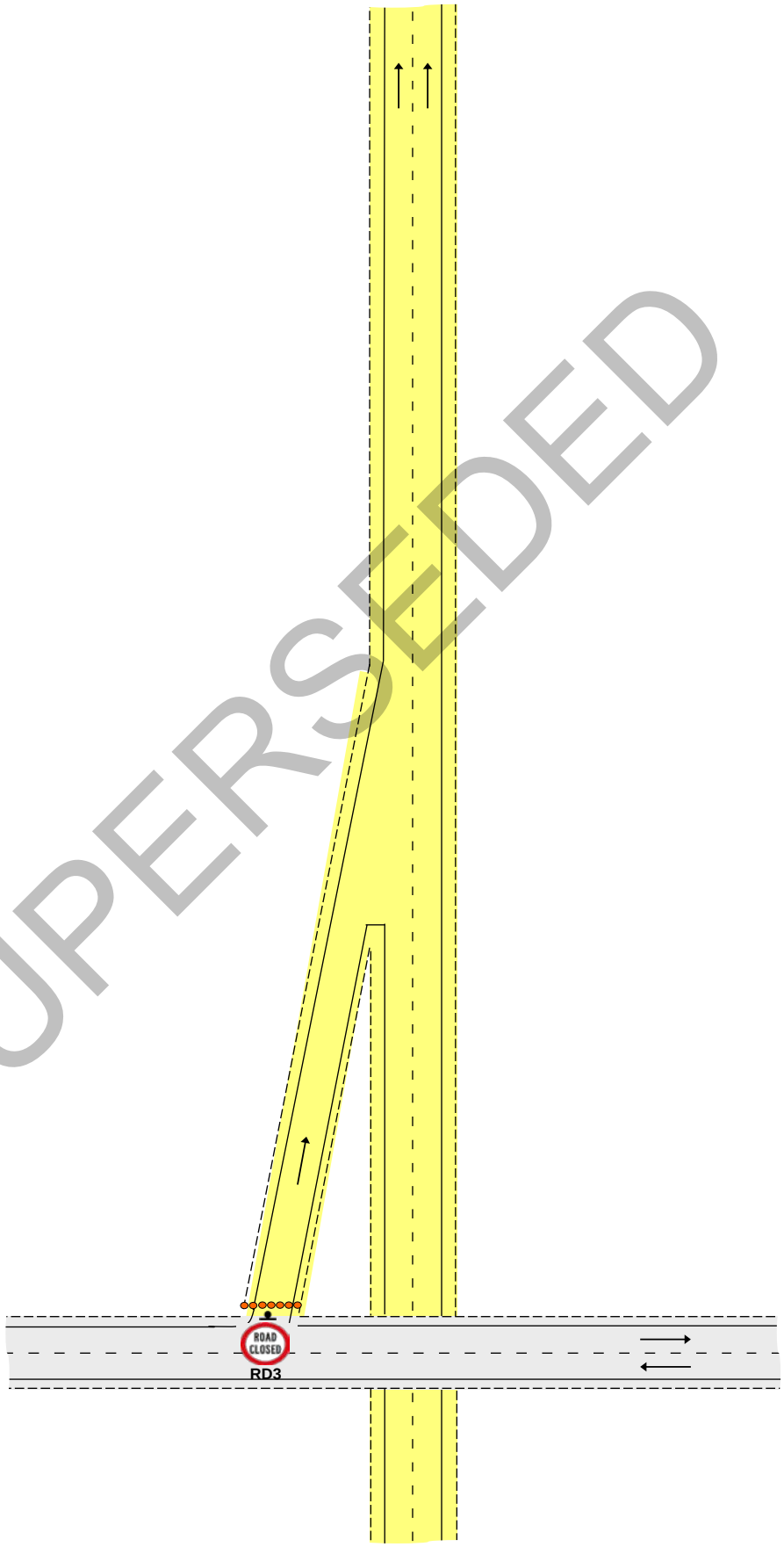


ONE-WAY MULTI-LANE ROAD
Closure example
On-ramp within worksite

H1.17a
Level 3

Notes

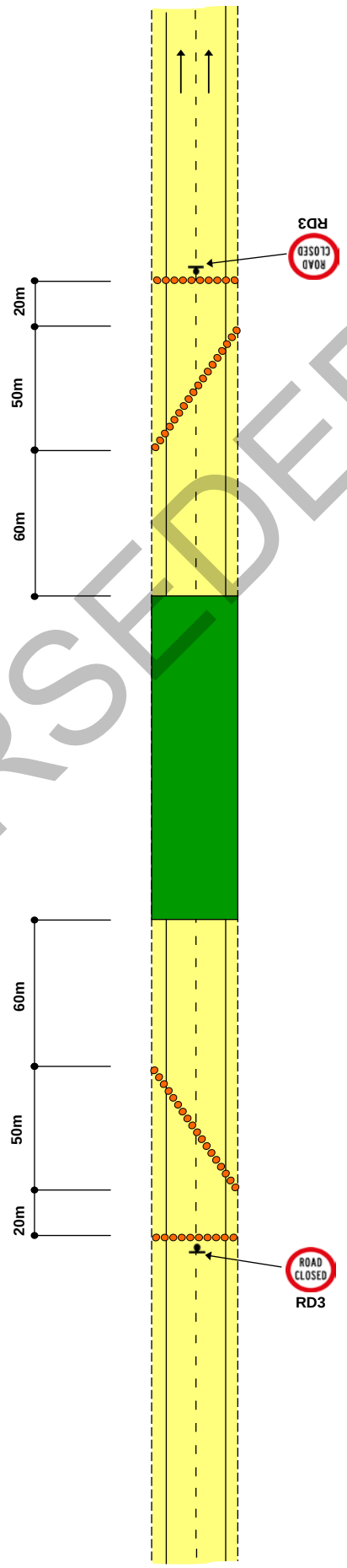
1. This diagram is part of a series of diagrams providing example diagrams for a motorway closure:
   - H1.17a - Closure of on-ramp within worksite
   - H1.17b - Closure example low accessed site
   - H1.17b - Closure example high accessed site
   - H1.17d - Closure of off-ramp within worksite
2. Where a motorway is completely closed to traffic in one or both directions, any on or off ramps impacted must also be closed
3. Cones across the on-ramp to be placed at 1m centres



