

# Main Roads Standard Specification

## **MRS11.02**

### **Provision for Traffic**

**June 08**

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# Provision for Traffic

## 1 INTRODUCTION

This specification applies to the control of traffic during the construction of roadworks.

This specification describes the project specific requirements for control of all traffic through the Site. However, where this specification includes lesser standards than the Manual of Uniform Traffic Control Devices and the *Workplace Health and Safety Act 1995*, the requirements of that Manual and that Act shall prevail.

This specification shall be read in conjunction with Standard Specifications MRS11.01 *Introduction to Standard Specifications*, MRS11.50 *Specific Quality System Requirements* and other specifications as appropriate.

This specification forms part of the Standard Specifications Roads Manual.

## 2 DESCRIPTION OF WORK ITEMS

### 2.1 Standard Work Items

In accordance with the provisions of Clause 2 of MRS11.01 *Introduction to Standard Specifications*, the standard work items covered by this specification are listed in Table 1.

**Table 1 - Standard Work Items**

Standard Item No.	Description	Unit of Measurement
<b>Provision for Traffic</b>		
1201	Provision for traffic	lump sum
1202	Traffic Management Plan	lump sum
1203	Roadwork signing records	lump sum
1211	Construction and removal of side track	m <sup>2</sup>
1221	Supply of Temporary Barriers	m
1223	Installation of Temporary Barriers	m
1225	Supply of temporary barrier end treatments	each
1226	Installation of temporary barrier end treatments	each
1227P	Supply of anti-gawking screens (Provisional Quantity, if ordered)	m
1228P	Installation of anti-gawking screens (Provisional Quantity, if ordered)	m
1231P	Supply and installation of temporary road lighting including connection to Electricity Supply Authority's network (Provisional Quantity, if ordered)	each

### 2.2 Work Operations

#### Item 1201 Provision for traffic

Work operations incorporated in the above item include —

- a) Work Operations listed in Clause 2.2.5 of MRS11.01 *Introduction to Standard Specifications*;
- b) Provision and placement of the prescribed traffic control devices for the warning, guidance and protection of the traffic and the protection of workers, construction plant and other property on or adjacent to the Works;
- c) Ensuring that any delays to the passage of traffic are not greater than that specified in Clause 4 of Annexure MRS11.02.1;
- d) Provision of police control, as necessary;
- e) Provision of Traffic Controllers, as necessary;

- f) Construction, maintenance and removal of temporary access along or across the Site for pedestrians, cyclists and agricultural machinery, as necessary;
- g) Relocation of any bus stops affected by changes in traffic arrangements;
- h) Covering and uncovering new signs, as necessary;
- i) Covering or removal of traffic control devices when not in use;
- j) Maintenance of emergency vehicle access at all times;
- k) Relocation of all existing signage and any modifications required thereto to ensure that the standard of signage is consistent with that existing prior to the Contractor commencing work and that it is consistent with the requirements of the Traffic Guidance Schemes;
- l) Supply and installation of Site access signs and all other traffic control signage as detailed in the Traffic Guidance Schemes;
- m) Supply and operation of traffic control devices;
- n) Supply and installation of temporary delineation of trafficked corridors;
- o) Supply, installation and operation of temporary traffic signals;
- p) Supply and installation of temporary delineation where access to streets and side roads has been altered;
- q) Provision for the detouring of traffic;
- r) Dust control;
- s) Maintenance of entrances and construction of alternative entrances (as necessary) to private properties;
- t) Provision of Traffic Guidance Schemes;
- u) Provision of any information required for public notices;
- v) Provision of out-of-hours representatives;
- w) Making inspections;
- x) Design and construction of side-tracks where no separate item is provided for this work in the Schedule;
- y) Maintenance of trafficable surfaces, where specified;
- z) Supply and installation of temporary barriers other than those nominated Clause 8.1 of Annexure MRS11.02.1;
- aa) Supply and installation of temporary barrier end treatments other than those nominated in Clause 9.1 of Annexure MRS11.02.1;
- bb) Supply and installation of anti-gawking screens other than those nominated in Clause 10.1 of Annexure MRS11.02.1;
- cc) Provision of all other facilities for the safe passage of vehicular traffic through and around the Works;  
and
- dd) Removal of all temporary works and control devices used in the provisions for traffic.

**Item 1202 Traffic Management Plan**

Work operations incorporated in the above item include —

- a) Work Operations listed in Clause 2.2.5 of MRS11.01 *Introduction to Standard Specifications*;
- b) All work associated with the preparation, submission and revision (where necessary) of the Traffic Management Plan, and
- c) Implementation and monitoring of the Traffic Management Plan when such is specified.

**Item 1203 Roadwork signing records**

Work operations incorporated in the above item include —

- a) Work Operations listed in Clause 2.2.5 of MRS11.01 *Introduction to Standard Specifications*;
- b) Recording of all work site signing and delineation;
- c) Keeping of records; and
- d) Provision of records on a monthly basis.

**Item 1211 Construction and removal of side track**

Work operations incorporated in the above item include —

- a) Work Operations listed in Clause 2.2.5 of MRS11.01 *Introduction to Standard Specifications*;
- b) Design of side track;
- c) Provision of all materials for construction of side track;
- d) Construction and maintenance of side track; and
- e) Removal of side track.

**Item 1221 Supply of Temporary Barriers**

Work operations incorporated in the above items include —

- a) Work Operations listed in Clause 2.2.5 of MRS11.01 *Introduction to Standard Specifications*;
- b) Supply of barrier and
- c) Delivery to the Site.

