DEVELOPMENT CONSTRUCTION SPECIFICATION

C201

CONTROL OF TRAFFIC

SPECIFICATION C201 - CONTROL OF TRAFFIC

CONTENTS

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GENERAL

C201.01 SCOPE

1. The work to be executed under this Specification consists of all work activities necessary to provide for the safe movement of traffic and the protection of persons and property on any public road through and/or around any work activities in relation to the development.

2. The extent of work includes the design, construction, maintenance and removal of temporary roadways and detours, the provision of traffic controllers, signposting, road markings, raised pavement markers, lights, barriers and any other items required

Works Included

3. Control of traffic shall be in accordance with RTA manual Traffic Control at Work Sites, AS1742.3, SAA HB81, this Specification and the Drawings.

Standards

4. Wherever the word 'should' occurs in AS 1742.3 the word 'shall' applies and the required action is the Developer's responsibility.

Developer's Responsibility

C201.02 REFERENCES

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 1165	-	Traffic Hazard Warning Lamps
AS 1742.3	-	Traffic Control Devices for Works on Roads
AS 1743	-	Road Signs Specifications
AS 1744	-	Standard Alphabets for Road Signs
AS 1906	-	Retro-reflective Materials & Devices for Road Traffic Control Purposes
AS 1742.10	-	Pedestrian Control and Protection
AS 4191	-	Portable Traffic Signal Systems
AS/NZS 4192	-	Illuminated flashing arrow signs
SAA HB81	-	Field Guide for Traffic Control at Works on Roads

(b) AUSTROADS Publications

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

(c) Roads and Traffic Authority Publications

Traffic Control at Work Sites

C201.03 TRAFFIC GUIDANCE SCHEME

1. The Developer shall construct the work with the least possible obstruction to traffic.

Minimise Obstruction

2. The Developer shall obtain all necessary approvals from Councils and other Authorities for temporary traffic arrangements except where specified otherwise.

Developer's Responsibility

3. A minimum of one (1) week prior to commencing work on the site, the Developer shall submit to the Council a Traffic Control Plan (TCP) in accordance with RTA Traffic Control at Worksites, AS1742.3 and AS 1742.10. The Roads Act requires Council, as the Roads Authority, to be informed of this TCP. Consequently, Council reserves the right to concur with or require modification of the TCP prior to its implementation. Submission of the TCP constitutes a HOLD POINT

Traffic Control Plan

HP

4. Where the TCP involves Regulatory Traffic Control Signs or Devices, temporary roadworks speed restrictions or temporary partial or full road closures, the period of notice shall be increased to five weeks in accordance with Clause C201.24.

Extended Notice

5. The TCP shall include for each activity of work that is on or involves the use of the road reserve: -

Control Plan Contents

(a) Design drawings for any temporary roadways and detours in accordance with Clause C201.11 showing pavement, wearing surface and drainage details,

(b) Details of arrangements for construction under traffic in accordance with RTA Traffic Control at Work Sites, 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.

(d) A maintenance plan for the above.

6. The TCP shall be in accordance with the requirements of this specification and the Drawings.

7. Persons preparing TCPs shall be accredited under the provisions of RTA Traffic Control at Worksites and shall make their accreditation available for inspection by the Council's Development Engineer upon request.

7. Special consideration to the safety of pedestrians and workers shall be given in the preparation of the TCP. 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, the Developer shall provide safe and convenient passage for vehicles, pedestrians and stock to and from side roads and property accesses connecting to the roadway. Work which affects the use of side roads and existing accesses shall not be undertaken without providing adequate alternative provisions to the prior satisfaction of the Council's Development Engineer.

Access

2. Where an existing access is to be restricted or prohibited during certain times, arrangements are to be made with the property owner or occupier by providing a minimum of one (1) weeks notice in writing prior to commencing the restriction/prohibition.

Notification

C201.05 TRAFFIC CONTROLLERS

Trained Traffic Controllers

1. All traffic controllers shall be appropriately trained in the duties of traffic controllers in accordance with AS 1742.3, and possess current certification as a traffic controller. The Developer shall advise the Council's Development Engineer of the names of proposed traffic controllers and their certificate shall be made available to Council's Development Engineer for sighting on demand.

