

# CAPRICORN MUNICIPAL DEVELOPMENT GUIDELINES

## CONTROL OF TRAFFIC

C201

# CONSTRUCTION SPECIFICATION



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### **Keeping the Capricorn Municipal Development Guidelines up-to-date**

The Capricorn Municipal Development Guidelines are living documents which reflect progress of municipal works in the Capricorn Region. To maintain a high level of currency that reflects the current municipal environment, all guidelines are periodically reviewed with new editions published and the possibility of some editions to be removed. Between the publishing of these editions, amendments may be issued. It is important that readers assure themselves they are using current guideline, which should include any amendments which may have been published since the guideline was printed. A guideline will be deemed current at the date of development approval for construction works.

## GENERAL

### C201.01 SCOPE

1. The work to be executed under this Specification consists of all work necessary to provide for the safe movement of traffic and the protection of persons and property through and/or around the work site.
2. The extent of work includes the design, construction, maintenance and removal of temporary roadways and detours, the provision of traffic controllers, signposting, roadmarkings, raised pavement markers, lights, barriers and any other items required. All temporary traffic arrangements required by works are included under this Specification except where specified otherwise. **Works Included**
3. Control of traffic shall be in accordance with the Queensland Department of Main Roads (DMR) Manual of Uniform Traffic Control Devices (MUTCD), this Specification, and the Drawings. **Standards**
4. Wherever the word 'should' occurs in the MUTCD the word 'shall' applies and the required action is the Contractor's responsibility. **Contractor's Responsibility**

### C201.02 REFERENCE DOCUMENTS

1. Documents referenced in this Specification are listed in full below whilst being cited in the text in the abbreviated form or code indicated. **Documents Standards Test Methods**

#### (a) Australian Standards

- AS 1743 - Road Signs Specifications
- AS 1744 - Standard Alphabets for Road Signs
- AS 1906 - Retroreflective Materials & Devices for Road Traffic Control Purposes

#### (b) AUSTRROADS Publications

- AUSTRROADS - Guide to Traffic Engineering Practice - Intersections at Grade
- AUSTRROADS - Guide to the Geometric Design of Rural Roads

#### (c) Queensland Department of Main Roads Publications

- MUTCD - Manual of Uniform Traffic Control Devices.

### C201.03 TRAFFIC GUIDANCE SCHEME

1. All works shall be constructed with the least possible obstruction to traffic. **Minimise Obstruction**
2. The Contractor shall obtain all necessary approvals from Local Governments and other Authorities for temporary traffic arrangements except where specified otherwise. **Contractor's Responsibility**
3. Prior to undertaking work which would involve any obstruction whatsoever to traffic, the Contractor shall submit, for Local Government's approval at the pre-start meeting, a Traffic Guidance Scheme in accordance with Part 3 of the MUTCD. **Guidance Scheme**

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4. The Traffic Guidance Scheme shall include:- **Control Plan Contents**
- (a) design drawings for any temporary roadways and detours in accordance with Clause C201.10 showing pavement, wearing surface and drainage details,
  - (b) details of arrangements for construction under traffic in accordance with Part 3 of MUTCD, and
  - (c) a signpost layout plan showing:
    - (i) location, size and legend of all temporary signs
    - (ii) temporary regulatory signs and temporary speed zones, and
    - (iii) all traffic control devices such as temporary traffic signals, linemarking, pavement reflectors, guideposts, guard fence and barrier boards.

5. Where the Traffic Guidance Scheme involves Regulatory Traffic Control Signs or Devices and/or where the disruption to local traffic is significant, the prior approval of the Local Government, or in the case of an intersection with a gazetted or State controlled road, the DMR District Director for the area, will be sought and obtained. Any approval may include public advertising requirements. **Notice**

6. The Traffic Guidance Scheme shall be in accordance with the requirements of this specification and the Drawings.

7. Special consideration to the safety of pedestrians and workers shall be given in the preparation of the traffic guidance scheme. Particular care shall be taken when requiring reversal of traffic flows or the separation of unidirectional flow by medians or other physical separation. **Safety**

### **C201.04 SIDE ROADS AND PROPERTY ACCESSES**

1. At all times, safe and convenient passage shall be provided for vehicles, pedestrians and stock to and from side roads and property accesses connecting to the roadway. **Access**