ONE-WAY MULTI-LANE ROAD
Closure example
Low accessed site

H1.17b
Level 3

Notes
1. This diagram is part of a series of diagrams providing example diagrams for a motorway closure:
   - H1.17a - Closure of on-ramp within worksite
   - H1.17b - Closure example low accessed site
   - H1.17b - Closure example high accessed site
   - H1.17d - Closure of off-ramp within worksite
2. Where the motorway is completely closed to traffic in one direction or both directions, the normal application of road closure signs, cones, barriers, fences or barricades at on and off ramps must be reinforced by a double line of cones at a normal warning distance from the working space
3. The double lines of cones must be either continuous or chicaned
4. TMA vehicles parked outside this inner cordon must be parked with their attenuators down and facing the normal direction of traffic. Vehicles inside the cordoned worksite are not subject to this requirement
5. Cones in tapers and across road to be placed at 1m centres



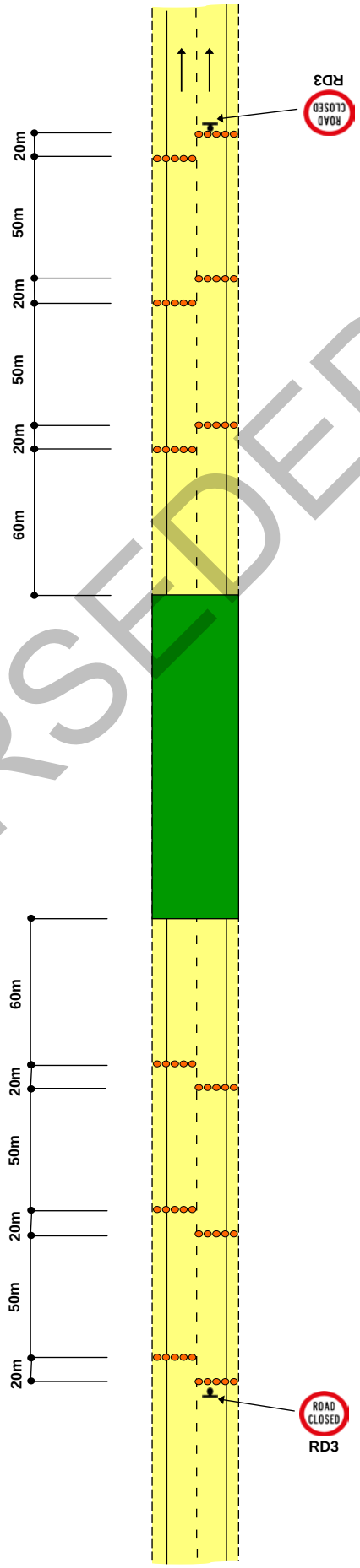
EXAMPLE ONLY

This drawing must not be used as a TMP diagram

ONE-WAY MULTI-LANE ROAD
Closure example
High accessed site

H1.17c
Level 3

Notes
1. This diagram is part of a series of diagrams providing example diagrams for a motorway closure:
   - H1.17a - Closure of on-ramp within worksite
   - H1.17b - Closure example low accessed site
   - H1.17b - Closure example high accessed site
   - H1.17d - Closure of off-ramp within worksite
2. Where the motorway is completely closed to traffic in one direction or both directions, the normal application of road closure signs, cones, barriers, fences or barricades at on and off ramps must be reinforced by a double line of cones at a normal warning distance from the working space
3. The double lines of cones must be either continuous or chicaned
4. TMA vehicles parked outside this inner cordon must be parked with their attenuators down and facing the normal direction of traffic. Vehicles inside the cordoned worksite are not subject to this requirement
5. Where there are oversized vehicles being used, the 20m gap in the chicanes may be increased
6. This is a secondary safety element for the worksite
7. Cones in chicanes to be placed at 1m centres



