School Zones

RTA

Prepared by:
Traffic Technology Branch
Sharing the knowledge

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1. Introduction

School zones contribute to the safety of school children. This is done by raising motorists awareness of the presence of school children when driving near a school.

The *school zone* sign is a regulatory device which requires motorists to drive at a reduced speed during school days at nominated times. The times of the reduced speed limit are restricted to morning and afternoon times to coincide with those times when there is activity along the school frontage and students will be on or near the road.

A *school zone* is not a pedestrian crossing facility. *School zones* are one of many measures available to assist with general road safety improvement at schools and can be used to enhance existing or proposed traffic management facilities including pedestrian crossings. It is particularly important that the approach speed of motorists is reduced in the school environment so that motorists are in a better position to react to the sometimes unpredictable behaviour of school children as well as school related activity of other motorists.

All schools should be regarded as eligible for a *school zone* provided the school environment is compatible with selection criteria specified in this manual.

2. Approval

School zones are in effect *speed zones* because they utilise speed limit signs. Installation of *school zones* on public streets therefore requires the approval of Roads and Traffic Authority NSW (RTA).

3. Definitions

DTR – Direction to restrict.

School children activity – all footpath activity including walking, cycling, playing, waiting, crossing and vehicle pickup/setdown on a school frontage road.

School frontage road – any road adjacent to any part of a school.

School precinct – an area encompassing all school frontage roads with school children activity.

School zone – a section of one or more roads adjacent to a school defined by *school zone* signs with a part–time speed limit lower than the otherwise prevailing limit. The *school zone* operates only during the times indicated on the sign(s), on school days or specified days as appropriate.

Signs

END SCHOOL ZONE (R3–210) sign – a regulatory sign used to identify the end of a school zone, indicating the speed limit beyond the school zone.

SCHOOL ZONE (R3–209), (R3–211) sign – a regulatory sign used to identify the start of a school zone, indicating the reduced speed limit and the times and days of operation.

4. Speed limits

The appropriateness of the full time speed limit (general state limit or otherwise) should be considered prior to introducing a *school zone*. *School zone* speed limits are as follows:

- 60 km/h *school zone* – within 80, 90 and 100 km/h speed zones
- 40 km/h *school zone* – within 50, 60 and 70 km/h speed zones.

4.1 End school zone

All *school zones* require the use of a speed limit sign at the end of a *school zone* to advise drivers of the speed limit beyond the *school zone*. This is a requirement of the *Motor Traffic Regulations* under the *Traffic Act 1909*. This speed limit is normally, but not necessarily, the limit that applied on the approach to the *school zone*.

Where the general state speed limit applies, a 100 km/h speed limit should be displayed on the END SCHOOL ZONE (R3–210) sign or use the SPEED DE–RESTRICTION (R4–2) sign.

4.2 Direction to Restrict

School zone signs are prescribed in the *Motor Traffic Regulations* under the *Traffic Act 1909*, as a speed limit sign and therefore a *school zone* must be approved by the RTA. Both a sample blank *Direction to Restrict* (DTR) form as well as a sample filled in DTR form are included in Appendix A. A DTR form must be completed and approved by the RTA. A hard copy record must also be maintained by the RTA. See also Section 11, *Regulations*.

5. Selection criteria

There are no prerequisite traffic management facilities required for the implementation of a *school zone*. On the other hand, the existence of traffic signals, pedestrian bridge or other pedestrian and traffic management facilities does not preclude a school from having a *school zone*.

All urban and rural road school frontage roads can be considered for the provision of a *school zone*. There are two exceptions.

School zones must not be installed on:

- six lane roads
- four lane roads with parking restrictions in the form of '*Clearways'*, '*No Stopping'* or '*No Standing'*. These restrictions would normally be in force because of traffic capacity problems. The period of the restriction would cover peak or longer periods in the day. The restriction would cover a substantial length of the road. Short lengths of parking restrictions e.g. near intersections, bus zones, etc., would **not** preclude a *school zone* being introduced.

Where this type of road is the frontage to the school, every effort should be undertaken to relocate pedestrian access and activity to another frontage (if one exists). If this is not possible, enhancement of traffic or pedestrian management should be considered e.g. guardfence, safety fence, additional CHILDREN (W6–3) & SCHOOL (W8–14) warning signs and improving existing pedestrian facilities.

5.1 Pre schools

School zones are not intended for implementation at pre schools.

School zones are not appropriate at pre schools for a number of reasons:

- the success and compliance with *school zones* relies heavily on the presence of pedestrian footpath activity. This level of activity does not occur at pre schools and therefore the necessity to slow down is not always evident to motorists.
- pre school children are escorted into the school property by parents and therefore the level of risk is significantly reduced in comparison to a primary or infants school where many children are unaccompanied on or near the road
- pre schools are often located in converted residential premises and are therefore not readily identified by motorists.

5.2 Other exclusions

On some school frontage roads the presence of a *school zone* will add little to the overall safety of the school environment, for example:

- in rural situations with wide setbacks, greater than 20 m, where no children walk to school and children are picked up or set down near access gates located well clear of the carriageway

- minor dead end road frontages where speeds are likely to be below the *school zone* speed limit.

In these and other similar circumstances a *school zone* need not be implemented if the agreement of the school principal is obtained. However this does not preclude reconsideration at a later date. These cases should be documented for future reference.

6. Length

School zones extend along the school frontage.

The minimum length of a *school zone*, on the main school frontage, should generally be not less than:

- 200 metres – where the *school zone* speed limit is 40 km/h
- 400 metres – where the *school zone* speed limit is 60 km/h.

Where a *school zone* is also installed on a secondary school frontage, the length of the *school zone* may be considerably less than that specified for the main frontage.

The actual lengths of *school zones* should be determined from the needs of the individual school, having regard for the type of road, traffic volume, traffic speed, visibility and road conditions.

Where possible the *school zone* on the main school frontage should be installed such that the point at which most students enter and leave the school is centred within the *school zone*. However this does not necessarily apply where an offset *school zone* is used. See Section 9.6, *Offset school zones*.

The existence and location of school crossing facilities such *as children's crossings* with or without a School Crossing Supervisor (lollipop person), *marked pedestrian crossings*, or *pedestrian refuges* should be taken into account in determining the length of the *school zone*. The *school zone* should extend over a length sufficient to include any such facilities in the immediate proximity of the school.

Where two schools are nearby, both independently satisfying the selection criteria, one continuous *school zone* serving both schools may be appropriate. Under these circumstances repeater signs should be considered if the length is significantly greater than the lengths specified above.

7. Consultation

All schools should be regarded as eligible for a *school zone* provided the school environment is compatible with the requirements of Section 5, S*election criteria*.

In eligible cases there must be adequate consultation, via the school Principal, with representatives of the school community (e.g. Parents and Citizens Association / School Council), local government and the

Police. The local Traffic Committee may be an appropriate forum for this process.

8. Times of operation

The times of operation should generally fall within the 8.00 AM – 9.30 AM and 2.30 PM – 4.00 PM time bands.

The actual times displayed on the signs must be a minimum one hour duration in the morning and one hour duration in the afternoon. Times must start and end on the hour or half hour interval. Times starting or finishing on the quarter hour are not permitted. The full one and a half hour times can be used and may be appropriate in urban areas to capture the start and finishing times of all schools.