C201.06 APPROVED CLOTHING FOR WORK PERSONNEL

Safety Clothing

1. All personnel working within the road reserve shall wear high visibility clothing to the requirements of AS 1742.3.

2. For night conditions, all personnel working within the road reserve shall wear clothing suited to the conditions, complying with Occupational Health, Welfare & Safety obligations and highlighting the wearer's presence to all other persons on or near the site through the use of retro-reflective silver tape of a suitable width(suggested 50mm wide) attached such that:-

- There are hoops of tape on each sleeve and each leg and
- The tape covers the torso area of the wearer's body (suggested minimum 30% of the front and 30% of the back of the torso area).

3. The traffic controller during night operations shall use an illuminated red cone wand with a minimum capacity of 30,000 candelas to control traffic.

C201.07 TEMPORARY SPEED ZONING

Speed Zone Signs

1. Where a temporary speed limit has been approved, the Developer shall arrange for the supply of appropriate temporary speed zoning signs, including posts and fittings, for erection. The Developer shall erect these signs, cover the signs when the speed zone is not in use and remove the signs when the speed zone is no longer required as part of the provision for traffic. The Developer shall keep a diary that records operation times of the speed zone.

Developer's Cost

2. All costs associated with temporary speed zoning signposting shall be borne by the Developer.

C201.08 PLANT AND EQUIPMENT

Plant Delineation

1. During the day plant and equipment working in a position adjacent to traffic and having a projection beyond the normal width of the item, for example, a grader blade shall have a fluorescent red flag attached to the outer end of the projection. During poor light conditions or at night, an additional traffic controller with an illuminated red wand shall direct traffic around such plant and equipment.

Night Time Clearance

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.

Warning Lamps

3. At night, plant and equipment within 6 m of the normal path of vehicles shall be lit by not less than two yellow flashing lamps suspended vertically from the point of the obstruction nearest to a traffic lane, and one yellow flashing lamp at each end of the obstruction.

TEMPORARY ROADWAYS AND DETOURS

C201.09 APPROVAL

1. The Developer shall submit for the Council Development Engineer's approval the design of all proposed temporary roadways and detours. ***Temporary Roads***

C201.10 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 AUSTROADS publication `Guide to the Geometric Design of Rural Roads'. ***Alignment & Grading***

2. Intersections shall be designed in accordance with the AUSTROADS publication `Guide to Traffic Engineering Practice - Intersections at Grade'. ***Intersections***

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 Developer with the TCP. ***Standards & Pavement***

C201.11 DESIGN DRAWINGS

1. Design drawings submitted for approval shall show:

   (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. ***Contents***

   (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) All proposed materials including sizes, quality grade, source of supply, etc

C201.12 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 designed to carry the 1:5 year ARI storm event 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***

C201.13 CONSTRUCTION OF EARTHWORKS AND PAVEMENT

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

Specifications: *Roadways*

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

C201.14 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

C201.15 GUARDFENCE

1. Corrugated steel guard fence 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 1m and as otherwise shown on the drawings. *Warrant*

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

C264	-	Guardfence

C201.16 OPENING TO TRAFFIC

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 Council's Development Engineer. *Approval to use*

2. All signposting, pavement marking, guard fence and portable or temporary traffic signals shall be completed before the opening of temporary roadways to traffic. *Signposting*

3. Unless otherwise approved by the Council's Development Engineer, 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 Council's Development Engineer. *Existing Roadway Retained*

4. The costs associated with the redirection of traffic back onto the existing roadway shall be borne by the Developer. *Developer's Cost*

5. Unless otherwise approved by the Council's Development Engineer, traffic shall be switched to a temporary roadway or detour only where the Developer's usual workforce will be on site for a minimum of two days thereafter. *Traffic Switch*

C201.17 MAINTENANCE

1. The Developer 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. *Developer's Responsibility*

C201.18 REMOVAL

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. ***Restoration***

ARRANGEMENTS FOR TRAFFIC

C201.19 CONSTRUCTION UNDER TRAFFIC

1. Where a temporary roadway or a detour is not provided or available, then subject to the approval of the Council's Development Engineer, construction under traffic may be permitted, provided that a minimum of 3.5 m lane width is available for through traffic on a two lane roadway. When working on multilane roads 3.5 m lanes are to be available in both directions for through traffic. ***Lane Width***

2. The carriageway/s shall be restored to a safe and trafficable state for through traffic prior to cessation of work each day. ***Carriageway Restoration***