**Item 1223 Installation of Temporary Barriers**

Work operations incorporated in the above items include —

- a) Work operations listed in Clause 2.2.5 of MRS11.01 *Introduction to Standard Specifications*;
- b) Maintenance and repair of barrier;
- c) Supply of erection angle connectors, reinforced connector assemblies and connector tie bars, as necessary;
- d) Trimming and /or levelling surface;
- e) Erection of barrier, including water filling where required;
- f) Dismantling and relocation of barriers; and
- g) Dismantling and removal of barrier from the Site.

**Item 1225 Supply of temporary barrier end treatments**

Work operations incorporated in the above items include —

- a) Work Operations listed in Clause 2.2.5 of MRS11.01 *Introduction to Standard Specifications*;
- b) Supply of all materials; and
- c) Delivery to the Site.

**Item 1226 Installation of temporary barrier end treatments**

Work operations incorporated in the above items include —

- a) Work Operations listed in Clause 2.2.5 of MRS11.01 *Introduction to Standard Specifications*;
- b) Installation of end treatment;
- c) Removal of end treatment for reuse or storage as necessary; and
- d) Maintenance of end treatment.

**Item 1227P Supply of anti-gawking screens (Provisional Quantity, if ordered)**

Work operations incorporated in the above items include —

- a) Work Operations listed in Clause 2.2.5 of MRS11.01 *Introduction to Standard Specifications*;
- b) Supply of materials;

- c) Fabrication of anti-gawking screens; and
- d) Delivery to the Site.

**Item 1228P Installation of anti-gawking screens (Provisional Quantity, if ordered)**

Work operations incorporated in the above items include —

- a) Work Operations listed in Clause 2.2.5 of MRS11.01 *Introduction to Standard Specifications*;
- b) Installation of screens;
- c) Maintenance of screens; and
- d) Removal of screens on completion.

**Item 1231P Supply and installation of temporary road lighting including connection to the Electricity Supply Authority's network (Provisional Quantity, if ordered)**

Work operations incorporated in the above items include —

- a) Work Operations listed in Clause 2.2.5 of MRS11.01 *Introduction to Standard Specifications*;
- b) Supply of all materials, plant and equipment;
- c) Installation and maintenance of temporary road lighting equipment; and
- d) Removal of temporary equipment after permanent road lighting is installed or as directed by the Superintendent.

**2.3 Calculation of Quantities**

Calculation of quantities for the supply of temporary measures for the provision of traffic shall be based on the quantity provided by the Contractor in accordance with the Contract.

Calculation of quantities for the installation of temporary measures for the provision of traffic shall be based on the quantity installed by the Contractor in accordance with the Contract with each installation measured separately.

**3 DEFINITION OF TERMS**

The terms used in this specification shall be as defined in Table 2.

Further definitions are referenced in Clause 3 of MRS11.01 *Introduction to Standard Specifications*.

**Table 2 - Definition of Terms**

<b>Term</b>	<b>Definition</b>
anti-gawking screen	An opaque screen attached to PCBs to shield the construction work from the view of passing motorists.
Manual	Manual of Uniform Traffic Control Devices issued by Main Roads (latest edition).
PCB	An abbreviation for Portable Concrete Barrier, which includes both the non-proprietary single slope concrete barrier (outlined in Main Roads Standard Drawing 1473) and approved proprietary barriers (listed in the Main Roads Compliant Product list – Road Safety Barrier Systems and End Treatments).
road	Road and/or bridge as relevant.
Traffic Guidance Scheme	A Traffic Guidance Scheme prepared by the Contractor in accordance with the requirements of the Contract as a means of planning and communicating individual traffic changes.
Traffic Controller	A person authorised in accordance with Clause 7.3.9 to control vehicular traffic at roadworks.
Traffic Management Plan	The Traffic Management Plan prepared by the Contractor in accordance with the requirements of the Contract.

## 4 QUALITY SYSTEM REQUIREMENTS

### 4.1 Hold Points, Witness Points and Milestones

General requirements for Hold Points, Witness Points and Milestones are specified in Clause 5 of MRS11.01 *Introduction to Standard Specifications*.

The Hold Points and Milestones applicable to this specification are summarised in Table 3. There are no Witness Points defined.

**Table 3 - Hold Points and Milestones**

Clause	Hold Point	Milestone
6.4	1. Traffic rearrangement	Submission of Traffic Guidance Scheme (21 days)
6.6	2. Traffic Management Arrangements	

### 4.2 Conformance Requirements

The Contractor shall establish records to show conformance to the requirements of this specification.

## 5 SPECIFIC METHODS OF TRAFFIC CONTROL

### 5.1 General

Notwithstanding the provisions of the remainder of this specification, specific methods of traffic control shall be employed on all or parts of the work under the Contract, in accordance with the requirements stated in Clauses 5.2 to 5.5 inclusive.

### 5.2 Construction Under Traffic

When construction under traffic is permitted in Clause 1.1 of Annexure MRS11.02.1, the Contractor shall arrange its construction program so that traffic flow is maintained through the Works in accordance with the requirements of Clause 7 as supplemented or amended by any requirements stated in Clause 1.1 of Annexure MRS11.02.1.

### 5.3 Detouring Traffic

Where detouring of traffic via an existing road or street is permitted by Clause 1.2 of Annexure MRS11.02.1, the requirements of Clause 7.3.3 shall apply.