All efforts must be made to ensure that consistent times are applied, on an area wide basis, to all schools within that area.

8.1 Unusual circumstances

For schools that fall outside the time bands specified above the closest full hour should be used.

Some schools have buildings on both sides of the road and may request *school zones* for an extended period throughout the day. In these circumstances it is preferable that a *school zone* **not** operate beyond the one and a half hour, morning and afternoon, time bands. Periods outside the morning and afternoon peaks are likely to have little pedestrian and vehicular activity and therefore the reason to reduce speed will not be obvious to motorists. Alternative measures to maintain an acceptable level of safety should be applied, e.g. if a *children's crossing* exists then the flags could be displayed for the whole duration of the school day.

8.2 School Crossing Supervisors

School zones of one and a half hour duration in the morning and afternoon do not compel School Crossing Supervisors to work for the full one and a half hour duration of the *school zone*. In general School Crossing Supervisors are contracted to work one hour in the morning and one hour in the afternoon. Their times of operation should coincide with the peak one hour period contained within the *school zone* time bands. For further information see RTA's, *School Crossing Supervisor Scheme*.

9. Signs and markings

All *school zone* signs should be supplemented with yellow pavement patches. The purpose of the patch is to increase the conspicuity of the zone.

Two types of signs are available to define a *school zone*, depending on whether the school has "standard" or "non–standard" holidays.

9.1 Standard holidays

The following sign should be used at all government schools and at other schools having common school holidays as notified by the Minister for Education and Training as school holidays.

At the start of the *school zone*, a SCHOOL ZONE (R3–209) sign must be installed on each side of the road, see Figure 1, *School zone signs*.

At the end of the *school zone*, a END SCHOOL ZONE (R3–210) sign must be installed, see Figure 1, *School zone signs*.

9.2 Non–standard holidays

The following sign is for use at schools having school holidays substantially different to those notified by the Minister for Education and Training as school holidays (government school holidays). Discretion should be used to determine the need for this type of sign. At locations where school holidays are not substantially different to those notified by the Minister for Education and Training, it may be appropriate to use the *standard holidays* SCHOOL ZONE (R3–209) sign.

Where the school has *non–standard* holidays, at the start of the *school zone*, a SCHOOL ZONE (R3–211) sign must be installed on both sides of the road, see Figure 1, *School zone signs*.

At the end of the *school zone*, a END SCHOOL ZONE (R3–210) sign must be installed, see Figure 1, *School zone signs*.

The SCHOOL ZONE (R3–211) sign for schools having *non–standard* holidays must have a central vertical hinge with provision for locks. The sign(s) must be locked in the open position during specified school days and closed and locked during school holidays applicable to the school for which they are erected. An undertaking should be obtained from the school Principal. A pro forma is provided in Appendix B, *Principal's undertaking*. If the Principal's undertaking can not be obtained then other arrangements should be made.

9.3 Sign sizes

The size of the *school zone* sign is important to the legibility of the sign. The sign sizes to be used are shown in Table 1, *Sign sizes*. Consideration should also be given to the visual environmental impact of the signs.

Sign size	Comments
A	Generally used in the urban residential areas on local

	roads.
B	Use in either urban or rural environments on state and regional roads. Can be used in rural areas on local roads. Avoid use in urban residential areas.
C	Use only in exceptional circumstances where signs compete with other distractions, or on high speed rural roads where advance warning may be required. Must not be used in urban residential areas.

Table 1 – Sign sizes

For dimensioned drawings of the sign faces, refer to:

- Figure 2, Regulatory sign R3–209
- Figure 3, Regulatory sign R3–210
- Figure 4, Regulatory sign R3–211.

Care should be taken in the selection of posts and footings which will vary according to the size of the sign. Posts and footings should comply with RTA requirements. Also minimum distances to the kerb and to other services must be observed. For general guidance refer to *Traffic Engineering Manual*, Part 20, *Ordering, Erection and Maintenance of Signs*.

Where flashing yellow lights are mounted on the sign structure, refer also to Section 10, *Flashing yellow lights.*

9.4 Pavement marking

A square patch is installed on the road pavement adjacent to all SCHOOL ZONE (R3-209), (R3-211) signs installed on the left hand side of the carriageway. The purpose of the patch is to act as an additional cue to increase motorists' awareness of the *school zone*. The patch consists of a hatched "40" or "60" black numeral marked on a yellow background contained within a white border. The pavement marking material used for installing this patch shall conform with the requirements of Appendix C, *Supply and application of school zone pavement markings.* The detailed dimensions and position of the square patch are given in Figure 5 *Yellow patch* and Figure 6, *Standard position of signs and yellow patch.*

9.5 Site layout

Refer to Figure 7, *Typical school zone layout in rural area* and Figure 8, *Typical school zone layout in urban area*. Note the features common to both layouts, i.e. SCHOOL ZONE (R3–209), (R3–211) signs are displayed on both sides of the road forming a gateway effect and conforming to current speed zoning practice. The END SCHOOL ZONE (R3–210) sign is displayed only on the left side of the road and should be the same size as the SCHOOL ZONE (R3–209), (R3–211) sign.

Pavement patches are marked on each approach to the *school zone*, see Section 9.4, *Pavement marking*.
In some situations where roads have very wide shoulders it would beneficial to construct kerb blisters so that signs can be erected closer to the edge of the carriageway. This type of treatment is recommended for maximum effect, but is not mandatory.
SCHOOL ZONE (R3–209), (R3–211) signs should be erected on both sides of the road, opposite each other, to form a gateway effect.

9.6 Offset *school zones*

Offset *school zones* are permissible, however, they would only normally apply to rural roads with full time speed limits above 70 km/h. Typical application is at locations where school activity is concentrated in a small area around the access point and it would be beneficial to have a longer length of *school zone* on the approach side of the access point. See Figure 9, *Typical offset school zone layout*.
A *school zone* applying to one side of the road only is not allowed.

10. Flashing yellow lights

Flashing yellow lights may be installed over the SCHOOL ZONE (R3–209), (R3–211) sign typically on the left hand side of the carriageway on each approach to the school where greater emphasis of the **reduced speed limit** is needed. Factors affecting this decision include the pedestrian behaviour, traffic volume and speed , visibility, road geometry and topography. Flashing lights would most commonly be applicable in 100 km/h speed zones on higher traffic volume roads.
Use in urban areas, both residential and commercial, is not encouraged. Over use of flashing lights should be avoided as this would lead to diminishing their importance at the most critical locations.
Where used, the flashing yellow lights will be activated by a programmable clock only during the time periods on school days or specified days as indicated on the sign.
All flashing light assemblies must comply with RTA requirements, drawings and practices as follows:

- RTA drawings, VM631–1 to VM631–8
- *Flashing Warning Lights, Equipment Specification – FWL/1*
- *Advance Flashing Warning Lights, Installation Specification – SI/FWL/1*.

For further information on these drawings and specifications, contact Traffic Technology Branch (Oxford Street), phone (02) 9375–3275.

11. Regulations

The *Motor Traffic Regulations* under the *Traffic Act 1909,* currently defines a *school zone* as a traffic control sign. The *Regulations* are

currently being amended so that *school zone* signs are prescribed as speed limit signs. A further change to the *Regulations* will allow a *school zone* sign to be displayed at each entrance to a network of streets so that the *school zone* applies to each street within the school precinct without the need for displaying a sign in each individual street. These changes will have implications for enforcement and will also reduce the number of signs required to implement a *school zone* in a network of streets.

