Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Dashboard Manual

Temporary Traffic Management Guidance Handbook

Road Marking Related Works

December 2022

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GLOSSARY OF TERMS

CSCS	**C**onstruction **S**kills **C**ertification **S**cheme
IPV	**I**mpact **P**rotection **V**ehicle
km/h	**K**ilometres **P**er **H**our
MLC	**M**obile **L**ane **C**losure
PSCS	**P**roject **S**upervisor **C**onstruction **S**tage
PSDP	**P**roject **S**upervisor **D**esign **P**rocess
Roadworks	Meaning repairs, maintenance, alterations, improvements, installations, or any works to, above or under a public road
SSO	**S**emi **S**tatic **O**peration
SSWP	**S**afe **S**ystems of **W**ork **P**lan
TII	**T**ransport **I**nfrastructure **I**reland
TM	**T**raffic **M**anagement
TSM	**T**raffic **S**igns **M**anual
TTM	**T**emporary **T**raffic **M**anagement
TTMDG	**T**emporary **T**raffic **M**anagement **D**esign **G**uidance
TTMGH	**T**emporary **T**raffic **M**anagement **G**uidance **H**andbook
TTMOG	**T**emporary **T**raffic **M**anagement **O**perations **G**uidance
veh/3min	**V**ehicles **P**er **3** **M**inute (Traffic Count in both directions)
VMS	**V**ariable **M**essage **S**ign

1 INTRODUCTION

1.1 PURPOSE

This guidance handbook is designed to serve as a quick and easy-to-use reference document for the planning and implementation of Temporary Traffic Management Measures (TTM) for routine operations relating to Road Marking works.

The operations covered by this document include the following roadworks types.

- Static Type B – < 12 hours duration.

  Note: As a general standard, these layouts should not be used where the traffic flow is ≥60 vehicles/3min per lane left open. In these scenarios, the reader of the handbook should either (i) re-schedule the works to a time when the traffic flow is <60 vehicles/3min (per lane left open) or (ii) consult with a TTM designer.

- Semi Static Operations (SSO) – Permitted for stop durations of up to 15 minutes and applicable to Level 1 and Level 2 Roads only; and
- Mobile Lane Closures (MLC) - Permitted for stop durations of up to 15 minutes and applicable to Level 3 Roads only.

This handbook takes a practical approach to TTM arrangements, giving due consideration to the safety of both road users and workers. The layouts shown within are prepared in compliance with the following documents:

Chapter 8 of the Traffic Signs Manual, TTM Design Guidance and TTM Operations Guidance

It also considers the practical issues and risks associated with setting up a TTM layout, which may take significantly longer than carrying out the works themselves, works which are relatively low risk routine operations.

The document is intended to be used as a 'dashboard' handbook, a commonplace reference which will encourage a greater level of consistenpcy across TTM measures for routine operations, such as the installation, replacement, and removal of:

- road studs;
- machine applied markings (centre lines, edge lines, lane lines);
- screed applied markings (stop / yield lines, symbols, arrows);
- lane destination markings; and
- worded or diagrammatic markings and hatched areas.

1.2 DEVELOPMENT

This handbook is based on:

- The principles and guidance of Chapter 8 of the Traffic Signs Manual (TSM);
- The principles and guidance of the Temporary Traffic Management Design Guidance (TTMDG) and Temporary Traffic Management Operations Guidance Documents (TTMOG);
- Consultation with Local Authorities, TTM service providers, and the road marking industry; and
- TII experience in implementing and managing road maintenance contracts.

1.3 ROAD CLASSIFICATIONS

For the purpose of TTM, roads are divided into three classifications:

- Level 1 Roads – Urban and Low Speed Roads;
- Level 2 Roads – Rural Single Carriageway Roads; and
- Level 3 Roads – Dual Carriageways and Motorways.

The sub levels applicable to the different carriageway types and speeds are tabulated below.

Level		Carriageway Type	Speed / Speed Limit (km/h)
Main	Sub		
Level 1	i	Single	≤ 30
	ii	Single	40
	iii	Single	50
	iv	Single	60
		Multi-Lane / Dual	≤ 60
Level 2	i	Single	80
	ii	Single	100
Level 3	i	Dual and Motorway	80
	ii	Dual and Motorway	≥ 100

Road Classifications

This handbook sets out dedicated TTM layouts for each Road Level and presents each within dedicated chapters as follows:

- Level 1 Roads – RM101 to RM138;
- Level 2 Roads – RM201 to RM226; and
- Level 3 Roads – RM301 to RM333.

The guidance presented does not cover Level 1(i) and Level 1(ii) road classifications.

1.4 APPROPRIATE TYPES OF TTM

The appropriate TTM for routine road marking works varies depending on the method used, the location and the extent of the works. The type of TTM controls also depends on whether they are hand applied (i.e. slow moving works) or machine applied (i.e. fast moving works).

Therefore, the most appropriate TTM setup for such works may not fall neatly into the standard roadwork types as set out in the TSM Chapter 8 (i.e. Static Types A, B, C, Semi Static, and Mobile).

As such, the layouts included in this handbook, where necessary, combine elements from the various roadwork types in order to arrive at what is considered to be the most suitable TTM arrangement.

1.5 FURTHER ASSESSMENT

While the guidance contained here will provide some consistency in TTM measures used for routine operations, no 'one' set of TTM layouts can cover all sites and conditions. Therefore, at each site, a risk assessment is required, and further development of the layouts may be necessary prior to TTM setup. Where further development is required, reference shall always be made to Chapter 8 of the TSM and the supporting guidance documents. For the purposes of this handbook:

- **Shall** or **must** indicates that a particular requirement is mandatory
- **Should** indicates a recommendation; and
- **May** indicates an option.

1.6 SITE SPECIFIC RISK ASSESSMENTS

It is important for TTM auditors and installers to note that the layouts in this guidance handbook cover typical scenarios only. There are many instances where they may not suit the particular operation or location. The Contractor's TTM designer may need to develop new layouts or amend the typical layouts shown here, in order to meet their particular site conditions.

It is therefore a requirement that a Site-Specific Risk Assessment be carried out by the TTM installer on any layout used in this handbook, prior to implementing it on site.

Section 8 contains a standard Health and Safety Design Risk Assessment Form which should be used. Alternatively refer to the TTMDG document for further guidance on risk assessments.

NO COMPROMISE SHALL BE MADE ON THE SAFETY OF ROAD USERS OR WORKERS

2 GENERAL PRINCIPLES OF HANDBOOK

Complement other TTM guidance

This handbook intends to complement existing standards and guidance, and apply it to specific routine operations.

Use of best practice and experience

While based on the principles of TSM Chapter 8 and guidance documents. This handbook is informed by years of experience in routine road maintenance operations and consultation with TTM providers and industry.

TTM types

In order to achieve the most practical setup, elements of different types of TTM have been blended or combined.

Take account of works duration

Consider if safe and reasonably practicable to spend extended durations setting up TTM for short duration works. Longer exposure to traffic increases risk.

Incident response

TTM setup should be capable of being removed quickly in the event of an incident or emergency.

Risk assess for routine operations

Is putting out the TTM more hazardous for operatives and road users than the routine operation itself?

Consistency

There are different interpretations of the current standards, which gives rise to inconsistencies and potential commercial advantages. The layouts provided here aim to remove ambiguity for routine operations.

Standardising PPE and works vehicles

A benchmark for PPE and vehicle conspicuity will help give a consistent message to road users.

Maximising visibility for operatives

If an operative can see what's coming, they have at least some chance of escape or preparing themself.

Semi-Static Operations (SSO)

Routine operations which move continuously with very short stops for single carriageways. Use of advance signage and repeaters.

Stop/Go Operative

This vulnerable operative must be protected, while ensuring that they have good visibility and is conspicuous.

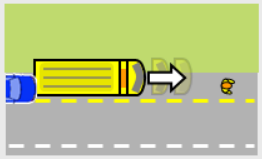
Using Spotters

Where operatives are working at high risk locations and are engaged in an activity, dedicated spotters are used as a second set of eyes to protect the operative. All spotters should carry whistles and flags.

Works vehicles as fend vehicles

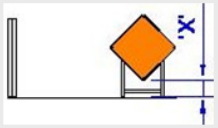
Use works vehicle(s) to protect workers from errant vehicles, allowing for potential shunting etc.

Mitigate against vehicle shunting



A shunting distance should be provided to mitigate against the risk of a shunted works vehicle impacting the works area.

Sign Mounting Height



Where a lower mounting height is required, the minimum clearance 'X' to the underside of the supplementary plate or sign should be:
Level 1 Roads = 100mm;
Level 2 Roads = 300mm; and
Level 3 Roads = 500mm.

Safety Zones

Longitudinal and lateral safety zones and tapers implemented to protect the works area.

Carry TM equipment to maximise visibility

Always carry signs and cones on side away from traffic, to maximise operative and traffic visibility.

Impact Protection Vehicle (IPV)

IPVs are used to set up the TTM, therefore where possible should also be used during the works to protect operatives.

3 THE CONCEPT OF ROUTINE OPERATIONS

3.1 GENERAL CONCEPT

Routine operations are considered to be those of short duration (less than 12 hours duration). Where works are greater than 12 hours in duration or are restricted by either traffic volume or weather conditions, Static Type A TTM shall be applied per TSM Chapter 8.

3.2 ANTICIPATED DURATIONS

Increased use of Static Signage

Mobile (MLC)
Level 3 Roads Only

Mobile works site, involving moving lane closures. Works are mobile and/or make frequent short duration stops up to a maximum of 15 minutes. Primarily complement the layouts for mobile lane closures (MLCs) on Level 3 Roads per the TSM Chapter 8.

Semi-Static (SSO)
Level 1 and 2 Roads Only

Where the works site can be up to 10km in length and the works involve a continuously moving operations and/or short duration stops up to a maximum of 15 minutes. Operations are predominantly in the running lane and covers vehicle applied activities such as longitudinal road markings, stud fitting/removal and/or short duration screed works.

Static
All Road Types

Fixed work site involving more comprehensive stops up to a maximum of 12 hours. Typically covering operations involving screed applied markings at isolated locations, and/or junctions and roundabouts. Primarily complement the layouts for static operations as per the TSM Chapter 8.

Increased use of Mobile Protection Measures

Note: A Semi-Static Operation (SSO) is applicable to works where the operations are mobile or are making short duration stops continuously along a road where static warning signs are used. These operations involve different types of control to safely guide the main traffic past the works. This can include, but is not limited to, the use of warning and works vehicles, STOP/GO on foot or by quad, convoy by quad, dedicated spotters or, where appropriate, the use of Impact Protection Vehicles.

3.3 PARTICULAR REQUIREMENTS FOR ROUTINE OPERATIONS

- Careful consideration must always be given to site specific conditions and further risk assessment must be carried out if deviations from the outlined durations are required (refer also to Section 1.6).
- The emphasis must always be on the safety of the work force, and road users being able to safely pass the works.
- Existing pedestrian and/or cyclist facilities shall be maintained where reasonably practicable, otherwise they shall be safely guided through the site, or a safe temporary route past the works shall be provided.
- Particular precautions must be taken during adverse weather conditions. The Contractor must consider what further measures are appropriate, up to and including pulling off site. Weather conditions such as, but not limited to, low-lying sun, fog, frost/ice/snow, heavy rainfall, wet/slippery roads.
- Where TTM is set up to encompass multiple works areas within close proximity, these areas may be considered as separate sites for the purposes of duration, only if further risk assessment has determined that the cumulative duration is not excessive. Additional TTM measures are required if this cannot be clearly demonstrated, or if other additional risks result.
- It should be noted that the TTM layouts in this handbook are considered to be appropriate for daylight hours only. Further assessment is required for the use of TTM for works outside of this period.

4 EQUIPMENT

4.1 VARIABLE MESSAGE SIGNS

Principles of Use

Variable Message Signs (VMS) are considered a requirement in the following circumstances:

- Level 1 and 2 Roads -
  - Recommended for use as part of Semi-Static Operations (SSO) up to a max distance of 10km, to be used in advance of the works in both directions.
  - Generally, not required otherwise unless the works zone is of an extended length (>2km), or operatives working on the live carriageway.
  - Generally, not required for one-off isolated works* of short duration i.e. <15 mins.
  - Can be used in other particular situations if risk assessment deems them necessary.
- Level 3 Roads -
  - Recommended for use as part of a Static and Mobile Lane Closures to provide additional warning to the works.
  - May be used as additional advanced warning for setting out static TTM equipment.

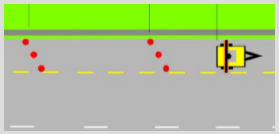
One-Off Isolated Works *refer to scenarios that are isolated to one works area (one site), no closer than 10km from the next site. They are* ***not*** *considered to be linear or extensive in nature.*

VMS Protection & Positioning

VMS should be regarded as a fixed object (hazard) in accordance with TII Publication on Safety Barriers (Ref: DN-REQ-03034). They should be located behind existing safety barriers where possible. The following diagrams give the various scenarios that are considered acceptable for protecting the VMS.

Scenario 1: VMS protected by existing barrier if access is available.

Scenario 2: VMS in verge no barrier, full hard shoulder, single line of cones in hard shoulder 40m in advance.



Scenario 3: VMS on hard shoulder if no access to verge or barrier. 2 lines of cones 20m and 60m in advance of VMS for a 100km/h road (15m and 45m for an 80km/h road).

Scenario 4: VMS on verge, no hard shoulder. Line of cones placed parallel to the VMS outside of its closest point along the edge of the carriageway.

The requirements in relation to the positioning of VMS are similar to those for static signs. Lateral clearance, clear visibility, and road geometry are to be considered when positioning VMS, and when in position the VMS should be free of obstructions such as vegetation.

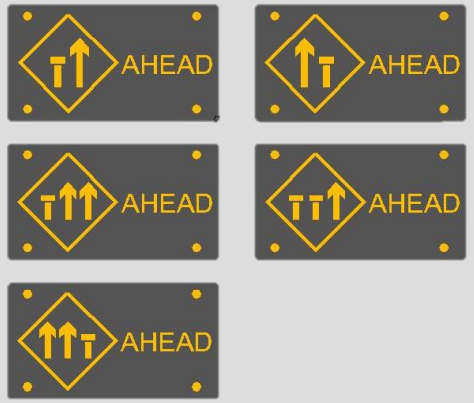
VMS at roadworks shall comply with the requirements of Section 8.3.4 of Chapter 8 and Chapter 3 of the TSM. Where overhead gantries are in place, these may be used in place of a VMS.

VMS Message Sets

The messages displayed on VMS should be clear and concise. Preferably messages should be displayed in a single frame to ensure passing traffic can read and react to them. If necessary, a maximum of two frames is permitted. Messages must be steady state and should not flash or use scrolling text. Use of pictograms in place of text is recommended and only signs permitted in TSM Chapter 8 should be displayed.

Level 1 and 2 Roads

Level 1 Roads Only



Level 3 Roads Only

VMS sizes and specifications are to be in accordance with *EN12966* and the *TII Guidelines for the Use of VMS on National Roads.*

4.2 WORKS / WARNING VEHICLE RECOMMENDATIONS

Front Markings (All vehicles)

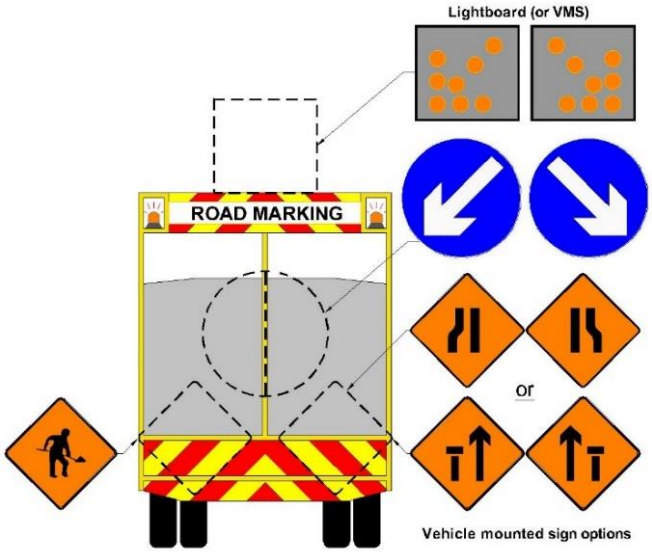
- Vehicle colour should be conspicuous yellow or white. Functioning amber warning beacons mounted on top visible from 360° and with no front or side chevron markings.
- Vehicles will display 'ROAD MARKING' on their front and rear in accordance with Temporary Traffic Management Operations Guidance Document – Part 3, cl. 3.2.1.

Rear Markings (All Vehicles)

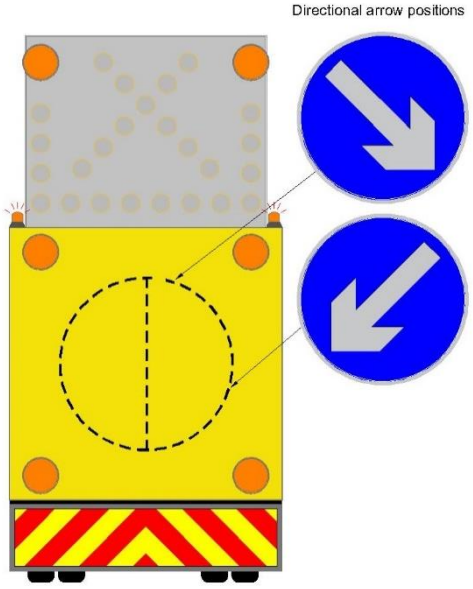
- The rear of the vehicle should be covered in markings as much as possible. Chevron markings to be used, comprising alternate strips of fluorescent orange-red Class RA2 retro-reflective material and fluorescent yellow non-retroreflective material, of not less than 150mm width each, inclined at 45-60° to the horizontal and pointing upwards (i.e. inverted 'V').
- The rear of the vehicle must be kept as clean as possible to maximise conspicuity and maintain its retro-reflective properties.
- Visibility through the rear of the vehicles should be maintained as much as possible.
- All signs on the rear of vehicles must be removed/covered once operations are complete (or work is finished for the day).
- If a trailer or other equipment is towed to the works site, it must not block the vehicle mounted signage during operations. All equipment must be detached prior to operations commencing, or if not, the vehicle signage must be replicated on the back.

General (All Vehicles)

- All works and warning vehicles must be fitted with LED lights and functioning amber warning beacons mounted on top visible from 360°. They should be kept in full working order and replaced when damaged or faded.
- Vehicles must have a driver restraint system (3-point inertia seat belts and head restraints).
- If non-standard vehicles (e.g. concrete trucks) are used as part of short-term operations, where they may be potentially exposed to oncoming traffic, they must be made highly conspicuous with appropriate markings and signage, as per the requirements for other works and warning vehicles.
- There is to be no working from the rear of any vehicle unless it is suitably protected from oncoming traffic in that direction.

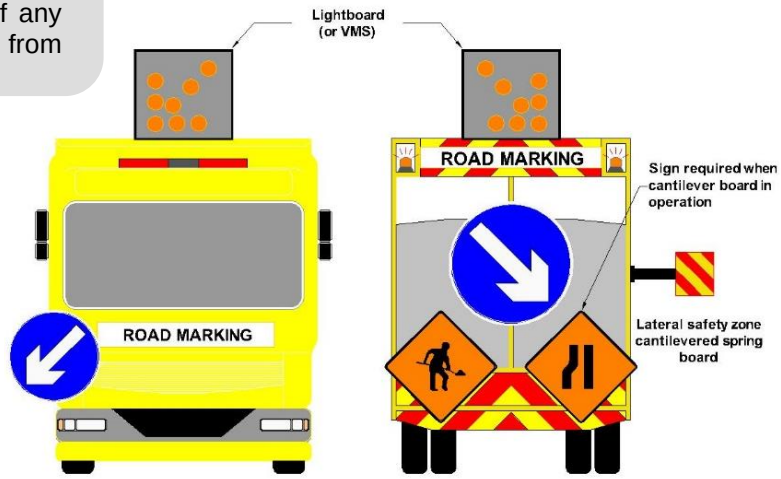


Rear Sign Configuration

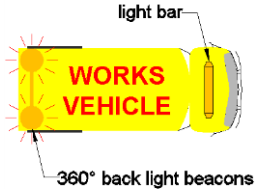


IPV (Impact Protection Vehicle)

(Rear Sign Configuration)



Vehicle Configuration (Front & Rear)



Light Bar and Beacon Configuration

4.3 OTHER VEHICLES

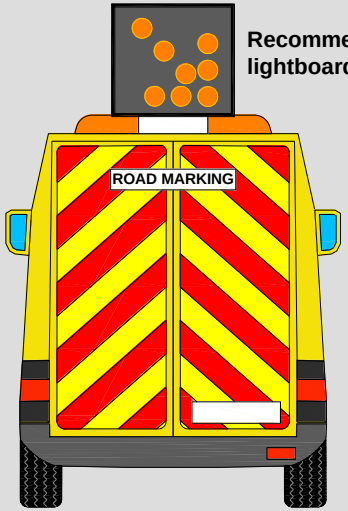
Any vehicle stopping on the road for works purposes or inspections should be conspicuously marked in the same manner as the work vehicles (described earlier).

Vehicles must be equipped with either a roof-mounted flashing amber warning light bar or independent roof-mounted flashing amber warning beacons, visible through 360°. For vehicles with bodies, the rear window chevrons should be semi-transparent to allow a clear view out the back of the vehicle where possible.

Where quad vehicles are used as part of traffic control operations, they must be roadworthy, have wing mirrors, indicators, registration plates and NCT, and shall be fitted with LEDs and high-level lights. A quad bike operator in a public place must have insurance, road tax, a driving licence and wear a motorcycle helmet. They should also have a reliable form of two-way communication, ideally as part of the helmet. The Stop/Go batten must be positioned on the right-hand side of the vehicle.

Quad Vehicle

Works Pick-Up



Works Van

Requirements for Vehicle Mounted Beacons

- Must comply with the requirements of the Road Vehicle Lighting Regulations and should also comply with the United Nations Economic Commission for Europe (UNECE) Regulation 65 on Special Warning Lamps.
- Where obscured by other parts of the vehicle or any equipment carried on the vehicle, additional beacons should be fitted where they will remain visible.
- Beacons shall be in use when entering, leaving or moving within the site, when travelling in traffic at less than the general traffic speed, when working through junctions and roundabouts, and when stationary on the hard shoulder.
- When stationary within the confines of a fully installed temporary traffic management layout, the roof-mounted beacons shall be switched off, unless they form part of the guarding of the works e.g. works on minor roads, or are required for mobile works.
- Vehicles should carry spare beacons to ensure the vehicle has at least one lamp working, should a bulb blow.
- Beacons must be kept clean and serviceable at all times and be inspected as part of the normal vehicle inspection regime.

4.4 COMMUNICATION SYSTEM

A reliable communication system should be provided between all vehicles. This is considered particularly important where there is no clear line of sight between vehicles and operatives.

It is also recommended that a communication system be provided for operatives on the ground, acting in traffic control and spotter roles (e.g. Stop/Go controller) at all times. Ideally quad bike operators should have two-way communication systems as part of the protective motorcycle helmet.

All operatives with communication devices should be able to intercommunicate.

4.5 RECOMMENDED PPE

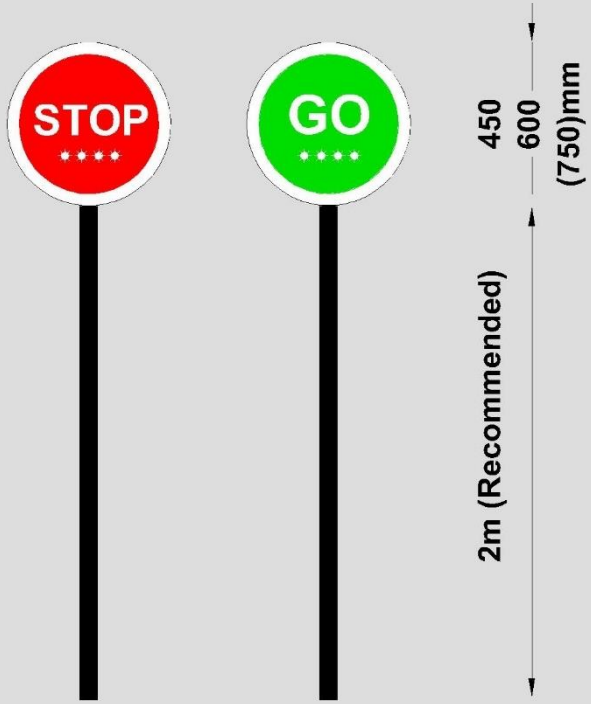
- High visibility clothing must be worn and should comply with EN ISO 20471. They should be fluorescent yellow or orange with retro-reflective stripes. Typically, orange clothing is used for road marking works. Class 3 high visibility clothing must be worn.
- Safety boots to be worn at all times, and should have steel toe caps and mid sole protection.
- Hard hats, gloves, eye and ear protection, etc. to be worn as required, depending on the operation.

Class 3 – Jacket / Trousers

Recommended for all Operatives

4.6 STOP / GO DISCS

- Where Stop/Go discs are used, they must be visible to oncoming traffic at all times (particularly on bends and crests of hills).
- The discs consist of a double-sided round disc (450mm or 600mm diameter). The discs can be used automatically or manually. When automatically operated the disc diameter is typically 750mm.
- They must be a minimum height of 1.5m (2m recommended) but may need to be higher in certain circumstances, to maintain visibility (over stationary vehicles).
- LEDs shall be provided on or around both faces, to improve conspicuity.



5 TEMPORARY TRAFFIC MANAGEMENT CHECKLISTS

Pre Setup – Consultation and Approvals

- ☐ **Develop TTM layouts.**
- ☐ **Agree Programme for the Works & Working Hours.**
- ☐ **Notify An Garda Síochána** (incl. Traffic Corps).
- ☐ **Notify Emergency Services** (if required).
- ☐ **Obtain Road Opening Licence / Road Closure Order** (if required).
- ☐ **Road Space Booking System** (for high-speed motorways and dual carriageways) – request consent through the Motorway Traffic Control Centre (where applicable).
- ☐ **Submit AF2 Forms to the Health and Safety Authority (HSA).**
- ☐ **Client to appoint PSCS** (to be accepted by the Contractor).
- ☐ **Appoint Temporary Traffic Operations Supervisor.**
- ☐ **Inform Bus Operators** (where applicable).

Pre-Setup – H&S Requirements

- ☐ **PSDP to be notified.**
- ☐ **Site Specific Risk Assessment** – to be carried out and recorded for each separate works site location.
- ☐ **Modifications to TTM Layouts** – where required under risk assessment, modifications to layouts must be recorded prior to implementation on site.
- ☐ **Communicate to TTM Installer** – the Temporary Traffic Operations Supervisor (or PSCS) must adequately communicate any particular changes or requirements of the specific TTM layouts to the TTM Installer prior to set-up.
- ☐ **Hazard Identification** – identification of utilities and other hazards must be carried out prior to TTM set-up.

Pre-Setup – H&S Documentation

The following documentation is to be held in the works vehicle at all times.

- ☐ **Job Information Pack** containing at a minimum layouts, SSWP, Risk Assessments, Times of operation and contact numbers.
- ☐ **PSCS's Construction Stage Safety & Health Plan.**
- ☐ **Signing, Lighting & Guarding at Roadworks CSCS card** (for TTOS only) and **Health and Safety at Roadworks CSCS Card** (for TTM Operatives).
- ☐ **Safe Pass cards.**
- ☐ **Machine Operator CSCS cards.**
- ☐ **IPV Driver Qualifications** (where applicable).

During Works – General Requirements

- ☐ **3-minute traffic counts** must be carried out and recorded prior to TTM setup and during the TTM operation. For Semi-Static Operations (SSO), counts shall be repeated at regular intervals to ensure that traffic flows are not exceeded for the selected layout.
- ☐ **Weather conditions**, such as heavy rain, fog, snow, low lying sun, etc. which can reduce visibility, should be considered when implementing TTM.
- ☐ **Queue lengths** to be checked regularly. If excessive build up is observed, Contractor to consider pulling off site and returning when traffic volumes adequately reduce.
- ☐ **Permanent signs** should be covered or taken down if in contradiction with the TTM layout.
- ☐ **Removing TTM** may be required to deal with high traffic volumes, adverse weather conditions, and emergency access.
- ☐ **TTM equipment**, cones, signs, barriers, PPE, etc. should be cleaned and checked regularly for displacement or damage and replaced where needed.
- ☐ For short duration or moving works, **varying degrees of TTM** will be required at different stages as site conditions change. At all stages, the TTM must be capable of properly managing road users and protecting operatives, particularly when transitioning between different TTM scenarios.
- ☐ All **TTM must be removed once the works are completed**. Any permanent signs covered/removed for the duration of the works must now be reinstated.
- ☐ Care must be taken not to cause **detrimental damage to verges, filter drains, and landscaped areas**, when manoeuvring TTM vehicles.
- ☐ **TTM Installers must face oncoming traffic** (and be visible to oncoming traffic) when placing and removing signs and cones.

6 TTM LAYOUT DIAGRAMS – ROAD MARKING

Temporary Traffic Management Layout Diagrams

For

ROAD MARKING

LAYOUT INDEX

Level 1 Roads – Urban and Low Speed Roads

KEY
Level 1 Roads - Urban and Low Speed Roads *(incl. Single C/W's, Multi-Lane Streets & Urban Dual C/W's)*
Level 2 Roads - Rural Single Carriageway Roads
Level 3 Roads - Dual Carriageways and Motorways

						Semi Static Operation (SSO)	Static
		WORKS AREA / OPERATION				LAYOUT REFERENCE	
Level 1(iii) & Level 1(iv) Roads	Urban Single Carriageway	Longitudinal Markings and Screed Markings	Stop/Go on Foot - Slow Moving Works	No Hard Shoulder		RM101	-
		Longitudinal Markings	Stop/Go on Quad - Fast Moving Works	No Hard Shoulder		RM102	-
			Stop/Go on Quad and Convoy - Fast Moving Works	Narrow Road		RM103	-
		Longitudinal Markings and Screed Markings	Stop/Go on Foot and Convoy - Slow Moving Works	Narrow Road		RM104	-
	Urban Gateway	Longitudinal Markings and Screed Markings	Stop/Go on Foot - Slow Moving Works	Urban Gateway		RM105	-
		Longitudinal Markings	Stop/Go on Quad - Fast Moving Works	Urban Gateway		RM106	-
		Edge Lines (Stud Fitting Type 1)	Stop/Go on Foot - Slow Moving Works	Urban Gateway		RM107	-
			Stop/Go on Quad - Fast Moving Works	Urban Gateway		RM108	-
	Urban Single Carriageway	Stop Line at T-Junction	All Stop	Urban Minor Road, Side Road Traffic Flow < 15 veh/3min		RM109	-
			Stop/Go on Foot	Urban Major Road, Side Road Traffic Flow > 15 veh/3min		-	RM110
			All Stop	Urban Major Road, Side Road Traffic Flow < 15 veh/3min		-	RM111
		Screed Applied Markings	2-way Traffic Maintained (Working From Hard Shoulder)	With Hard Shoulder		-	RM112
			Stop/Go (Working From Running Lane)	No Hard Shoulder		-	RM113
			Stop/Go (Hatching on Bend)	No Hard Shoulder - On a Bend		-	RM114
			Stop/Go (Working From Running Lane)	With Cycle Track - Cycle Track Markings		-	RM115
			Stop/Go (Working From Running Lane)	With Cycle Track - Mainline Markings		-	RM116
			Priority (Working From Running Lane)	No Hard Shoulder		-	RM117
			2-way Traffic Maintained	No Hard Shoulder - Ghost/Central Island		-	RM118
			All Stop	Urban Signalised Junction		-	RM119

KEY
Level 1 Roads - Urban and Low Speed Roads *(incl. Single C/W's, Multi-Lane Streets & Urban Dual C/W's)*
Level 2 Roads - Rural Single Carriageway Roads
Level 3 Roads - Dual Carriageways and Motorways

			WORKS AREA / OPERATION		LAYOUT REFERENCE	
					Semi Static Operation (SSO)	Static
Level 1(iii) & Level 1(iv) Roads	Urban Single Carriageway	Roundabout Markings	All Stop (All Works Areas)	Roundabout	-	RM120
			Traffic Flow Maintained (Left Entry Lane)	Roundabout	-	RM121
			Traffic Flow Maintained (Right Entry Lane)	Roundabout	-	RM122
			All Stop (All Works Areas)	Urban Mini Roundabout	-	RM123
	Urban Multi-Lane Street	Longitudinal Markings and Screed Markings	Lane 1 Closure (Centre Lines)	Two-Way 3 Lane	RM124	-
			Lane 2 Closure (Median Line)	Two-Way 3 Lane	RM125	-
		Screed Applied Markings	Lane 1 Closure	Two-Way 3 Lane	-	RM126
			Lane 2 Closure	Two-Way 3 Lane	-	RM127
			Closure of Opposing Lane	Two-Way 3 Lane	-	RM128
			Lane 1 Closure	One-Way 2 Lane	-	RM129
			Lane 2 Closure	One-Way 2 Lane	-	RM130
	Urban Dual Carriageway	Longitudinal Markings and Screed Markings	Lane 1 Closure (Edge Line)	Two-Lane	RM131	-
			Lane 1 Closure (Centre Line)	Two-Lane	RM132	-
			Lane 2 Closure (Median Line)	Two-Lane	RM133	-
		Screed Applied Markings	Lane 1 Closure	Two-Lane	-	RM134
			Lane 2 Closure	Two-Lane	-	RM135
			Lane 1 Closure	Three-Lane	-	RM136
			Lane 1 & 2 Closure	Three-Lane	-	RM137
			Lane 3 Closure	Three-Lane	-	RM138

Level 2 Roads – Rural Single Carriageway Roads

KEY
Level 1 Roads - Urban and Low Speed Roads *(incl. Single C/W's, Multi-Lane Streets & Urban Dual C/W's)*
Level 2 Roads - Rural Single Carriageway Roads
Level 3 Roads - Dual Carriageways and Motorways

		WORKS AREA / OPERATION			LAYOUT REFERENCE	
					Semi Static Operation (SSO)	Static
Level 2(i) & Level 2(ii) Roads	Rural Single Carriageway	Stud Fitting/Removal and Screed Markings	Stop/Go on Foot - Slow Moving Works	No Hard Shoulder	RM201	-
		Longitudinal Markings and Stud Replacements	Stop/Go on Quad - Fast Moving Works	No Hard Shoulder	RM202	-
			Stop/Go on Quad - Fast Moving Works	Around a Bend	RM202a	-
			Stop/Go on Quad and Convoy - Fast Moving Works	Narrow Road	RM203	-
		Stud Fitting/Removal and Screed Markings	Stop/Go on Foot and Convoy - Slow Moving Works	Narrow Road	RM204	-
		Stud Fitting/Removal and Longitudinal Markings	Traffic Flow Maintained (Working From Running Lane)	Wide with Hard Shoulder	RM205	
		Edge Lines (Stud Fitting Type 1)	Stop/Go on Foot - Slow Moving Works	No Hard Shoulder	RM206	-
			Stop/Go on Quad - Fast Moving Works	No Hard Shoulder	RM207	-
		Stud Fitting/Removal, Longitudinal Markings	2-way Traffic Maintained (Working From Hard Shoulder)	With Hard Shoulder	RM208	-
		Stop Line at T-Junction	All Stop	Minor Road, Side Road Traffic Flow < 15 veh/3min	RM209	-
			Stop/Go	Minor Road, Side Road Traffic Flow < 15 veh/3min	RM210	-
		Stud Fitting/Removal, Longitudinal Markings	2-way Traffic Maintained (Lane 1 Closure)	Climbing Lane	-	RM211
			2-way Traffic Maintained (Lane 2 Closure)	Climbing Lane	-	RM212
			2-way Traffic Maintained (Closure of Opposing Lane)	Climbing Lane	-	RM213
			Stop/Go on Foot (Nearside Passing Bay)	With Hard Shoulder	-	RM214
		Stop Line at T-Junction	Stop/Go on Mainline - All Stop on Minor Road	Minor Road, Side Road Traffic Flow < 15 veh/3min	-	RM215
			Stop/Go	Major Road, Side Road Traffic Flow > 15 veh/3min	-	RM216
			All Stop on Side Road Only	Major Road, Side Road Traffic Flow < 15 veh/3min	-	RM217

KEY
Level 1 Roads - Urban and Low Speed Roads *(incl. Single C/W's, Multi-Lane Streets & Urban Dual C/W's)*
Level 2 Roads - Rural Single Carriageway Roads
Level 3 Roads - Dual Carriageways and Motorways

		WORKS AREA / OPERATION			Semi Static Operation (SSO)	Static
					LAYOUT REFERENCE	
Level 2(i) & Level 2(ii) Roads	Rural Single Carriageway	Screed Applied Markings	2-way Traffic Maintained (Working From Hard Shoulder)	With Hard Shoulder	-	RM218
			Stop/Go (Working From Running Lane)	No Hard Shoulder	-	RM219
		Screed Applied Markings	Hatching on Bend (Stop/Go)	No Hard Shoulder - On a Bend	-	RM220
			Priority (Working From Running Lane)	No Hard Shoulder	-	RM221
			2-way Traffic Maintained	With Hard Shoulder - Ghost / Central Island	-	RM222
		Stud Fitting/Removal, Longitudinal Markings Ghost/Central Island	3-way Stop/Go	With Hard Shoulder - Ghost / Central Island	-	RM223
		Roundabout Markings	All Works Areas (All Stop)	Roundabout	-	RM224
			Left Entry Lane (Traffic Flow Maintained)	Roundabout	-	RM225
			Right Entry Lane (Traffic Flow Maintained)	Roundabout	-	RM226

Level 3 Roads – Dual Carriageways and Motorways

KEY
Level 1 Roads - Urban and Low Speed Roads *(incl. Single C/W's, Multi-Lane Streets & Urban Dual C/W's)*
Level 2 Roads - Rural Single Carriageway Roads
Level 3 Roads - Dual Carriageways and Motorways

		WORKS AREA / OPERATION			LAYOUT REFERENCE	
					Mobile	Static
Level 3(i) & Level 3(ii) Roads	Dual Carriageway and Motorway	Chainage and Emergency Telephone Markings	Two-Lane (Hard Shoulder Closure)	Two-Lane - With Hard Shoulder	RM301	-
		Stud Fitting/Removal and Longitudinal Markings	Lane 1 Mobile Closure (Hard Shoulder Line)	Two-Lane - With Hard Shoulder	RM302	-
			Lane 2 Mobile Closure (Median Line)	Two-Lane - With Hard Shoulder	RM303	-
			Lane 1 Mobile Closure (Hard Shoulder Line)	Three-Lane - With Hard Shoulder	RM304	-
			Lane 1 & 2 Mobile Closure (Lane 1/2 - Lane Line)	Three-Lane - With Hard Shoulder	RM305	-
			Lane 2 & 3 Mobile Closure (Lane 2/3 - Lane Line)	Three-Lane - With Hard Shoulder	RM306	-
			Lane 3 Mobile Closure (Median Line)	Three-Lane - With Hard Shoulder	RM307	-
			Lane 1 Mobile Closure (Merge Lane Line)	Two & Three-Lane - With Hard Shoulder	RM308	-
		Screed Applied Markings	Mainline Carriageway (Hard shoulder Closure)	Two -Lane - With Hard Shoulder	-	RM309
			Mainline Carriageway (Lane 1 Closure)	Two-Lane - With Hard Shoulder	-	RM310
			Mainline Carriageway (Lane 2 Closure)	Two-Lane - With Hard Shoulder	-	RM311
		Screed Applied Markings, Stud Fitting/Removal and Longitudinal Markings	Mainline Carriageway - Hard Shoulder Running (Lane 1/2 Line)	Two-Lane - With Hard Shoulder	-	RM312
		Screed Applied Markings	Mainline Carriageway (Lane 1 Closure)	Three-Lane - With Hard Shoulder	-	RM313
			Mainline Carriageway (Lane 1 & 2 Closure)	Three-Lane - With Hard Shoulder	-	RM314
			Mainline Carriageway (Lane 3 Closure)	Three-Lane - With Hard Shoulder	-	RM315
		Screed Applied Markings and Longitudinal Markings	Off-Ramp (Lane 1 and Slip Closure)	Two-Lane - With Hard Shoulder	-	RM316
			Off-Ramp (Slip Closure)	Two-Lane - With Hard Shoulder	-	RM317
			Off-Ramp (Lane 1 Closure - Works After Slip Lane)	Two-Lane - With Hard Shoulder	-	RM318

KEY
Level 1 Roads - Urban and Low Speed Roads *(incl. Single C/W's, Multi-Lane Streets & Urban Dual C/W's)*
Level 2 Roads - Rural Single Carriageway Roads
Level 3 Roads - Dual Carriageways and Motorways

		WORKS AREA / OPERATION			Mobile	Static
					LAYOUT REFERENCE	
Level 3(i) & Level 3(ii) Roads	Dual Carriageway and Motorway	Screed Applied Markings and Longitudinal Markings	Off-Ramp - Lane 1 Closure - Edge of Carriageway Line and Bifurcation Arrow	Two-Lane - With Hard Shoulder	-	RM319
			Off-Ramp - Lane 1 Closure - Chevron Markings For Diverge	Two-Lane - With Hard Shoulder	-	RM320
		Screed Applied Markings, Stud Fitting/Removal and Longitudinal Markings	Mainline Carriageway at an Off-Ramp (Hard Shoulder Running)	Two-Lane - With Hard Shoulder	-	RM321
		Screed Applied Markings and Longitudinal Markings	Off-Ramp (Lane 1 and Slip Closure)	Two-Lane - With Hard Shoulder	-	RM322
		Screed Applied Markings	Mainline Carriageway - Chevron Hatching For Merge	Two-Lane - With Hard Shoulder	-	RM323
		Screed Applied Markings and Longitudinal Markings	On-Ramp - Lane 1 Closure - End of Merge Lane and Hard Shoulder Line	Two-Lane - With Hard Shoulder	-	RM324
			On-Ramp (Lane 1 Closure - Works After Slip Lane)	Two-Lane - With Hard Shoulder	-	RM325
		Screed Applied Markings, Stud Fitting/Removal and Longitudinal Markings	Off-Ramp - Mainline Closure - Up and Over	Two-Lane - With Hard Shoulder	-	RM326
		Screed Applied Markings, Stud Fitting/Removal and Longitudinal Markings	On-Ramp - Mainline Closure - Up and Over	Two-Lane - With Hard Shoulder	-	RM327
		Screed Applied Markings, Stud Fitting/Removal and Longitudinal Markings	Mainline Carriageway at on-Ramp - Hard Shoulder Running (Lane 1/2 Line)	Two-Lane - With Hard Shoulder	-	RM328
		Screed Applied Markings and Longitudinal Markings	Compact Junction	Two-Lane - With Hard Shoulder	-	RM329
		Screed Applied Markings	Lane 1 Closure (Edge Line)	Type 3 Dual Carriageway	-	RM330
			Lane 2 Closure (Median Line)	Type 3 Dual Carriageway	-	RM331
		Roundabout Markings	Entry Lane (Lane 1 Closure)	Dual C/W and Motorway	-	RM332
			Entry Lane (Lane 2 Closure)	Dual C/W and Motorway	-	RM333

Temporary Traffic Management Layout Diagrams

For

ROAD MARKING
LEVEL 1(iii) & 1(iv) ROADS

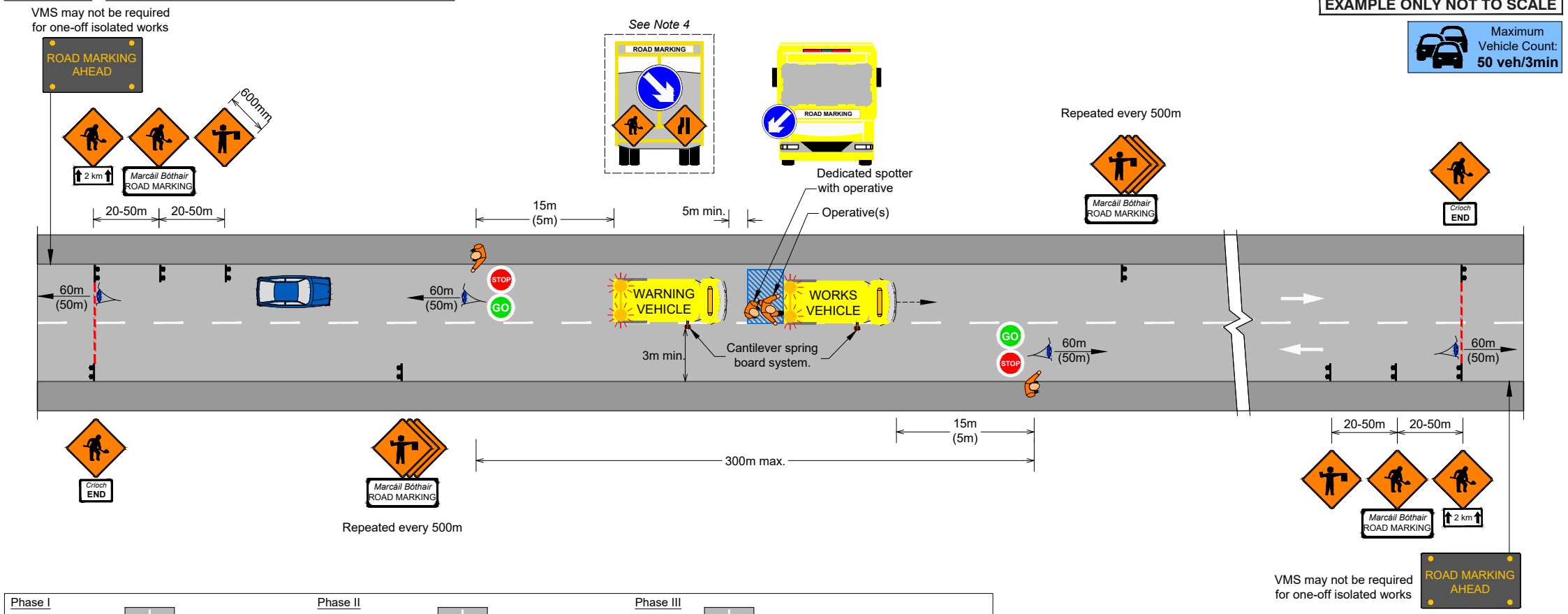
Temporary Traffic Management Guidance Handbook

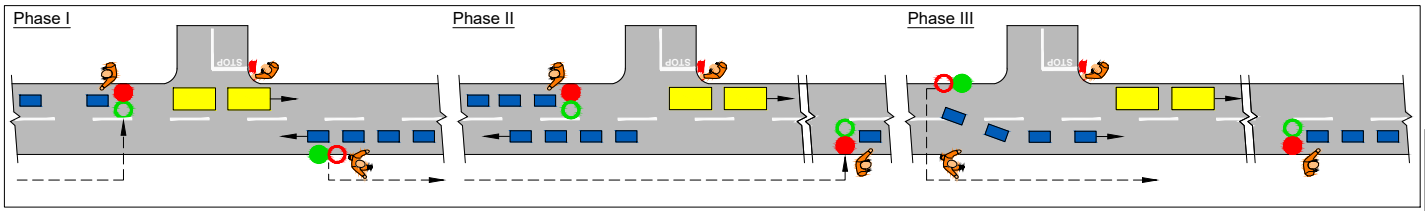
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

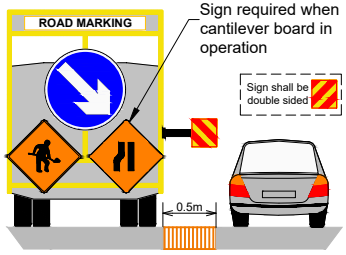
EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **50 veh/3min**





Lateral Safety Zone Cantilever Board

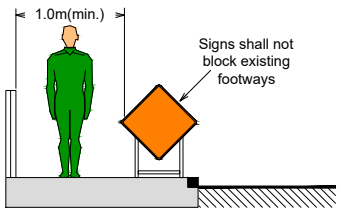


Notes

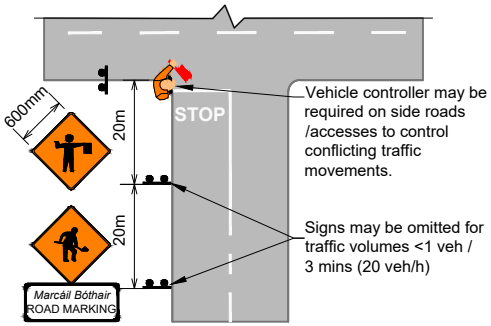
1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Sign Position Requirements

(If Positioned on Footway)



Side Road Within Stop/Go Setup



Legend

- Cones (0.75m min)
- Spotter
- Operative
- Visibility — 60m (50m) — relates to 60 km/h (relates to 50 km/h)
- Distance — 15m (5m) — relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Stop/Go & Operative
- Works Area
- Works Zone

Longitudinal Markings and Screed Markings

Centre Lines (Stop/Go on Foot - Slow Moving Works)

Continuously Moving (SSO)

Urban Single C/W

No Hard Shoulder

50 km/h OR 60 km/h

RM101

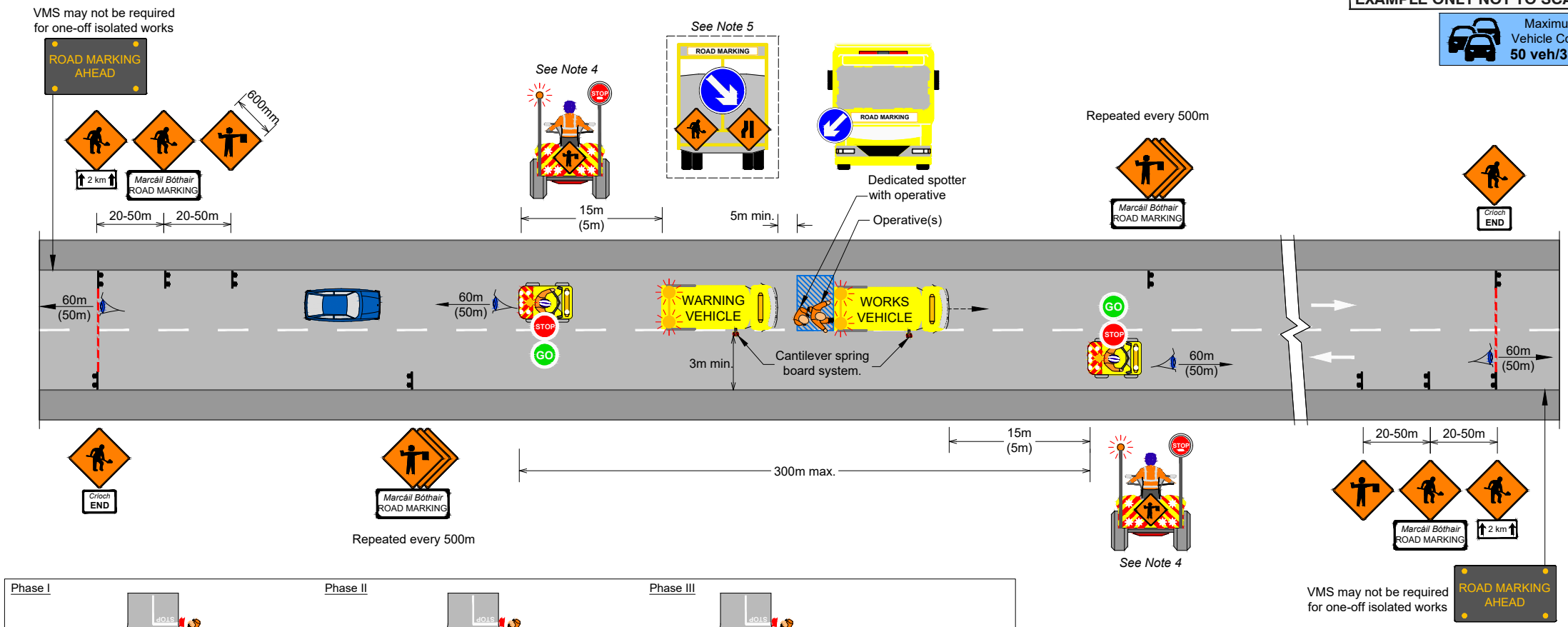
Temporary Traffic Management Guidance Handbook

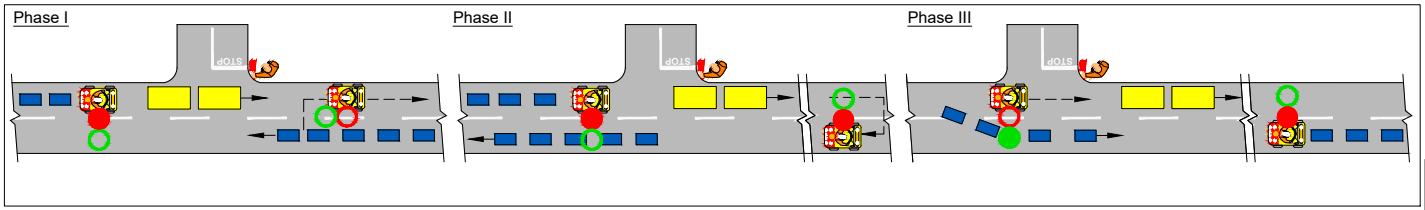
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

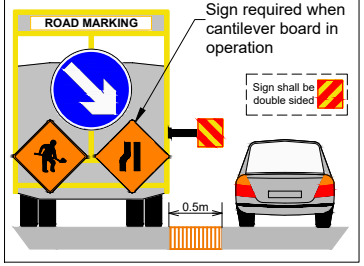
EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **50 veh/3min**





Lateral Safety Zone Cantilever Board

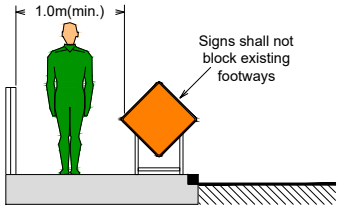


Notes

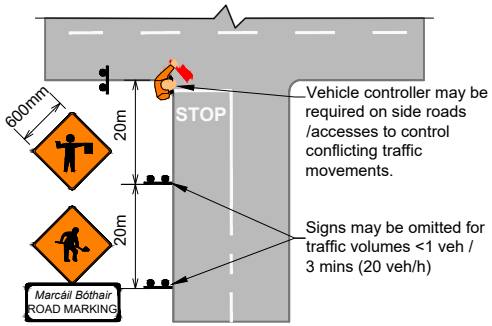
1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. Operatives may dismount from the quad vehicle to face oncoming vehicles when carrying out Stop and Go control.
5. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Sign Position Requirements

(If Positioned on Footway)



Side Road Within Stop/Go Setup



Legend

- Cones (0.75m min)
- Spotter
- Operative
- Visibility — 60m (50m) — relates to 60 km/h (relates to 50 km/h)
- Distance — 15m (5m) — relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Stop/Go on Quad
- Works Area
- Works Zone

Longitudinal Markings

Centre Lines (Stop/Go on Quad - Fast Moving Works)

Continuously Moving (SSO)

Urban Single C/W

No Hard Shoulder

50 km/h OR 60 km/h

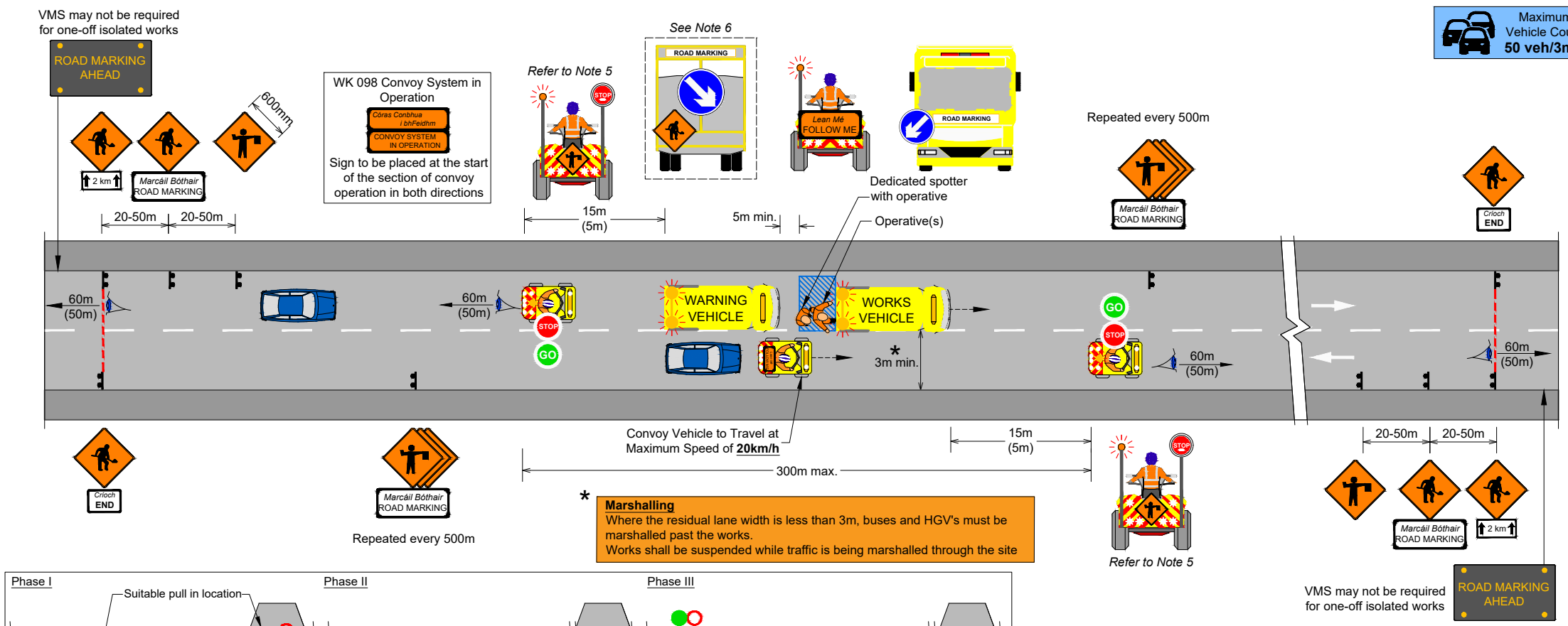
RM102

Road Marking

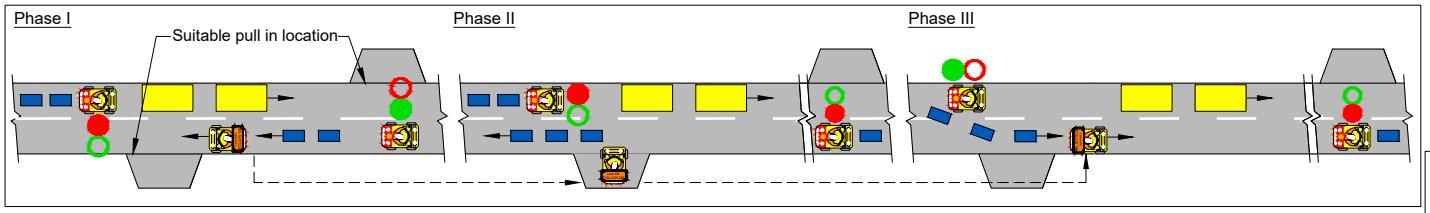
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **50 veh/3min**



* **Marshalling**
Where the residual lane width is less than 3m, buses and HGV's must be marshalled past the works.
Works shall be suspended while traffic is being marshalled through the site

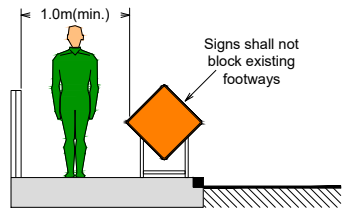


Notes

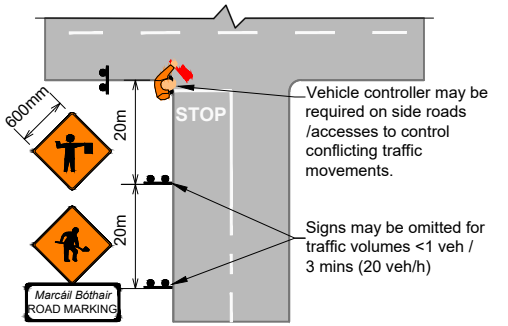
1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. Traffic must be controlled/stopped by the Stop/Go controls prior to traffic being moved through the works under convoy.
5. Operatives may dismount from the quad vehicle to face oncoming vehicles when carrying out Stop and Go control.
6. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Sign Position Requirements

(If Positioned on Footway)



Side Road Within Stop/Go Setup



Legend

- Cones (0.75m min)
- Spotter
- Operative
- Visibility (60m (50m)) relates to 60 km/h (relates to 50 km/h)
- Distance (15m (5m)) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Stop/Go on Quad
- Works Area
- Works Zone

Longitudinal Markings
Centre Lines (Stop/Go on Quad & Convoy - Fast Moving Works)

Continuously Moving (SSO)

Urban Single C/W
Narrow Road

50 km/h OR 60 km/h

RM103

Temporary Traffic Management Guidance Handbook

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **50 veh/3min**

VMS may not be required for one-off isolated works

ROAD MARKING AHEAD

600mm

2 km

Marcáil Bóthair ROAD MARKING

WK 098 Convoy System in Operation

Córas Conbhua i bhFeidhm
CONVOY SYSTEM IN OPERATION

Sign to be placed at the start of the section of convoy operation in both directions

See Note 5

ROAD MARKING

Lean Mé FOLLOW ME

ROAD MARKING

Repeated every 500m

Marcáil Bóthair ROAD MARKING

Críoch END

Dedicated spotter with operative

Operative(s)

20-50m | 20-50m

15m (5m)

5m min.

60m (50m)

STOP

GO

WARNING VEHICLE

WORKS VEHICLE

* 3m min.

Convoy Vehicle to Travel at Maximum Speed of **20km/h**

15m (5m)

300m max.

Críoch END

Marcáil Bóthair ROAD MARKING

Repeated every 500m

* **Marshalling**
Where the residual lane width is less than 3m, buses and HGV's must be marshalled past the works.
Works shall be suspended while traffic is being marshalled through the site

20-50m | 20-50m

Marcáil Bóthair ROAD MARKING

2 km

VMS may not be required for one-off isolated works

ROAD MARKING AHEAD

Phase I — Suitable pull in location

Phase II

Phase III

Sign Position Requirements

(If Positioned on Footway)

1.0m(min.)

Signs shall not block existing footways

Side Road Within Stop/Go Setup

600mm

20m

20m

STOP

Marcáil Bóthair ROAD MARKING

Vehicle controller may be required on side roads /accesses to control conflicting traffic movements.