### 5.4 Construction of Side-Track

Where specified or permitted by Clause 1.3 of Annexure MRS11.02.1, a sidetrack shall be constructed to the requirements set out in Clause 8 and traffic shall be diverted via the sidetrack around the work under the Contract.

### 5.5 Maintenance of Trafficable Surfaces

Where specified in Clause 1.4 of Annexure MRS11.02.1, the Contractor shall maintain existing roadways, for the duration of the period of construction, to no lesser standard than that existing immediately prior to the Contractor taking possession of the site. Maintenance shall include the running surface available to traffic, drainage structures and roadside furniture.

Should the running surface available to traffic become unsatisfactory, the Superintendent may direct that action be taken to correct the situation within 24 hours.

Notwithstanding the requirement that action be taken within 24 hours to correct an unsatisfactory situation, immediate action shall be taken by the Contractor where weather and/or action of traffic causes or threatens closure of the trafficked surface or the creation of an unsafe situation.

## 6 TRAFFIC MANAGEMENT PLANNING

### 6.1 Nominated Traffic Officer

The Nominated Traffic Officer shall be responsible for preparation and implementation of Traffic Guidance Schemes. The Contractor shall submit to the Superintendent the name of its Nominated Traffic Officer.

Where Traffic Guidance Schemes are developed from standard diagrams in Part 3 of the Manual, the Nominated Traffic Officer shall have obtained a statement of attainment in the approved Main Roads' Traffic Management and Roadworks Signage Course. Where the principles from the Part 3 of the Manual are used to develop site specific diagrams, the Nominated Traffic Officer is to have two years experience in developing Traffic Guidance Schemes in addition to the above statement of attainment. Where more complex traffic management plan are required, additional qualifications and/or experience may be nominated in the annexure.

## **6.2 Traffic Management Plan**

When a Traffic Management Plan is required to be prepared in accordance with the provisions of Clause 12 of the Supplementary Conditions of Contract, Clauses 6.3 and 6.5 shall apply under the Contract.

## **6.3 Scope of Traffic Management Plan**

The Traffic Management Plan shall —

- a) Describe traffic arrangements which provide for any necessary sequencing of the work under the Contract while minimising disruption and confusion to road users, local traffic, emergency vehicles, pedestrians and cyclists;
- b) Provide details of the consultative process proposed to ensure consultation with and notification to the community, business, road users and other stakeholders in advance of alterations to existing traffic conditions. The Contractor's proposed inputs into the communication process shall ensure the timely notification of the Superintendent, Principal, travelling public, emergency services, adjacent landowners and businesses of impending changes to traffic conditions. This process shall take cognisance of any Principal's requirements with respect to public notifications;
- c) Where required, describe how the construction work zone shall be physically and visually isolated from road users;
- d) Provide details of how local access to communities and adjacent private properties and businesses will be maintained;
- e) Provide details of arrangements to be made for detouring traffic;
- f) Provide details of all road closures and/or restrictions required to undertake the work under the Contract;
- g) Detail provisions to maintain the specified number of traffic lanes in each direction at the minimum nominated operating speed between the hours stated in Clause 7.3.2;
- h) Provide for participation of a senior member of the Contractor's site personnel on any traffic coordination committee convened by the Principal;
- i) Include the names and contact details of the nominated out-of-hours representatives nominated as specified in Clause 7.3.14;
- j) Include the name of the Nominated Traffic Officer;
- k) Include a schedule of Traffic Guidance Schemes giving a general description of the relevant traffic arrangements and the date when the Traffic Guidance Scheme will be submitted. Traffic Guidance Schemes shall be prepared and submitted as specified in Clause 6.4;
- l) Provide details of the Contractor's organisational structure for traffic management issues including a list of the duties and responsibilities of each position nominated in that structure; and
- m) Take into account any project specific requirements stated in Clause 2 of Annexure MRS11.02.1.

## **6.4 Traffic Guidance Schemes**

Where any change to existing traffic arrangements is proposed or where construction conflicts with normal traffic movements, the Contractor shall prepare a Traffic Guidance Scheme which clearly details the revised traffic arrangements at all locations affected by the change or conflict. Planning of Traffic Guidance Schemes shall be undertaken in accordance with Part 3 of the Manual.

The Traffic Guidance Scheme shall be prepared by a person with a minimum two years industry experience and shall be submitted to the Superintendent for a direction as to its suitability, at least 21 days prior to the date of the proposed traffic rearrangement. **Milestone**

The Traffic Guidance Scheme shall show proposed temporary signing and other traffic control device layouts (including temporary barriers, temporary pavement marking and temporary islands) to a suitable scale and be fully dimensioned and shall generally agree with the construction sequence and other requirements shown elsewhere in the Contract. The Traffic Guidance Scheme shall also state the period for which these are to be in place (time and date) and the person who is responsible for installing, maintaining and removing them.

Where the Traffic Guidance Scheme includes changes to regulatory signs or devices, the Contractor shall include a Form M994 certified by the Nominated Traffic Officer with the Traffic Guidance Scheme.

The Contractor and the Superintendent shall cooperate to ensure that the Traffic Guidance Scheme receives the Superintendent's direction with respect to suitability at least 14 days prior to the proposed traffic rearrangement.

Failure to comply with this requirement may result in the Principal deferring the date for traffic rearrangement so as to ensure sufficient time for public notification is maintained. Such deferment shall not be a cause for an extension of time under Clause 35.5 of the General Conditions of Contract.