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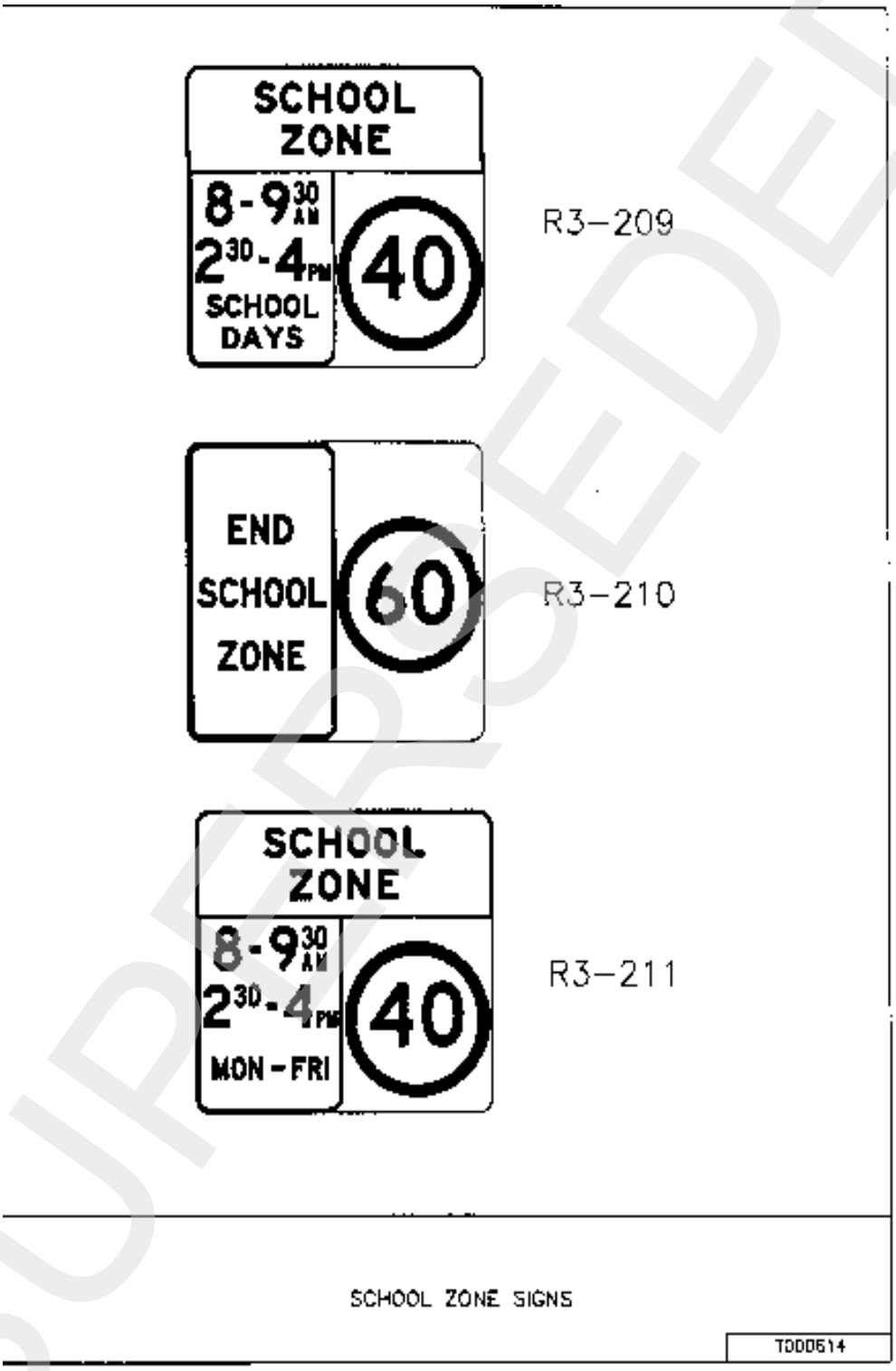
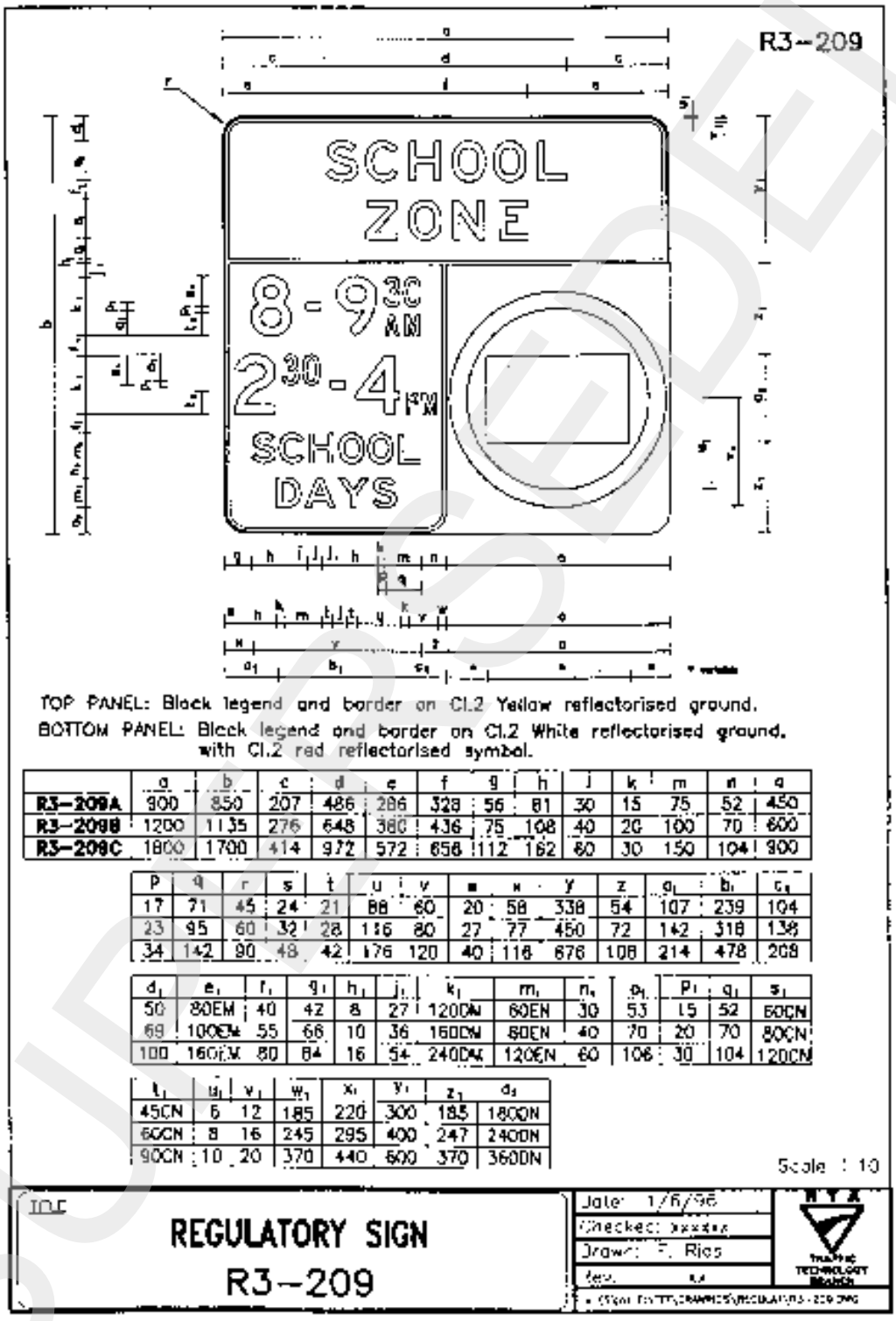