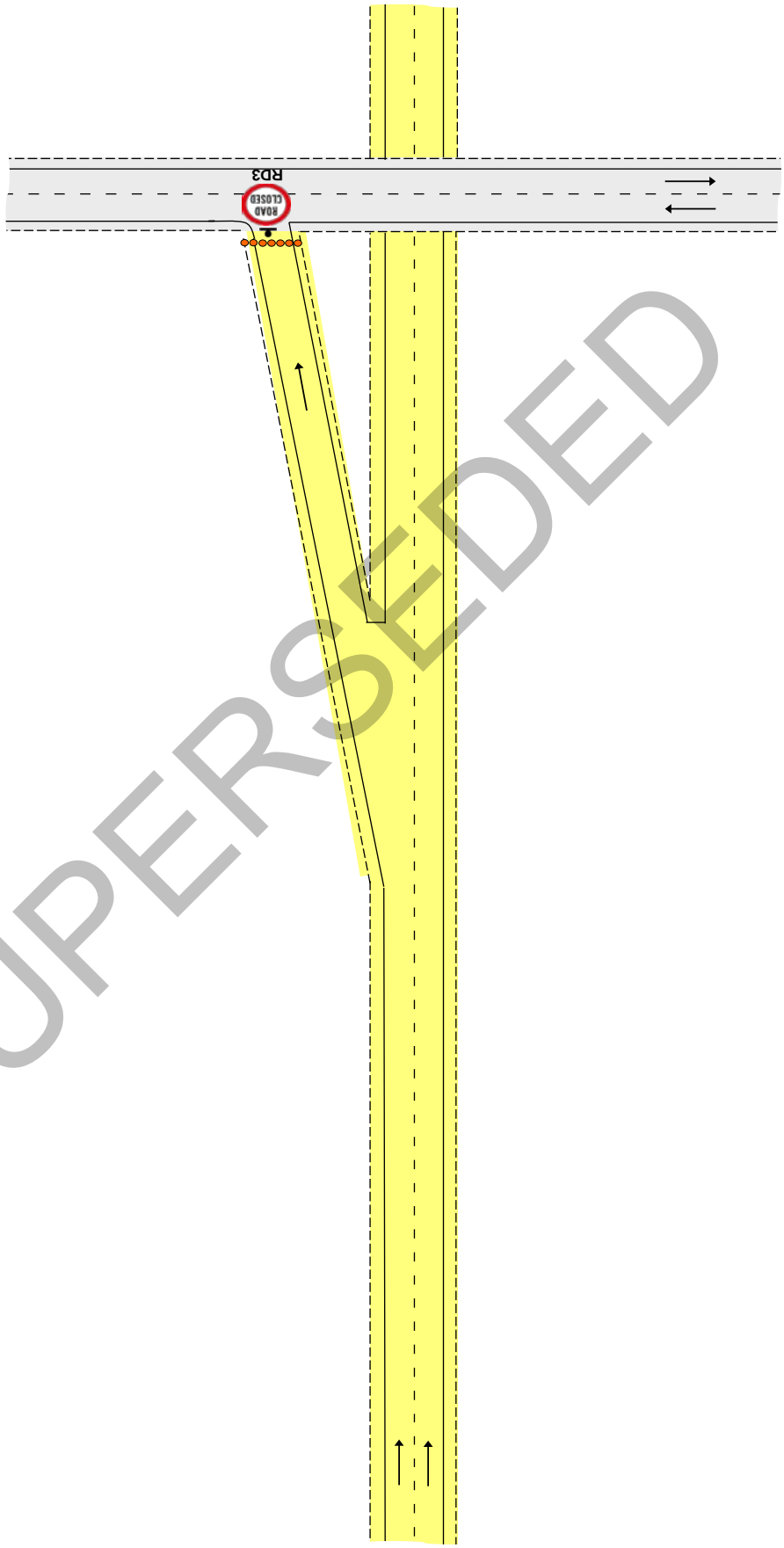
EXAMPLE ONLY

This drawing must not be used as a TMP diagram

ONE-WAY MULTI-LANE ROAD
Closure example
Off-ramp within worksite

H1.17d
Level 3

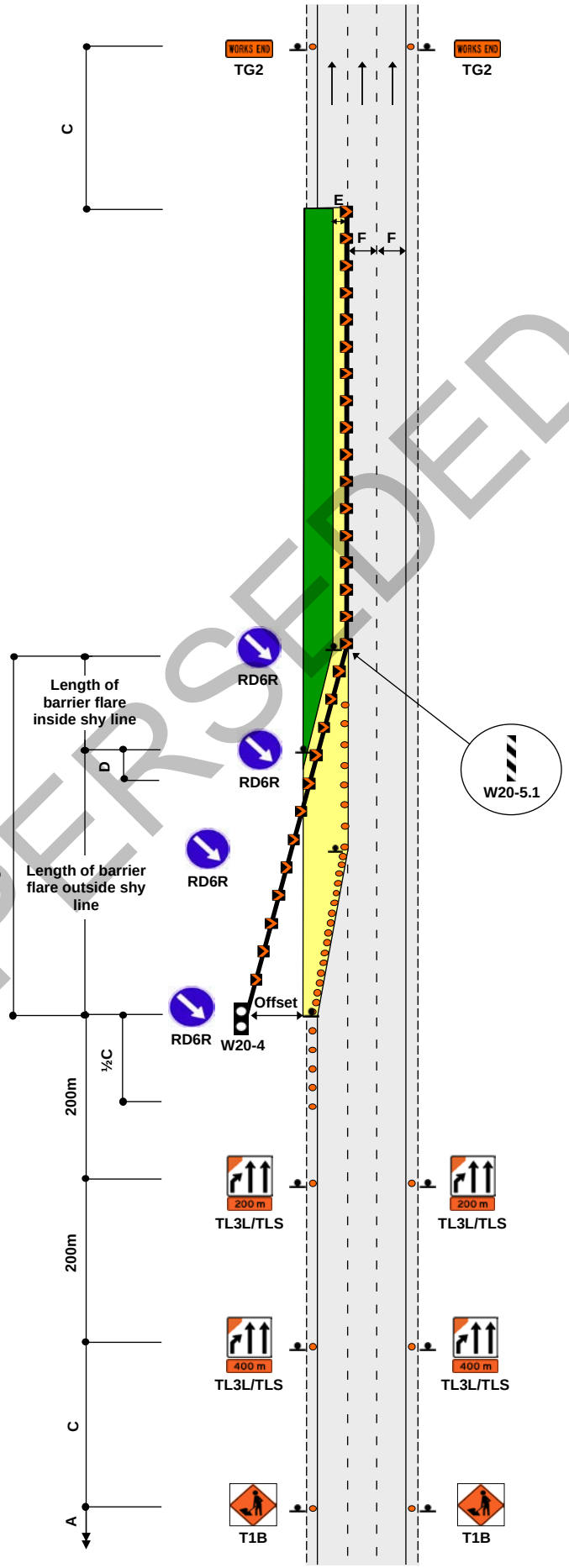
Notes
1. This diagram is part of a series of diagrams providing example diagrams for a motorway closure:
   - H1.17a - Closure of on-ramp within worksite
   - H1.17b - Closure example low accessed site
   - H1.17b - Closure example high accessed site
   - H1.17d - Closure of off-ramp within worksite
2. Where a motorway is completely closed to traffic in one direction or both directions, any on or off ramps impacted must also be closed
3. Cones across the on-ramp to be placed at 1m centres



ONE-WAY MULTI-LANE ROAD
Long-term closure
Left-lane closure - barrier

H1.18
Level 3

Notes
1. Barrier end treatment depends on its distance from the edgeline - refer to section C18.4 for details
2. A black/white right-hand bridge end marker post must be used to delineate the approach end of the barrier at its narrowest point
3. Offset depends on speed ie 100km/h = 9m
4. Total length of barrier flare depends on:
   - the offset from the live lane line
   - the width of lane and shoulder closed
   - barrier flare rates, and
   - the offset of the barrier end from the edgeline
5. Hazard marker must be used to delineate the barrier terminal