No traffic rearrangements shall be carried out until 14 days after the Superintendent has advised the Contractor that the relevant Traffic Guidance Scheme has been deemed suitable by the Superintendent.

**Hold Point 1**

**6.5 Implementation of Traffic Management Plan**

The Contractor shall implement the Traffic Management Plan in accordance with the schedule included in the Plan.

Should the Superintendent so direct, the Contractor shall provide details of the Traffic Management Plan or any changes to that Plan to any bodies nominated by the Superintendent.

The Contractor shall monitor the continued effectiveness of the Traffic Management Plan during the Contract and shall revise and update the Plan where necessary.

**6.6 Implementation of Traffic Guidance Schemes**

The Contractor shall implement only those traffic management arrangements that have been deemed suitable by the Superintendent. Should the Contractor wish to depart from such arrangements, an amended Traffic Guidance Scheme shall be submitted to the Superintendent for determination of suitability prior to implementation of any new arrangements.

Prior to any change to existing traffic arrangements, the Contractor shall ensure that the traffic management arrangements conform with the Traffic Guidance Scheme. **Hold Point 2**

On a daily basis, the Contractor shall ensure that all applicable traffic redirection and/or warning measures and safety requirements are implemented prior to proceeding with any relevant work under the Contract.

The Contractor shall monitor the effectiveness of the Traffic Guidance Scheme and revise it in response to incidents and/or traffic disruptions.

Details of a Traffic Guidance Scheme shall be provided on request to any other body nominated by the Superintendent.

**7 PROVISION FOR TRAFFIC**

**7.1 Traffic Management**

**7.1.1 General**

Traffic shall be controlled at all times, during construction, in accordance with the provisions of the Manual of Uniform Traffic Control Devices, Queensland, Part 3. The Contractor's attention is especially drawn to Appendix B of that manual.

It shall be the Contractor's responsibility to progressively record all changes to temporary regulatory devices during the Period for Construction, as required in the Manual of Uniform Traffic Control Devices.

**7.1.2 Traffic Restrictions**

Only machinery fitted with reversing or other alarms, which will adjust the alarm sound output to no more than 5dB above the surrounding noise level and an alarm sound output range of 85dB - 115dB, will be permitted to work from Midnight to 6 am unless otherwise permitted by the Superintendent.

Work on shoulder areas is limited to one side of the road at a time. In sections of the project where the speed restriction is 40 km/hr, the maximum length of roadway with a 40 km/hr speed limit should be 500 m.

## **7.2 Traffic Control Devices**

Traffic control devices and their use shall conform to the requirements of the Manual and such other additional standards as may be issued from time to time by the Department of Main Roads.

All traffic control devices shall be securely fixed in the correct position and maintained in an effective and clean condition whilst employed on the work under the Contract. Devices which are damaged or worn, or which do not conform to the above requirements, shall not be used.

The Contractor shall comply with the requirements for traffic control devices and ITS installation stated in Clause 3 of Annexure 11.02.1. The Contractor may elect to use additional traffic control devices during construction.

## **7.3 Implementation of Controls**

### **7.3.1 General**

Placement of traffic control devices shall be in accordance with the requirement of the Manual except that additional devices shall be supplied and placed where shown on the Drawings.

### **7.3.2 Restrictions to Traffic Lanes**

Restrictions to the passage of vehicular traffic through the Site shall be subject to the limiting requirements stated in Clause 7.3.2.

Clause 4.1 of Annexure MRS11.02.1 sets out the following minimum requirements for various time periods and for various locations on the Site —

- a) The number of traffic lanes which shall be available to traffic;
- b) The trafficable width of the lanes;
- c) The clearance of roadside objects from traffic lanes; and
- d) The minimum posted speed.

The trafficked way shall be designed for not less than the posted speed adopted.

No traffic shall be allowed during the erection of bridge girders, deck units and other bridge components and/or while lifting and fixing street light poles and sign gantries within the distance the lifted item could fall. Traffic shall be temporarily stopped or diverted while such work is carried out.

No work is permitted on site Easter Thursday, Anzac Day or the last working day prior to Christmas Day until New Years Day, both inclusive. In addition, lane closures are not permitted during any event deemed by the Superintendent to be a major commercial, sporting or cultural event, where the Superintendent considers that such closure would cause an unacceptable level of disruption to the traffic operations associated with such events.

Where a minimum of one lane is allowed, the Contractor shall maintain traffic flow under the control of traffic controllers or portable traffic signals in such a way that no road user is delayed in excess of the acceptable delay specified in Clause 4.2 of Annexure MRS11.02.1. In all cases, the length of one-lane, two-way operation shall be limited to one kilometre.

The Contractor may stop traffic in both directions simultaneously only for purposes of construction of specific work and during the specific period stated in Clause 4.3 of Annexure MRS11.02.1. The maximum delay to any road user shall be as stated in Clause 4.3 of Annexure MRS11.02.1.

Work under the Contract involving lane closures, stop/go arrangements or construction traffic entering or leaving any through traffic lanes shall not be carried out during any periods stated in Clause 4.4 of Annexure MRS11.02.1 and unless otherwise stated, such restrictions shall apply 24 hours per day.

### **7.3.3 Detouring Traffic**

When specified in Clause 1.2 of Annexure MRS11.02.1, traffic may be detoured away from the Works via existing roads. The Contractor shall liaise with and make all necessary arrangements with the relevant Local Government and/or other authorities concerned.

