

CAPRICORN MUNICIPAL DEVELOPMENT GUIDELINES

GEOMETRIC ROAD DESIGN

D1

DESIGN GUIDELINES

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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 the 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

D1.01 SCOPE

1. This section sets out the Guidelines developed specifically for the design of subdivision roadwork's using principles of street design to ensure safety and improved amenity and to reduce pedestrian/vehicular conflicts.
2. A fundamental requirement of the design process is for designers to determine the vehicle speed which is deemed acceptable for a particular subdivision or section of road. The concept of designing to regulatory street speeds is contrary to the current principles of subdivision road design.
3. All relevant design principles must be integrated in the development of the road network. A careful balance is required between maximising amenity, safety and convenience considerations and those related to the drivers' perception of driving practice.
4. This Guideline shall be read in conjunction with the IMEAQ publication Design Guidelines for Subdivisional Streetworks - 'Queensland Streets'.
5. Situations outside the scope of this document and Queensland Streets shall refer to requirements of Department of Transport and Main Roads (DTMR) and Austroads.

D1.02 AIMS

1. The provision of a road system within a subdivision is to be designed so as to achieve the following aims:
 - Provide convenient and safe access to all allotments for pedestrians, vehicles and cyclists.
 - Provide safe, logical and hierarchical transport linkages with existing street systems.
 - Provide appropriate access for buses, emergency and service vehicles.
 - Provide a quality product that minimises maintenance costs.
 - Provide a convenient way for public utilities.
 - Provide an opportunity for street landscaping.
 - Provide convenient parking for visitors.
 - Have appropriate regard for the climate, geology and topography of the area.

D1.03 REFERENCE AND SOURCE DOCUMENTS

(a) Council Guidelines

All Guidelines for Design and Construction Specifications.

(b) Australian Standards

- | | | |
|----------------|---|--------------------------------------|
| AS 2890.1 to 6 | - | Parking facilities |
| AS 1158 | - | Lighting for roads and public spaces |

(c) QLD State Authorities

Department of Housing and Public Works
- Queensland Development Code

(d) Other**AUSTROADS**

- Guide to Road Design
- Guide to Traffic Management

The Institute of Municipal Engineering Australia, QLD Division.
- Design Guidelines for Subdivisional Streetworks, 1995 - 'Queensland Streets'.

Capricorn Municipal Development Guidelines.
- Standard Drawings.

ARRB Special Report No. 33, L E Comerford: A Review of Subdivision Road Design Criteria.

Joint Venture for More Affordable Housing – 1990: Australian Model Code for Residential Development. (AMCORD)

Stapleton, C 1984: Streets Where We Live – A Manual for the Design of Safer Residential Estates.

Stapleton, C 1988, Dept. of Transport South Australia: Planning & Road Design for New Residential Subdivisions.

Brindle, R 1988, ARRB: Planning & Design of the Local Distributor. Colman, J 1978, ARRB: Streets for Living.

Pak-Poy Kneebone - 1989: Research Study into Road Characteristics for Residential Development.

(e) Queensland Government – Queensland Transport Publications

PTIM - Public Transport Infrastructure Manual, June 2007.

The following order of priority for interpretation of documents will apply:

- (a) CMDG Design and Construction Specifications
- (b) CMDG Standard Drawings
- (c) Design Guidelines for Subdivisional Streetworks, 1995 - 'Queensland Streets'.
- (d) AUSTROADS Publications
- (e) Department of Transport and Main Roads publications
- (f) Queensland Development Code
- (g) Australian Standards

D1.04 CONSULTATION

1. Designers are encouraged to consult with the Local Government and other relevant authorities prior to or during the preparation of design. Designers should in addition to requirements of this Guideline ascertain specific requirements of these authorities as they relate to the designs in hand.

D1.05 PLANNING CONCEPTS

1. In new areas (as distinct from established areas with a pre-existing road pattern) each class of route should reflect its role in the road hierarchy by its visual appearance and related physical design standards. Routes should differ in alignment and design standard according to the volume of traffic they are intended to carry, the desirable traffic speed, and other factors.

***Road
Hierarchy***

2. The road pattern and width must be in conformity with that shown on any relevant area Development Control Plan. In areas not covered by these plans, the pattern and width(s) will be determined by Local Government on their merits.

Road Pattern

3. The road network for residential developments should have clear legibility.

4. The road network should reinforce legibility by providing sufficient differentiation between the road functions.

5. Wherever possible distinct landmark features such as watercourses, mature vegetation or ridge lines should be emphasised within the structural layout so as to enhance the legibility.

Legibility

6. Whilst legibility can be enhanced by introduced physical features such as pavement and lighting details, the road network should, by its inherent design and functional distinction, provide the necessary legibility.

7. The maximum number of turning movements at intersections or junctions that a visitor should be required to undertake to reach a particular address within the development should be minimised.

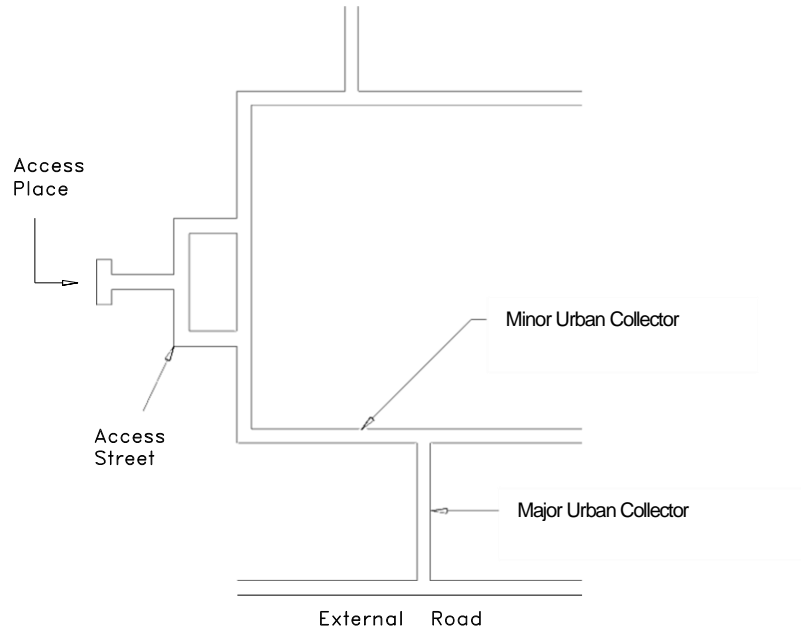
***Turning
Movements***

URBAN DESIGN CRITERIA

D1.06 ROAD HIERARCHY

1. A hierarchical road network is essential to maximise road safety, residential amenity and legibility. Each class of road in the network serves a distinct set of functions and is designed accordingly. The design should convey to motorists the predominant function of the road. A typical hierarchy is shown on Figure D1.1.

Figure D1.1 Typical Road Hierarchy



2. Streets and Roads have been classified in accordance with the recommendations of the 'Australian Model Code For Residential Development' (AMCORD) and 'Queensland Streets' and the road hierarchy shall be as defined in Tables D1.06.02 to D1.06.12. The table is considered to be a deemed-to-comply criteria solution for traffic management. Alternative solutions responding to specific site constraints or future planning considerations may be considered at the discretion of Local Government.

3. Access Place

Access Place

The lowest order road (access place) having as its primary function, residential space - amenity features which facilitate pedestrian and cycle movements, and where vehicular traffic is subservient in terms of speed and volume, to those elements of space, amenity, pedestrians and cyclists.

4. Access Street

Access Street

The next level road as a local residential street should provide a balance between the status of that street in terms of its access and residential amenity functions. Resident safety and amenity are dominant but to a lesser degree than an access place. Horizontal geometry is preferred for speed control. The use of traffic control devices should be avoided wherever possible.

5. Minor Urban Collector***Minor Urban
Collector***

The next highest order road has a residential function but also has the purpose of collecting and distributing traffic from local areas to the wider road network. A reasonable level of residential amenity and safety is maintained by restricting traffic volumes and speeds, however, amenity and resident safety do not have the same priority as access or local streets. Horizontal geometry is preferred for speed control. The use of traffic control devices should be avoided wherever possible.

6. Major Urban Collector***Major Urban
Collector***

The second highest order road within a residential development should have as its main function the conveyance of traffic generated by the development. Direct access should not be provided for single dwelling allotments for traffic volumes in excess of 3000 vpd but access can be provided to multi-unit developments and non-residential land uses.

7. Sub-Arterial / Arterial***Sub-Arterial/
Arterial***

This order road should have its main function the conveyance of traffic across urban areas, including traffic generated from connecting developments and through traffic. Direct access should not be provided to any allotments.

Table D1.06.02 Access Place- Deemed to Comply Requirements

Roadway Classification	No. of Dwellings	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade ₅ (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol			RW	CW	VW	G		P
Access Place								
Banana Shire Council	0-25	0-250	16	8.0	4	16 (12)	30	nil
Central Highlands Regional	0-25	0-250	18	8.0	4	16 (12)	30	1 x 1.2
Gladstone Regional	Refer Policy P-2014/31 in Appendix A							
Isaac Regional	0-25	0-250	18	8.0	4	16 (12)	30	nil
Livingstone Shire	0-25	0-250	16	5.5	4	16 (12)	30	nil
Maranoa Regional	0-25	0-250	18	10.0	4	12 (10)	30	nil
Rockhampton Regional	0-25	0-250	16	5.5	4	16 (12)	30	nil

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. The absolute maximum grade shall be 20% for a maximum length of 60m. The maximum length of grades less than 20% but not less than 16% shall be 60m plus 25m for each 1% the grade is less than 20%. The maximum length of any grade greater than 16% shall be 160m.
6. Cycleways to be provided within verge.

Figure D1.06.1 Urban Access Place - Standard Cross Section

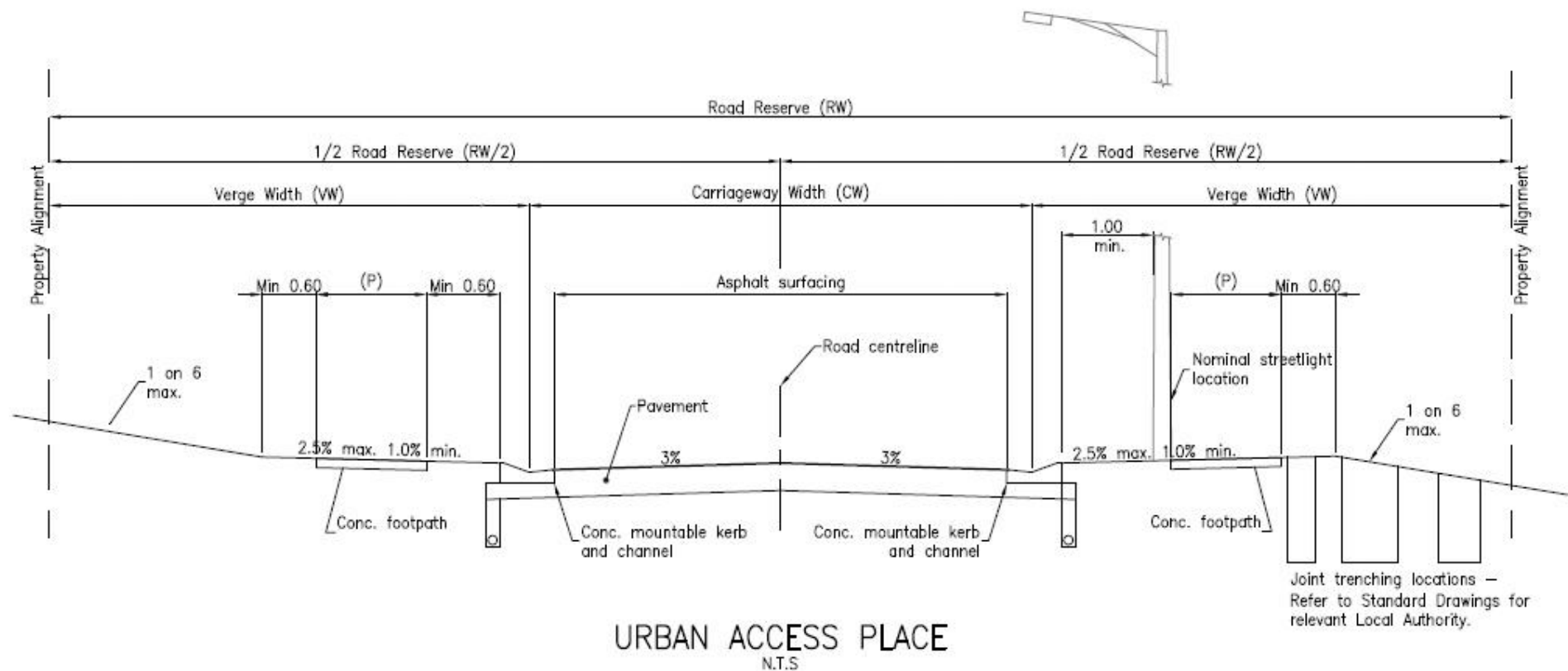


Table D1.06.03 Access Street - Deemed to Comply Requirements

Roadway Classification	No. of Dwellings	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade ₅ (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol			RW	CW	VW	G		P
Access Street								
Banana Shire	26-75	260-750	18.0	10.0	4.0	16 (12)	40	nil
Central Highlands Regional	26-50	251-500	18.0	10.0	4.0	16 (12)	40	1 x 1.2
Gladstone Regional	Refer Policy P-2014/31 in Appendix A							
Isaac Regional	26-50	251-500	18.0	10.0	4.0	16 (12)	40	nil
Livingstone Shire	26-75	251-750	16.0	7.5	4.0	16 (12)	40	nil
Maranoa Regional	26-60	251-600	18.0	10.0	4.0	12 (10)	40	nil
Rockhampton Regional	26-75	251-750	16.0	7.5	4.0	16 (12)	40	nil

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. The absolute maximum grade shall be 20% for a maximum length of 60m. The maximum length of grades less than 20% but not less than 16% shall be 60m plus 25m for each 1% the grade is less than 20%. The maximum length of any grade greater than 16% shall be 160m.
6. Cycleways to be provided within verge.