Signs may be omitted for traffic volumes <1 veh / 3 mins (20 veh/h)

Legend

- Cones (0.75m min)
- Spotter
- Operative
- Visibility — 60m (50m) — relates to 60 km/h (relates to 50 km/h)
- Distance — 15m (5m) — relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Stop/Go & Operative
- Convoy Quad
- Works Area
- Works Zone

Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. Traffic must be controlled/stopped by the Stop/Go controls prior to the quad guiding the traffic through the works.
5. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Longitudinal Markings and Screed Markings

Centre Lines (Stop/Go on Foot & Convoy - Slow Moving Works)

Continuously Moving (SSO)

Urban Single C/W

Narrow Road

50 km/h OR 60 km/h

RM104

Temporary Traffic Management Guidance Handbook

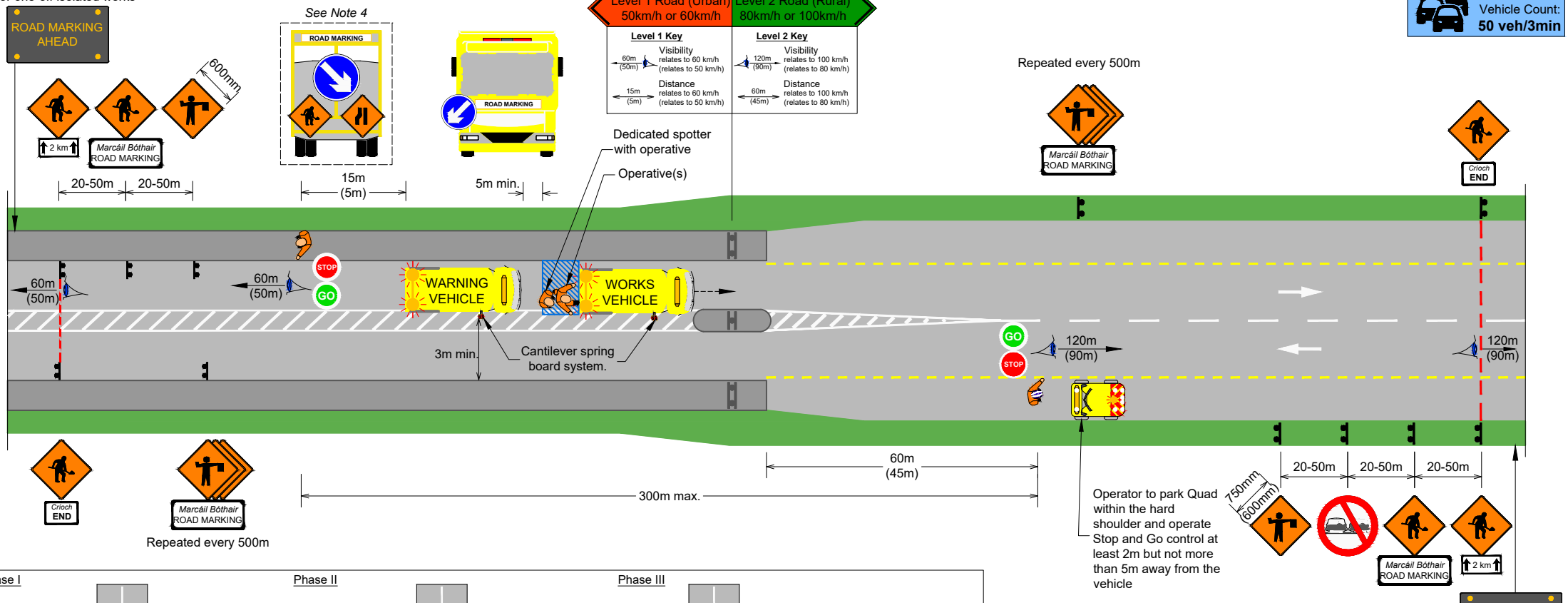
Road Marking

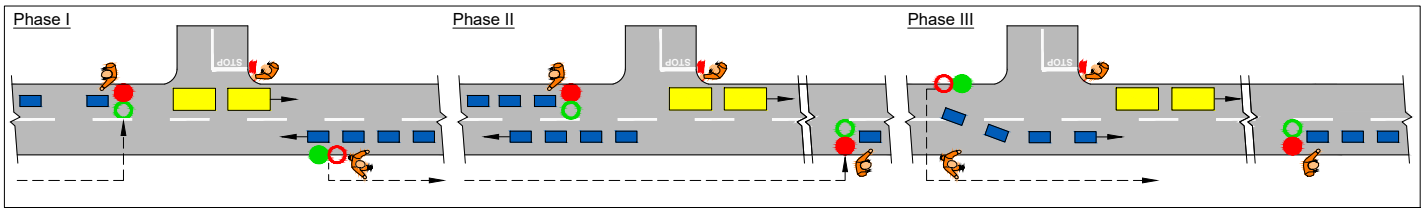
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

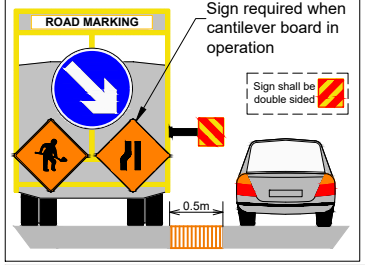
Maximum Vehicle Count: **50 veh/3min**

VMS may not be required for one-off isolated works





Lateral Safety Zone Cantilever Board

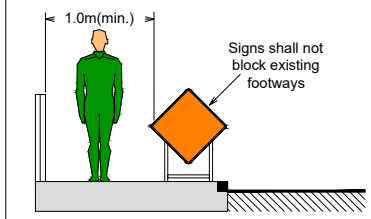


Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved. Marshalling system may also be used where sight lines are poor.
4. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Sign Position Requirements

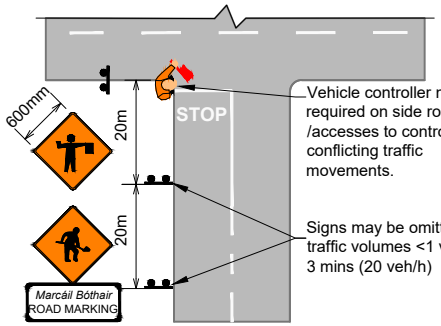
(If Positioned on Footway)



Legend

- Cones (0.75m min)
- Spotter
- Operative
- Visibility *As Indicated on Plan*
- Distance *As Indicated on Plan*
- Traffic Sign
- Stop/Go & Operative
- Quad
- Works Area
- Works Zone

Side Road Within Stop/Go Setup



Longitudinal Markings and Screed Markings

Centre Lines (Stop/Go on Foot - Slow Moving Works)

Continuously Moving (SSO)

Urban Gateway

As Specified in Plan

RM105

Temporary Traffic Management Guidance Handbook

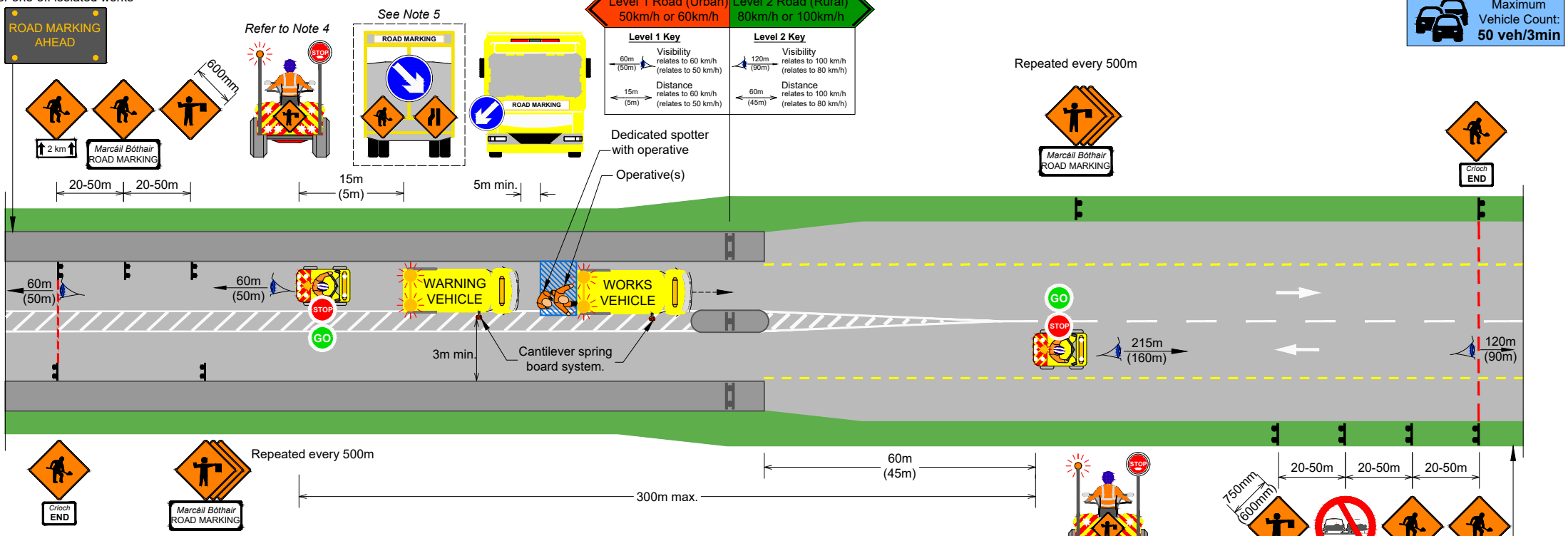
Road Marking

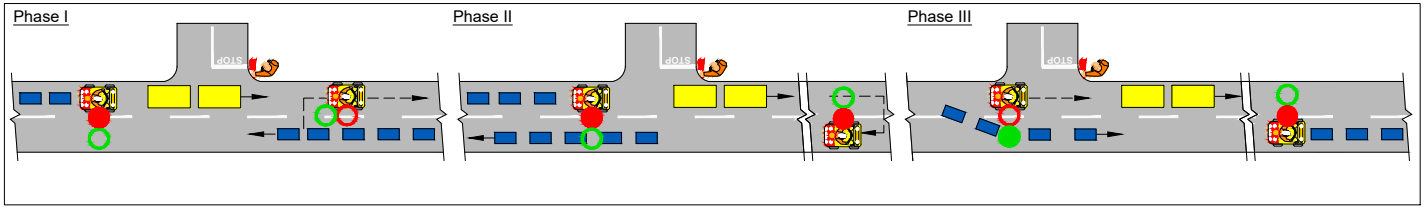
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

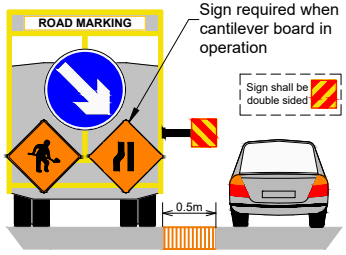
Maximum Vehicle Count: **50 veh/3min**

VMS may not be required for one-off isolated works





Lateral Safety Zone Cantilever Board

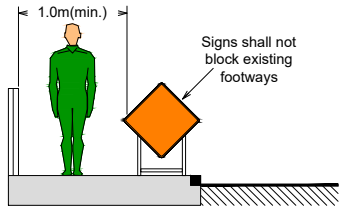


Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved. Marshalling system may also be used where sight lines are poor.
4. Operatives may dismount from the quad vehicle to face oncoming vehicles when carrying out Stop and Go control.
5. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Sign Position Requirements

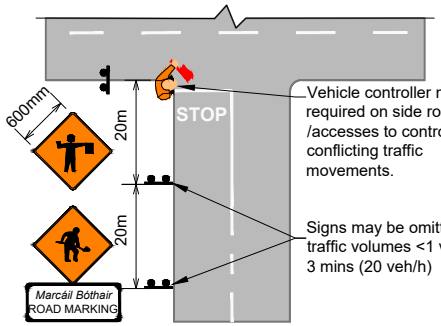
(If Positioned on Footway)



Legend

- Cones (0.75m min)
- Spotter
- Operative
- Visibility *As Indicated on Plan*
- Distance *As Indicated on Plan*
- Traffic Sign
- Stop/Go on Quad
- Works Area
- Works Zone

Side Road Within Stop/Go Setup



Longitudinal Markings

Centre Lines (Stop/Go on Quad - Fast Moving Works)

Continuously Moving (SSO)

Urban Gateway

As Specified in Plan

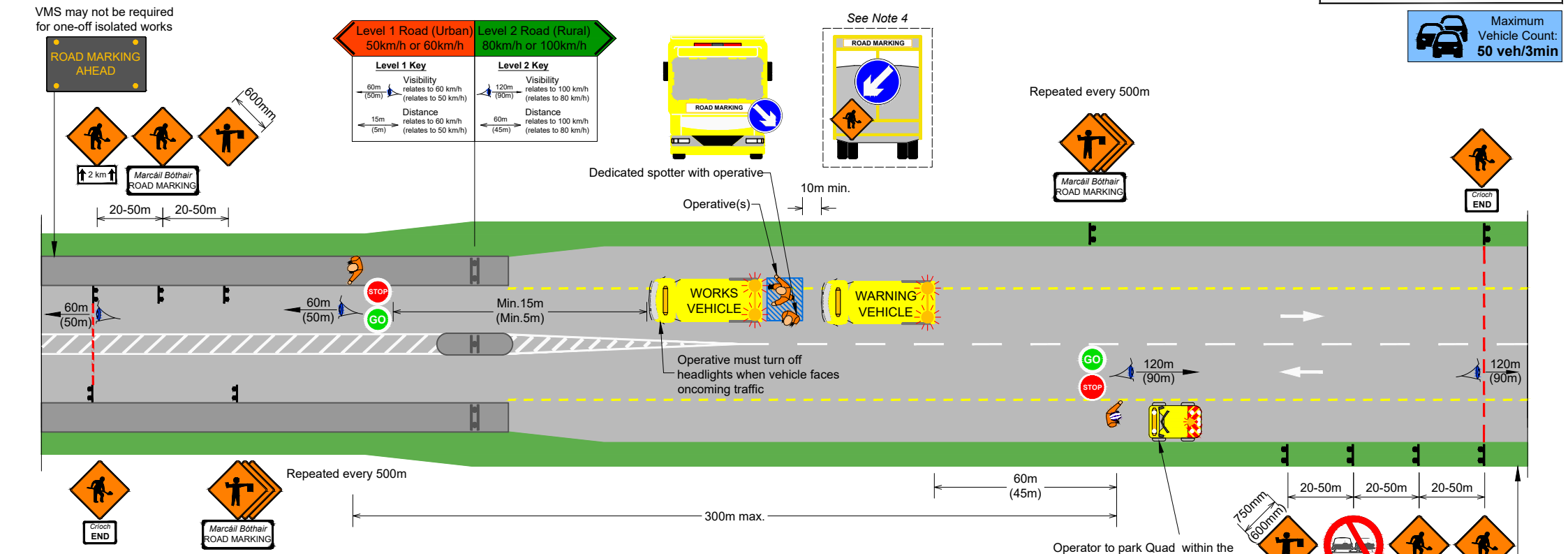
RM106

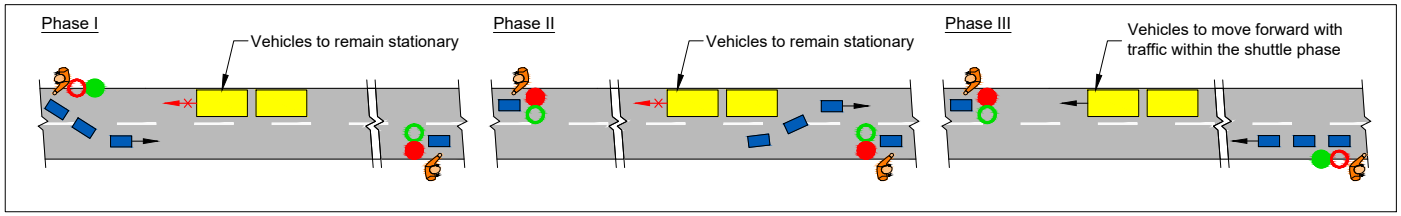
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

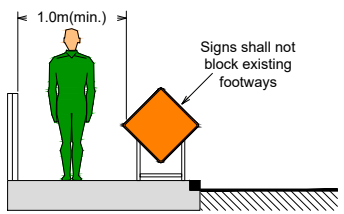
EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **50 veh/3min**





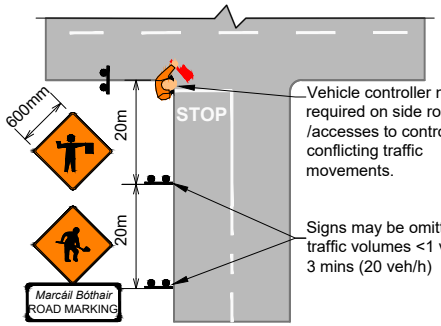
Sign Position Requirements
(If Positioned on Footway)



Legend

- Cones (0.75m min)
- Spotter
- Operative
- Visibility *As Indicated on Plan*
- Distance *As Indicated on Plan*
- Traffic Sign
- Stop/Go & Operative
- Quad
- Works Area
- Works Zone

Side Road Within Stop/Go Setup



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
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3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved. Marshalling system may also be used where sight lines are poor.
4. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Stud Fitting Type 1 (Incl. Short Duration Screed)
Edge Lines (Stop/Go on Foot - Slow Moving Works)

Continuously Moving (SSO)

Urban Gateway

As Specified in Plan

RM107

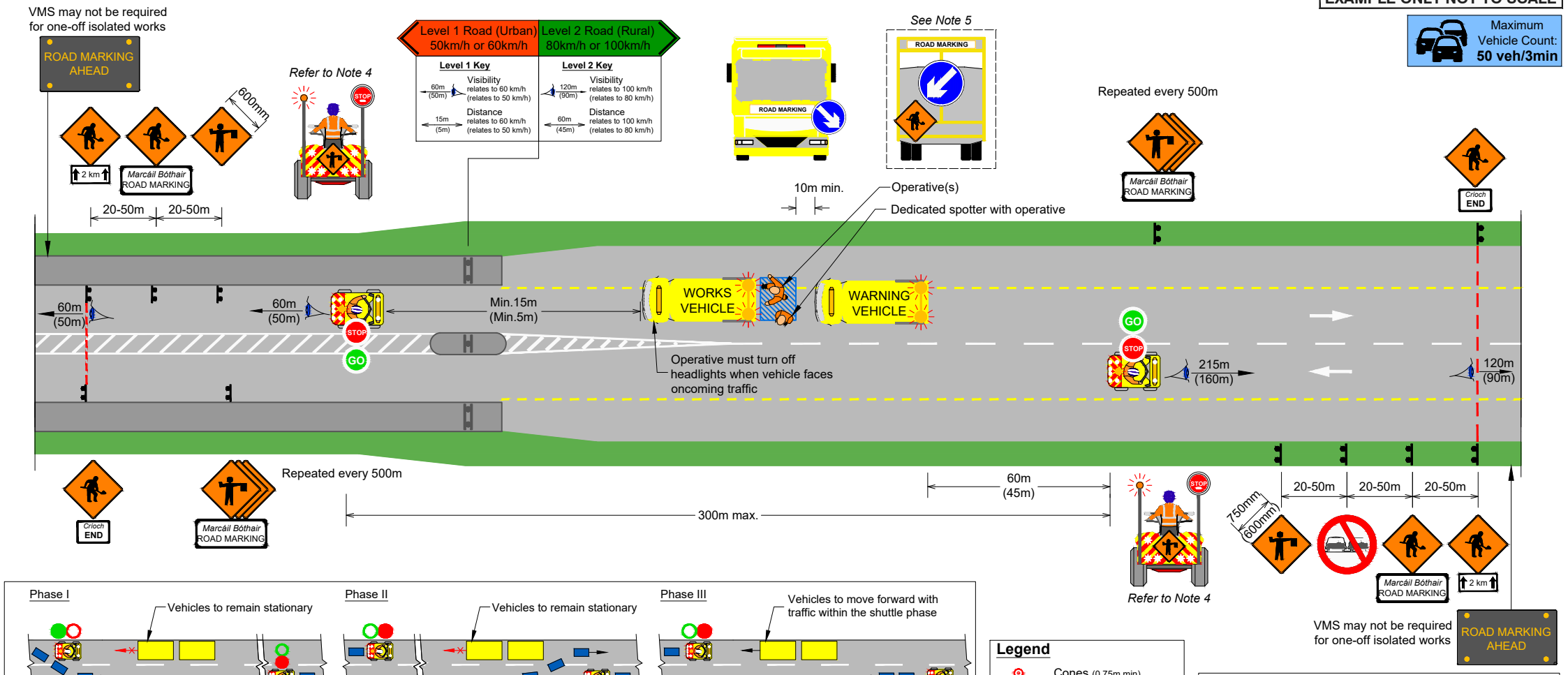
Temporary Traffic Management Guidance Handbook

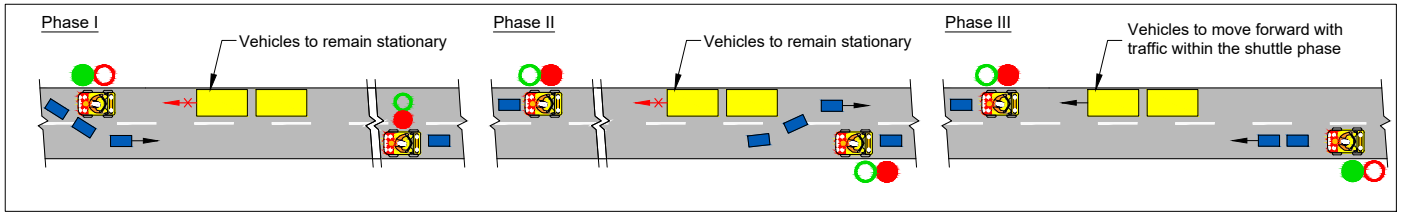
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **50 veh/3min**





Notes

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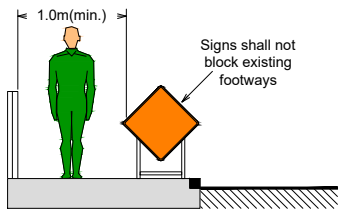
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved. Marshalling system may also be used where sight lines are poor.
4. Operatives may dismount from the quad vehicle to face oncoming vehicles when carrying out Stop and Go control.
5. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Sign Position Requirements

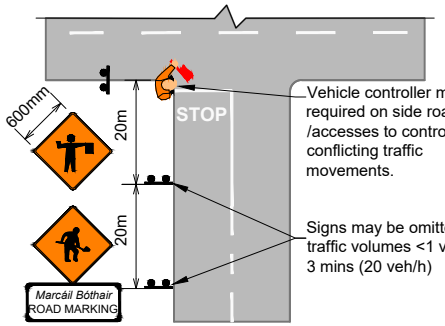
(If Positioned on Footway)



Legend

- Cones (0.75m min)
- Spotter
- Operative
- Visibility *As Indicated on Plan*
- Distance *As Indicated on Plan*
- Traffic Sign
- Stop/Go on Quad
- Works Area
- Works Zone

Side Road Within Stop/Go Setup



Stud Fitting Type 1 (Incl. Short Duration Screed)

Edge Lines (Stop/Go on Quad - Fast Moving Works)

Continuously Moving (SSO)

Urban Gateway

As Specified in Plan

RM108

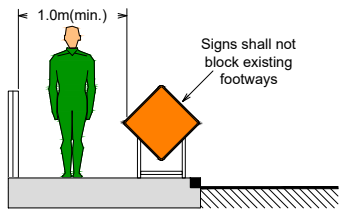
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Sign Position Requirements

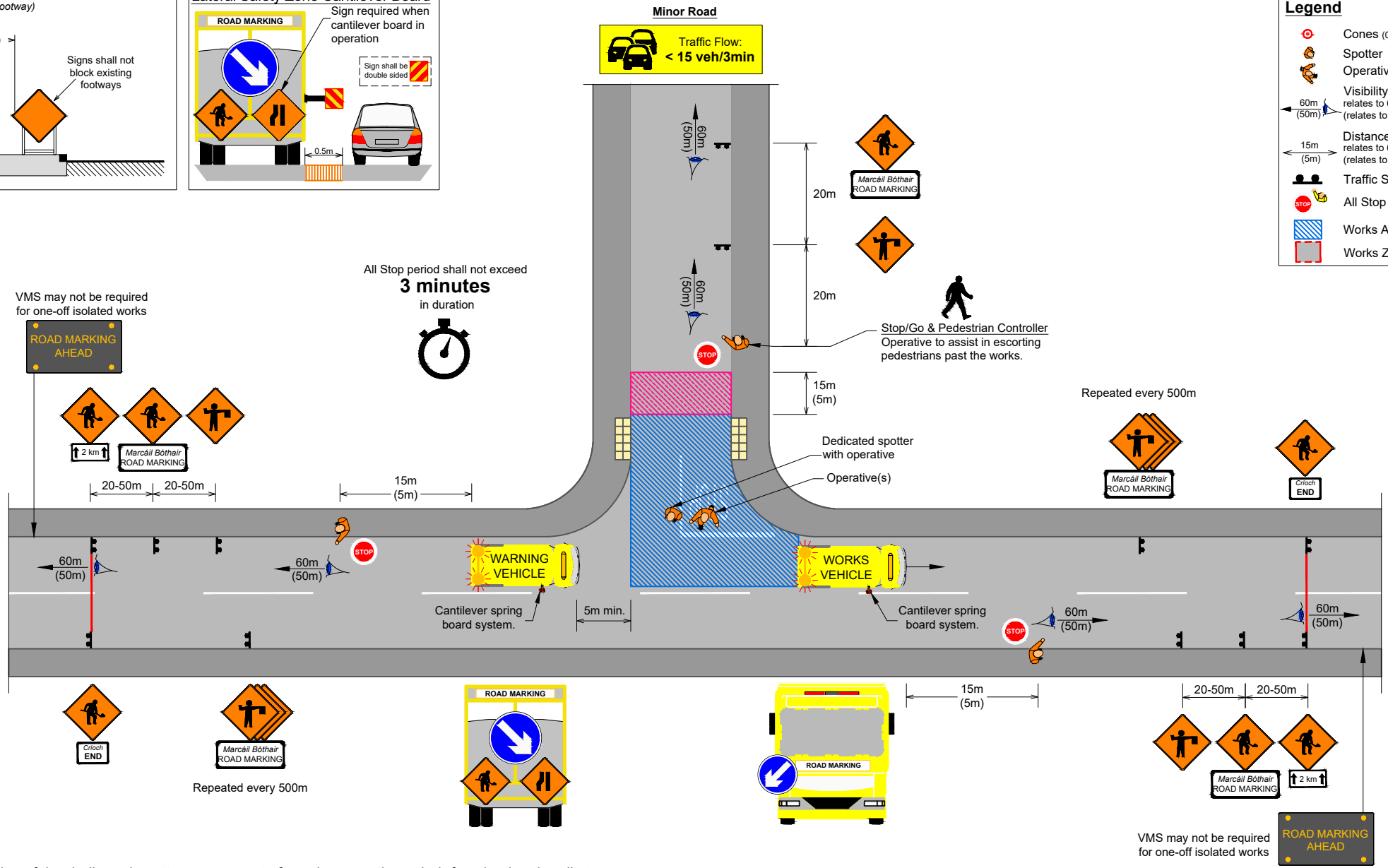
(If Positioned on Footway)



Lateral Safety Zone Cantilever Board

Legend

- Cones (0.75m min)
- Spotter
- Operative
- Visibility (60m (50m)) relates to 60 km/h (relates to 50 km/h)
- Distance (15m (5m)) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- All Stop & Operative
- Works Area
- Works Zone



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) / flagmen may be required depending on the activity.

Screed Applied Markings

Stop Line at Minor Road T-Junction (All Stop)

Continuously Moving (SSO)

Urban Single C/W

50 km/h OR 60 km/h

RM109

Road Marking

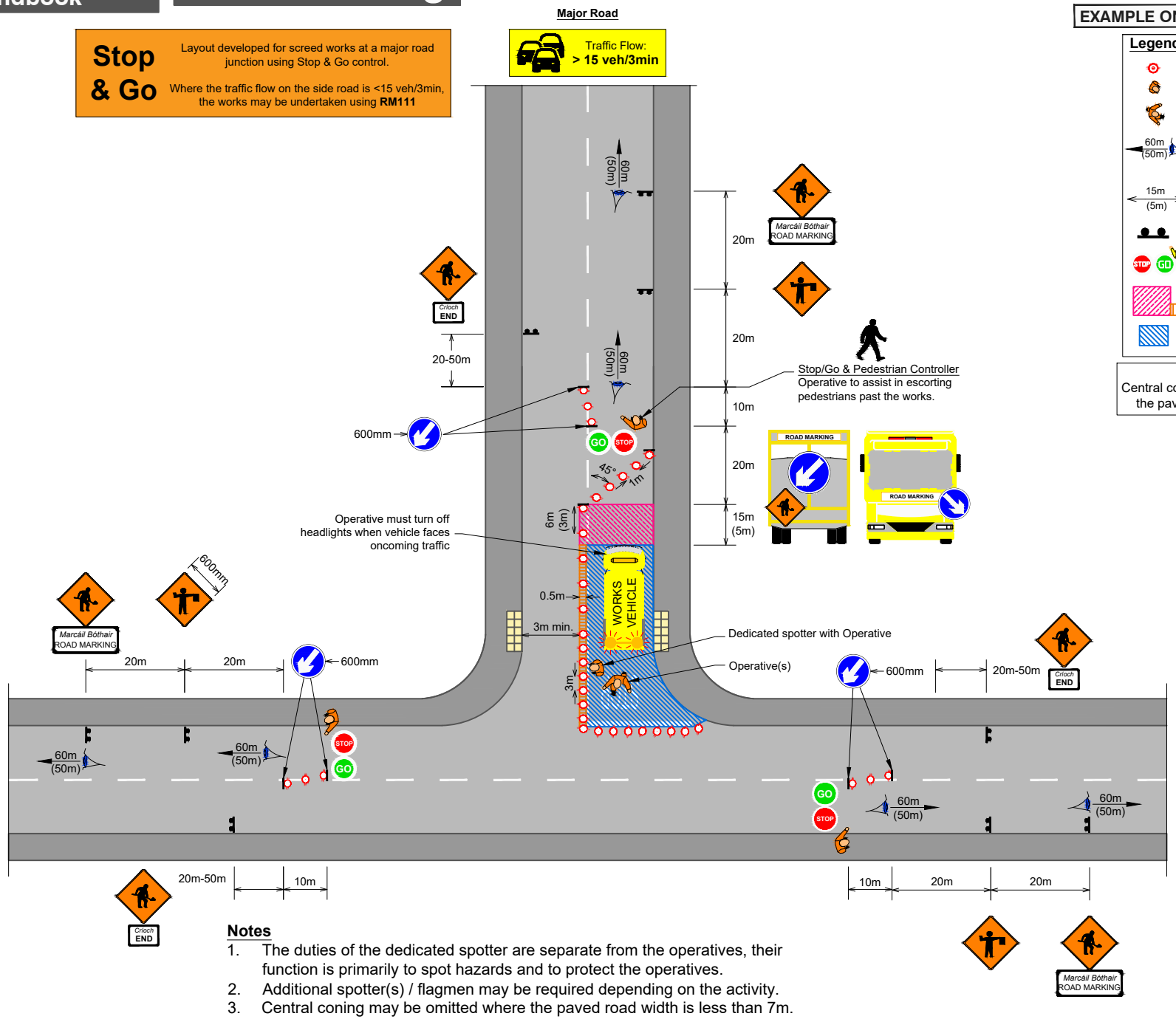
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Stop & Go

Layout developed for screed works at a major road junction using Stop & Go control.

Where the traffic flow on the side road is <15 veh/3min, the works may be undertaken using **RM111**

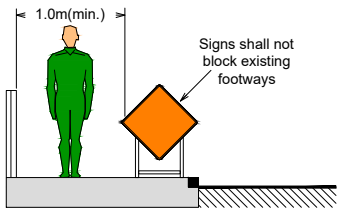


Legend

- Cones (0.75m)
- Spotter
- Operative
- Visibility: 60m (50m) relates to 60 km/h (relates to 50 km/h)
- Distance: 15m (5m) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Stop/Go & Operative
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Central Coning:
Central coning may be omitted when the paved width is less than 7m

Sign Position Requirements
(If Positioned on Footway)



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) / flagmen may be required depending on the activity.
3. Central coning may be omitted where the paved road width is less than 7m.

Screed Applied Markings

Stop Line at T-Junction (Stop/Go on Foot)

Static

Urban Single C/W

50 km/h OR 60 km/h

RM110

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

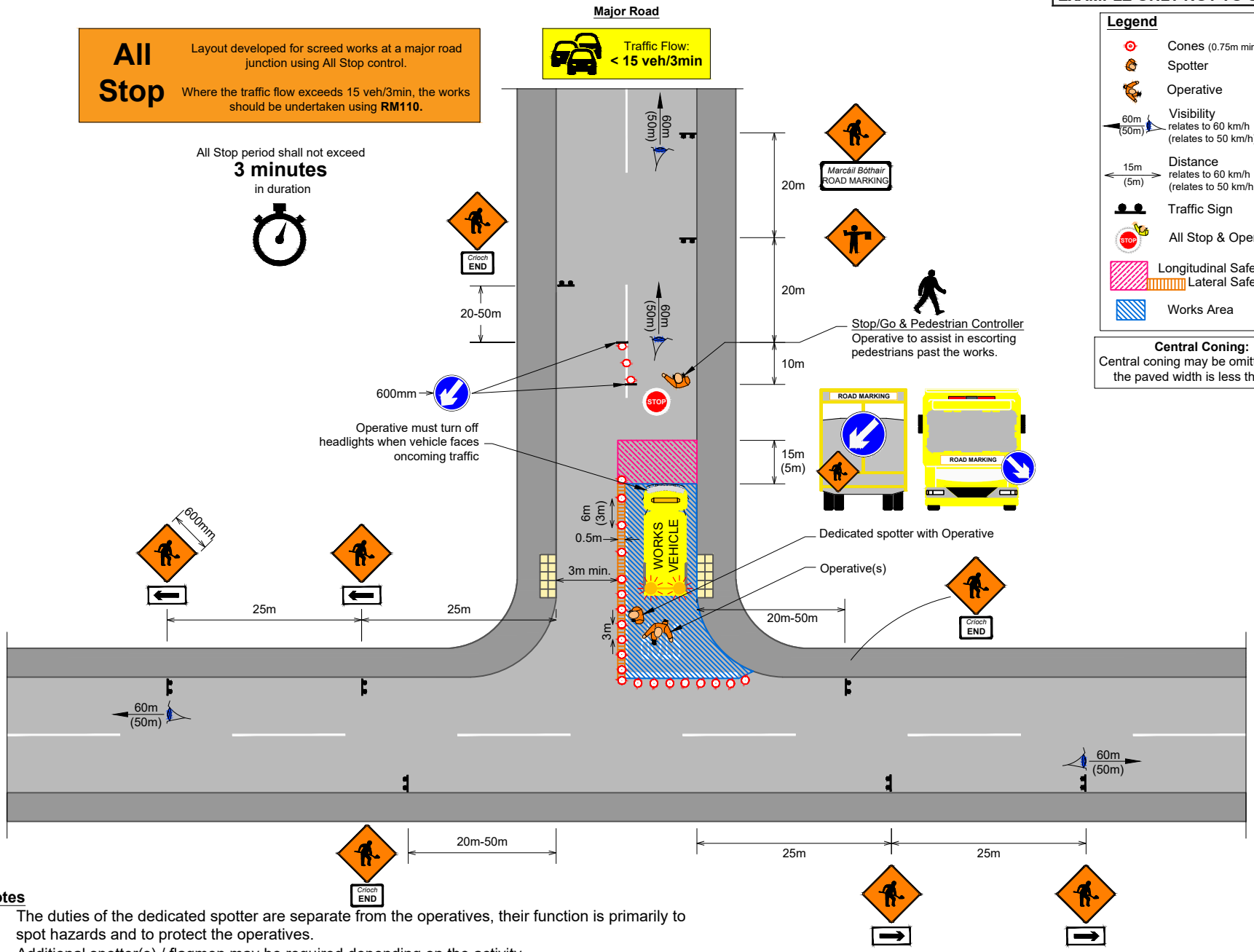
EXAMPLE ONLY NOT TO SCALE

All Stop

Layout developed for screed works at a major road junction using All Stop control.

Where the traffic flow exceeds 15 veh/3min, the works should be undertaken using **RM110.**

All Stop period shall not exceed **3 minutes** in duration

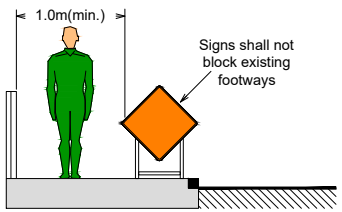


Legend

- Cones (0.75m min)
- Spotter
- Operative
- Visibility 60m (50m) relates to 60 km/h (relates to 50 km/h)
- Distance 15m (5m) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- All Stop & Operative
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Central Coning:
Central coning may be omitted when the paved width is less than 7m

Sign Position Requirements
(If Positioned on Footway)



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) / flagmen may be required depending on the activity.
3. Central coning may be omitted where the paved road width is less than 7m.

Screed Applied Markings

Stop Line at T-Junction (All Stop)

Static

Urban Single C/W

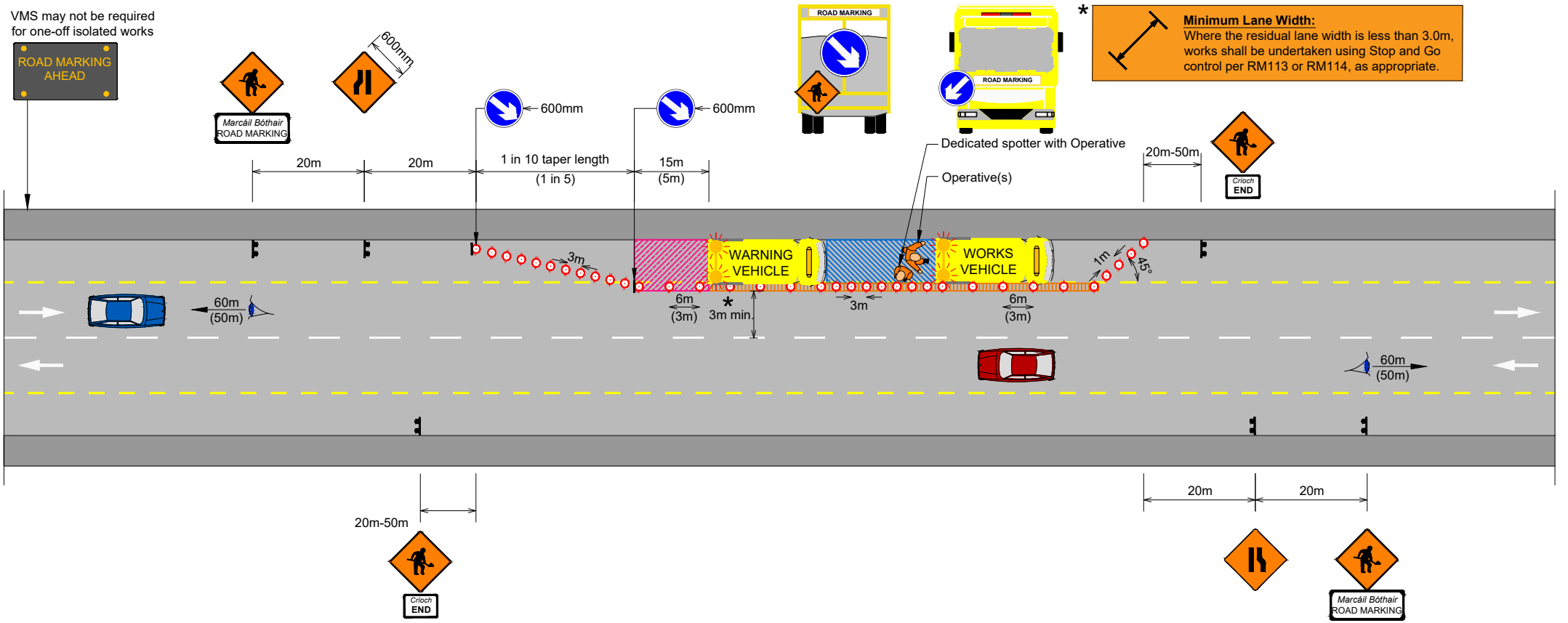
50 km/h OR 60 km/h

RM111

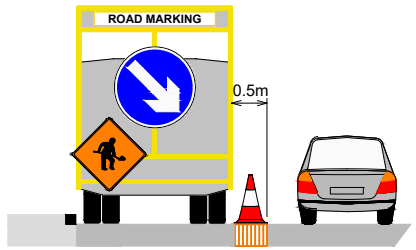
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Lateral Safety Zone

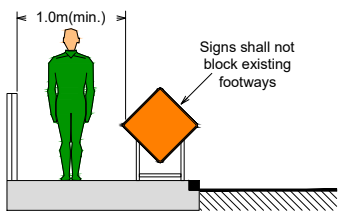


Notes

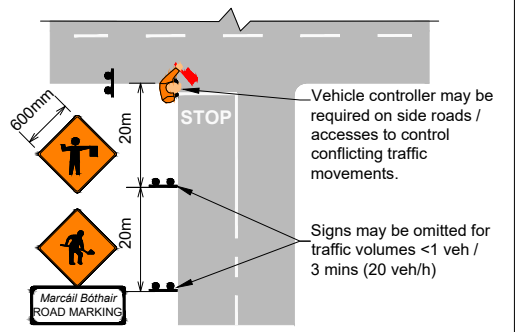
1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. 3m cone spacing required adjacent to works area/operatives.

Sign Position Requirements

(If Positioned on Footway)



Side Road Within Operation



Legend

- Cones (0.75m)
- Spotter
- Operative
- Visibility — 60m (50m) — relates to 60 km/h (relates to 50 km/h)
- Distance — 15m (5m) — relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Screed Applied Markings

Mainline Carriageway (2-Way Traffic Maintained - Working from Hard Shoulder)

Static

Urban Single C/W

With Hard Shoulder

50 km/h OR 60 km/h

RM112

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

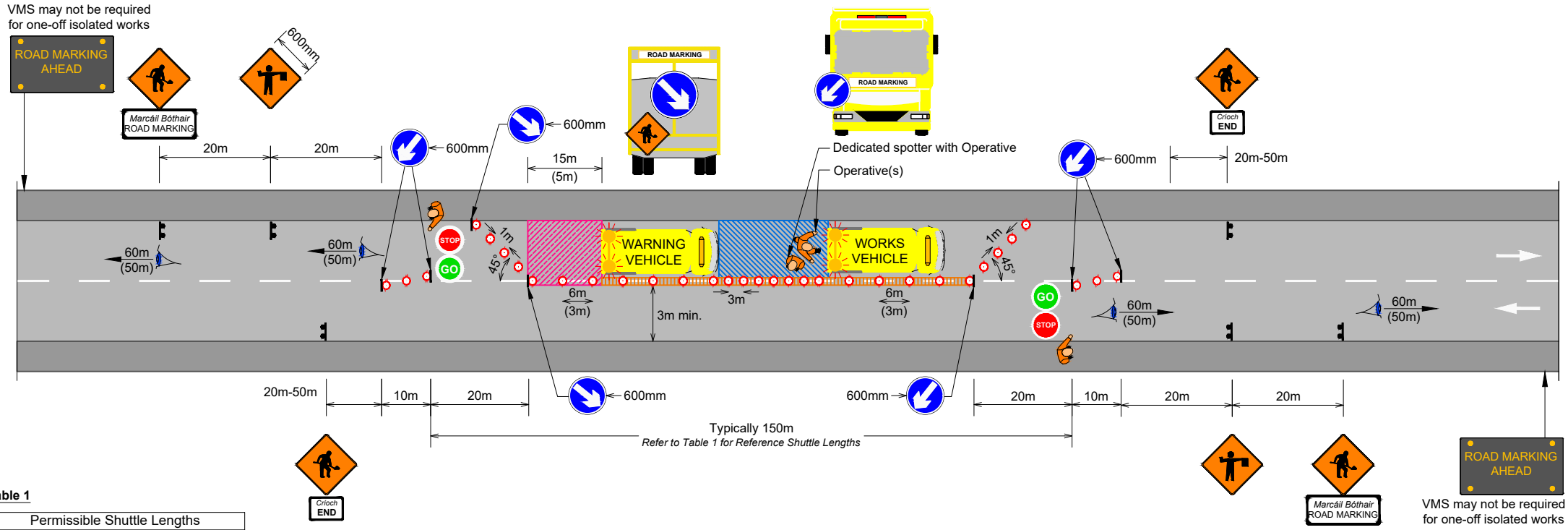


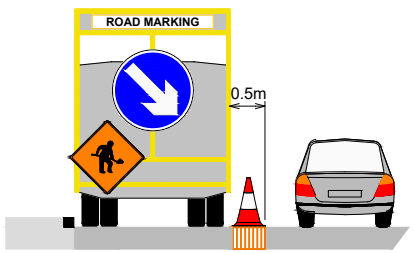
Table 1

Permissible Shuttle Lengths		
Shuttle Length (m)	Maximum Traffic Flow	
	Veh/hr	Veh/3min
100	1400	70
200	1260	63
300	1060	53
400	940	47
500	840	42

Notes

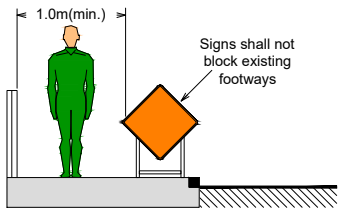
1. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
2. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
3. Additional spotter(s) may be required, depending on the activity.
4. 3m cone spacing required adjacent to works area/operatives.
5. 3-way Stop/Go required for busy side roads within operation.
6. Central coning may be omitted where the paved road width is less than 7m.

Lateral Safety Zone

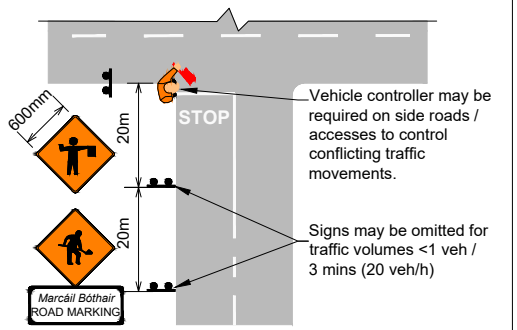


Sign Position Requirements

(If Positioned on Footway)



Side Road Within Operation



Legend

- Cones (0.75m)
- Spotter
- Operative
- Visibility (60m (50m)) relates to 60 km/h (relates to 50 km/h)
- Distance (15m (5m)) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Stop/Go & Operative
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Mainline Carriageway (Stop/Go - Working From Running Lanes)

Static

Urban Single C/W

No Hard Shoulder

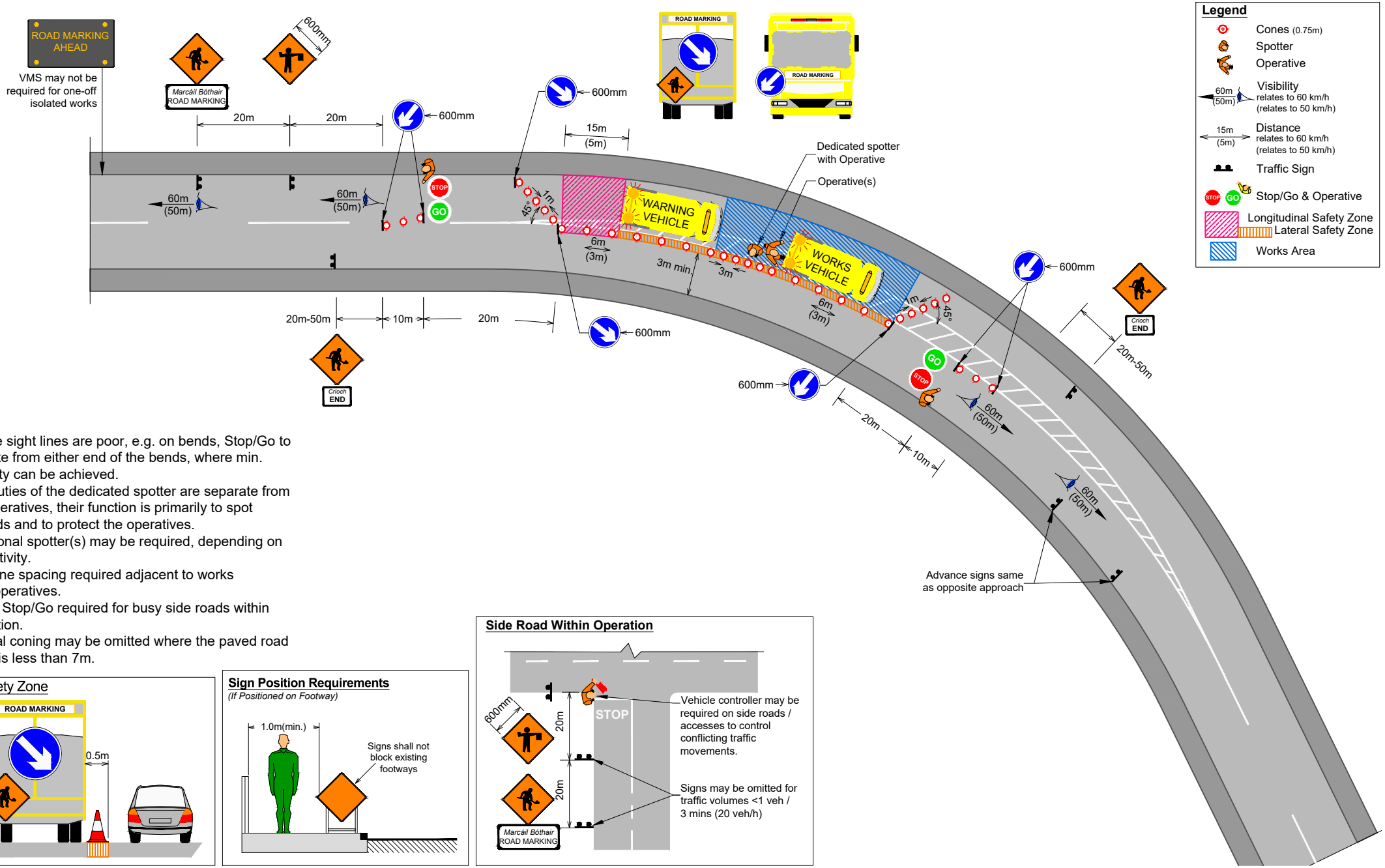
50 km/h OR 60 km/h

RM113

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Notes

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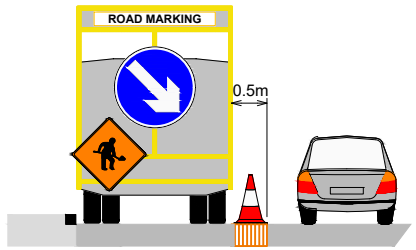
4. 3m cone spacing required adjacent to works area/operatives.
5. 3-way Stop/Go required for busy side roads within operation.
6. Central coning may be omitted where the paved road width is less than 7m.

Lateral Safety Zone



Sign Position Requirements

(If Positioned on Footway)

Side Road Within Operation

Screed Applied Markings

Mainline Carriageway - Hatching On Bend (Stop/Go)

Static

Urban Single C/W

No Hard Shoulder - On a Bend

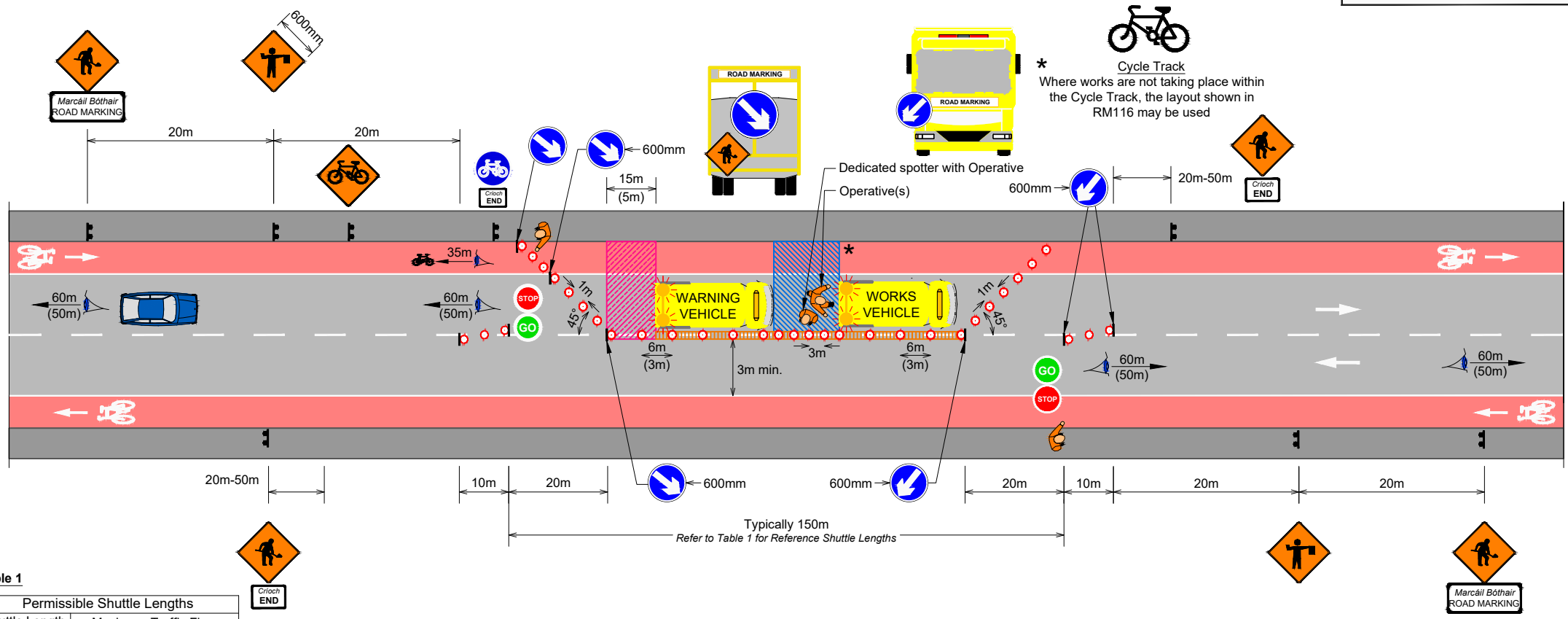
50 km/h OR 60 km/h

RM114

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



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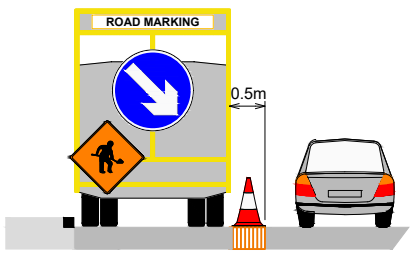
	Veh/hr	Veh/3min
100	1400	70
200	1260	63
300	1060	53
400	940	47
500	840	42

Lateral Safety Zone



Notes

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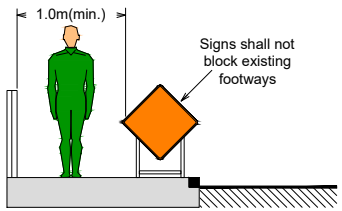
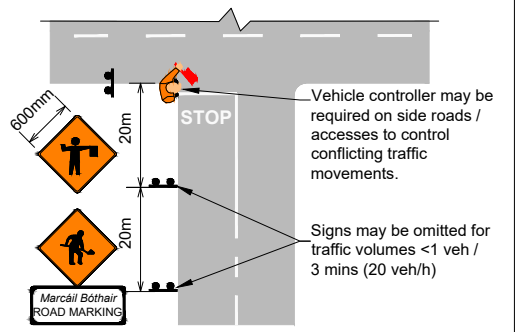
6. Central coning may be omitted where the paved road width is less than 7m.

Sign Position Requirements

(If Positioned on Footway)



Side Road Within Operation



Legend

- Cones (0.75m)
- Spotter
- Operative
- Visibility — 60m (50m) — relates to 60 km/h (relates to 50 km/h)
- Distance — 15m (5m) — relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Stop/Go & Operative
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings - Cycle Track Markings

Mainline Carriageway (Stop/Go - Working From Running Lanes)

Static

Urban Single C/W

With Cycle Track

50 km/h OR 60 km/h

RM115

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

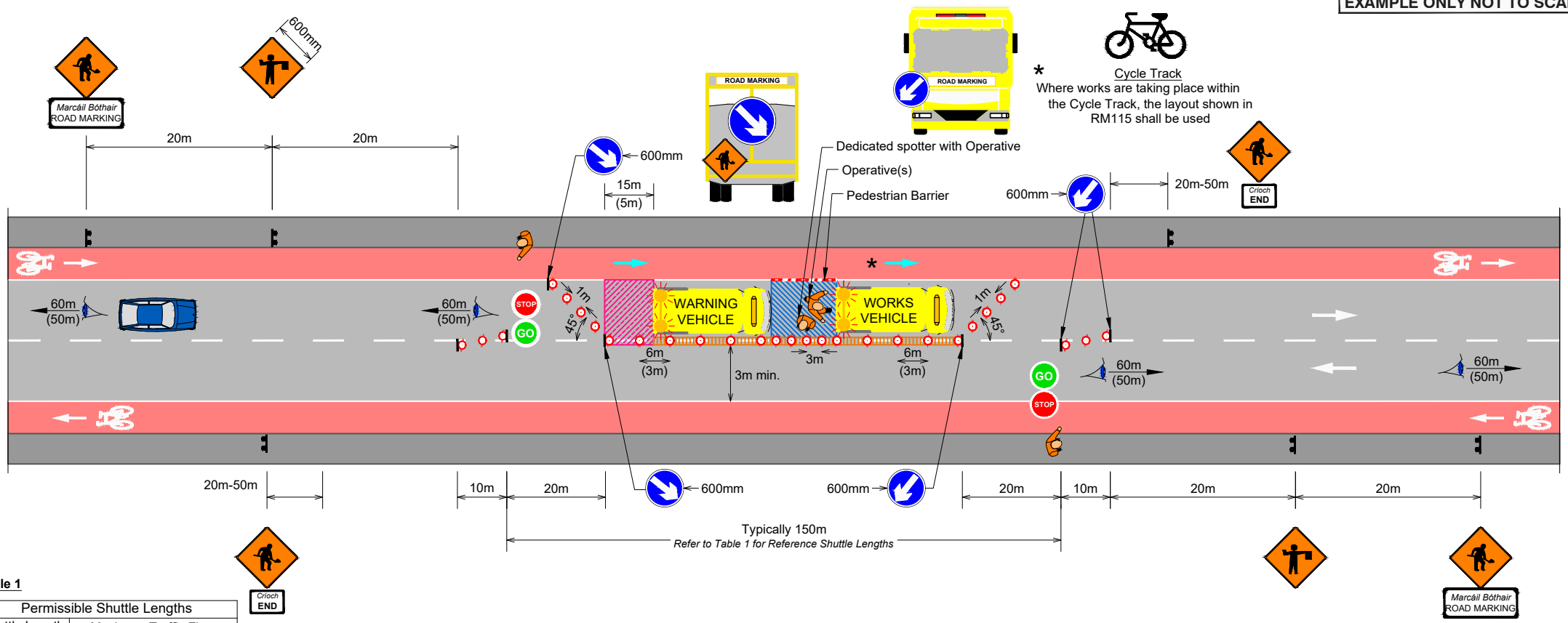
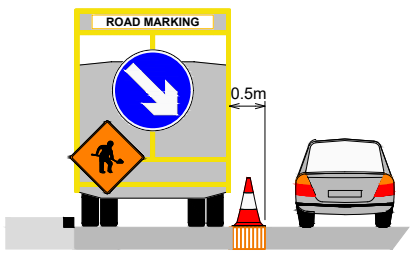


Table 1

Permissible Shuttle Lengths		
Shuttle Length (m)	Maximum Traffic Flow	
	Veh/hr	Veh/3min
100	1400	70
200	1260	63
300	1060	53
400	940	47
500	840	42

Lateral Safety Zone

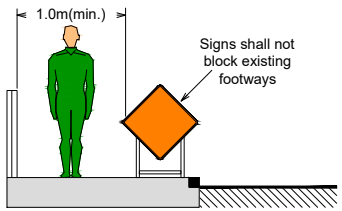


Notes

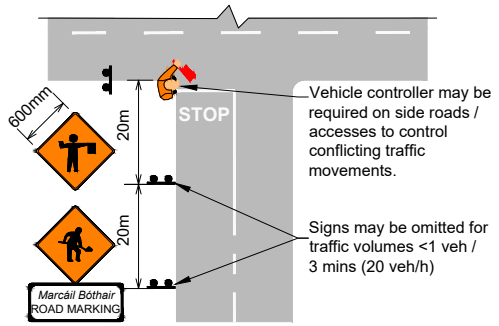
1. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
2. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
3. Additional spotter(s) may be required, depending on the activity.
4. 3m cone spacing required adjacent to works area/operatives.
5. 3-way Stop/Go required for busy side roads within operation.
6. Central coning may be omitted where the paved road width is less than 7m.

Sign Position Requirements

(If Positioned on Footway)



Side Road Within Operation



Legend

- Cones (0.75m)
- Spotter
- Operative
- Visibility — 60m (50m) — relates to 60 km/h (relates to 50 km/h)
- Distance — 15m (5m) — relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Stop/Go & Operative
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Mainline Carriageway (Stop/Go - Working From Running Lanes)

Static

Urban Single C/W

With Cycle Track

50 km/h OR 60 km/h

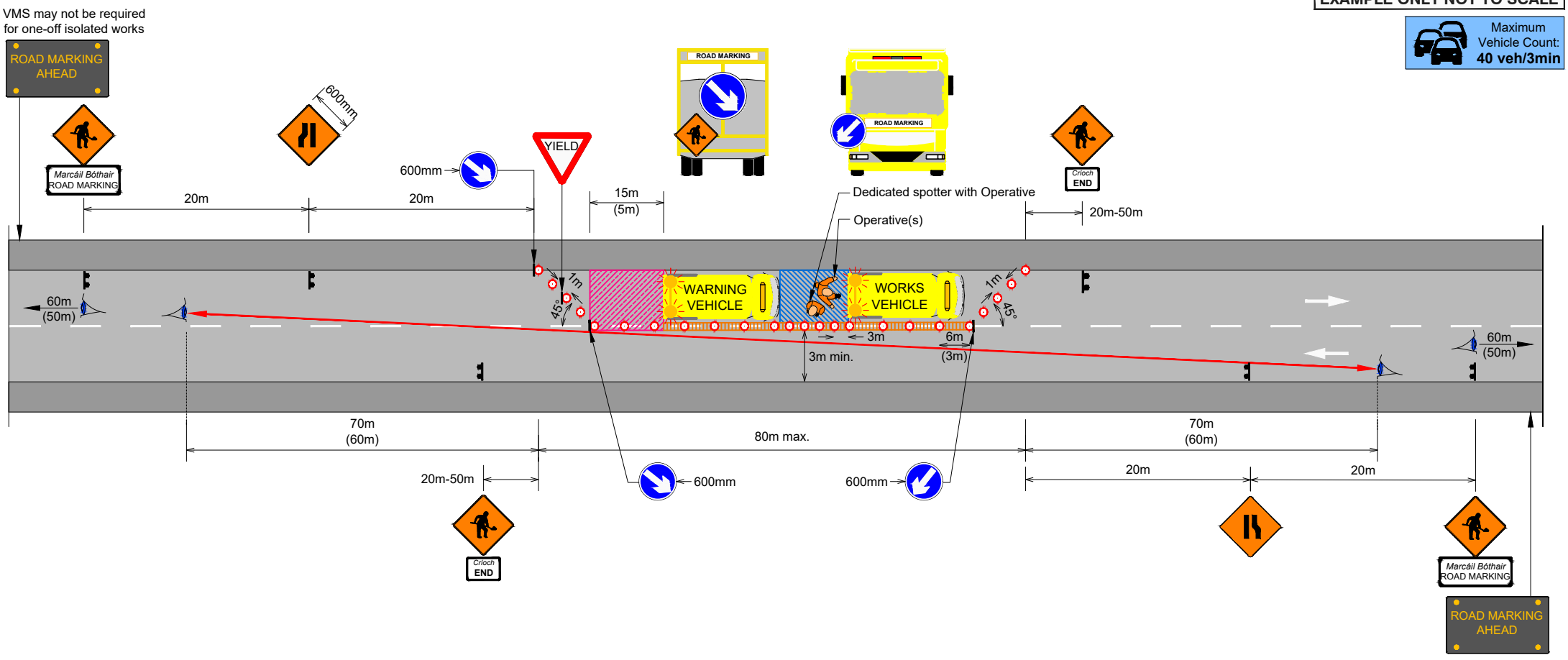
RM116

Road Marking

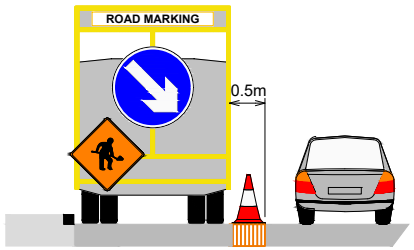
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **40 veh/3min**

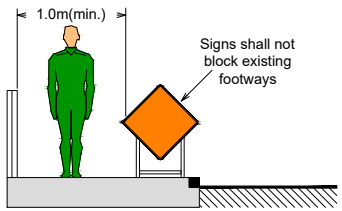


Lateral Safety Zone



Sign Position Requirements

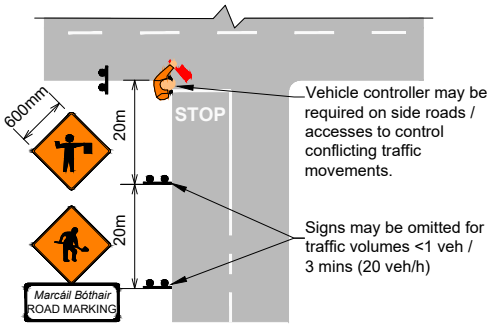
(If Positioned on Footway)



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. 3m cone spacing required adjacent to works area/operatives.