These arrangements shall include making provision for such matters as the issuing of public notices in respect of the detour, any repair or upgrading work which may be required prior to the detouring of traffic on the roads concerned, maintenance of the roads concerned during the detour period, inspection of the route for adequacy for the entire length of the detour, and any restoration work which may be necessary following cessation of the detour period.

#### **7.3.4 Side Tracks**

Where side-tracks are constructed for the passage of traffic, they shall conform to the provisions of Clause 8.

#### **7.3.5 Entrances to Private Property**

The work under the Contract shall be carried out in a manner such that existing entrances to private properties affected by the work shall be maintained in useable condition during the period of construction. Where this is not possible, alternative entrance arrangements which are acceptable to the property owners concerned shall be made. In this respect, the Contractor shall permit and provide for the free movement of traffic in and out of the properties at all times except as otherwise agreed to by the property owners concerned.

The Contractor shall, at no expense to the Principal, make good any damage to entrances to private properties which results from the Contractor's operations during the construction of the work under the Contract.

#### **7.3.6 Dust Control**

The Contractor shall take adequate precautions to effectively minimise the generation of dust during the construction of the work under the Contract which may affect the safety and general comfort of the travelling public, the Contractor's employees and/or occupants of adjacent buildings.

In this respect, the Contractor shall carry out regular applications of water or other palliative measures along the sections of the work traversed by the travelling public, as required, to minimise dust.

#### **7.3.7 Use of Police**

Where police officers are to be employed to assist in the control of traffic around or through the Site, the Contractor shall be responsible for making all necessary arrangements with the local Police Station or relevant branch of the Queensland Police Services and for making all payments.

#### **7.3.8 Pedestrian Movements**

Where it is necessary to provide for pedestrian and/or cyclist access along or across portions of the work under the Contract, the Contractor shall provide such temporary pathways as necessary in accordance with the requirements of the Manual. The pathways shall be clearly delineated, signed and fenced to prevent easy access to the remainder of the work under the Contract. Signs shall be provided adjacent to the pathway to clearly indicate that access to the remainder of the work under the Contract is absolutely prohibited.

Adequate illumination shall be provided during all periods of darkness.

Where a large volume of pedestrian traffic has to cross the Site, consideration shall be given to directing pedestrians to suitably constructed and protected crossings.

Special provision for pedestrians may be required where the direction of traffic flow is opposite to that normally expected.

#### **7.3.9 Traffic Controller**

A Traffic Controller shall hold an appointment as an accredited person under section 21 of the *Transport Operations (Road Use Management) Act 1995* to perform the functions of a traffic controller as prescribed by the *Transport Operations (Road Use Management – Accreditation and Other Provisions) Regulation 2005*. The Traffic Controller shall carry their Queensland Transport issued Traffic Controller Accreditation Scheme accreditation identity card at all times while working as a traffic controller.

Traffic control shall be undertaken in accordance with the Traffic Controller Accreditation Scheme: Approved Procedure issued by Queensland Transport and Main Roads. The Traffic Controller shall have a copy of the procedure available on the Site at all times during which traffic control operations are being undertaken.

### **7.3.10 Use of Additional Traffic Controllers**

Additional Traffic Controllers shall be used in high traffic flow situations where sight-distance is restricted, to prevent rear end collisions where vehicles are stopped or slowed by the work under the Contract. Additional Traffic Controllers shall also be used in other situations where described in Clause 5 of Annexure MRS11.02.1.

### **7.3.11 Delineation of Trafficked Corridors**

#### **7.3.11.1 General**

Where described in Clause 6 of Annexure MRS11.02.1, direction hazard markers, temporary raised reflective pavement markers, line marking, reflective mesh fencing and/or other such delineation devices shall be used in addition to the requirements of the Manual to delineate trafficked corridors.

#### **7.3.11.2 Materials**

Materials used for temporary pavement markings shall be subject to the approval of the Superintendent. Only materials which can be removed without damaging the pavement surface shall be used for temporary marking of the final pavement surface.

Delineation shall consist of bollards, traffic cones and interconnected lightweight plastic water ballasted modules or mesh fencing using a heavy, highly visible plastic safety mesh. Star pickets shall not be used without end protection (e.g. caps).

Drums, cylinders or stand-alone non-interconnected lightweight modules, which can roll if dislodged by impact or wind, shall not be used.

#### **7.3.11.3 Construction**

Under no circumstances shall temporary painted or thermoplastic linemarking materials or temporary raised pavement markers be used on the surface of a final pavement layer.

Temporary pavement marking and temporary raised pavement markers shall be installed in accordance with the requirements of MRS11.45 *Pavement Marking*.

Temporary delineation devices shall not damage the surface of the Works.

### **7.3.12 Lighting of Work Site**

The Contractor shall provide artificial lighting over the area where any work operations are being carried out at times of low light intensity. The lighting over the work area shall be such as to ensure a minimum intensity of 20 lux on the surface where the work operation is being carried out.

Artificial lighting shall be arranged in such a manner as to avoid creating levels of glare arising from shallow angles of incidence towards the drivers of vehicles using the adjacent traffic lanes. At no time shall artificial lighting be directed towards oncoming traffic.

### **7.3.13 Direction and Street Signs**

Where access to streets and side roads has been altered during the construction of the Works, the Contractor shall supply and erect all such temporary signs necessary to assist the travelling public to find their way to such streets and roads.