Figure 1



TOP PANEL: Black legend and border on Cl.2 Yellow reflectorised ground.
BOTTOM PANEL: Black legend and border on Cl.2 White reflectorised ground, with Cl.2 red reflectorised symbol.

	a	b	c	d	e	f	g	h	j	k	m	n	q
R3-209A	900	850	207	486	286	328	56	81	30	15	75	52	450
R3-209B	1200	1135	276	648	380	436	75	108	40	20	100	70	600
R3-209C	1800	1700	414	972	572	656	112	162	60	30	150	104	900

	p	q	r	s	t	u	v	w	x	y	z	a_1	b_1	c_1
R3-209A	17	71	45	24	21	88	60	20	58	338	54	107	239	104
R3-209B	23	95	60	32	28	116	80	27	77	450	72	142	318	138
R3-209C	34	142	90	48	42	176	120	40	116	676	108	214	478	208

	d_1	e_1	f_1	g_1	h_1	j_1	k_1	m_1	n_1	p_1	P_1	q_1	s_1
R3-209A	50	80EM	40	42	8	27	120DN	60EN	30	53	15	52	60CN
R3-209B	69	100EM	55	66	10	36	160DN	80EN	40	70	20	70	80CN
R3-209C	100	160EM	80	84	16	54	240DN	120EN	60	106	30	104	120CN

	t_1	u_1	v_1	w_1	x_1	y_1	z_1	d_2
R3-209A	45CN	6	12	185	220	300	185	180DN
R3-209B	60CN	8	16	245	295	400	247	240DN
R3-209C	90CN	10	20	370	440	600	370	360DN