Side Road Within Operation



Legend

- Cones (0.75m)
- Spotter
- Operative
- Visibility — 60m (50m) — relates to 60 km/h (relates to 50 km/h)
- Distance — 15m (5m) — relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Mainline Carriageway (Priority - Working From Running Lanes)

Static

Urban Single C/W

No Hard Shoulder

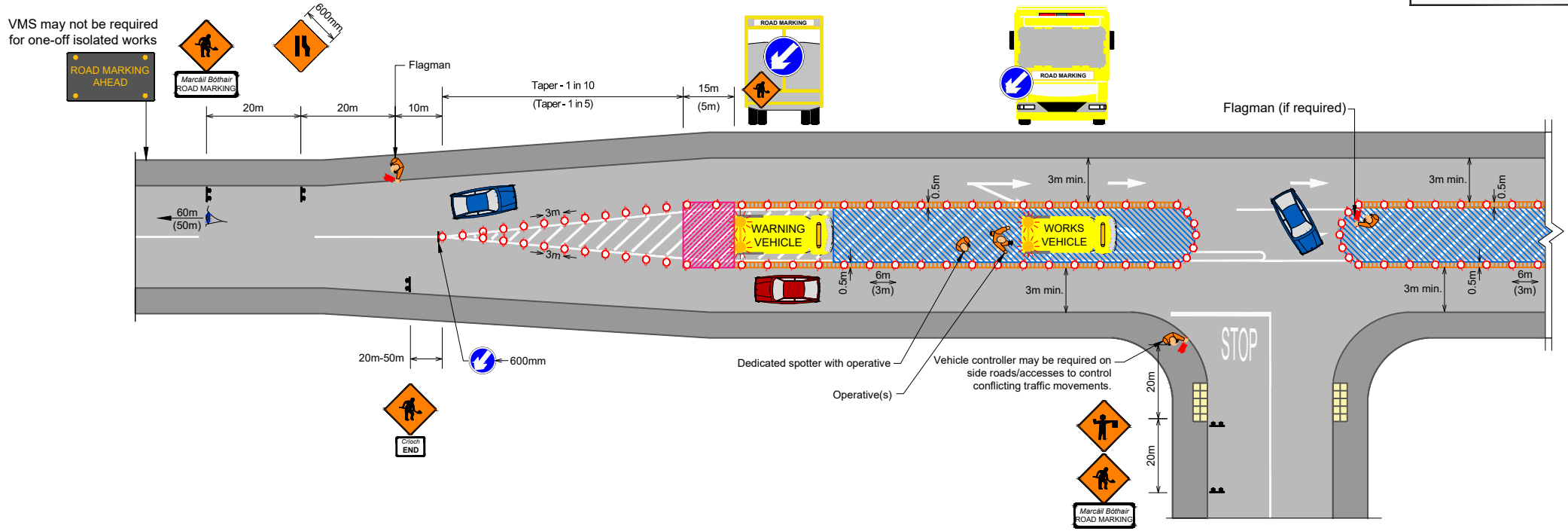
50 km/h OR 60 km/h

RM117

Road Marking

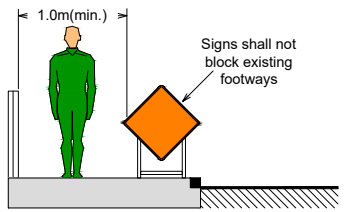
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

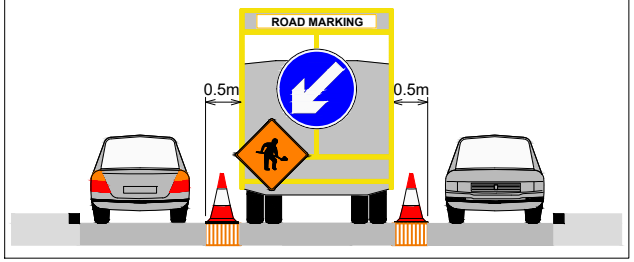


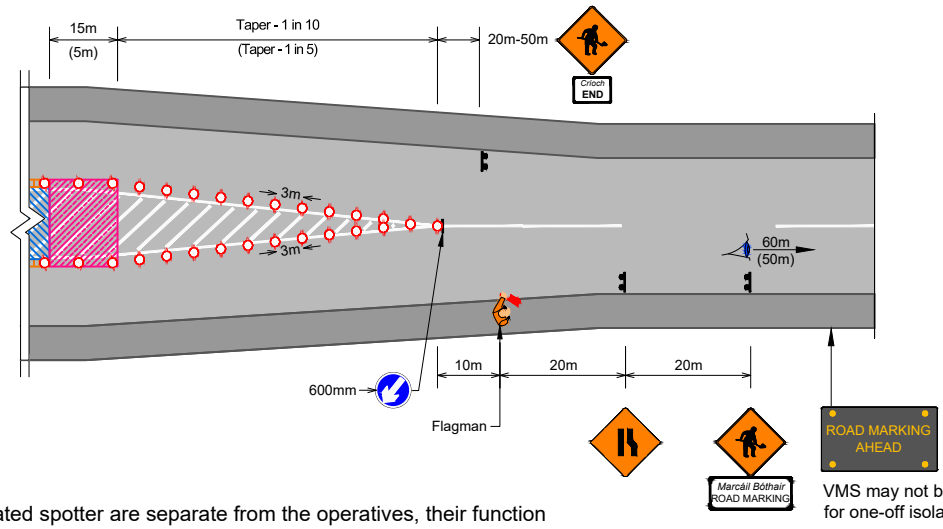
Sign Position Requirements

(If Positioned on Footway)



Lateral Safety Zones





Legend

- Cones (0.75m)
- Spotter
- Operative
- Visibility (60m / 50m) relates to 60 km/h (relates to 50 km/h)
- Distance (15m / 5m) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Cone spacing to be tightened up on shorter hatchings, and to define junctions etc.

Screed Applied Markings

Ghost/Central Island (2-Way Traffic Maintained)

Static

Urban Single C/W

No Hard Shoulder

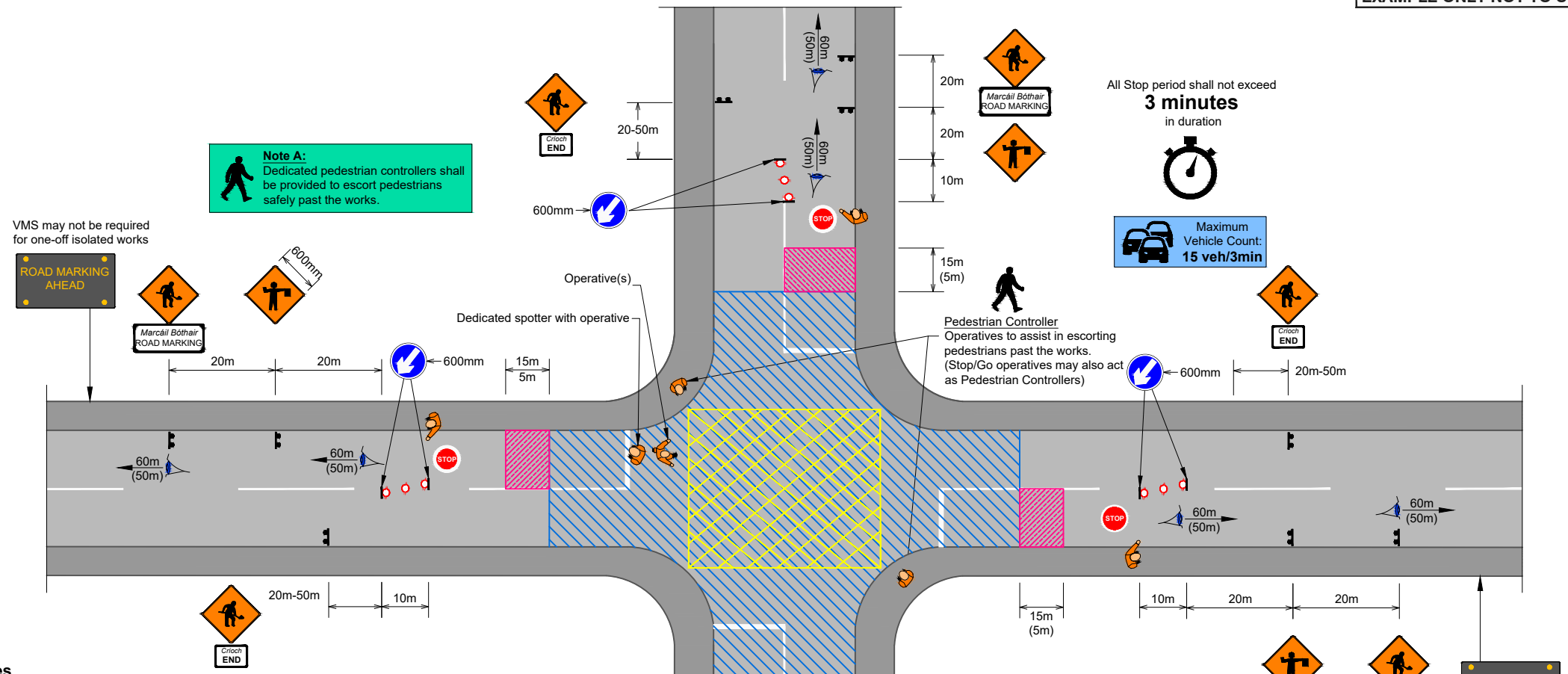
50 km/h OR 60 km/h

RM118

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Notes

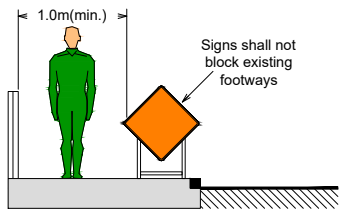
1. Layout is not suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. All Stop operatives to coordinate the operation using short work sessions. Each time the All Stop is to be lifted, vehicles and operatives must move to a safe location to allow traffic to pass.
3. Queues must be allowed to dissipate after each short work session.
4. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operative.
5. Additional spotter(s) / flagmen may be required depending on the activity.
6. TTM on each arm can vary in line with the approach arm speed limits.
7. Work vehicles to be parked in a suitably safe location.
8. Pedestrians may need to be directed through the works.
9. Signal heads may need to be covered.
10. Central coning may be omitted where the paved road width is less than 7m.

Legend

- Cones (0.75m min)
- Spotter / Flagman
- Operative
- Visibility (60m (50m)) relates to 60 km/h (relates to 50 km/h)
- Distance (15m (5m)) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- All Stop & Operative
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Sign Position Requirements

(If Positioned on Footway)



Screed Applied Markings

Urban Signalised Junction (All Stop)

Static

Urban Single C/W

50 km/h OR 60 km/h

RM119

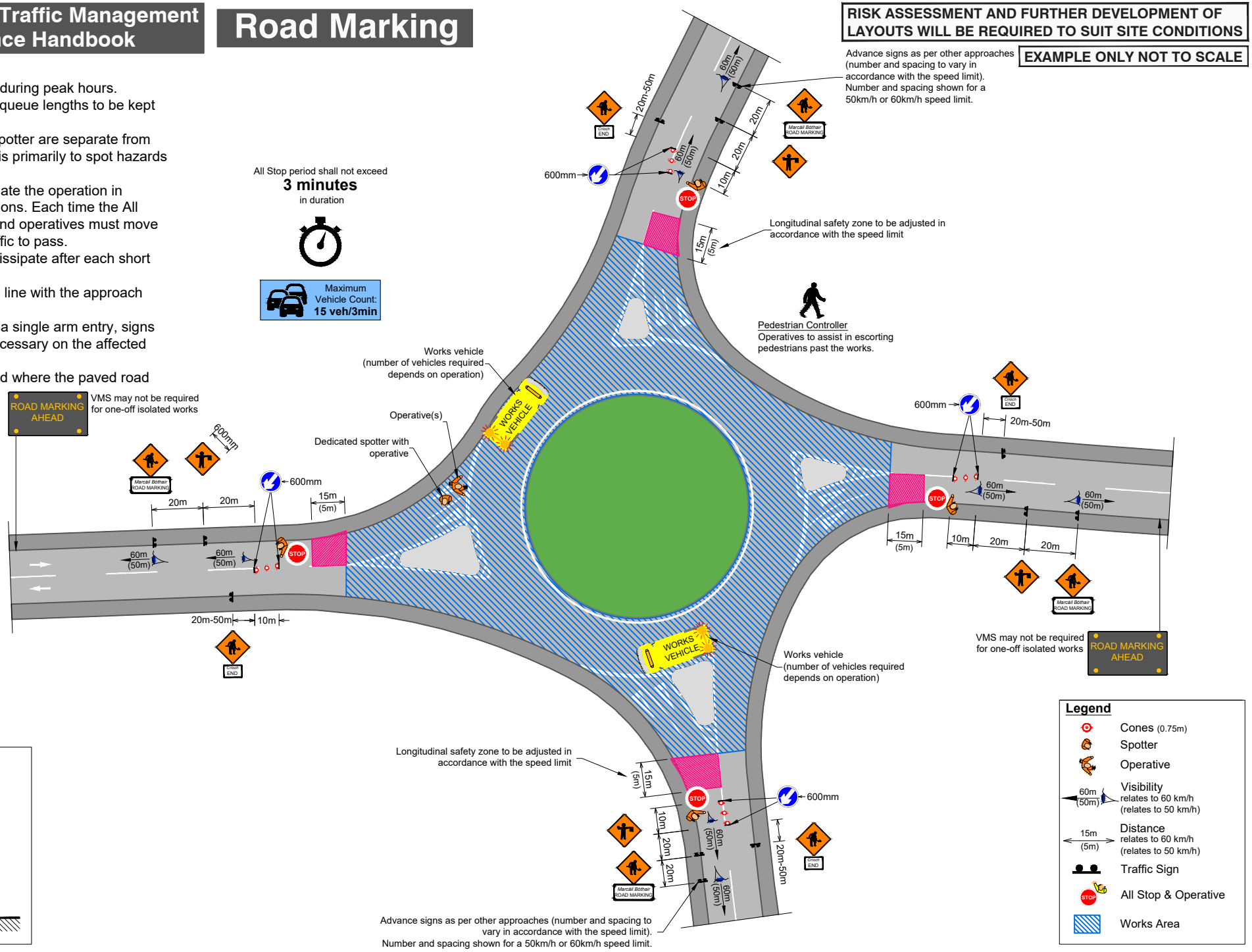
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

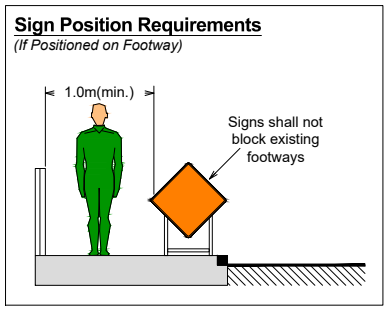
EXAMPLE ONLY NOT TO SCALE

Notes

1. Layout is not suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operative.
3. All Stop operatives to coordinate the operation in unison using short work sessions. Each time the All Stop is to be lifted, vehicles and operatives must move to a safe location to allow traffic to pass.
4. Queues must be allowed to dissipate after each short work session.
5. TTM on each arm can vary in line with the approach arm speed limits.
6. Where works are confined to a single arm entry, signs and All Stop operation are necessary on the affected arm only.
7. Central coning may be omitted where the paved road width is less than 7m.



Sign Position Requirements
(If Positioned on Footway)



Legend

- Cones (0.75m)
- Spotter
- Operative
- Visibility (60m (50m)) relates to 60 km/h (relates to 50 km/h)
- Distance (15m (5m)) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- All Stop & Operative
- Works Area

Roundabout Markings

All Works Areas (All Stop)

Static

Urban Single C/W
Roundabout

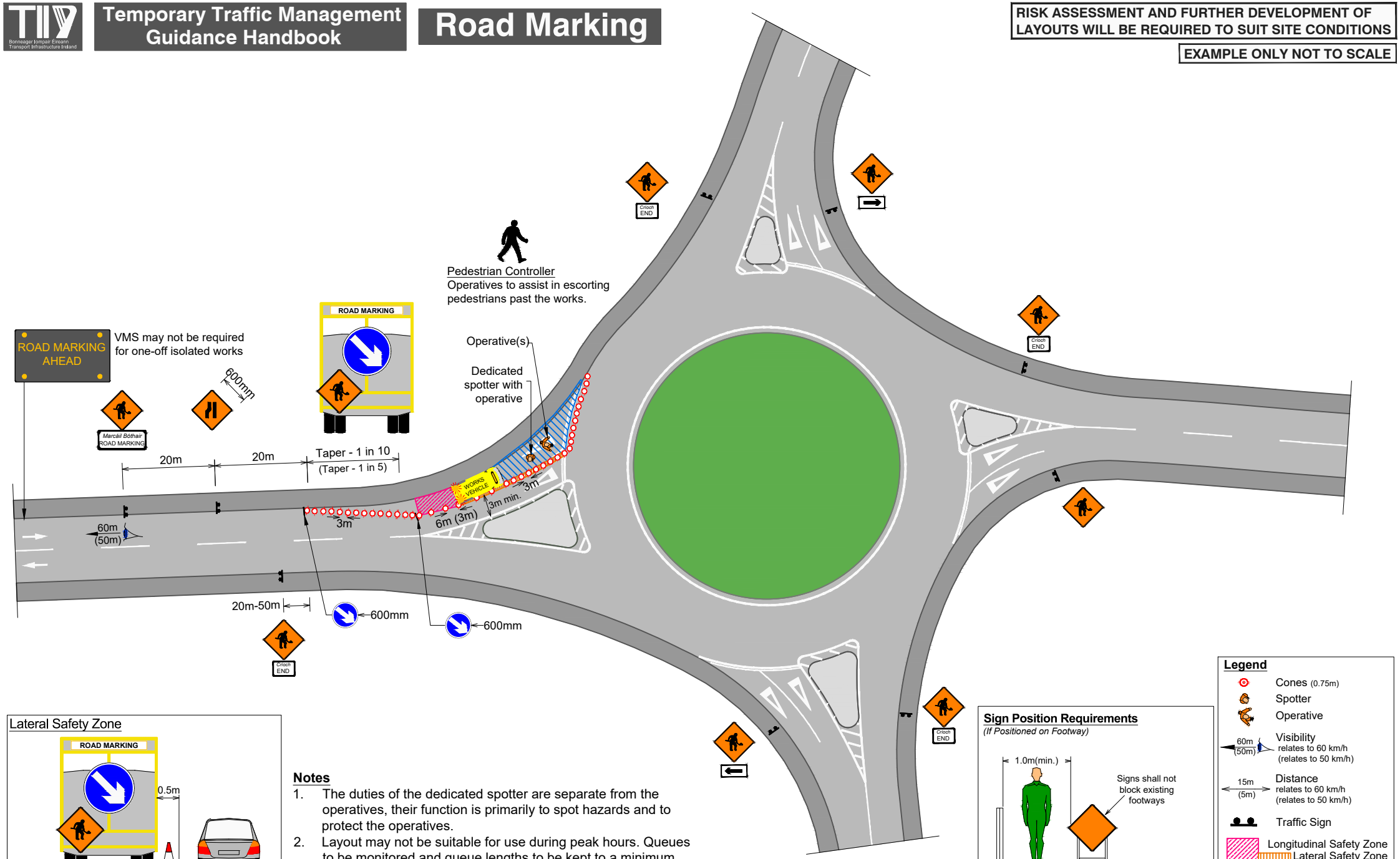
50 km/h OR 60 km/h

RM120

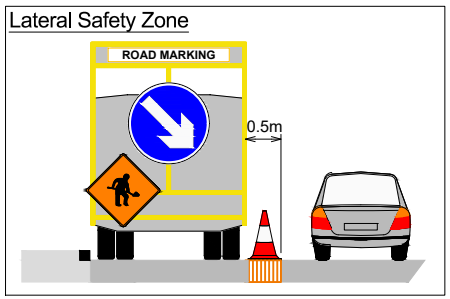
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Lateral Safety Zone

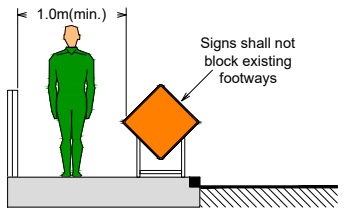


Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
3. If minimum lane widths are not achievable, All Stop is recommended as per RM120.

Sign Position Requirements

(If Positioned on Footway)



Legend

- Cones (0.75m)
- Spotter
- Operative
- Visibility — 60m (50m) — relates to 60 km/h (relates to 50 km/h)
- Distance — 15m (5m) — relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Roundabout Markings

Left Entry Lane (Traffic Flow Maintained)

Static

Urban Single C/W

Roundabout

50 km/h OR 60 km/h

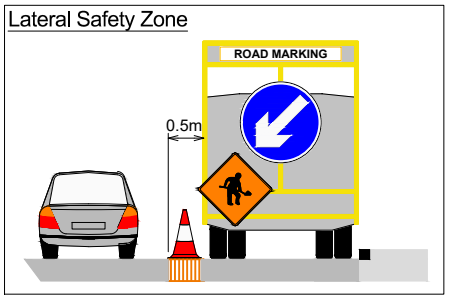
RM121

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Lateral Safety Zone

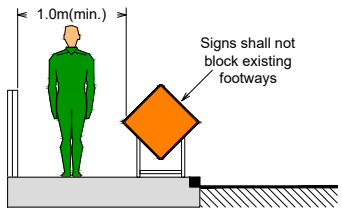


Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
3. If minimum lane widths are not achievable, All Stop is recommended as per RM120.

Sign Position Requirements

(If Positioned on Footway)



Legend

- Cones (0.75m)
- Spotter
- Operative
- Visibility — 60m (50m) — relates to 60 km/h (relates to 50 km/h)
- Distance — 15m (5m) — relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Roundabout Markings

Right Entry Lane (Traffic Flow Maintained)

Static

Single C/W

Roundabout

50 km/h OR 60 km/h

RM122

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

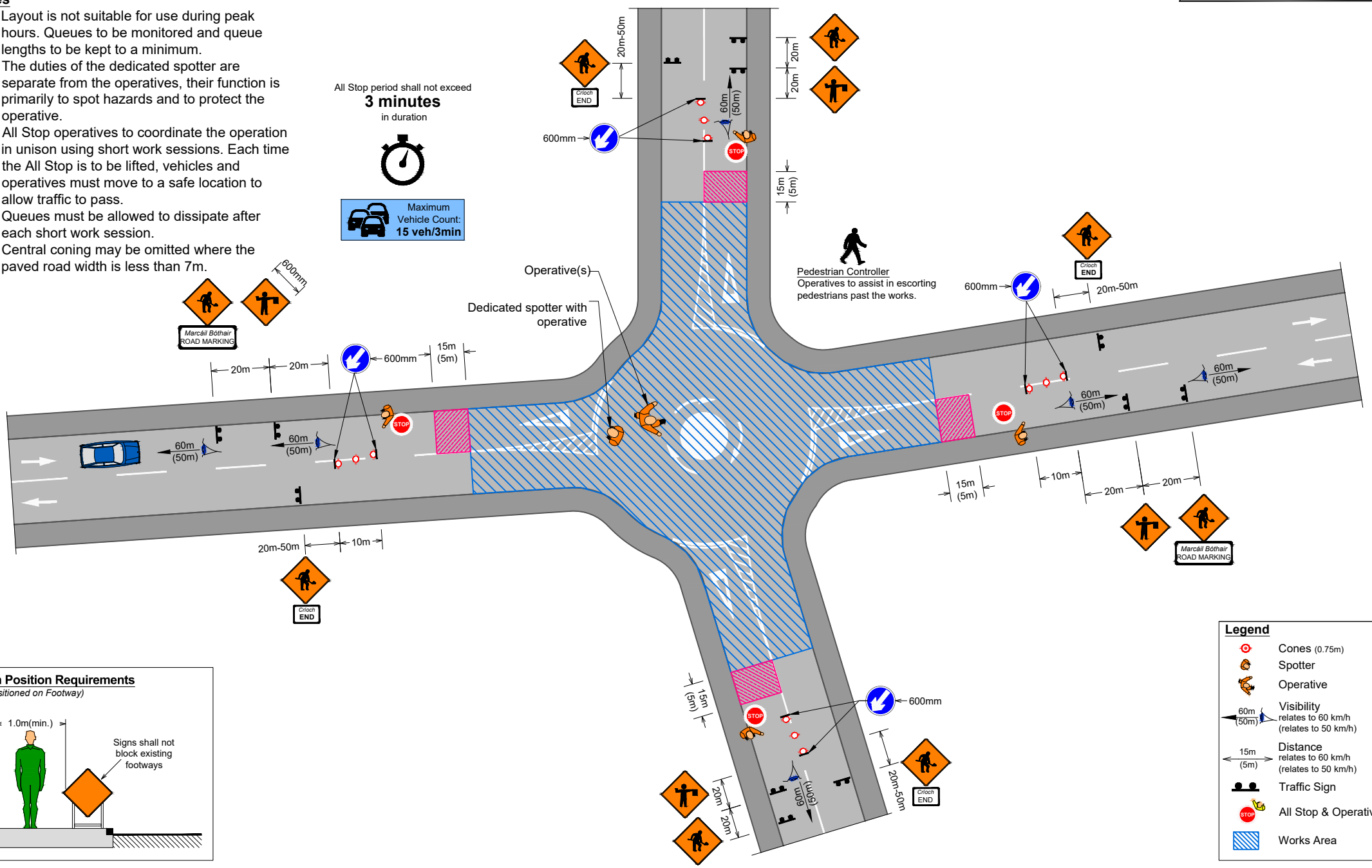
EXAMPLE ONLY NOT TO SCALE

Notes

1. Layout is not suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operative.
3. All Stop operatives to coordinate the operation in unison using short work sessions. Each time the All Stop is to be lifted, vehicles and operatives must move to a safe location to allow traffic to pass.
4. Queues must be allowed to dissipate after each short work session.
5. Central coning may be omitted where the paved road width is less than 7m.

All Stop period shall not exceed
3 minutes
in duration

Maximum Vehicle Count: **15 veh/3min**



Sign Position Requirements
(If Positioned on Footway)

Legend

- Cones (0.75m)
- Spotter
- Operative
- Visibility — 60m (50m) — relates to 60 km/h (relates to 50 km/h)
- Distance — 15m (5m) — relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- All Stop & Operative
- Works Area

Roundabout Markings

All Works Areas (All Stop)

Static

Urban Single C/W
Mini Roundabout

50 km/h OR 60 km/h

RM123

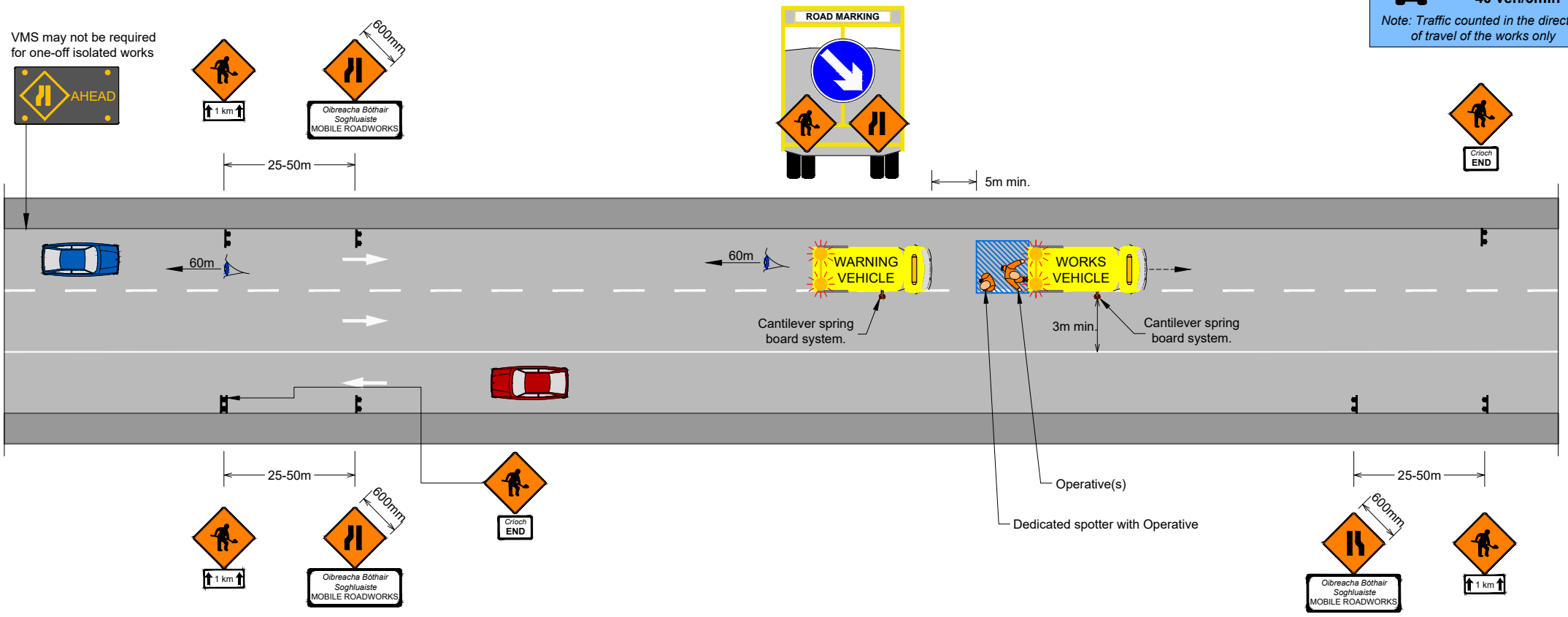
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

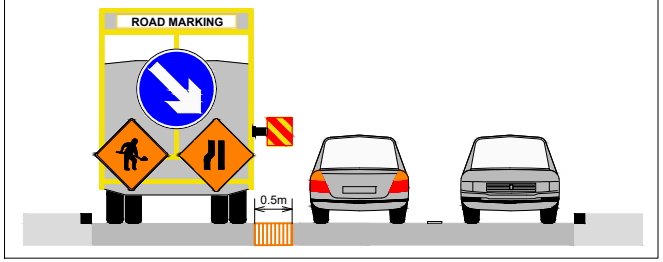
EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count in **Multi-lane Direction**: **40 veh/3min**

Note: Traffic counted in the direction of travel of the works only



Lateral Safety Zone Cantilever Board

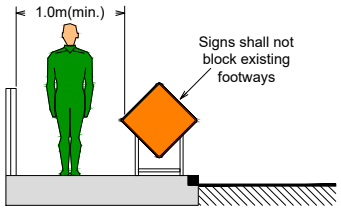


Notes

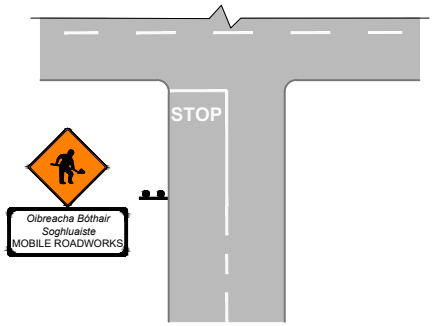
1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.

Sign Position Requirements

(If Positioned on Footway)



Urban Multi-lane Street - Side Road



Legend

- Spotter
- Operative
- Visibility 60m (50m) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Works Area

Longitudinal Markings & Screed Markings

Centre Lines - Lane 1 Closure

Continuously Moving (SSO)

Urban Multi-Lane Street

Two-Way 3 Lane

50 km/h OR 60 km/h

RM124

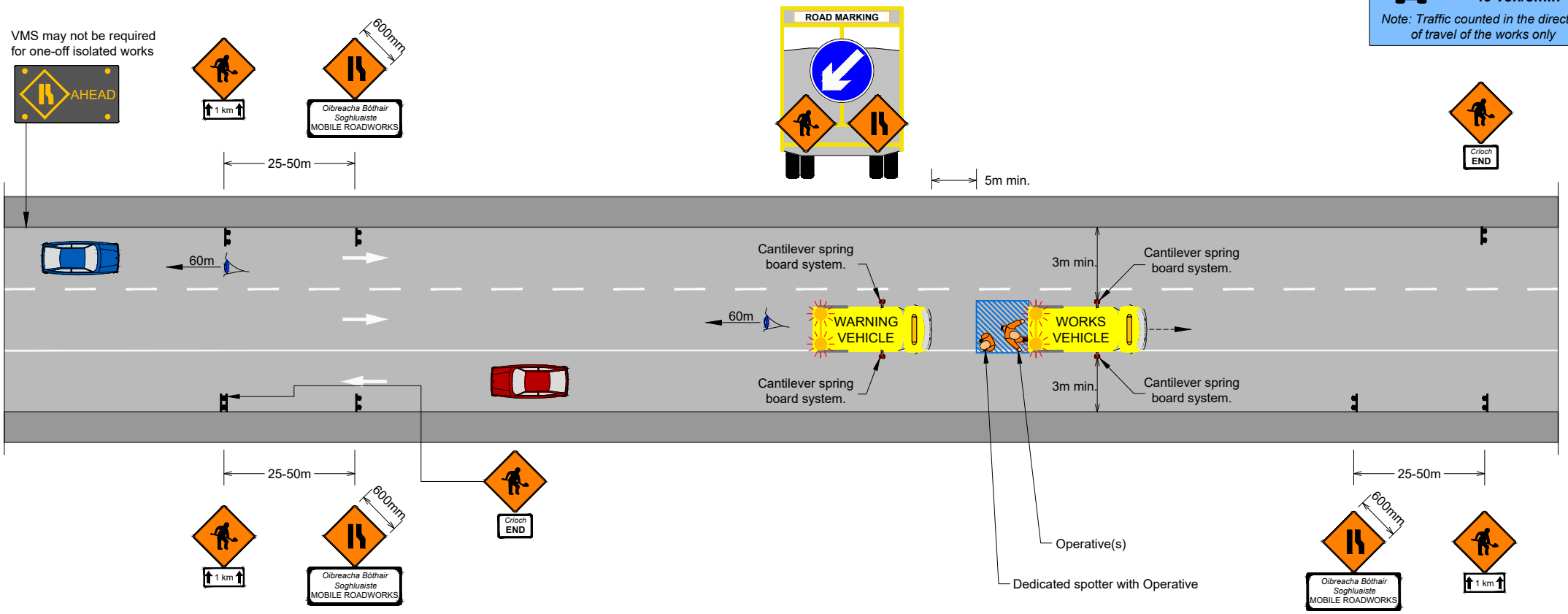
Road Marking

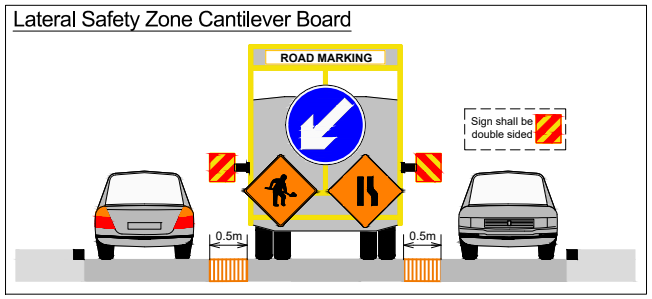
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count in **Multi-lane Direction**: **40 veh/3min**

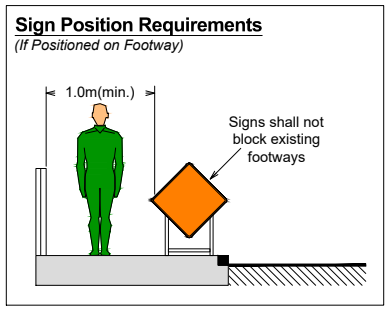
Note: Traffic counted in the direction of travel of the works only

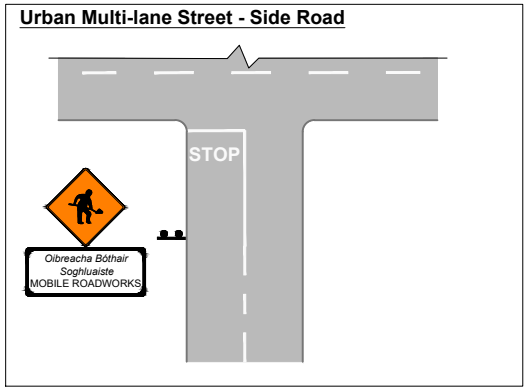




Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.





Legend

- Spotter
- Operative
- Visibility (60m (50m)) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Works Area

Longitudinal Markings & Screed Markings

Median Line - Lane 2 Closure

Continuously Moving (SSO)

Urban Multi-Lane Street

Two-Way 3 Lane

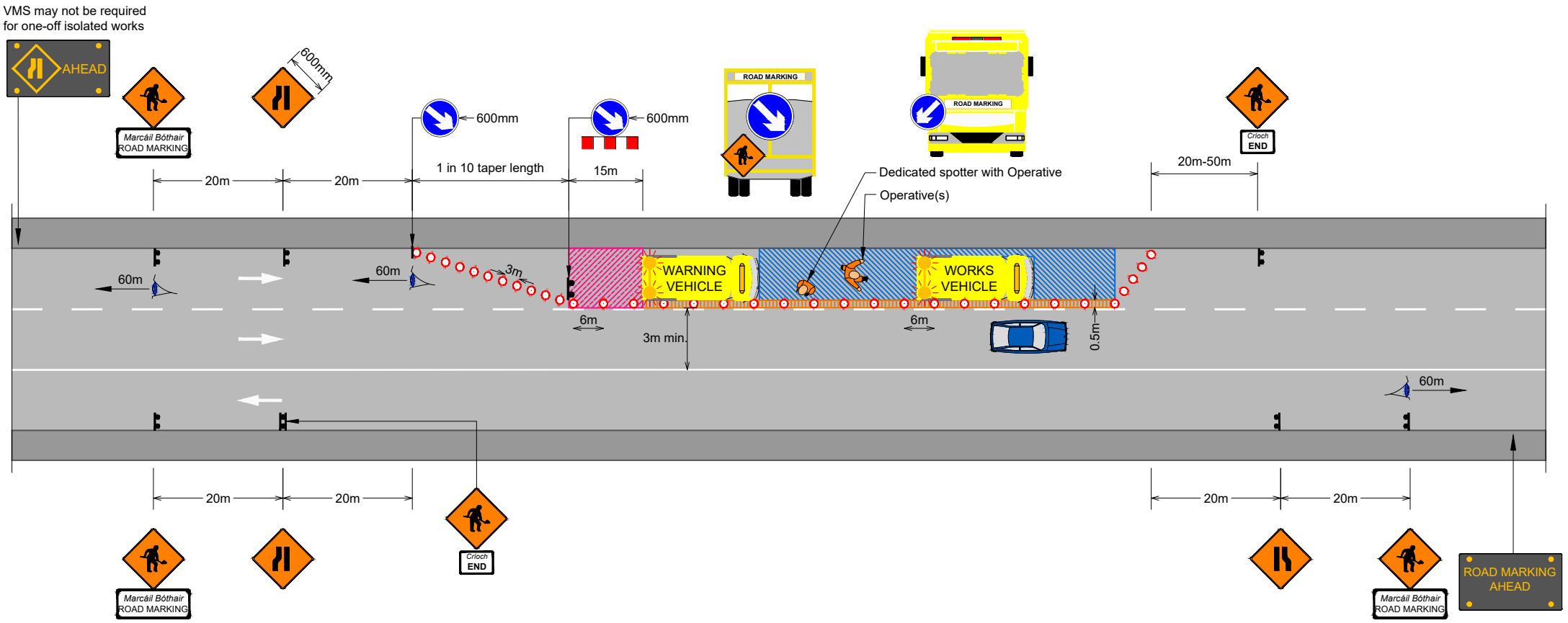
50 km/h OR 60 km/h

RM125

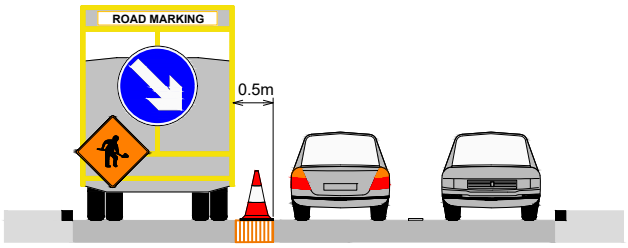
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Lateral Safety Zone

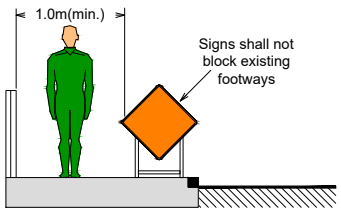


Notes

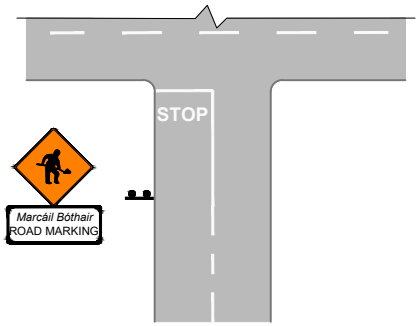
1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.

Sign Position Requirements

(If Positioned on Footway)



Urban Multi-lane Street - Side Road



Legend

- Cones (0.75m)
- Spotter
- Operative
- 60m Visibility
- 15m Distance
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Lane 1 Closure

Static

Urban Multi-Lane Street

Two-Way 3 Lane

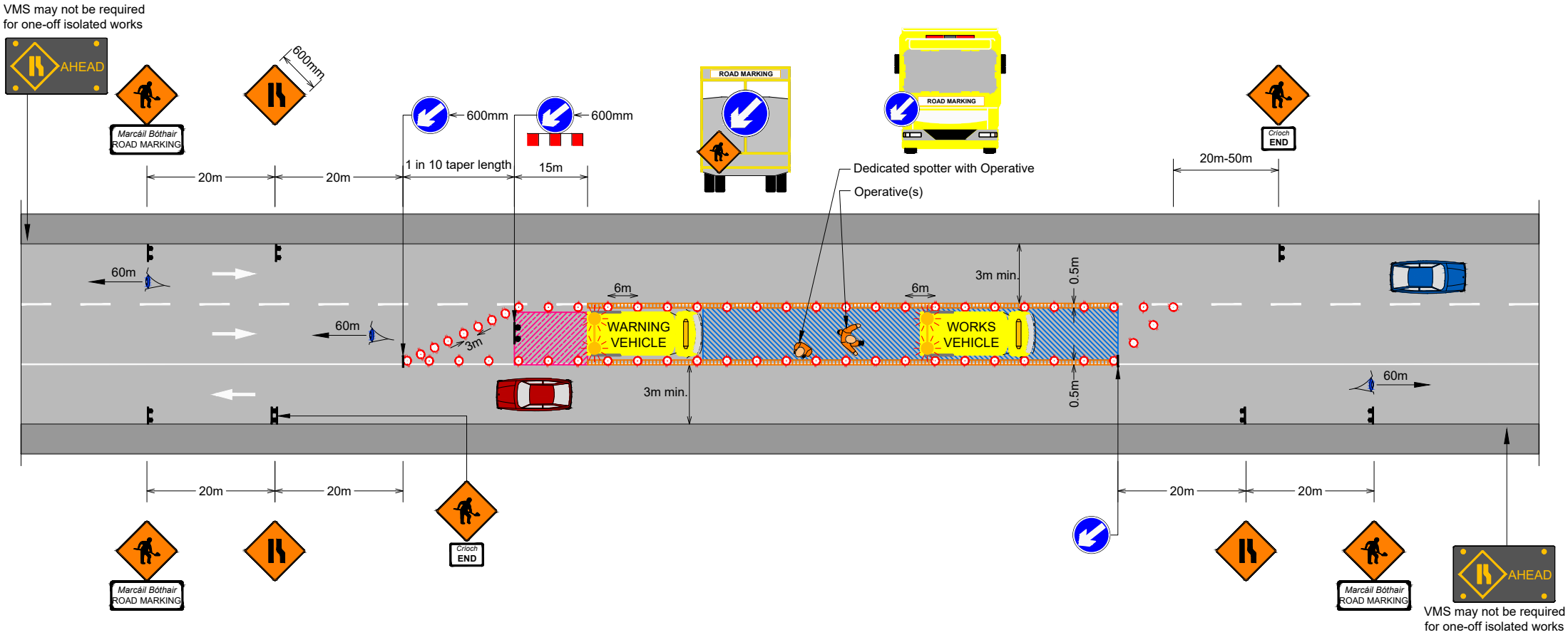
50 km/h OR 60 km/h

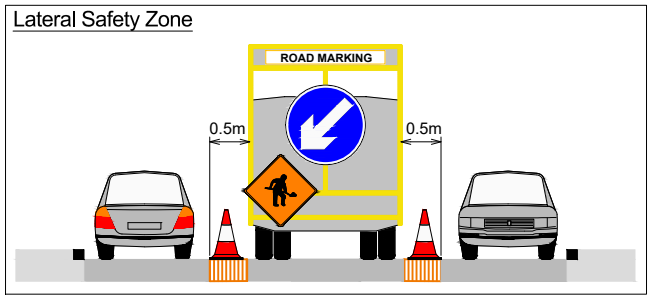
RM126

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE





Notes

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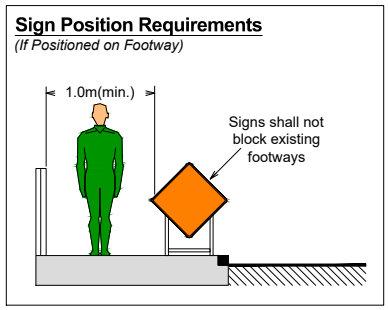
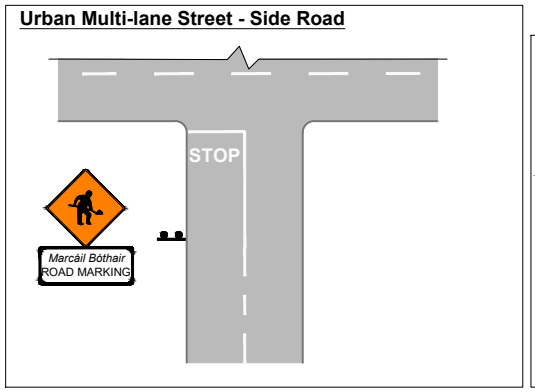
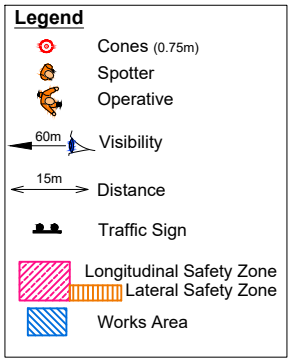






Screed Applied Markings

Lane 2 Closure

Static

Urban Multi-Lane Street

Two-Way 3 Lane

50 km/h OR 60 km/h

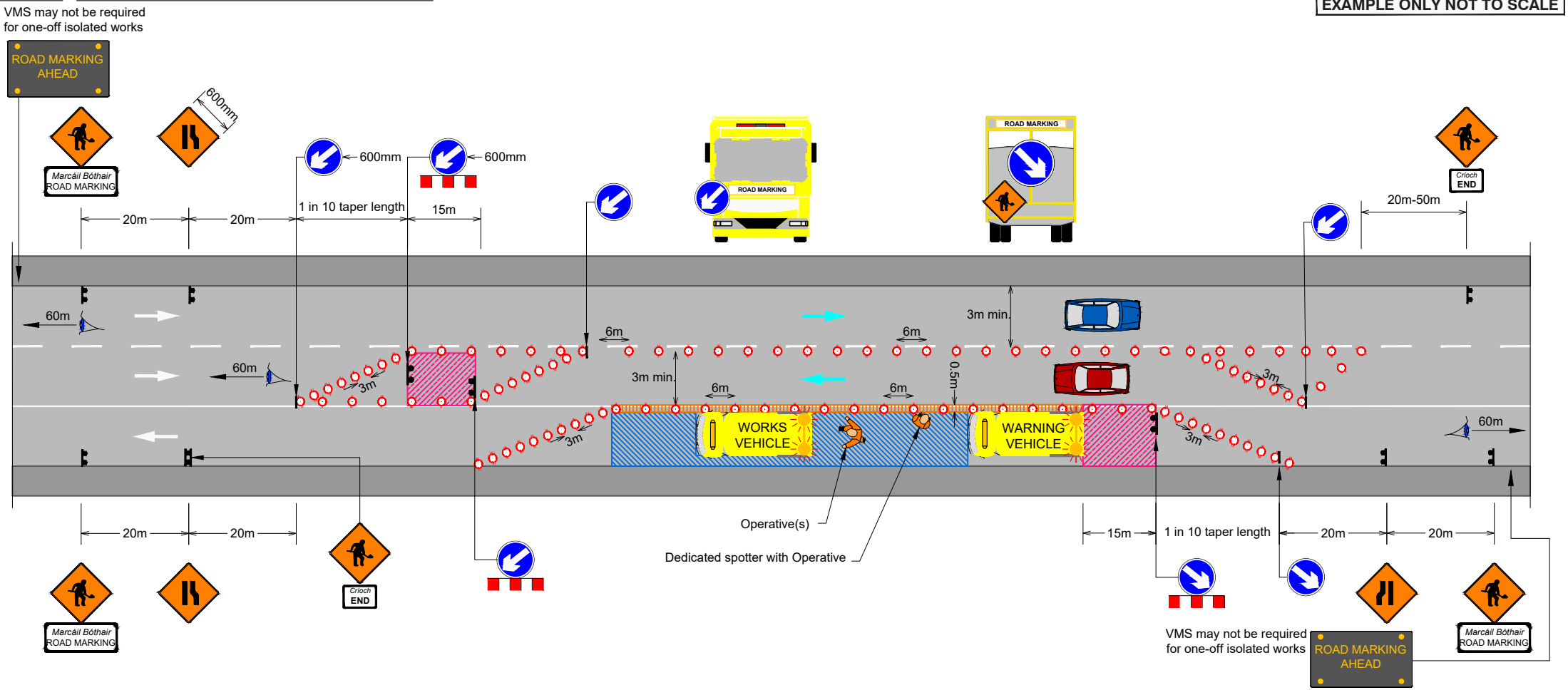
RM127

Temporary Traffic Management Guidance Handbook

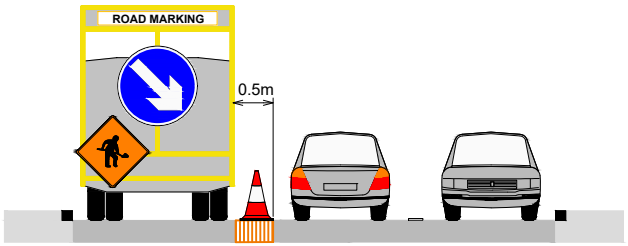
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Lateral Safety Zone



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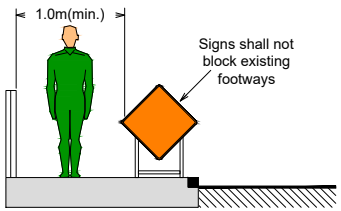
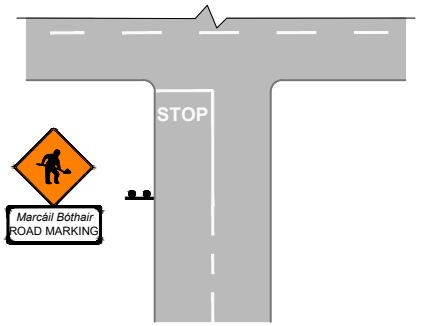
Sign Position Requirements

(If Positioned on Footway)



Urban Multi-lane Street - Side Road



Legend

- Cones (0.75m)
- Spotter
- Operative
- 60m Visibility
- 15m Distance
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Closure of Opposing Lane

Static

Urban Multi-Lane Street

Two-Way 3 Lane

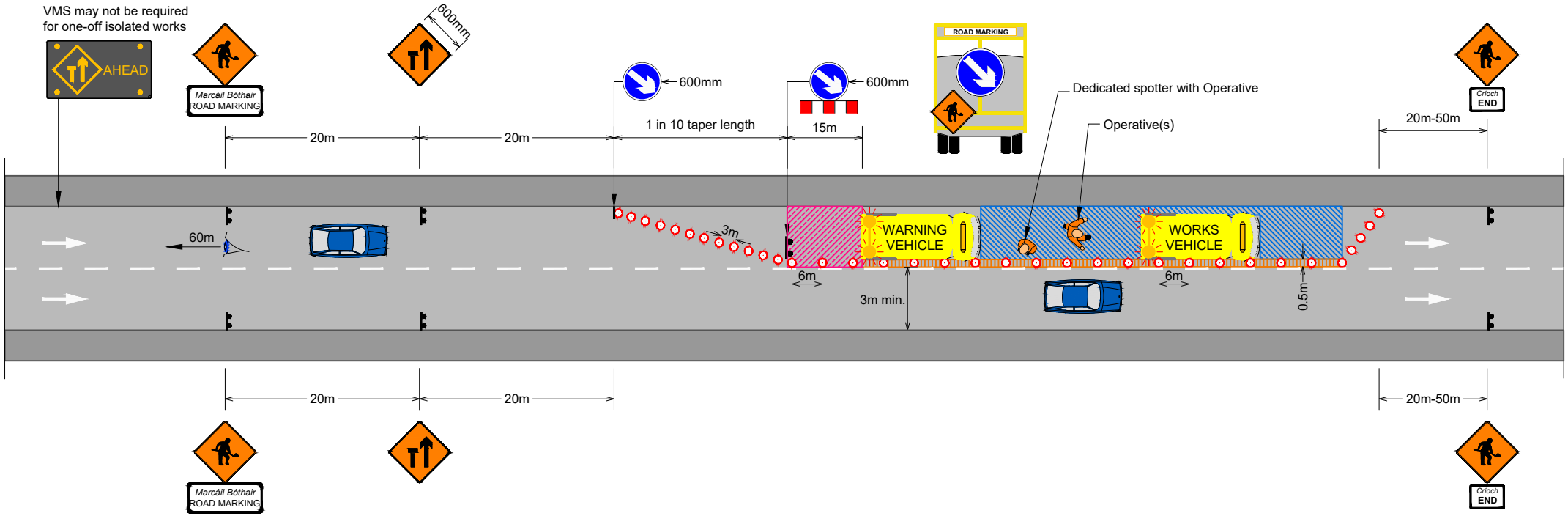
50 km/h OR 60 km/h

RM128

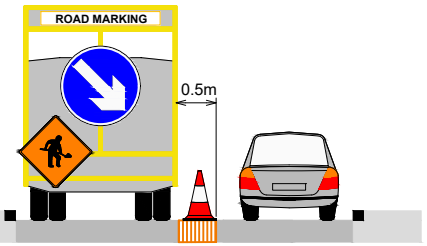
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Lateral Safety Zone



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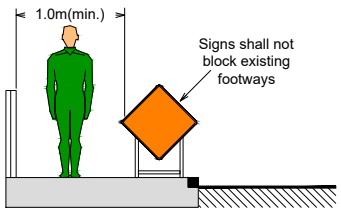
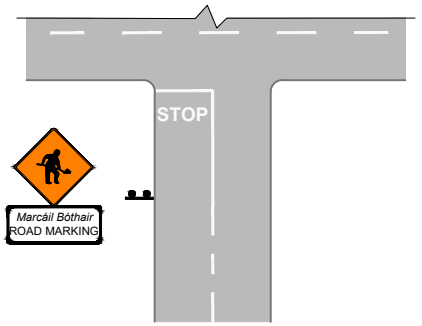
Sign Position Requirements

(If Positioned on Footway)



Urban Multi-lane Street - Side Road



Legend

- Cones (0.75m)
- Spotter
- Operative
- 60m Visibility
- 15m Distance
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Lane 1 Closure

Static

Urban Multi-Lane Street

One-Way 2 Lane

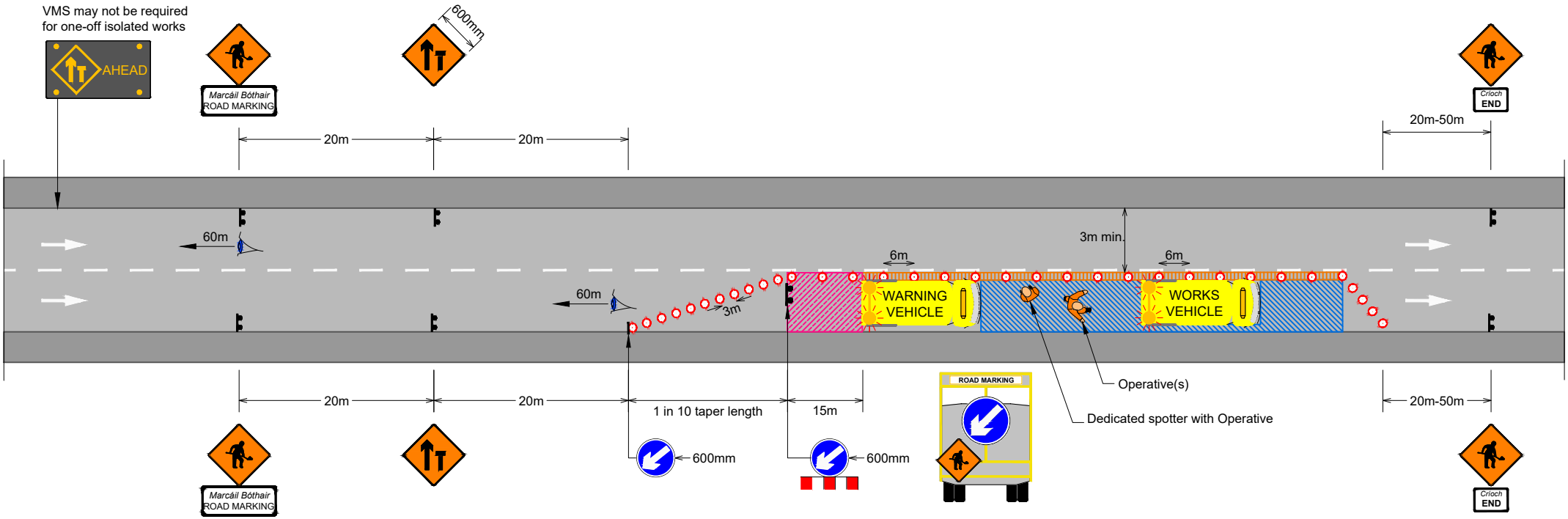
50 km/h OR 60 km/h

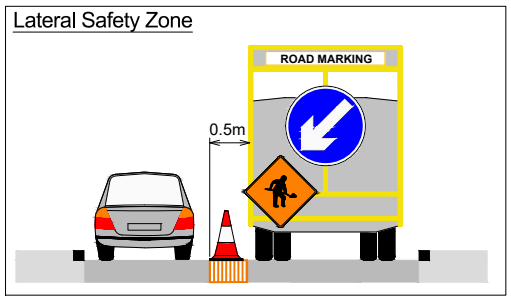
RM129

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE





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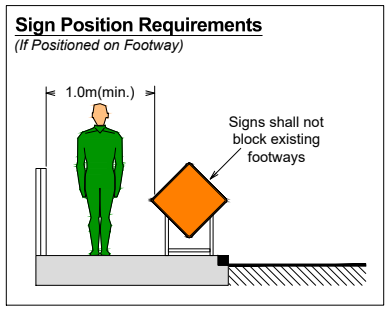
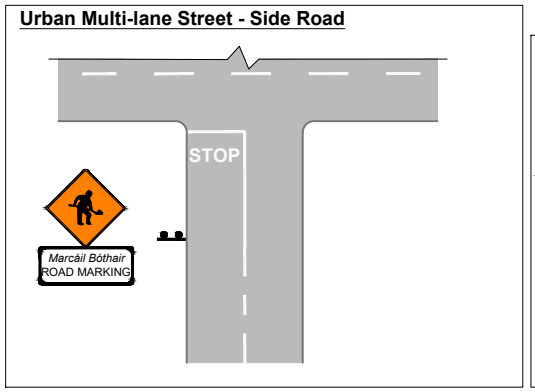
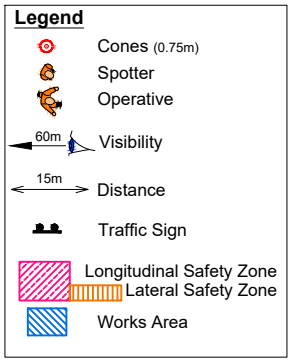






Screed Applied Markings

Lane 2 Closure

Static

Urban Multi-Lane Street

One-Way 2 Lane

50 km/h OR 60 km/h

RM130

Temporary Traffic Management Guidance Handbook

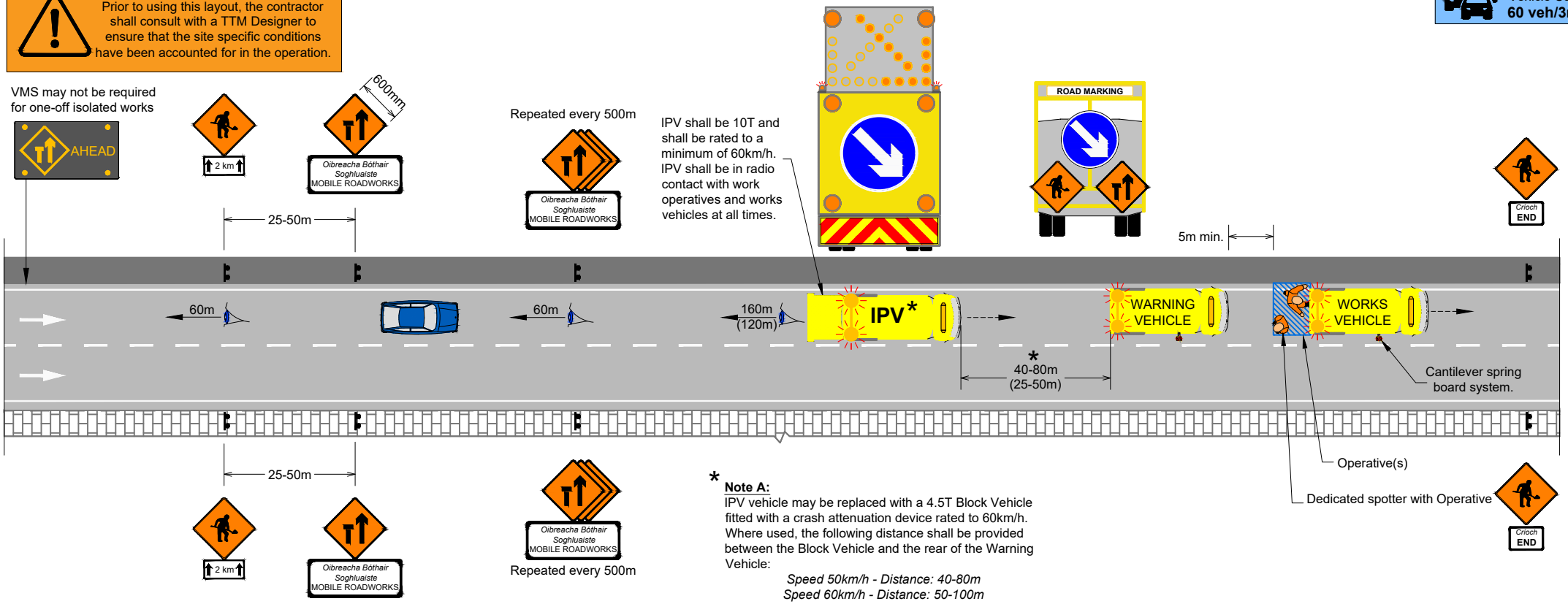
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **60 veh/3min**

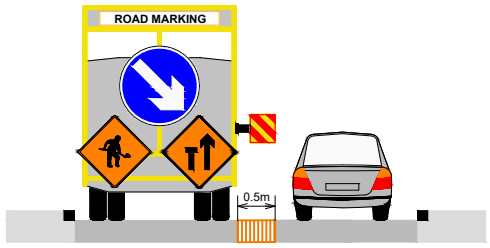
Site Specific Assessment:
Prior to using this layout, the contractor shall consult with a TTM Designer to ensure that the site specific conditions have been accounted for in the operation.