3. Full details of temporary signposting, traffic control devices and traffic control methods, in accordance with the appropriate arrangement diagrams in RTA Traffic Control at Work Sites, are to be submitted to the Council's Development Engineer at least five working days before undertaking any work that would involve construction under traffic. ***Signs and Markings***

C201.20 OPENING COMPLETED WORK

1. The Developer shall give the Council's Development Engineer at least two working days written notice confirming the date of opening completed work to traffic. The procedure for opening shall be determined through consultation between the Developer and Council's Development Engineer. ***Written Notice***

2. The Developer 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. ***Developer's Responsibility***

TRAFFIC CONTROL DEVICES

C201.21 ARRANGEMENT OF TRAFFIC CONTROL DEVICES

1. The arrangement and placement of traffic control devices shall be carried out in accordance with RTA Traffic Control at Work Sites. 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 shall be covered and/or removed without delay when no longer required in order to maintain unambiguous safe guidance to traffic. ***Unnecessary Signs***

C201.22 MAINTENANCE OF TRAFFIC CONTROL DEVICES

All traffic control devices shall be maintained in accordance with AS 1742.3 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. ***Developer's Responsibility***

1. The Developer shall maintain a daily log that verifies that daily checks of all traffic control devices have been conducted. This log shall be made available for the Development Engineer's inspection upon demand. ***Daily Log***

3. The Developer may need to be contacted outside normal working hours to arrange for adjustments or maintenance of traffic control devices. The Developer shall notify the Council's Development Engineer, the Council's Development Engineer and the local Police, in writing, the names, addresses, and means of communicating with personnel nominated for this purpose. ***Out of Hours Contact***

C201.23 ADEQUATE TRAFFIC CONTROL DEVICES

1. Where the Developer fails to provide and maintain adequate traffic control devices specified in this Specification, the Council's Development Engineer shall arrange to have such items provided and maintained at the developer's cost. ***Default by Developer***

2. The cost of providing and maintaining adequate traffic control devices arranged by the Council's Development Engineer shall be borne by the Developer. ***Developer's Cost***

C201.24 REGULATORY TRAFFIC CONTROL SIGNS AND DEVICES

1. A Regulatory Traffic Control Sign or Devices shall be in accordance with AS 1742.3, and shall require approval by the appropriate Authority before its erection. This approval should be obtained through Council's Development Engineer. A minimum of five weeks written notice by the Developer shall be required to ensure that approval is obtained before erection of these signs and/or devices. ***Prior Approval***

C201.25 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 2 material complying with AS 1906.1 except where otherwise specified. The fluorescent material used on signs shall be fluorescent red. ***Reflective Material***

C201.26 SUPPLEMENTARY SIGNS

1. Signs supplementary to AS 1742.3 are shown in Annexure C201A. These signs may be used in lieu of or in addition to those shown in AS 1742.3.

(a) Heavy Machinery Crossing

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

(b) Cycle Hazard Grooved Road

This temporary sign, shown as Sign ST1-10, shall 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, shall be used in addition to T3-1 for bituminous surfacing works.

(d) Changed Traffic Conditions Ahead

This temporary sign, shown as Sign ST1-6, shall be used in addition to T1-1, T1-6, T2-6 and T2-21 on long term works, sidetracks and detours.

C201.27 FLASHING ARROW SIGNS

1. Flashing arrow signs shall comply with AS 1742.3.

C201.28 BARRIER BOARDS

1. Barrier boards shall comply with AS 1742.3. ***Standard***

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. ***Trestle Support***

C201.29 HIGH VISIBILITY MESH FENCING

1. High visibility mesh fencing shall be constructed where shown on the Drawings, TCP or as directed by the Council's Development Engineer.

2. High visibility mesh fencing shall be constructed in accordance with AS 1742.3, containment fences.

3. The mesh fencing shall be paraweb or equivalent as approved by the Council's Development Engineer.

C201.30 TEMPORARY POST-MOUNTED DELINEATORS

1. In addition to the requirements of AS 1742.3, 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.

C201.31 CONES AND BOLLARDS

1. Traffic cones and bollards shall comply with AS 1742.3 and be placed in accordance with the arrangement diagrams in RTA Traffic Control at Work Sites. ***Standard and Placement***

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 immediately reinstate any of the cones that have been dislodged by traffic. Otherwise they shall be removed and bollards or barriers substituted. ***Conditions of Use***

3. Cones and bollards used under night conditions shall be reflectorised in accordance with AS 1742.3. ***Reflectorised for Night Work***