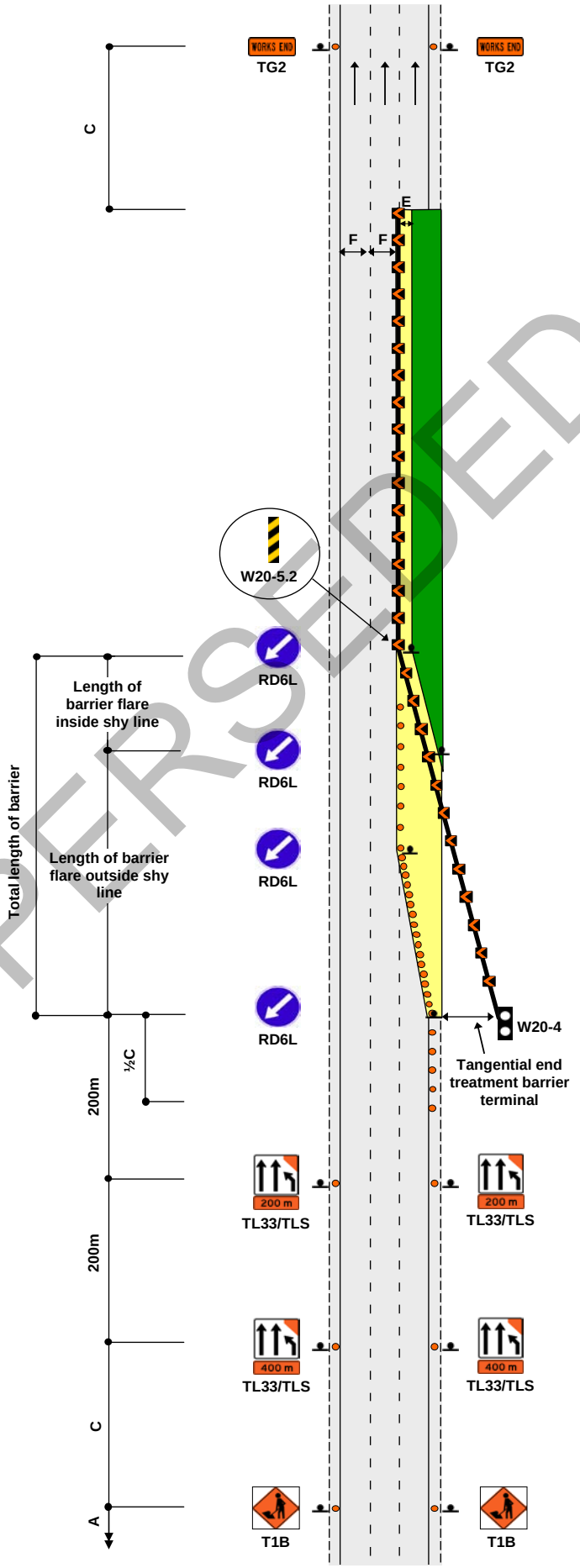


ONE-WAY MULTI-LANE ROAD
Long-term closure
Right-lane closure - barrier

H1.19
Level 3

Notes

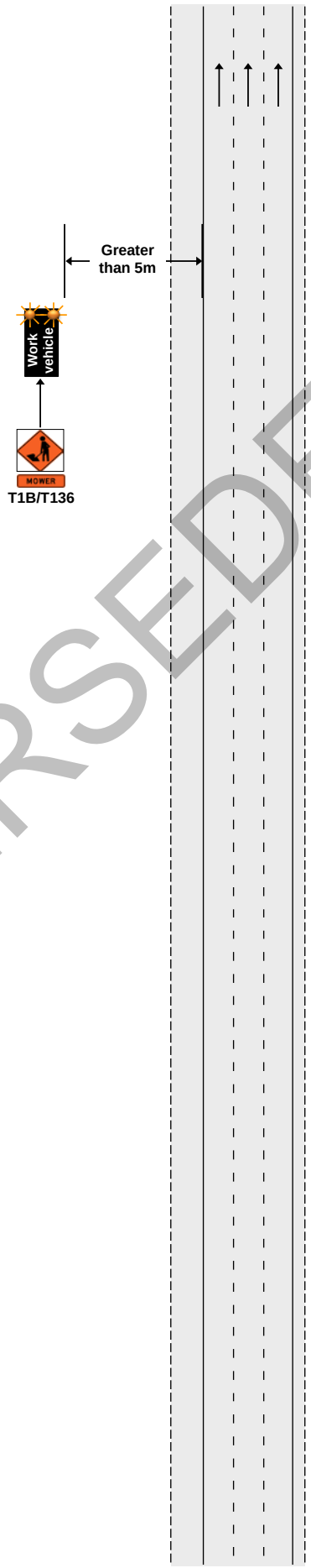
1. Barrier end treatment depends on its distance from the edgeline - refer to section C18.4 for details
2. A black/yellow right-hand bridge end marker post must be used to delineate the approach end of the barrier at its narrowest point
3. Total length of barrier flare depends on:
   - the offset from the live lane line
   - the width of lane and shoulder closed
   - barrier flare rates, and
   - the offset of the barrier end from the edgeline
4. Hazard marker must be used to delineate the barrier terminal



ONE-WAY MULTI-LANE ROAD
Work vehicle is more than five (5) metres from the edgeline - Zone A