Figure D1.06.2 Urban Access Street - Standard Cross Section

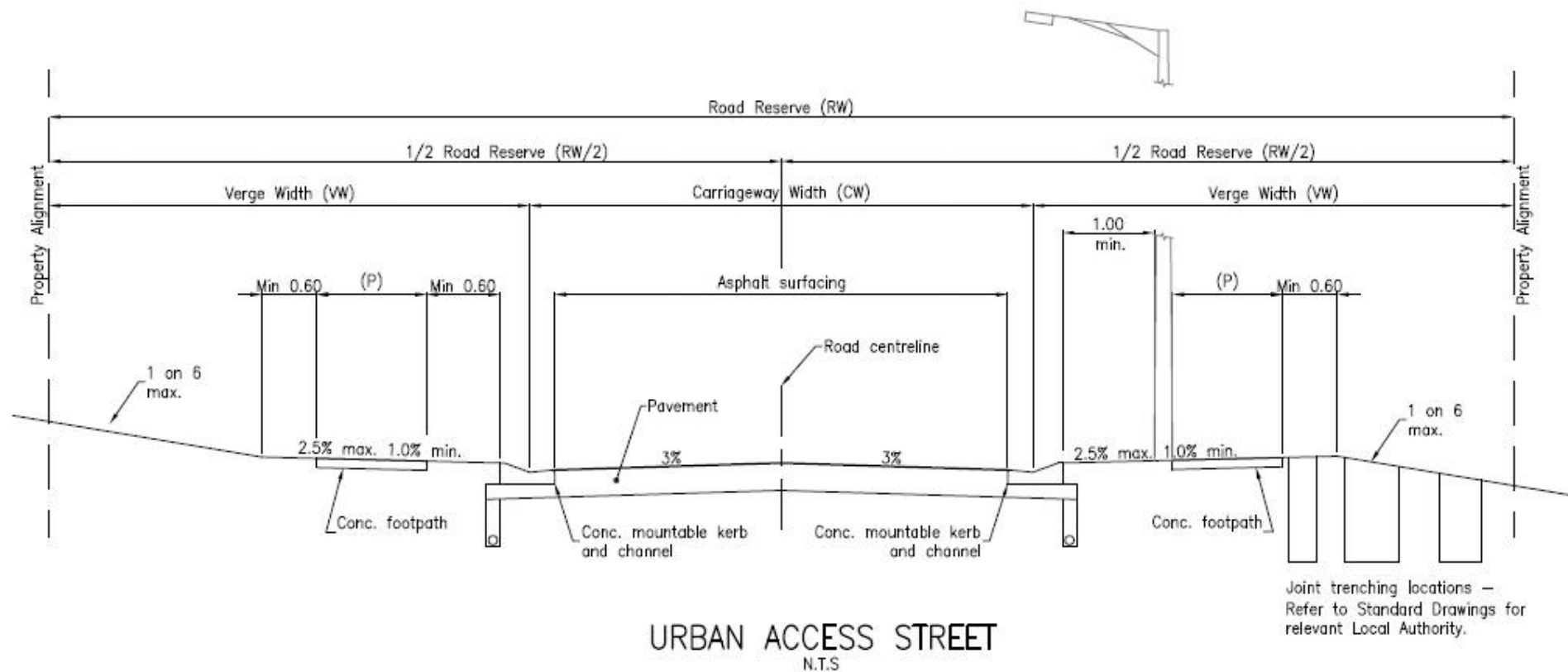


Table D1.06.04 Minor Urban Collector- Deemed to Comply Requirements

Roadway Classification	No. of Dwellings	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol			RW	CW	VW	G		P
Minor Urban Collector								
Banana Shire	76-300	760-3000	20.0	10.0	4.0	10 (8)	50	1 x 2.0
Central Highlands Regional	51-150	501-1500	20.0	10.0	4.0	8 (6)	50	1 x 2.0
Gladstone Regional	Refer Policy P-2014/31 in Appendix A							
Isaac Regional	51-150	501-1500	20.0	10.0	4.0	10 (8)	50	1 x 1.5
Livingstone Shire	76-300	751-3000	18.0	7.5	4.0	10 (8)	50	1 x 1.2
Maranoa Regional	61-150	601-1500	20.0	12.0	4.0	12 (10)	50	1 x 1.5
Rockhampton Regional	76-300	751-3000	18.0	7.5	4.0	10 (8)	50	1 x 1.2

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. Cycleways to be provided within verge.

Figure D1.06.3 Minor Urban Collector - Standard Cross Section

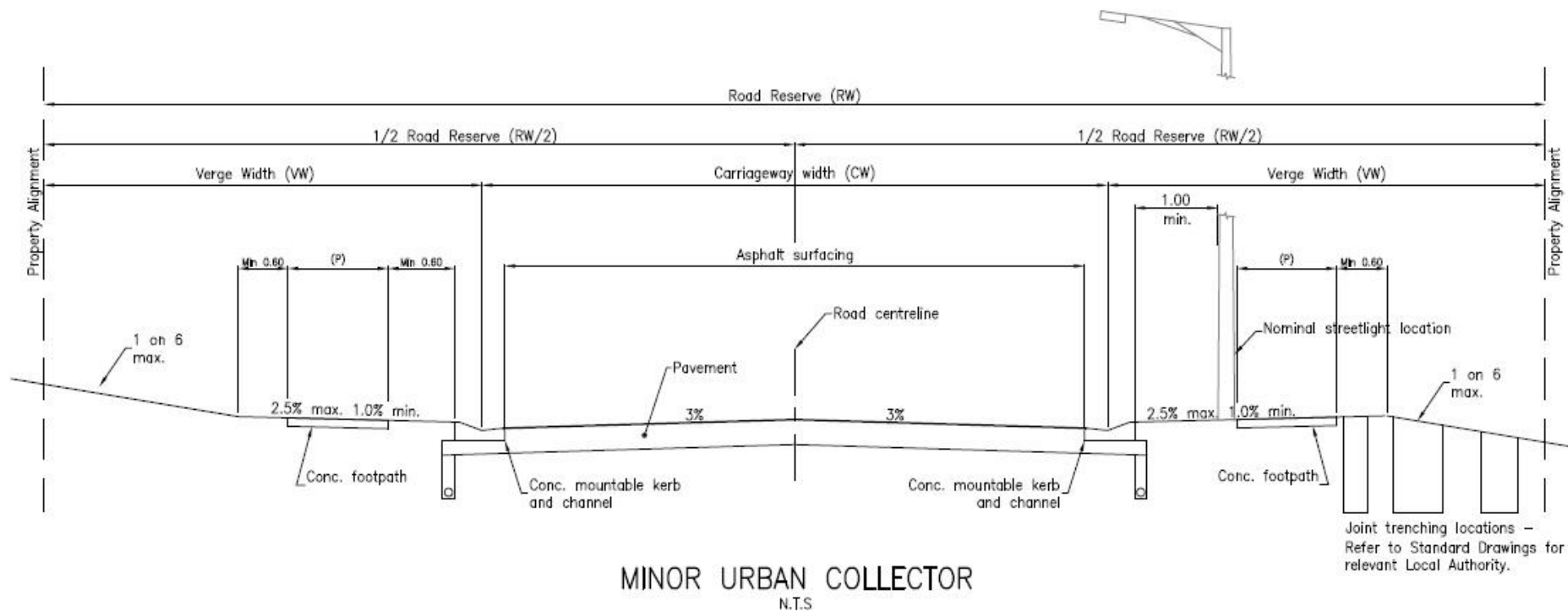


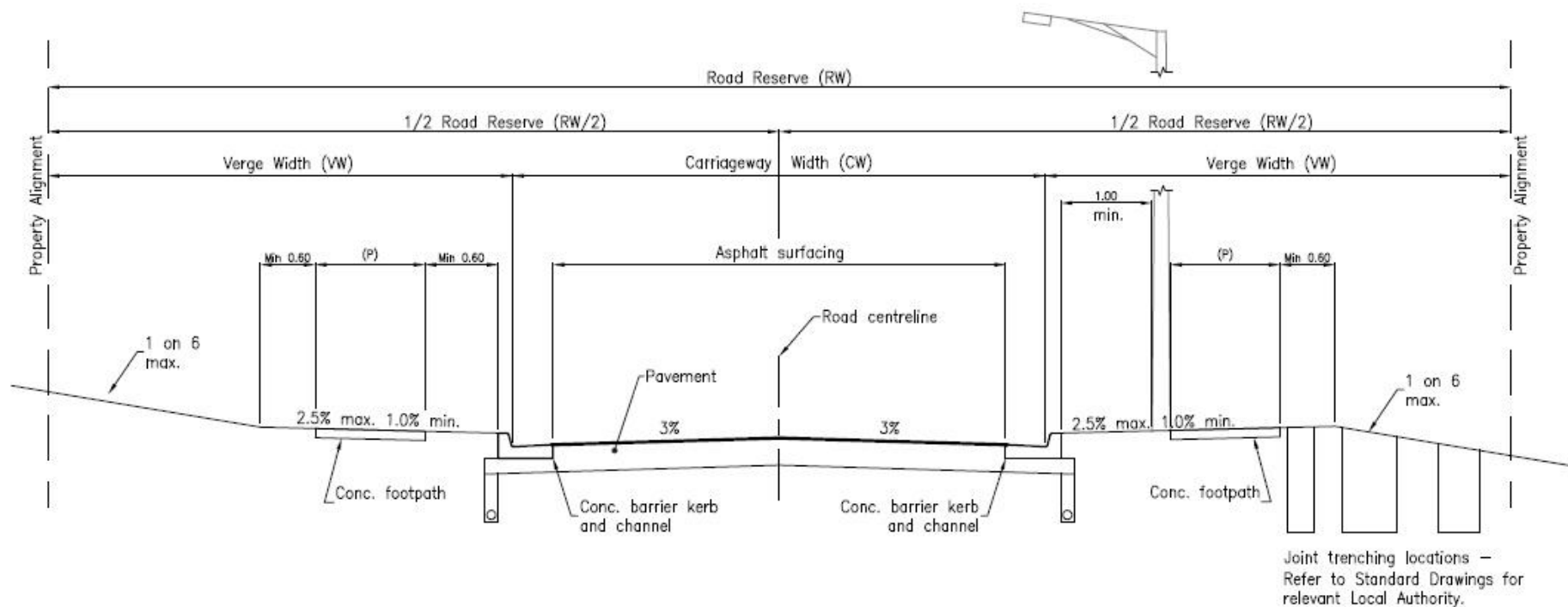
Table D1.06.05 Major Urban Collector (No Access) - Deemed to Comply Requirements

Roadway Classification	No. of Dwellings	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol			RW	CW	VW	G		P
Major Urban Collector								
Banana Shire	301-600	3001-6000	20.0	12.0	4.0	10 (8)	60	2 x 2.0
Central Highlands Regional	151-300	1501-3000	20.0	12.0	4.0	10 (8)	60	2 x 2.0
Gladstone Regional	Refer Policy P-2014/31 in Appendix A							
Isaac Regional	151-300	1501-3000	20.0	12.0	4.0	10 (8)	60	2 x 2.0
Livingstone Shire	301-600	3001-6000	20.0 22.0	10.0 10.0	4.5 5.5	10 (8)	50 60	2 x 1.2
Maranoa Regional	151-300	1501-3000	25.0	12.0	4.0	10 (8)	60	1 x 1.5
Rockhampton Regional	301-600	3001-6000	20.0 22.0	10.0 10.0	4.5 5.5	10 (8)	50 60	2 x 1.2

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. Cycleways to be provided within verge.

Figure D1.06.4 Major Urban Collector - Standard Cross Section



MAJOR URBAN COLLECTOR – NO RESIDENTIAL ACCESS
N.T.S. Refer to Clause D 1.06–6

Table D1.06.06 Trunk Collector – Deemed to Comply Requirements

Roadway Classification	No. of Dwellings	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol			RW	CW	VW	G		P
Trunk Collector Street								
Banana Shire	-	-	-	-	-	-	-	-
Central Highlands Regional	>300	>3,000	30 (25)	2 x 6.5m carriageway + 5.0m centre median (varies)	4.5 (4)	(6)	60-80	2 x 2.0
Gladstone Regional	Refer Policy P-2014/31 in Appendix A							
Isaac Regional	>300	>3,000	30	2 x 6.5m carriageway + 5.0m centre median (varies)	4.5	6	80	2 x 2.0
Livingstone Shire	-	-	-	-	-	-	-	-
Maranoa Regional	N/A	>3,000	25	14.0	4.0	10 (8)	60	1 x 2.0
Rockhampton Regional	-	-	-	-	-	-	-	-

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. Cycleways to be provided within verge.