C201.32 TRAFFIC WARNING LAMPS

1. Traffic warning lamps shall comply with AS 1165 and shall be installed in accordance with AS 1742.3. The Developer 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***

C201.33 TEMPORARY PAVEMENT MARKINGS

1. All pavement markings shall be reflectorised and consist of painted lines, road marking tape and/or raised pavement markers in accordance with the relevant Australian Standards or as otherwise approved by the Council's Development Engineer and shall be provided in accordance with AS 1742.3. ***Reflectorised Markings***

2. Where the adjoining roadway is edge lined, temporary roadways shall be similarly edge lined. ***Adjoining Work***

C201.34 TEMPORARY LINEMARKING

1. Where temporary linemarking is required on the final wearing surface, only pavement marking tape shall be used. ***On Final Surface***

2. Where the pavement linemarking has become ineffective in the opinion of the Council's Development Engineer, remarking shall be undertaken within forty-eight hours of direction so given by the Council's Development Engineer. The cost of remarking the pavement lines shall be borne by the Developer. ***Developer'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 or at a spacing nominated by the Council's Development Engineer. 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 to the satisfaction of the Council's Development Engineer. ***Old Markings Removed***

5. On a final surface, obliteration by painting shall not be permitted.

C201.35 RAISED PAVEMENT MARKERS

1. Where raised pavement markers have become ineffective in the opinion of the Council's Development Engineer, they shall be replaced within twenty-four hours of a direction so given by the Council's Development Engineer. ***Ineffective Markers***

2. The cost of replacing ineffective pavement markers shall be borne by the Developer. ***Developer's Cost***

3. All superseded raised pavement markers shall be immediately removed from the pavement by the Developer. ***Removal of Superseded Markers***

C201.36 TRAFFIC SIGNALS

1. Traffic Signals may be either portable or temporary as shown in AS 1742.3. ***Portable or Temporary***

(a) Portable Traffic Signals

(i). Portable traffic signals may be used for shuttle control where a single lane has to be used alternately by traffic from opposite directions or at road crossings or intersections. They are intended for relatively short-term applications. ***Warrant for Use***

(ii) Where the Developer proposes to use portable traffic signals they shall be in accordance with AS 4191.

(b) Temporary Fixed Traffic Signals

(i) Temporary fixed traffic signals may be used in accordance with AS 1742.3 for longer-term shuttle operations or for non-shuttle control of intersecting traffic flows. ***Warrant for Use***

(ii) Where the Developer proposes to use temporary fixed traffic signals they shall be designed and installed in accordance with AS 1742.14.

(iii) Approval of the Local Traffic Committee shall be sought prior to implementation. Written application is required through Council's Development Engineer 5 weeks in advance of action to employ such signals. ***Approval***

C201.37 SUMMARY OF APPROVALS & SUBMISSIONS TO COUNCIL'S DEVELOPMENT ENGINEER

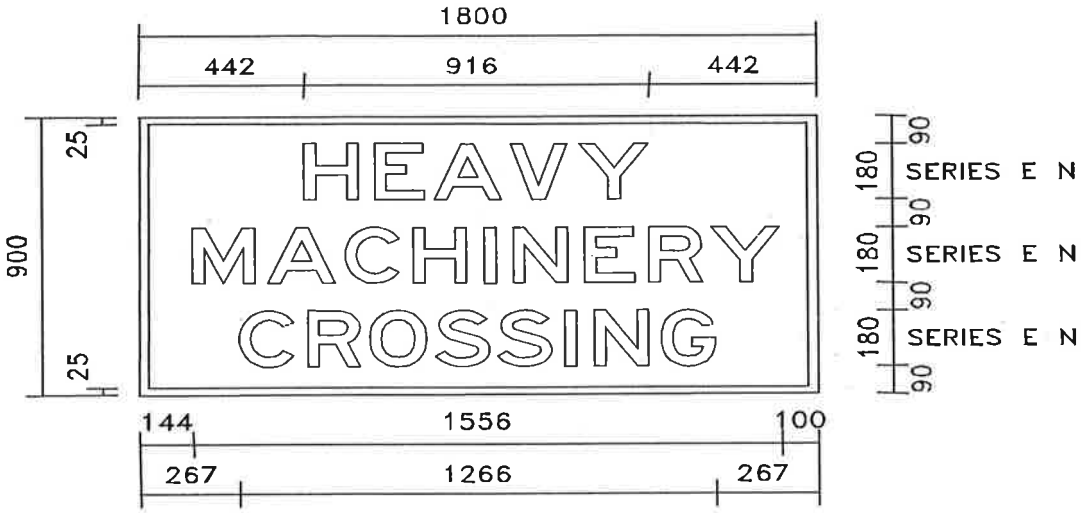
Activity	Notice Required	Spec Clause
Traffic Control Plan	Minimum One (1) week	**C201.03**
Regulatory Traffic Control Signs	Minimum Five (5) weeks	**C201.03**
Sighting of Traffic Controllers' Certificates		**C201.05**
Proposed Temporary Roadways and Detours		**C201.09**
Full details of temporary signposting, traffic control devices and traffic control methods for construction under traffic	Five (5) working days	**C201.19**
Consultation between the Developer and the Council's Development Engineer when opening completed work	Two (2) working days	**C201.20**
Out of hours contact details for Developer		**C201.22**
Use of regulatory traffic control signs and devices	Minimum Five (5) weeks	**C201.24**
Use of temporary Fixed Traffic Signals	Minimum Five (5) weeks	**C201.36**