H2.1
Level 3

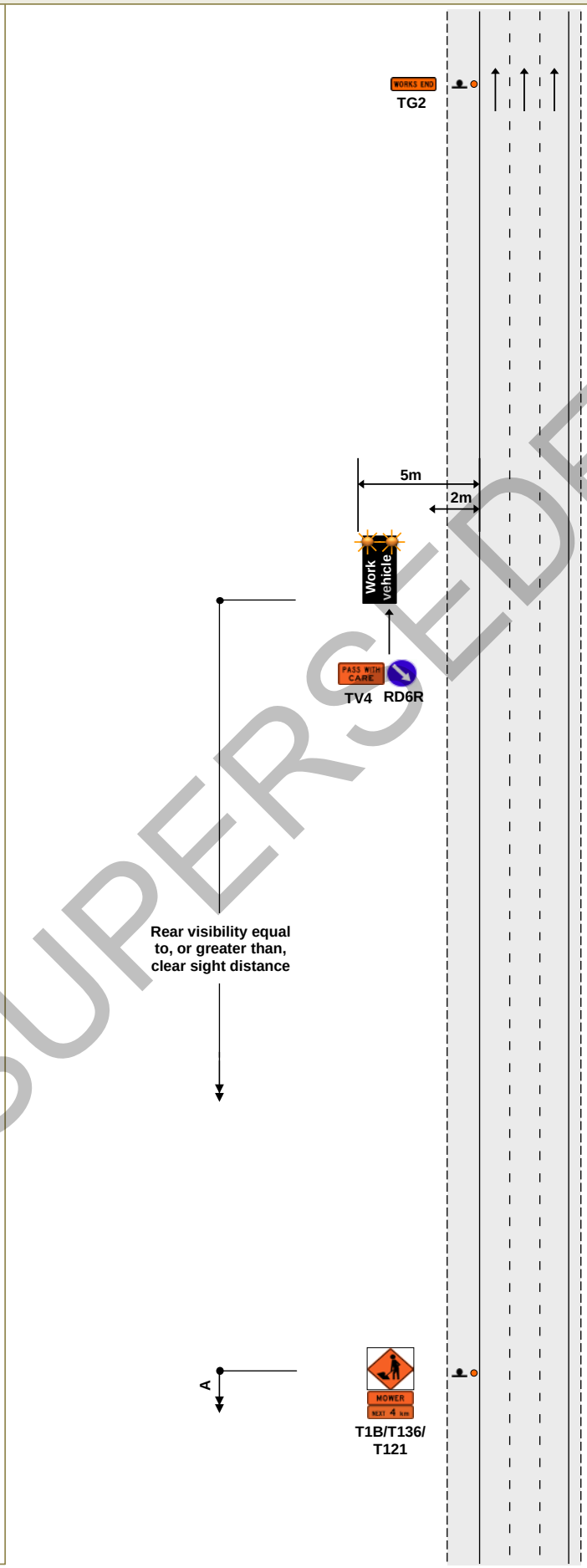
Notes



ONE-WAY MULTI-LANE ROAD
Work vehicle is between two (2) and five (5) metres from the edgeline - Zone B
Rear visibility is GREATER than the clear sight distance

H2.2
Level 3

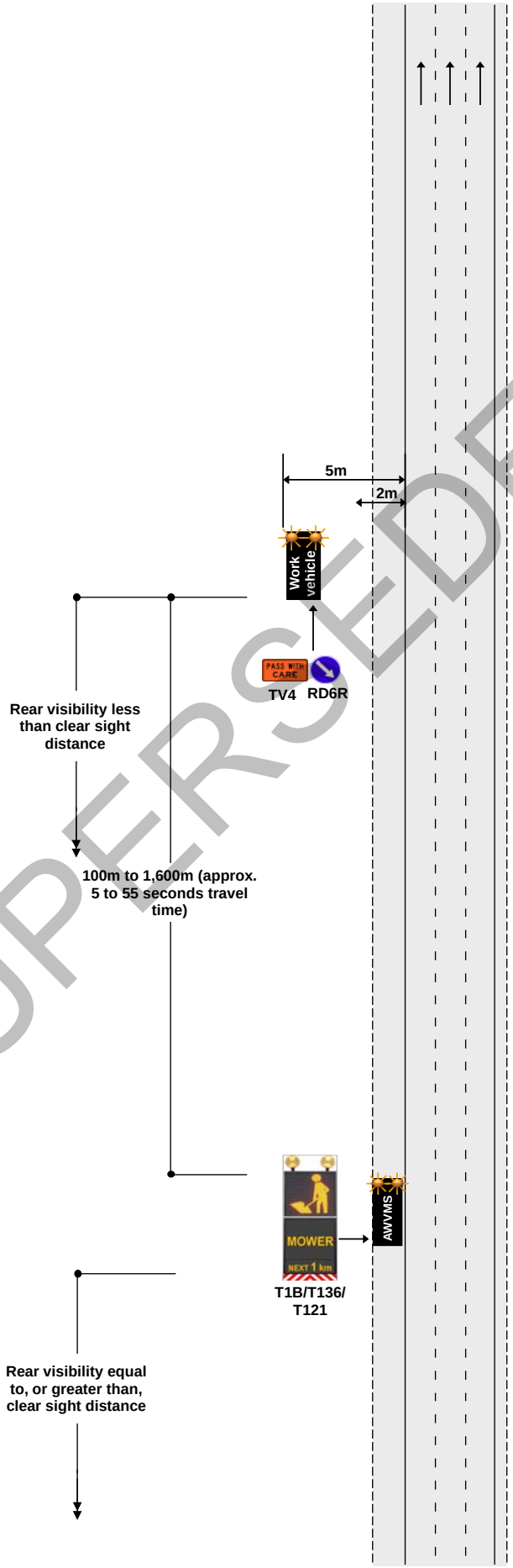
Notes
1. The T1B sign and supplementary plates must be repeated throughout the length of the worksite at intervals no greater than 4km
2. The static signs may be replaced by an AWVMS. In this case CSD will be required (see H2.3)



ONE-WAY MULTI-LANE ROAD
Work vehicle is between two (2) and five (5) metres from the edgeline - Zone B
Rear visibility is LESS than the clear sight distance

H2.3
Level 3

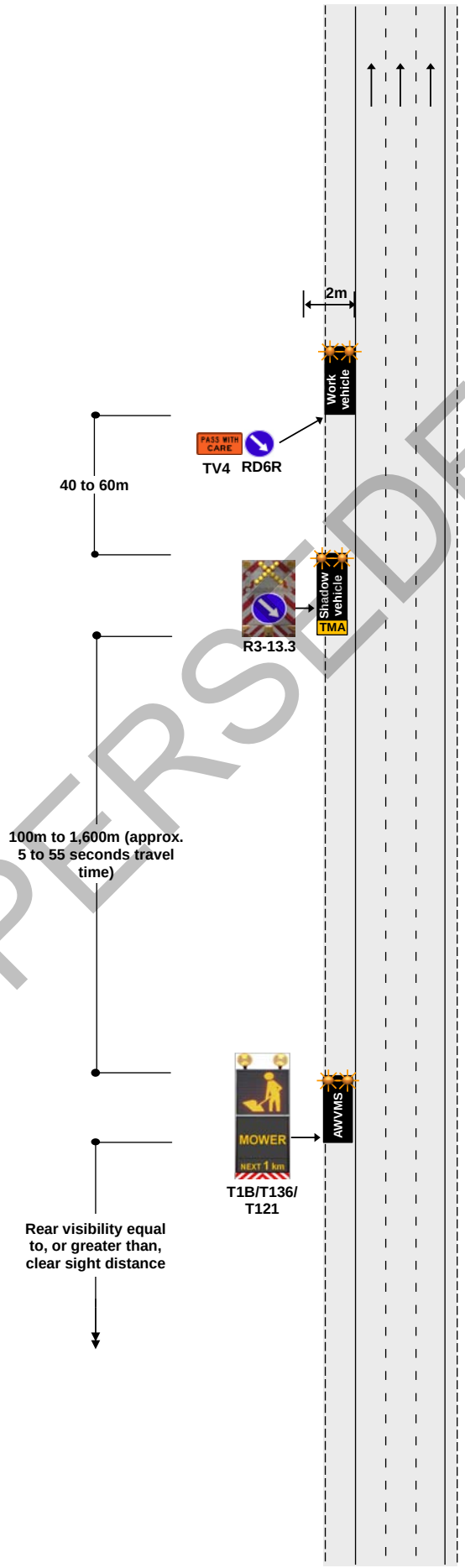
Notes
1. Always try to use the shortest distance in any range provided