Scale : 10

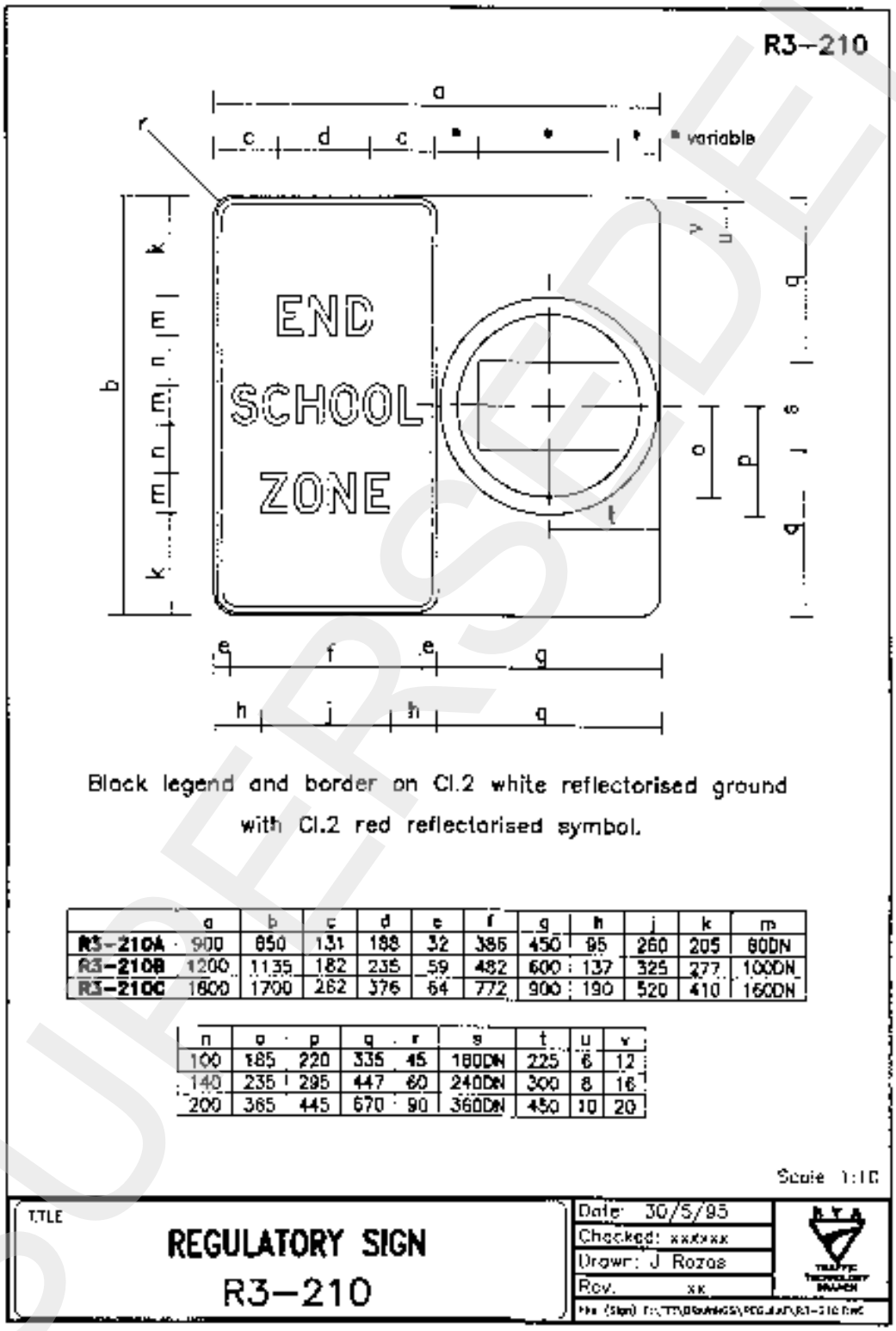
IDLE

REGULATORY SIGN

R3-209

Date: 1/6/96
Checked: xxxxxx
Drawn: F. Rios
Appr. xx

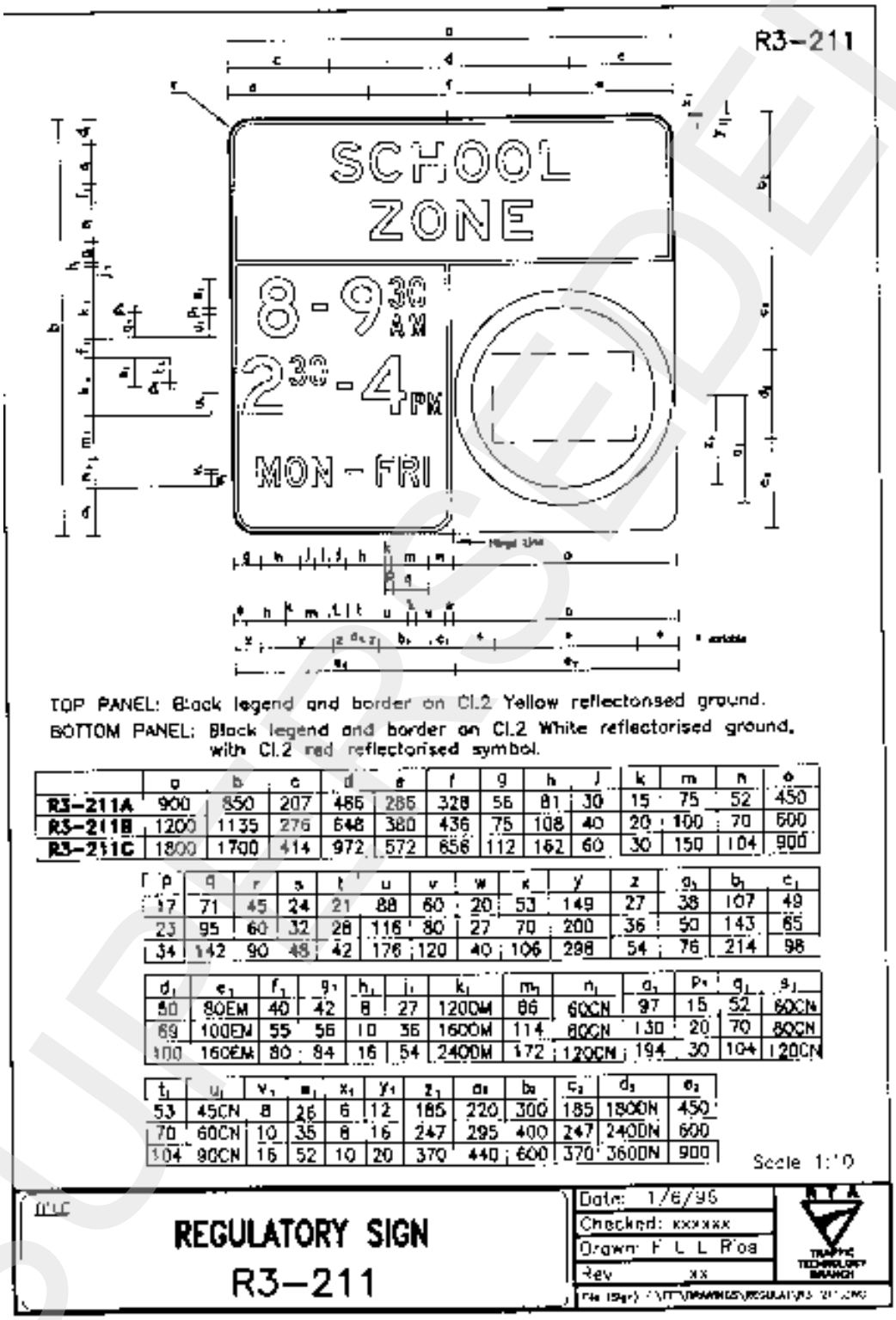
Figure 2



	a	b	c	d	e	f	g	h	j	k	m
R3–210A	900	850	131	188	32	386	450	95	260	205	80DN
R3–210B	1200	1135	182	235	59	482	600	137	325	277	100DN
R3–210C	1600	1700	262	376	64	772	900	190	520	410	160DN

n	o	p	q	r	s	t	u	v
100	185	220	335	45	180DN	225	6	12
140	235	295	447	60	240DN	300	8	16
200	365	445	670	90	360DN	450	10	20

Figure 3



TOP PANEL: Black legend and border on Cl.2 Yellow reflectorised ground.
BOTTOM PANEL: Black legend and border on Cl.2 White reflectorised ground, with Cl.2 red reflectorised symbol.

	a	b	c	d	e	f	g	h	j	k	m	n	o
R3-211A	900	850	207	486	286	328	56	81	30	15	75	52	450
R3-211B	1200	1135	276	648	380	436	75	108	40	20	100	70	600
R3-211C	1800	1700	414	972	572	656	112	162	60	30	150	104	900

p	q	r	s	t	u	v	w	x	y	z	g_1	b_1	c_1
17	71	45	24	21	88	60	20	53	149	27	38	107	49
23	95	60	32	28	116	80	27	70	200	36	50	143	65
34	142	90	48	42	176	120	40	106	298	54	76	214	98

d_1	e_1	f_1	g_1	h_1	j_1	k_1	m_1	n_1	a_1	p_1	q_1	s_1
50	80EM	40	42	8	27	1200M	86	60CN	97	15	52	60CN
69	100EM	55	56	10	36	1600M	114	80CN	130	20	70	80CN
100	160EM	80	84	16	54	2400M	172	120CN	194	30	104	120CN

t_1	u_1	v_1	w_1	x_1	y_1	z_1	a_2	b_2	c_2	d_2	e_2
53	45CN	8	26	6	12	185	220	300	185	1800N	450
70	60CN	10	35	8	16	247	295	400	247	2400N	600
104	90CN	16	52	10	20	370	440	600	370	3600N	900