* **Note A:**
IPV vehicle may be replaced with a 4.5T Block Vehicle fitted with a crash attenuation device rated to 60km/h. Where used, the following distance shall be provided between the Block Vehicle and the rear of the Warning Vehicle:

Speed 50km/h - Distance: 40-80m
Speed 60km/h - Distance: 50-100m

Lateral Safety Zone Cantilever Board



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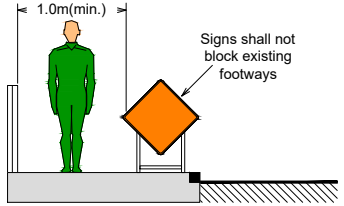
Sign Position Requirements
(If Positioned on Footway)



Legend

- Spotter
- Operative
- Visibility (160m / 120m) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Works Area

Longitudinal Markings & Screed Markings

Edge Line - Lane 1 Closure

Continuously Moving (SSO)

Urban Dual Carriageway

Two-Lane

50 km/h OR 60 km/h

RM131

Temporary Traffic Management Guidance Handbook

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **60 veh/3min**

Site Specific Assessment:
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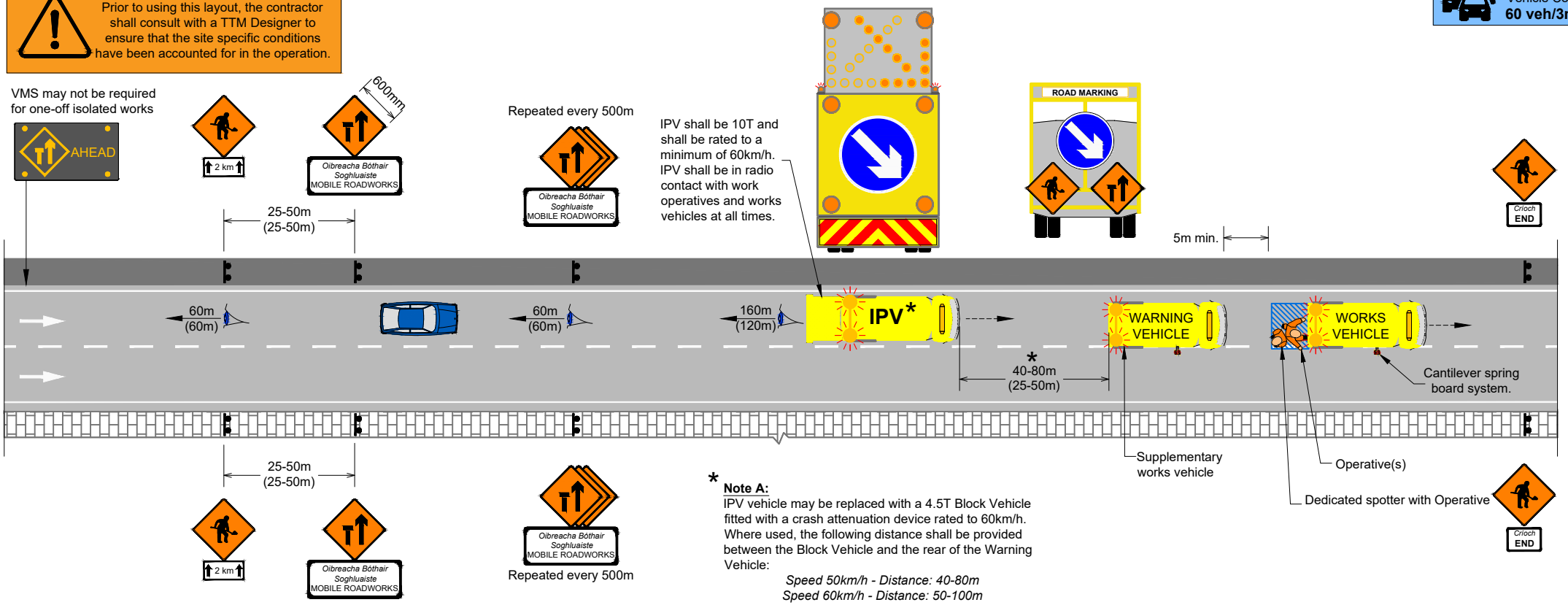

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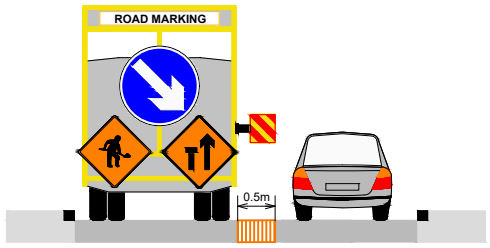
IPV vehicle may be replaced with a 4.5T Block Vehicle fitted with a crash attenuation device rated to 60km/h. Where used, the following distance shall be provided between the Block Vehicle and the rear of the Warning Vehicle:

Speed 50km/h - Distance: 40-80m
Speed 60km/h - Distance: 50-100m

Lateral Safety Zone Cantilever Board



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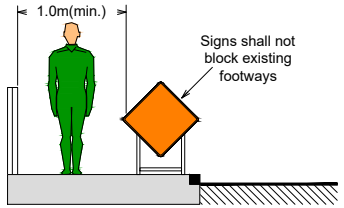
Sign Position Requirements
(If Positioned on Footway)



Legend

- Spotter
- Operative
- Visibility (160m / 120m) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Works Area

Longitudinal Markings & Screed Markings

Centre Line - Lane 1 Closure

Continuously Moving (SSO)

Urban Dual Carriageway

Two-Lane

50 km/h OR 60 km/h

RM132

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **60 veh/3min**

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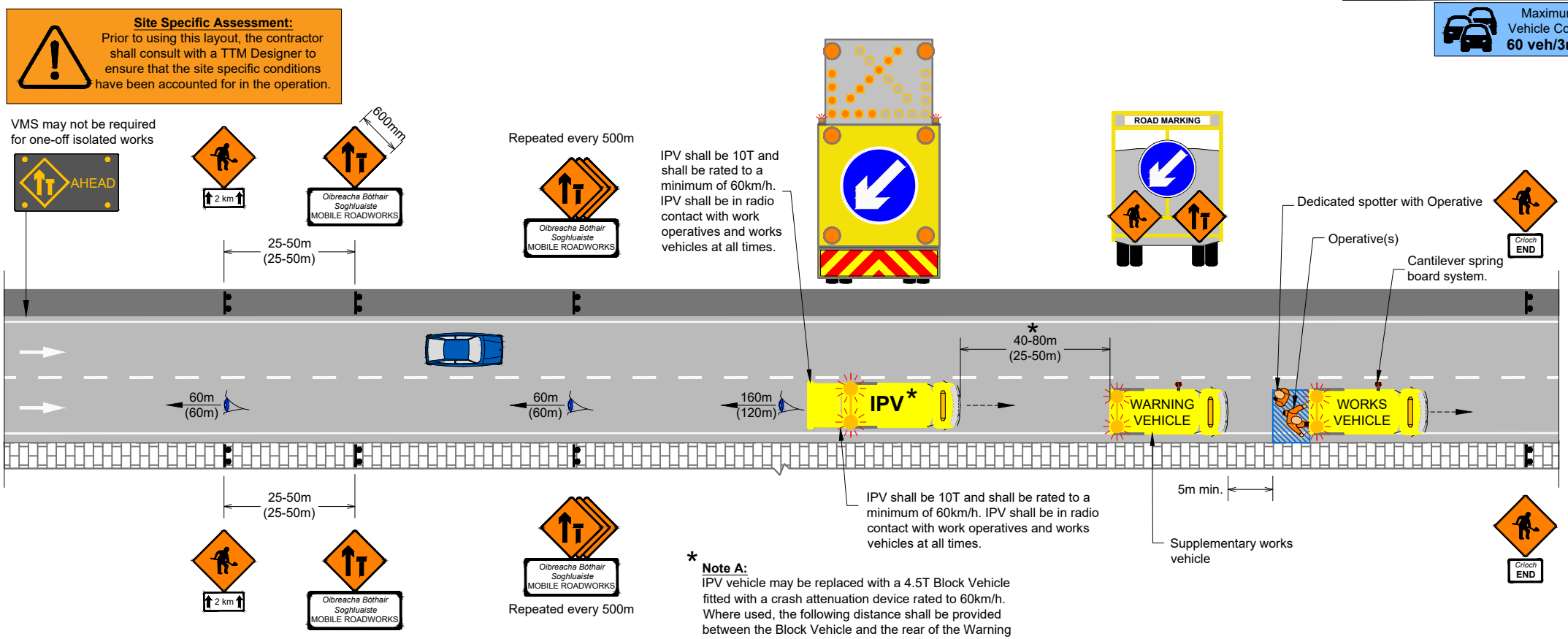

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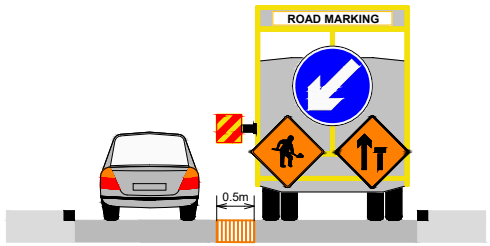

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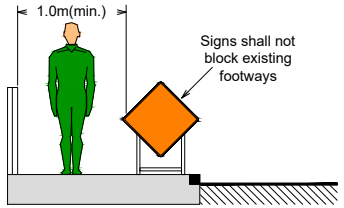
Sign Position Requirements
(If Positioned on Footway)



Legend

- Spotter
- Operative
- Visibility (160m / 120m) relates to 60 km/h (relates to 50 km/h)
- Traffic Sign
- Works Area

Longitudinal Markings & Screed Markings

Median Line - Lane 2 Closure

Continuously Moving (SSO)

Urban Dual Carriageway
Two-Lane

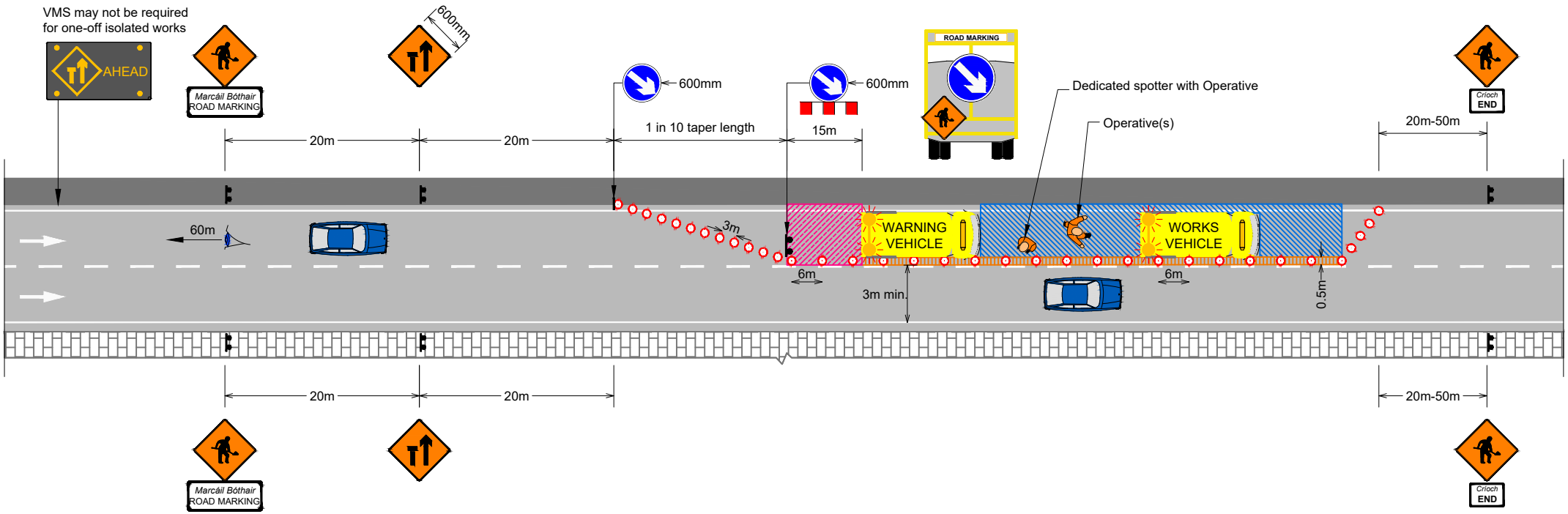
50 km/h OR 60 km/h

RM133

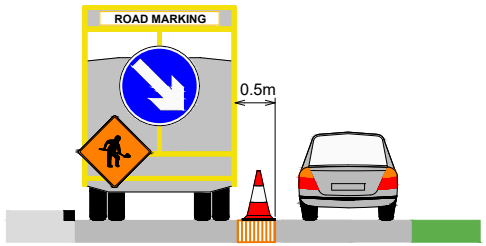
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Lateral Safety Zone



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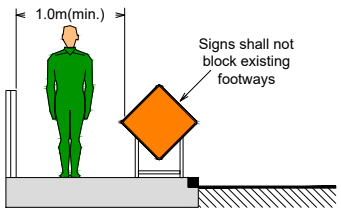
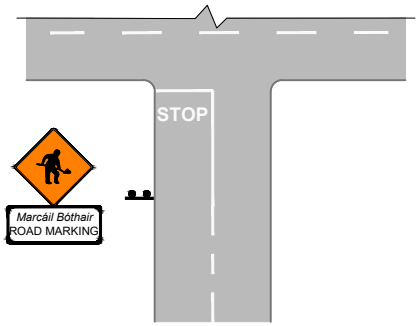


Urban Multi-lane Street - Side Road



Legend

- Cones (0.75m)
- Spotter
- Operative
- 60m Visibility
- 15m Distance
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Lane 1 Closure

Static

Urban Dual Carriageway

Two-Lane

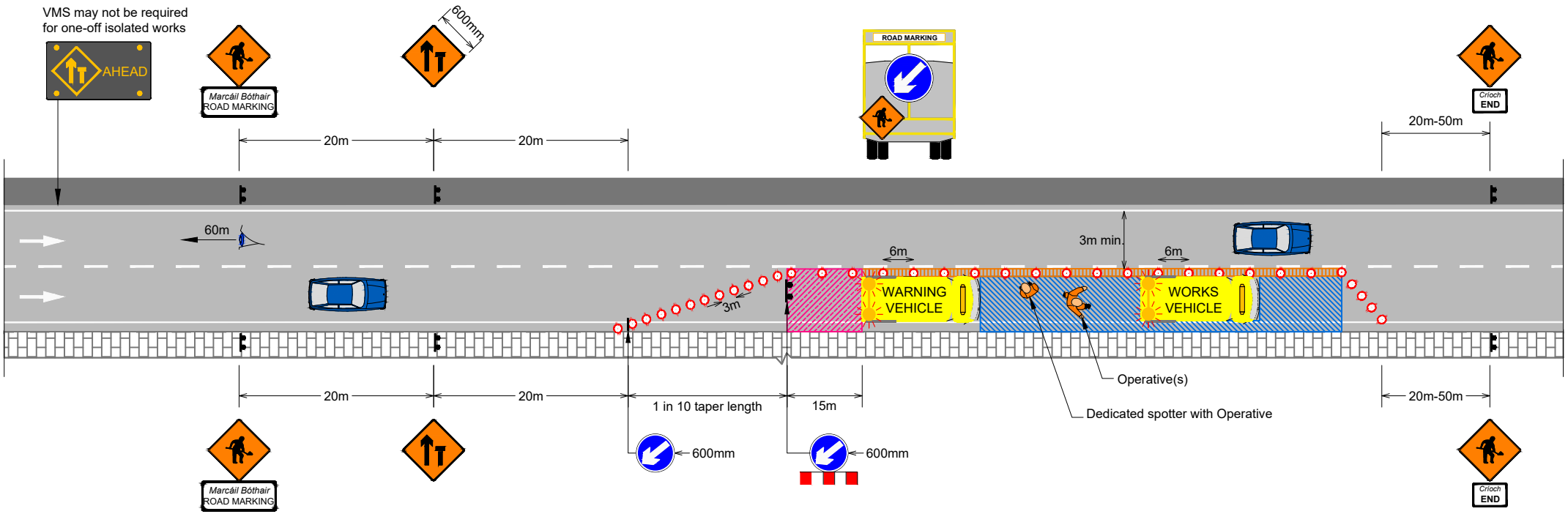
50 km/h OR 60 km/h

RM134

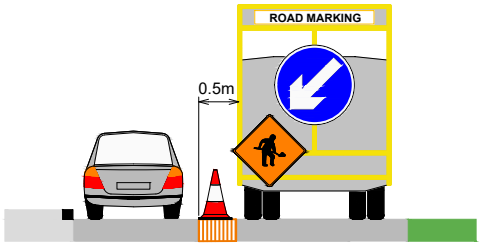
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Lateral Safety Zone



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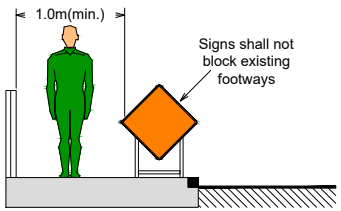
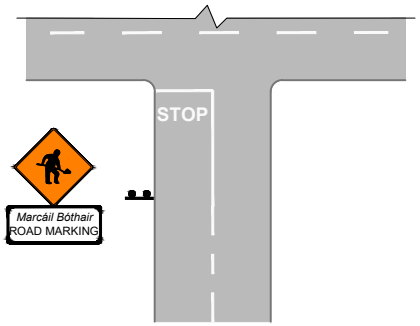


Urban Multi-lane Street - Side Road



Legend

- Cones (0.75m)
- Spotter
- Operative
- 60m Visibility
- 15m Distance
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Lane 2 Closure

Static

Urban Dual Carriageway

Two-Lane

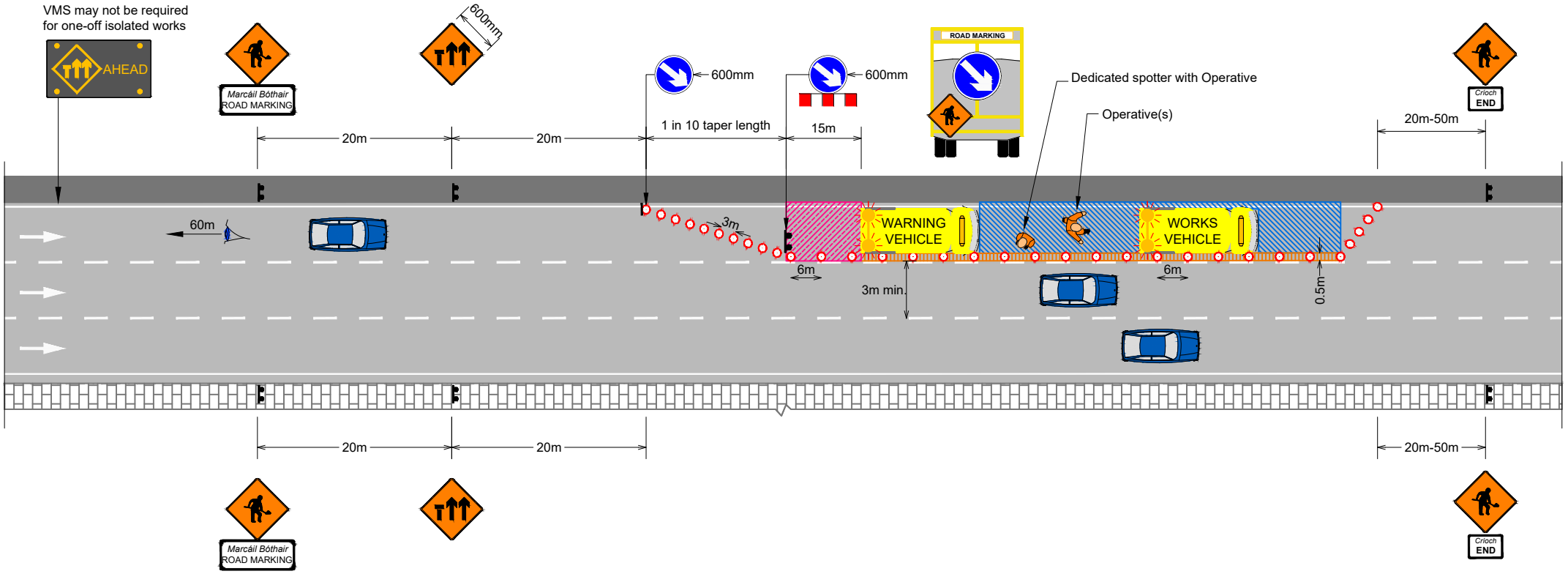
50 km/h OR 60 km/h

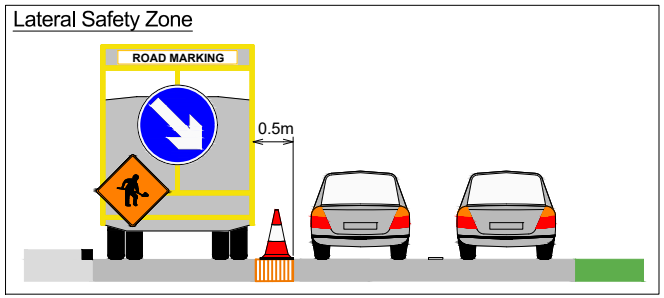
RM135

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE





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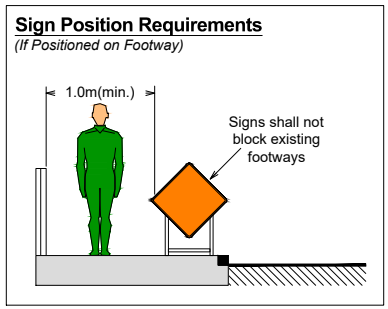
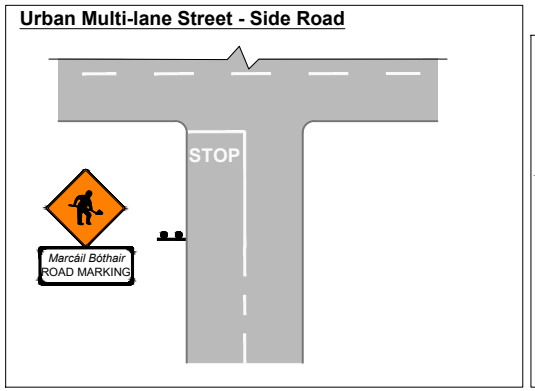
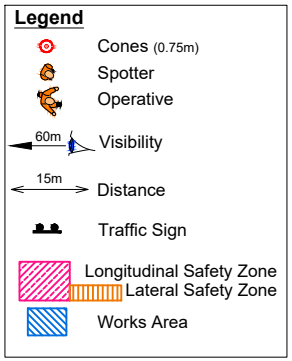






Screed Applied Markings

Lane 1 Closure

Static

Urban Dual Carriageway

Three-Lane

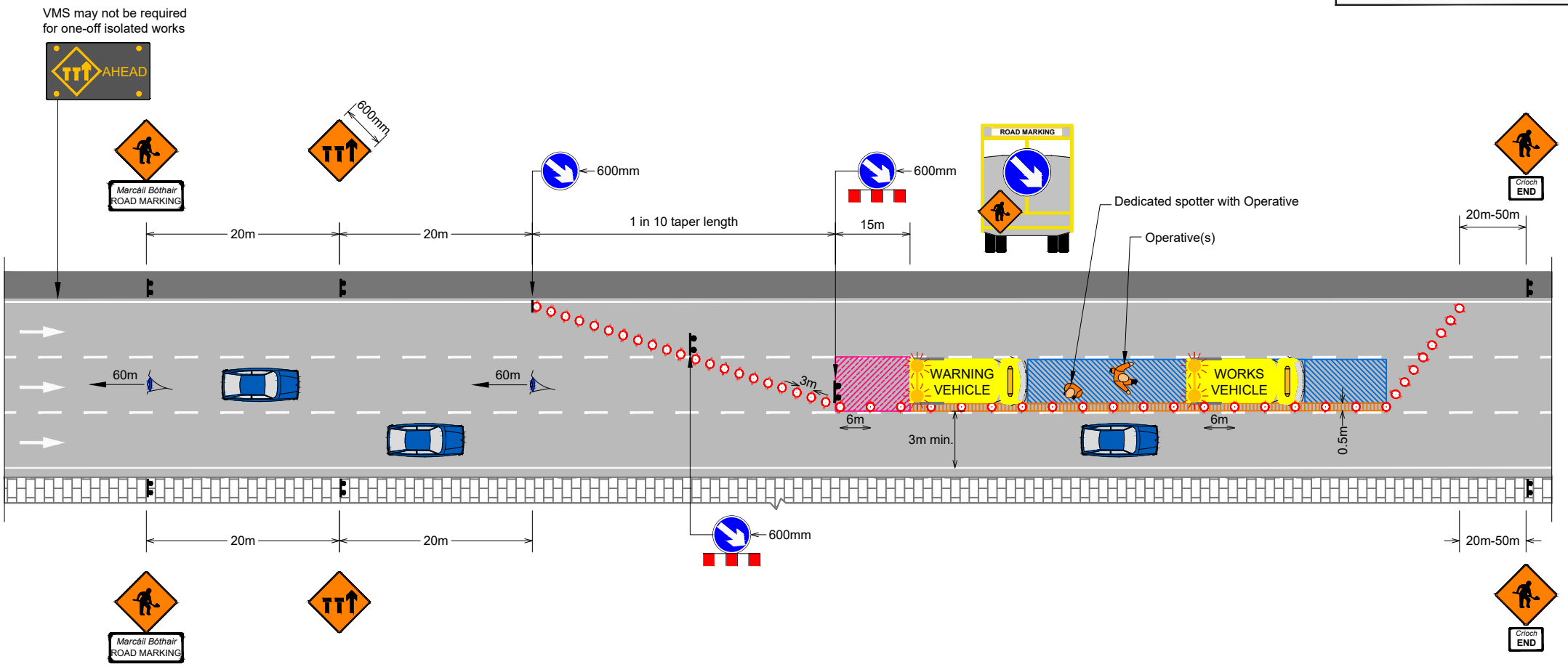
50 km/h OR 60 km/h

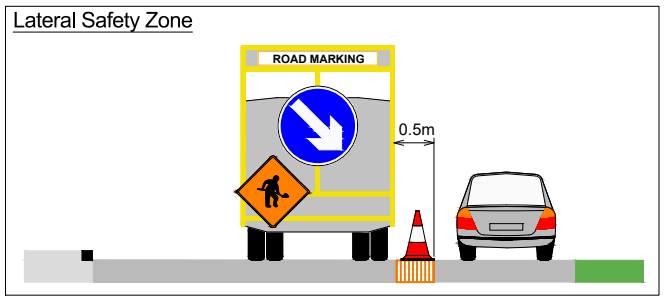
RM136

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE





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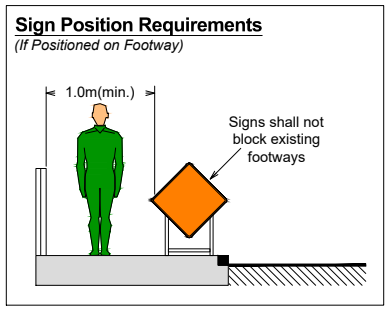
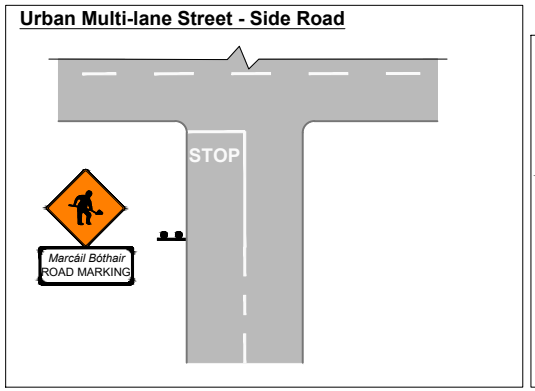
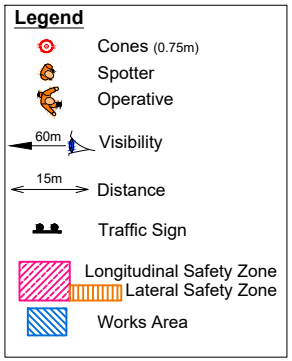






Screed Applied Markings

Lane 1 & 2 Closure (Direct Taper - Type B Works)

Static

Urban Dual Carriageway
Three-Lane

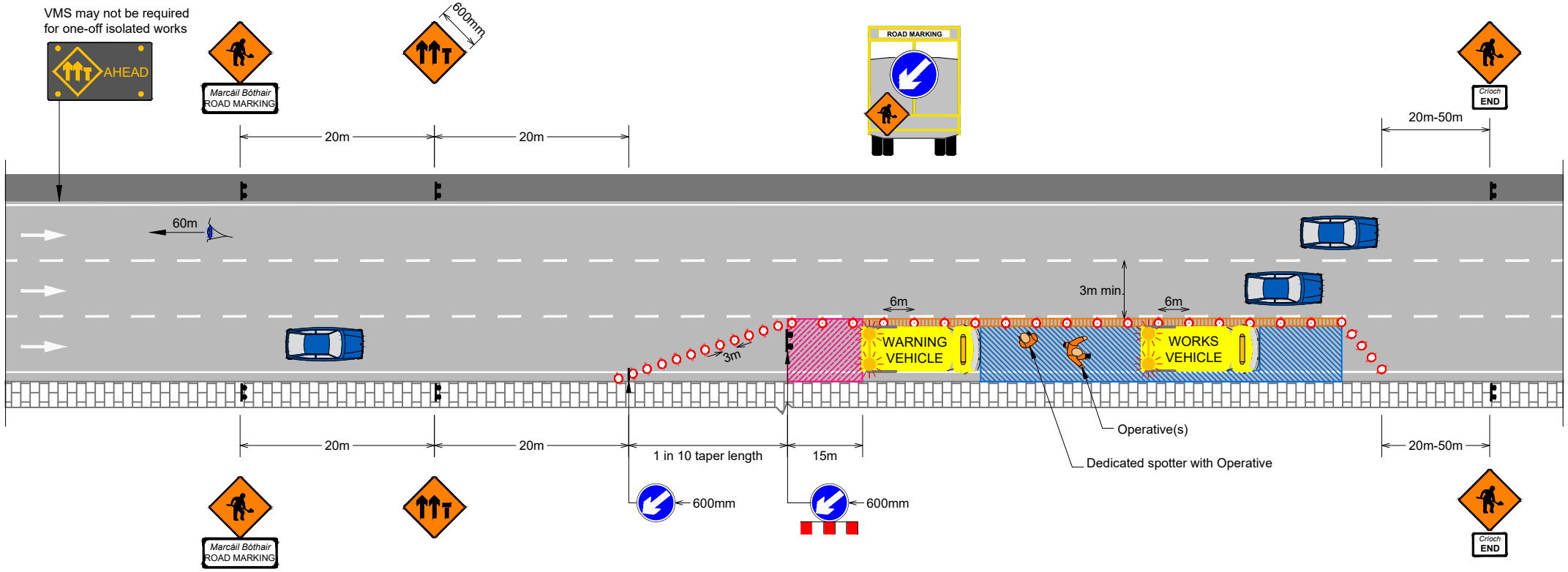
50 km/h OR 60 km/h

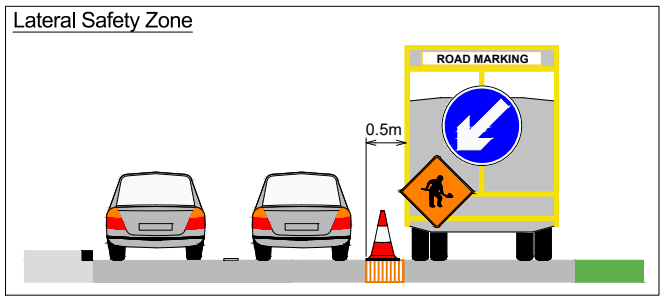
RM137

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

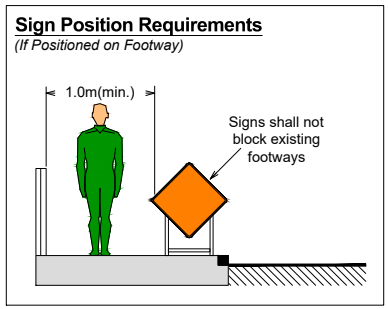
EXAMPLE ONLY NOT TO SCALE

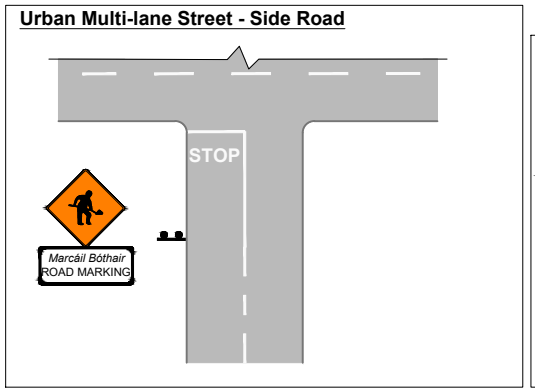


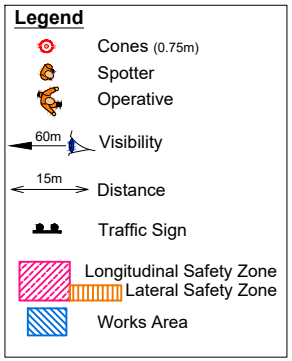


Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.







Screed Applied Markings

Lane 3 Closure

Static

Urban Dual Carriageway

Three-Lane

50 km/h OR 60 km/h

RM138

Temporary Traffic Management Layout Diagrams

For

ROAD MARKING
LEVEL 2(i) & 2(ii) ROADS

Temporary Traffic Management Guidance Handbook

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

VMS may not be required for one-off isolated works

ROAD MARKING FOR 10km

10 km

Marcáil Bóthair ROAD MARKING

750mm (600mm)

Refer to Insert A for Repeater Sign Requirements

See Note 4

ROAD MARKING

ROAD MARKING

Insert A: SSO Repeater Sign Requirements

X km

Marcáil Bóthair ROAD MARKING

X km

(1) To be repeated at 2km intervals with a P 002 'step down' distance plate
(2) To be repeated at every 500m interval

Maximum Vehicle Count: **50 veh/3min**

Críoch END

20-50m 20-50m 20-50m

120m (90m)

60m (45m)

10m min.

50m max.

Dedicated spotter with operative

Operative(s)

120m (90m)

STOP

GO

WARNING VEHICLE

WORKS VEHICLE

3m min.

Cantilever spring board system.

GO

STOP

120m (90m)

120m (90m)

60m (45m)

20-50m 20-50m 20-50m

300m max.

Works zone may be extended to 500m subject to a site specific risk assessment

Críoch END

Refer to Insert A for Repeater Sign Requirements

Marcáil Bóthair ROAD MARKING

10 km

VMS may not be required for one-off isolated works

ROAD MARKING FOR 10km

Phase I

Phase II

Phase III

STOP

Lateral Safety Zone Cantilever Board

ROAD MARKING

Sign required when cantilever board in operation

Sign shall be double sided

1.2m

Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Side Road Within Stop/Go Setup

750mm (600mm)

20m

20m

STOP

Marcáil Bóthair ROAD MARKING

Vehicle controller may be required on side roads /accesses to control conflicting traffic movements.

Signs may be omitted for traffic volumes <1 veh / 3 mins (20 veh/h)

Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 60m (45m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Stop/Go & Operative
- Works Area
- Works Zone

Stud Fitting/Removal and Screed Markings

Centre Lines & Edge Lines (Stop/Go on Foot - Slow Moving Works)

Continuously Moving (SSO)

Single C/W

No Hard Shoulder

100 km/h OR 80 km/h

RM201

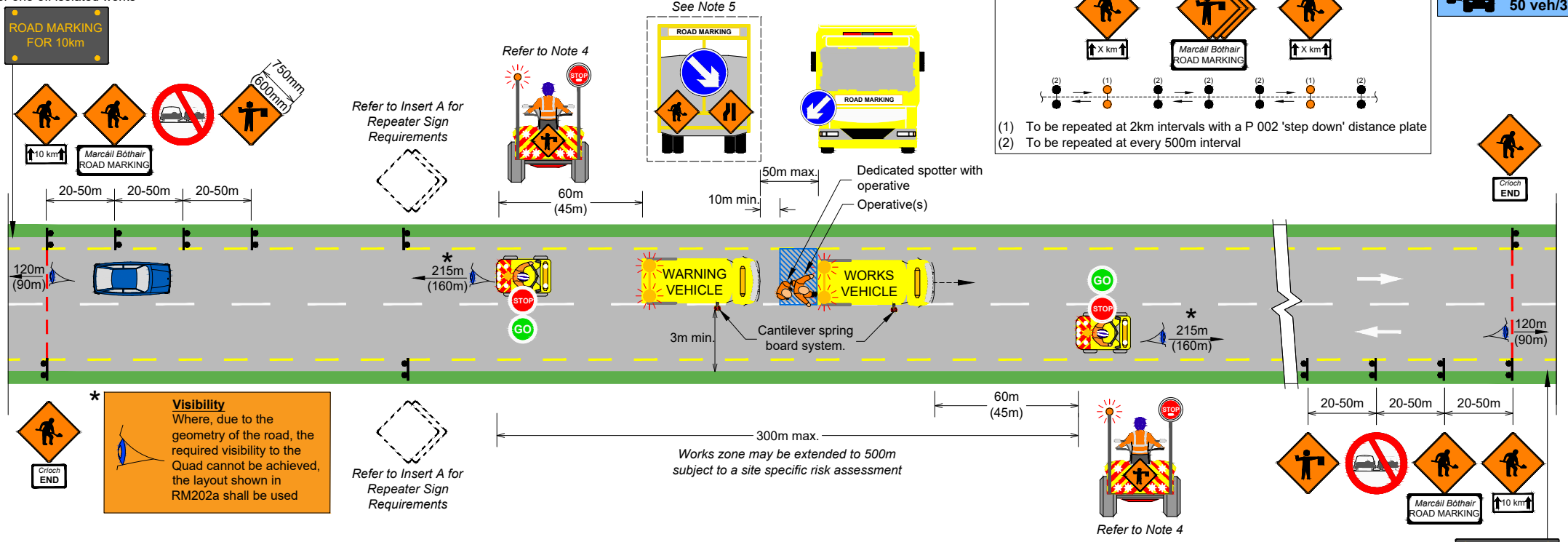
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

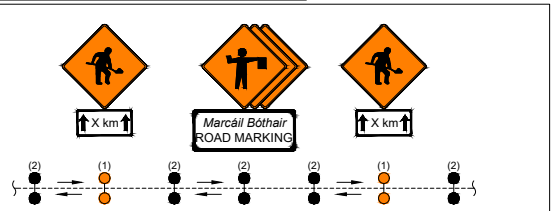
EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **50 veh/3min**

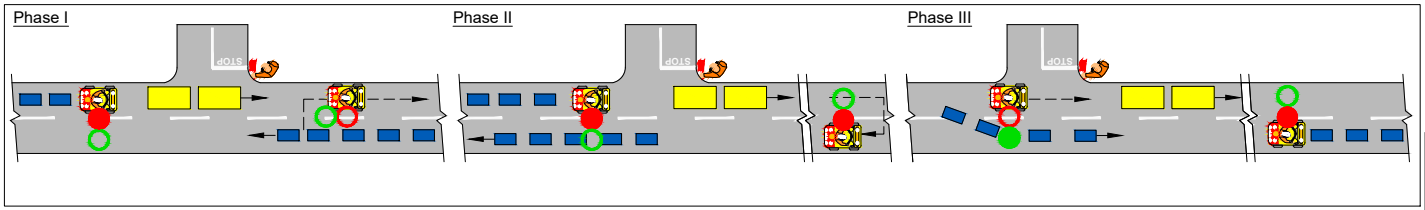
VMS may not be required for one-off isolated works



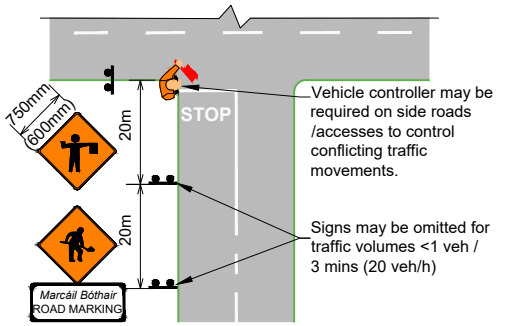
Insert A: SSO Repeater Sign Requirements



(1) To be repeated at 2km intervals with a P 002 'step down' distance plate
(2) To be repeated at every 500m interval



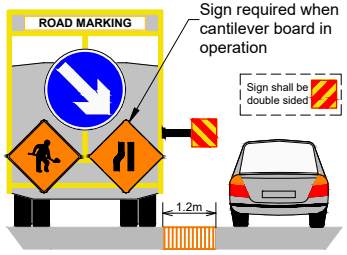
Side Road Within Stop/Go Setup



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 60m (45m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Stop/Go on Quad
- Works Area
- Works Zone

Lateral Safety Zone Cantilever Board



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. Operatives may dismount from the quad vehicle to face oncoming vehicles when carrying out Stop and Go control. When the driver dismounts the quad, and the quad has been legally parked, the visibility requirement for the quad reduces to 120m for 100km/h and 90m for 80km/h.
5. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Longitudinal Markings & Stud Replacements

Centre Lines & Edge Lines (Stop/Go on Quad - Fast Moving Works)

Continuously Moving (SSO)

Single C/W

No Hard Shoulder

100 km/h OR 80 km/h

RM202

Road Marking

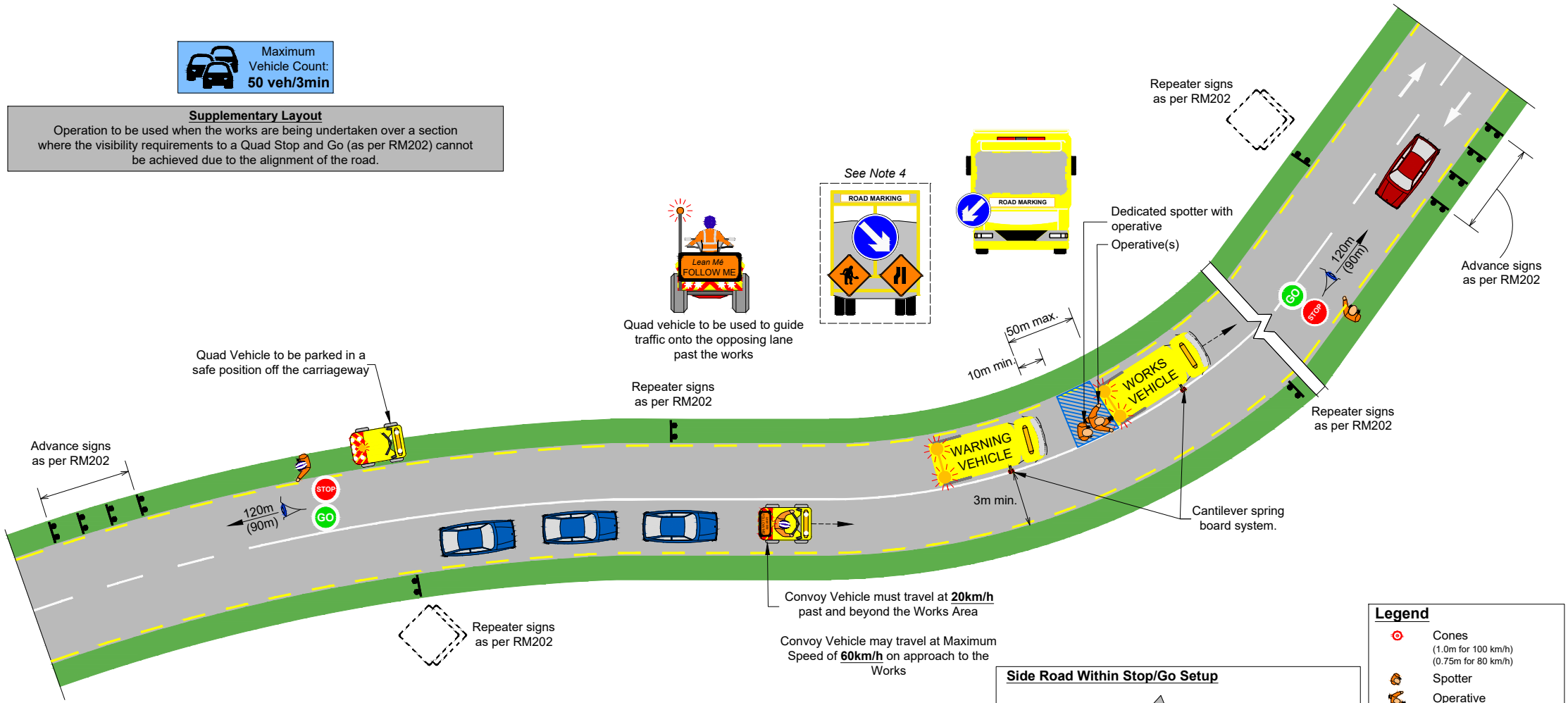
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

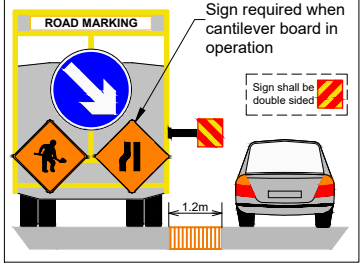
Maximum Vehicle Count: **50 veh/3min**

Supplementary Layout

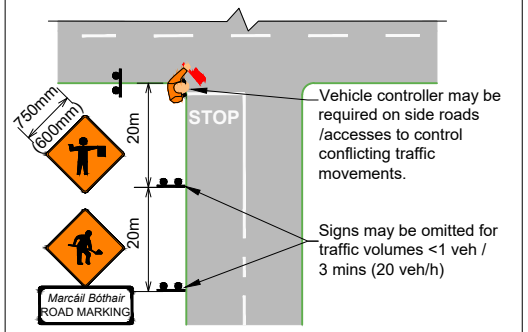
Operation to be used when the works are being undertaken over a section where the visibility requirements to a Quad Stop and Go (as per RM202) cannot be achieved due to the alignment of the road.



Lateral Safety Zone Cantilever Board



Side Road Within Stop/Go Setup



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 60m (45m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Stop/Go & Operative
- Convoy Quad
- Works Area
- Works Zone

Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Longitudinal Markings & Stud Replacements

Centre Lines & Edge Lines (Stop/Go on Quad - Fast Moving Works)

Continuously Moving (SSO)

Single C/W

Around a Bend

100 km/h OR 80 km/h

RM202a

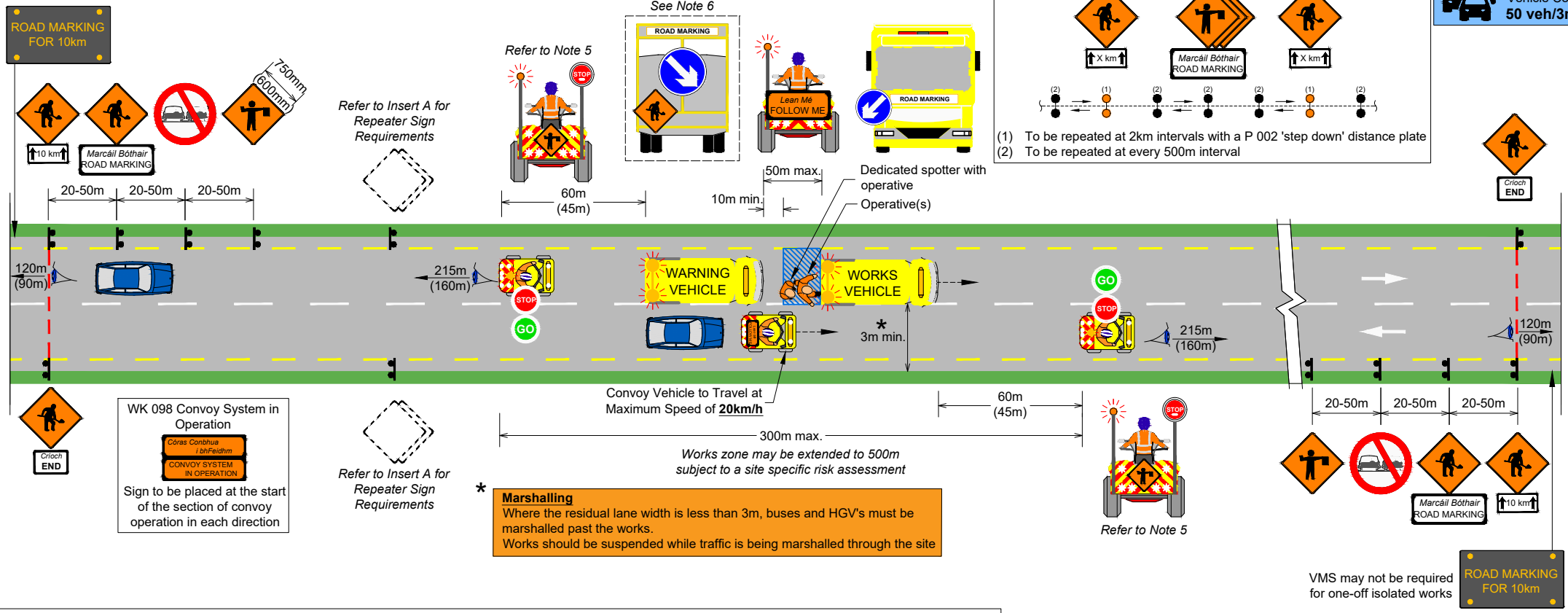
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

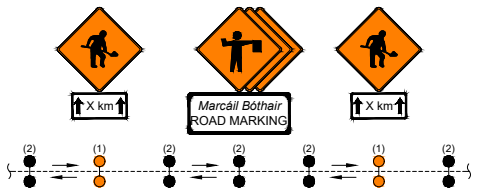
EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **50 veh/3min**

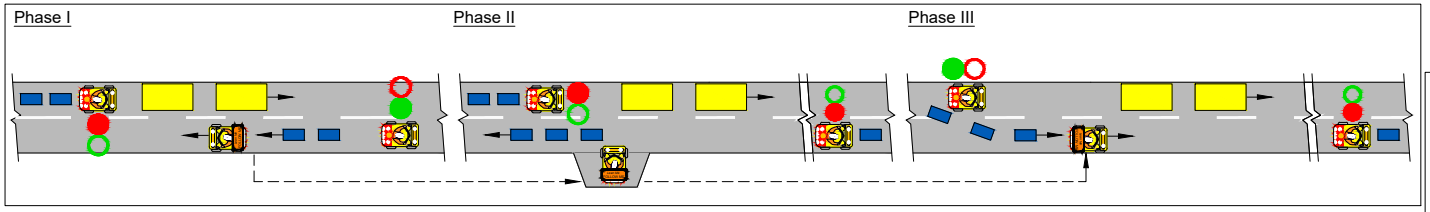
VMS may not be required for one-off isolated works



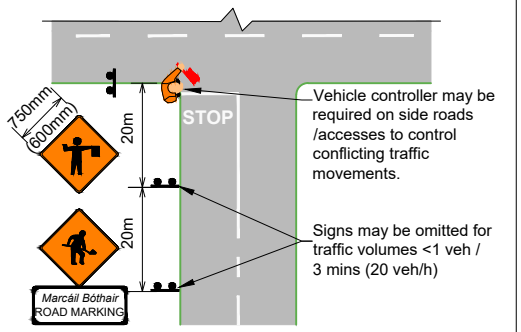
Insert A: SSO Repeater Sign Requirements



(1) To be repeated at 2km intervals with a P 002 'step down' distance plate
(2) To be repeated at every 500m interval



Side Road Within Stop/Go Setup



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 60m (45m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Stop/Go on Quad
- Works Area
- Works Zone

Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. Traffic must be controlled/stopped by the Stop/Go controls prior to traffic being moved through the works under convoy
5. Operatives may dismount from the quad vehicle to face oncoming vehicles when carrying out Stop and Go control. When the driver dismounts the quad, and the quad has been legally parked, the visibility requirement for the quad reduces to 120m for 100km/h and 90m for 80km/h.
6. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Longitudinal Markings & Stud Replacements

Centre Lines & Edge Lines (Stop/Go on Quad & Convoy - Fast Moving Works)

Continuously Moving (SSO)

Single C/W

Narrow Road

100 km/h OR 80 km/h

RM203

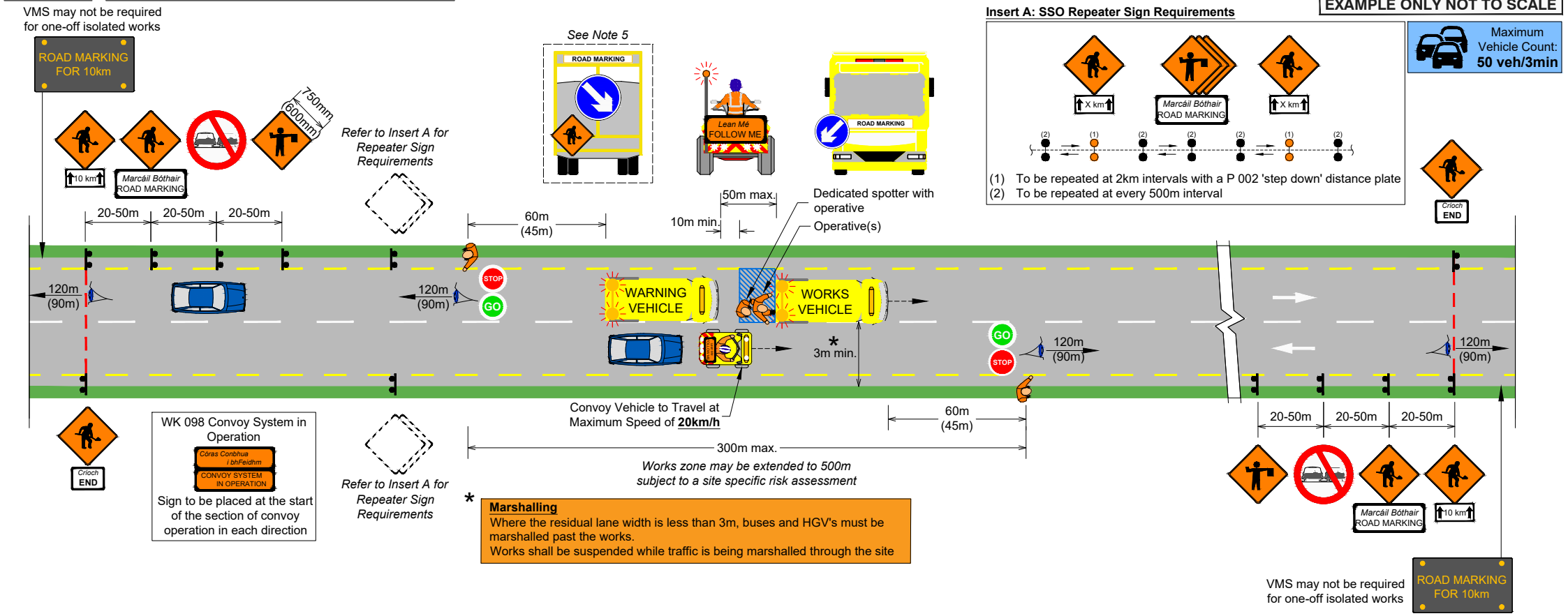
Temporary Traffic Management Guidance Handbook

Road Marking

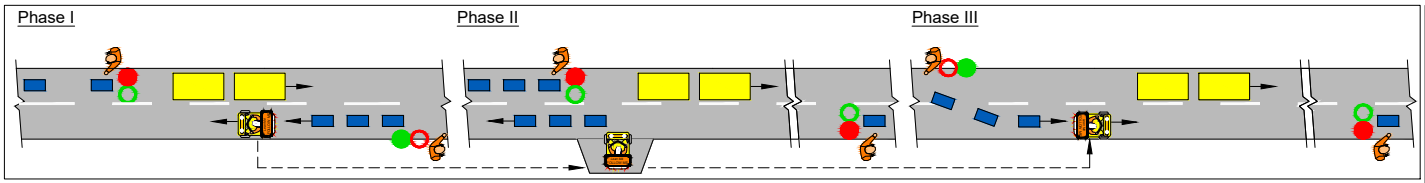
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

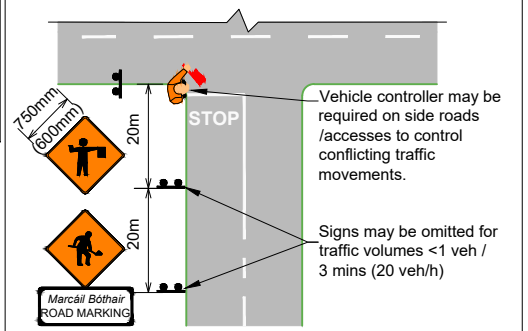
VMS may not be required for one-off isolated works



* **Marshalling**
Where the residual lane width is less than 3m, buses and HGV's must be marshalled past the works.
Works shall be suspended while traffic is being marshalled through the site



Side Road Within Stop/Go Setup



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 60m (45m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Stop/Go & Operative
- Convoy Quad
- Works Area
- Works Zone

Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. Traffic must be controlled/stopped by the Stop/Go controls prior to the quad guiding the traffic through the works.
5. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Stud Fitting/Removal and Screed Markings
Centre & Edge Lines (Stop/Go on Foot & Convoy - Slow Moving Works)

Continuously Moving (SSO)

Single C/W
Narrow Road

100 km/h OR 80 km/h

RM204

Temporary Traffic Management Guidance Handbook

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Site Specific Assessment:
Prior to using this layout, the contractor shall consult with a TTM Designer to ensure that the site specific conditions have been accounted for in the operation.

Maximum Vehicle Count: **50 veh/3min**

ROAD MARKING FOR 10km

VMS may not be required for one-off isolated works

750mm (600mm)

10 km

Marcáil Bóthair ROAD MARKING

20-50m 20-50m

Refer to Insert A for Repeater Sign Requirements

Flagman required when operatives are working in the carriageway (i.e. slow moving works)
To be positioned in the verge facing oncoming traffic.

150m

100m max.

50m min.

50m max.

10m min.

Dedicated spotter with operative

Operative(s)

120m (90m)

3m min.

IPV

WORKS VEHICLE

WORKS VEHICLE

Cantilever spring board system.

215m (160m)

* ≥ 2.5m

Crioch END

Insert A: SSO Repeater Sign Requirements

X km

Marcáil Bóthair ROAD MARKING

X km

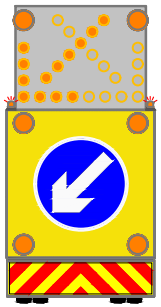
(1) To be repeated at 2km intervals with a P 002 'step down' distance plate
(2) To be repeated at every 500m interval

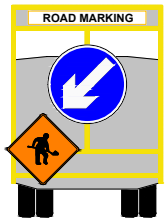
Refer to Insert A for Repeater Sign Requirements

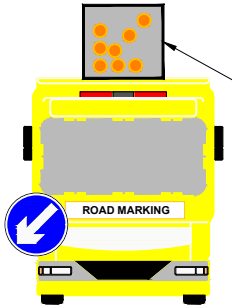
* **IPV**

The use of an IPV is only permitted where the hard shoulder width is ≥ 2.5m.

IPV driver must be suitably trained and in radio contact with the operatives and the works vehicles at all times.







Front of works & warning vehicles, optional lightboard.

150m

Flagman required when operatives are working in the carriageway (i.e. slow moving works)
To be positioned in the verge facing oncoming traffic.

20-50m 20-50m

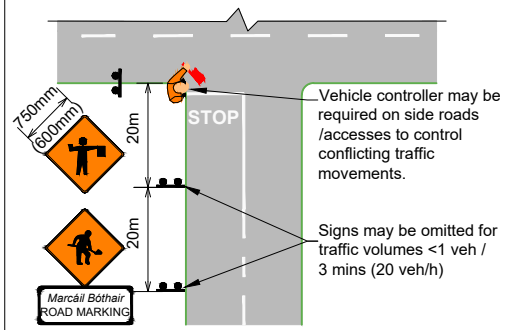
Marcáil Bóthair ROAD MARKING

10 km

ROAD MARKING FOR 10km

VMS may not be required for one-off isolated works

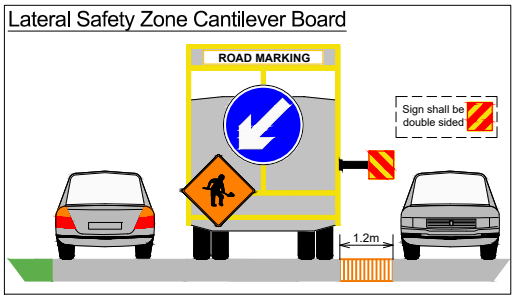
Side Road Within Stop/Go Setup



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter/Flagman
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Works Area
- Works Zone

Lateral Safety Zone Cantilever Board



Notes

1. Hard shoulders must be in good condition, and a minimum of 3.0m lane width available adjacent to the works, as indicated, must be achievable.
2. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
3. Additional spotter(s) may be required, depending on the activity.
4. Layout may not be suitable if accesses are present.

Stud Fitting/Removal, Longitudinal Markings (incl. Short Duration Screed)
Centre Lines Only (2-Way Traffic Maintained - Working From Running Lanes)

Continuously Moving (SSO)

Single C/W
Wide with Hard Shoulder

100 km/h OR 80 km/h

RM205

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **50 veh/3min**

VMS may not be required for one-off isolated works

ROAD MARKING FOR 10km

10 km

Marcáil Bóthair ROAD MARKING

750mm (600mm)

Refer to Insert A for Repeater Sign Requirements

20-50m 20-50m 20-50m

60m (45m)

Dedicated spotter with operative

Operative(s)

10m min.

120m (90m)

STOP

GO

WORKS VEHICLE

WARNING VEHICLE

Operative must turn off headlights when vehicle faces oncoming traffic

60m (45m)

300m max.

Works zone may be extended to 500m subject to a site specific risk assessment

Crioch END

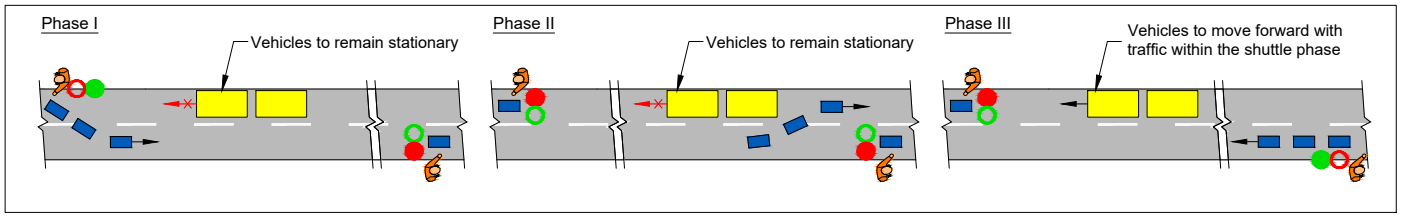
Insert A: SSO Repeater Sign Requirements

X km

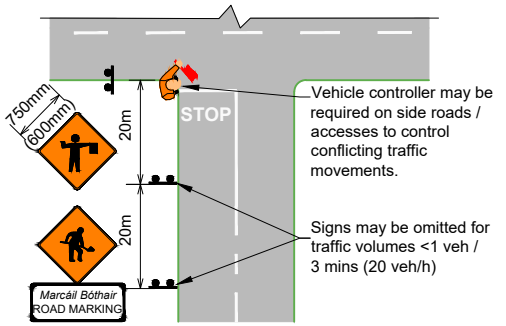
Marcáil Bóthair ROAD MARKING

(1) To be repeated at 2km intervals with a P 002 'step down' distance plate

(2) To be repeated at every 500m interval



Side Road Within Operation



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80 km/h)
- Distance 60m (45m) relates to 100 km/h (relates to 80 km/h)
- Traffic Sign
- Stop/Go & Operative
- Works Area
- Works Zone

Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.