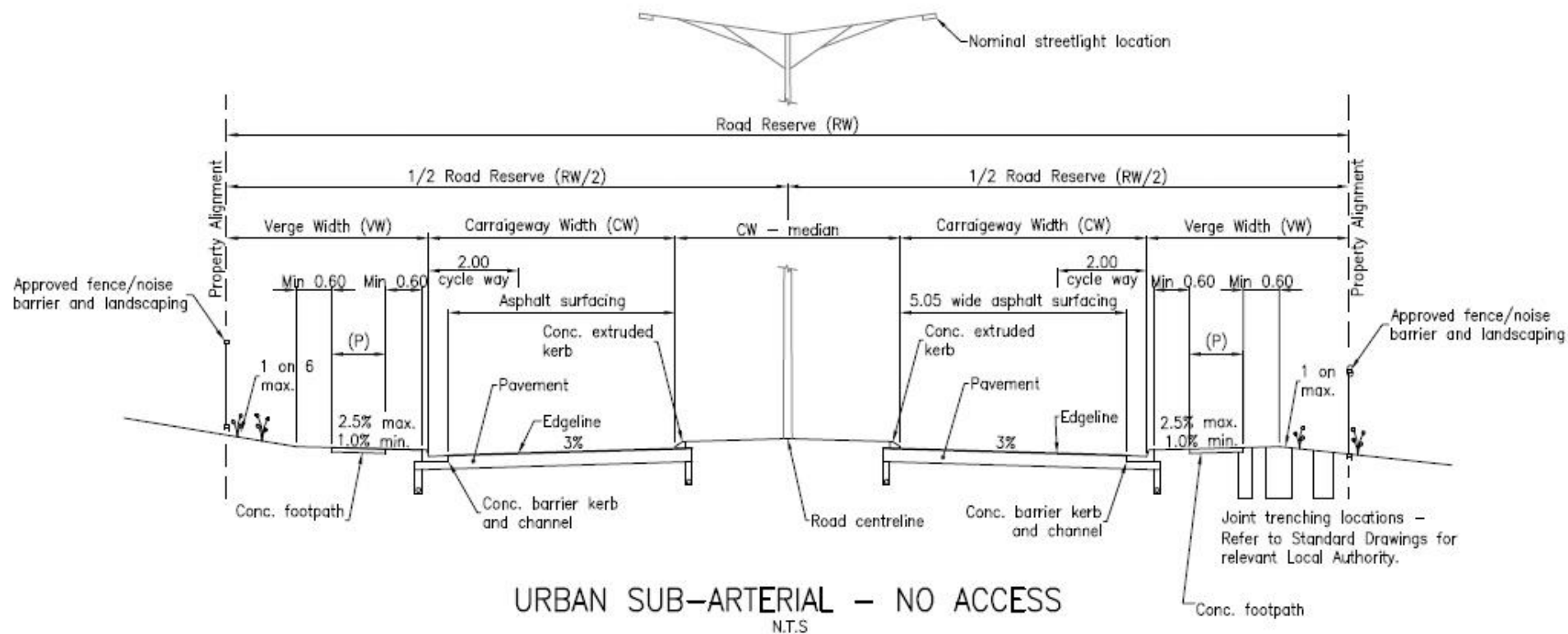
Table D1.06.07 Urban Sub-Arterial – Deemed to Comply Requirements

Roadway Classification	No. of Dwellings	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol			RW	CW	VW	G		P
Sub-Arterial								
Banana Shire	601-1,000	6010-10,000	30	5.5m carriageway + 5.0m centre median	4.5 5.5	8 (6)	60 80	2 x 2.0
Central Highlands Regional	Specific data for these categories shall be provided by the Consulting Engineer for individual application and generated traffic volumes shall be in accordance with a traffic management report.						60 80	2 x 2.0
Gladstone Regional	Refer Policy P-2014/31 in Appendix A							
Isaac Regional	Specific data for these categories shall be provided by the Consulting Engineer for individual application and generated traffic volumes shall be in accordance with a traffic management report.						60 80	2 x 2.0
Livingstone Shire	601-1,000	6001-10,000	30	5.5m carriageway + 5.0m centre median	4.5 5.5	8 (6)	60 80	2 x 2.0
Maranoa Regional	Specific data for these categories shall be provided by the Consulting Engineer for individual application and generated traffic volumes shall be in accordance with a traffic management report.						60 80	2 x 2.0
Rockhampton Regional	601-1,000	6001-10,000	30	5.5m carriageway + 5.0m centre median	4.5 5.5	8 (6)	60 80	2 x 2.0

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. Cycleways to be provided within verge.

Figure D1.06.5 Sub Arterial - Standard Cross Section



Note: Individual cross section elements may be varied to suit site specific conditions, subject to Council approval.

Table D1.06.08 Urban Arterial – Deemed to Comply Requirements

Roadway Classification	No. of Dwellings	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol			RW	CW	VW	G		P
Arterial								
Banana Shire	Specific data for these categories shall be provided by the Consulting Engineer for individual application and generated traffic volumes shall be in accordance with a traffic management report.						60 80	2 x 2.0
Central Highlands Regional	Specific data for these categories shall be provided by the Consulting Engineer for individual application and generated traffic volumes shall be in accordance with a traffic management report.						60 80	2 x 2.0
Gladstone Regional	Refer Policy P-2014/31 in Appendix A							
Isaac Regional	Specific data for these categories shall be provided by the Consulting Engineer for individual application and generated traffic volumes shall be in accordance with a traffic management report.						60 80	2 x 2.0
Livingstone Shire	Specific data for these categories shall be provided by the Consulting Engineer for individual application and generated traffic volumes shall be in accordance with a traffic management report.						60 80	2 x 2.0
Maranoa Regional	Specific data for these categories shall be provided by the Consulting Engineer for individual application and generated traffic volumes shall be in accordance with a traffic management report.						60 80	2 x 2.0
Rockhampton Regional	Specific data for these categories shall be provided by the Consulting Engineer for individual application and generated traffic volumes shall be in accordance with a traffic management report.						60 80	2 x 2.0

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. Cycleways to be provided within verge.

Table D1.06.09 Park Residential– Deemed to Comply Requirements

Roadway Classification	No. of Dwellings	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol			RW	CW	VW	G		P
Park Residential								
Banana Shire				Determined by traffic generation. Refer Access Place, Access Street and Collector Street				Nil
Central Highlands Regional				Determined by traffic generation. Refer Access Place, Access Street and Collector Street				Nil
Gladstone Regional	Refer Policy P-2014/31 in Appendix A							
Isaac Regional				Determined by traffic generation. Refer Access Place, Access Street and Collector Street				Nil
Livingstone Shire				Determined by traffic generation. Refer Access Place, Access Street and Collector Street				Nil
Maranoa Regional				Determined by traffic generation. Refer Access Place, Access Street and Collector Street				Nil
Rockhampton Regional				Determined by traffic generation. Refer Access Place, Access Street and Collector Street				Nil

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. Cycleways to be provided within verge.

Table D1.06.10 Rural / Park Residential– Deemed to Comply Requirements

Roadway Classification	No. of Dwellings	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol			RW	CW	VW	G		P
Rural & Rural Residential								
Banana Shire	Refer Table D1.21.04 for details of Rural Road Elements							
Central Highlands Regional	Refer Table D1.21.02 for details of Rural Road Elements							
Gladstone Regional	Refer Policy P-2014/31 in Appendix A							
Isaac Regional	Refer Table D1.21.02 for details of Rural Road Elements							
Livingstone Shire	Refer Table D1.21.01 for details of Rural Road Elements							
Maranoa Regional	Refer Table D1.21.03 for details of Rural Road Elements							
Rockhampton Regional	Refer Table D1.21.01 for details of Rural Road Elements							

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. Cycleways to be provided within verge.

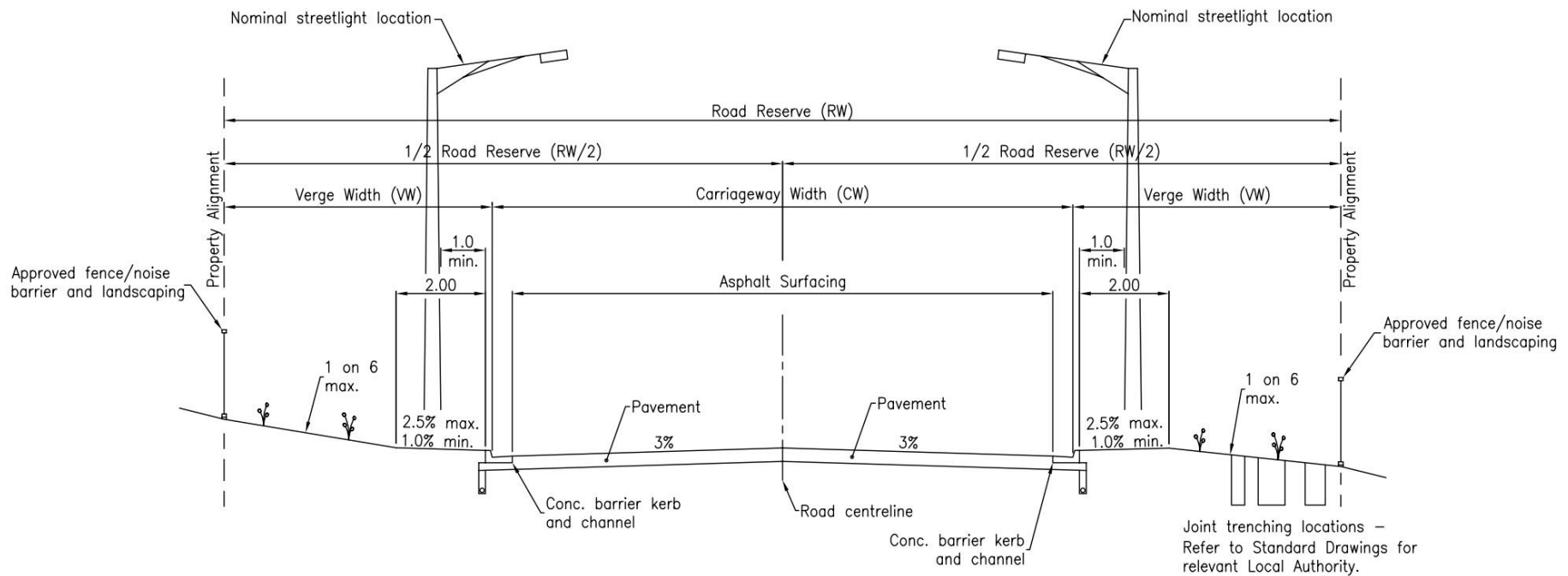
Table D1.06.11 Industrial Access - Deemed to Comply Requirements

Roadway Classification	Area (ha)	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol			RW	CW	VW	G		P
Industrial Access								
Banana Shire	<8ha	-	25	13.0	4.0	10 (6)	60	Nil
Central Highlands Regional	<8ha	-	25	13.0	4.0	10 (6)	60	1 x 1.2
Gladstone Regional	Refer Policy P-2014/31 in Appendix A							
Isaac Regional	<8ha	-	25	13.0	4.0	10 (6)	60	1 x 2.0
Livingstone Shire	<8ha	-	25	13.0	4.0	10 (6)	60	Nil
Maranoa Regional	<8ha	-	25	12.0	4.0	10 (8)	50	Nil
Rockhampton Regional	<8ha	-	25	13.0	4.0	10 (6)	60	Nil

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. Cycleways to be provided within verge.

Figure D1.06.6 Industrial Access-or Industrial Collector (no median) Standard Cross Section



INDUSTRIAL ACCESS OR INDUSTRIAL COLLECTOR (NO MEDIAN)

Table D1.06.12 Industrial Collector - Deemed to Comply Requirements

Roadway Classification	Area (ha)	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol			RW	CW	VW	G		P
Industrial Collector								
Banana Shire	<30	-	30	18	4.0	8 (6)	60	1 x 2.0
Central Highlands Regional	<30	-	30	18	4.0	8 (6)	60	1 x 1.2
Gladstone Regional	Refer Policy P-2014/31 in Appendix A							
Isaac Regional	<30	-	30	18	4.0	8 (6)	60	1 x 2.0
Livingstone Shire	<30	-	30	18	4.0	8 (6)	60	1 x 1.2
Maranoa Regional	<30	-	30	18	4.0	10 (8)	60	1 x 2.0
Rockhampton Regional	<30	-	30	18	4.0	8 (6)	60	1 x 1.2

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. Cycleways to be provided within verge.

Table D1.06.13 Commercial - Deemed to Comply Requirements

Roadway Classification	Traffic Generation (AADT)	Minimum Reserve Width (m)	Nominal Carriageway Width ₃ (m)	Minimum Verge Width ₄ ~Both Sides~ (m)	Max. Grade (Desirable) (%)	Max. Design Speed (kph)	Pathways (m)
Standard Drawing Symbol		RW	CW	VW	G		P
Commercial							
Banana Shire	Not Applicable						
Central Highlands Regional	Not Applicable						
Gladstone Regional	Refer Policy P-2014/31 in Appendix A						
Isaac Regional	Not Applicable						
Livingstone Shire	Not Applicable						
Maranoa Regional	-	30	22	4.0	8 (6)	40	Full width x 2.0
Rockhampton Regional	Not Applicable						

Notes:

1. Carriageway (and reserve) widening shall be provided on bends in accordance with Queensland Streets.
2. Bus setdown bays to be provided on identified bus routes.
3. Carriageway widths are measured from the invert of kerb and channel on one side of the carriageway to the invert of the kerb and channel on the opposite side of the carriageway.
4. Offset centrelines are an alternative with an absolute minimum verge width of 3.0m one side where design speeds permit.
5. Cycleways to be provided within verge.

D1.07 ROAD NETWORK

1. The design features of each type of road convey to the motorist its primary functions and encourage appropriate driver behaviour.
2. Traffic volumes and speeds on any road should be compatible with the residential functions of that road.
3. The maximum length of an access place should ensure its status as a residential place is retained, where the traffic, in terms of speed and volume will enable the integration of pedestrian, cycle and vehicular movements. This length will also ensure that residential convenience is not unduly impaired as a result of speed restraints.
4. The time required for motorists to travel on all streets within the development should be minimised.
5. Where access places form part of a pedestrian or cycle network, access links should provide suitable connectivity with adjoining access places or open space systems so as to ensure such pedestrian and cycle network are functionally efficient.
6. The road network should ensure that no road links with another road which is more than two levels higher or lower in the hierarchy. In exceptional circumstances roads may link with others that are more than two levels apart, however, no access place or access street should have access to an access-controlled arterial road.
7. Connections between internal roads shall be T-junctions or controlled by roundabouts.
8. The road layout should conform to the requirements of the external road network and satisfy the transport provisions of an outline development plan.
9. The external road network should be designed and located to provide routes which are more convenient for potential through traffic within the network. Major roads should be provided at intervals of no more than 1.5 km and should be complete and of adequate capacity to accommodate through network movements. The internal road system should not provide through routes that are more convenient than the external road network.