### **C201.05 TRAFFIC CONTROLLERS**

1. All traffic controllers shall be appropriately trained in the duties of traffic controllers in accordance with the MUTCD. **Trained Traffic Controllers**

### **C201.06 APPROVED CLOTHING FOR WORK PERSONNEL**

1. All personnel working in close proximity to traffic shall wear high visibility clothing to the requirements of the MUTCD. **Safety Clothing**

### **C201.07 TEMPORARY SPEED ZONING**

1. Where a temporary speed limit has been approved by the Local Government or in the case of a gazetted or State controlled road the District Director of DMR for the area, the Contractor shall arrange for the supply of appropriate temporary speed zoning signs, including posts and fittings, for erection. Signs shall be covered when the speed zone is not in use and removed from the site when the speed zone is no longer required as part of the provision for traffic. A diary recording operation times of the speed zone shall be kept by the Contractor. **Speed Zone Signs**

**C201.08 PLANT AND EQUIPMENT**

- |   |                                    |
|---|------------------------------------|
| 1. During the day where plant and equipment are working in a position adjacent to traffic the work area shall be clearly delineated in accordance with MUTCD.   | <b><i>Delineation</i></b>          |
| 2. At night, where traffic is permitted to use the whole or portion of the existing road, all plant items and similar obstructions shall be removed from the normal path of vehicles to provide a lateral clearance of at least 6 m where practicable, with a minimum clearance of 1.2 m.   | <b><i>Night Time Clearance</i></b> |
| 3. During poor light conditions or at night plant and equipment, within 6 m of the normal path of vehicles, shall be lit by not less than two yellow steady lamps suspended vertically from the point of the obstruction nearest to a traffic lane and one yellow steady lamp at each end of the obstruction on the side furthest away from the traffic lane. | <b><i>Warning Lamps</i></b>        |

**TEMPORARY ROADWAYS AND DETOURS****C201.09 DESIGN STANDARDS**

- |   |  |
|---|--|
| 1. The standard of alignment and grading adopted shall be in accordance with specific provisions of this Specification and shall otherwise be in accordance with the AUSTRROADS publication 'Guide to the Geometric Design of Rural Roads'. | <b><i>Alignment &amp; Grading</i></b>  |
| 2. Intersections shall be designed in accordance with the AUSTRROADS publication 'Guide to Traffic Engineering Practice - Intersections at Grade'.  | <b><i>Intersections</i></b>            |
| 3. Design drawings, geometric standards, design speed, wearing surface type and pavement design of the proposed temporary roadways and detours shall be submitted by the Contractor with the Traffic Guidance Scheme.                       | <b><i>Standards &amp; Pavement</i></b> |

**C201.10 DESIGN DRAWINGS**

- |   |                        |
|---|------------------------|
| 1. Design drawings submitted for approval shall show:   | <b><i>Contents</i></b> |
| (a) Alignment and grading at a horizontal scale of 1:2000 for rural roads and 1:500 for urban roads. Where the temporary road rejoins the existing road, levels showing the full cross section shall be extended along the existing road for a minimum length of 200 m. |                        |
| (b) A sight distance diagram if opposing traffic is to use a single carriageway   |                        |
| (c) Intersections, and any other locations where traffic may be required to make turning, merging or diverging movements, at a scale of 1:500.  |                        |
| (d) Pavement marking details.   |                        |
| (e) Sufficient cross-sections to indicate the feasibility of making connections between various parts of the work.  |                        |
| (f) Sufficient dimensions, especially lane widths, to make clear the geometry and clearances of the proposed Works.   |                        |
| (g) A north point or some other location method to orientate the plan.  |                        |

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### C201.11 DRAINAGE

1. Drainage structures and drains shall be constructed in accordance with the following Specifications: **Standard**

- C220 - Stormwater Drainage - General
- C221 - Pipe Drainage
- C223 - Drainage Structures
- C224 - Open Drains, including Kerb and Gutter

2. Drainage proposed in accordance with Clause C201.03 shall be able to cope with upstream rainfall run-off resulting from all rainfall intensities up to that expected for a once in five year frequency, without overflow over the road. **Design Frequency**

3. Pavements shall be designed and constructed to not pond water on the wearing surface or shoulders. Temporary formations to be constructed shall not dam water. **Pavement Drainage**