ONE-WAY MULTI-LANE ROAD
Work vehicle is between zero (0) and two (2) metres from the edgeline - Zone C

H2.4
Level 3

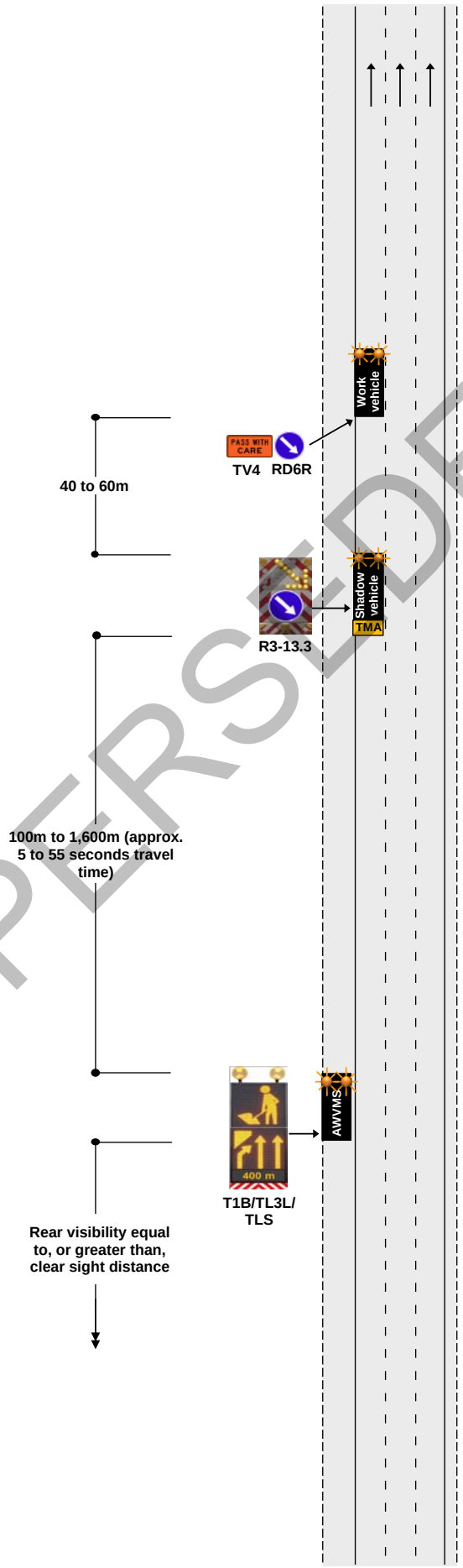
Notes
1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
2. Always try to use the shortest distance in any range provided



ONE-WAY MULTI-LANE ROAD
Work vehicle on live lane - Zone C

H2.5
Level 3

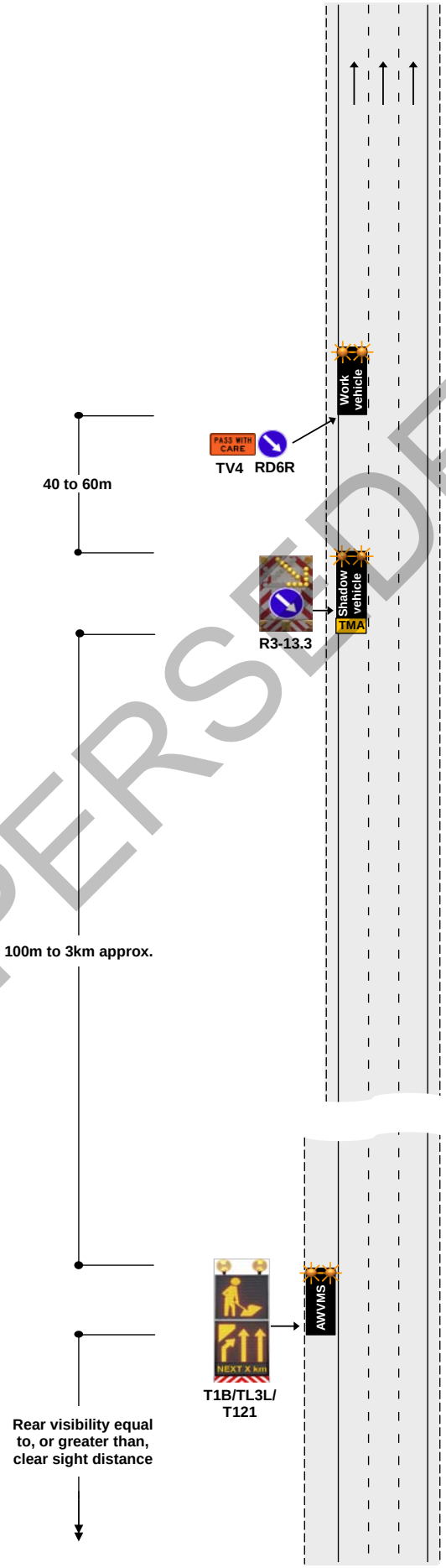
Notes
1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
2. Always try to use the shortest distance in any range provided



ONE-WAY MULTI-LANE ROAD
Work vehicle on live lane or within 2m from live lane - Zone C
No available shoulder width for AWVMS within 1,600m of work vehicle