***Length of
Access Place***

Connectivity

Road Links

***External Road
Network***

D1.08 DESIGN SPEED

1. For geometric design of roads design speeds shall be as nominated in Tables D1.06.2 to D1.06.12 unless specified otherwise by Local Government. Developments should be designed with a road layout to achieve the desired speed environment. The use of traffic control devices in lieu of a suitable road layout is not preferred.
2. Adoption of a low design speed discourages speeding, attention should be given to ensuring that potentially hazardous features are visible to the driver and adopting traffic engineering measures which will help a driver avoid errors of judgement.

Guidelines

Low Speeds

D1.09 LONGITUDINAL GRADIENT

1. A general minimum gradient of 0.5 per cent should be adopted. In very flat conditions it may be reduced to 0.3 per cent.
2. Longitudinal grade through intersections should not exceed 4 per cent, the actual gradient being dependent on the type of terrain. Design of the road alignment and the grades used are interrelated. A steep grade on a side street is undesirable if vehicles have to stand waiting for traffic in the priority road. Turning circles in cul-de-sacs on steep grades should have grades less than 5 per cent.
3. Roads constructed without kerb and channel, completely in embankment may have zero grade. Maximum grades shall be as nominated in Tables D1.06.2 to D1.06.12.

Flat Terrain

Intersections

D1.10 HORIZONTAL CURVES AND TANGENT LENGTHS

1. The horizontal alignment of a road is normally in a series of tangents (straights) and curves. The choice of the horizontal alignment is normally determined from the design speeds for a particular street within the road hierarchy. Designers should ensure that, for a given design speed, the minimum radius of curvature utilised is such that drivers can safely negotiate the curve. Curves which progressively tighten produce an uncomfortable sense of disorientation and alarm. Sudden reverse curves which drivers cannot anticipate also have a potential to cause similar conditions.
2. Where speed restriction is provided by curves in the street alignment the relationship between the radius of the curve and the desired vehicle speed is given in 'Queensland Streets'.
3. To determine appropriate lengths for tangents between speed restrictions, which may be curves, narrow sections or other obstructions, refer to 'Queensland Streets'.
4. Sight distance on curves is determined by formula, values of which are tabulated in 'Queensland Streets'.

***Speed/Radius
Relation***

D1.11 VERTICAL CURVES

1. Vertical curves should be used on all changes of grade where the algebraic change of grade exceeds:

***Change of
Grade***

§ Access Place, Access Street, Collector Streets	1.0%
§ Sub-arterials	0.6%

The length of the crest vertical curve for stopping sight distance should conform to 'Queensland Streets'.

2. For adequate riding comfort, lengths of sag vertical curves should conform to 'Queensland Streets'.

***Riding
Comfort***

3. Junctions of roads should be located at a safe distance from a crest, determined by visibility from the side road. Location of a side road at a crest should only occur if there is no suitable alternative.

Side Road

4. Drainage poses a practical limit to the length of sag curves and a maximum length (in metres) of 15 times the algebraic sum of the intersecting vertical grades should be adopted. This is to avoid water ponding in excessively flat sections of kerb and gutter. A minimum grade of 0.5 per cent should be maintained in the kerb and gutter. This may require some warping of road cross sections at sag points.

Sag Curves

5. The three dimensional coordination of the horizontal and vertical alignment of a road should be aimed at improved traffic safety and aesthetics. Economic considerations often require a compromise with aesthetic considerations. The following principles should be applied:

- The design speed of the road in both horizontal and vertical planes should be of the same order
- Combined horizontal and vertical stopping sight distance and minimum sight distance should be considered three dimensionally.

- Sharp horizontal curves should not be introduced at or near the crest of a vertical curve. A horizontal curve should leave the vertical curve and be longer than the vertical curve.
- A short vertical curve on a long horizontal curve or a short tangent in the gradeline between sag curves may adversely affect the road's symmetry and appearance.

D1.12 SUPERELEVATION

1. The use of superelevation in association with horizontal curves is an essential aspect of geometric design of roads with design speeds in excess of 60 km/h.

2. The maximum superelevation for urban roads of higher design speeds should be 6 per cent. Any increase in the longitudinal grade leading to excessive crossfall at intersections should be considered with caution. While it is desirable to superelevate all curves, negative (adverse) crossfall should be limited to 3 per cent.

**Negative
Crossfall**

3. In general, curve radii larger than the minimum and superelevation rates less than the maximum should be used where possible. The minimum radius of curves is determined by the design speed; the minimum superelevation (or maximum adverse crossfall) at any point on the circular portion of the curve; and the maximum coefficient of side friction which allows safe lane changing.

**Coefficient of
Side Friction**

D1.13 CARRIAGEWAY WIDTH

1. The cross section of the road reserve must cater for all functions that the road is expected to fulfil, including the safe and efficient movement of all users, provision for parked vehicles, provision of a buffer from traffic nuisance for residents, the provision of public utilities and street scaping. The minimum carriageway criteria shall be as defined in Tables D1.06.2 to D1.06.12.

Functions

2. The carriageway width must allow vehicles to proceed safely at the operating speed intended for that level of road in the network and with only minor delays in the peak period. This must take into consideration the restrictions caused by parked vehicles where it is intended or likely that this will occur on the carriageway. Vehicles include trucks, emergency vehicles and, on some roads, buses.

Vehicles

3. The safety of pedestrians and cyclists, where it is intended they use the carriageway, must also be assured by providing sufficient width.

Pedestrians

4. The carriageway width should also provide for unobstructed access to individual allotments. Motorists should be able to comfortably enter or reverse from an allotment in a single movement, taking into consideration the possibility of a vehicle being parked on the carriageway opposite the driveway.

Reversing

5. The design of the carriageway should discourage motorists from travelling above the intended speed by reflecting the functions of the road in the network. In particular the width and horizontal and vertical alignment should not be conducive to excessive speeds.

**Discourage
Speed**

6. Appropriate road reserve width should be provided to enable the safe location, construction and maintenance of required paths and public utility services (above or

Road Reserve

below ground) and to accommodate the desired level of street scaping.

7. The verge when considered in conjunction with the horizontal alignment and permitted fence and property frontage treatments should provide appropriate sight distances, taking into account expected speeds and pedestrian and cyclist movements.

Verge

8. Stopping sight distances and junction or intersection sight distances should be based on the intended speeds for each road type.

D1.14 CROSSFALLS

1. Desirably, roads should be crowned in the centre. Typical pavement crossfall on straight roads are:

<i>Pavement Type</i>	<i>Crossfall</i>
Bituminous seal coat	3 per cent
Asphaltic concrete pavement	3 per cent
Cement concrete pavement	3 per cent
Paved surfaces	3 per cent
Gravel	5 per cent

2. There are many factors affecting levels in urban areas which force departures from these crossfall. Differences in level between road alignments can be taken up by offsetting crown lines or adopting one way cross falls. Sustained crossfall should not exceed 4 per cent, although up to 6 per cent may be used where unavoidable. The rate of change of crossfall should not exceed: 6 per cent per 30 m for through traffic; 8 per cent per 30 m for free flowing turning movements; or 12 per cent per 30 m for turning movements for which all vehicles are required to stop.

**Offset Crown
Changes -
Crossfall**

3. The crossfall on a collector or sub-arterial should take precedence over the grade in side streets. Standard practice is to maintain the crossfall on the priority road and adjust the side road levels to suit. The crossfall in side streets should be warped quickly either to a crown or a uniform crossfall depending on the configuration of the side street. A rate of change of grade of two per cent in the kerb line of the side street relative to the centre line grading is a reasonable level.

**Priority Road –
Crossfall**

D1.15 VERGES

1. A suitable design of the verge will depend on utility services, access to allotments, pedestrian usage, tree preservation and stormwater drainage. Refer to Standard Drawings for verge design requirements (Note: where a cycleway or pathway is located in the verge the design of such shall be in accordance with Section D9 of these Guidelines).

2. Minimum verge width shall be as nominated in Tables D1.06.2 to D1.06.12.

3. Verge footpath tree planting is detailed in Standard Drawing SD-G-16 Street Planting.

D1.16 INTERSECTIONS

1. The design of intersections or junctions should allow all movements to occur safely without undue delay. Projected traffic volumes shall be used in designing all intersections or junctions on sub-arterials.

**Traffic
Volumes**

2. Intersection design for the junction of subdivision roads with existing main rural,

Main Roads

main urban and state highways shall be designed in accordance with the publication AUSTROADS Guide to Road Design –

- Part 4: Intersections and Crossing – General
- Part 4A: Unsignalised and signalised intersections
- Part 4C: Interchanges

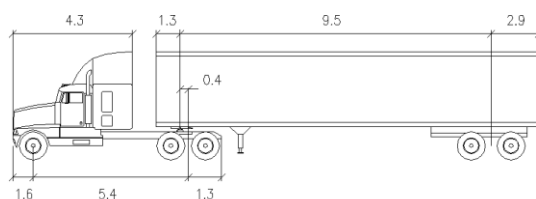
3. Intersections with main roads, tourist roads or state highways shall be designed and constructed in accordance with the requirements of the Queensland Department of Transport and Main Roads.
4. Where major intersections are required to serve a development complete reconstruction of the existing road pavements will be necessary where the speed environment and irregularity of the existing road pavement may endanger the safety of traffic in the locality.
5. All new intersections within residential areas shall be designed and located in accordance with "Queensland Streets".
6. All vehicle turning movements are accommodated utilising AUSTROADS Design Vehicles and Turning Templates, as follows:
 - For turning movements involving sub-arterials or collector streets, the "design semi-trailer" with turning path radius 15.0 m.
 - For turning movements involving access streets but not involving collector streets, the "design single unit truck/bus" with turning path radius 15.0 m.
 - For turning movements on access places but not involving, collector streets or access streets, the garbage collection vehicle.
 - For turning movements at the head of cul-de-sac streets sufficient area is provided for the "design single unit truck" to make a three-point turn.

**Tourist Roads
State
Highways**

**Turning
Movements**

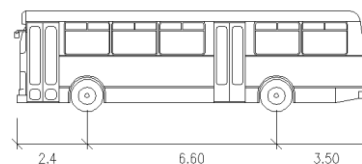
Figure D1.16.1 shows standard vehicles to be adopted for turning movements.

Figure D1.16.1 Standard Vehicles



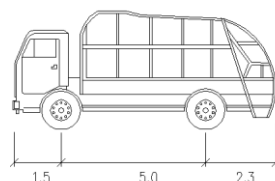
Tractor Width : 2.50 Trailer Width : 2.50
Tractor Track : 2.50 Trailer Track : 2.50
Turning Radius (Outside) : 15.00

Semi-Trailer



Width : 2.50
Track : 2.50
Turning Radius (Outside) : 13.00

Single Unit Truck / Bus



Width : 2.50
Track : 2.50
Turning Radius (Outside) : 12.00

Garbage Truck

- | | | |
|----|--|-----------------------------|
| 7. | The Turning radii at intersections shall be 9.0m minimum, and accommodate the intended movements without allowing desired speeds to be exceeded. | <i>Turning Radii</i> |
| 8. | On bus routes, appropriately designed 3-centred curves shall be provided at junctions, intersections and the like. Designers shall liaise with Local Government to determine the design vehicle to be applied in such cases. | <i>Bus Routes</i> |

D1.17 ROUNDABOUTS

- | | | |
|----|--|---------------------------------|
| 1. | Roundabouts are to be approved by the Local Government. | |
| 2. | The design of all roundabout shall be in accordance with current Department of Transport and Main Roads or AUSTROADS Guide to Road Design – Part 4B: Roundabouts shall only be used at intersection of Urban Collectors and Access Streets or higher order roads only. All roundabouts shall have a minimum outside radius of 15.0m. | <i>Roundabout Radius</i> |

D1.18 TRAFFIC CALMING

- | | | |
|----|--|---|
| 1. | Calming devices such as thresholds, slowpoints, speed humps, chicanes and splitter islands should be designed in accordance with the requirements of the publication AUSTROADS Guide to Traffic Management – Part 8: Local Area Traffic Management and are to be approved by Local Government. Devices designs should generally comply with the following: | <i>Local Area Traffic Management</i> |
|----|--|---|

(a) Streetscape

- reduce the linearity of the street by segmentation
- avoid continuous long straight lines (eg. kerb lines)
- enhance existing landscape character
- maximise continuity between existing and new landscape areas.

(b) Location of Devices/Changes

- devices other than at intersections should be located to be generally consistent with streetscape requirements
- existing street lighting, drainage pits, driveways, and services may decide the exact location of devices

(c) Design Vehicles

- | | |
|--|-------------------------------|
| <ul style="list-style-type: none"> • emergency vehicles must be able to reach all residences and properties • where bus routes are involved, buses should be able to pass without mounting kerbs and with minimised discomfort to passengers. • in newly developing areas where street systems are being developed in line with the Local Area Traffic Management (LATM) principles, building construction traffic must be catered for. | <i>Design Vehicles</i> |
|--|-------------------------------|

(d) Control of Vehicle Speeds

- maximum vehicle speeds can only be reduced by deviation of the travelled path. Pavement narrowing's have only minor effects on average speeds, and usually little or no effect on maximum speeds
- speed reduction can be achieved using devices which shift vehicle paths laterally (slow points, roundabouts, corners) or vertically (humps, platform intersections, platform pedestrian/school/bicycle crossings)
- speed reduction can be helped by creating a visual environment conducive to lower speeds. This can be achieved by 'segmenting' streets into relatively short lengths (less than 300m), using appropriate devices, streetscapes, or street alignment to create short sight lines

**Vehicle
Speeds**

(e) Visibility Requirements (sight distance)

- adequate critical sight distances should be provided such that evasive action may be taken by either party in a potential conflict situation. Sight distances should relate to likely operating speeds
- sight distance to be considered include those of and for pedestrians and cyclists, as well as for drivers
- night time visibility of street features must be adequate. Speed control devices particularly should be located near existing street lighting if practicable, and all street features/furniture should be delineated for night time operation.