### **7.3.14 Out-of-Hours Representatives**

The Contractor shall nominate a minimum of two representatives with the authority to address traffic management issues one of whom must be available at all times outside of the Contractor's normal working hours. The Contractor shall notify the Superintendent of the name, address and telephone number of the nominated persons. Such persons, when requested by the Superintendent, shall coordinate and expedite immediate repairs to and maintenance of such part of the work under the Contract as may be considered necessary by the Superintendent and shall carry out such work to the satisfaction of the Superintendent.

If a nominated person leaves the employ of the Contractor during the period of the Contract, the Contractor shall immediately nominate another person and provide the full details of that person.

### **7.3.15 Inspections and Records**

The Contractor shall record all changes to regulatory signs and devices including location and the time they were displayed. The Contractor shall also record all changes to traffic movements. Such written records shall be included on, or attached to, Form M994 and presented to the Superintendent on a monthly basis. A

completed and certified Form M994 shall be submitted to the Principal and the Superintendent within 14 days of a Traffic Guidance Scheme being finalised. Where regulatory signs and devices are displayed to traffic for part of a day only, the time they are displayed and closed shall be recorded and the record shall be attached to the Form M994.

The Contractor shall inspect all traffic control devices and traffic control arrangements twice daily to ensure the adequacy of such devices and arrangements. The Contractor shall maintain records of these inspections and subsequent actions taken to rectify any inadequacies. Such records shall be made available to the Superintendent upon request.

The Contractor shall keep a register of all complaints received and actions taken to address each complaint. The register of such complaints shall be forwarded to the Superintendent on a weekly basis. The Contractor shall similarly keep a register of requests for information from the public, which register shall be forwarded to the Superintendent on a weekly basis.

#### **7.4 Departmental Policy / Procedures**

The Department has procedures in place for crossing high speed multilane roads. The Contractor is to conform to the requirements of these procedures and at all times refrain from crossing these roads without the use of lane closures or speed reductions.

## **8 SIDE TRACKS**

### **8.1 General**

Design and construction of side-tracks shall conform with Part 3 of the Manual.

### **8.2 Materials**

Materials for construction of side-tracks shall comply with the provisions of the relevant Main Roads Standard Specification.

### **8.3 Construction**

#### **8.3.1 Location of Side Tracks**

The location and route of side-tracks shall be in accordance with the details provided in Clause 1.3 of Annexure MRS11.02.1 and/or as shown on the Drawings.

#### **8.3.2 General Requirements**

The ground surface of the areas on which a side-track is to be constructed shall be cleared, grubbed and stripped of vegetation and any other undesirable matter. Such operations shall extend for not less than the full width of the surface formation of the side-track. Any tree or other object within 3 metres of the edge of the side-track shall be removed, shielded or delineated as directed by the Superintendent.

Side-tracks shall be aligned, formed, graded and drained so as to provide for safe, comfortable passage of vehicles at the indicated speed limit. In general, not less than 4% surface crossfall shall be provided. The surface of side-tracks shall be in accordance with the requirements of the Manual.

Not less than 6 metres vertical clearance shall be provided from the trafficked surface to any overhanging obstacle. The Contractor shall make the necessary arrangements with the appropriate Electricity and/or Communications Authority in the case of overhead cables.

#### **8.3.3 Geometric Requirements**

The minimum geometric standards of a side-track shall be as specified in Clause 7.1 of Annexure MRS11.02.1.

The width of a side-track shall nowhere be less than that specified or directed.

If the normal width of a side-track is less than 6 metres, suitable passing facilities, not less than 30 metres in length and providing an available width of not less than 6 metres, shall be located at minimum intervals of 800 metres along the side-track and at locations where conditions are such that sight distance is effectively less than 100 metres.

### **8.3.4 Waterway Crossings**

If waterways are encountered along the route of a side-track, then, unless the construction of special waterway crossings has been provided for elsewhere in the Contract, such crossing shall be provided by the Contractor as follows —

- a) At all waterways, whether they be running or dry, adequate culvert crossings or adequately paved floodways shall be constructed for the full width of the side-track;
- b) The edges of the culvert crossings and paved floodways shall be delineated effectively both day and night, using appropriate delineators mounted on approved guide posts in accordance with the requirements of MRS11.14 *Road Furniture*; and
- c) Where specified or if directed by the Superintendent, the Contractor shall install depth indicator posts which permit assessment of the maximum depth of water above the surface of a side-track.

### **8.3.5 Paving and Sealing of Side Tracks**

The requirements for paving and/or sealing of a sidetrack shall be as stated in Clause 7.2 of Annexure MRS11.02.1.

Where paving and/or sealing of a side-track is required, the Contractor shall prepare the side-track formation and carry out the paving and/or sealing operations in accordance with the requirements of the relevant Main Roads Standard Specification and such other requirements as may be stated elsewhere in the Contract.

## **8.4 Maintenance**

Side-tracks shall be maintained to a standard similar to adjoining sections of roadway to ensure safety of users. Maintenance standards shall be subject to the approval of the Superintendent.

## **8.5 Removal of Side Tracks**

Following closure of a side-track, the Contractor shall remove all temporary works and restore the area to its original profile and cross-section.

Any removed materials shall be disposed of in accordance with Clause 11 of MRS11.01 *Introduction to Standard Specifications*.