Stud Fitting Type 1 (Incl. Short Duration Screed)

Edge Lines (Stop/Go on Foot - Slow Moving Works)

Continuously Moving (SSO)

Single C/W

No Hard Shoulder

100 km/h OR 80 km/h

RM206

Road Marking

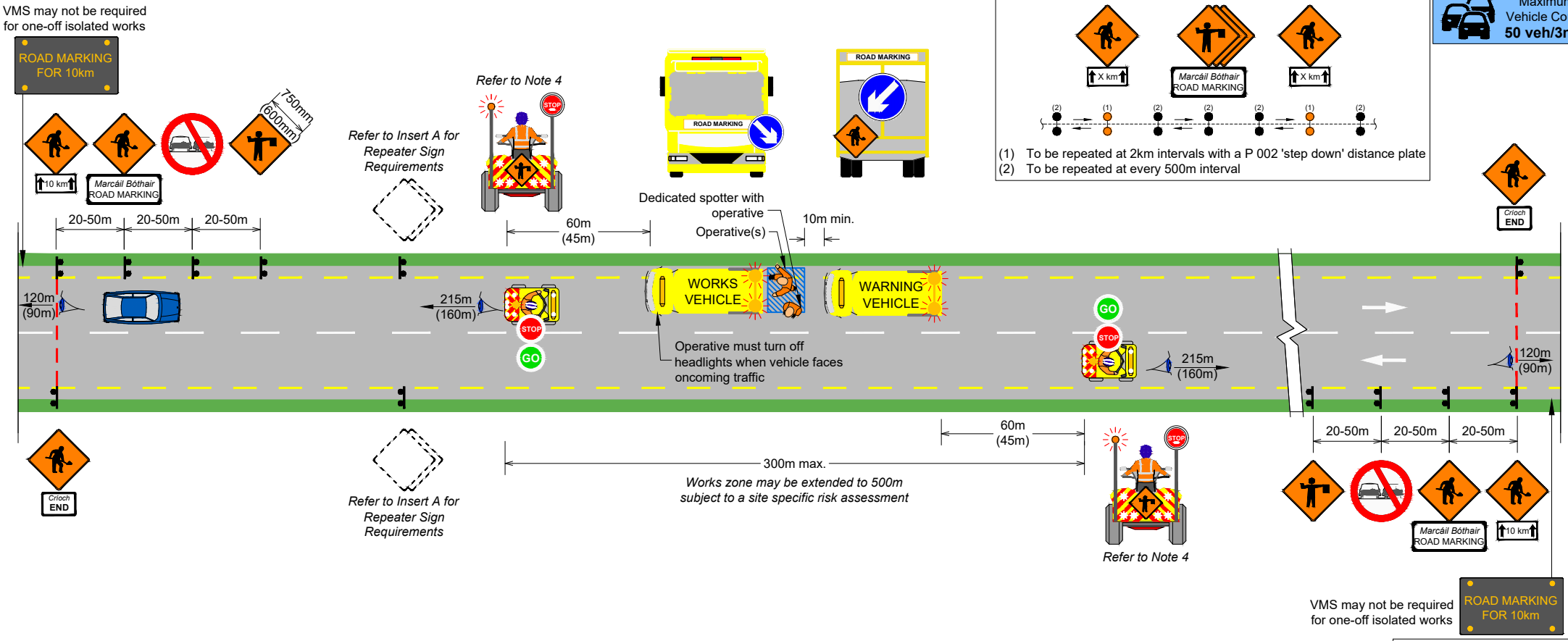
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

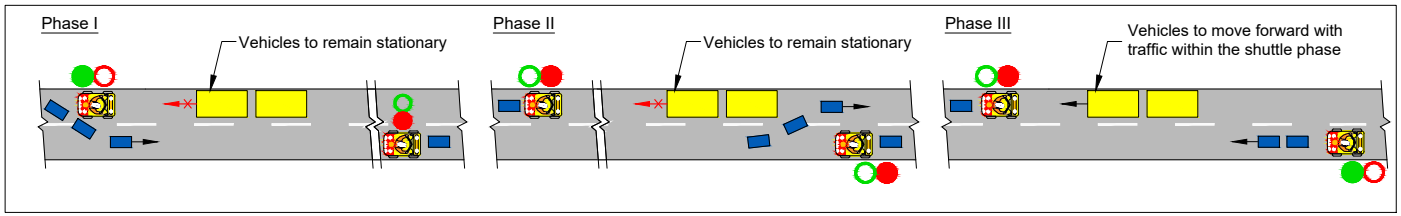
EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **50 veh/3min**

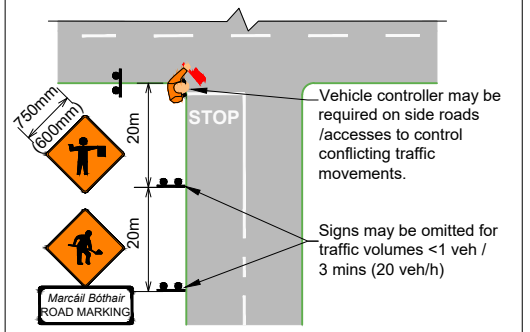
Insert A: SSO Repeater Sign Requirements

(1) To be repeated at 2km intervals with a P 002 'step down' distance plate
(2) To be repeated at every 500m interval





Side Road Within Stop/Go Setup



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 60m (45m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Stop/Go on Quad
- Works Area
- Works Zone

Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. Operatives may dismount from the quad vehicle to face oncoming vehicles when carrying out Stop and Go control. When the driver dismounts the quad, and the quad has been legally parked, the visibility requirement for the quad reduces to 120m for 100km/h and 90m for 80km/h.

Stud Fitting Type 1 (Incl. Short Duration Screed)

Edge Lines (Stop/Go on Quad - Fast Moving Works)

Continuously Moving (SSO)

Single C/W

No Hard Shoulder

100 km/h OR 80 km/h

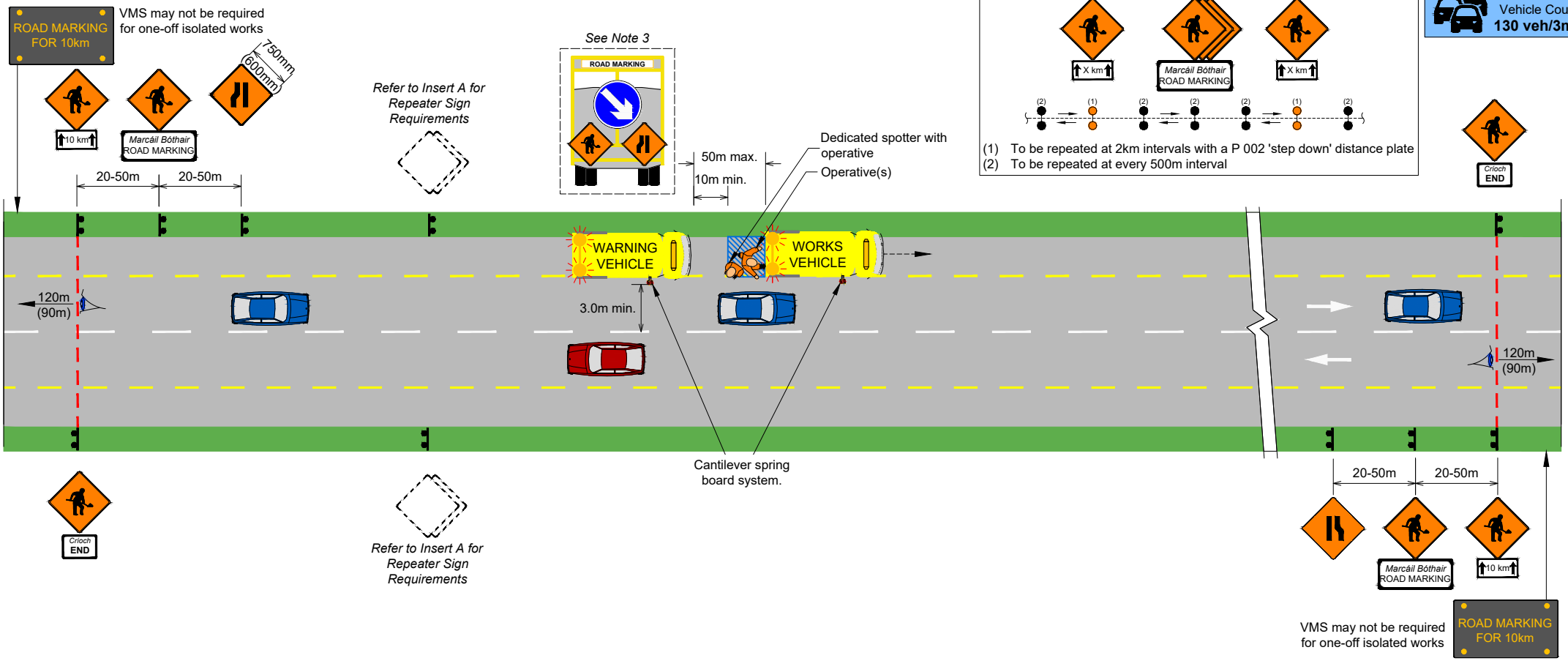
RM207

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

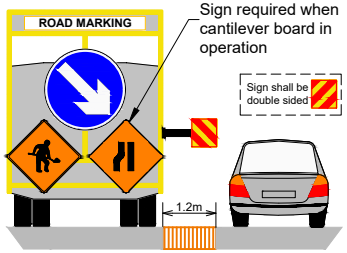
Maximum Vehicle Count: 130 veh/3min



Insert A: SSO Repeater Sign Requirements

(1) To be repeated at 2km intervals with a P 002 'step down' distance plate
(2) To be repeated at every 500m interval

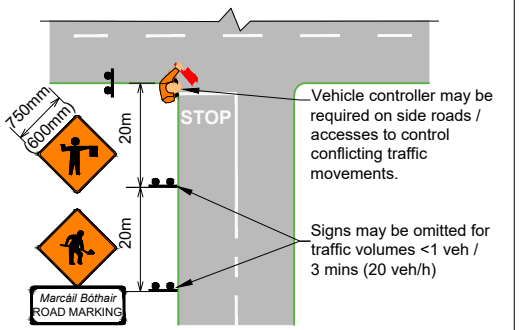
Lateral Safety Zone Cantilever Board



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. The Warning Vehicle may be omitted when operatives are not working in the carriageway (i.e. vehicle mounted works only).

Side Road Within Operation



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80 km/h)
- Traffic Sign
- Works Area
- Works Zone

Stud Fitting/Removal, Longitudinal Markings (Incl. Short Duration Screed)

Edge Lines Only (2-Way Traffic Maintained - Working From Hard Shoulder)

Continuously Moving (SSO)

Single C/W

Wide with Hard Shoulder

100 km/h OR 80 km/h

RM208

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

All Stop

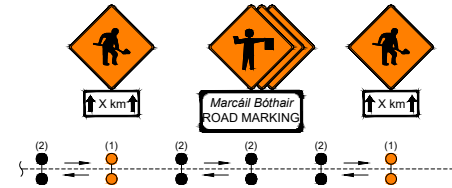
Layout developed for **short duration** screed works at minor road junctions using All Stop control.

Where the traffic flow exceeds 15 veh/3min, the works should be undertaken using **RM210**

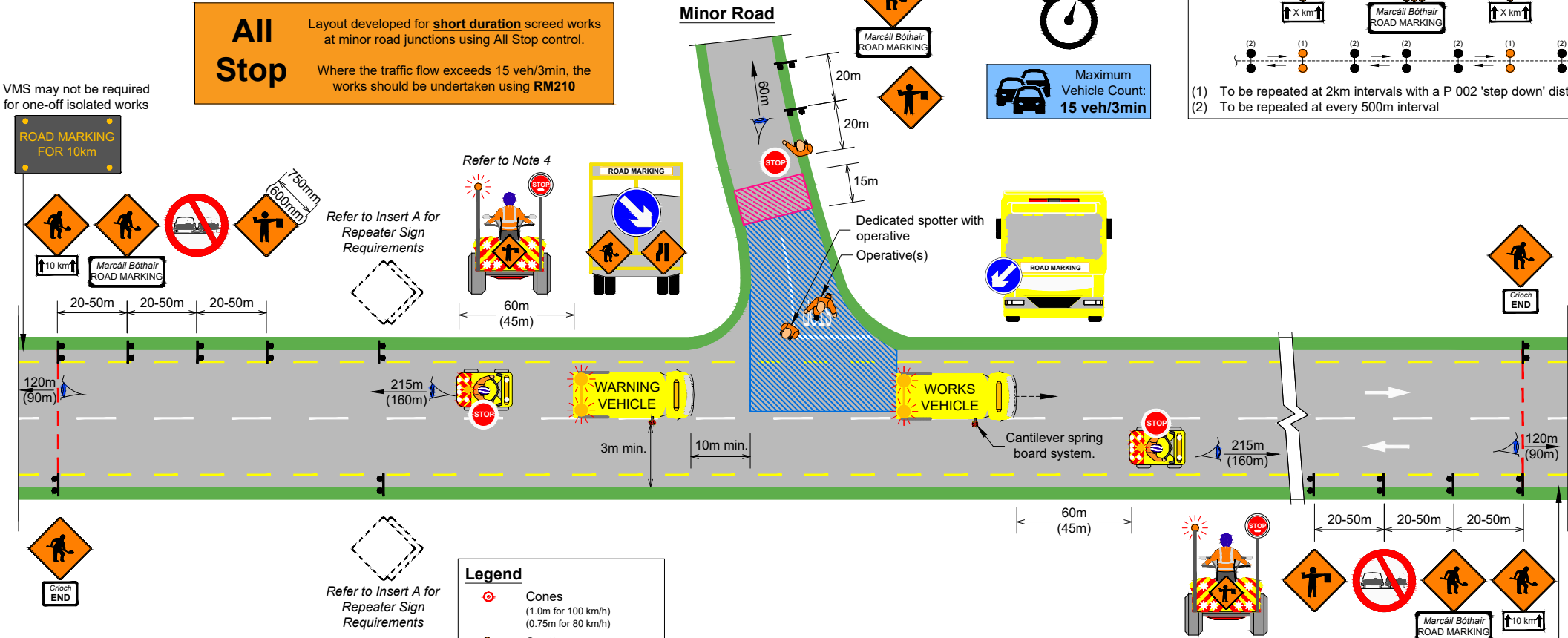
All Stop period shall not exceed **10 minutes** in duration

Maximum Vehicle Count: **15 veh/3min**

Insert A: SSO Repeater Sign Requirements



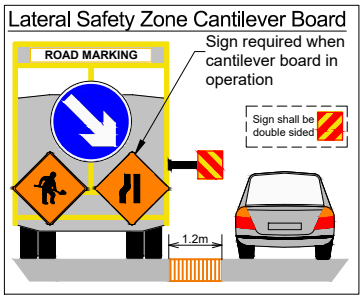
(1) To be repeated at 2km intervals with a P 002 'step down' distance plate
(2) To be repeated at every 500m interval



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 60m (45m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- All Stop
- Works Area
- Works Zone

Lateral Safety Zone Cantilever Board



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. Operatives may dismount from the quad vehicle to face oncoming vehicles when carrying out Stop and Go control. When the driver dismounts the quad, and the quad has been legally parked, the visibility requirement for the quad reduces to 120m for 100km/h and 90m for 80km/h.

Screed Applied Markings

Stop Line at Minor Road T - Junction - All Stop

Continuously Moving (SSO)

Single C/W

No Hard Shoulder

100 km/h OR 80 km/h

RM209

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

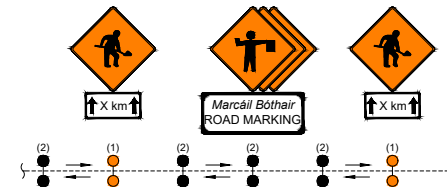
Stop & Go

Layout developed for **short duration** screed works at minor road junctions using Stop & Go control.

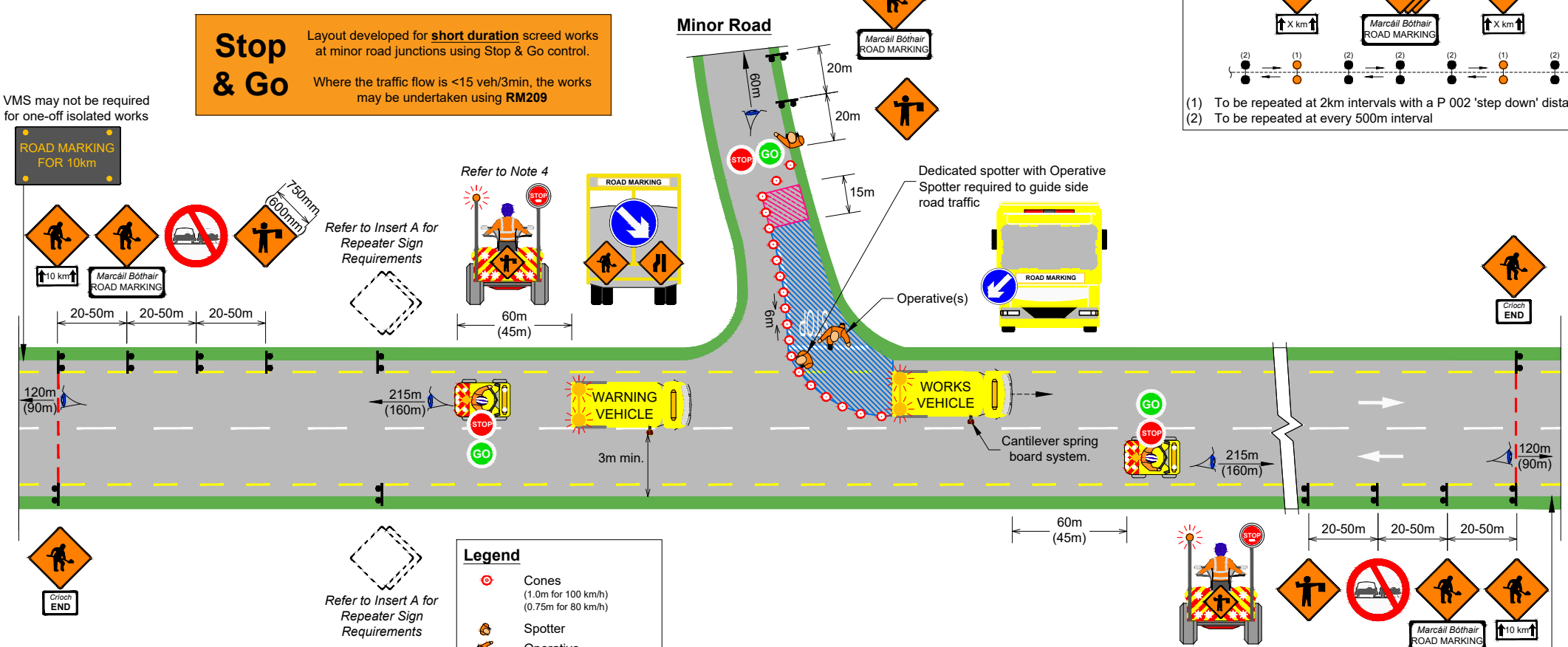
Where the traffic flow is <15 veh/3min, the works may be undertaken using **RM209**

Maximum Vehicle Count: **50 veh/3min**

Insert A: SSO Repeater Sign Requirements



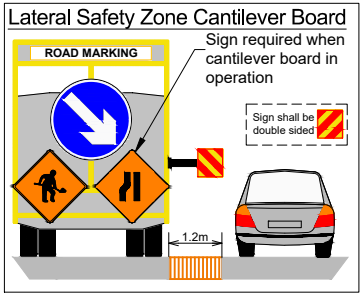
(1) To be repeated at 2km intervals with a P 002 'step down' distance plate
(2) To be repeated at every 500m interval



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 60m (45m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Stop/Go on Quad
- Works Area
- Works Zone

Lateral Safety Zone Cantilever Board



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
4. Operatives may dismount from the quad vehicle to face oncoming vehicles when carrying out Stop and Go control. When the driver dismounts the quad, and the quad has been legally parked, the visibility requirement for the quad reduces to 120m for 100km/h and 90m for 80km/h.

Screed Applied Markings

Stop Line at Minor Road T - Junction - Stop/Go

Continuously Moving (SSO)

Single C/W

No Hard Shoulder

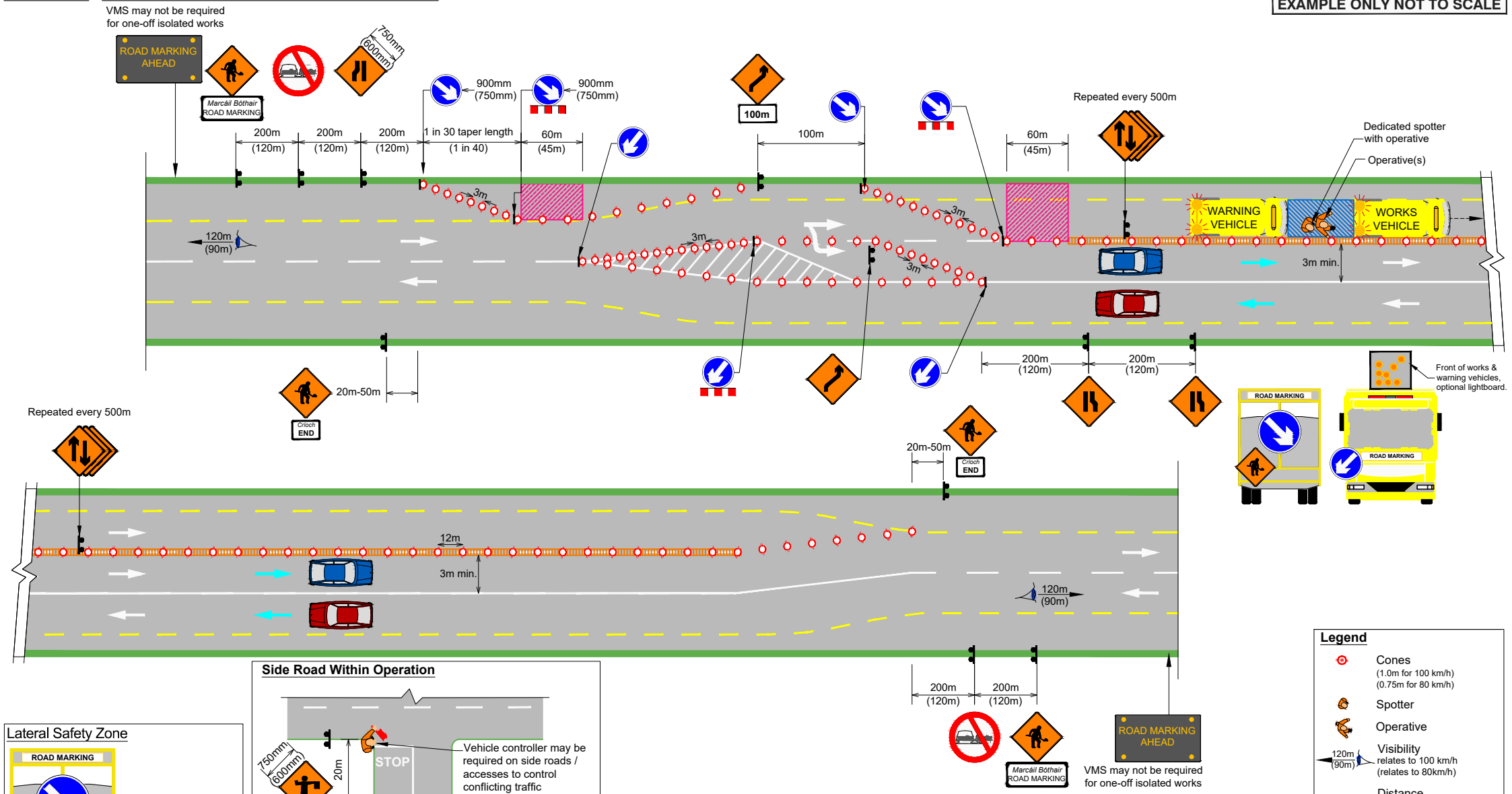
100 km/h OR 80 km/h

RM210

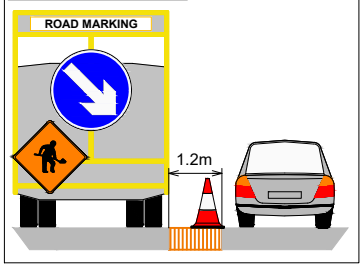
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

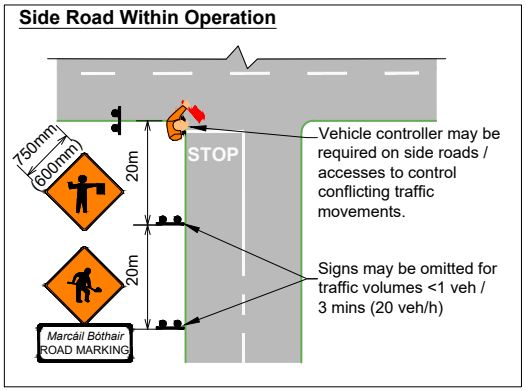
EXAMPLE ONLY NOT TO SCALE



Lateral Safety Zone



Side Road Within Operation



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.

Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 200m (120m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Stud Fitting/Removal and Longitudinal Markings

Edge Line and Lane Line (2-Way Traffic Maintained - Lane 1 Closure)

Static

Single C/W

Climbing Lane

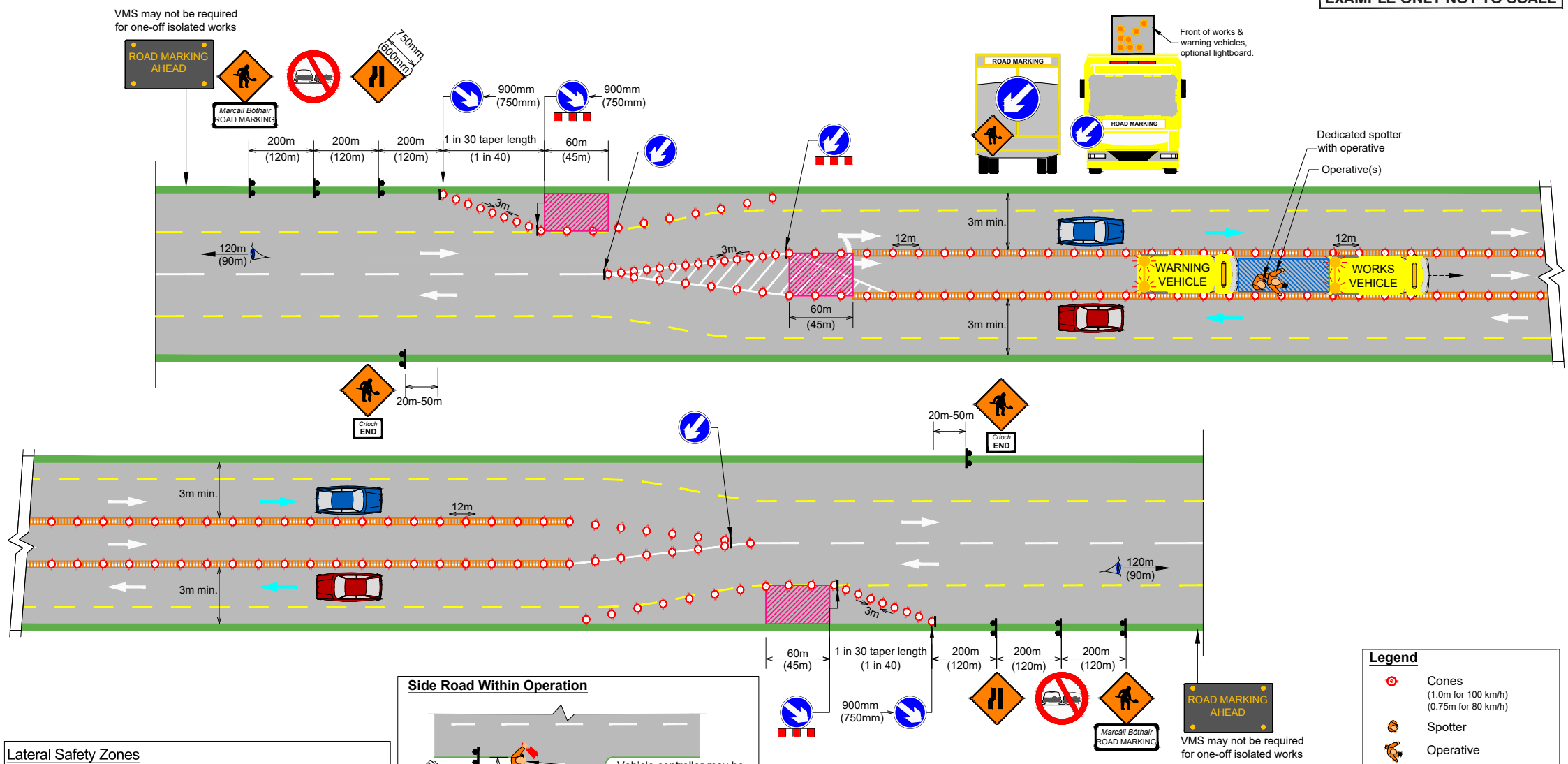
100 km/h OR 80 km/h

RM211

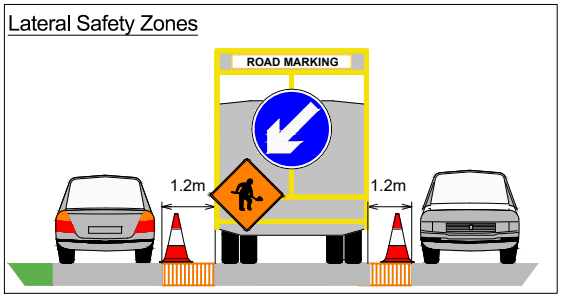
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

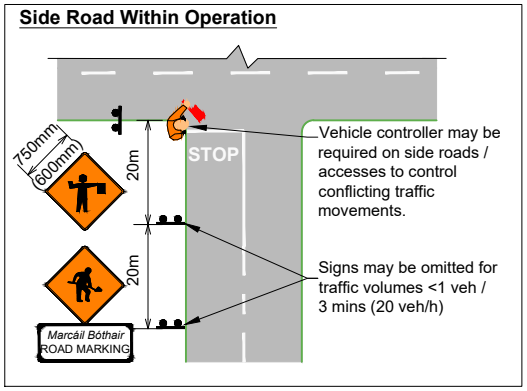
EXAMPLE ONLY NOT TO SCALE



Lateral Safety Zones



Side Road Within Operation



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.

Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 200m (120m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Stud Fitting/Removal and Longitudinal Markings

Lane Line (2-Way Traffic Maintained - Lane 2 Closure)

Static

Single C/W

Climbing Lane

100 km/h OR 80 km/h

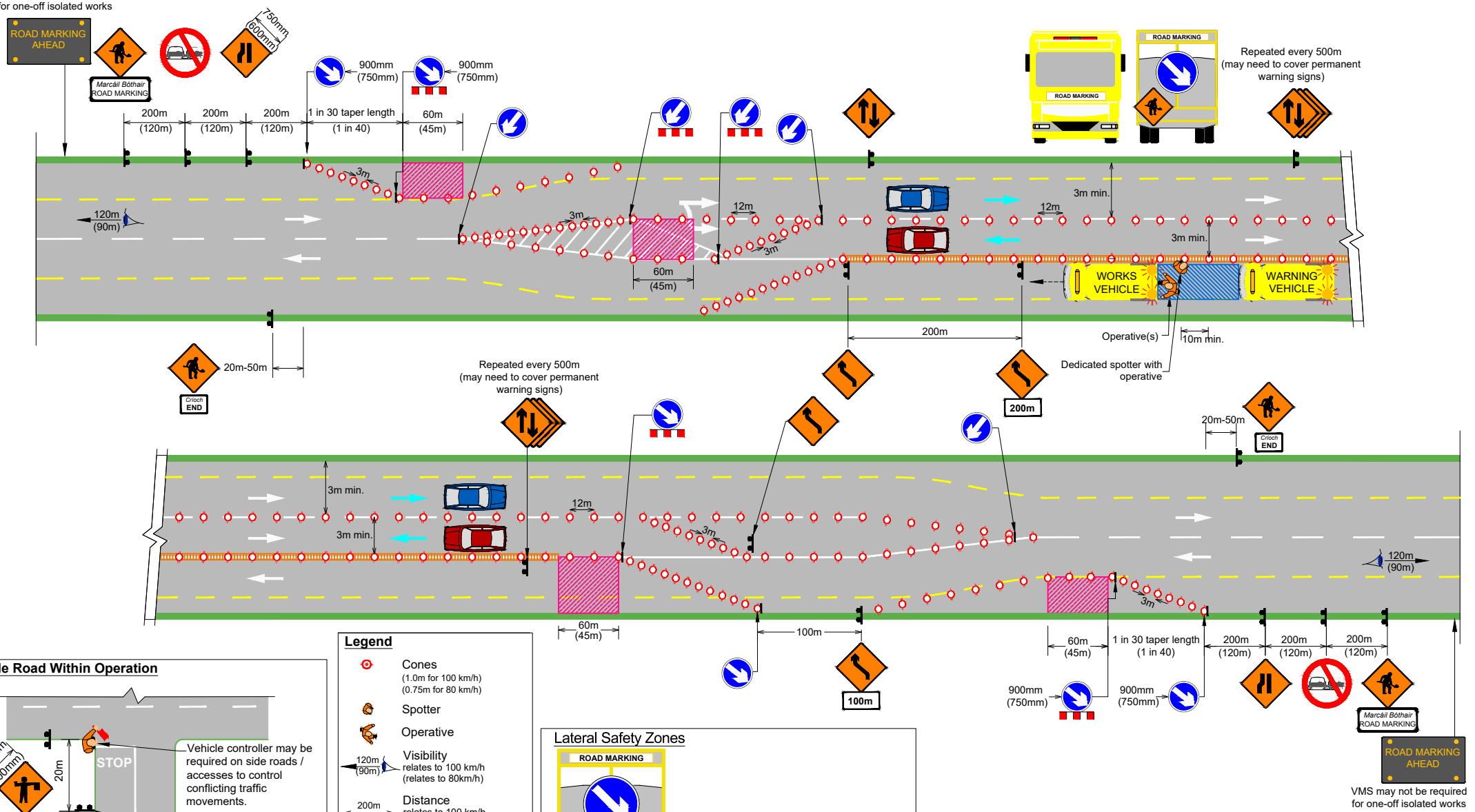
RM212

Road Marking

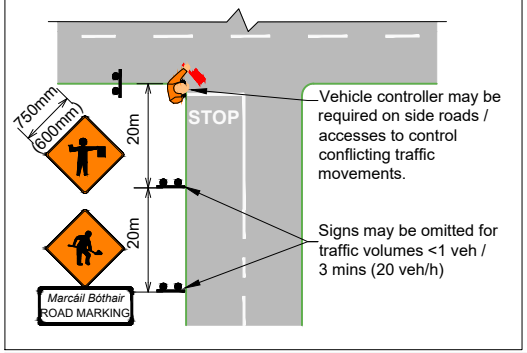
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

VMS may not be required for one-off isolated works



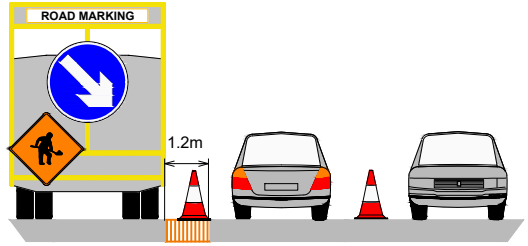
Side Road Within Operation



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 200m (120m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Lateral Safety Zones



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.

Stud Fitting/Removal and Longitudinal Markings

Edge Line (2-Way Traffic Maintained - Closure of Opposing Lane)

Static

Single C/W

Climbing Lane

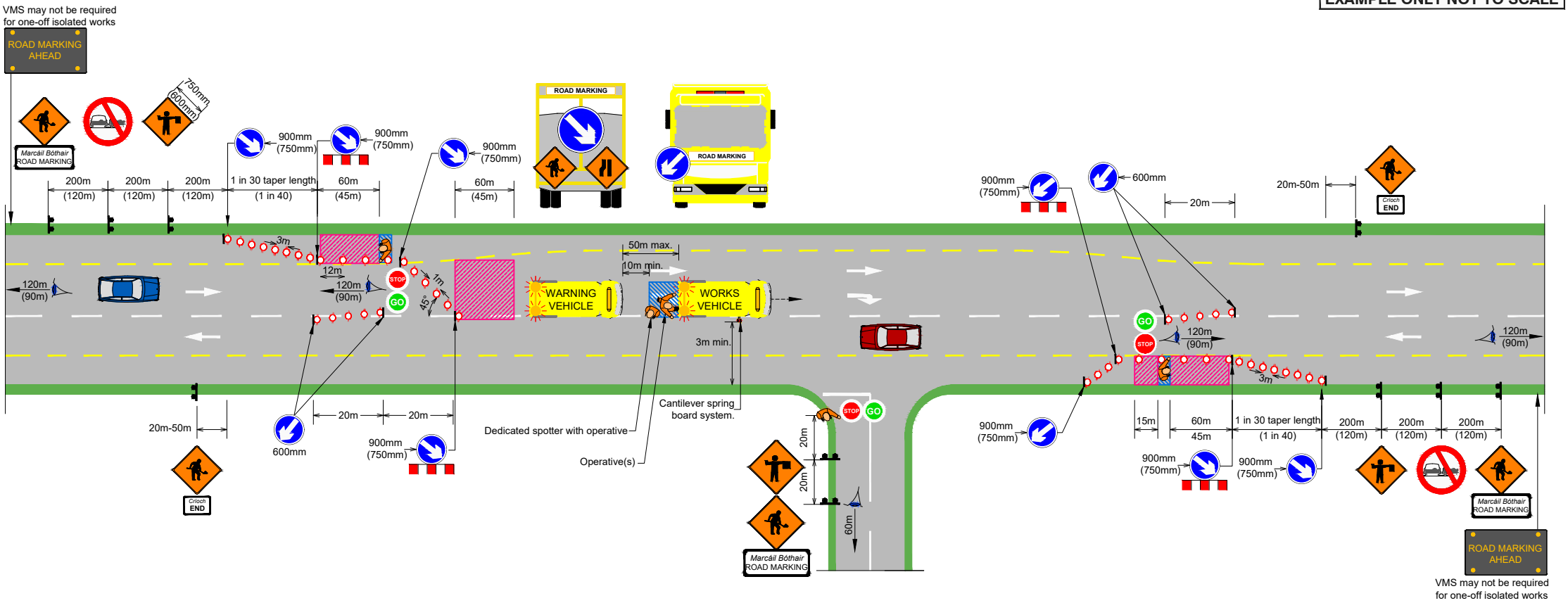
100 km/h OR 80 km/h

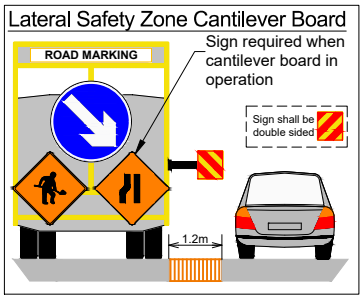
RM213

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE





Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.

Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility relates to 100 km/h (relates to 80km/h)
- Distance relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Stop/Go & Operative
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Stud Fitting/Removal and Longitudinal Markings

Nearside Passing Bay (Stop/Go On Foot)

Static

Single C/W

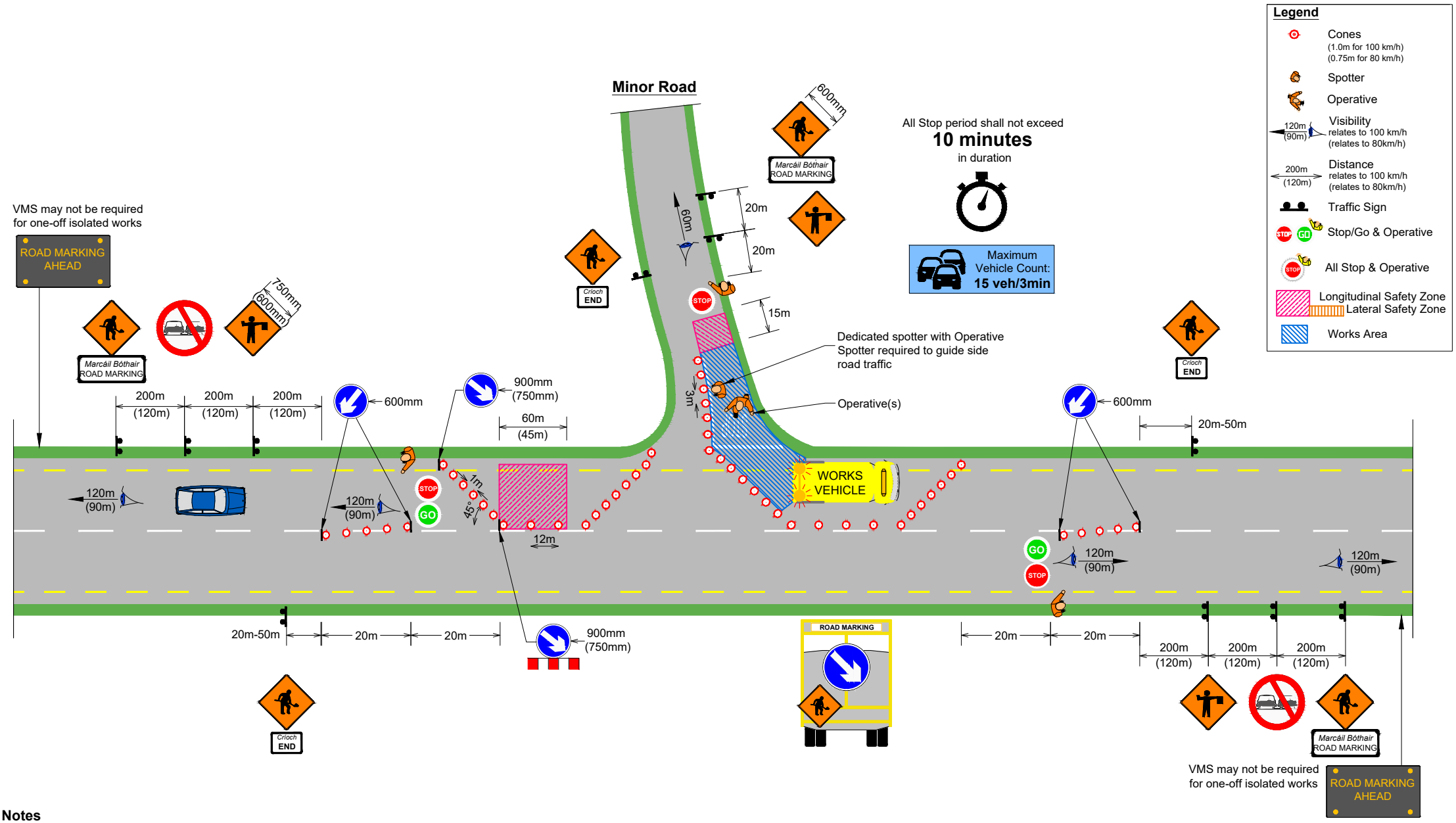
100 km/h OR 80 km/h

RM214

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Notes

1. 3 minute traffic counts should be carried out at regular intervals to monitor flows.
2. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
3. Additional spotter(s) / flagmen may be required depending on the activity.

Screed Applied Markings

Stop Line at Narrow Minor Road T - Junction

Static

Single C/W
No Hard Shoulder

100 km/h OR 80 km/h

RM215

Road Marking

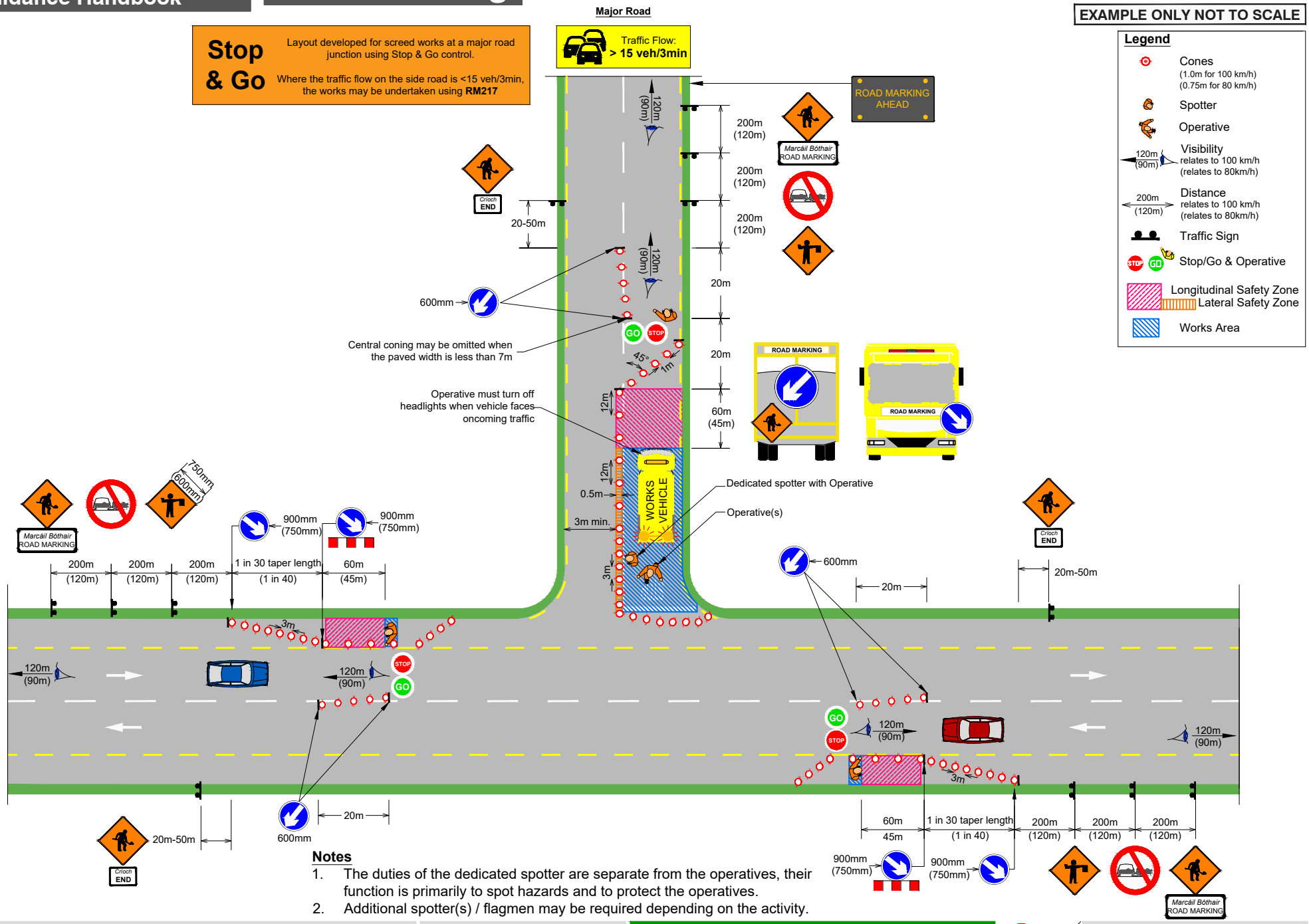
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Stop & Go

Layout developed for screed works at a major road junction using Stop & Go control.

Where the traffic flow on the side road is <15 veh/3min, the works may be undertaken using **RM217**



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) / flagmen may be required depending on the activity.

Screed Applied Markings

Stop Line at Major Road T-Junction (Stop/Go on Foot)

Static

Single C/W
With Hard Shoulder

100 km/h OR 80 km/h

RM216

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

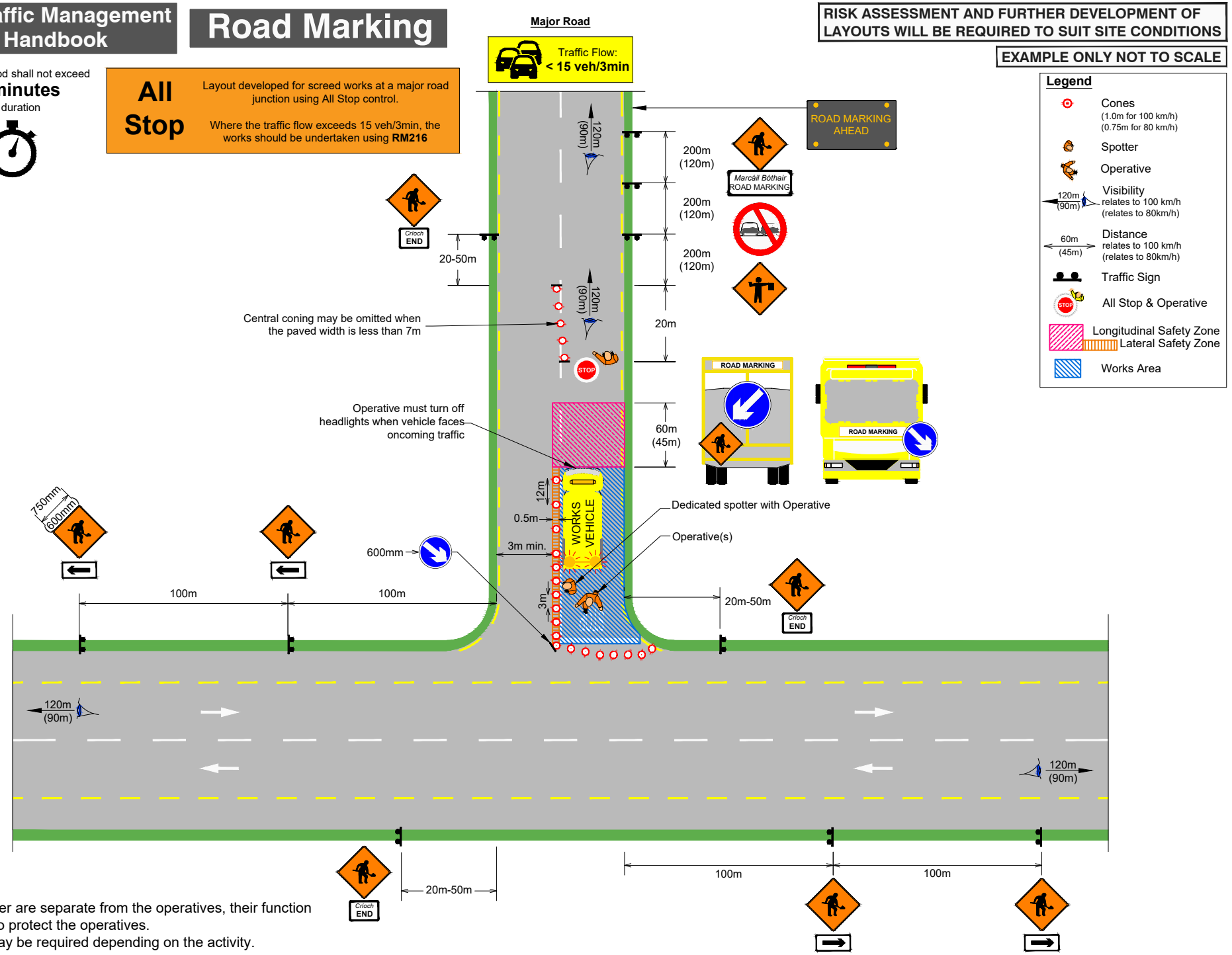
EXAMPLE ONLY NOT TO SCALE

All Stop period shall not exceed **10 minutes** in duration

All Stop

Layout developed for screed works at a major road junction using All Stop control.

Where the traffic flow exceeds 15 veh/3min, the works should be undertaken using **RM216**



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) / flagmen may be required depending on the activity.

Screed Applied Markings

Stop Line at Major Road T-Junction (All Stop)

Static

Single C/W
With Hard Shoulder

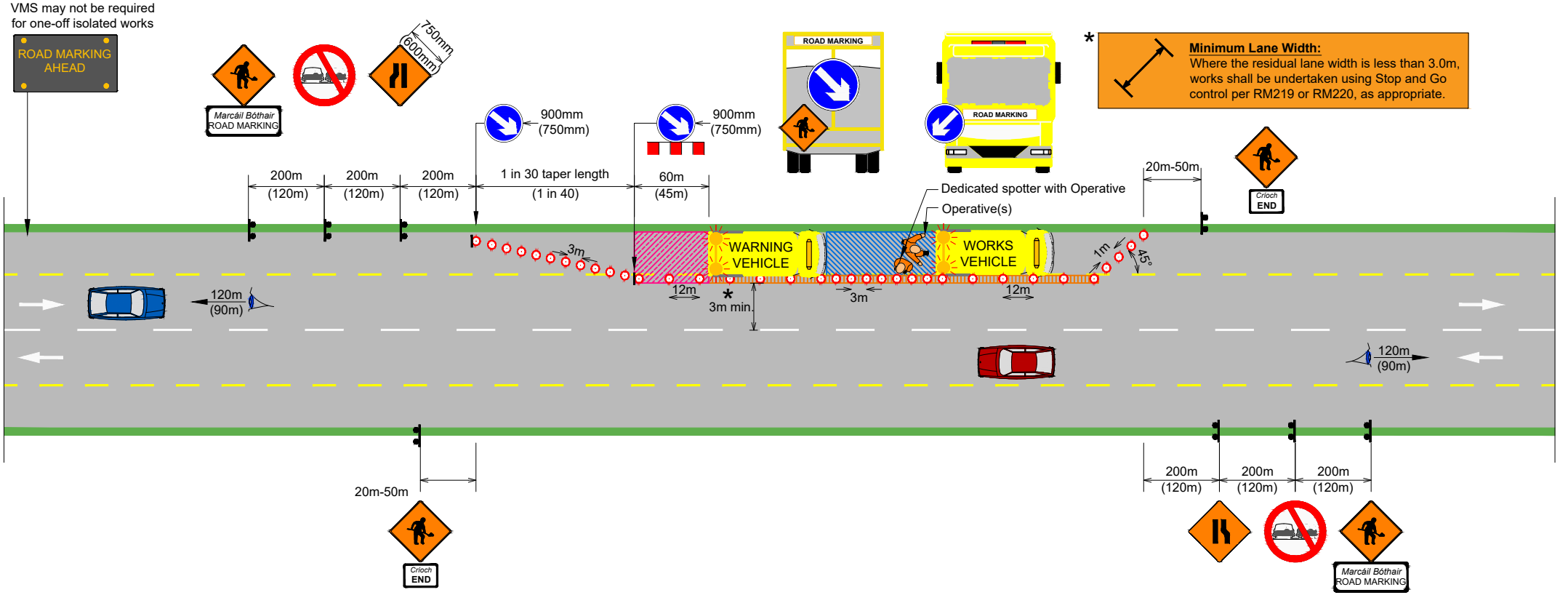
100 km/h OR 80 km/h

RM217

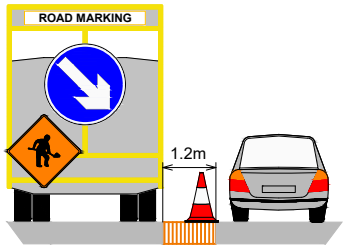
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



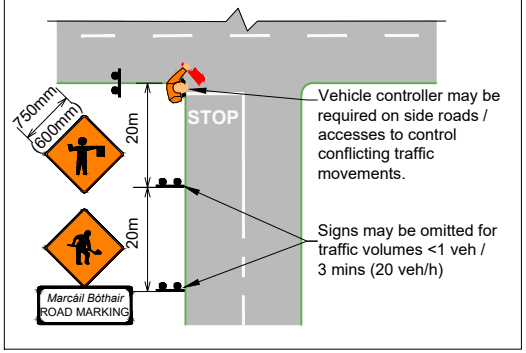
Lateral Safety Zone



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Additional spotter(s) may be required, depending on the activity.
3. 3m cone spacing required adjacent to works area/operatives.

Side Road Within Operation



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 200m (120m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Screed Applied Markings

Mainline Carriageway (2-Way Traffic Maintained - Working from Hard Shoulder)

Static

Single C/W

With Hard Shoulder

100 km/h OR 80 km/h

RM218

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

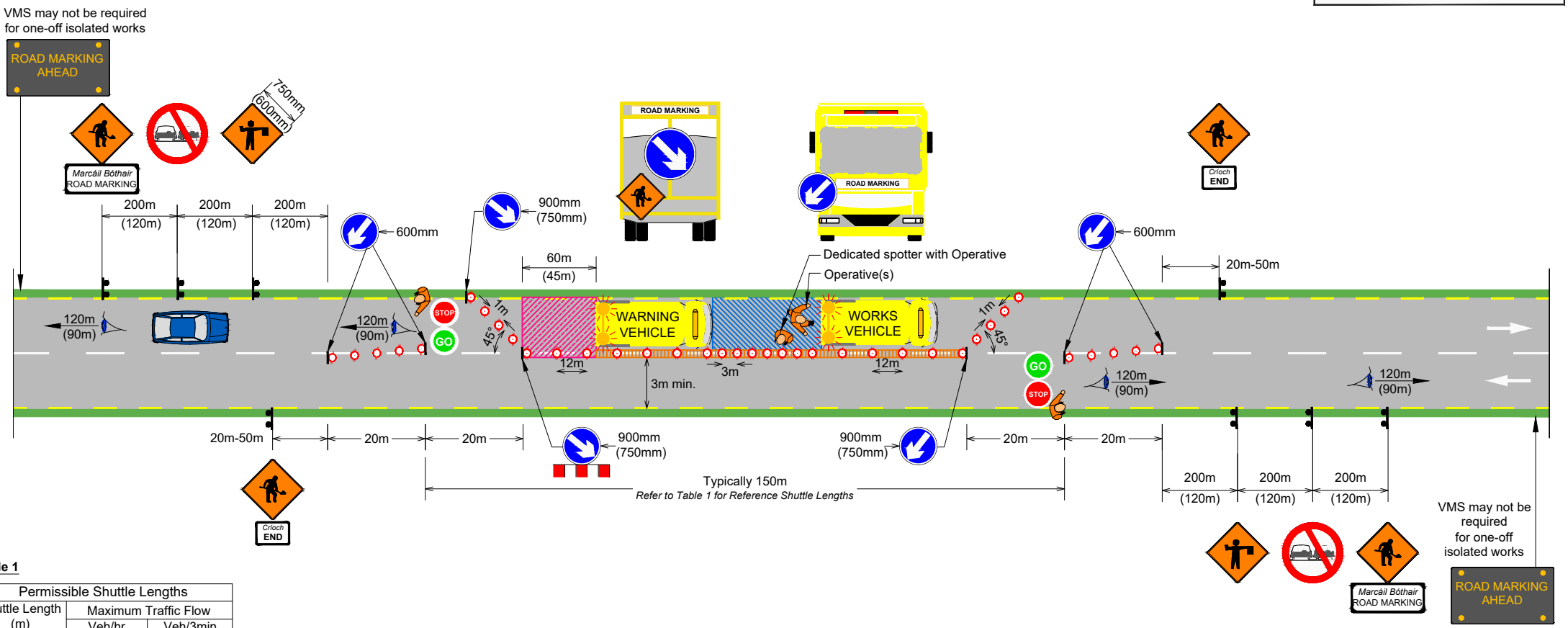
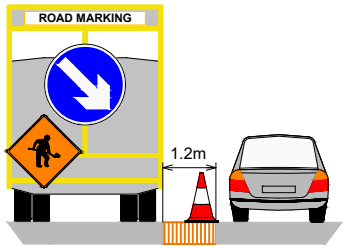


Table 1

Permissible Shuttle Lengths		
Shuttle Length (m)	Maximum Traffic Flow	
	Veh/hr	Veh/3min
100	1400	70
200	1260	63
300	1060	53
400	940	47
500	840	42

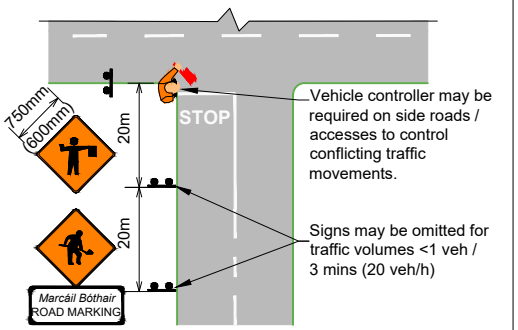
Lateral Safety Zone



Notes

1. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
2. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
3. Additional spotter(s) may be required, depending on the activity.
4. 3m cone spacing required adjacent to works area/operatives.
5. 3-way Stop/Go required for busy side roads within operation.

Side Road Within Operation



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80 km/h)
- Distance 200m (120m) relates to 100 km/h (relates to 80 km/h)
- Traffic Sign
- Stop/Go & Operative
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Mainline Carriageway (Stop/Go - Working From Running Lanes)

Static

Single C/W

No Hard Shoulder

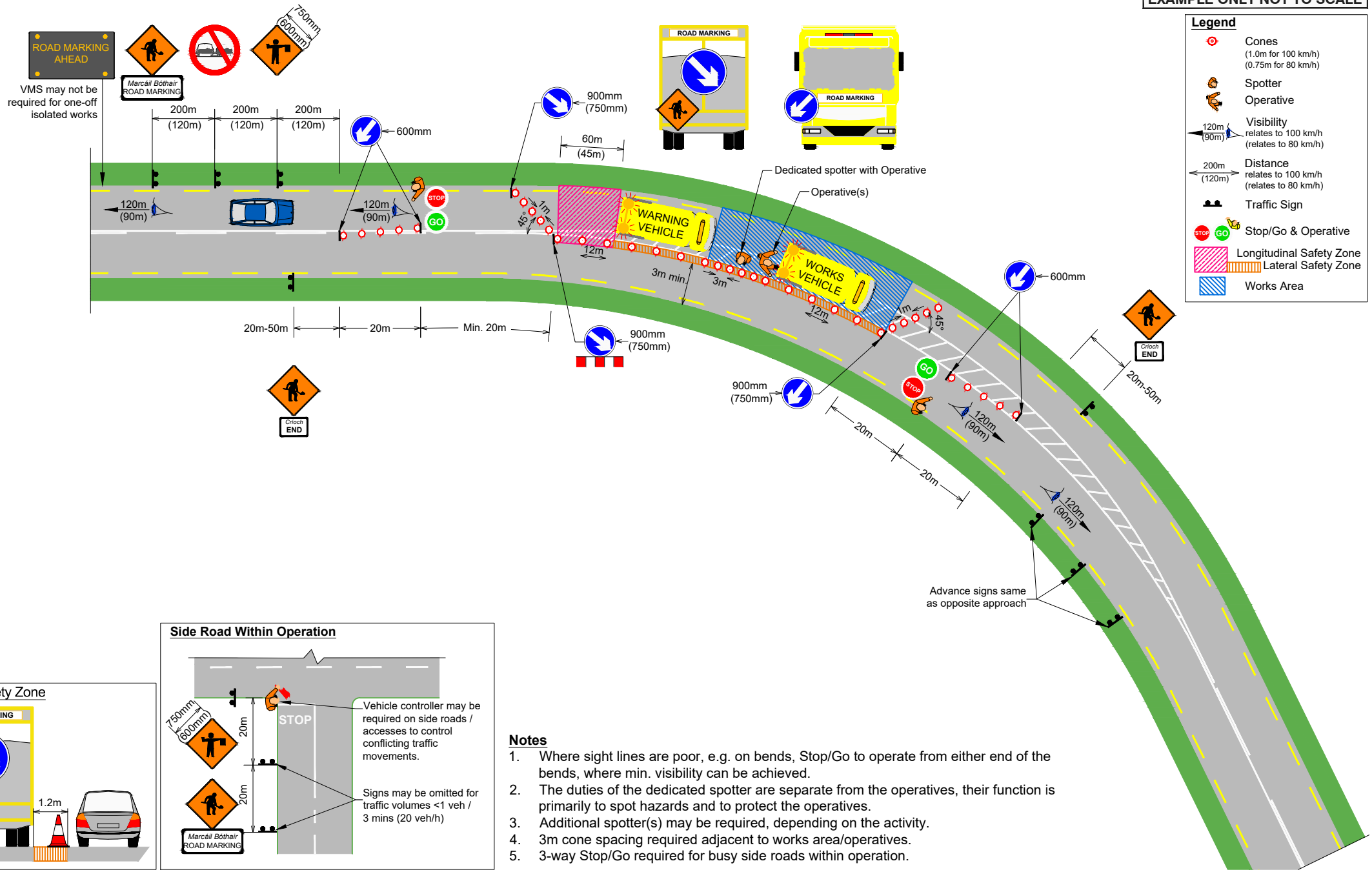
100 km/h OR 80 km/h

RM219

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

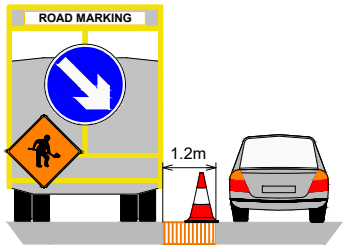
EXAMPLE ONLY NOT TO SCALE



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility relates to 100 km/h (relates to 80 km/h)
- Distance relates to 100 km/h (relates to 80 km/h)
- Traffic Sign
- Stop/Go & Operative
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Lateral Safety Zone



Side Road Within Operation

Notes

1. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
2. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
3. Additional spotter(s) may be required, depending on the activity.
4. 3m cone spacing required adjacent to works area/operatives.
5. 3-way Stop/Go required for busy side roads within operation.