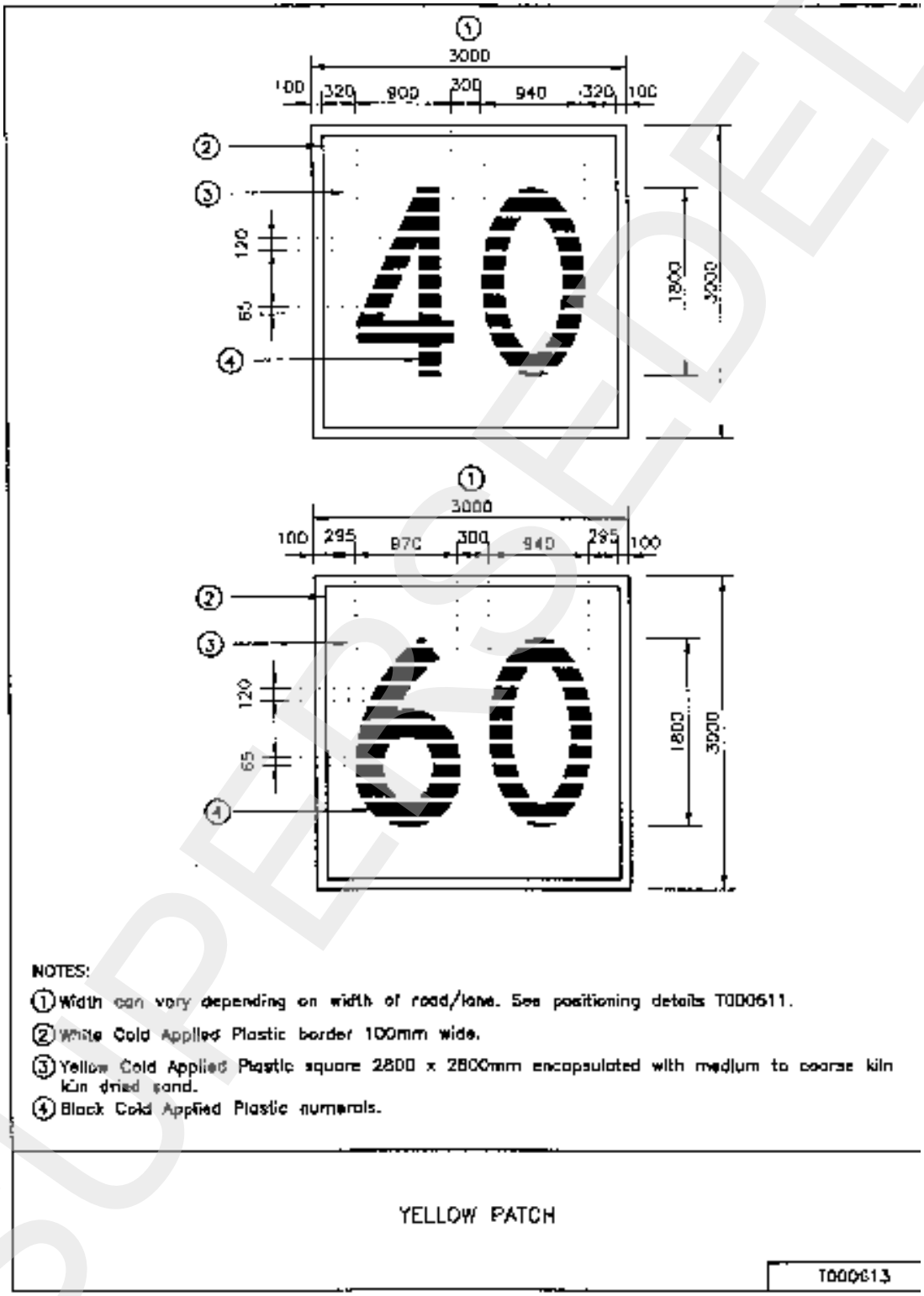
Scale 1:10

MUTCD

REGULATORY SIGN
R3-211

Date: 1/6/95
Checked: xxxxxx
Drawn: F L L R'os
Rev xx

Figure 4



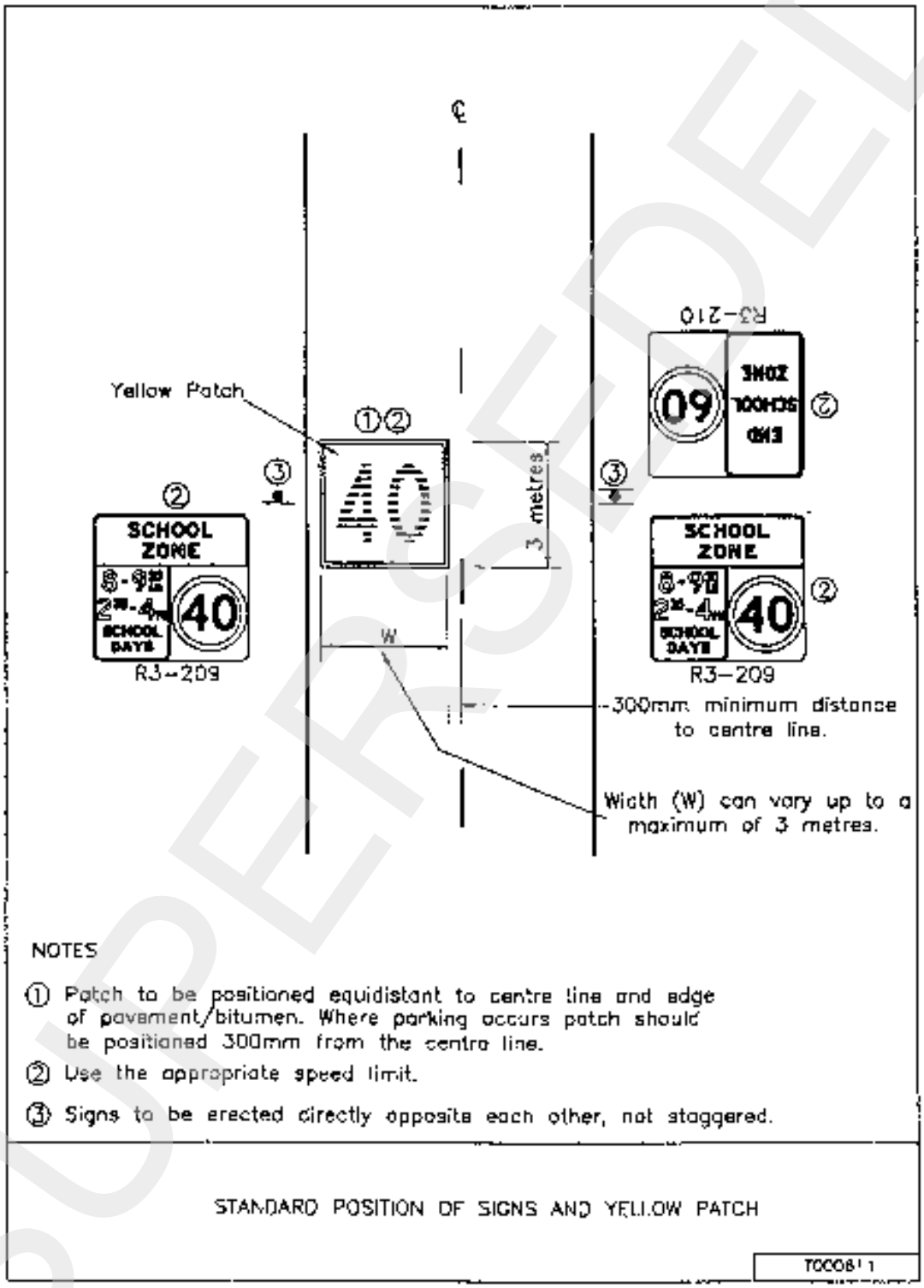
NOTES:

1. Width can vary depending on width of road/lane. See positioning details T000611.
2. White Cold Applied Plastic border 100mm wide.
3. Yellow Cold Applied Plastic square 2800 x 2800mm encapsulated with medium to coarse kiln kiln dried sand.
4. Black Cold Applied Plastic numerals.

YELLOW PATCH

T000613

Figure 5



NOTES

① Patch to be positioned equidistant to centre line and edge of pavement/bitumen. Where parking occurs patch should be positioned 300mm from the centre line.

② Use the appropriate speed limit.

③ Signs to be erected directly opposite each other, not staggered.