H2.6
Level 3

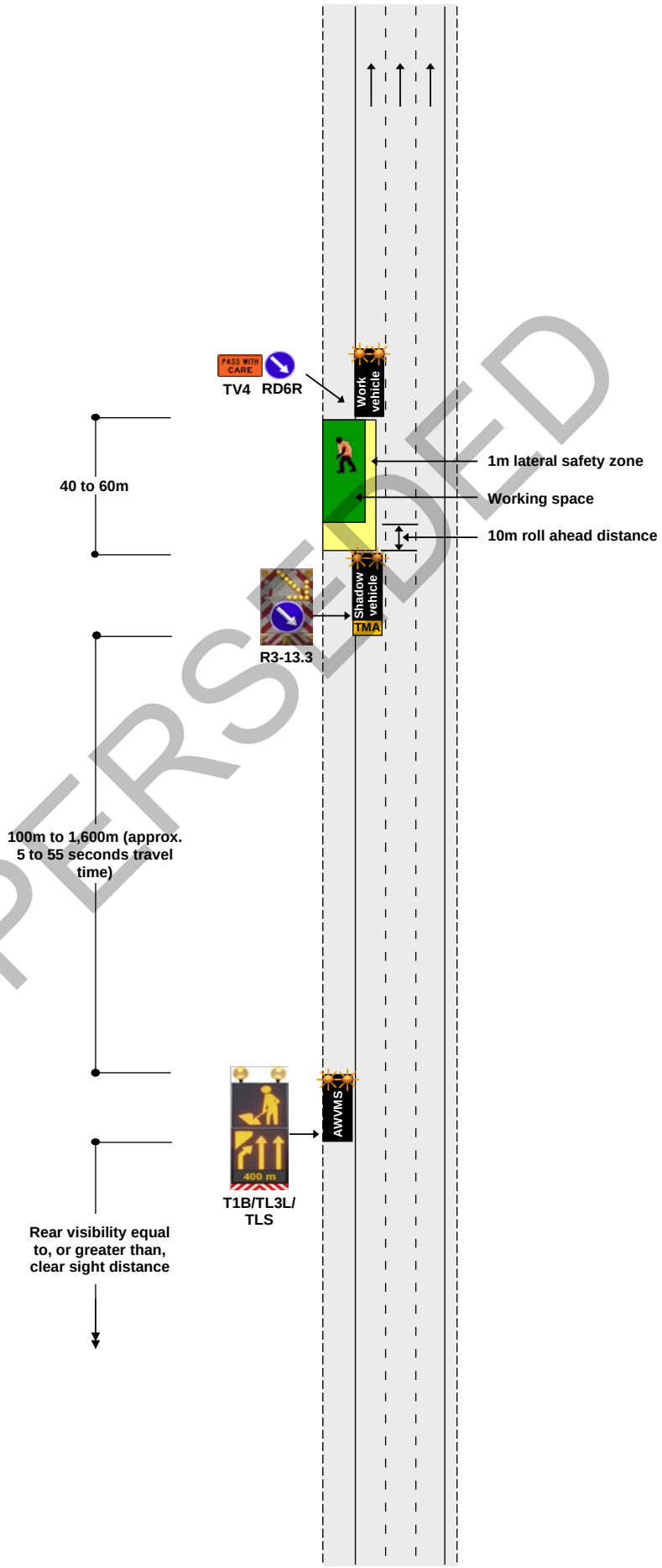
Notes
1. To provide advance warning, the AWVMS may be located more than 1,600m from the work vehicle
2. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
3. Always try to use the shortest distance in any range provided



ONE-WAY MULTI-LANE ROAD
Work vehicle on live lane or within 2m from live lane - Zone C
Personnel on the live lane

H2.7
Level 3

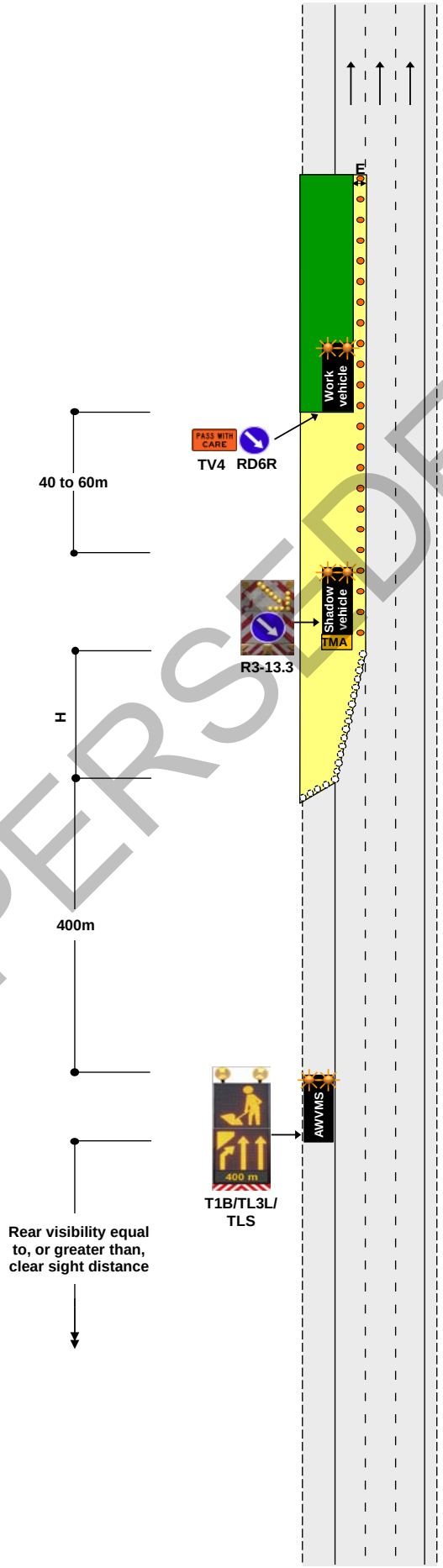
Notes
1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
2. Always try to use the shortest distance in any range provided