Screed Applied Markings

Mainline Carriageway - Hatching On Bend (Stop/Go)

Static

Single C/W

No Hard Shoulder - On a Bend

100 km/h OR 80 km/h

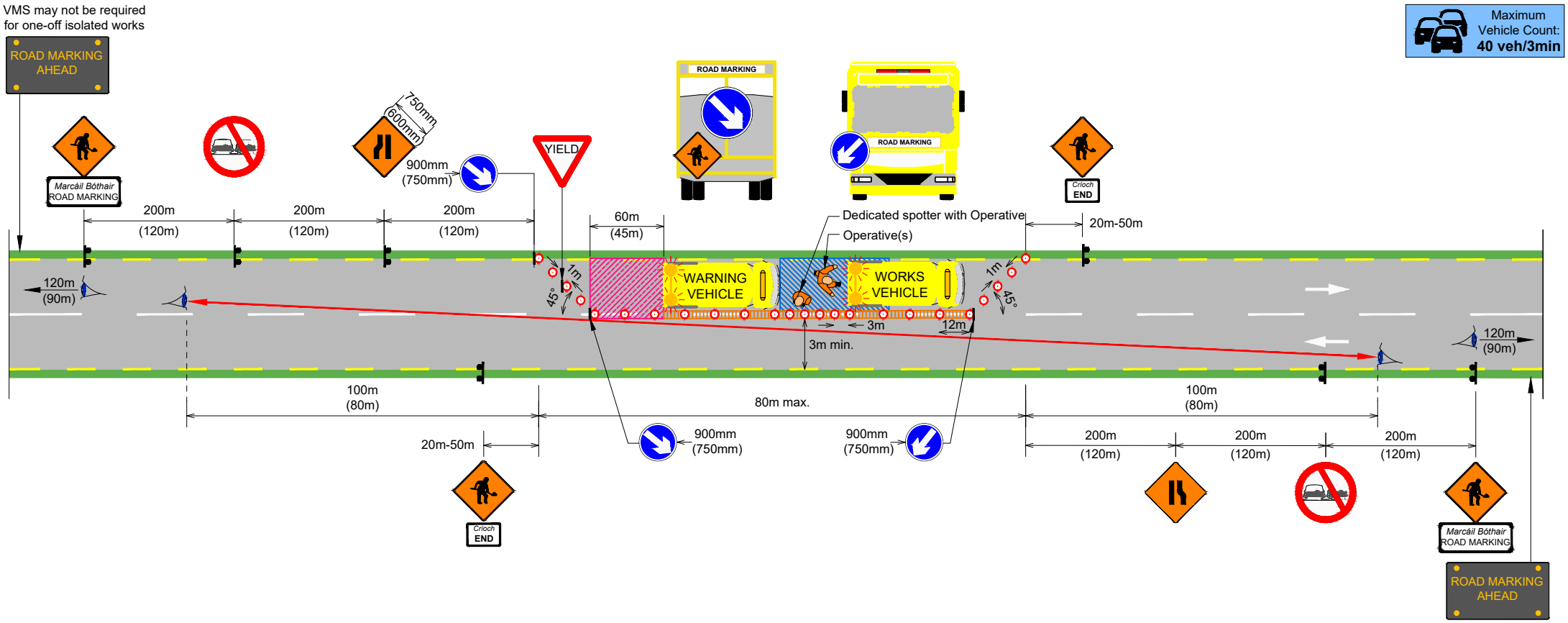
RM220

Road Marking

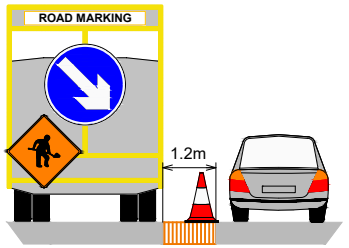
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

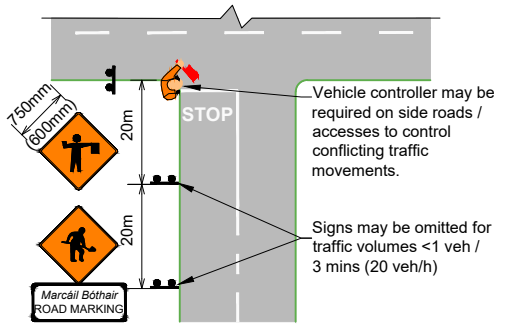
Maximum Vehicle Count: **40 veh/3min**



Lateral Safety Zone



Side Road Within Operation



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80 km/h)
- Distance 200m (120m) relates to 100 km/h (relates to 80 km/h)
- Traffic Sign
- Stop/Go & Operative
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Notes

1. Where sight lines are poor, e.g. on bends, Stop/Go to operate from either end of the bends, where min. visibility can be achieved.
2. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
3. Additional spotter(s) may be required, depending on the activity.
4. 3m cone spacing required adjacent to works area/operatives.
5. 3-way Stop/Go required for busy side roads within operation.

Screed Applied Markings

Mainline Carriageway (Stop/Go & Priority Yield - Working From Running Lanes)

Static

Single C/W

No Hard Shoulder

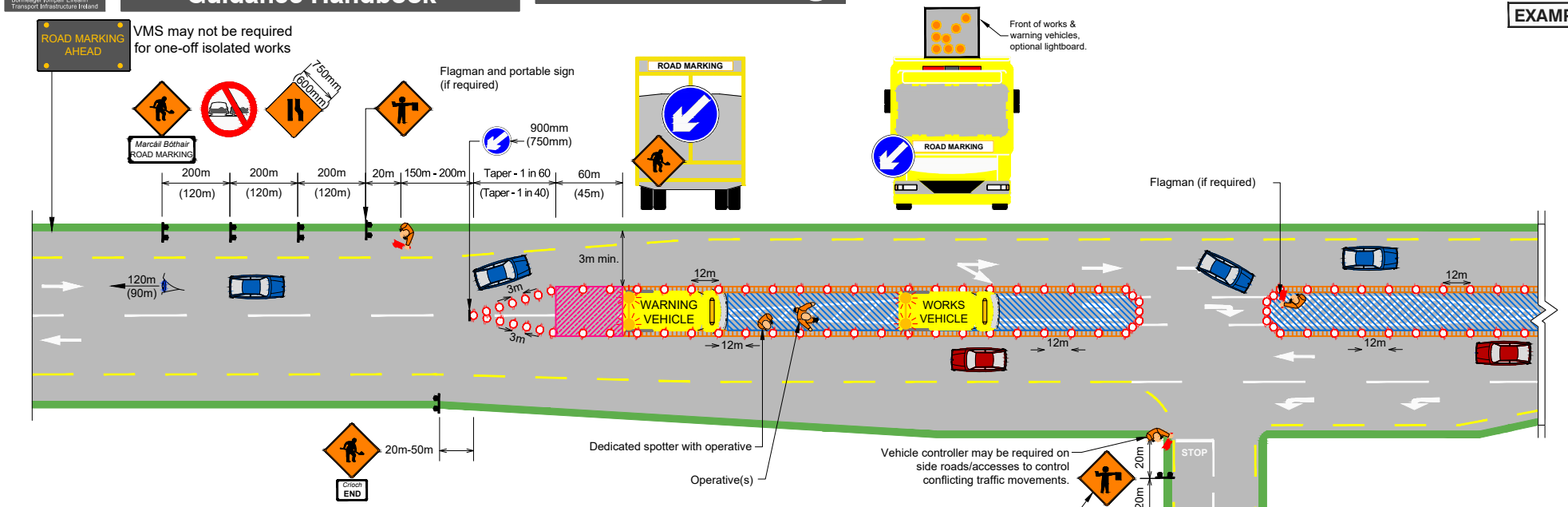
100 km/h OR 80 km/h

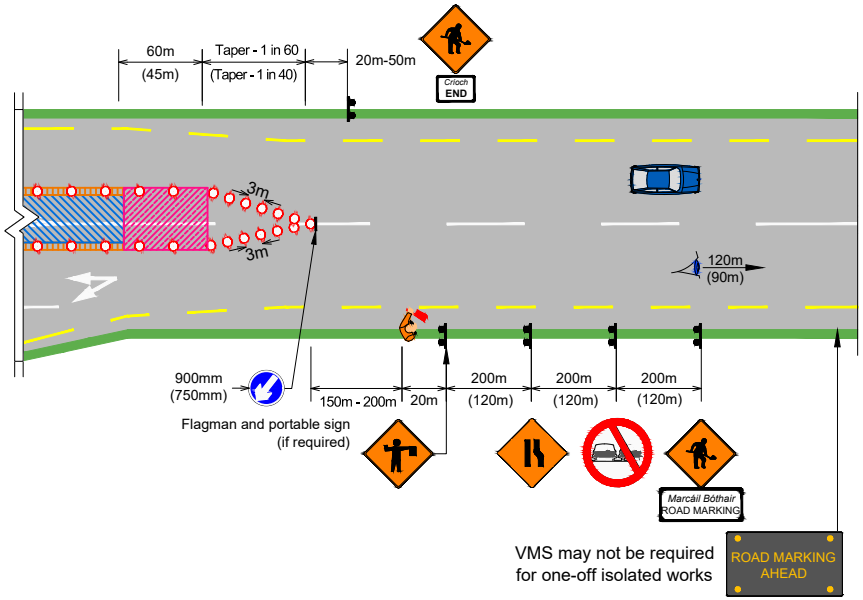
RM221

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

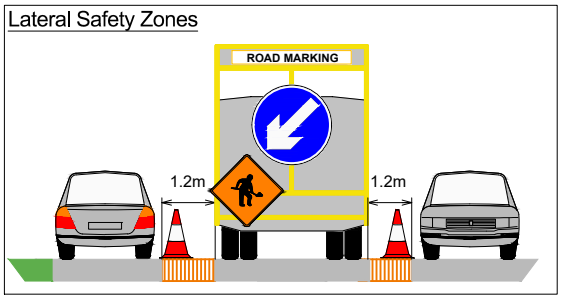




Notes

1. Hard shoulders must be in good condition, and a minimum of 3.0m lane width available adjacent to the works, as indicated, must be achievable.
2. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
3. Additional spotter(s) may be required, depending on the activity.
4. Cone spacing to be tightened up on shorter hatchings, and to define junctions etc.

Lateral Safety Zones



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80km/h)
- Distance 200m (120m) relates to 100 km/h (relates to 80km/h)
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Screed Applied Markings

Ghost/Central Island (2-Way Traffic Maintained)

Static

Single C/W

With Hard Shoulder

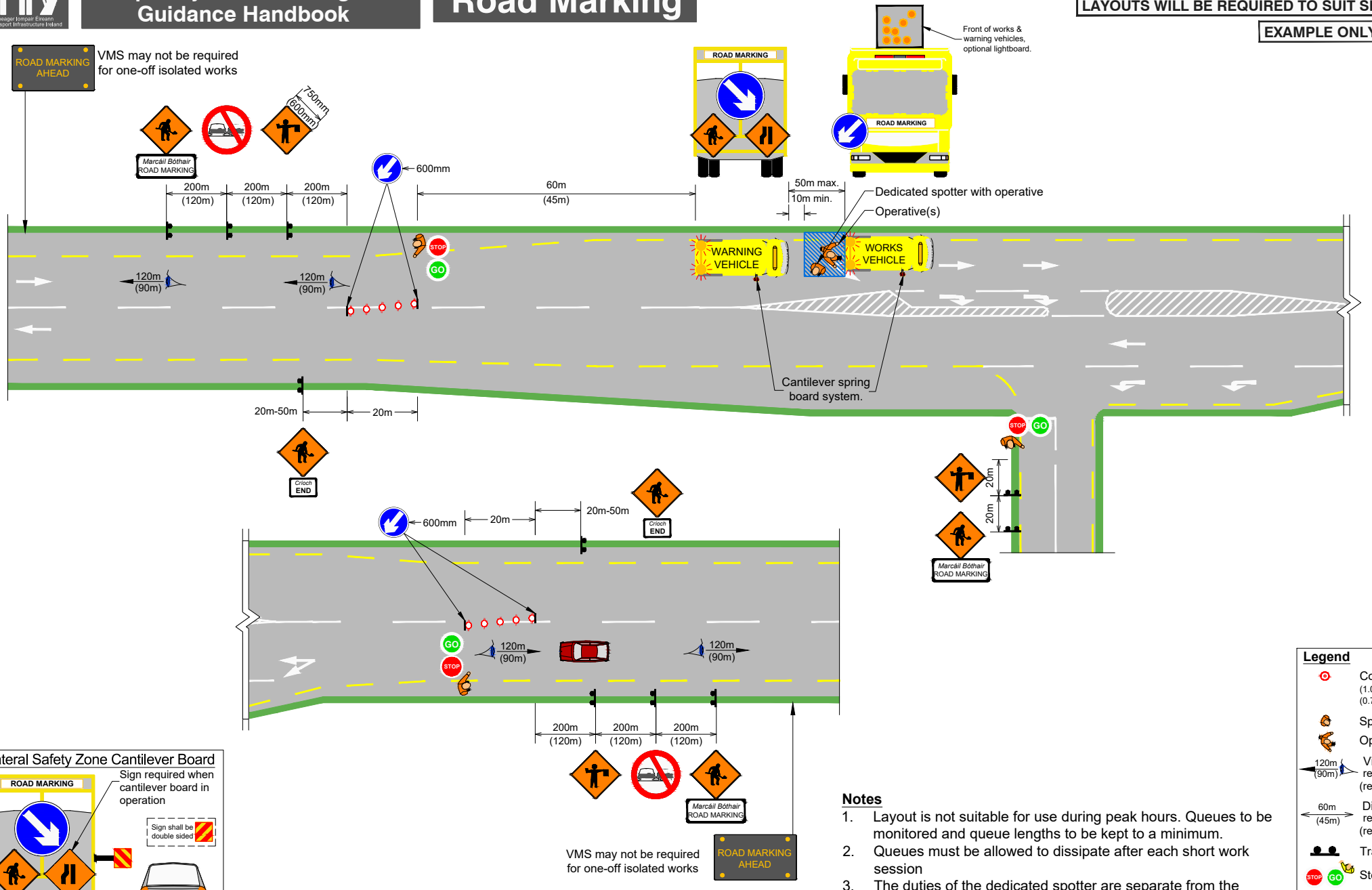
100 km/h OR 80 km/h

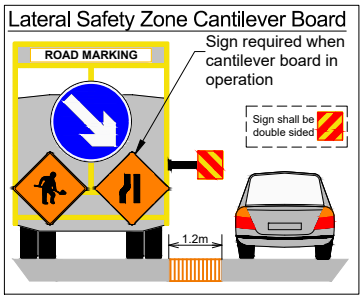
RM222

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE





Notes

1. Layout is not suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. Queues must be allowed to dissipate after each short work session
3. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
4. Additional spotter(s) may be required, depending on the activity.

Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- 120m (90m) Visibility relates to 100 km/h (relates to 80 km/h)
- 60m (45m) Distance relates to 100 km/h (relates to 80 km/h)
- Traffic Sign
- Stop/Go & Operative
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Stud Fitting/Removal, Longitudinal Markings

(Incl. Short Duration Screed)

Ghost/Central Island (3-way Stop/Go)

Static

Single C/W

With Hard Shoulder

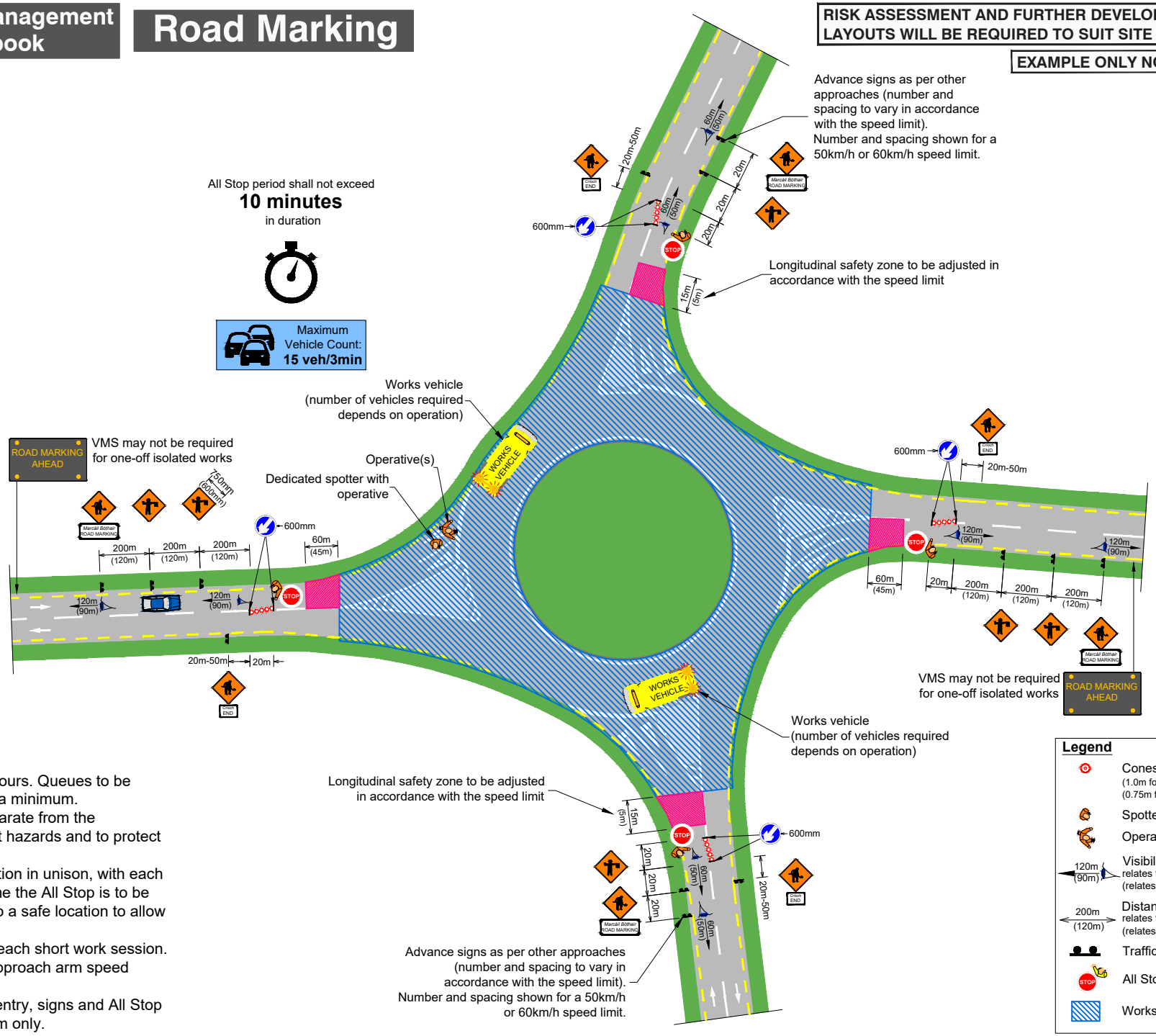
100 km/h OR 80 km/h

RM223

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Notes

1. Layout is not suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operative.
3. All Stop operatives to coordinate the operation in unison, with each short work session being < 5mins. Each time the All Stop is to be lifted, vehicles and operatives must move to a safe location to allow traffic to pass.
4. Queues must be allowed to dissipate after each short work session.
5. TM on each arm can vary in line with the approach arm speed limits.
6. Where works are confined to a single arm entry, signs and All Stop operation are necessary on the affected arm only.

Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility relates to 100 km/h (relates to 80 km/h)
- Distance relates to 100 km/h (relates to 80 km/h)
- Traffic Sign
- All Stop & Operative
- Works Area

Roundabout Markings

All Works Areas (All Stop)

Static

Single C/W

Roundabout

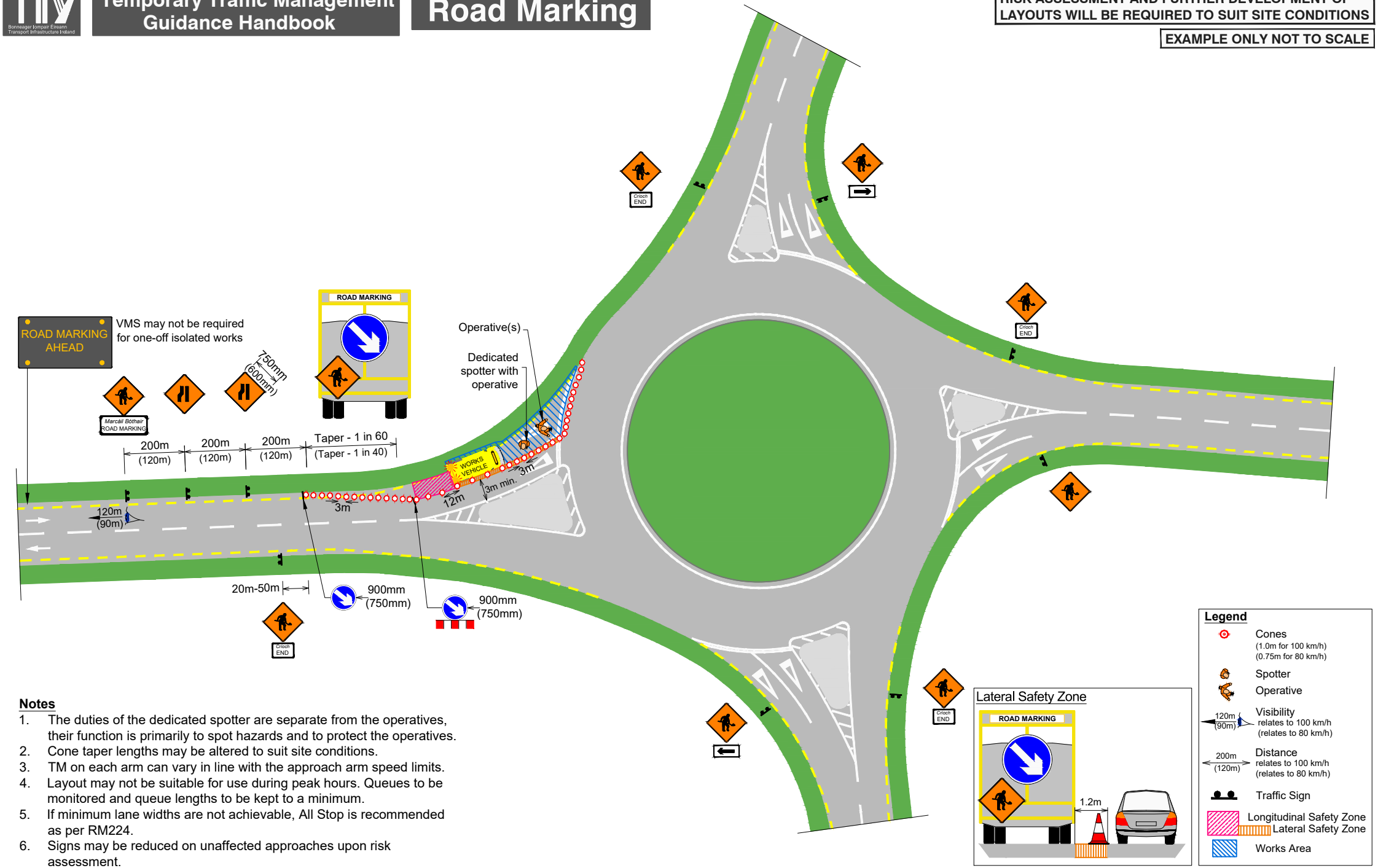
100 km/h OR 80 km/h

RM224

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE



Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Cone taper lengths may be altered to suit site conditions.
3. TM on each arm can vary in line with the approach arm speed limits.
4. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
5. If minimum lane widths are not achievable, All Stop is recommended as per RM224.
6. Signs may be reduced on unaffected approaches upon risk assessment.

Roundabout Markings

Left Entry Lane (Traffic Flow Maintained)

Static

Single C/W
Roundabout

100 km/h OR 80 km/h

RM225

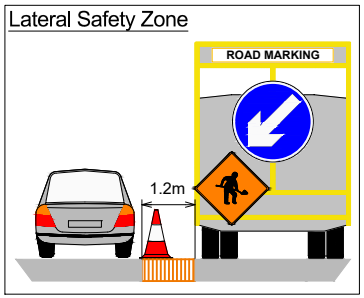
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Notes

1. The duties of the dedicated spotter are separate from the operatives, their function is primarily to spot hazards and to protect the operatives.
2. Cone taper lengths may be altered to suit site conditions.
3. TM on each arm can vary in line with the approach arm speed limits.
4. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
5. If minimum lane widths are not achievable, All Stop is recommended as per RM224.
6. Signs may be reduced on unaffected approaches upon risk assessment.
7. Traffic island markings to be carried out using RM224.



Legend

- Cones (1.0m for 100 km/h) (0.75m for 80 km/h)
- Spotter
- Operative
- Visibility 120m (90m) relates to 100 km/h (relates to 80 km/h)
- Distance 200m (120m) relates to 100 km/h (relates to 80 km/h)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Roundabout Markings

Right Entry Lane (Traffic Flow Maintained)

Static

Single C/W
Roundabout

100 km/h OR 80 km/h

RM226

Temporary Traffic Management Layout Diagrams

For

ROAD MARKING
LEVEL 3(i) & 3(ii) ROADS

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

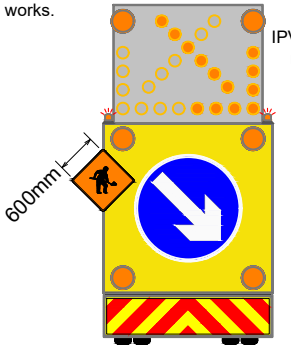
EXAMPLE ONLY NOT TO SCALE

Maximum Vehicle Count: **65 veh/3 minute** *Per Lane*

Minimum Visibility of: **500m** *Required to Mobile Operation*

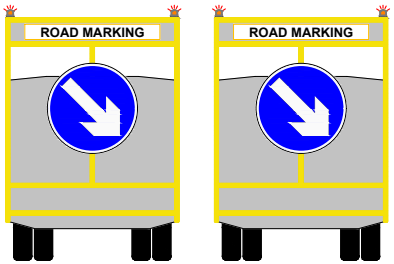
VMS to be used to give drivers advance notification of continuously moving operation ahead.
Can be located up to a max. of 10km in advance of the works.

Not required for one-off isolated works.
VMS must not be towed as part of a moving operation.



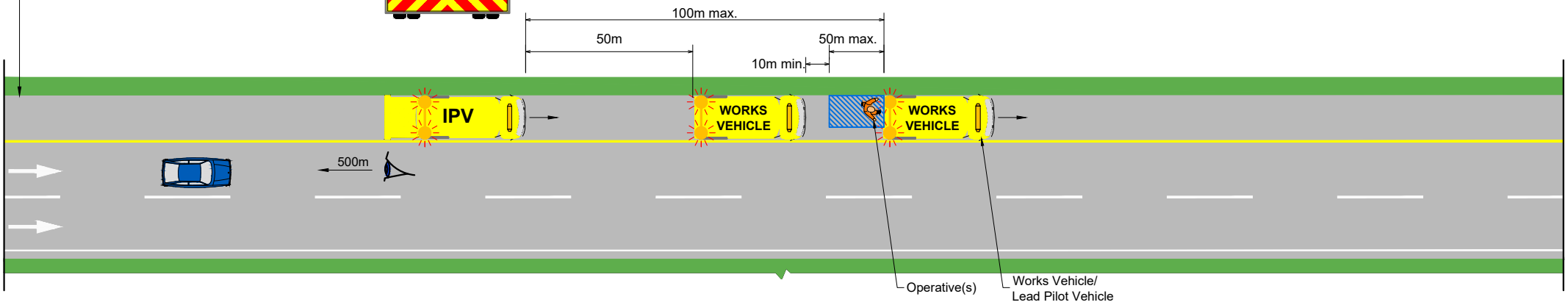
IPV shall be of 10T minimum road weight

A dedicated communication system shall be used between all vehicles



Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts shall be taken at 15 minute intervals during the closure.
- The closure should be removed if 2 successive traffic counts are above the permissible level or the traffic counts show a rising trend and with last count being above the permissible level.



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. Minimum of 500m visibility required to implement this layout. The mobile lane closure should not be implemented where this visibility requirement cannot be achieved. In scenarios where this visibility requirement cannot be achieved due to road alignment or other site constraints, the works should be undertaken using a static operation.
2. Maximum stop permitted is 15 minutes.
3. Keep Left / Keep Right Arrow on the Lead Pilot Vehicle shall be a minimum of 1200mm.

Legend

- Operative
- Traffic Sign
- Works Area

Screed Applied Markings

Chainage and Emergency Telephone Markings

Mobile

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM301

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Traffic Count Notes:

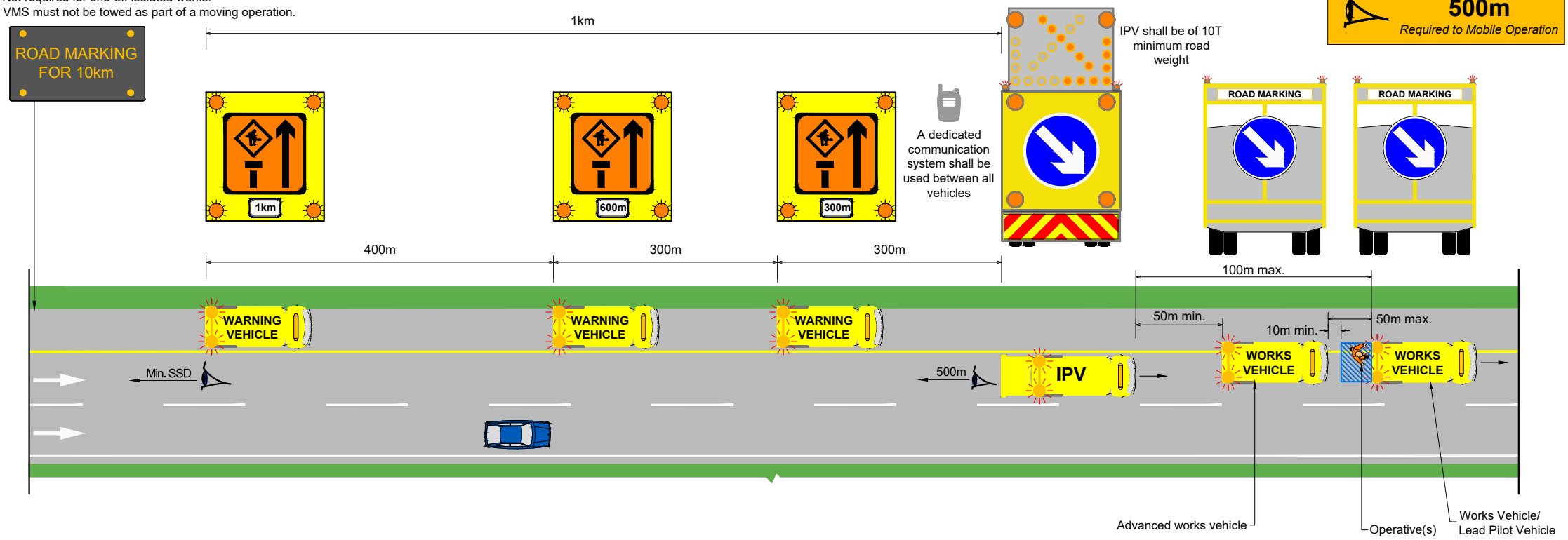
- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts shall be taken at 15 minute intervals during the closure.
- The closure should be removed if 2 successive traffic counts are above the permissible level or the traffic counts show a rising trend and with last count being above the permissible level.

Permissible 3 Minute Traffic Counts for Lane 1 Closure				
Road Type	HGV Level	If HGV Count ≤ HGV Level then Max Traffic Count (Veh/3min)	If HGV Count ≥ HGV Level then Max Traffic Count (Veh/3min)	Max Permitted HGV Count (Veh/3min)
Dual Two-Lane Carriageway	10	40	35	15

VMS to be used to give drivers advance notification of continuously moving operation ahead.
Can be located up to a max. of 10km in advance of the works.

Not required for one-off isolated works.
VMS must not be towed as part of a moving operation.

Minimum Visibility of: **500m** *Required to Mobile Operation*



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. Minimum of 500m visibility required to implement this layout. The mobile lane closure should not be implemented where this visibility requirement cannot be achieved. In scenarios where this visibility requirement cannot be achieved due to road alignment or other site constraints, the works should be undertaken using a static operation.
2. Maximum stop permitted is 15 minutes.
3. Keep Left / Keep Right Arrow on the Lead Pilot Vehicle shall be a minimum of 1200mm.

Legend

- Operative
- Traffic Sign
- Works Area

Stud Fitting/Removal and Longitudinal Markings

Hard Shoulder Line (Lane 1 Mobile Lane Closure)

Mobile

Dual C/W & Motorway

Two-Lane - with Hard Shoulder

120 100 OR 80

RM302

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

VMS to be used to give drivers advance notification of continuously moving operation ahead.
Can be located up to a max. of 10km in advance of the works.

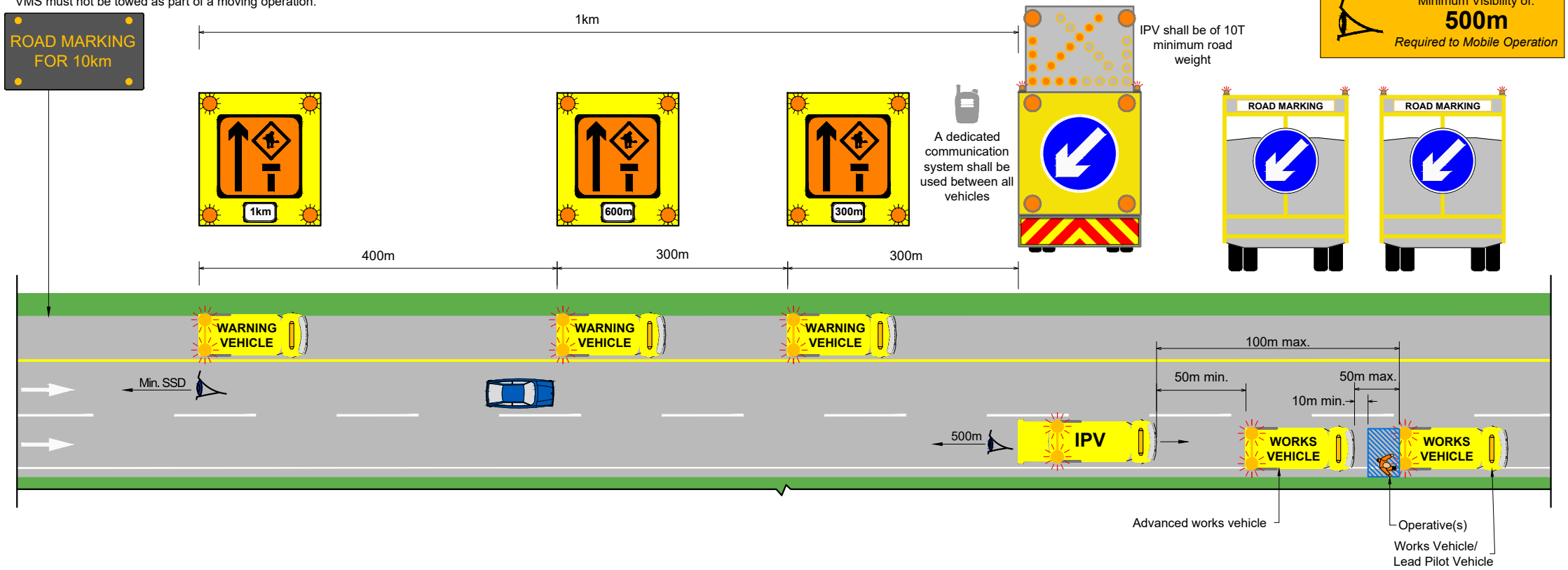
Not required for one-off isolated works.
VMS must not be towed as part of a moving operation.

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts shall be taken at 15 minute intervals during the closure.
- The closure should be removed if 2 successive traffic counts are above the permissible level or the traffic counts show a rising trend and with last count being above the permissible level.

Permissible 3 Minute Traffic Counts for Lane 2 Closure				
Road Type	HGV Level	If HGV Count ≤ HGV Level then Max Traffic Count (Veh/3min)	If HGV Count ≥ HGV Level then Max Traffic Count (Veh/3min)	Max Permitted HGV Count (Veh/3min)
Dual Two-Lane Carriageway	15	60	55	20

Minimum Visibility of: **500m** *Required to Mobile Operation*



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. Minimum of 500m visibility required to implement this layout. The mobile lane closure should not be implemented where this visibility requirement cannot be achieved. In scenarios where this visibility requirement cannot be achieved due to road alignment or other site constraints, the works should be undertaken using a static operation.
2. Maximum stop permitted is 15 minutes.
3. Keep Left / Keep Right Arrow on the Lead Pilot Vehicle shall be a minimum of 1200mm.

Legend

- Operative
- Traffic Sign
- Works Area

Stud Fitting/Removal and Longitudinal Markings

Median Line (Lane 2 Mobile Lane Closure)

Mobile

Dual C/W & Motorway

Two-Lane - with Hard Shoulder

120 100 OR 80

RM303

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

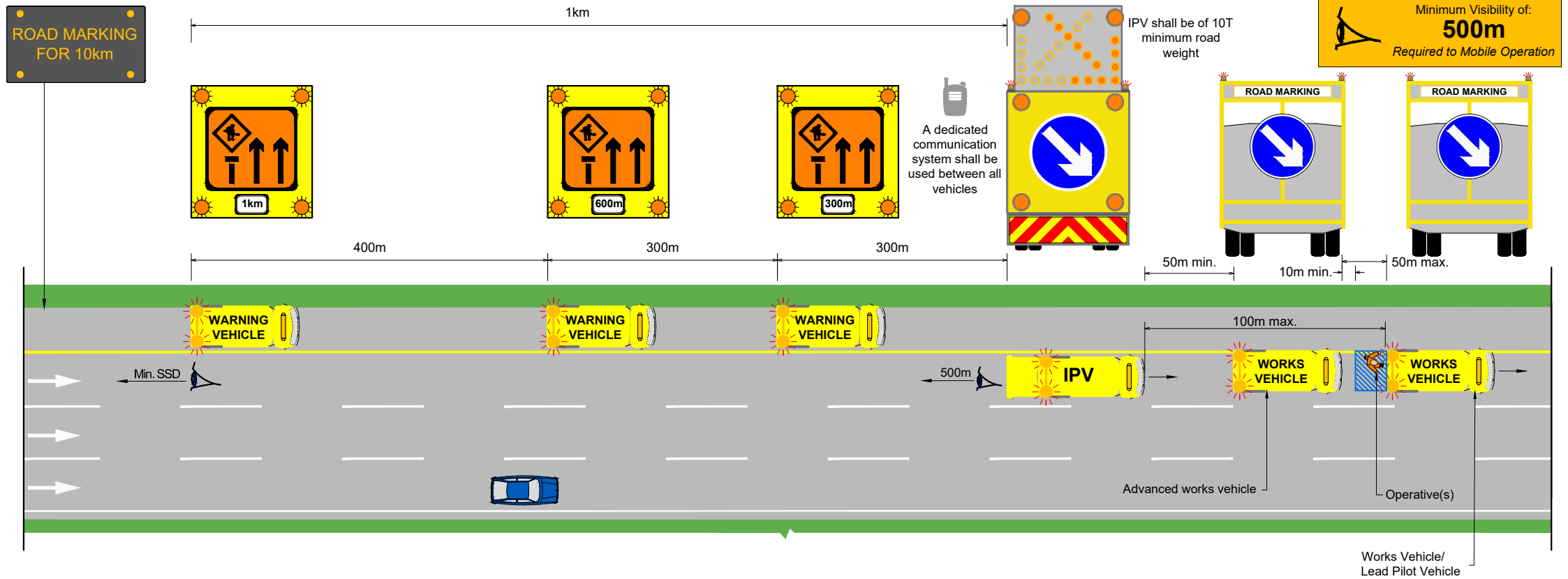
VMS to be used to give drivers advance notification of continuously moving operation ahead.
Can be located up to a max. of 10km in advance of the works.

Not required for one-off isolated works.
VMS must not be towed as part of a moving operation.

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts shall be taken at 15 minute intervals during the closure.
- The closure should be removed if 2 successive traffic counts are above the permissible level or the traffic counts show a rising trend and with last count being above the permissible level.

Permissible 3 Minute Traffic Counts for Lane 1 Closure				
Road Type	HGV Level	If HGV Count ≤ HGV Level then Max Traffic Count (Veh/3min)	If HGV Count ≥ HGV Level then Max Traffic Count (Veh/3min)	Max Permitted HGV Count (Veh/3min)
Dual Three-Lane Carriageway	20	100	90	30



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. Minimum of 500m visibility required to implement this layout. The mobile lane closure should not be implemented where this visibility requirement cannot be achieved. In scenarios where this visibility requirement cannot be achieved due to road alignment or other site constraints, the works should be undertaken using a static operation.
2. Maximum stop permitted is 15 minutes.
3. Keep Left / Keep Right Arrow on the Lead Pilot Vehicle shall be a minimum of 1200mm.

Legend

- Operative
- Traffic Sign
- Works Area

Stud Fitting/Removal and Longitudinal Markings

Hard Shoulder Line (Lane 1 Mobile Lane Closure)

Mobile

Dual C/W & Motorway
Three-Lane - with Hard Shoulder

120 100 OR 80

RM304

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

VMS to be used to give drivers advance notification of continuously moving operation ahead.
Can be located up to a max. of 10km in advance of the works.

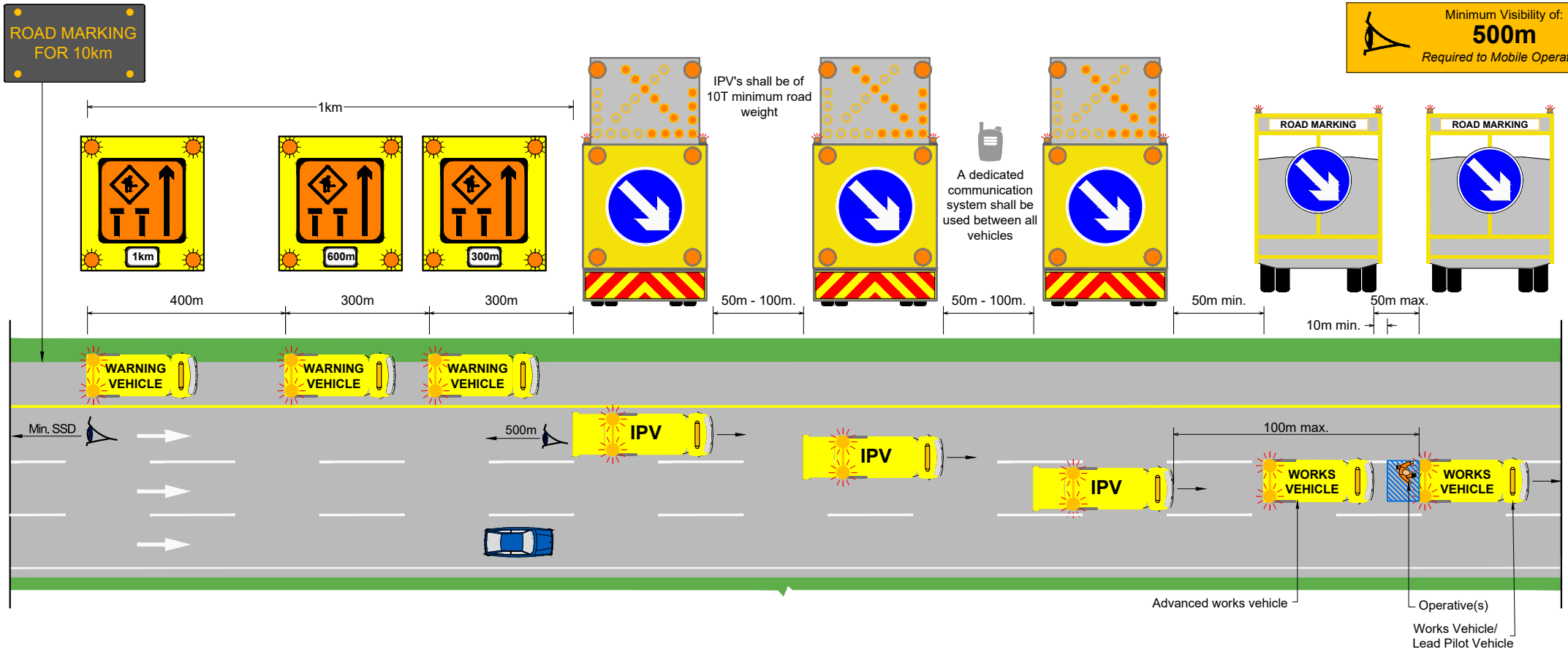
Not required for one-off isolated works.
VMS must not be towed as part of a moving operation.

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts shall be taken at 15 minute intervals during the closure.
- The closure should be removed if 2 successive traffic counts are above the permissible level or the traffic counts show a rising trend and with last count being above the permissible level.

Permissible 3 Minute Traffic Counts for Lane 1 + 2 Closure				
Road Type	HGV Level	If HGV Count ≤ HGV Level then Max Traffic Count (Veh/3min)	If HGV Count ≥ HGV Level then Max Traffic Count (Veh/3min)	Max Permitted HGV Count (Veh/3min)
Dual Three-Lane Carriageway	15	60	55	20

Minimum Visibility of:
500m
Required to Mobile Operation



SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. Minimum of 500m visibility required to implement this layout. The mobile lane closure should not be implemented where this visibility requirement cannot be achieved. In scenarios where this visibility requirement cannot be achieved due to road alignment or other site constraints, the works should be undertaken using a static operation.
2. Maximum stop permitted is 15 minutes.
3. Keep Left / Keep Right Arrow on the Lead Pilot Vehicle shall be a minimum of 1200mm.

Legend

- Operative
- Traffic Sign
- Works Area

Stud Fitting/Removal and Longitudinal Markings
Lane 1/2 - Lane Line (Lane 1 & 2 Mobile Lane Closure)

Mobile

Dual C/W & Motorway
Three-Lane - with Hard Shoulder

120 100 OR 80

RM305

Temporary Traffic Management Guidance Handbook

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

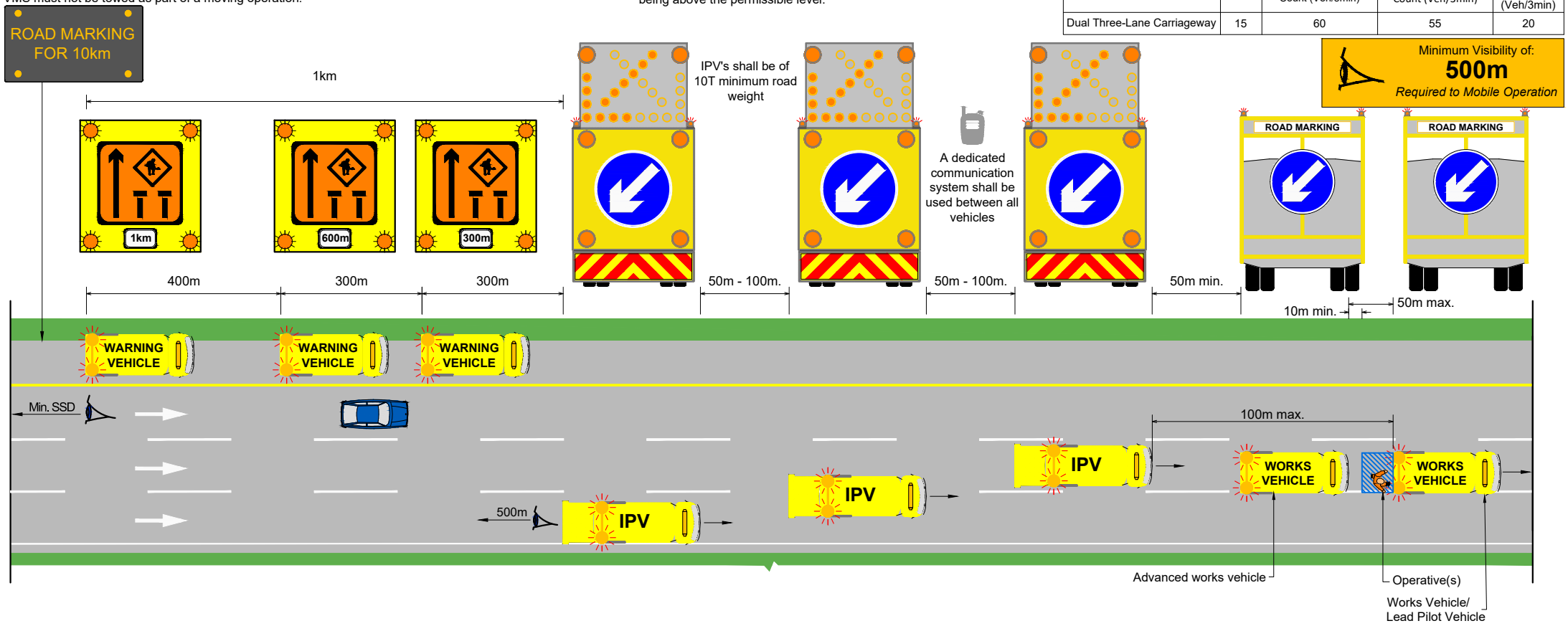
VMS to be used to give drivers advance notification of continuously moving operation ahead.
Can be located up to a max. of 10km in advance of the works.

Not required for one-off isolated works.
VMS must not be towed as part of a moving operation.

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts shall be taken at 15 minute intervals during the closure.
- The closure should be removed if 2 successive traffic counts are above the permissible level or the traffic counts show a rising trend and with last count being above the permissible level.

Permissible 3 Minute Traffic Counts for Lane 2 + 3 Closure				
Road Type	HGV Level	If HGV Count ≤ HGV Level then Max Traffic Count (Veh/3min)	If HGV Count ≥ HGV Level then Max Traffic Count (Veh/3min)	Max Permitted HGV Count (Veh/3min)
Dual Three-Lane Carriageway	15	60	55	20



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. Minimum of 500m visibility required to implement this layout. The mobile lane closure should not be implemented where this visibility requirement cannot be achieved. In scenarios where this visibility requirement cannot be achieved due to road alignment or other site constraints, the works should be undertaken using a static operation.
2. Maximum stop permitted is 15 minutes.
3. Keep Left / Keep Right Arrow on the Lead Pilot Vehicle shall be a minimum of 1200mm.

Legend

- Operative
- Traffic Sign
- Works Area

Stud Fitting/Removal and Longitudinal Markings

Lane 2/3 - Lane Line (Lane 2 & 3 Mobile Lane Closure)

Mobile

Dual C/W & Motorway
Three-Lane - with Hard Shoulder

120 100 OR 80

RM306

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

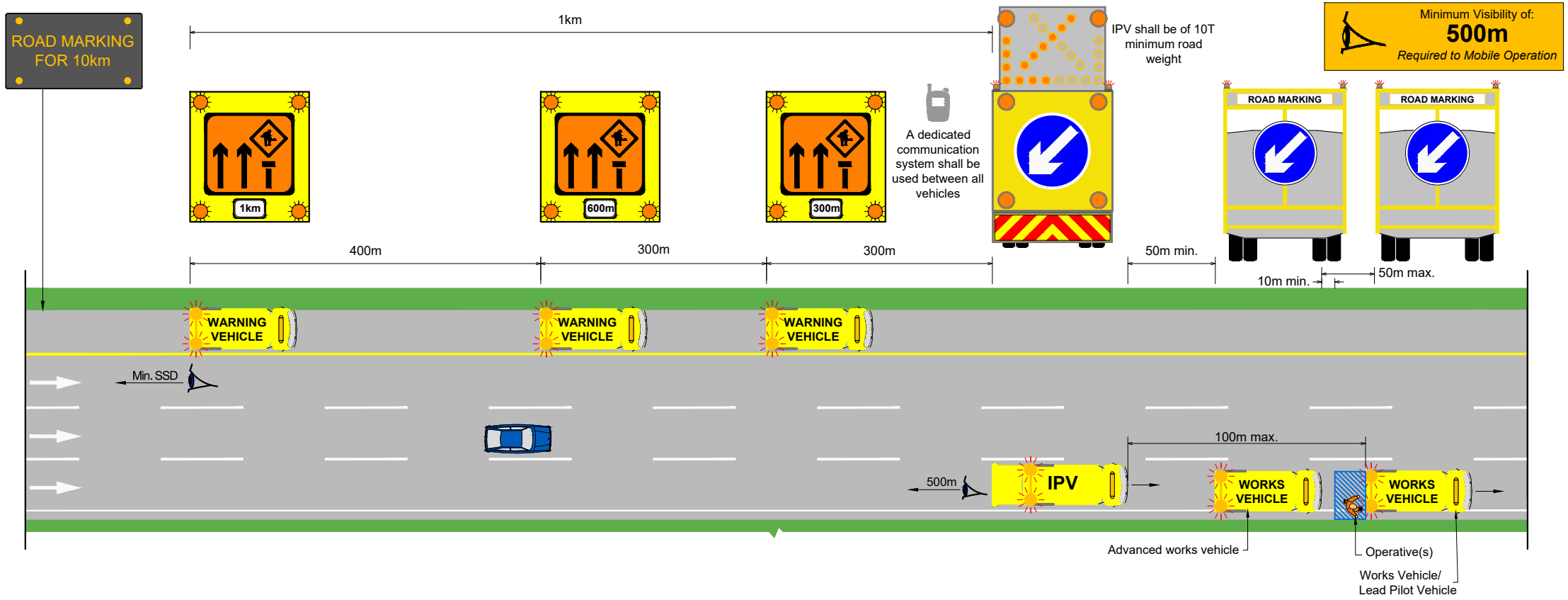
VMS to be used to give drivers advance notification of continuously moving operation ahead.
Can be located up to a max. of 10km in advance of the works.

Not required for one-off isolated works.
VMS must not be towed as part of a moving operation.

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts shall be taken at 15 minute intervals during the closure.
- The closure should be removed if 2 successive traffic counts are above the permissible level or the traffic counts show a rising trend and with last count being above the permissible level.

Permissible 3 Minute Traffic Counts for Lane 3 Closure				
Road Type	HGV Level	If HGV Count ≤ HGV Level then Max Traffic Count (Veh/3min)	If HGV Count ≥ HGV Level then Max Traffic Count (Veh/3min)	Max Permitted HGV Count (Veh/3min)
Dual Three-Lane Carriageway	25	135	120	40



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. Minimum of 500m visibility required to implement this layout. The mobile lane closure should not be implemented where this visibility requirement cannot be achieved. In scenarios where this visibility requirement cannot be achieved due to road alignment or other site constraints, the works should be undertaken using a static operation.
2. Maximum stop permitted is 15 minutes.
3. Keep Left / Keep Right Arrow on the Lead Pilot Vehicle shall be a minimum of 1200mm.

Legend

- Operative
- Traffic Sign
- Works Area

Stud Fitting/Removal and Longitudinal Markings

Median Line (Lane 3 Mobile Lane Closure)

Mobile

Dual C/W & Motorway
Three-Lane - with Hard Shoulder

120 100 OR 80

RM307

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

VMS to be used to give drivers advance notification of continuously moving operation ahead.
Can be located up to a max. of 10km in advance of the works.

Not required for one-off isolated works.
VMS must not be towed as part of a moving operation.

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts shall be taken at 15 minute intervals during the closure.
- The closure should be removed if 2 successive traffic counts are above the permissible level or the traffic counts show a rising trend and with last count being above the permissible level.

Permissible 3 Minute Traffic Counts for Lane 1 Closure				
Road Type	HGV Level	If HGV Count ≤ HGV Level then Max Traffic Count (Veh/3min)	If HGV Count ≥ HGV Level then Max Traffic Count (Veh/3min)	Max Permitted HGV Count (Veh/3min)
Dual Two-Lane Carriageway	10	40	35	15
Dual Three-Lane Carriageway	20	100	90	30

ROAD MARKING FOR 10km

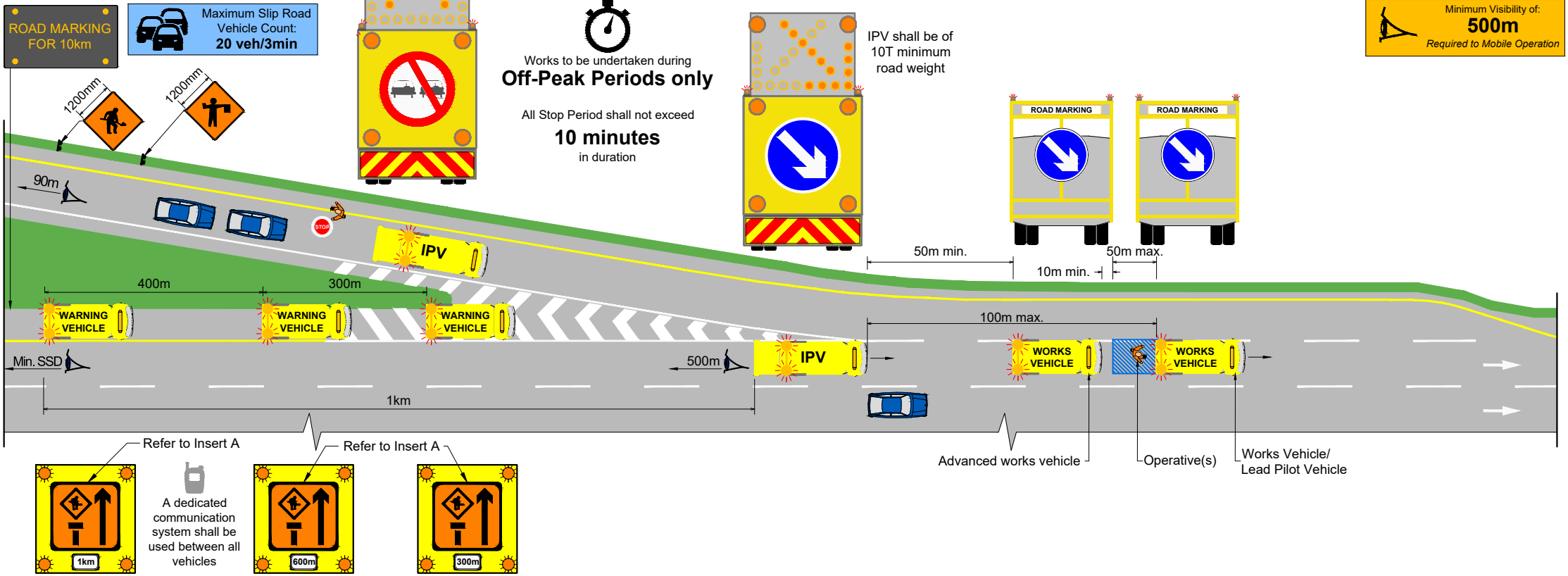
Maximum Slip Road Vehicle Count: **20 veh/3min**

Minimum Visibility of: **500m** *Required to Mobile Operation*

IPV shall be of 10T minimum road weight

Works to be undertaken during **Off-Peak Periods only**

All Stop Period shall not exceed **10 minutes** in duration



Refer to Insert A

Refer to Insert A

A dedicated communication system shall be used between all vehicles

SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Insert A
Alternative 3 Lane Version

Notes

1. Minimum of 500m visibility required to implement this layout. The mobile lane closure should not be implemented where this visibility requirement cannot be achieved. In scenarios where this visibility requirement cannot be achieved due to road alignment or other site constraints, the works should be undertaken using a static operation.
2. Keep Left / Keep Right Arrow on the Lead Pilot Vehicle shall be a minimum of 1200mm.
3. Layout applies to a single lane on-slip only.

Legend

- Operative
- Traffic Sign
- Works Area

Stud Fitting/Removal, Longitudinal Markings (Incl. Short Duration Screed)

Merge Lane Line (Lane 1 Mobile Lane Closure)

Mobile

Dual C/W & Motorway
Two & Three-Lane - with H.S.

120 100 OR 80

RM308

Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

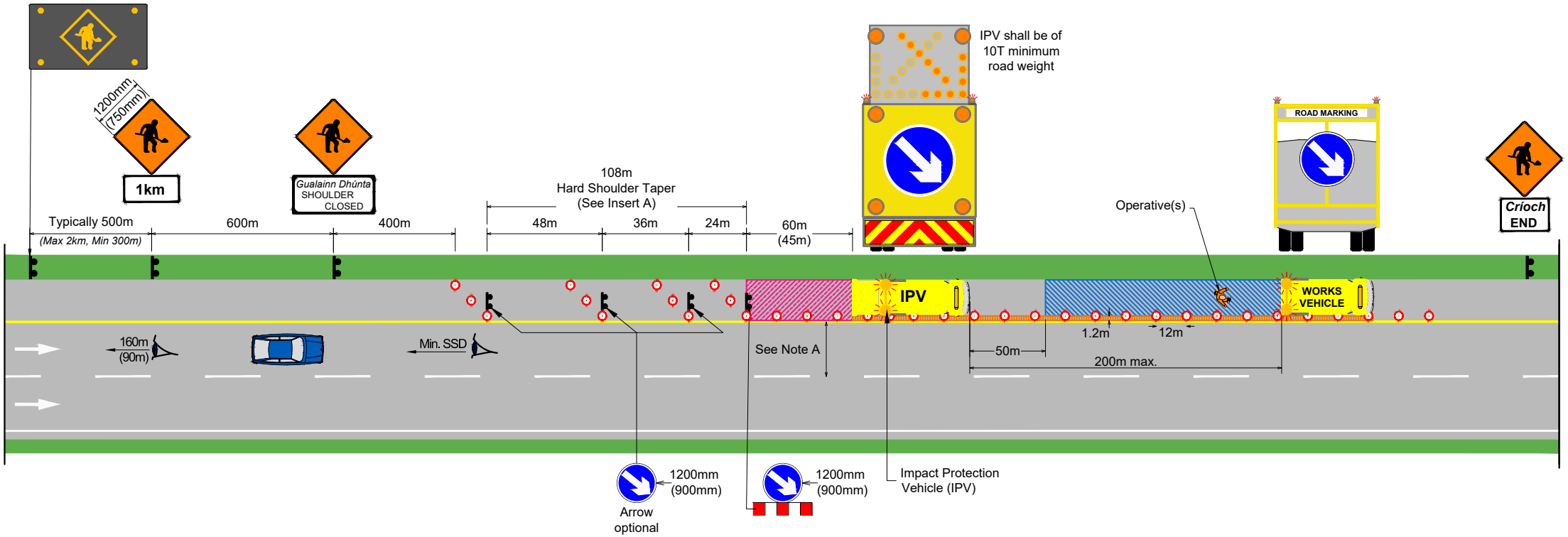
EXAMPLE ONLY NOT TO SCALE

Note A:
This layout assumes that the works area, lateral safety zone and all vehicles are contained to the hard shoulder and do not encroach into Lane 1. Where this is not achievable, the works shall be undertaken using a Lane 1 closure as per RM310.