STANDARD POSITION OF SIGNS AND YELLOW PATCH

TDC08/11

Figure 6

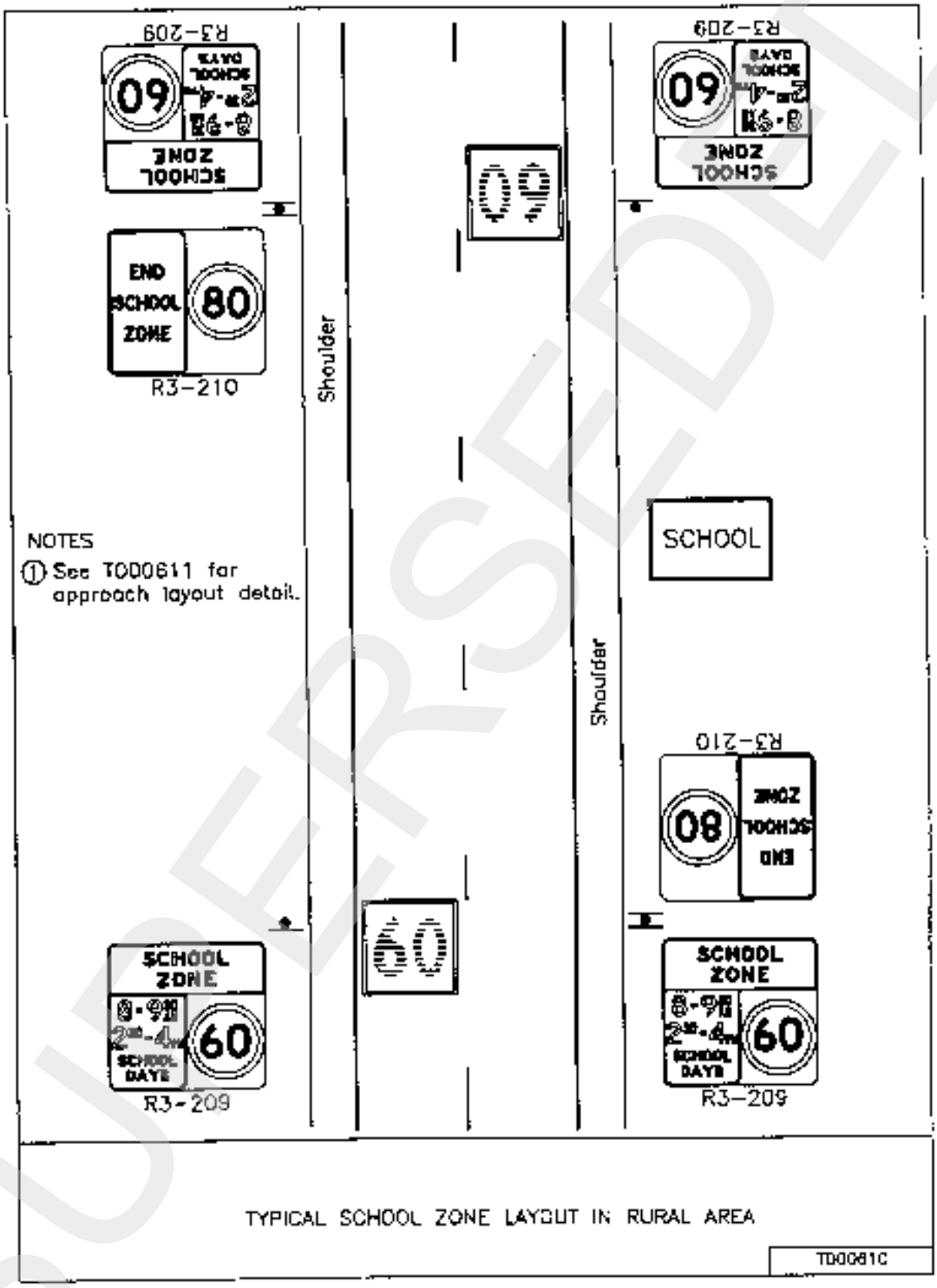


Figure 7

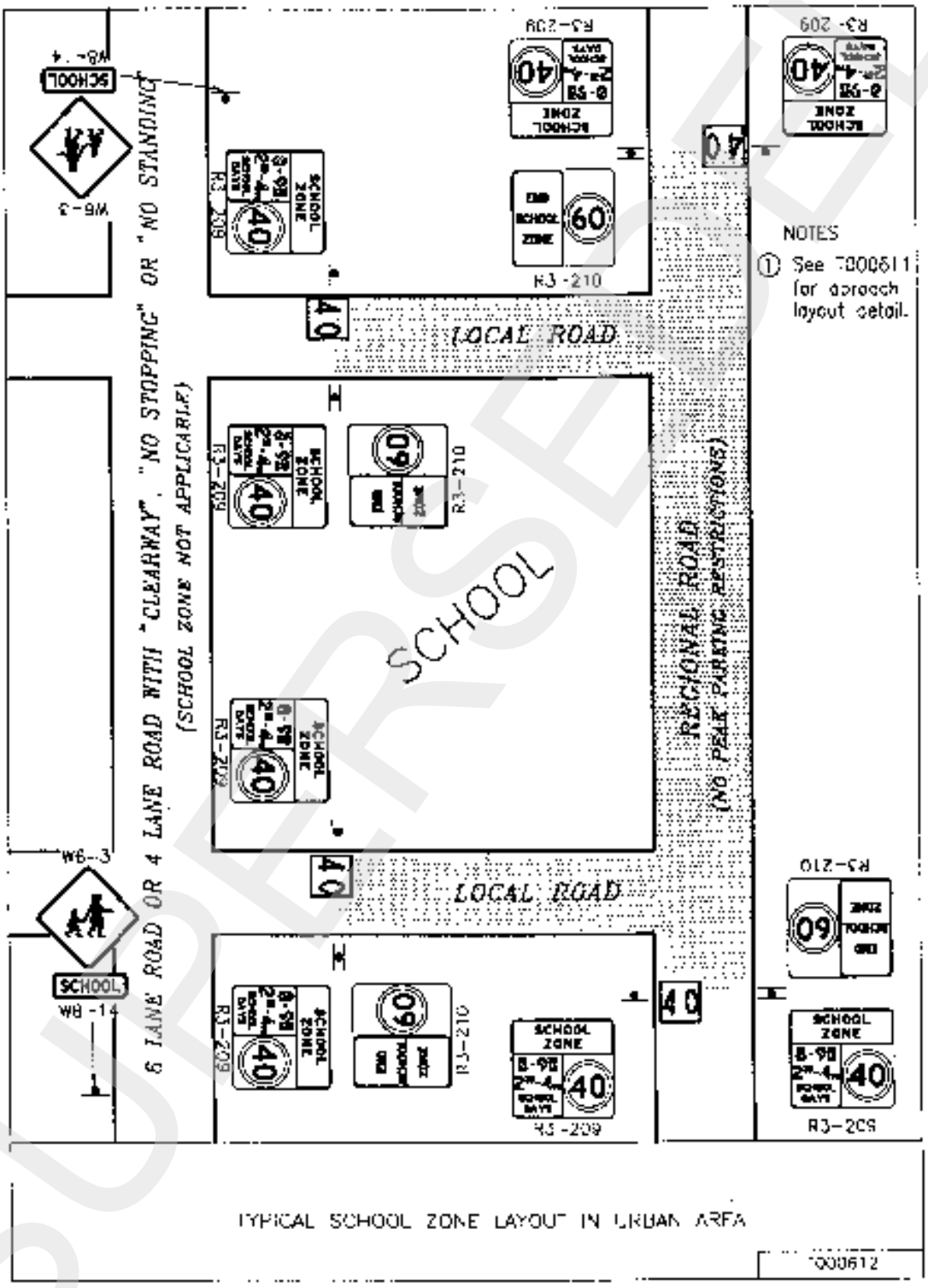


Figure 8

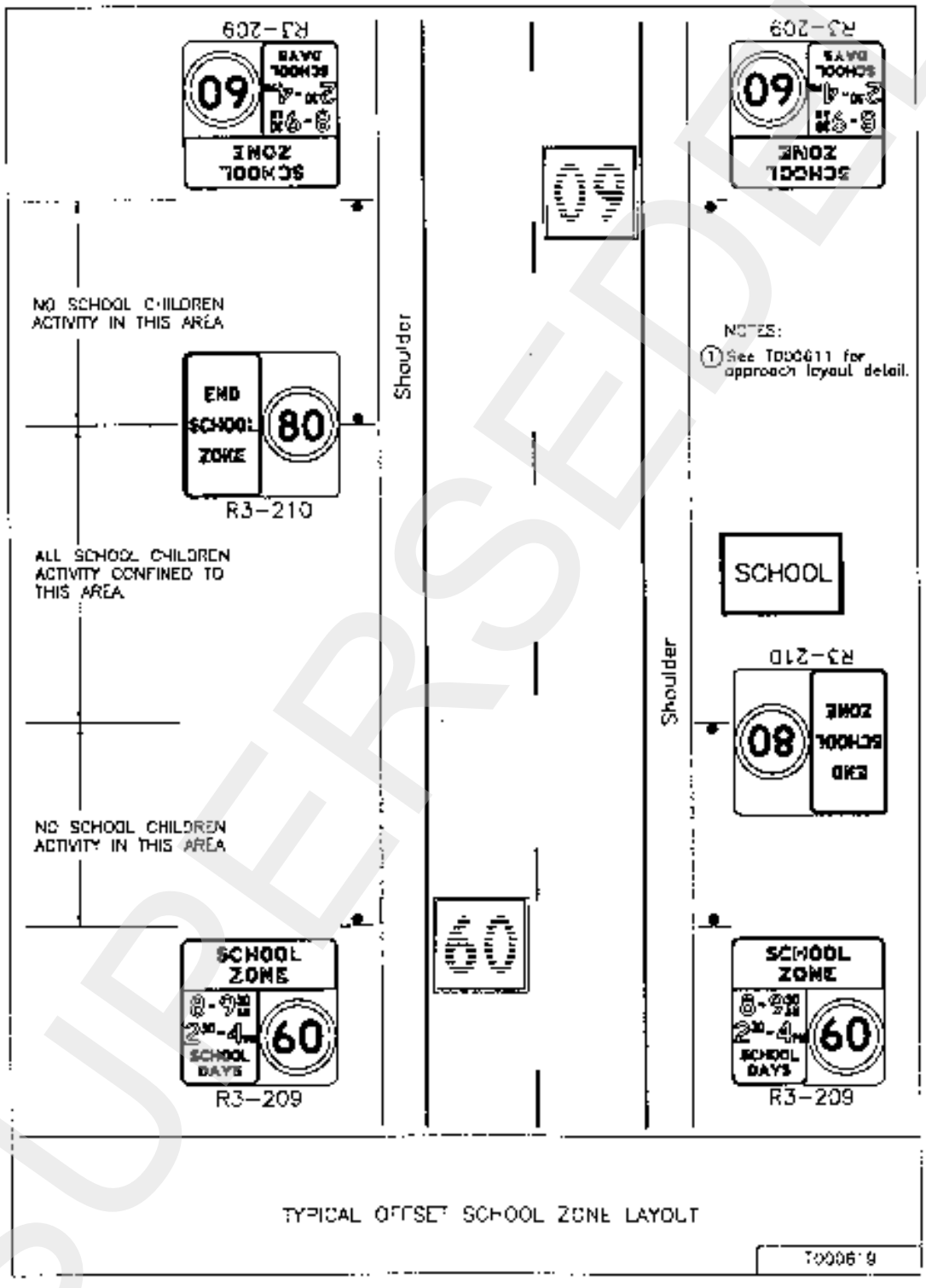


Figure 9

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Appendix A Direction to Restrict

A.1 Sample blank DTR

DTR No.:

Direction to Restrict
(Fixing a speed limit on a length of public street)

Traffic Act 1909 Section 4A

For the purpose of and by virtue of the power conferred by Section 4A (3) of the *Traffic Act 1909*, I hereby revoke any previous Direction in so far as it applies to the length of public street as hereinafter described and fix a speed limit of km/h on that length applicable during the times and days specified on the prescribed *school zone* sign.

Signed _____

Name _____

Designation _____

Date _____

Date signs erected _____

Revoked/Varied by Direction to Restrict No. _____

Date _____

A.2 Sample filled in DTR

DTR No.: 411/3

Direction to Restrict

(Fixing a speed limit on a length of public street)

Traffic Act 1909 Section 4A

For the purpose of and by virtue of the power conferred by Section 4A (3) of the *Traffic Act 1909*, I hereby revoke any previous Direction in so far as it applies to the length of public street as hereinafter described and fix a speed limit of 40 km/h on that length applicable during the times and days specified on the prescribed *school zone* sign.

Shire of Sutherland.
Hall Drive, between the intersection of Barnes Crescent and 50 metres south of Bradman Road, Menai.
School zone applicable from 8.30AM – 9.30AM and 2.30PM – 3.30PM school days.

Signed

Name Fred Smith

Designation Traffic Manager

Date 4 November 1996

Date signs erected 8 November 1996

Revoked/Varied by Direction to Restrict No._____

Date_____

Appendix B Principal's undertaking

The following is a proforma of a suitable undertaking to be completed by a school Principal.

Undertaking

I, the undersigned, _____ of

_____ (school) give an undertaking that the relevant *school zone* sign assemblies at the start of the *school zone* will be locked in the open position during specified school days and closed and locked during school holidays applicable to my school for which they are erected.

Signed:_____

Designation:_____

Address:_____

_____

_____

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Appendix C Supply and application of *school zone* pavement markings

1. Scope