### C201.12 CONSTRUCTION OF EARTHWORKS AND PAVEMENT

1. Temporary roadways shall be constructed in accordance with the following Specifications: **Temporary Roadways**

- C211 - Control of Erosion and Sedimentation
- C212 - Clearing And Grubbing
- C213 - Earthworks
- C242 - Flexible Pavements

### C201.13 SURFACING

1. The wearing surface width shall extend across the full width of the traffic lanes plus the width for each shoulder, or as shown on the Drawings. **Wearing Surface**

2. The wearing surface shall be carried onto any existing connecting roadway so as to finish square to the existing roadway centreline. **Tie-in to existing work**

3. Surfacing shall be constructed in accordance with: **Standards**

- C244 - Sprayed Bituminous Surfacing and/or
- C245 - Asphaltic Concrete

### C201.14 GUARDFENCE

1. Corrugated steel guardfence shall be erected on all temporary embankments where the vertical height between the edge of the shoulder and the intersection of the embankment slope and natural surface exceeds 2m and as otherwise shown on the drawings. **Warrant**

2. Guardfence shall be erected in accordance with: **Erection**

- C264 - Guardfence



**C201.15 OPENING TO TRAFFIC**

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| <p>1. Temporary roadways and detours (including portable or temporary traffic signals sites) shall not be open to traffic until they have been inspected, approved and authorised in writing by the relevant Authority.</p>  | <p><b><i>Approval to use</i></b></p>           |
| <p>2. All signposting, pavement marking, guardfence and portable or temporary traffic signals shall be completed before the opening of temporary roadways to traffic.</p>  | <p><b><i>Signposting</i></b></p>               |
| <p>3. Unless otherwise approved by the relevant Authority, the opening of temporary roadways shall be arranged so that sections of existing roadway being replaced are not disturbed for a minimum of forty-eight hours in the event of temporary roadway failure and there is a warrant to redirect traffic back onto the existing roadway. The determination to redirect traffic shall be by the relevant Authority.</p> | <p><b><i>Existing Roadway Retained</i></b></p> |

**C201.16 MAINTENANCE**

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|---|--|
| <p>1. The Contractor shall be responsible for the maintenance of temporary roadways and detours and shall ensure the road surface is kept safe for traffic. Any potholes or other failures shall be repaired without delay.</p> | <p><b><i>Contractor's Responsibility</i></b></p> |
|---|--|

**C201.17 REMOVAL**

- |   |                                  |
|---|----------------------------------|
| <p>1. Upon completion of the Work the temporary roadways and/or detour arrangements shall be removed and the area restored to a condition equivalent to that which existed prior to the commencement of the work.</p> | <p><b><i>Restoration</i></b></p> |
|---|----------------------------------|

**ARRANGEMENTS FOR TRAFFIC**

**C201.18 CONSTRUCTION UNDER TRAFFIC**

- |   |  |
|---|--|
| <p>1. Where a temporary roadway or a detour is not provided or available then, subject to the approval of the relevant Authority, construction under traffic may be permitted provided a minimum of 3.5 m lane width is available for through traffic on a two lane roadway and where 3.5 m lanes are available in both directions for through traffic when working on multilane roads.</p> | <p><b><i>Lane Width</i></b></p>              |
| <p>2. The carriageway/s shall be restored to a safe and trafficable state for through traffic prior to cessation of work each day in accordance with the approved Traffic Guidance Scheme.</p>  | <p><b><i>Carriageway Restoration</i></b></p> |
| <p>3. Full details of temporary signposting, traffic control devices and traffic control methods, in accordance with the appropriate arrangement diagrams in MUTCD, are to be submitted for the relevant Authority's approval at least five working days before undertaking any work which would involve construction under traffic.</p>  | <p><b><i>Signs and Markings</i></b></p>      |

**C201.19 OPENING COMPLETED WORK**

- |   |  |
|---|--|
| <p>1. The Contractor shall give at least five working days written notice confirming the date of opening completed work to traffic. The procedure for opening shall be determined through consultation between the Contractor and the relevant Authority.</p> | <p><b><i>Written Notice</i></b></p>              |
| <p>2. The Contractor shall be responsible for the removal of all temporary traffic control devices no longer required for the safety of traffic, when the Works or part thereof are opened to traffic.</p>  | <p><b><i>Contractor's Responsibility</i></b></p> |