Table C201.1

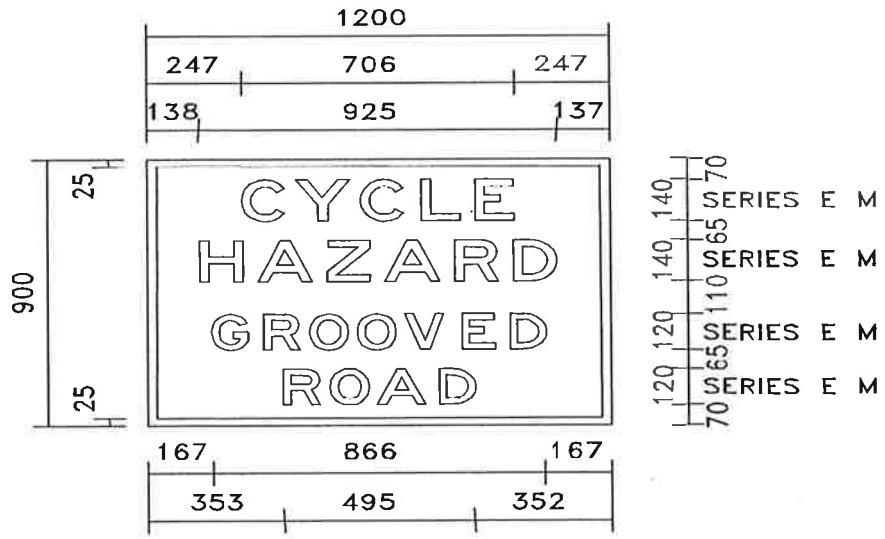
ANNEXURE C201.A
SUPPLEMENTARY TEMPORARY WARNING SIGNS TO AS 1742.3

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

(i) SW5-22



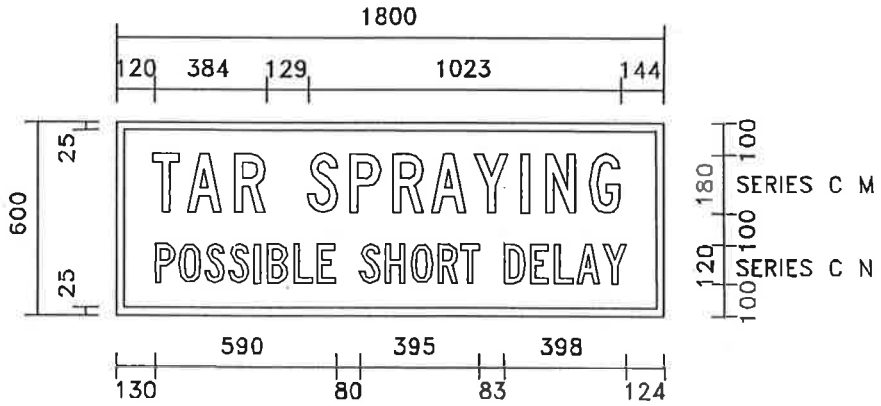
(ii) ST1-10



ANNEXURE C201A
SUPPLEMENTARY TEMPORARY WARNING SIGNS TO AS 1742.3

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

(iii) ST3-1



(iv) ST1-6