Visibility

Lighting

(f) Critical Dimensions

Many devices will be designed for their normal use by motor cars, but with provision (such as mountable kerbs) for larger vehicles. Some typical dimensions include:

- pavement narrowing's
 - single lane 3.50m between kerbs
 - 3.75m between obstructions
 - two lane 5.50m minimum between kerbs
- bicycle lanes (including adjacent to pavement narrowing - 1.5m minimum
- plateau or platform areas
 - 75mm to 150 mm height maximum, with 1 in 15 ramp slope
- width of clear sight path through slowing devices
 - 1.0m maximum

(i.e. the width of the portion of carriageway which does not have its line of sight through the device blocked by streetscape materials, usually vegetation)
- dimensions of mountable areas required for the passage of large vehicles to be determined by appropriate turning templates.
- design of all devices must consider future maintenance requirements and also be approved by the appropriate Local Government
- use of vegetation in the central island where utilised as part of a speed control device is required.

Bicycle Lanes

Vegetation

D1.19 LIGHTING

Lighting

1. The objective of road lighting is to provide an illuminated environment, which is conducive to the safe and comfortable movement of vehicular and pedestrian traffic at night, and the discouragement of illegal acts. To accomplish this, the lighting should reveal necessary visual information. This consists of the road itself, the course of the road ahead, kerbs, footpaths, property lines, road furniture and surface imperfections, together with the road users including pedestrians, cyclists and vehicles and their movements, and other animate and inanimate obstacles.

2. All roads in urban areas are required to be effectively lit, generally in accordance with the criteria of the Australian/New Zealand Standard AS/NZS 1158 series. Lighting standards in Park Residential areas shall be determined by individual Local Governments.

3. The sub-categories used in this specification does not apply to lighting intended specifically as security lighting for building exteriors and lighting for video surveillance.

Table D1.19.1 “Table 2.1 from AS1158.3.1” Lighting categories for road reserves in local areas

Road Hierarchy	Usual Minimum Applicable Lighting Sub Category (Refer notes)
Access Place	P4
Access Street	P4
Minor Collector Street	P3
Major Collector Street	P3
Trunk Collector Street	P3
Commercial	To be determined by Individual Local Governments
Sub Arterial	
Arterial	
Park Residential	
Rural & Rural Residential	
Industrial Access	P4
Industrial Collector	P3

Notes:

- 1) Calculation procedures for specific site requirements need to be completed using AS1158.2 before acceptance of a Lighting Category.
- 2) Category P Lighting is provided for pedestrians, not motorists, with the exception of light of LATMS, which is intended to reveal sufficient details of the device to allow approaching used to navigate through appropriately.
- 3) Alternative categories may be considered under direction of the Local Government

4. Category P Lighting – Lighting that is applicable to roads and other outdoor public spaces on which the visual requirements of pedestrians are dominant, e.g. local roads, outdoor shopping precincts and outdoor car parks.

D1.20 BUS ROUTES

1. It is important that the road hierarchy adequately caters for buses. The main criteria in determining the location of bus routes is that no more than 5% of residents should have to walk in excess of 400 metres to catch a bus. Table D1.20.01 details minimum criteria for bus route design.

Buses

Table D1.20.01 Bus Route Criteria

Road	Carriageway Width (min)	Stops (Spacing)	Bays
Major Urban Collector	10m	400 metre **	Single
Sub-Arterial	5.5m carriageway + 5.0m centre median	400 metre	Shelters***

Notes:

** Loop roads with single entry/exit only require stops and bays on one side road.

*** Shelters are subject to Local Government's requirements

2. The location and type of bus stops is to be in accordance with the requirements of the Local Government who will consult with the Local bus company operating in the area. Where required bus stops must be constructed and placed in accordance with Public Transport Infrastructure Manual, June 2007 which can be downloaded from <http://www.translink.qld.gov.au/qt/translin.nsf/index/ptim>.

RURAL DESIGN CRITERIA

D1.27 GENERAL

1. The rural design criteria applies to Council's as detailed in the following Table D1.27.01.

Table D1.27.01 Rural Design Criteria Applicability

Local Government	Section D1.27 to D1.31 Applicable?
Banana Shire	Yes
Central Highlands Regional	Yes
Gladstone Regional	No
Isaac Regional	Yes
Livingstone Shire	Yes
Maranoa Regional	Yes
Rockhampton Regional	Yes

2. In addition to the foregoing sections this section specifically applies to all those sites identified as being suited to rural subdivisions inclusive of rural home sites and hobby farms types of developments. Table D1.27.01 to D1.27.03 details Council specific road demands for rural roads.

Table D1.27.01 Rural Road Elements for Rockhampton Regional and Livingstone Shire

Traffic Volume or Road Class	<150 VPD(or rural access)	151 – 999 (or rural minor collector)	1000 – 7999 (or rural major collector)	>8000 (or arterial)
Road Reserve (flat terrain $\leq 5\%$)	25m	25m	25m	40m
Road Reserve ² (Undulating/Hilly > 5%)	25m	25m	30m	40m
Formation	6.5m	8m	10m	10m
Pavement Width	6.5m	8m	8m	10m
Seal Width	No Seal Required ¹	6.5m	8m	10m
Shoulders ³	See Standard Drawing Figure D1.23.03 for details			
Desirable Speed Environment	100kph	100kph	100kph	100kph
Design Speed for Individual Elements (Minimum)	80kph	80kph	80kph	80kph
Flood Immunity (ARI Years) ⁴	2	5	20	20
Trafficable Immunity (ARI years) ⁵	20	20	50	50

Notes:

- (a) Sealing shall be required for longitudinal grades in excess of 10% for Rural B zone and in excess of 16% for Rural A zone. Where it is possible for the road to be extended to service additional lots, the road shall be constructed to a 6.5m seal standard.
- (b) Sealing may be required at sites where existing adjacent roads are sealed. In this instance the seal width shall match the adjoining seal with a minimum of 6.5m.
- ² In undulating terrain this width shall be increased to enable services to be constructed on accessible flatter land on top and below batters.
- ³ Where the road is a designated on-road bicycle route (signposted and pavement marked) the shoulder provision needs to conform to the AUSTRROADS Traffic Engineering Practice Part 14: Bicycles.
- ⁴ Culverts shall be designed to accommodate flood immunity flows with a maximum headwater level 150mm below the shoulder level.
- ⁵ The vertical alignment shall be designed such that the maximum overtopping depth is 200mm to achieve trafficable immunity.

Table D1.27.02 Rural Road Elements for Central Highlands Regional Council

Traffic Volume or Road Class	<150 VPD (or rural access)	150 – 500 (or rural minor collector)	500 – 3000 (or rural major collector)	>3000 (or arterial)
Road Reserve (flat terrain ≤ 5%)	20m	20m	25m	As per Division 8: Schedule C Sub- Arterial
Road Reserve ** (Undulating/Hilly > 5%)	25m	25m	30m	
Formation	8m	8m	10m	
Pavement Width	8m gravel	8m	10m	
Seal Width	7m	7m	8m	
Shoulders ***	Incl. 0.25m sealed on each side	Incl. 0.25m sealed on each side	Incl. 0.5m sealed on each side	
Desirable Speed Environment	100kph	100kph	100kph	
Design Speed for Individual Elements (Minimum)	80kph	80kph	80kph	

Notes:

** In undulating terrain this width shall be increased to enable services to be constructed on accessible flatter land on top and below batters.

*** Where the road is a designated on-road bicycle route (signposted and pavement marked) the shoulder provision needs to conform to the AUSTROADS Traffic Engineering Practice Part 14: Bicycles.

Table D1.27.03 Rural Road Elements for Isaac Regional Council

Traffic Volume or Road Class	<150 VPD (or rural access)	150 – 500 (or rural minor collector)	500 – 3000 (or rural major collector)	>3000 (or arterial)
Road Reserve (flat terrain ≤ 5%)	20m	20m	25m	As per Division 8: Schedule C Sub- Arterial
Road Reserve ** (Undulating/Hilly > 5%)	25m	25m	30m	
Formation	8m	8m	10m	
Pavement Width	8m gravel	8m	10m	
Seal Width ***	8m	8m	10m	
Lane width	2 x 3.5m	2 x 3.5m	2 x 4.0m	
Desirable Speed Environment	100kph	100kph	100kph	
Design Speed for Individual Elements (Minimum)	80kph	80kph	80kph	

Notes:

** In undulating terrain this width shall be increased to enable services to be constructed on accessible flatter land on top and below batters.

*** Where the road is a designated on-road bicycle route (signposted and pavement marked) the shoulder provision needs to conform to the AUSTROADS Traffic Engineering Practice Part 14: Bicycles

Table D1.27.04 Rural Road Elements for Maranoa Regional Council

Traffic Volume / Road Class	<10 VPD Rural Access – Secondary	10 – 39 VPD Rural Access – Primary B	40 – 99 VPD Rural Access – Primary A	100 – 149 VPD Rural Collector Minor A	150 – 249 VPD Rural Collector – Major B	250 – 999 VPD Rural Collector – Major A	1000 – 3000 VPD Arterial – Minor	>3000 VPD Arterial – Major
Road Reserve (flat terrain $\leq 5\%$)	20m	20m	20m	20m	20m	20m	25m	40m
Road Reserve ^b (undulating/hilly $\geq 5\%$)	25m	25m	25m	25m	25m	25m	30m	40m
Formation Width	6m	8m	8m	8m	9m	9m	10m	10m
Pavement Width	0m	4m	7m	8m	8m	8m	9m	9m
Seal Width	0m	0m	0m	7m	7 (8) ^c	8m	9m	9m
Shoulders ^b	See Standard Drawing Figure D1.23.03 for details							
Desirable Speed Environment	60kph	80kph	80kph	100kph	100kph	100kph	100kph	100kph
Design Speed for Individual Elements (Minimum)	40kph	60kph	60kph	80kph	80kph	80kph	80kph	80kph
Flood Immunity (ARI Years)	1	2	2	2	5	5	10	10

Notes:

- (a) Sealing shall be required for longitudinal grades in excess of 10%. Where it is possible for the road to be extended to service additional lots, the road shall be constructed to a 7.0 m seal standard.
- (b) Sealing may be required at sites where existing adjacent roads are sealed. In this instance the seal width shall match the adjoining seal with a minimum of 7.0 m. In undulating terrain this width shall be increased to enable services to be constructed on accessible flatter land on top and below batters. Where the road is a designated on-road bicycle route (signposted and pavement marked) the shoulder provision needs to conform to the AUSTROADS Traffic Engineering Practice Part 14: Bicycles.
- (c) Where pavement material used is of a lower standard, seal width is to be extended to shoulders.

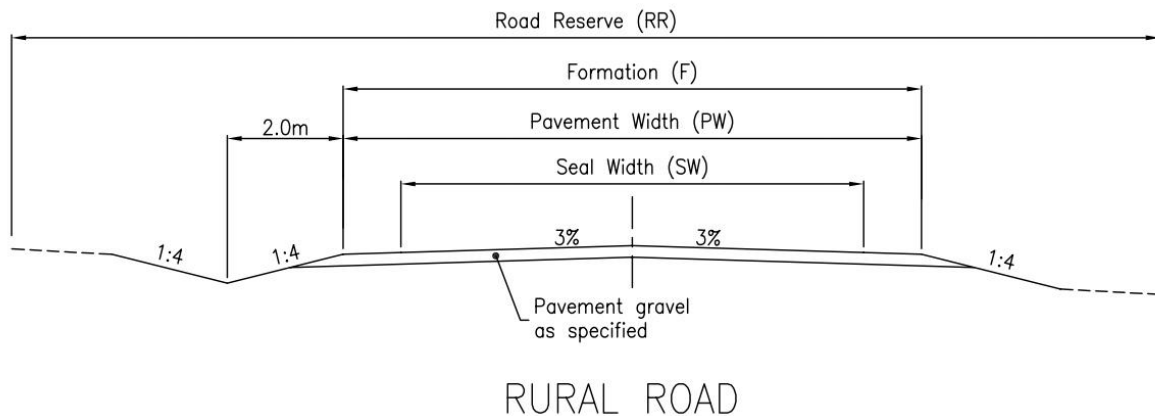
Table D1.27.05 Rural Road Elements for Banana Shire Council

Traffic Volume / Road Class	<10 VPD (rural minor lane)	10 – 39(rural major lane)	40 – 149(rural minor access)	150 – 249(rural major access)	250 – 999(rural minor collector)	1000 – 3000(rural major collector)	> 3000 (Arterial)
Road Reserve (flat terrain ≤ 5%)	25m	25m	25m	25m	25m	25m	40m
Road Reserve ** (undulating/hilly ≥ 5%)	25m	25m	25m	25m	30m	30m	40m
Formation Width	6m	6m	8m	8m	8m	10m	10m
Pavement Width	b	4m	6.5m	6.5m	6.5m	8m	10m
Seal Width	-	a	a	4m	6.5m	8m	10m
Shoulders ***	See Standard Drawing Figure D1.22.03 for details						
Desirable Speed Environment	60kph	80kph	80kph	100kph	100kph	100kph	100kph
Design Speed for Individual Elements (Minimum)	40kph	40kph	60kph	80kph	80kph	80kph	80kph
Flood Immunity (ARI years)	1	1	2	2	5	5	10

Notes

- (a) Sealing shall be required for longitudinal grades in excess of 10% for Rural B zones and in excess of 16% for Rural A zone. Where the rural access (cul de sac) cannot be extended by future development, a 4m seal is generally sufficient (subject to traffic volumes). Where it is possible for the road to be extended to service additional lots, the road shall be constructed to a 6.5m seal standard.
- (b) Gravel shall be required for longitudinal grades in excess of 10% for Rural B zones and in excess of 16% for Rural A zone. Gravel shall also be required in locations subject to flooding, i.e. where the risk of erosion is high, e.g. creek crossings. Refer Note (d)
- (c) Sealing may be required at sites where existing adjacent roads are sealed. In this instance the seal width will match the adjoining seal with a minimum of 4m.
 ** In undulating terrain this width shall be increased to enable services to be constructed on accessible flatter land on top and below batters.
 ** Where the road is a designated on-road bicycle route (signposted and pavement marked) the shoulder provision need to conform to AUSTROADS – BICYCLES.
- (d) In the Rural Access road classes described above, an assessment of stream flow discharge and velocities by the developer may be required at the discretion of the Local Government to determine the need for further drainage and erosion protection treatments, e.g. Floodways. Refer to CMDG D5 Stormwater Drainage Design

Figure D1.27.06 Rural Road Standard Cross-Section



3. Design speed is to be generally used as the basic parameter of design standards and the determination of the minimum design value for other elements in rural subdivisions is to be based on the concept of a "speed environment" as outlined in AUSTROADS Guide to Road Design – Part 3: Geometric Design.