**TRAFFIC CONTROL DEVICES**

**C201.20 ARRANGEMENT OF TRAFFIC CONTROL DEVICES**

- 1. The arrangement and placement of traffic control devices shall be carried out in accordance with the approved Traffic Guidance Scheme, and the MUTCD. The arrangement diagrams illustrate the more common examples of the arrangement of traffic control devices and set out the minimum requirements. **Arrangement Diagrams**
- 2. All temporary traffic control devices when no longer required shall be covered and/or removed without delay in order to maintain unambiguous safe guidance to traffic. **Unnecessary Signs**

**C201.21 MAINTENANCE OF TRAFFIC CONTROL DEVICES**

- 1. All traffic control devices shall be maintained in accordance with the MUTCD so that they are in good order and in the correct positions day and night. They shall be neat and clean, and signs shall be clear and legible at all times. **Contractor's Responsibility**
- 2. The Contractor may need to be contacted outside normal working hours to arrange for adjustments or maintenance of traffic control devices. The Contractor shall notify the Superintendent, the Local Government and the local Police, in writing, the names, addresses, and means of communicating with personnel nominated for this purpose. **Out of Hours Contact**

**C201.22 ADEQUATE TRAFFIC CONTROL DEVICES**

- 1. Where the Contractor fails to provide and maintain adequate traffic control devices specified in this Specification, the Superintendent and/or Local Government may arrange to have such items provided and maintained. **Default by Contractor**
- 2. The cost of providing and maintaining adequate traffic control devices arranged by the Superintendent and/or Local Government shall be borne by the Developer through the Construction maintenance bond. **Contractor's Cost**

**C201.23 REGULATORY TRAFFIC CONTROL SIGNS AND DEVICES**

- 1. A Regulatory Traffic Control Sign or Device shall be in accordance with the MUTCD, and shall require approval by the Local Government, or in the case of a gazetted or State controlled road the District Director of DMR for the area, before its erection. **Prior Approval**

**C201.24 SIGNS**

- 1. Signs shall be designed and manufactured in accordance with AS 1743. Details of each letter shall be as shown in AS 1744. **Specifications**
- 2. The reflective material used on signs shall be Class 1 material complying with AS 1906.1 except where otherwise specified. **Reflective Material**

**C201.25 SUPPLEMENTARY SIGNS**

- 1. Signs supplementary to the MUTCD are shown in Annexure C201A. Approval

must be obtained from QDMR prior to their use.

**(a) Heavy Machinery Crossing**

This temporary sign, shown as Sign SW5-22, if approved, may be used in lieu of W5-22, trucks entering.

**(b) Cycle Hazard Grooved Road**

This temporary sign, shown as Sign ST1-10, if approved, may be used in addition to T1-10 of AS 1742.3 where the road is grooved and is a hazard to cyclists.

**(c) Tar Spraying Possible Short Delay**

This temporary sign, shown as Sign ST3-1, if approved, may be used in addition to T3-1 for bituminous surfacing works.

**C201.26 FLASHING ARROW SIGNS**

1. Flashing arrow signs shall comply with the MUTCD.

**C201.27 BARRIER BOARDS**

1. Barrier boards shall comply with the MUTCD.
2. Trestles supporting the barrier boards may be manufactured of timber, metal or other suitable material and shall be yellow. The trestles shall provide firm supports for the barrier board and be kept in place by sandbags or other devices. The bases of the trestles shall not protrude beyond the ends of the boards.

***Standard***

***Trestle  
Support***

**C201.28 HIGH VISIBILITY MESH FENCING**

1. High visibility mesh fencing shall be constructed where shown on the Drawings or Traffic Guidance Scheme.
2. High visibility mesh fencing shall be constructed in accordance with the MUTCD, containment fences.
3. The mesh fencing shall be para-web or equivalent as approved by the Superintendent.

**C201.29 TEMPORARY POST-MOUNTED DELINEATORS**

1. In addition to the requirements of MUTCD, temporary post mounted delineators shall be provided in conjunction with high visibility mesh fencing which is erected parallel to and in close proximity to traffic.

**C201.30 CONES AND BOLLARDS**

1. Traffic cones and bollards shall comply with the MUTCD and be placed in accordance with the arrangement diagrams in the MUTCD.
2. Unless cones are firmly fixed in position they shall be used only while work is in progress, or in locations where there is an employee in attendance who shall reinstate any of the cones which have been dislodged by traffic. Otherwise they shall be removed and bollards or barriers substituted.