# **9 ROAD SAFETY BARRIER SYSTEMS**

## **9.1 General**

Road safety barrier systems shall be used for separation of traffic from roadworks and hazards as specified in Clause 8.1 of Annexure MRS11.02.1. Barriers should be used when —

- a) Workers or pedestrians in vulnerable situations need protection.
- b) There is a need to separate opposing traffic.
- c) There are hazardous objects or deep excavations near traffic.

Where the requirements for road safety barrier systems are not specified, the Contractor shall undertake a risk assessment to determine the method of separation and the Contractor shall be solely responsible for the method of separation adopted. The risk assessment shall be undertaken in accordance with the methodology outlined in AS/NZS 4360 – Risk Management.

Road safety barrier systems shall have recesses at their base to allow drainage at ground surface level to pass through.

## **9.2 Provision of Temporary Barriers**

The Principal will pay separately for the supply and/or installation of barriers only where such barriers are specifically referred to in Clause 8.1 of Annexure MRS11.02.1.

The Contractor shall be deemed to have made due allowance in Work Item 1201, Provision for Traffic for the supply and installation of temporary barriers other than those referred to in Clause 8.1 of Annexure MRS11.02.1.

Barriers shall be installed to achieve the minimum barrier length as detailed on the Main Roads drawings and/or those supplied by the supplier/manufacturer of the barrier system. Individual barriers shall be connected together with temporary connectors as specified on the drawings.

### 9.3 Materials

All materials required for correct installation of temporary barriers including reinforcing assemblies, connectors, bolts, nuts and washers shall be supplied by the Contractor.

Barriers approved for use on state-controlled roads are listed in the Main Roads Compliant Product List – Road Safety Barrier Systems and End Treatments (published on [www.mainroads.qld.gov.au](http://www.mainroads.qld.gov.au)). Water filled barriers listed in the compliant product list are to be filled with water at all times and linked together by an engineer certified system and approved by the Superintendent to provide integral support in the event of vehicular impact. Refer to Clause 8.3 of Annexure MRS11.02.1.

### 9.4 Separation Requirements

Where temporary barriers are shown on the drawings, the type and location of barriers shall be as shown on the drawings.

Where shown in Clause 8.2 of Annexure MRS11.02.1, traffic shall be separated from road workers and hazards as specified in Table 4.

**Table 4 – Traffic Separation Requirements**

Posted speed during roadworks (See notes 1 and 2 below)	Distance from Travelled Path to Road Workers and Hazards			
	0 – 1.2 metres	1.2 – 3 metres	3 – 6 metres	6 – 9 metres
> 80 km/h	Barrier	Barrier	Risk Assessment	Risk Assessment
70 & 80km/h	Barrier	Barrier	Risk Assessment	Risk Assessment
50 & 60km/h	Barrier	Containment Fence	Risk Assessment	Risk Assessment
< 50km/h	Risk Assessment	Risk Assessment	Risk Assessment	Risk Assessment

NOTES:

- The posted speed during roadworks shall be the highest speed which will allow the passage of vehicles in safety, but, in no instance, shall it exceed the original posted speed prior to roadworks.
- 40 km/h speed zones should be no longer than 500 metres.
- Risk assessments shall be undertaken in AS/NZS 4360 – Risk Management.

When a need for temporary barriers is identified, the barrier type shall be determined on the basis of the following considerations:

- The type, shape, deflection performance and test characteristics of the barrier;
- The speed of traffic travelling through the work site; and
- The clearance between the traffic and the work area.

Where the use of PCBs at intersections will create visibility problems for motorists to safely negotiate the intersection, the Contractor shall be permitted to use other approved barriers or devices as determined by a risk assessment.

Steel Beam Guardrail may be used instead of PCBs in some locations subject to the approval of the Superintendent. Guardrail shall be installed in accordance with Standard Drawings 1474 and 1475 with end treatments in accordance with Standard Drawings 1462, 1470, 1474 and 1475, or with an approved proprietary end treatment listed in the Main Roads Compliant Product List – Road Safety Barrier Systems and End Treatments. Guardrail will not be approved for temporary erection where posts have to be installed through pavements which remain part of the permanent works.

Where shown in Clause 8.2 of Annexure MRS11.02.1, opposing flows of traffic shall be separated by an appropriate barrier except that the distance shall be measured from the edge lines of the opposing traffic flows.

Temporary barriers shall be installed in any other situation stated in Clause 8.2 of Annexure MRS11.02.1.

### **9.5 Installation**

PCBs shall be installed in accordance with the details shown on the Drawings or, where not shown, in accordance with the Traffic Guidance Scheme as appropriate. Approved proprietary PCBs shall be installed in accordance with the manufacturer's installation manuals.

Where temporary barriers are installed between opposing traffic flows, sufficient offset shall be provided to reduce the likelihood that barriers deflect into opposing traffic flow in the event of impact.

The Contractor shall maintain temporary barriers on their correct alignment for the period that they are installed on the Site.

### **9.6 Working Behind Barriers**

When barriers are in place, workers shall not work within the barrier deflection zone. Containment fences shall be placed behind the barrier to constrain the work area to areas beyond the likely deflection limits of the barrier if struck by a vehicle.

### **9.7 On Site Storage**

Where temporary barriers are required, plant and materials shall be treated as a hazard and be protected as specified in Clause 9.1.

Where temporary barriers are not required, plant or materials shall not be stored less than 3 m from the nearest edge of any traffic lane and any plant or materials stored overnight within 9 m of the nearest edge of any traffic lane shall be delineated with warning lights adjacent to the traffic lanes.