Design Speed

4. Where appropriate superelevation, widening and centreline shift and their associated transitions are to comply with AUSTROADS Guide.

5. Where the table drain is likely to scour, a stone pitched or suitably lined dish drain is to be constructed along the invert. Also for grades of less than 0.5%, the inverts of the drain are to be lined to prevent siltation.

Table Drain

D1.28 HORIZONTAL AND VERTICAL ALIGNMENT

1. Horizontal and vertical curves are to be designed generally to the requirements of AUSTROADS Guide to the Road Design – Part 3: Geometric Design. These requirements are essential to satisfy the safety and performance of proper road design. Roads having both horizontal and vertical curvature should be designed to conform to the terrain to achieve desirable aesthetic quality and being in harmony with the landform.

D1.29 LIGHTING

1. The objective of road lighting in the rural area is to provide an illuminated environment, which is conducive to the safe and comfortable movement of vehicular traffic. To accomplish this, the lighting should reveal necessary visual information. This consists of the road itself, the course of the road ahead, road furniture and surface imperfections, vehicles and their movements, and other animate and inanimate obstacles.

Lighting

2. Street lighting standards in rural areas shall be determined by individual Local Governments.

D1.30 INTERSECTIONS

1. Intersections should generally be designed in accordance with the publication AUSTROADS Guide to Road Design –

- Part 4: Intersections and Crossing – General
- Part 4A: Unsignalised and signalised intersections

2. Adequate sight distance should be provided at intersections both horizontally and vertically. Each intersection location shall be examined for conformance with the criteria for Approach Sight Distance (ASD), Entering Sight Distance (ESD) and Safe Intersection Sight Distance (SISD).

D1.31 CLEAR ZONES

1. A clear zone is an area adjacent to the traffic lane that should be kept free from features that would be potentially hazardous to errant vehicles. Where it is environmentally appropriate and economically viable, the clear zone should be kept free of non-frangible hazards.
2. The clear zone shall be designed to provide a forgiving roadside environment, free of any hazards that may increase the severity of a crash. Ideally this would provide drivers with enough space to regain control of their vehicles and stop safely without colliding with any objects or the vehicle rolling over.
3. Clear zones distances shall comply with Austroads Guide to Road Design – Part 6: Roadside Design, Safety and Barriers Table 4.1 Clear zone distances from edge of through travelled way. The clear zone dimensions are intended as a guide only, and the types of hazards encountered and their treatments shall be assessed for each site, which a greater or lesser width provided depending on the risk factors identified
4. Hazards within the clear zone shall be addressed in the following priority order:
 - Remove the hazard
 - Redesign the hazard so that it can be safely traversed
 - Relocate hazard to a location where it is less likely to be struck
 - Replacement of the hazard so that it breaks away or is impact absorbing
 - Shield the obstacle with an appropriate barrier and / or a crash cushion
 - Delineate the hazard to make it more conspicuous
5. Refer to Austroads Guide to Road Design – Part 6: Roadside Design, Safety and Barriers Chapter 4 Design to Mitigate hazards for guidance with determination of clear zone widths, and identification and appropriate treatment of hazards.
6. The aim for all Local Government Controlled roads classified as either Rural Access or Rural Minor Collector is for a minimum of a 3 meter wide clear Zone from edge of traffic lane or drainage formation depending on location. The width of the clear zone for all Local Government Controlled roads classified as Rural Major Collector shall be as the Austroads Guide to Road Design – Part 6: Roadside Design, Safety and Barriers.

Taking into consideration;

- Site specific amenity or aesthetic value
- Protection of rare and endangered species
- Prevention of land degradation due to soil erosion and salinity
- Preservation of historical values of roadside features.

Appendix A

Gladstone Regional Council Policy P-2014/31



Gladstone Regional Council

Council Policy

Title	ROAD HIERARCHY
Policy Number	P-2014/31
Responsible Directorate	ENGINEERING SERVICES
Responsible Officer	MANAGER TECHNICAL SERVICES
Date of Adoption	2 SEPTEMBER 2014
Resolution Number	G/14/2143
Date Review Due	2 SEPTEMBER 2016

1.0 PURPOSE:

This policy sets out Council's requirements for a road classification scheme which defines the function of a road in terms of traffic mobility and access/amenity functions. A road hierarchy provides the basis for determination of appropriate road design elements such as widths, speeds and management devices etc. that would be compatible with the function of the road.

2.1 SCOPE:

This policy applies to:-

- Existing gazetted roads and proposed new road reserves, that currently (or will) fall under the jurisdiction of Council;
- Private roads within gated or private communities; and
- New Development Applications (made after the policy is adopted) and where economically feasible, to projects that Council undertakes on the existing road network.

This policy is subordinate to Federal; State (Queensland) and Local (Gladstone Regional Council) Laws

3.1 RELATED LEGISLATION:

- Local Government Act 2009
 - Local Government Regulation 2012
 - Gladstone Regional Council Local Laws No 4 (Local Government Controlled Areas, Facilities and Roads) 2011
 - Gladstone Regional Council Subordinate Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2011
-

4.1 RELATED DOCUMENTS:

- Council Development Manual
- AUSTRROADS Guides
- Queensland Streets, Australian
- AMCORD
- Australian Standards

5.1 DEFINITIONS:

To assist in the interpretation of this policy, various terminology relating to road cross sections (ie carriageway, formation etc) are described in Figure 1 (Urban Areas) and Figure 2 (Rural Areas).

The Local Government Act 2009 Section 59 defines a Road as:-

- (1) *This division is about roads.*
- (2) *A road is—*
 - (a) *an area of land that is dedicated to public use as a road; or*
 - (b) *an area of land that -*
 - (i) *is developed for, or has as 1 of its main uses, the driving or riding of motor vehicles; and*
 - (ii) *is open to, or used by, the public; or*
 - (c) *a footpath or bicycle path; or*
 - (d) *a bridge, culvert, ford, tunnel or viaduct.*
- (3) *However, a road does not include -*
 - (a) *a State-controlled road; or*
 - (b) *a public thoroughfare easement.*

6.1 POLICY STATEMENT:

The road system within the Gladstone Regional Council shall be designed to achieve the following objectives:-

- Provide a convenient, efficient and safe access for pedestrians, vehicles and cyclists that is economical to the community in terms of capital, cost of construction, maintenance costs and user costs;
- Provide a safe, logical and hierarchical transport linkage within the existing system;
- Provide a convenient, efficient and safe access for emergency and service vehicles;
- Provide a convenient and efficient access for public transport;
- Provide a convenient and efficient space for public utilities;
- Provide an opportunity for street landscape that would enhance the amenity of the environment;
- Provide convenient parking for visitors;
- Have appropriate regard for the climate, geology and topography of the area;
- Provide an acceptable layout for the community to socially interact;
- Provide a safe and efficient Major Drainage System; and
- Provide ease of recognition for the function of each street.

6.2 Function

Council recognises four distinct road functions, Arterial, Distributor, Collector and Local.

Arterial

These are the highest order roads, whose main function is to provide the principal links between urban centres, or between urban centres and rural regions. Within an urban area, they should have the capacity to be developed into multi-lane facilities with access control being a desirable feature to enhance traffic flow. Consequently, development of maximum traffic capacity must be the prime consideration. Aspects of noise, intrusion etc must be accepted and where this creates an unacceptable disturbance, solutions should be found elsewhere, other than by the removal of traffic. Such roads could be expected to be candidates for the full range of traffic management schemes, including intersection upgrading, full access control and parking restrictions. Application of these techniques would be consistent with the movement of traffic through given localities.

In summary:-

- Through traffic movements between towns;
- Longer distance strategic traffic movements;
- Primary connection between suburbs and employment, economic, education or entertainment centres;
- Line haul, public transport task;
- Primary freight and dangerous goods routes;
- Regional cycle movements;
- Access to commercial properties in some instances from Sub Arterial Roads; and
- Car parking in some instances along Sub Arterial Roads.

Distributor

These are roads whose main function is to connect arterial roads to local areas and supplement the arterial roads in providing for traffic movements from one part of the urban area to another. They may be either two-lane or multi-lane roadways and as with roads classified as arterial, aspects of noise, intrusion etc must be accepted or reduced by means other than removal of traffic. The prime concern is still with the movement of traffic, so that on a two-lane roadway, extensive use of traffic management techniques could be expected to be applied. This could mean promotion of the movement of traffic through the locality, even at some inconvenience to local traffic.

In summary:-

- Through traffic between arterial roads;
- Connections between local areas and arterial roads;
- Access to public transport;
- Through movement of public transport;
- Regional – local cycle movements;
- Pedestrian movements; and
- Access to properties (certain cases).

Collector

These roads are intended to carry traffic between the arterial or distributor roads and local streets. They are not expected to carry high traffic volumes, and are not used for longer distance travel, except at the beginning or end of the journey. These roads help to collect traffic at the neighbourhood level and may provide access to abutting properties. Ideally they should discourage through traffic by not providing continuous through routes between arterials or distributors. They are generally the lowest order road that may be used as a bus route.

In summary:-

- Carry traffic having a trip end within the specific area;
- Direct access to properties;
- Access to public transport;
- Pedestrian movements;
- Access to grouped/commercial properties and community facilities; and
- Local cycle movements.

Local

These are the lowest order roads in the tributary local system and they exist to provide access to residential properties. Their main functions are to provide both property access and residential amenity (resident safety and amenity are dominant). Residential amenity can be preserved if traffic volumes are limited to 1000 vehicles per day.

In summary:-

- Direct access to properties;
- Pedestrian movements; and
- Local cycle movements.

6.3 Performance Criteria

Council has identified the performance criteria in Tables 1-4. Council's Chief Executive Officer (CEO) is delegated the authority to clarify, define and amend the performance criteria in specific instances to ensure that the function of the road is realised.

6.4 Acceptable Solutions

Council has identified the acceptable solutions in Tables 5-8. Council's Chief Executive Officer (CEO) is delegated the authority to clarify, define and amend the acceptable solutions in specific instances to ensure that the function of the road is realised.

Table 1 - Performance Criteria - Urban Areas (Road)

Criterion	Road			
	Arterial Road		Distributor Road	
	Arterial	Sub Arterial	4 Lane Distributor	2 Lane Distributor
	<i>Functional Characteristics</i>			
1. Traffic Carrying Function	Volumes Not Restricted	<20,000vpd	<12,000vpd	<6,000vpd
2. Residential Access Function	Nil	Nil	Multi-Dwelling Sites Only	Individual
3. Through Road	Yes	Yes	Yes	Yes
4. Commercial Access Function	Nil	Nil	Consolidated	Individual
5. Industrial Access Function	Nil	Nil	Consolidated	Consolidated
6. Traffic Speed Environment	100km/h ³	80km/h	70km/h	60km/h
7. Maximum Design Vehicle Access ¹	TMR Permitted Vehicles	Class 10	Class 10	Class 10
8. Dangerous/Hazardous Goods Movement	Primary Routes	Primary Routes	Nominated Routes Only	Inappropriate Except for Business Access
9. Public Transport Facilities	Line Haul, Priority Treatments	Bus Route	Bus Route	Bus Route
10. Minimum Flood Immunity for Access	1 in 100 years	1 in 100 years	1 in 50 years	1 in 50 years
11. Cycle Facilities	Within Road Reserve, Max Separation from Road Formation	Lanes on Road (in shoulder) Within Road Reserve (verge), Max Separation from Road Formation	Lanes on Road (in shoulder) Within Road Reserve (verge), Max Separation from Road Formation	Lanes on Road (in shoulder) Within Road Reserve (verge), Max Separation from Road Formation
12. Pedestrian Movement Facilities	Within Road Reserve, Max Separation from Road Formation	Pathways Both Sides within the verge (see Pathway Hierarchy)	Pathways Both Sides within the verge (see Pathway Hierarchy)	Pathways Both Sides within the verge (see Pathway Hierarchy)
13. Property Access Control	No Access	No Access	Selective Access Control	Selective Access Control
14. Parking Provision	Nil	Nil	Site Specific	Site Specific
15. Longitudinal Linemarking	Edge of Lane & Centre	Edge of Lane & Centre	Edge of Lane & Centre	Edge of Lane & Centre
16. Bus Stopping Provision	On Road Reserve, Separated from Formation	On Road Reserve, Separated from Formation	On Road Reserve, Separated from Formation	Indented, Dedicated Bays where Appropriate
17. Pedestrian Crossings	Grade Separated	① Grade Separated ② Signalised	Grade Separated	Some Controlled Points Underpass Central Refuge
18. Wildlife Corridors	Yes	Yes	Yes	No
19. Intersection Spacing	2km Highway >2km Motorway	1000m (min)	500m (min)	500m (min)
20. Intersection Treatments	Grade Separated	Grade Separated Signalised Roundabout Volume Dependant	Signalised Roundabout Priority "T" Volume dependant	Signalised Roundabout Priority "T" Volume dependant

¹ Austroads Vehicle Classification System

² These roads are to be No Through Roads only

³ Desirable Future level is legal limit

Table 1 - Performance Criteria - Urban Areas (Road) cont'd.....