***Standard and  
Placement***

***Conditions of  
Use***

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3. Cones and bollards used under night conditions shall be reflectorised in accordance with the MUTCD. **Reflectorised for Night Work**

### C201.31 TRAFFIC WARNING LAMPS

1. Traffic warning lamps shall comply with the MUTCD and shall be installed in accordance with the MUTCD. The Contractor shall ensure that warning lamps are in good working order, correctly aligned and positioned with respect to the direction of traffic flow each night, before the site is left unattended. **Standards and Positioning**

### C201.32 TEMPORARY PAVEMENT MARKINGS

1. All pavement markings shall be reflectorised and consist of painted lines, roadmarking tape and/or raised pavement markers in accordance with the relevant Australian Standards or as otherwise approved by the Superintendent and shall be provided in accordance with the MUTCD. **Reflectorised Markings**
2. Where the adjoining roadway is edge lined, temporary roadways shall be similarly edge lined. **Adjoining Work**

### C201.33 TEMPORARY LINEMARKING

1. Where temporary line marking is required on the final wearing surface, only pavement marking tape shall be used. **On Final Surface**
2. Where the pavement line marking has become ineffective in the opinion of the Superintendent and/or Local Government, remarking shall be undertaken within forty-eight hours of direction by the Superintendent. **Contractor's Cost**
3. Where a single carriageway is opened adjacent to or used in lieu of an existing dual carriageway length, pavement arrows indicating the direction of flow of traffic shall be placed at not more than 500 m intervals or at a spacing nominated by the Superintendent. The arrows shall be removed if the section is then reincorporated as dual carriageway. **Pavement Arrows**
4. Immediately before or after placement of new markings all superseded pavement markings shall be obliterated or removed. **Old Markings Removed**
5. On a final surface, obliteration by over painting shall not be permitted.

### C201.34 RAISED PAVEMENT MARKERS

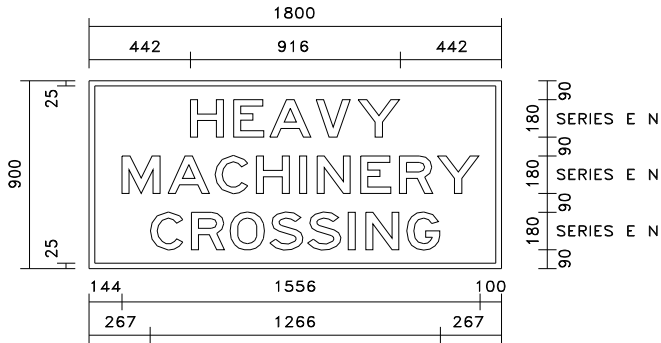
1. Where raised pavement markers have become ineffective in the opinion of the Superintendent and/or Local Government, they shall be replaced within twenty four hours of direction by the Superintendent. **Ineffective Markers**
2. The cost of replacing ineffective pavement markers shall be borne by the Contractor. **Contractor's Cost**
3. All superseded raised pavement markers shall be immediately removed from the pavement by the Contractor. **Removal of Superseded Markers**

ANNEXURE C201A

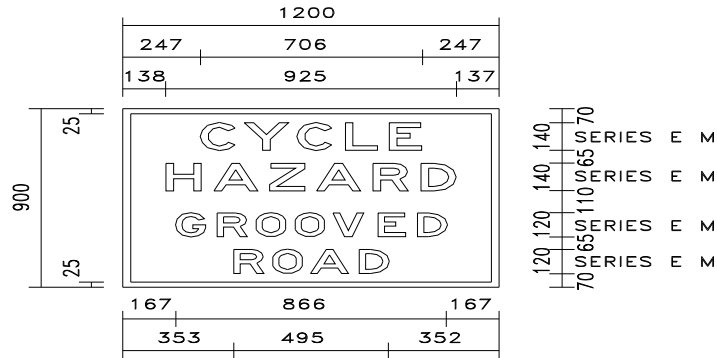
**C201A SUPPLEMENTARY TEMPORARY WARNING SIGNS TO MUTCD**

Black letters and border on yellow reflectorised ground  
 Dimensions are in mm

**(i) SW5-22**



**(ii) ST1-10**



**(iii) ST3-1**