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

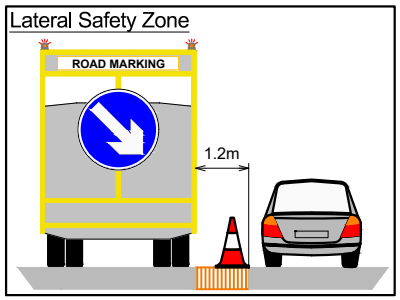
Permissible Traffic Counts for Hard Shoulder Closure		
Road Type	Maximum Allowable Traffic Flow **per Lane**	
	Veh/hr	Veh/3min
Dual Two, Three or Four Lane Carriageway	1300	65



SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Lateral Safety Zone

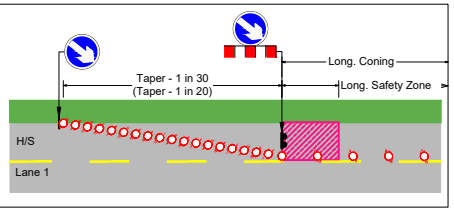


Notes

1. Subject to risk assessment, the IPV may be replaced with a works vehicle.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings
Mainline Carriageway (Hard Shoulder Closure)

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM309

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

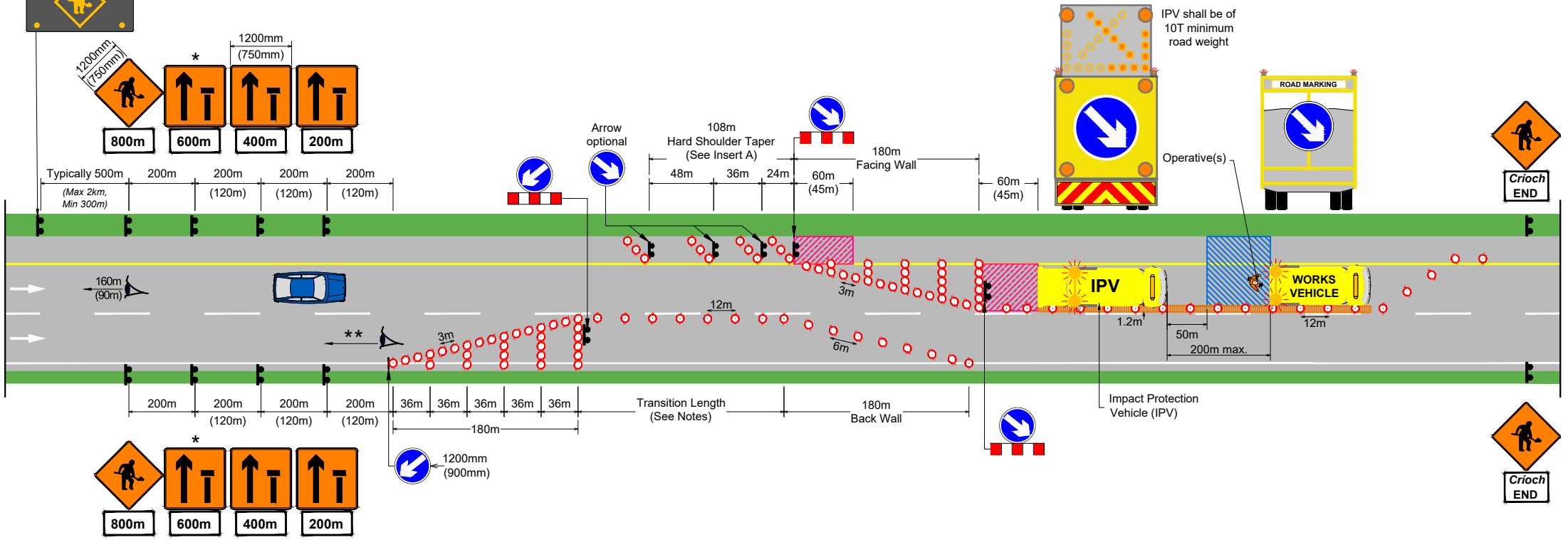
EXAMPLE ONLY NOT TO SCALE

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

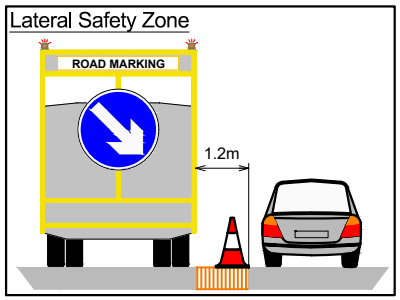
Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60



SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Lateral Safety Zone

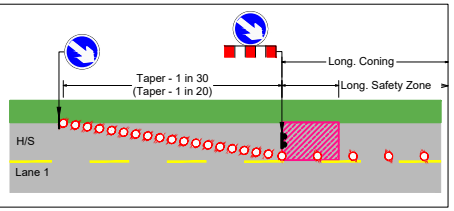


Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Screed Applied Markings
Mainline Carriageway (Lane 1 Closure)

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM310

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

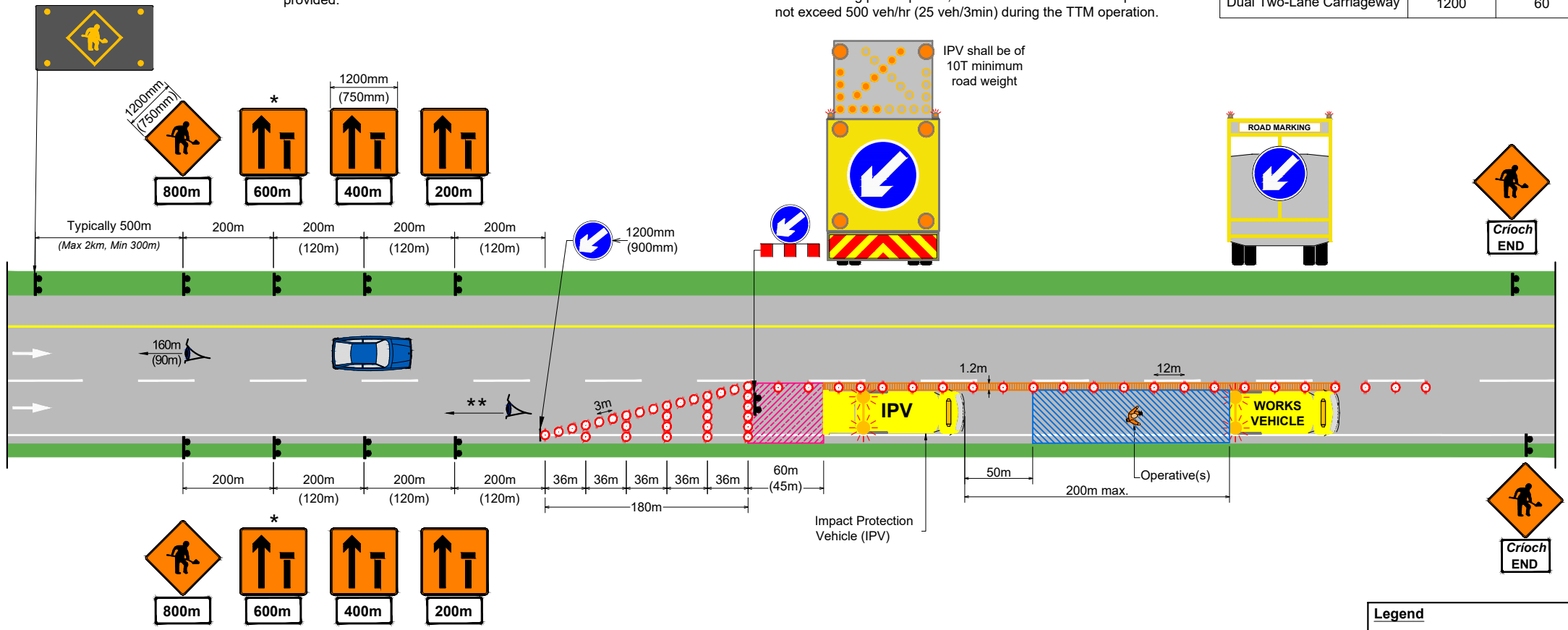
EXAMPLE ONLY NOT TO SCALE

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.

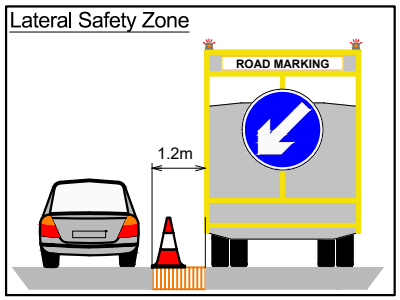
Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

Permissible Traffic Counts for Lane 2 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295



Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.

Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Mainline Carriageway (Lane 2 Closure)

Static

Dual C/W & Motorway

Two-Lane - with Hard Shoulder

120 100 OR 80

RM311

Temporary Traffic Management Guidance Handbook

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

Permissible Traffic Counts for Hard Shoulder Running		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1000	50

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.

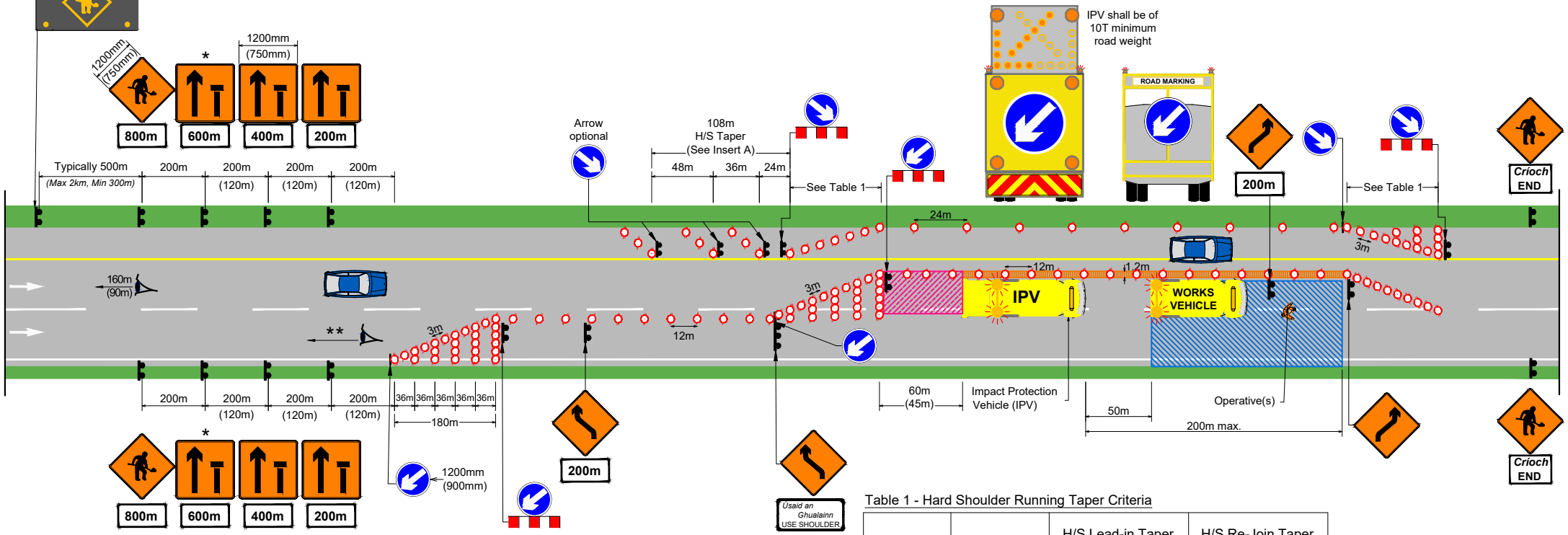
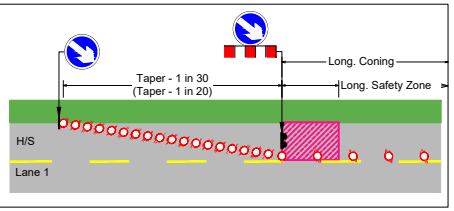


Table 1 - Hard Shoulder Running Taper Criteria

Speed (km/h)	H/S Width (m)	H/S Lead-in Taper Length (m)	H/S Re-Join Taper Length (m)
80	2.5	50	100
	3.0	60	120
≥100	2.5	75	150
	3.0	90	180

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



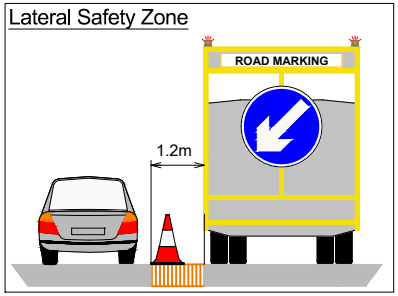
Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Lateral Safety Zone



Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.

Screed Applied Markings, Stud Fitting/Removal and Longitudinal Markings (Lane 1/2 Line)
Mainline Carriageway (Hard Shoulder Running)

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM312

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

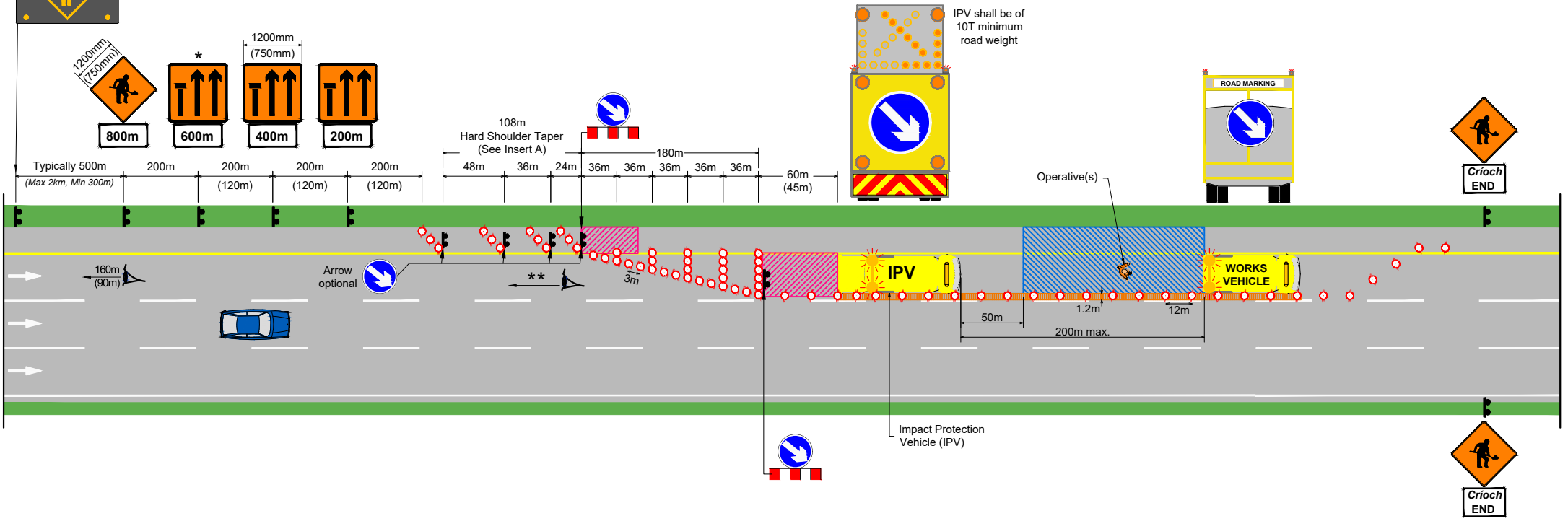
EXAMPLE ONLY NOT TO SCALE

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

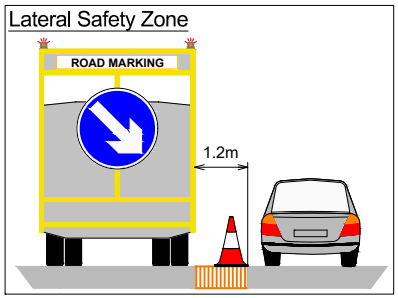
Permissible Traffic Counts for Multi Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Three-Lane Carriageway	2700	60

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Lateral Safety Zone

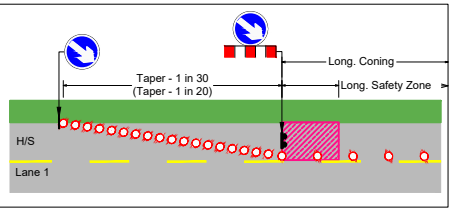


Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Screed Applied Markings
Mainline Carriageway (Lane 1 Closure)

Static

Dual C/W & Motorway
Three-Lane - with Hard Shoulder

120 100 OR 80

RM313

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

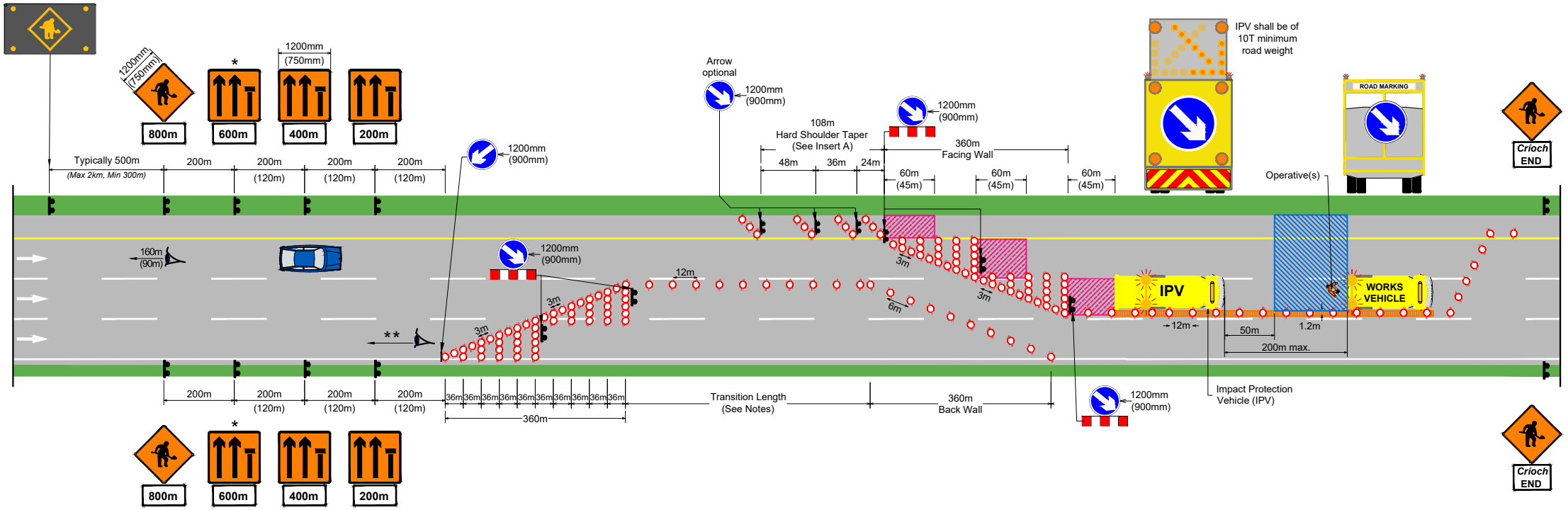
EXAMPLE ONLY NOT TO SCALE

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.

Traffic Count Notes:

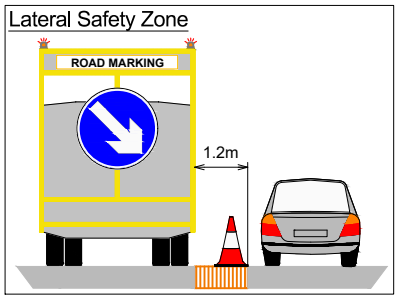
- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

Permissible Traffic Counts for Lane 2 & 3 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Three-Lane Carriageway	1200	60



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Lateral Safety Zone

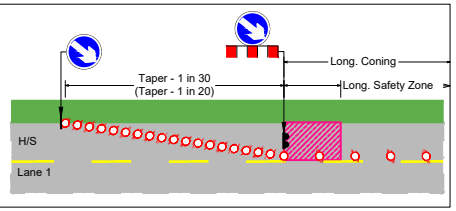


Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Mainline Carriageway (Lane 1 & 2 Closure)

Static

Dual C/W & Motorway

Three-Lane - with Hard Shoulder

120 100 OR 80

RM314

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

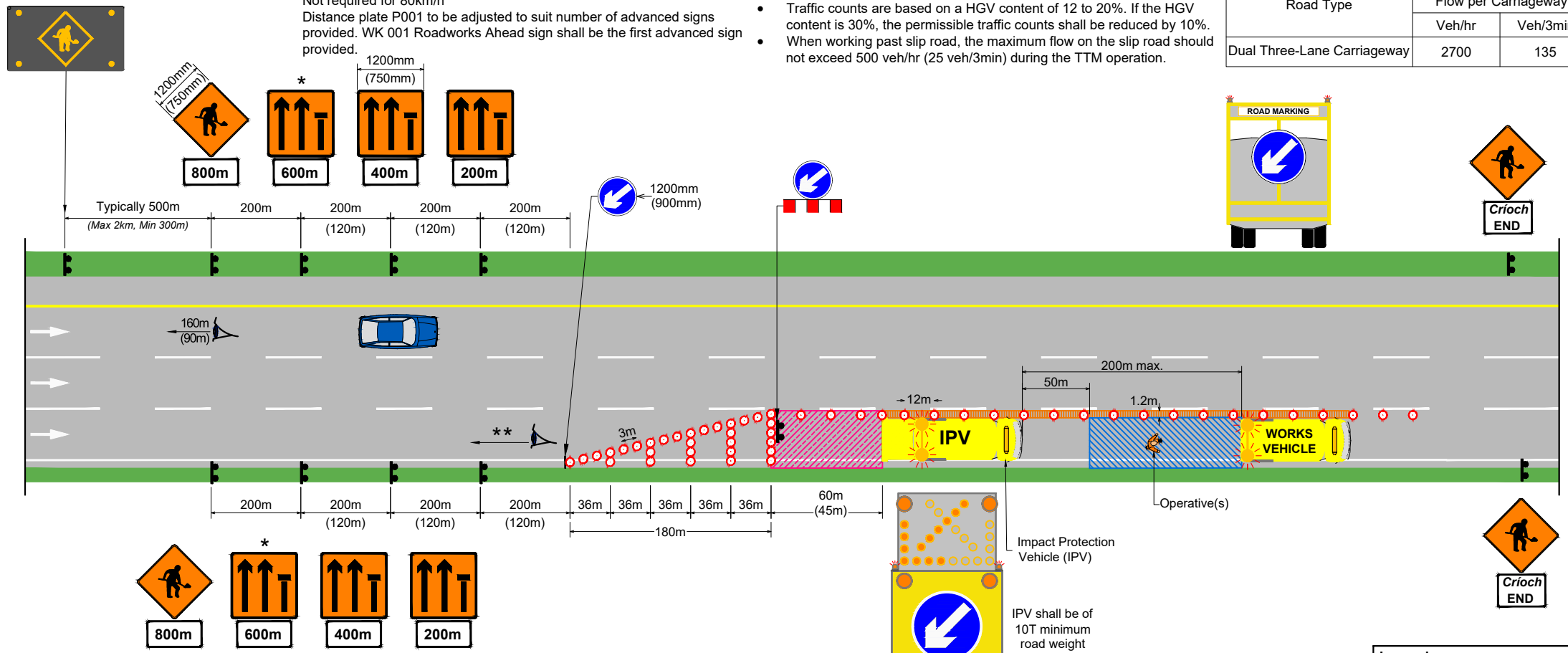
EXAMPLE ONLY NOT TO SCALE

Traffic Count Notes:

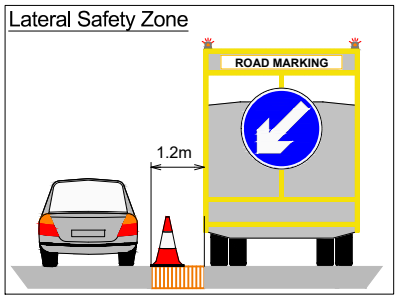
- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

Permissible Traffic Counts for Lane 3 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Three-Lane Carriageway	2700	135

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295



Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.

Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings

Mainline Carriageway (Lane 3 Closure)

Static

Dual C/W & Motorway

Three-Lane - with Hard Shoulder

120 100 OR 80

RM315

Temporary Traffic Management Guidance Handbook

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

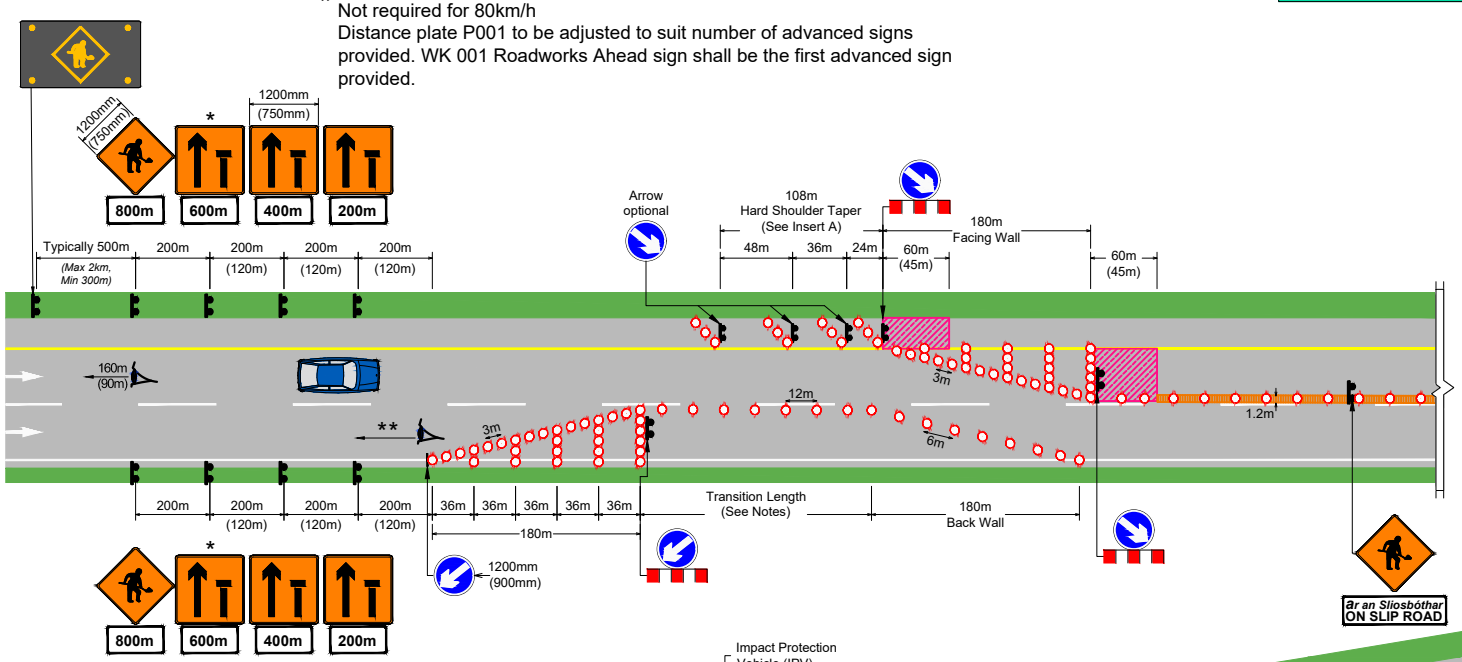
EXAMPLE ONLY NOT TO SCALE

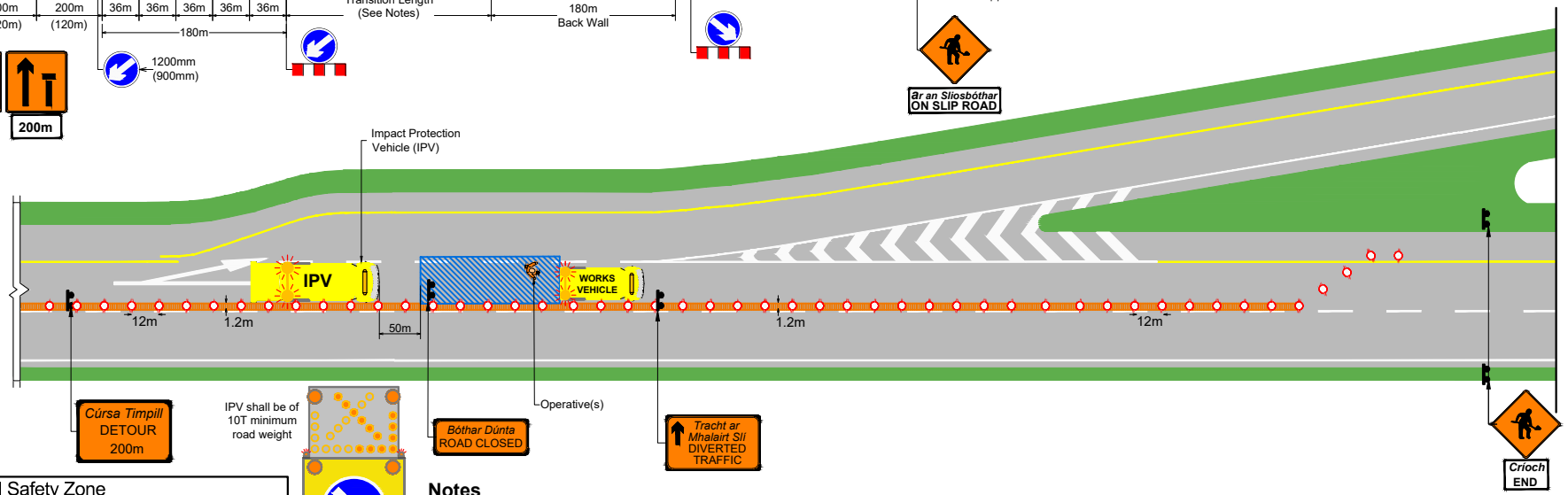
* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.

Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

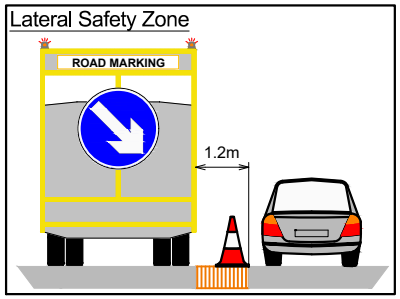




Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Lateral Safety Zone



SSD Parameters

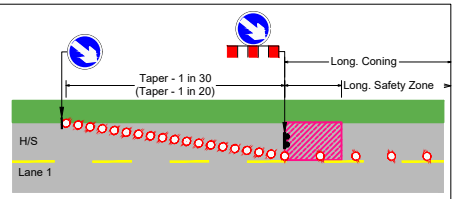
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Screed Applied Markings and Longitudinal Markings

Off-Ramp - Lane 1 and Slip Closure

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM316

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

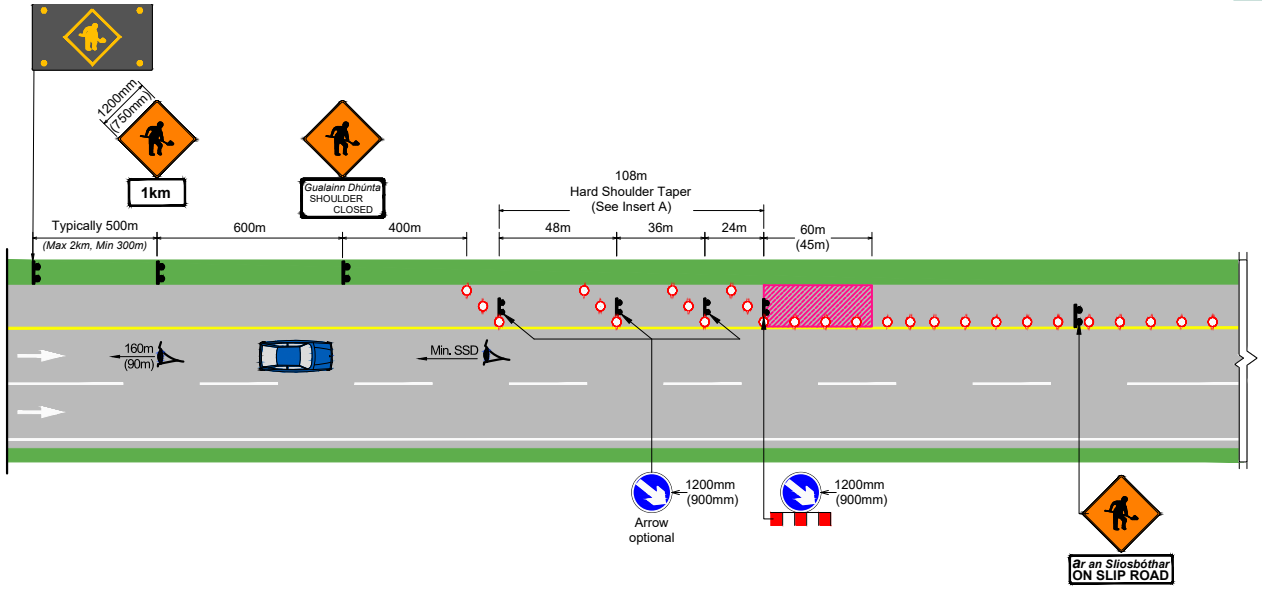
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

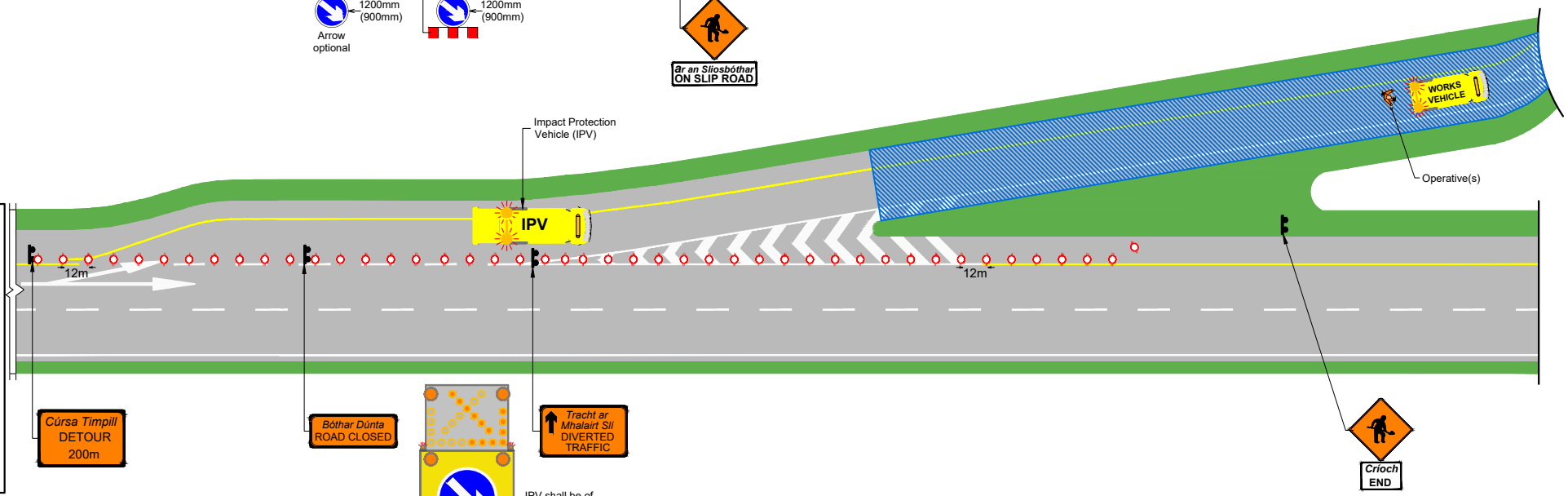
EXAMPLE ONLY NOT TO SCALE

Permissible Traffic Counts for Hard Shoulder Closure		
Road Type	Maximum Allowable Traffic Flow **per Lane**	
	Veh/hr	Veh/3min
Dual Two, Three or Four Lane Carriageway	1300	65

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.





Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

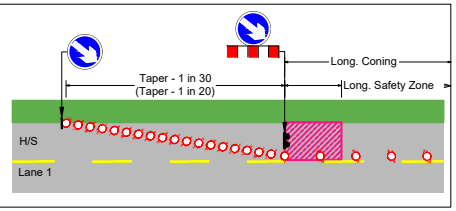
SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Screed Applied Markings and Longitudinal Markings

Off-Ramp - Slip Closure

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM317

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

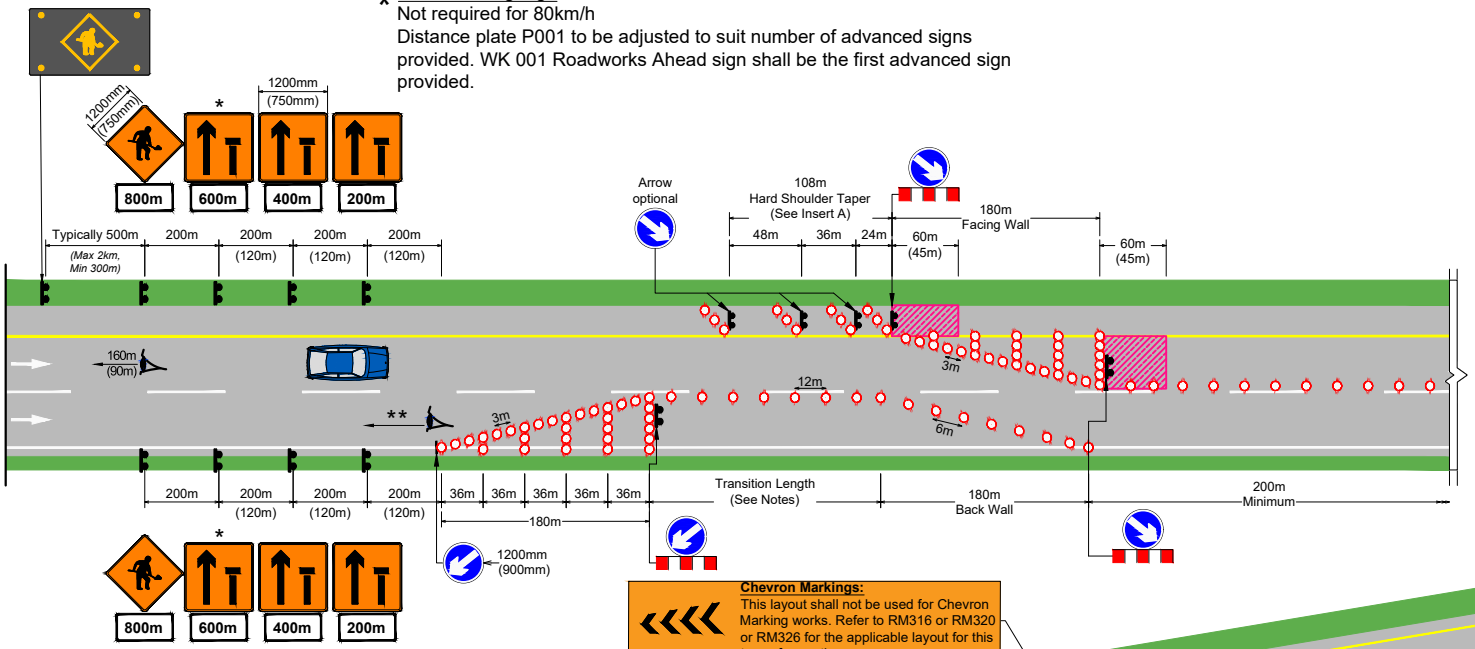
EXAMPLE ONLY NOT TO SCALE

Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60

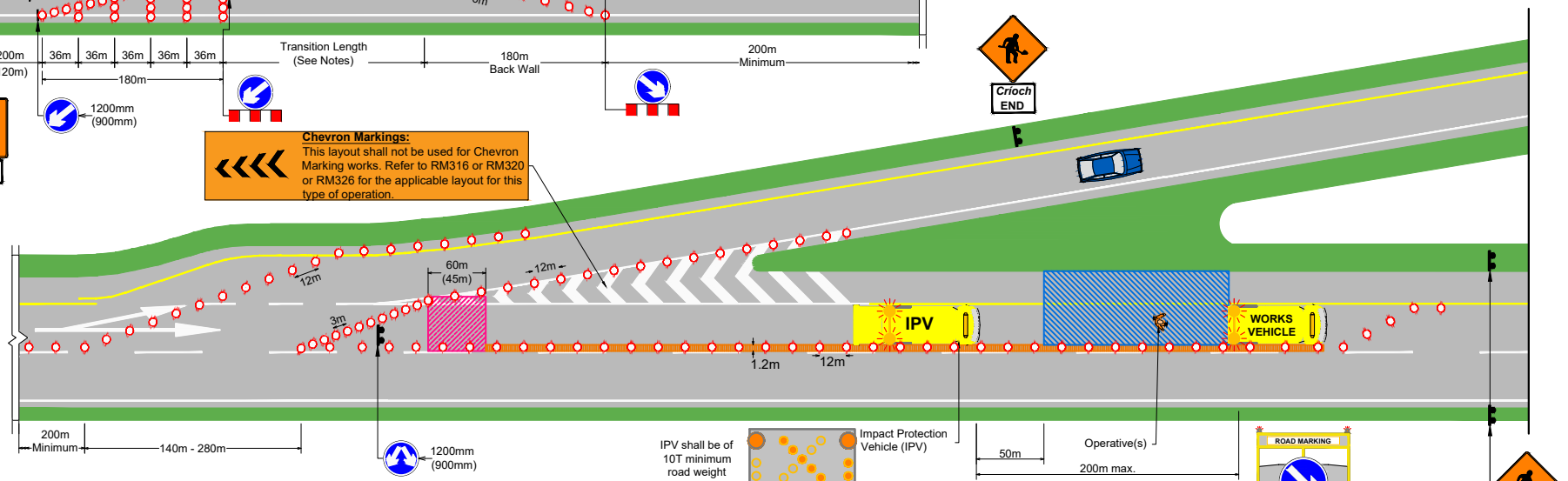
Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.



Chevron Markings:
This layout shall not be used for Chevron Marking works. Refer to RM316 or RM320 or RM326 for the applicable layout for this type of operation.



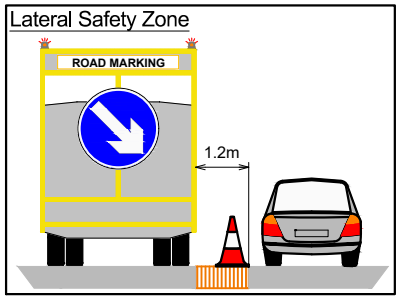
Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility (160m / 90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance (200m / 120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Lateral Safety Zone

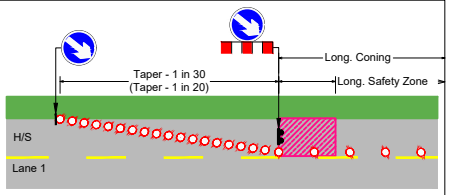


Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Screed Applied Markings and Longitudinal Markings

Off-Ramp - Lane 1 Closure - Works After Slip Lane

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM318

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

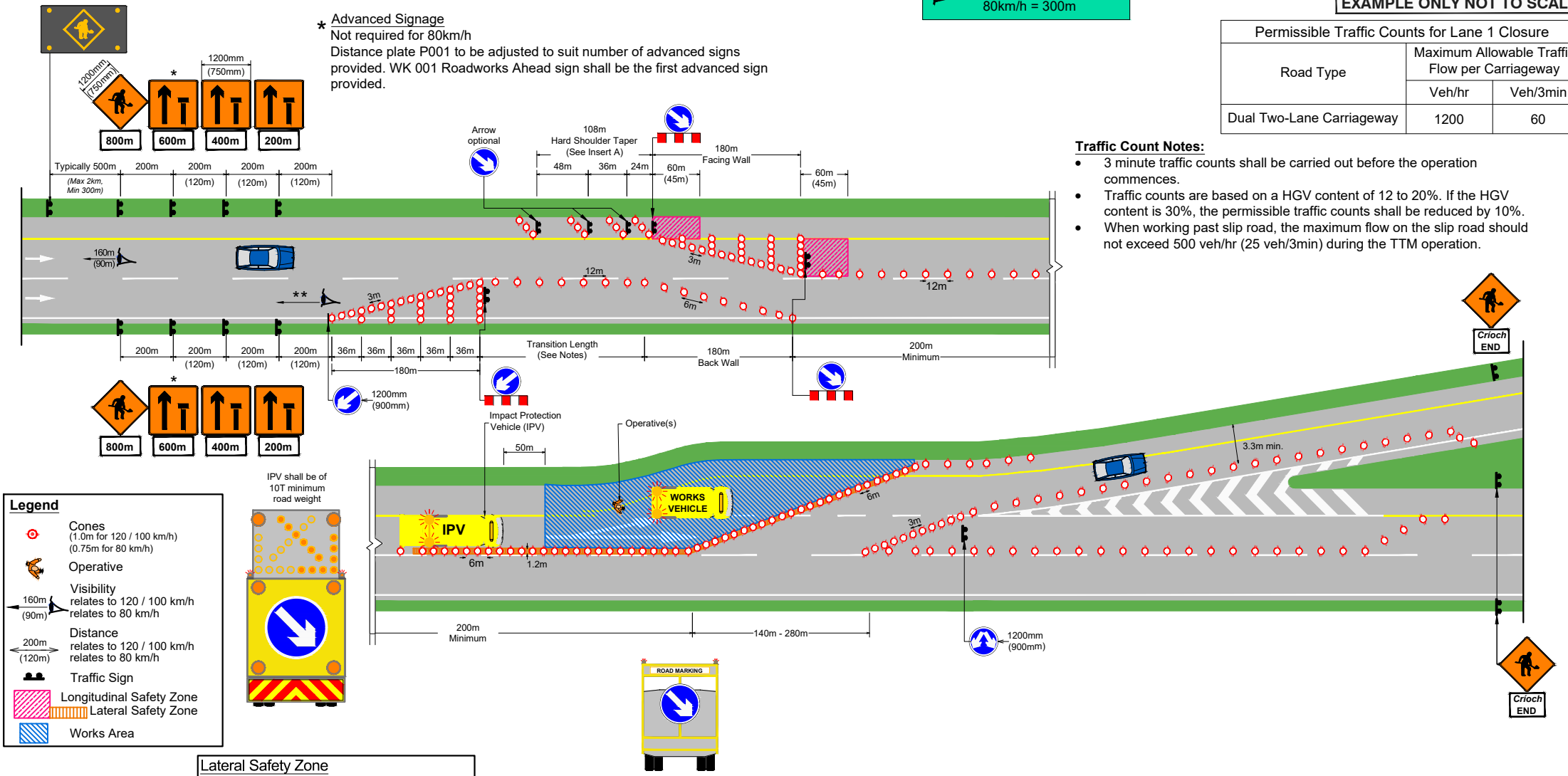
EXAMPLE ONLY NOT TO SCALE

Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

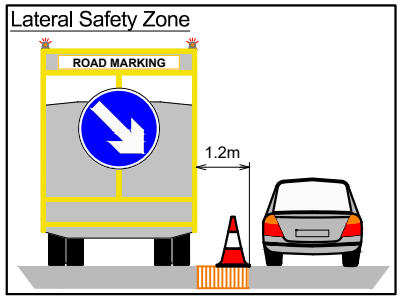
* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.



Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility relates to 120 / 100 km/h relates to 80 km/h (160m (90m))
- Distance relates to 120 / 100 km/h relates to 80 km/h (200m (120m))
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Lateral Safety Zone



SSD Parameters

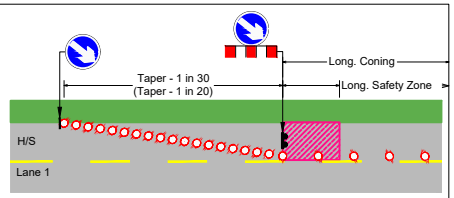
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Screed Applied Markings and Longitudinal Markings

Off-Ramp - Lane 1 Closure - Edge of Carriageway Line and Bifurcation Arrow

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM319

Road Marking

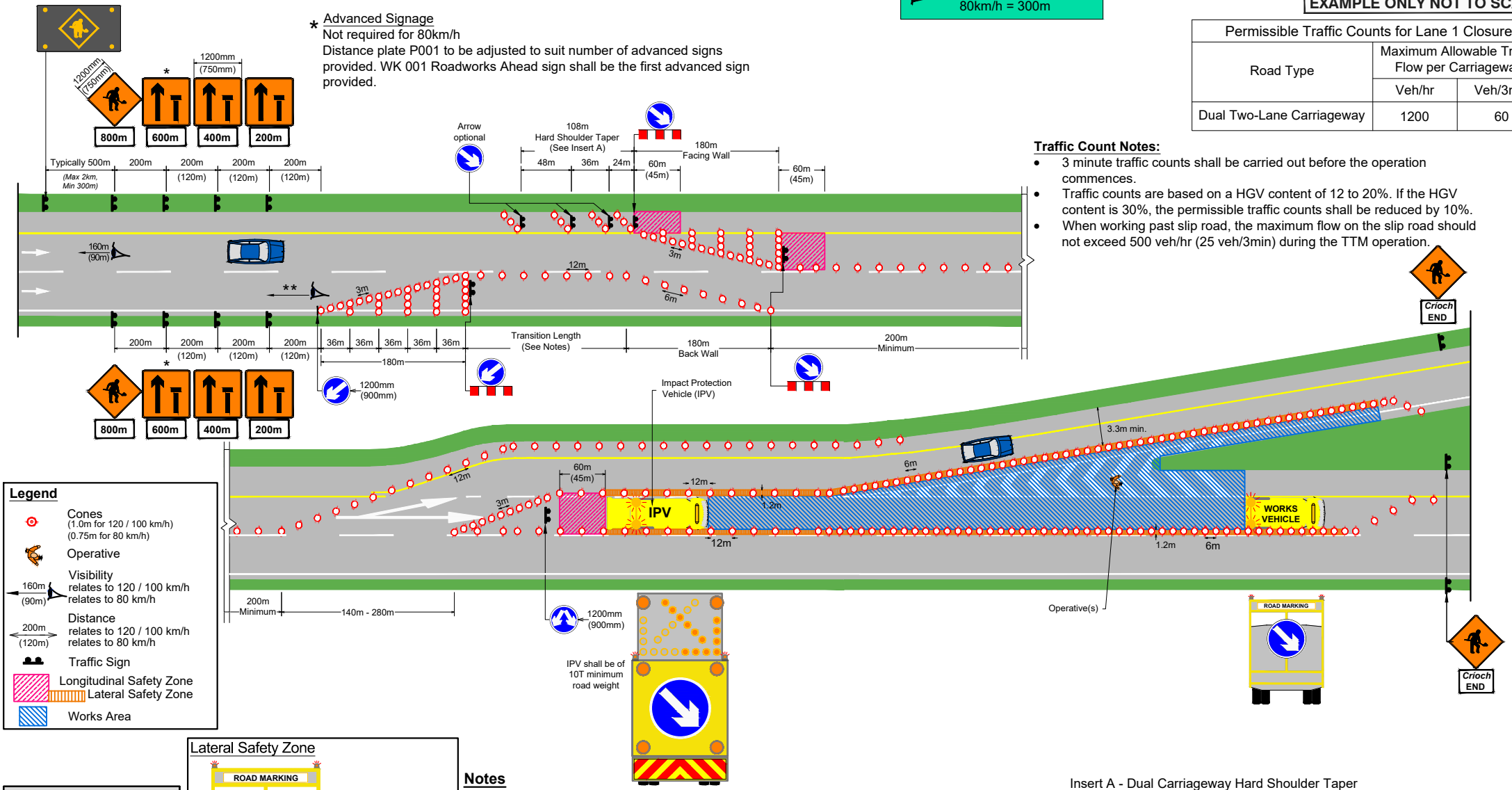
** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.



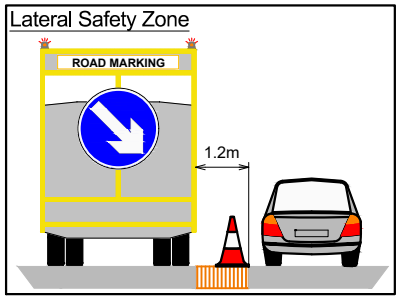
Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility relates to 120 / 100 km/h relates to 80 km/h
- Distance relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Lateral Safety Zone



SSD Parameters

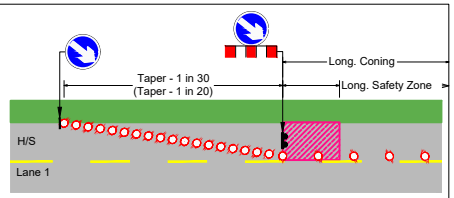
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Screed Applied Markings and Longitudinal Markings
Off-Ramp - Lane 1 Closure - Chevron Markings For Diverge

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM320

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

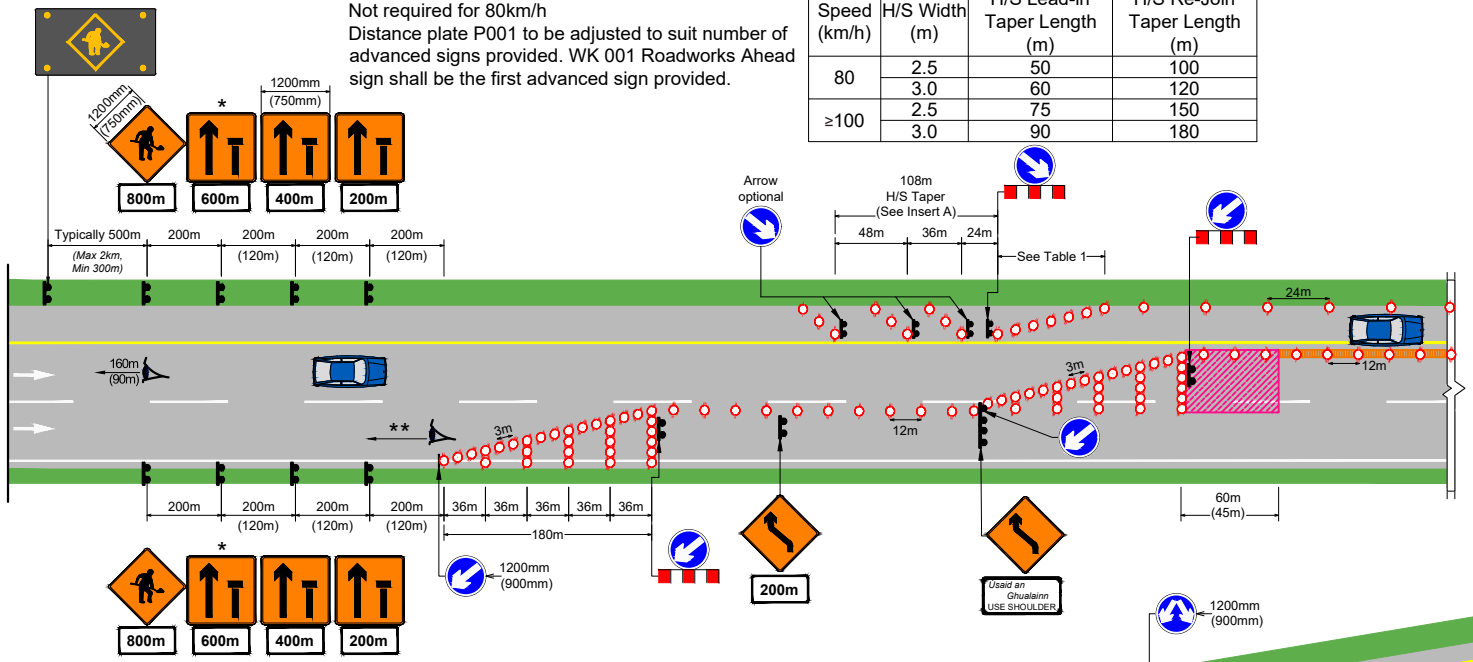
* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.

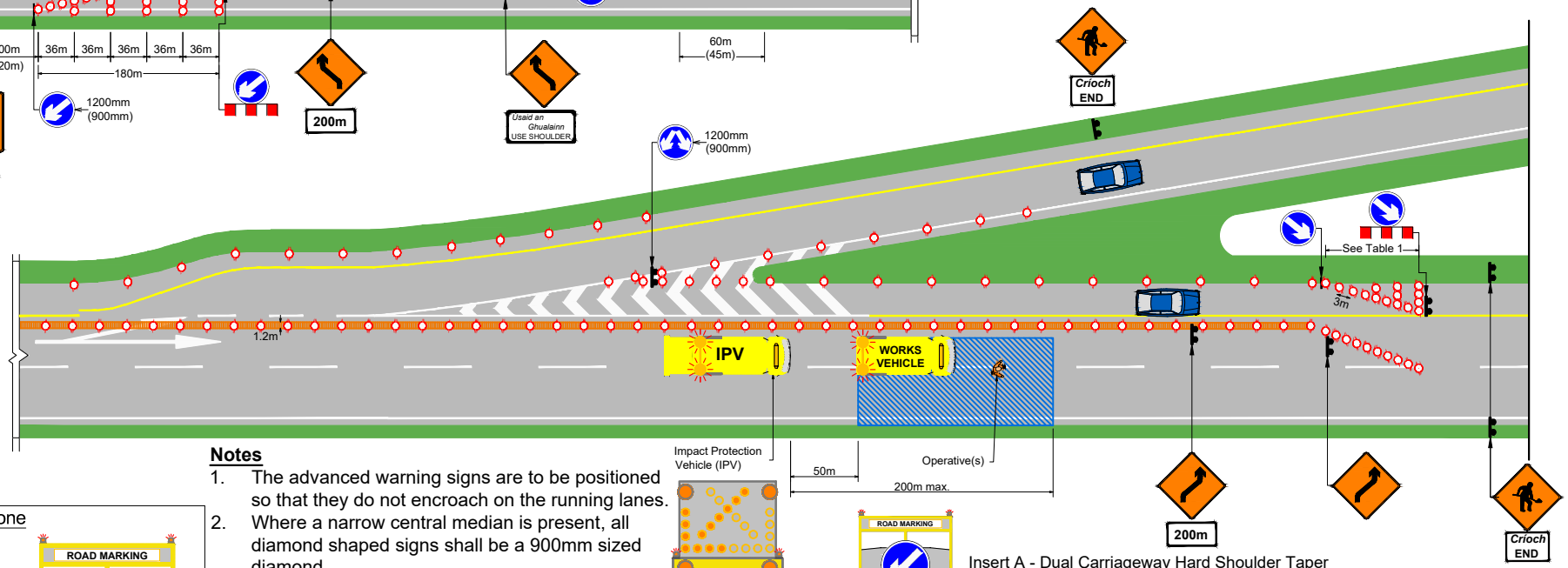
Table 1 - Hard Shoulder Running Taper Criteria

Speed (km/h)	H/S Width (m)	H/S Lead-in Taper Length (m)	H/S Re-Join Taper Length (m)
80	2.5	50	100
	3.0	60	120
≥100	2.5	75	150
	3.0	90	180

Permissible Traffic Counts for Hard Shoulder Running		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1000	50

Traffic Count Notes:
- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

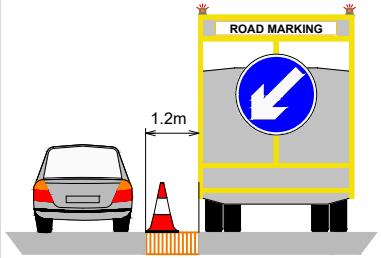


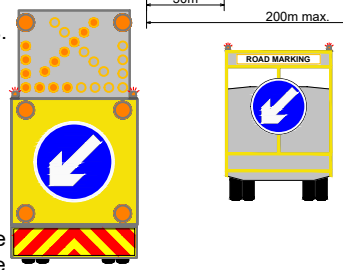


Legend
- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility: 160m (90m) relates to 120 / 100 km/h; relates to 80 km/h
- Distance: 200m (120m) relates to 120 / 100 km/h; relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Notes
1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Lateral Safety Zone





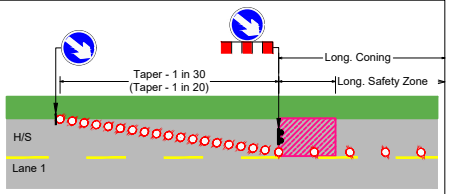
IPV shall be of 10T minimum road weight

SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Screed Applied Markings, Stud Fitting/Removal and Longitudinal Markings (Lane 1/2 Line)
Mainline Carriageway at an Off-Ramp (Hard Shoulder Running)

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM321

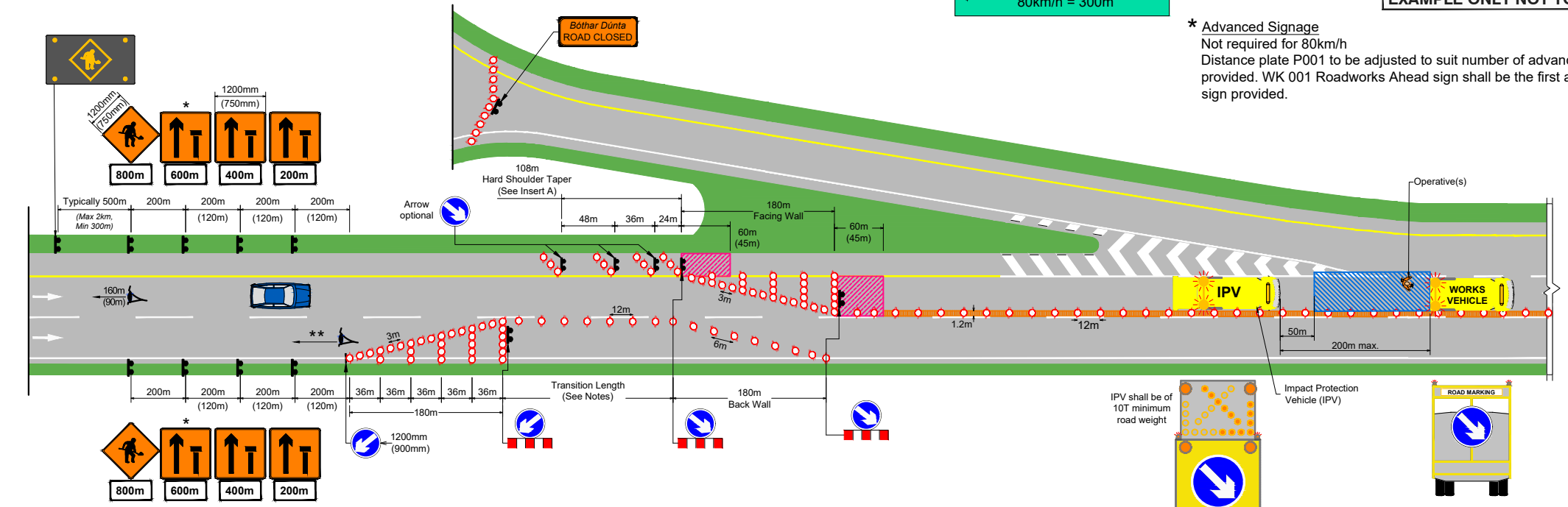
Road Marking

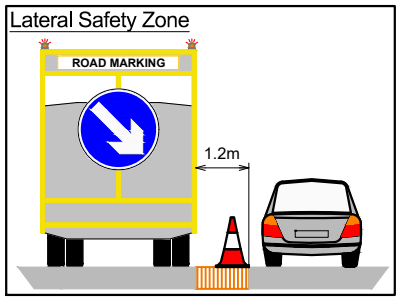
** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

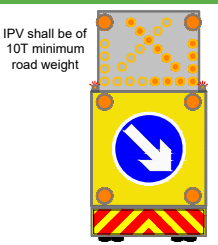
* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.



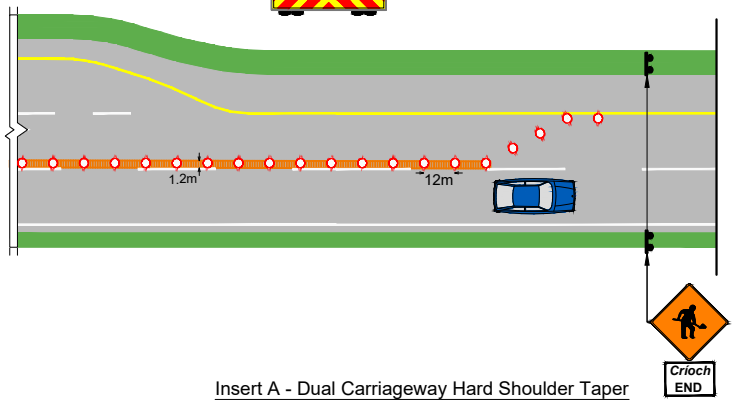


Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.