Criterion	Road			
	Arterial Road		Distributor Road	
	Arterial	Sub Arterial	4 Lane Distributor	2 Lane Distributor
	<i>Functional Characteristics</i>			
21. Intersection Interaction				
- Arterial				
- Sub Arterial				
- Distributor				
- Industrial Collector				
- Residential Collector				
- Access Street				
- Access Place				
22. Cross Section	Divided Carriageway	Divided Carriageway	Divided Carriageway	2 Lanes Undivided
	<i>Impact Characteristics</i>			
23. Abutting Land Use Types	Non Sensitive to Traffic	Non Sensitive, Vehicle Associated	Non Sensitive to Traffic	Retail Commercial Light Industrial
24. Land Use Impact Amelioration	Barriers Buffers Setbacks	Barriers Buffers Setbacks	Buffers Streetscaping Setbacks	① Streetscaping ② Traffic Management (Site Specific)

¹ Austroads Vehicle Classification System

² These roads are to be No Through Roads only

³ Desirable Future level is legal limit

Table 2 - Performance Criteria - Urban Areas (Street)

Criterion	Street			
	Collector Street		Local Street	
	Industrial	Residential/ Commercial	Residential Access Street	Residential Access Place ²
	<i>Functional Characteristics</i>			
1. Traffic Carrying Function	<6,000vpd	<3,000vpd	<1,000vpd	<150vpd
2. Residential Access Function	Nil	Individual	Individual	Individual
3. Through Road	Yes	Yes	Preferred	No (cul-de-sac only)
4. Commercial Access Function	Individual	Individual	No	No
5. Industrial Access Function	Individual	Nil	No	No
6. Traffic Speed Environment	60km/h	60km/h	50km/h	50km/h
7. Maximum Design Vehicle Access ¹	Class 10	Class 9	Service Vehicles only (Class 8)	Service Vehicles only (Class 8)
8. Dangerous/Hazardous Goods Movement	Nominated Routes Only	Inappropriate Except for Business Access	No	No
9. Public Transport Facilities	Bus Route	Bus Route	School Bus Only	No
10. Minimum Flood Immunity for Access	20	20	10	10
11. Cycle Facilities	District/ Neighbourhood Routes, Preference ① Separate Lanes ② Sealed Shoulders Lane ③ On Road Lane	Neighbourhood Routes, Shared Road Space with Cars	Neighbourhood Routes, Shared Road Space with Cars	Neighbourhood Routes, Shared Road Space with Cars
12. Pedestrian Movement Facilities	Pathways Both Sides within the verge (see Pathway Hierarchy)	Pathways Both Sides within the verge (see Pathway Hierarchy)	On Verge, Path on One Side	On Verge
13. Property Access Control	Individual Sites	Individual Sites	Individual Sites	Individual Sites
14. Parking Provision	Kerbside	Kerbside	No Specific (Marked) Provision	No Specific (Marked) Provision
15. Longitudinal Linemarking	Edge of Lane & Centre	Edge of Lane & Centre	Not Required	Not Required
16. Bus Stopping Provision	No Provision	No Provision	No Provision	No Provision
17. Pedestrian Crossings	Controlled Points, as per Pathway Hierarchy	Controlled Points, as per Pathway Hierarchy	No Specific Provision	No Specific Provision
18. Wildlife Corridors	No	No	No	No
19. Intersection Spacing	200m (min)	100m (min)	80m (min)	Nil
20. Intersection Treatments	Roundabout Priority "T" Volume Dependant	Roundabout Priority "T" Volume Dependant	Priority "T"	Priority "T"

¹ Austroads Vehicle Classification System

² These roads are to be No Through Roads only

³ Desirable Future level is legal limit

Table 2 - Performance Criteria - Urban Areas (Street) cont'd.....

Criterion	Street			
	Collector Street		Local Street	
	Industrial	Residential/ Commercial	Residential Access Street	Residential Access Place ²
	<i>Functional Characteristics</i>			
21. Intersection Interaction				
- Arterial				
- Sub Arterial				
- Distributor				
- Industrial Collector				
- Residential Collector				
- Access Street				
- Access Place				
22. Cross Section	2 Lanes Undivided	2 Lanes Undivided	2 Lanes Undivided	2 Lanes Undivided
	<i>Impact Characteristics</i>			
23. Abutting Land Use Types	As Specified Under Zoning	As Specified Under Zoning	As Specified Under Zoning	As Specified Under Zoning
24. Land Use Impact Amelioration	① Streetscaping ② Intersection Control	① Streetscaping ② Intersection Control	① Streetscaping	① Streetscaping

¹ Austroads Vehicle Classification System

² These roads are to be No Through Roads only

³ Desirable Future level is legal limit

Table 3 - Performance Criteria - Rural Areas (Road)

Criterion	Road		
	Arterial Road		Distributor Road
	Arterial	Sub Arterial ²	Distributor ³
Functional Characteristics			
1. Traffic Carrying Function	As Per State Road Authority Requirements	Volumes not Restricted	<5,000 vpd
2. Residential Access		1 per Property	1 per Property
3. Commercial Access		Via a Lower Order Road ⁴	Via a Lower Order Road ⁴
4. Industrial Access		Via a Lower Order Road ⁴	Via a Lower Order Road ⁴
5. Traffic Speed Environment		100km/h	100km/h
6. Heavy Traffic Movement		Available	Available
7. Dangerous Goods Movement		Primary Routes	Nominated Routes Only
8. Maximum Design Vehicle Access ¹		Class 10	Class 10
9. Wildlife Corridors		Yes	No
10. Public Transport Facilities		Line Haul, Priority Treatments	Bus route
11. Cycle Facilities (where Required by Council Cycle Strategy)		Separate From Road	Separate From Road
12. Pedestrian Movement Facilities		Separate From Road	Separate From Road
13. Parking Provision		Nil	Nil
14. Bus Stopping Provision		Dedicated Bays	Dedicated Bays
15. Pedestrian Crossings		No Specific Provision	No Specific Provision
16. Intersection Spacing		>500m	>500m
17. Intersection Treatments		Priority "T"	① Priority "T" ② Roundabout (3 or 4 leg)
18. Intersection Interaction			
- Arterial			
- Sub Arterial			
- Distributor			
- Collector			
- Access Place			
Impact Characteristics			
19. Abutting Land Use Types		Non Sensitive to Vehicle Associated Noise	Non Sensitive to Vehicle Associated Noise
20. Land Use Impact Amelioration		Setbacks ⁶	Setbacks ⁶

¹ Austroads Vehicle Classification System

² Where Road is to be State Controlled, Criteria must follow the State Road Authority Requirements

³ Traffic Distributor is to be used as Industrial Road

⁴ Access is to be to an existing lower order road, or to a newly created lower order road located at an adjoining property boundary.

⁵ Subject to B-Double permit approval

⁶ Distance is to be as specified in the Planning Scheme

Table 4 - Performance Criteria - Rural Areas (Road)

Criterion	Road	
	Collector Road	Local Road
	Collector	Access
	<i>Functional Characteristics</i>	
1. Traffic Carrying Function	<1,000vpd	<150vpd
2. Residential Access	1 per Property	1 per Property
3. Commercial Access	1 per Property	1 per Property
4. Industrial Access	1 per Property	1 per Property
5. Traffic Speed Environment	100km/h (80km/h - Rural Residential)	80km/h (60km/h - Rural Residential)
6. Heavy Traffic Movement	Access Only ⁵	Access Only ⁵
7. Dangerous Goods Movement	Access Only	Access Only
8. Maximum Design Vehicle Access ¹	Class 10	Class 10
9. Wildlife Corridors	No	No
10. Public Transport Facilities	Bus route	No
11. Cycle Facilities (where Required by Council Cycle Strategy)	On Road	No Specific Provision
12. Pedestrian Movement Facilities	No Specific Provision	No Specific Provision
13. Parking Provision	Nil	Nil
14. Bus Stopping Provision	On Widened Shoulder, Coinciding with Property Access	Nil
15. Pedestrian Crossings	No Specific Provision	No Specific Provision
16. Intersection Spacing	>500m	>100m
17. Intersection Treatments	Priority "T"	Priority "T"
18. Intersection Interaction		
- Arterial		
- Sub Arterial		
- Distributor		
- Collector		
- Access Place		
	<i>Impact Characteristics</i>	
19. Abutting Land Use Types	Not Applicable	Not Applicable
20. Land Use Impact Amelioration	Setbacks ⁶	Setbacks ⁶

¹ Austroads Vehicle Classification System

² Where Road is to be State Controlled, Criteria must follow the State Road Authority Requirements

³ Traffic Distributor is to be used as Industrial Road

⁴ Access is to be to an existing lower order road, or to a newly created lower order road located at an adjoining property boundary.

⁵ Subject to B-Double permit approval

⁶ Distance is to be as specified in the Planning Scheme

Table 5 - Acceptable Solutions - Urban Areas (Road)

Criterion	Units	Road			
		Arterial Road		Distributor Road	
		Arterial	Sub Arterial	4 Lane Distributor	2 Lane Distributor
1. Design speed	km/h	90km/h	90km/h	70km/h	70km/h
2. Posted Speed	km/h	80km/h	80km/h	60km/h	60km/h
3. Reserve Width ¹	m	60m (min)	40m (min) Depends on Ultimate Function	40m (min)	25m (min) Depends on Ultimate Function
4. Carriageway Form	Form	Divided	Site Specific	Divided, 2 Lanes Each Direction	2 Lanes
5. Minimum Curve Radius ²	m	900	900	300	300
6. Through Lane Width	m	3.5m	3.5m	3.5m	3.5m
7. Carriageway Width	m	12m (min, no parking)	11m (min, no parking)	11.5m (min) Each Carriageway	13m (min)
8. Verge Width	m	10m (min)	7.5m (min)	6m (min)	6m (min)
9. Verge Grade ³	Max %	2.5% @ 6m	2.5% @ 6m	2.5% @ 4.5m	2.5% @ 4.5m
	Min %	1% @ 6m	1% @ 6m	1% @ 4.5m	1% @ 4.5m
10. Shoulder Width	m	3.0m (min) Left Side 2.0m (min) Right Side Each Carriageway	2.0m (min) Both Sides	4.5m (min)	Site Specific
11. Median Width	m	10m (min)	5m (min)	5m (min)	Nil
12. Kerb Type	Type	Site Specific	Barrier Kerb	Barrier Kerb	Barrier Kerb
13. Median Surface Drainage ⁴	Grade	2% (max) Vegetated 5% (max) Concrete	2% (max) Vegetated 8% (max) Concrete	2% (max) Vegetated 6% (max) Concrete	2% (max) Vegetated 10% (max) Concrete
14. Off Street Path Width (Pedestrian/Cycle) ⁵	m	Refer to Gladstone Regional Council's Bicycle & Pedestrian Hierarchy	2 x 3.0m	2 x 2.5m	2 x 2.5m
15. Bicycle Lane Width	m	Refer to Gladstone Regional Council's Bicycle & Pedestrian Hierarchy	On Road, Marked 2.5m (min, included in shoulder width)	On Road, Marked 2.0m (min, included in shoulder width)	On Road, Marked 2.0m (min, included in shoulder width)
16. On Street Parking (width)	m	Nil	Nil	3m (min)	3m (min)
17. Bus Stop (width)	m	Separate to Carriageway	Site Specific	3m Indented	3m Indented
18. Lighting ⁶	Item	V3 (Min)	V3 (Min)	V4 (Min)	V4 (Min)

¹ Reserve width to increase in localised areas to accommodate cutting, fill, and intersections ie roundabouts etc

² Based on Austroads Part 3. Table 7.10 (using centreline)

³ Grade to be positive, from top of kerb, with distance measured from 'back' of kerb

⁴ Q100 events to be contained within road/drainage reserve

⁵ Path widths are to be ultimately controlled by the Footpath / cycleway Strategy

⁶ Lighting must be designed in accordance with AS1158 set, and Main Roads Manual

Table 5 - Acceptable Solutions - Urban Areas (Road) cont'd.....