This specification sets out the material requirements for supply and application of *school zone* pavement marking material.

2. References

The following documents are referred to in this specification:

RTA specifications

RTA 3360, *Two part cold applied marking material*

RTA QA Specification R141, *Pavement markings*

RTA manual

TTT–037, *School zones*

3. Types of markings

Detailed dimensions, colours and position of *school zone* pavement markings are given in RTA manual, *School zones*.

4. Material requirements

Two part cold applied material, conforming with the requirements of RTA Specification 3360, shall be used for installing the *school zone* pavement markings. The material shall not contain any glass beads.

5. Application

The *school zone* pavement markings shall be applied in accordance with the requirements of RTA R141, with the following special provisions.

Glass beads

The marking is designed for daylight hours only and shall not contain any reflective glass beads.

Surface preparation

Where the surface of the pavement is concrete or is smooth or is polished, a tack coat of primer with a proven compatibility with the two part cold applied plastic material, shall be applied in accordance with the manufacturer's recommendations.

Method of application

On a clean, dry and oil free surface, a yellow base coat of cold applied plastic material shall be applied at a rate of 0.5 litres/m^2, and spread on to this, 3 kg/m^2 of clean 16/30 grade crushed aggregate, while the surface is still fluid. When the product has fully cured, all loose aggregate material shall be removed before recoating the area with another layer of yellow cold applied plastic material at a rate of 0.5 litre/m^2 to encapsulate the aggregate and ensure a finished dry film thickness of 1.5 mm to 2 mm.

Following the instructions for the yellow cold applied plastic material, apply a border of white cold applied plastic material.
The black “40” or “60” numeral shall then be applied at a minimum dry film thickness of 0.2 mm.
Refer to drawing number T000613, contained in the RTA manual, *School Zones*, for dimensions of this pavement marking and the numerals. An appropriate stencil shall be used to ensure that the numerals conform to this drawing.

Other properties of school zone pavement marking

The material used shall have a proven capability to adhere to itself where repair or re-coating of the marking becomes necessary.

Notes

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