ONE-WAY MULTI-LANE ROAD
Semi-static closure
Left-lane closure

H3.1
Level 3

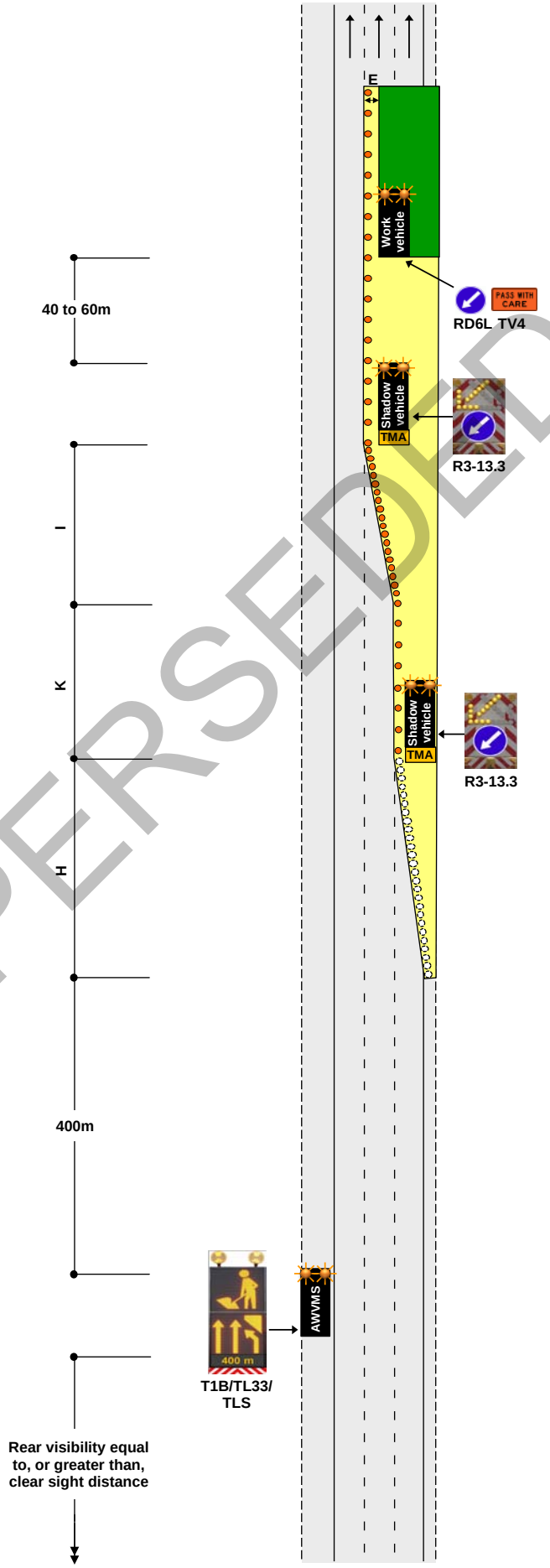
Notes
1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
2. The AWVMS may be replaced by T1B signs installed on both sides of the road
3. Where an AWVMS is used, cone taper (H) is not required
4. Always try to use the shortest distances in any range provided



ONE-WAY MULTI-LANE ROAD
Semi-static closure
Right and centre lane closure

H3.2
Level 3

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 be replaced by T1B signs installed on both sides of the road
3. Where an AWVMS is used, cone taper (H) is not required. Also, cones from the first shadow vehicle to the second shadow vehicle are optional
4. Always try to use the shortest distances in any range provided

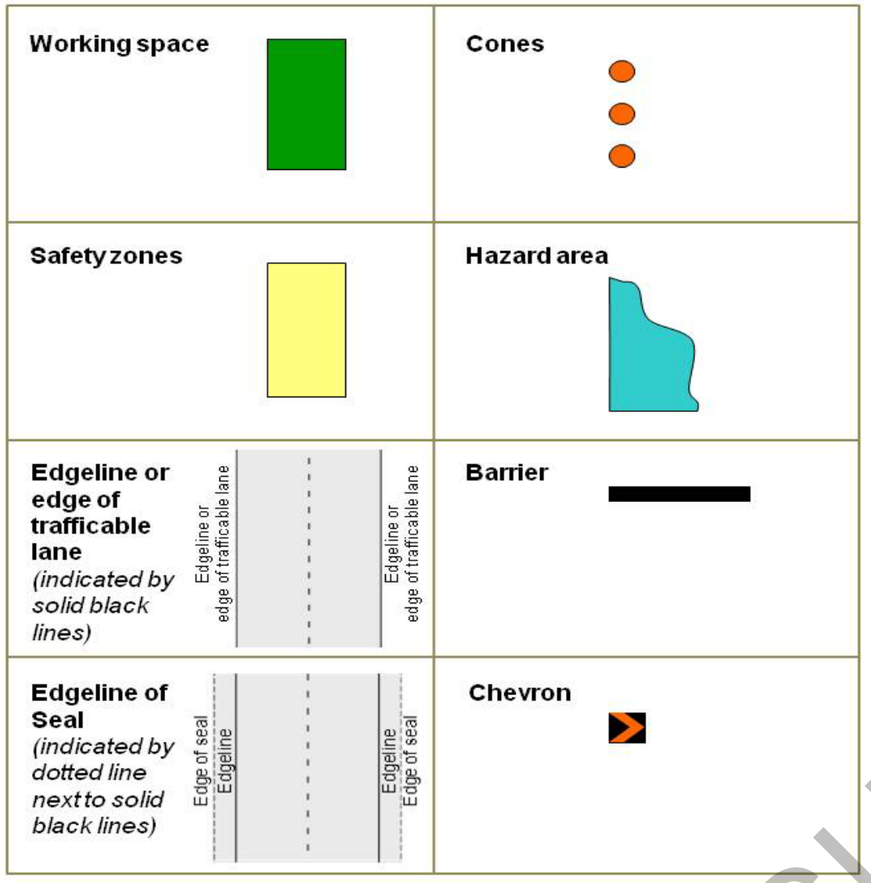


Note:

This page is to be used as the layout distances table for the level 2 static and mobile diagrams.

Print this page on A3 paper and fold it to fit an A4 page.

Unfold this page when you want to view the layout distances table and a diagram at



C2.6 Level 3 worksite layout distances

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 concrete barrier	0.5	0.5
	3. Behind other barriers	As recommended by manufacturers	
Tapers			
H	Initial taper length per lane**	150	180
I	Subsequent taper length per lane***	80	100
K	Minimum distance between tapers	80	100
Delineation devices			
Spacing	All tapers	2.5	2.5
	Approaches, between tapers and around the working space	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 speeds less than 80km/h use the C2.5 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.

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

*** Only applicable where the taper is a sufficient distance from temporary speed restriction for motorists to have slowed down to the temporary speed.

Lane widths									
(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

General

Except for delineation device spacings, which are maximum values, the distances specified in the above table are minimum values. Approach signage and the initial taper must be based on the permanent speed limit. Any subsequent tapers, and the remainder of the worksite, are based on the applicable permanent or TSL.