Impact Protection Vehicle (IPV)



Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

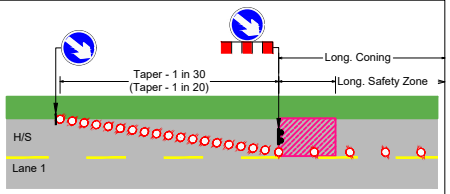
Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Screed Applied Markings and Longitudinal Markings

Off-Ramp - Lane 1 and Slip Closure

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM322

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

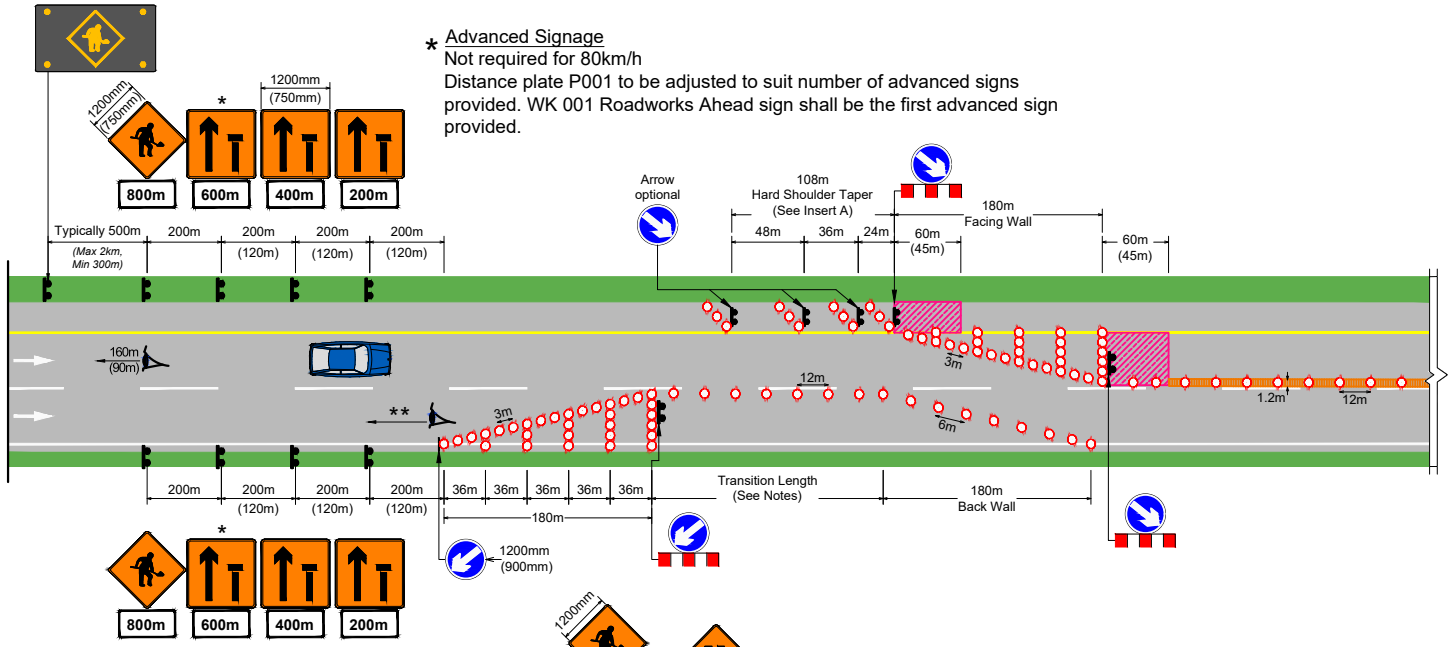
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

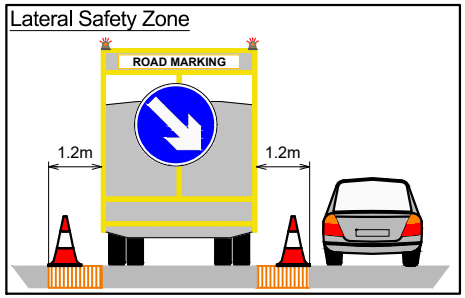
EXAMPLE ONLY NOT TO SCALE

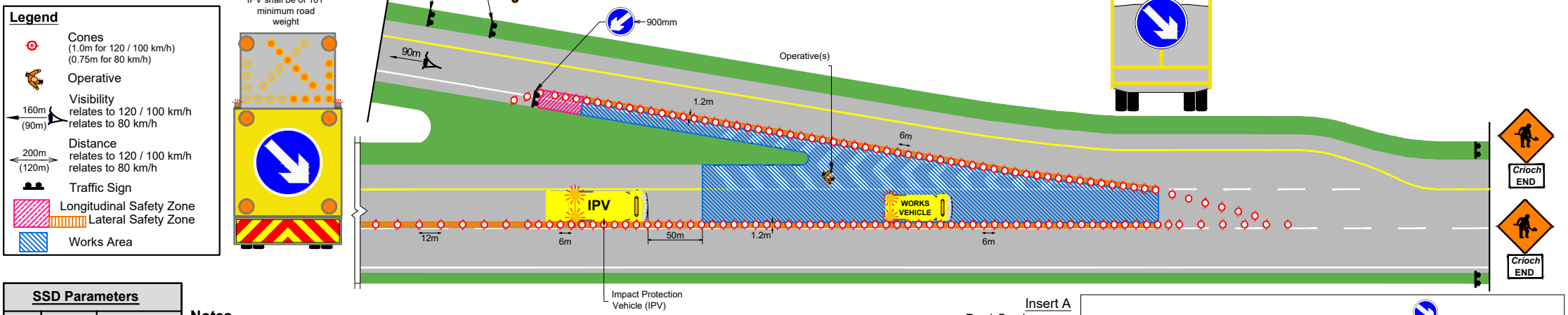
Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60

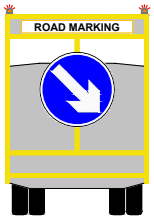
Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.









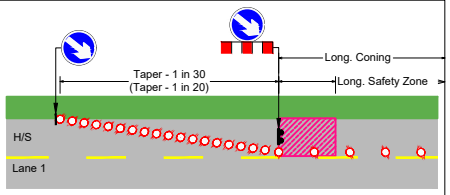
SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Insert A
Dual Carriageway
Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Screed Applied Markings

Mainline Carriageway - Chevron Hatching For Merge

Static

Dual C/W & Motorway

Two-Lane - with Hard Shoulder

120 100 OR 80

RM323

Temporary Traffic Management Guidance Handbook

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

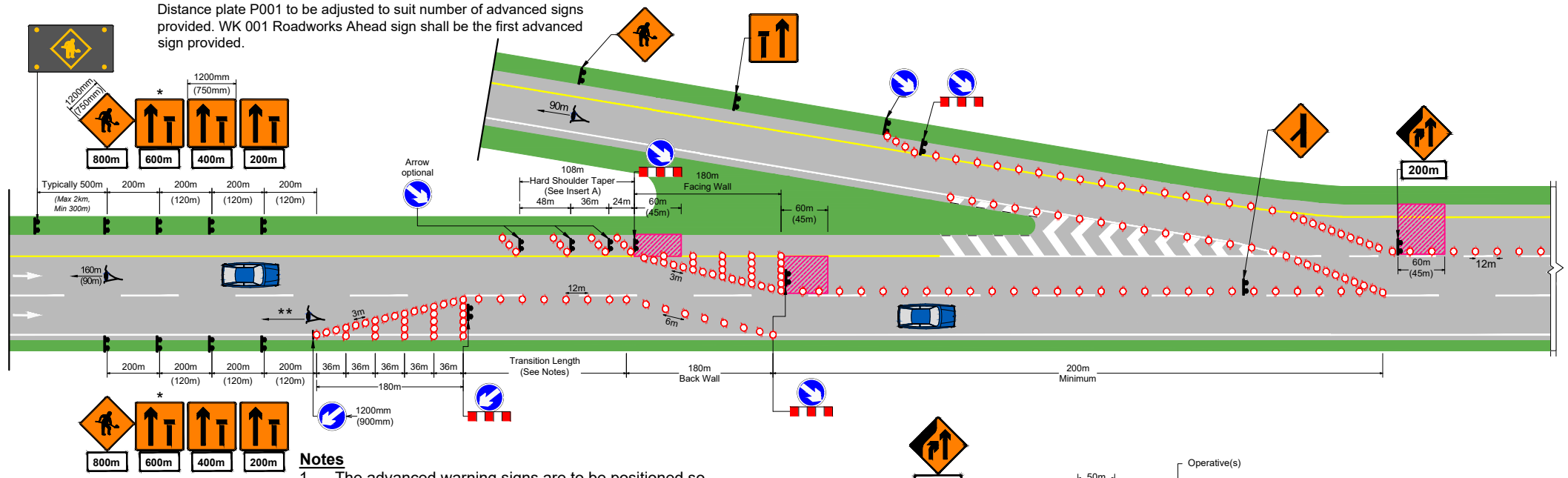
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Advanced Signage

* Not required for 80km/h

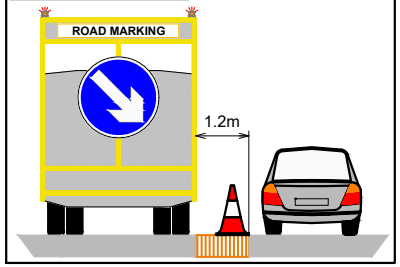
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.

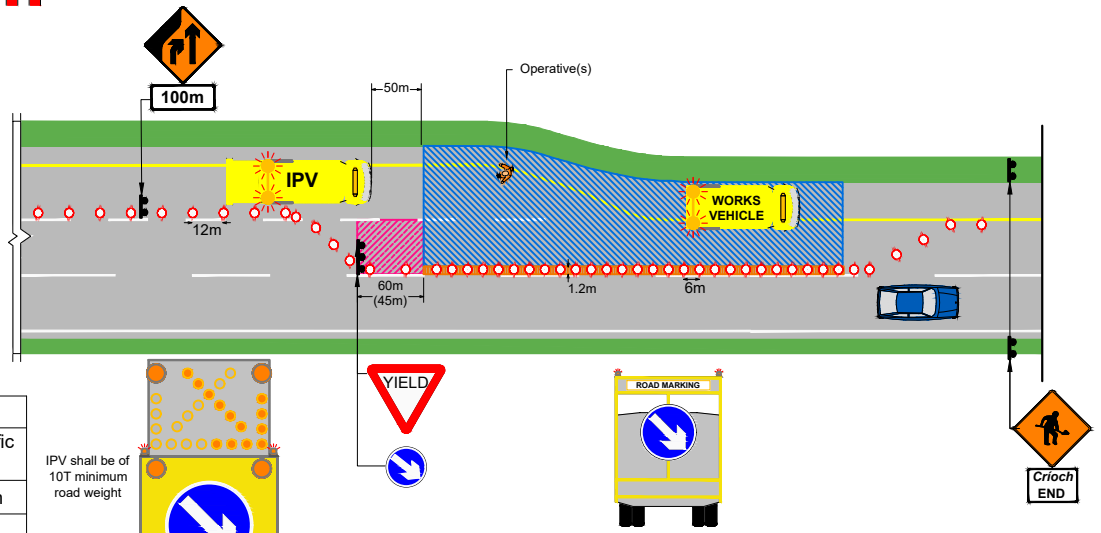


Notes

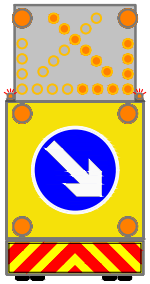
1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Lateral Safety Zone





IPV shall be of 10T minimum road weight



Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility (160m (90m)) relates to 120 / 100 km/h relates to 80 km/h
- Distance (200m (120m)) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

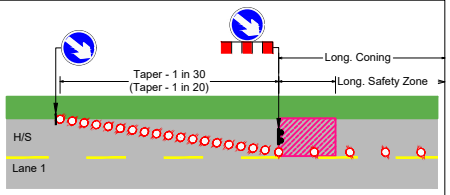
Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

Insert A
Dual Carriageway
Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Screed Applied Markings and Longitudinal Markings

On-Ramp - Lane 1 Closure - End of Merge Lane and Hard Shoulder Line

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM324

Temporary Traffic Management Guidance Handbook

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

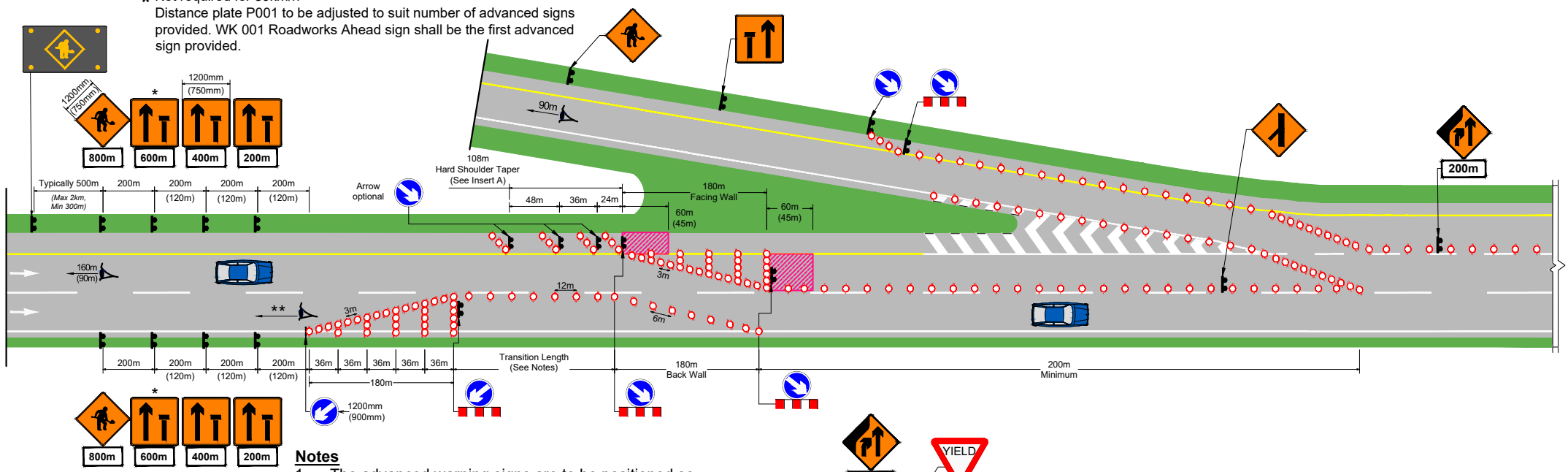
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

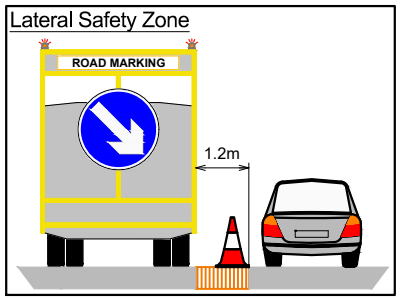
EXAMPLE ONLY NOT TO SCALE

Advanced Signage

* Not required for 80km/h

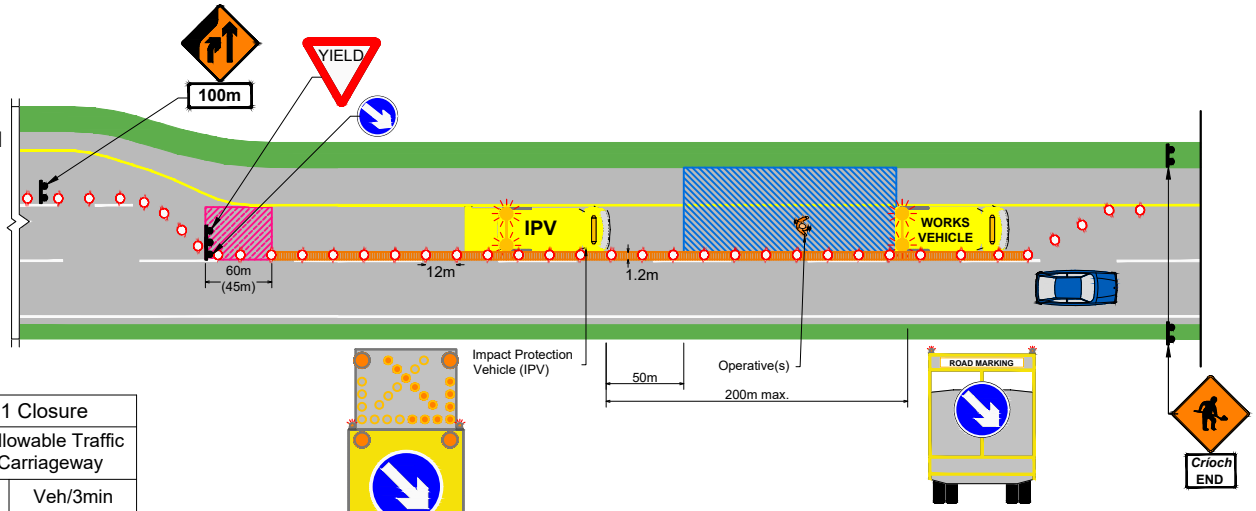
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.





Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.



Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

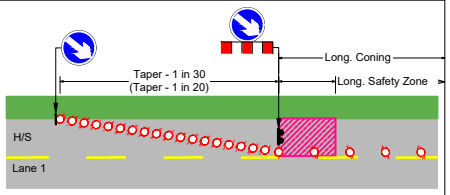
Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

Insert A
Dual Carriageway
Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Screed Applied Markings and Longitudinal Markings

On-Ramp - Lane 1 Closure - Works After Slip Lane

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM325

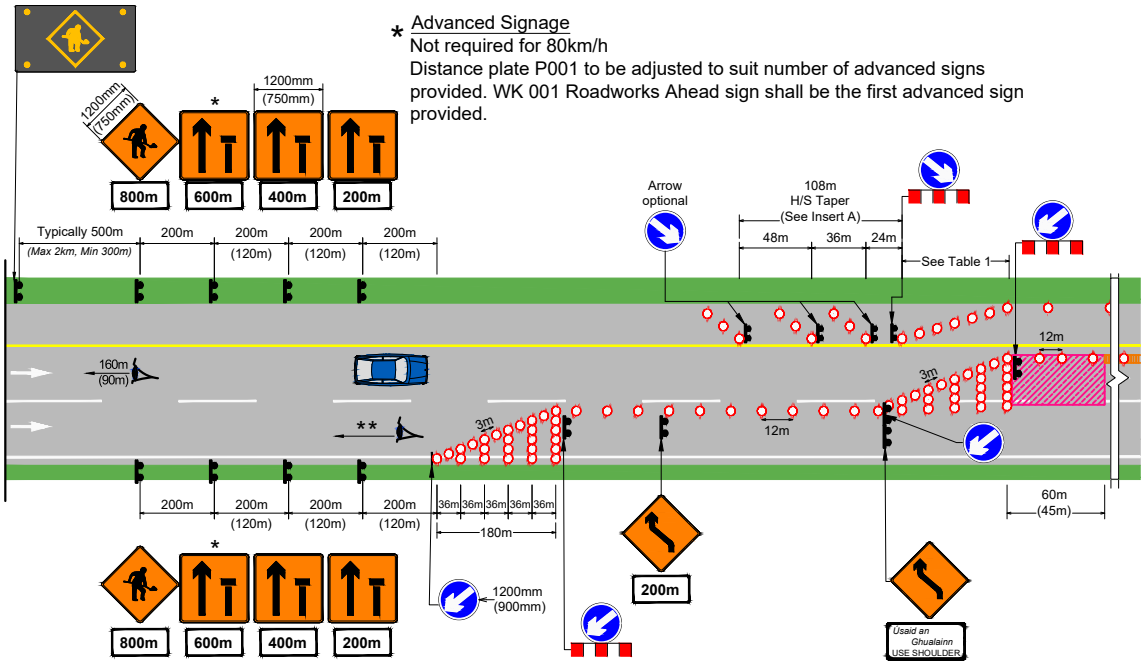
Road Marking

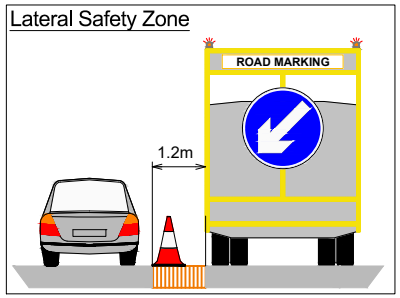
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

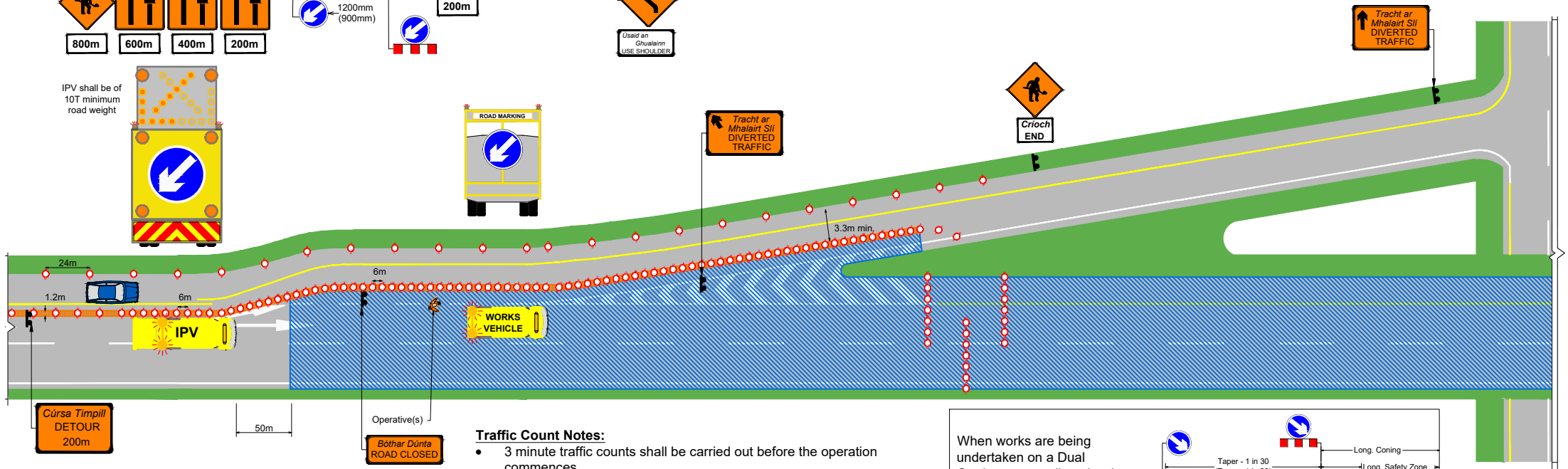




SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

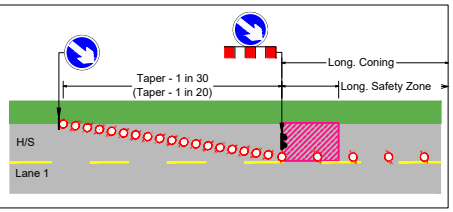
Legend
- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Notes
1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.



Traffic Count Notes:
- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Insert A
Dual Carriageway
Hard Shoulder Taper

Screed Applied Markings, Stud Fitting/Removal and Longitudinal Markings
Off-Ramp - Mainline Closure - Up and Over

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM326

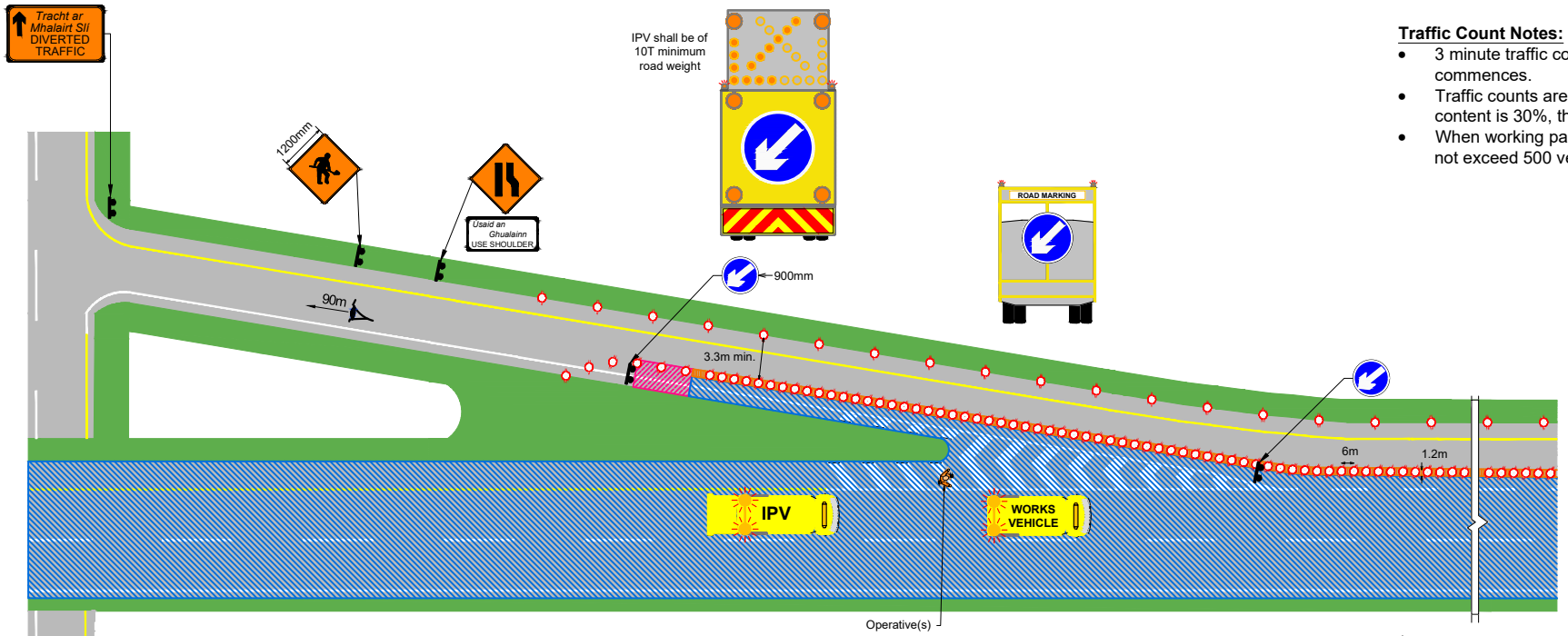
Road Marking

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

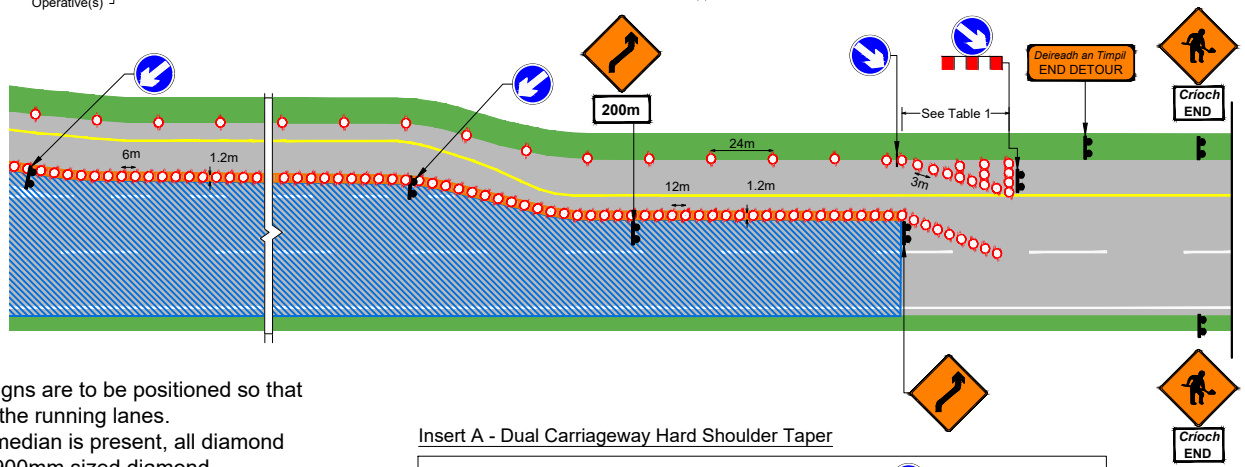
Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.



Legend

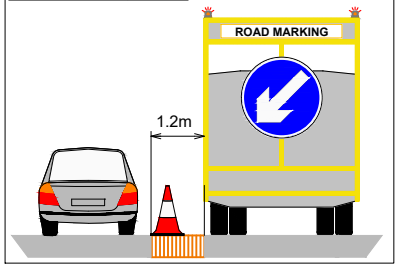
- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area



SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Lateral Safety Zone

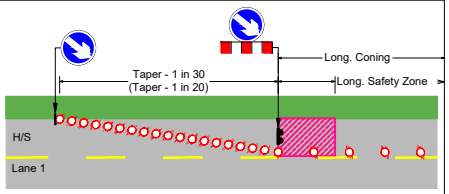


Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Screed Applied Markings and Longitudinal Markings

On-Ramp - Mainline Closure - Up and Over

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM327

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

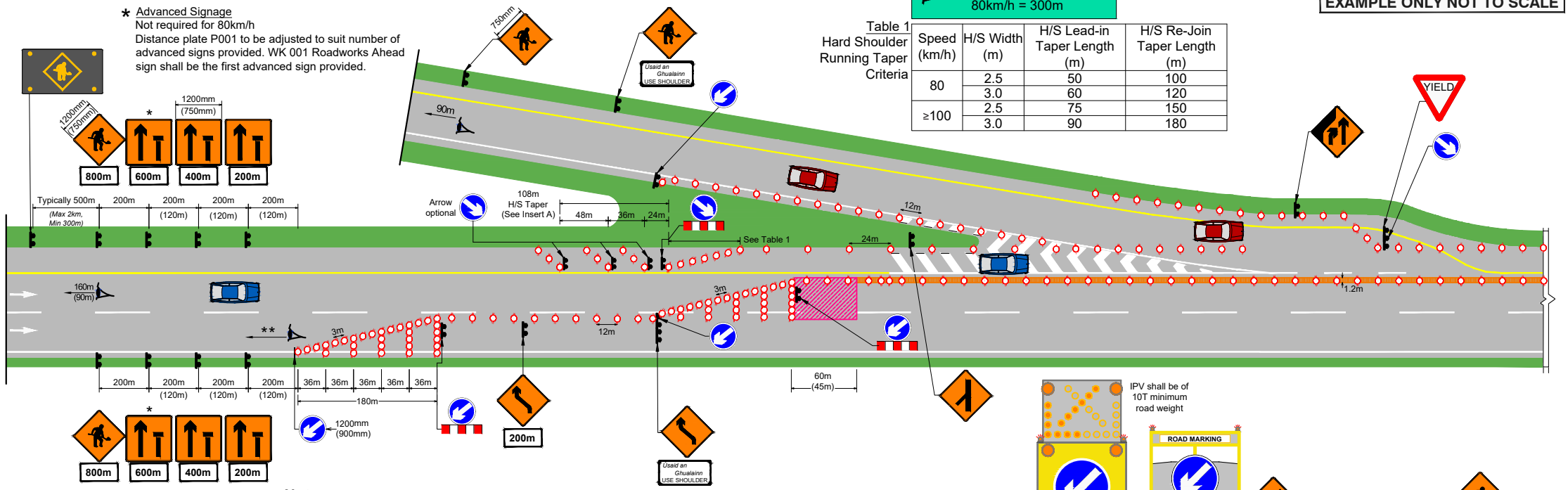
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

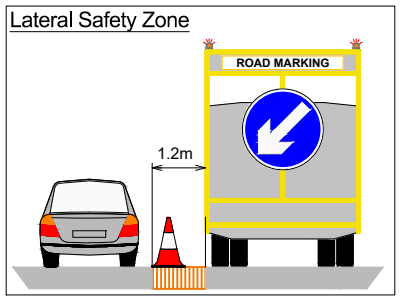
EXAMPLE ONLY NOT TO SCALE

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.

Table 1
Hard Shoulder Running Taper Criteria

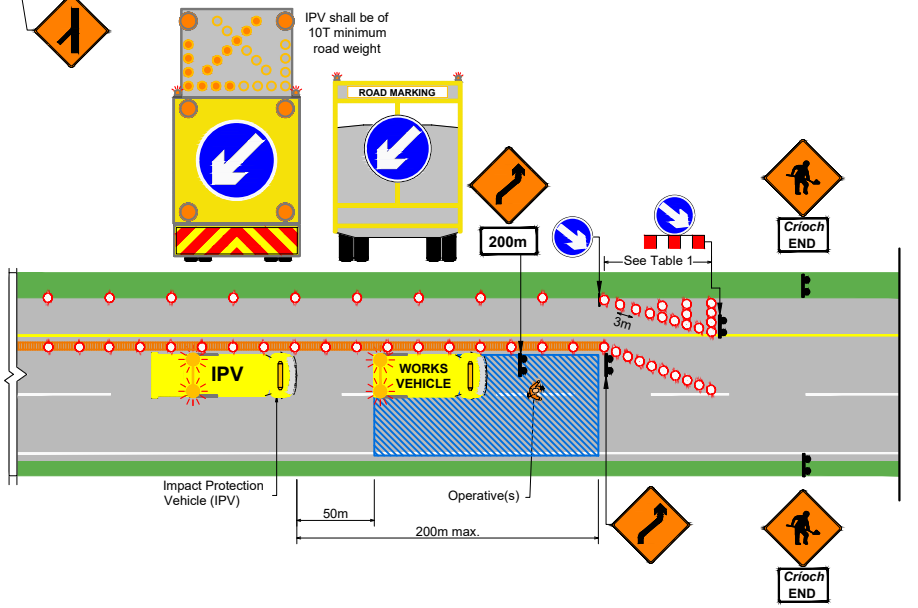
Speed (km/h)	H/S Width (m)	H/S Lead-in Taper Length (m)	H/S Re-Join Taper Length (m)
80	2.5	50	100
	3.0	60	120
≥100	2.5	75	150
	3.0	90	180





Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.



SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

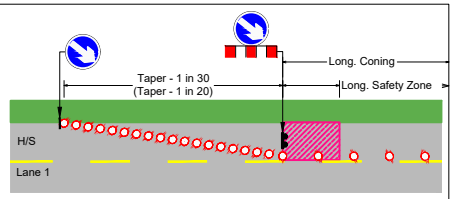
Permissible Traffic Counts for Hard Shoulder Running		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1000	50

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

Insert A
Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Screed Applied Markings, Stud Fitting/Removal and Longitudinal Markings (Lane 1/2 Line)
Mainline Carriageway at an On-Ramp (Hard Shoulder Running)

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM328

Temporary Traffic Management Guidance Handbook

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

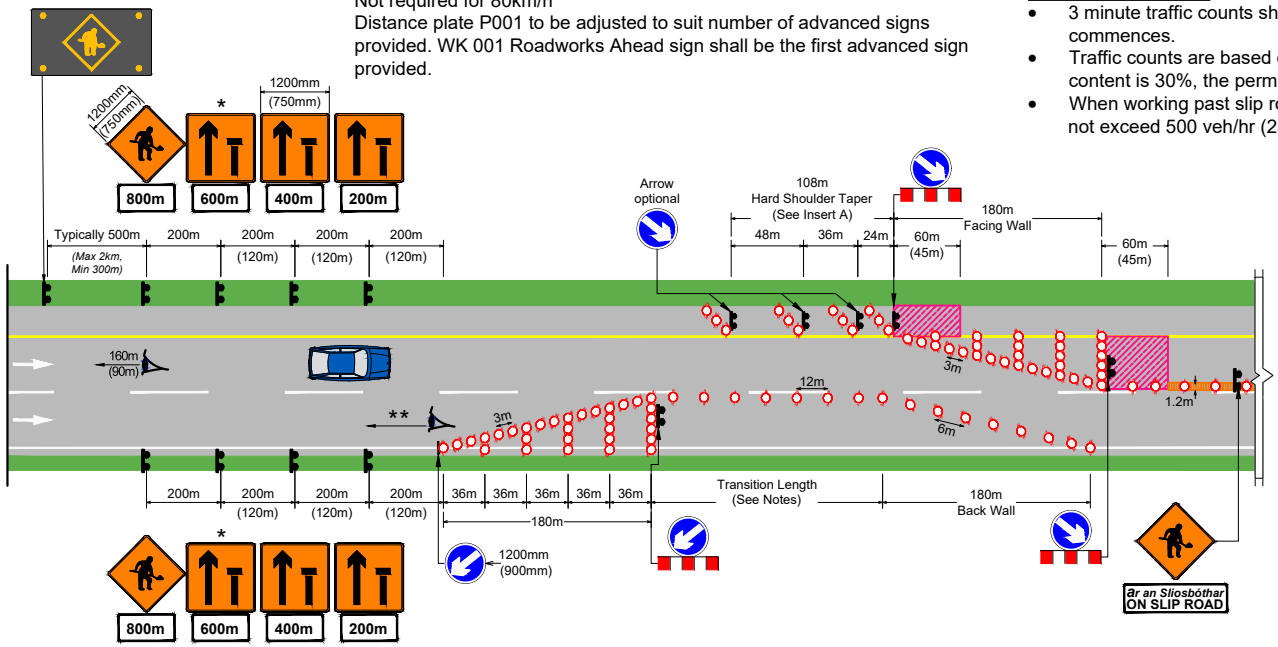
EXAMPLE ONLY NOT TO SCALE

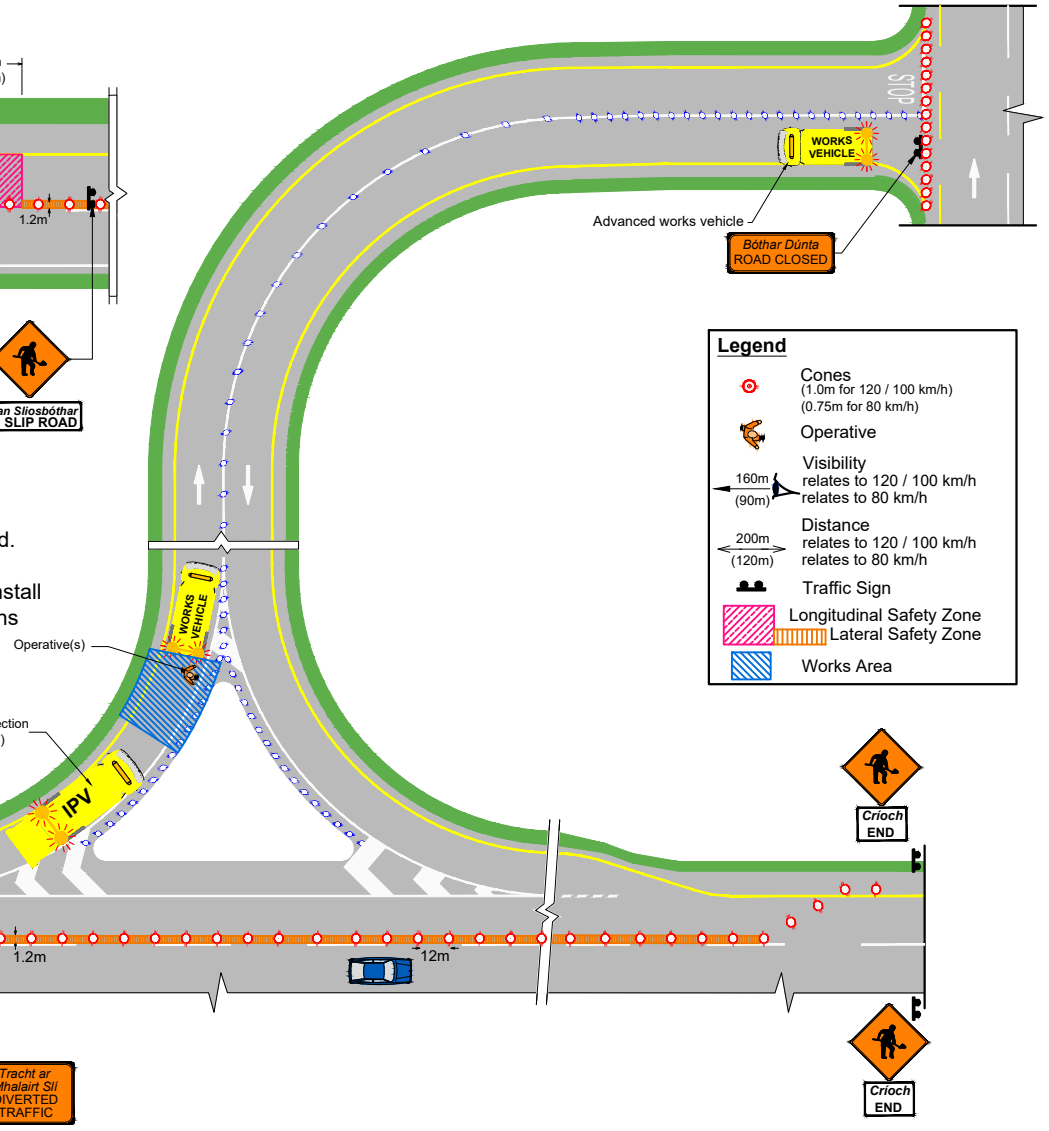
* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.

Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60





Legend

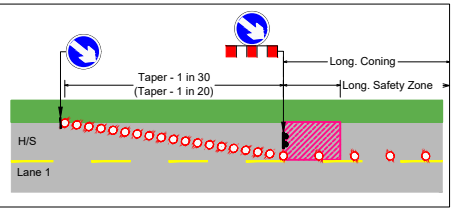
- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, the first WK 0001 Roadworks Ahead sign shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Screed Applied Markings and Longitudinal Markings
Compact Junction - Lane 1 and Slip Closure

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM329

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

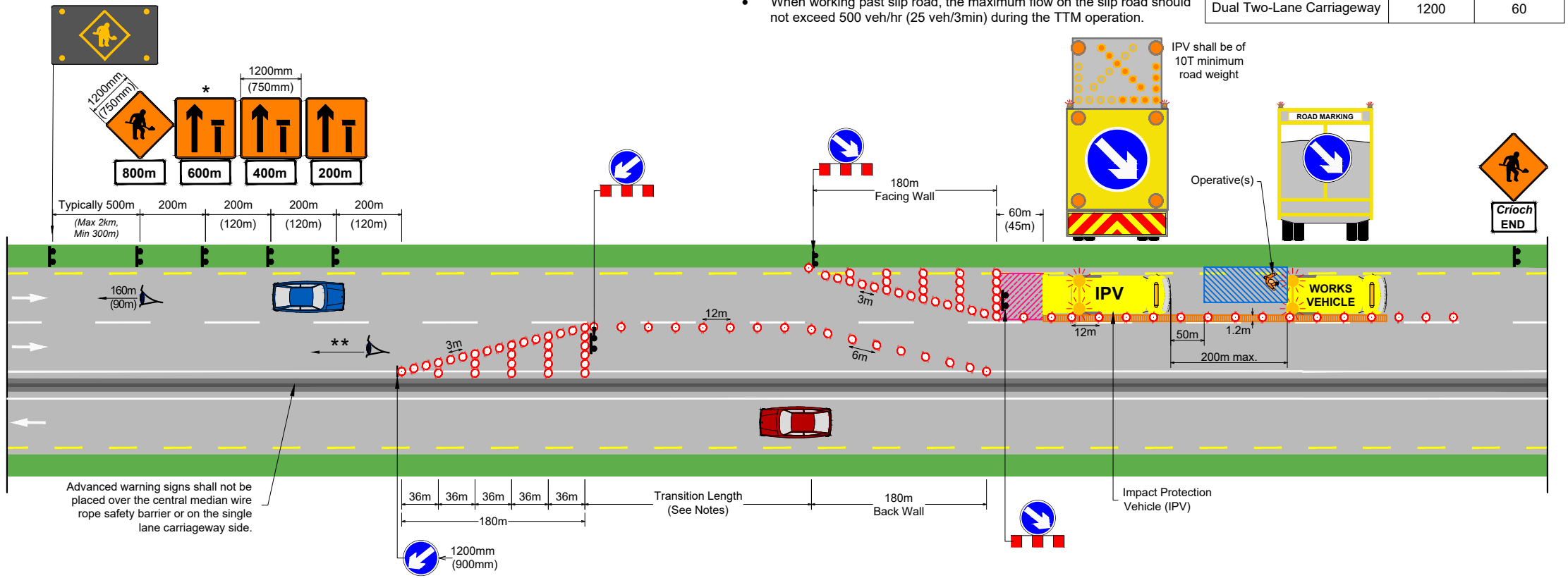
EXAMPLE ONLY NOT TO SCALE

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.

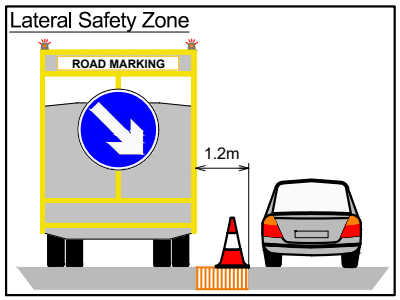
Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295



Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings (Edge Line)

Mainline Carriageway (Lane 1 Closure)

Static

Dual C/W & Motorway

Type 3 Dual Carriageway

120 100 OR 80

RM330

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

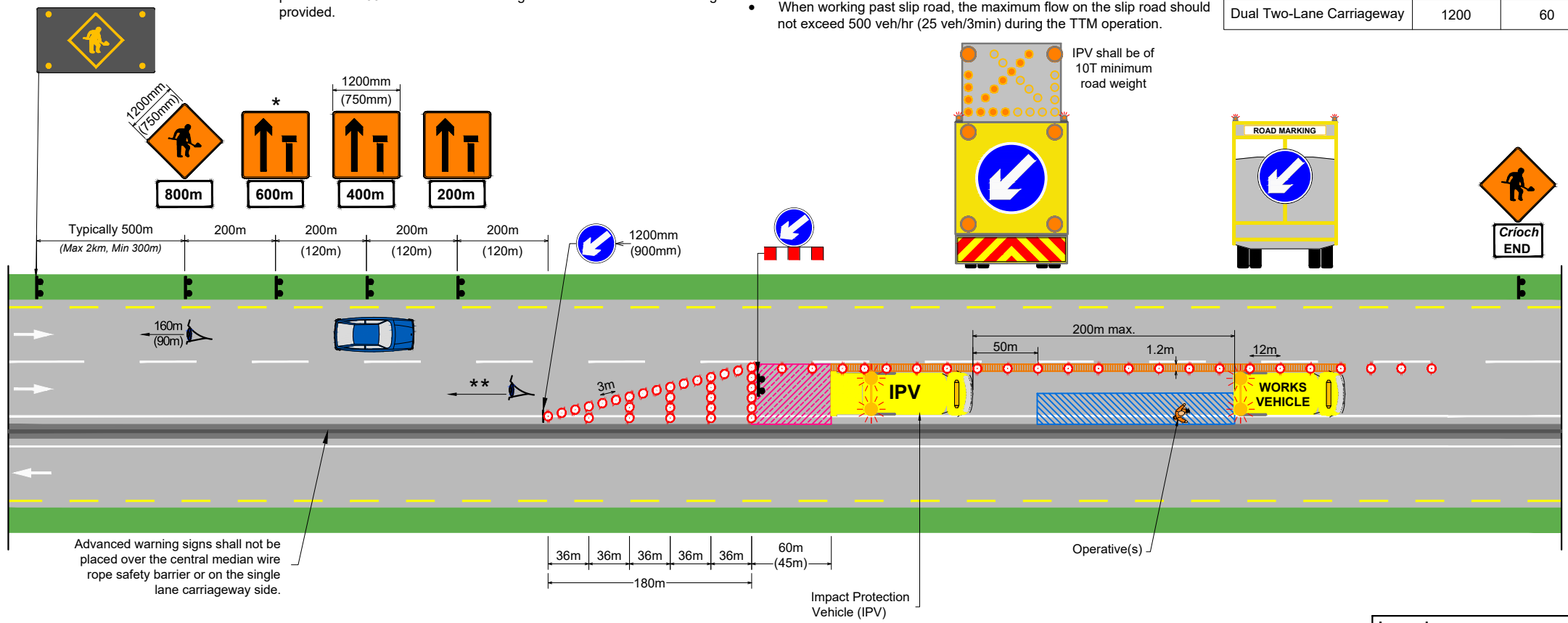
EXAMPLE ONLY NOT TO SCALE

Permissible Traffic Counts for Lane 2 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60

Traffic Count Notes:

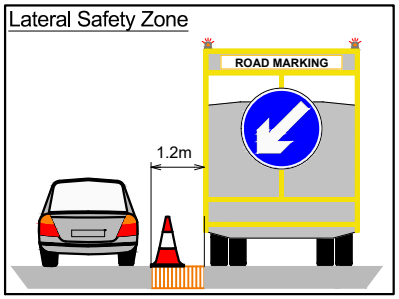
- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
- When working past slip road, the maximum flow on the slip road should not exceed 500 veh/hr (25 veh/3min) during the TTM operation.

* Advanced Signage
Not required for 80km/h
Distance plate P001 to be adjusted to suit number of advanced signs provided. WK 001 Roadworks Ahead sign shall be the first advanced sign provided.



SSD Parameters		
Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
DUAL C/W	80	160
	100	215
	120	295

Lateral Safety Zone



Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Subject to risk assessment, the IPV may be replaced with a works vehicle.

Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
- Visibility 160m (90m) relates to 120 / 100 km/h relates to 80 km/h
- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Screed Applied Markings (Median Line)

Mainline Carriageway (Lane 2 Closure)

Static

Dual C/W & Motorway
Type 3 Dual Carriageway

120 100 OR 80

RM331

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

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Traffic Count Notes:

- 3 minute traffic counts shall be carried out before the operation commences.
- Traffic counts are based on a HGV content of 12 to 20%. If the HGV content is 30%, the permissible traffic counts shall be reduced by 10%.
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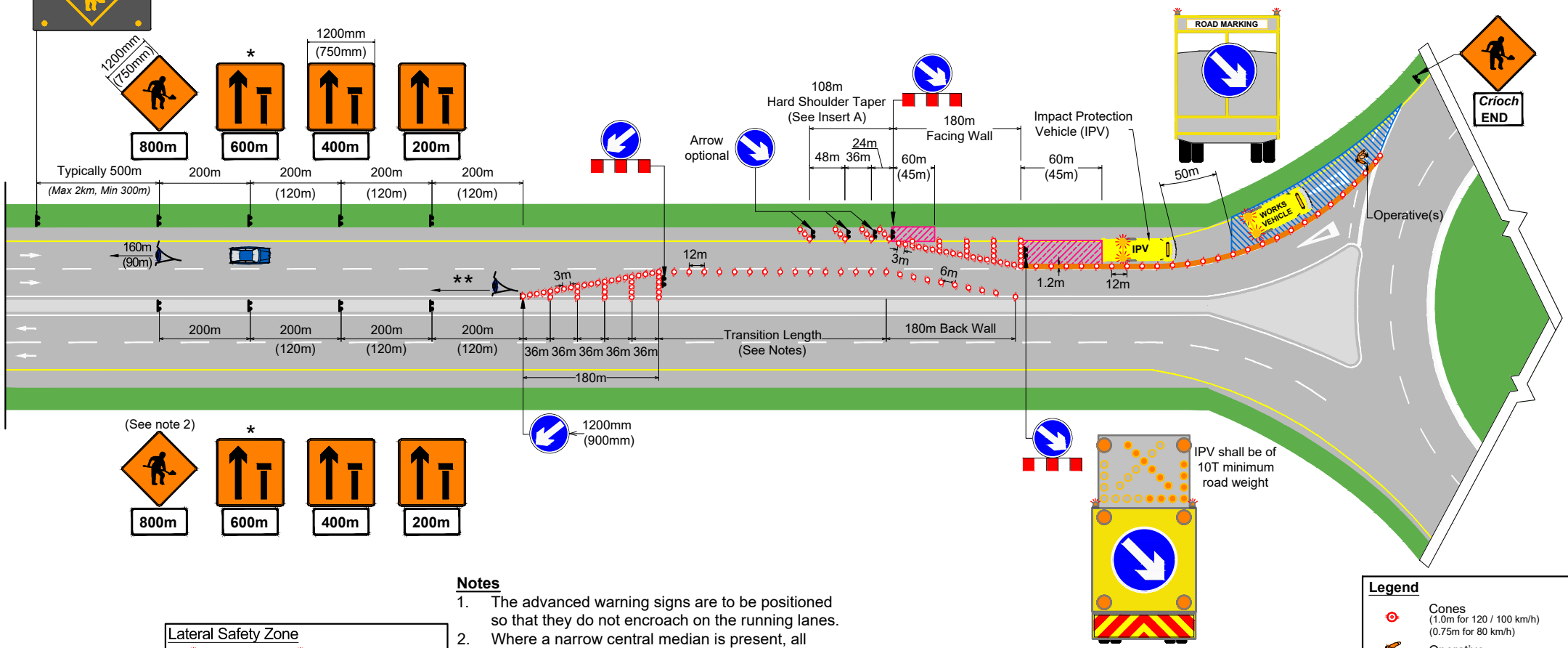
Permissible Traffic Counts for Lane 1 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60



Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
2. Where a narrow central median is present, all diamond shaped signs shall be a 900mm sized diamond.
3. Subject to risk assessment, the IPV may be replaced with a works vehicle.
4. The transition length should be a minimum of 360m (twice the taper length). Where a working window is required to install a facing wall, then the transition length should be selected in accordance with Table 3.3.3.5.1 of Chapter 8 - Operations Guidance for Level 3 Roads.

SSD Parameters

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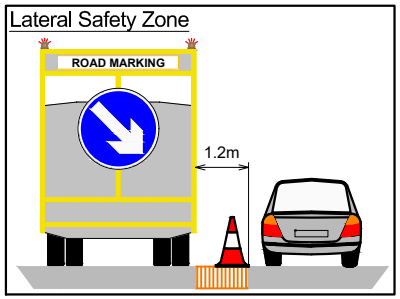
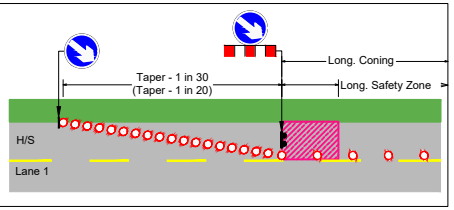
	100	215
	120	295

Lateral Safety Zone



Insert A - Dual Carriageway Hard Shoulder Taper

When works are being undertaken on a Dual Carriageway, a direct hard shoulder taper shall be provided as shown:



Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
- Operative
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- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Roundabout Markings
Entry Lane (Lane 1 Closure)

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM332

Road Marking

** Minimum Lead in Taper Visibility
120km/h = 500m
100km/h = 400m
80km/h = 300m

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY NOT TO SCALE

Traffic Count Notes:

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Permissible Traffic Counts for Lane 2 Closure		
Road Type	Maximum Allowable Traffic Flow per Carriageway	
	Veh/hr	Veh/3min
Dual Two-Lane Carriageway	1200	60

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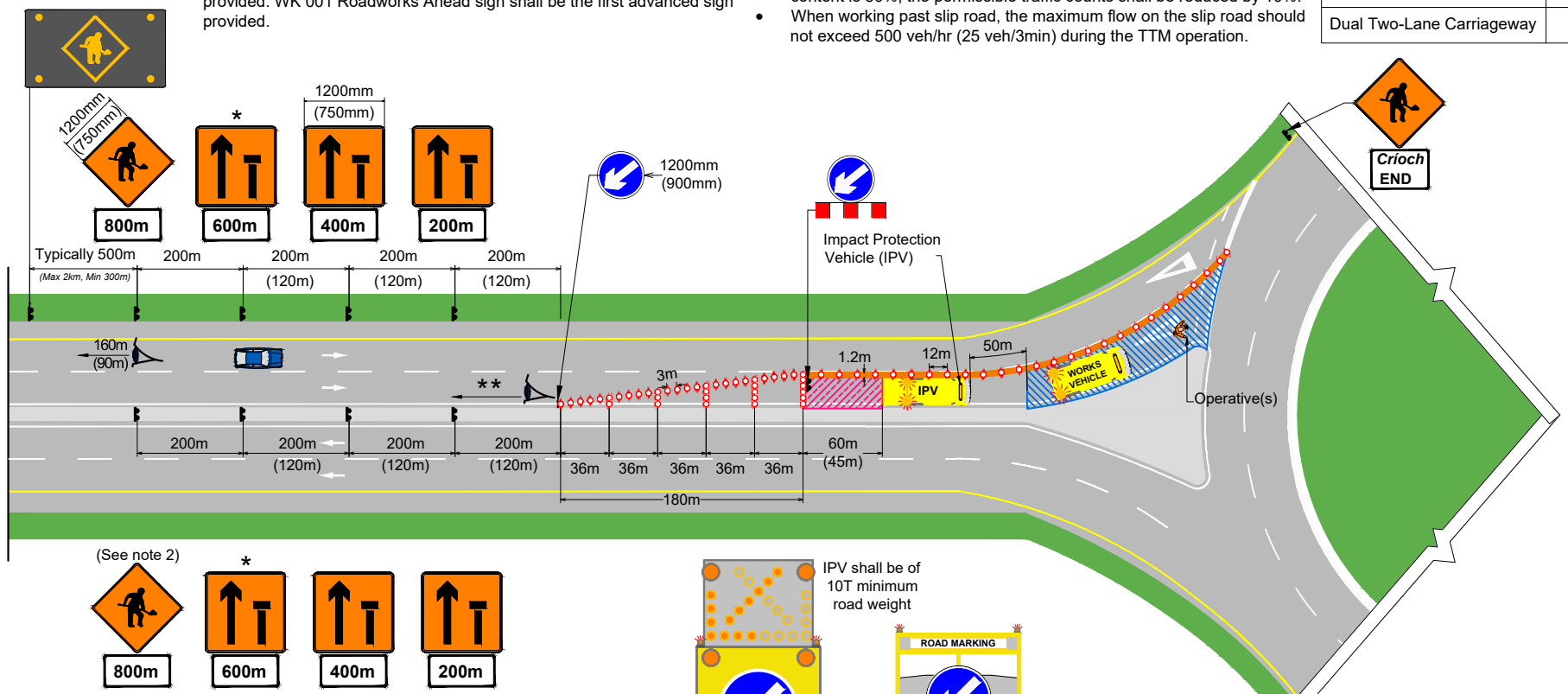

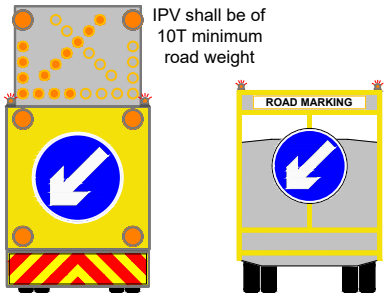

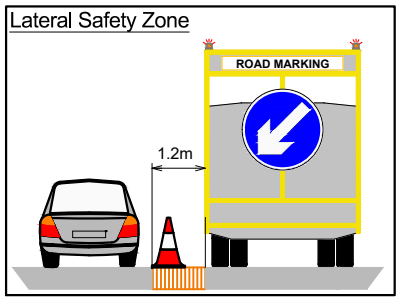

Notes

1. The advanced warning signs are to be positioned so that they do not encroach on the running lanes.
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SSD Parameters

Road Type	Speed Limit (km / h)	Stopping Sight Distance SSD (m)
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Legend

- Cones (1.0m for 120 / 100 km/h) (0.75m for 80 km/h)
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- Distance 200m (120m) relates to 120 / 100 km/h relates to 80 km/h
- Traffic Sign
- Longitudinal Safety Zone / Lateral Safety Zone
- Works Area

Roundabout Markings
Entry Lane (Lane 2 Closure)

Static

Dual C/W & Motorway
Two-Lane - with Hard Shoulder

120 100 OR 80

RM333

7 IN THE EVENT OF AN EMERGENCY

CALL EMERGENCY SERVICES (999 or 112)

KNOW YOUR EXACT LOCATION

In the case of a Serious Incident

- Call Emergency Services.
- Stop work, making sure that all vehicles and site equipment are safe.
- Stop traffic if necessary – do not move injured person.
- Assist injured person with First Aid, if appropriate, at the instruction of emergency services phone operator.
- Call Site Supervisor by phone/radio - do not leave injured person alone.
- Arrange for easy access and egress for Emergency Services.
- Wait for Emergency Services, and provide access through the works where required.
- Assist Gardaí with Traffic Control if required.
- Maintain safe traffic flow around injured person if applicable.

In the case of a Minor Accident

- Assist injured person with First Aid.
- Stop work if necessary.
- Report injury to the Site Supervisor.
- Log accident.

Reporting Accidents and Incidents

- All site accidents and incidents must be immediately reported to the Site Supervisor who in turn will report to the appointed Safety Officer.
- All personnel must fully assist in any investigation resulting from an accident.
- Contact the Employer's Representative, if any of the following take place:
  - A fatality
  - Any injury to the public requiring medical attention.
  - All notifiable accidents to employees.
  - Road traffic accidents due to or near the works where no injury has been sustained.
  - Any dangerous occurrence or incident.
- Contact the Health and Safety Authority (HSA) for all notifiable accidents.

8 TEMPORARY TRAFFIC MANAGEMENT - DESIGN RISK ASSESSMENT FORM

Temporary Traffic Management Design Guidance Appendix

Temporary Traffic Management Design Sheets

SITE SPECIFIC SHEET _____ OF _____

TDRAM -

Health and Safety Design Risk Assessment Form

Project Details

Job No.		Date		Client	
Job Location				Job Start Date	
TTM Designer		Contact Details			
Job Description					
PSDP			PSCS		
Total No. Work Days		Tot. No. Person Days		Work Days > 30 or Person Days > 500 Notify HSA	

Road Details

Road Number	
Road Classification	
Road Width	
Veh/hr	
% HGV	
Speed Limit	
Operating Speed	

Carriageway

Level 1 (i)		Level 1 (ii)	
Level 1 (iii)		Level 1 (iv)	
Level 2 (i)		Level 2 (ii)	
Level 3 (i)		Level 3 (ii)	
Minor Road		Wide Single	
Climbing / Overtaking Lane			
Hard Shoulder			

Works Details

Works Length	
Works Duration	
Working Width Required	
Unobstructed Road Width	
TTM Works Type A/B/C	
Number of phases	

Road Layout

Is adequate visibility available for advance signs?	YES	NO
Is adequate visibility available for Stop/Go and Traffic Lights?	YES	NO
Can the required lateral safety zone be achieved?	YES	NO
Will a road closure / diversion be required?	YES	NO
Will a temporary speed limit be required?	YES	NO
Is there a narrow central median?	YES	NO

Comments:

Hazards Identified (For Map Reference see overleaf)

		Risk				Residual Risk		
Map Ref.	Hazard	Hi	Med	Lw	Control	Hi	Med	Lw
	Are there vulnerable road users?							
	Do the works close or reduce the width of an existing footway?							
	Are there existing pedestrian / pelican crossings affected?							
	Is there a cycle track adjacent to / affected by the works?							
	Are there junctions affected by the works or TTM?							
	Are there conflicting signs or road markings?							
	Are there existing traffic signals which need to be turned off?							
	Is there on street parking affected by the works?							
	Are there public transport interfaces (bus stops/tram lines etc.)?							
	Are there private / commercial access's to be accommodated?							
	Will existing signs or road markings conflict with the layout?							
	Are there schools / hospitals / emergency services depots near the works?							
	Are there overhead cables?							
	Other Items Identified (use additional sheet if required)							

Design Prepared By: _____

9 REFERENCES AND ACKNOWLEDGEMENTS

These guidelines are based on the standards and guidance published in the following documents:

- Chapter 8 of the Traffic Signs Manual 2019 (DTTAS).
- Temporary Traffic Management Design Guidance 2019 (DTTAS).
- Temporary Traffic Management Operations Guidance 2019 (DTTAS).
- Roads Act 2007.
- Road Traffic Act 2011.
- Safety, Health and Welfare at Work Act 2005.
- Safety, Health and Welfare at Work (Construction) Regulations 2013.
- Safety, Health and Welfare at Work (General Application) Regulations 2007 to 2012.
- Guidelines for Working on Roads - Guide to the Safety, Health and Welfare at Work (Construction) Regulations 2008 (HSA).
- Guidelines on the Procurement, Design and Management Requirements of the Safety Health and Welfare at Work (Construction) Regulations 2006 (HSA).
- Road Safety Markings Association (RSMA) Best Practice Guide, UK.
- Guidelines for the use of Variable Message Signs on National Roads (TII Publications).
- EN 12966 Vertical Road Signs: Variable Message Signs.

Transport Infrastructure Ireland gratefully acknowledges the contribution of the consultative expert group, including the technical assistance of RPS Consulting Engineers, in the preparation of this handbook. It would also like to acknowledge the significant collaboration with those who participated directly in the development of this document, including the following:

- Local Authority Engineering and Health & Safety Personnel.
- National Road Offices, with specialist industry knowledge.
- Road Marking Industry, in association with the Construction Industry Federation (CIF).
- Traffic Management Service Providers.

Transport Infrastructure Ireland also wishes to acknowledge the comments and contributions of the many persons and organisations who reviewed the draft versions of the handbook.