## **10 TEMPORARY BARRIER END TREATMENTS**

### **10.1 General**

The ends of temporary barriers must be appropriately treated as they can be a hazard to road users if struck end on. Barrier ends must be protected with a suitable approved end treatment.

### **10.2 Provision of Temporary Barrier End Treatments**

The Principal will pay separately for the supply and/or installation of temporary barrier end treatments only where such end treatments are specifically referred to in Clause 9.1 of Annexure MRS11.02.1.

The Contractor shall be deemed to have made due allowance in Work Item 1201, Provision for Traffic for the supply and installation of temporary barrier end treatments other than those referred to in Clause 9.1 of Annexure MRS11.02.1.

### **10.3 Materials**

Temporary barrier end treatments approved for use on state-controlled roads are listed in the Main Roads Compliant Product List – Road Safety Barrier Systems and End Treatments.

### **10.4 Installation**

Temporary barrier end treatments shall be installed in accordance with the manufacturer's specifications.

Where exposed to on-coming traffic, both the approach and departure ends of PCBs shall be treated with an approved crash cushion or attenuator designed for the speed environment to the manufacturer's specification (refer to the Road Planning and Design Manual and the Main Roads Compliant Product list – Road Safety Barrier Systems and End Treatments).

## **11 ANTI-GAWKING SCREENS**

### **11.1 Provision of Anti-Gawking Screens**

The Principal will pay separately for the supply and/or installation of anti-gawking screens only where such screens are specifically referred to in Clause 10.1 of Annexure MRS11.02.1.

The Contractor shall be deemed to have made due allowance in Work Item 1201, Provision for Traffic for the supply and installation of anti-gawking screens other than those referred to in Clause 10.1 of Annexure MRS11.02.1.

### **11.2 Locations Required**

Anti-gawking screens shall be used to minimise visibility of the construction activities to the travelling public.

Where so stated in Clause 10.2 of Annexure MRS11.02.1, anti-gawking screens shall be installed in the following situations —

- a) Where PCBs, designed to be fitted with anti-gawking have been installed; and
- b) Where work activities are being undertaken within 3.5 metres of the lane edge and such activities are, in the opinion of the Superintendent, likely to cause traffic delays.

Anti-gawking screens shall also be installed in other situations as stated in Clause 10.3 of Annexure MRS11.01.2.

### **11.3 Materials**

Anti-gawking screens shall be supplied and fabricated in accordance with the details shown on the Drawings nominated in Clause 10.4 of Annexure MRS11.02.1. All materials required for correct temporary installation of the anti-gawking screens shall be supplied by the Contractor.

### **11.4 Construction**

Screens shall be securely fitted to the top of PCBs in accordance with the details shown on the Drawings nominated in Clause 10.4 of Annexure MRS11.02.1.

## **12 TEMPORARY ROAD LIGHTING**

### **12.1 Provision of Temporary Lighting**

Where existing roadway lighting is provided, roadway lighting shall be provided at all times. Existing lighting shall not be removed until alternative temporary lighting is provided to at least the same standard as the existing lighting.

Temporary road lighting shall also be required in the locations stated in Clause 11 of Annexure MRS11.02.1.

No additional payment will be made for this temporary lighting.

### **12.2 Installation**

Where directed by the Superintendent, the Contractor shall install, operate and maintain temporary road lighting installations for the full period during which the relevant temporary roadway is in use and/or until the permanent road lighting is installed and becomes operational.

Temporary road lighting shall be installed in the locations shown on the Drawings or as otherwise directed by the Superintendent.

Temporary road lighting installations shall conform to the requirements of MRS11.94 *Road Lighting*.

## **13 SUPERINTENDENT'S AUDIT**

### **13.1 Timing**

The Superintendent will undertake scheduled monthly audits of the Contractor's traffic control measures.

The Superintendent will also undertake unscheduled spot audits of the Contractor's traffic control measures.

### **13.2 Nonconformances**

A non-conformance shall be determined by the Superintendent and shall include but not be limited to the following instances —

- a) Failure to maintain delineation as detailed in a Traffic Guidance Scheme;
- b) Failure to maintain all signs as detailed in a Traffic Guidance Scheme;
- c) Failure to maintain any other traffic control device detailed in a Traffic Guidance Scheme;
- d) Failure to maintain minimum travelled path dimensions;
- e) Traffic delay periods exceeding any maximum period nominated in the Contract;
- f) Failure to cover/remove unused signs and traffic control devices within two hours of completion of any revised traffic arrangement;
- g) Failure to provide the required notification to the community or local businesses of changes to traffic movement;

- h) Failure to use other than designated construction workplace entries or exits;
- i) Failure to maintain a defect and obstruction free travelled path through areas subject to Traffic Guidance Schemes; and
- j) Undertaking traffic rearrangements without a Traffic Guidance Scheme approved by the Principal.

All non-conformances shall be remedied by the Contractor within two hours of receipt of written notice of the non-conformance. Failure to remedy any non-conformance within the two hour period shall entitle the Principal to carry out any remedial work deemed necessary pursuant to Clause 39 of the General Conditions of Contract.

## **14 ADDITIONAL REQUIREMENTS**

The requirements of MRS11.02 *Provision for Traffic* are varied by the supplementary specification requirements given in Clause 12 of Annexure MRS11.02.1.