Criterion	Units	Road			
		Arterial Road		Distributor Road	
		Arterial	Sub Arterial	4 Lane Distributor	2 Lane Distributor
19. Grade - Longitudinal	Max %	5% (max)	6% Maximum 8% Maybe Permitted for Maximum Length of 100m (Excluding Transitions)	6% Maximum 8% Maybe Permitted for Maximum Length of 100m (Excluding Transitions)	6% Maximum 8% Maybe Permitted for Maximum Length of 100m (Excluding Transitions)
	Min %	0.5%	0.5%	0.5%	0.5%
20. Noise Attenuation	Priority Order	① Buffer ② Landscaping & Buffer ③ Barrier	Site Specific	① Buffer ② Landscaping & Buffer	Site Specific
21. Appropriateness of LATM	Item	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable

¹ Reserve width to increase in localised areas to accommodate cutting, fill, and intersections ie roundabouts etc

² Based on Austroads Part 3. Table 7.10 (using centreline)

³ Grade to be positive, from top of kerb, with distance measured from 'back' of kerb

⁴ Q100 events to be contained within road/drainage reserve

⁵ Path widths are to be ultimately controlled by the Footpath / cycleway Strategy

⁶ Lighting must be designed in accordance with AS1158 set, and Main Roads Manual

Table 6 - Acceptable Solutions - Urban Areas (Street)

Criterion	Units	Street			
		Collector Street		Local Street	
		Industrial	Residential/ Commercial	Residential Access Street	Residential Access Place
1. Design speed	km/h	70km/h	70km/h	60km/h	60km/h
2. Posted Speed	km/h	60km/h	60km/h	50km/h	50km/h
3. Reserve Width ¹	m	25m (min)	22m (min)	18m (min)	17m (min)
4. Carriageway Form	Form	2 Lanes	2 Lanes	2 Lanes	2 Lanes
5. Minimum Curve Radius ²	m	300	300	200	200
6. Through Lane Width	m	3.5m	3.0m	3.0m	3.0m
7. Carriageway Width	m	13m (min)	11m (min)	9m (min)	8m (min)
8. Verge Width	m	6m (min)	5.5m (min)	4.5m (min)	4.5m (min)
9. Verge Grade ³	Max %	2.5% @ 4.5m	2.5% @ 4m	2.5% @ 3m	2.5% @ 3m
	Min %	1% @ 4.5m	1% @ 4m	1% @ 3m	1% @ 3m
10. Shoulder Width	m	N/A	N/A	N/A	N/A
11. Median Width	m	Site Specific 2.0m min. (Where Provided)	Site Specific 2.0m min. (Where Provided)	Nil	Nil
12. Kerb Type	Type	Barrier Kerb and Channel (150mm high)	Barrier Kerb and Channel (150mm high)	Mountable Kerb and Channel (100mm high)	Mountable Kerb and Channel (100mm high)
13. Median Surface Drainage ⁴	Grade	2% (max) Vegetated 8% (max) Concrete	2% (max) Vegetated 8% (max) Concrete	Nil	Nil
14. Off Street Path Width (Pedestrian/Cycle) ⁵	m	2 x 1.5m(min)	2 x 1.5m(min)	1 x 1.5m	Nil
15. Bicycle Lane Width	m	On Road, Not Marked	On Road, Not Marked	On Road, Not Marked	On Road, Not Marked
16. On Street Parking (width)	m	2.5m (min)	2.5m (min)	Unmarked	Unmarked
17. Bus Stop (width)	m	Unmarked	Unmarked	Unmarked	Nil
18. Lighting ⁶	Item	P4 (Min)	P4 (Min)	P4 (Min)	P4 (Min)
19. Grade - Longitudinal	Max %	8% max	8% Max Absolute Max 10% Under 75m Length (Exclude Transitions) on one Occasion per road	10% Max Absolute Max 15% Under 25m Length (Exclude Transitions)	10% Max Absolute Max 15% Under 25m Length (Exclude Transitions)
	Min %	0.5%	0.5%	0.5%	0.5%
20. Noise Attenuation	Priority Order	Incorporate in Building/Lot Design (Passive)	Incorporate in Building/Lot Design (Passive)	No	No
21. Appropriateness of LATM	Item	Not Acceptable	Not Acceptable	Not Acceptable	Not Acceptable

¹ Reserve width to increase in localised areas to accommodate cutting, fill, and intersections ie roundabouts etc

² Based on Austroads Part 3. Table 7.10 (using centreline)

³ Grade to be positive, from top of kerb, with distance measured from 'back' of kerb

⁴ Q100 events to be contained within road/drainage reserve

⁵ Path widths are to be ultimately controlled by the Footpath / cycleway Strategy

⁶ Lighting must be designed in accordance with AS1158 set, and Main Roads Manual

Table 7 - Acceptable Solutions - Rural Areas (Road)

Criterion	Units	Road		
		Arterial Road		Distributor Road
		Arterial	Sub Arterial	Distributor
1. Design Speed	km/h	As Per State Road Authority Requirements	110km/h	110km/h
2. Reserve Width ¹	m		40m (min)	30m (min)
3. Carriageway Form ²	Form		2 lanes	2 lanes
4. Running Surface	Type		Sealed	Sealed
5. Minimum Curve Radius ³	m		1,100m	1,100m
6. Minimum Formation Width	m		16.0m	13.0m
7. Carriageway Width (cw)	m		12.0m	9.0m
8. Through Lane	m		3.5m	3.5m
9. Shoulder Width	m		2.5m	1.0m
10. Shoulder Surface	Type		Sealed	Sealed
11. Guidepost Lateral Location	Item		At Edge of cw	At Edge of cw
12. Verge Width	m		1m (min)	1m (min)
13. Median Width	m		1x Clear Zone Width (where required)	Not Appropriate
14. Drainage Depth ⁴	m		0.3m (min)	0.3m (min)
15. Clear Zone Width ⁵	m		See Note 2	
16. Off Street Path Width (Pedestrian/Cycle)	m		No Provision	No Provision
17. Bicycle Lane Width	m		Nil (use Sealed Shoulder)	No Provision
18. On Street Parking (Width, Indented)	m		No Provision	No Provision
19. Bus Stop (Width, Indented)	m		3m Shoulder Extensions (where required)	3m Shoulder Extensions (where required)
20. Grade - Longitudinal	%		5% Max	7% Max
21. Noise Attenuation	Item		Not Appropriate	Not Appropriate
22. Appropriateness of LATM	Item		Not Appropriate	Not Appropriate

¹ Minimum Reserve width is carriageway + verge width x 2 + drainage x 2 + Lateral Clearance x 2, width to increase in localised areas to accommodate cutting, fill, and intersections ie roundabouts etc

² Carriageway form is typically located centrally within the road reserve

³ 3% superelevation is utilised for these minimum radii

⁴ Drainage depth is depth below edge of carriageway

⁵ As per Austroads Guide to Road Design Part 6, Table 4.1

⁶ This category includes all unformed unmade roads within Dedicated Road Reserves

⁷ For areas other than rural residential with AADT <10, carriageway width of 4m is acceptable, AADT<50, cw of 5m, AADT<100, cw of 6m

Table 8 - Acceptable Solutions - Rural Areas (Road)

Criterion	Units	Road	
		Collector Road	Local Road
		Collector	Access ⁶
1. Design Speed	km/h	110km/h (90km/h - Rural Residential)	110km/h (70km/h - Rural Residential)
2. Reserve Width ¹	m	25m (min)	25m (min)
3. Carriageway Form ²	Form	2 lanes	2 lanes
4. Running Surface	Type	Sealed	Formed (AADT<10) Gravel (AADT<100) Sealed (AADT >= 100) (Sealed - Rural Residential)
5. Minimum Curve Radius ³	m	1,100m	1,100m
6. Minimum Formation Width	m	12.0m	11.0m
7. Carriageway Width (cw)	m	8.0m	7.0m ⁷
8. Through Lane	m	3.0m	3.0m
9. Shoulder Width	m	1.0m (min)	0.5m (min)
10. Shoulder Surface	Type	Sealed (Sealed with concrete edge protection - Rural Residential)	Gravel (Sealed with concrete edge protection - Rural Residential)
11. Guidepost Lateral Location	Item	At Edge of cw	At Edge of cw
12. Verge Width	m	1m (min)	1m (min)
13. Median Width	m	Not Appropriate	Not Appropriate
14. Drainage Depth ⁴	m	0.3m (min)	0.3m (min)
15. Clear Zone Width ⁵	m	See Note 2	
16. Off Street Path Width (Pedestrian/Cycle)	m	No Provision	No Provision
17. Bicycle Lane Width	m	No Provision	No Provision
18. On Street Parking (Width, Indented)	m	No Provision	No Provision
19. Bus Stop (Width, Indented)	m	3m Shoulder Extensions (where required)	No Provision
20. Grade - Longitudinal	%	8% Max	10% Max (Unsealed) 15% Max (Sealed)
21. Noise Attenuation	Item	Not Appropriate	Not Appropriate
22. Appropriateness of LATM	Item	Not Appropriate	Not Appropriate

¹ Minimum Reserve width is carriageway + verge width x 2 + drainage x 2 + Lateral Clearance x 2

² Carriageway form is typically located centrally within the road reserve

³ 3% superelevation is utilised for these minimum radii

⁴ Drainage depth is depth below edge of carriageway

⁵ As per Austroads Guide to Road Design Part 6, Table 4.1

⁶ This category includes all unformed unmade roads within Dedicated Road Reserves

⁷ For areas other than rural residential with AADT <10, carriageway width of 4m is acceptable, AADT<50, cw of 5m, AADT<100, cw of 6m

Figure 1 - Urban Areas

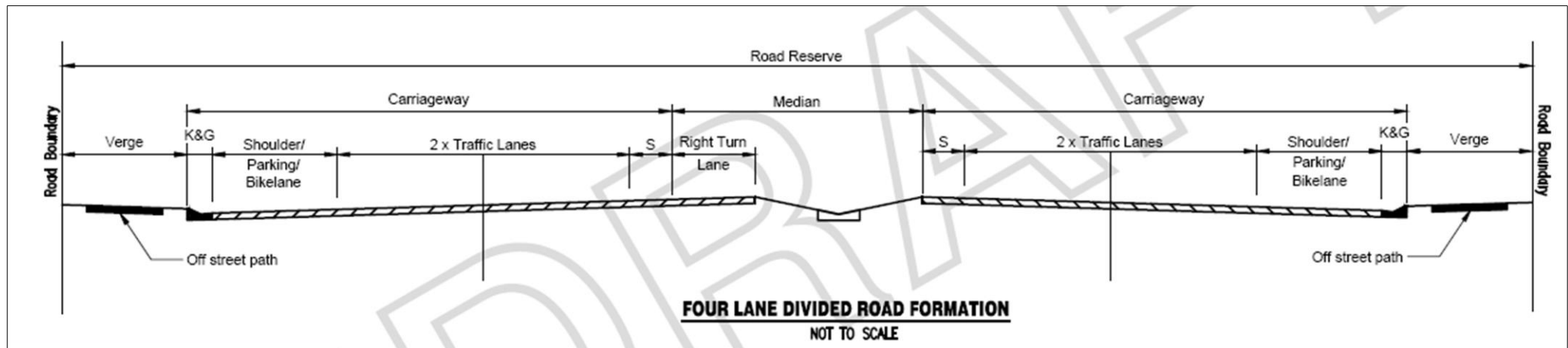
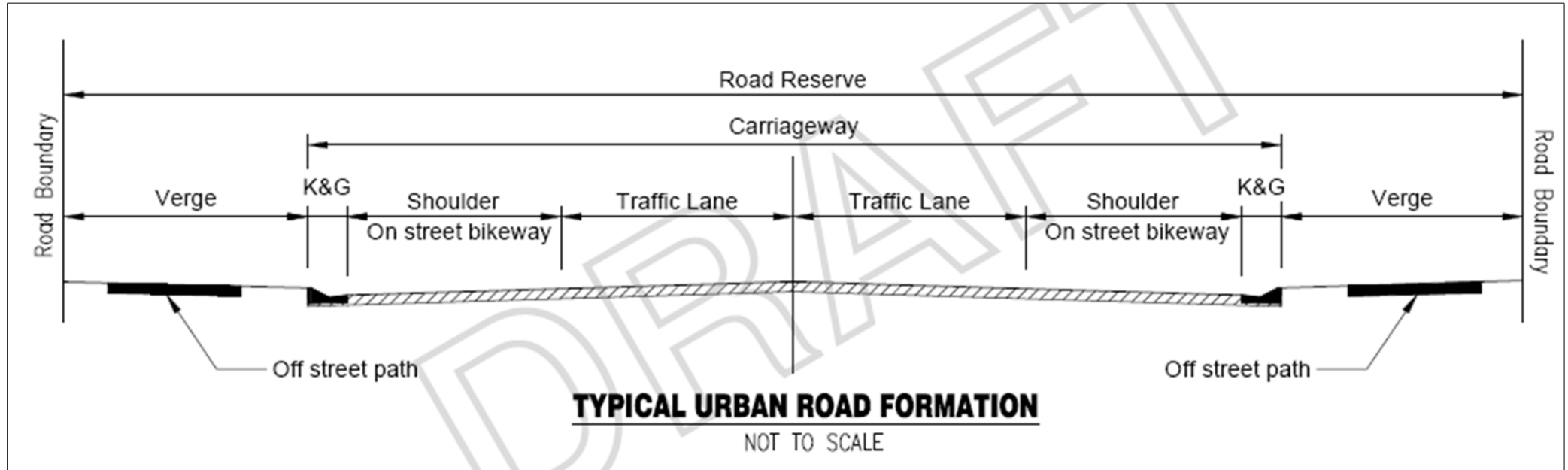
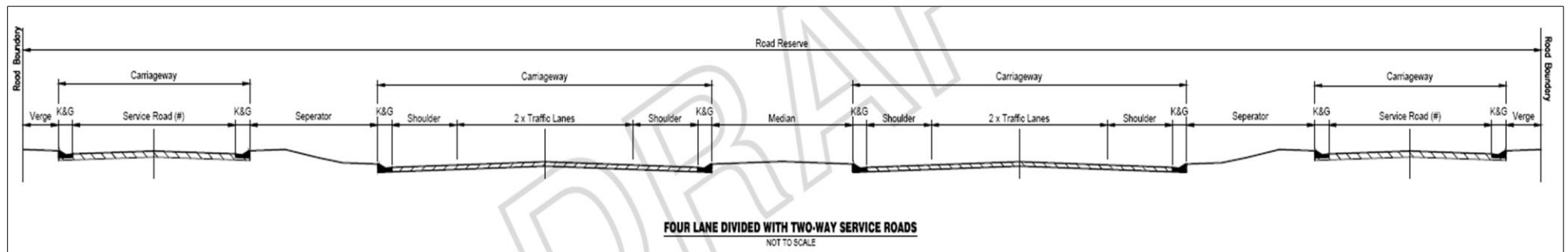
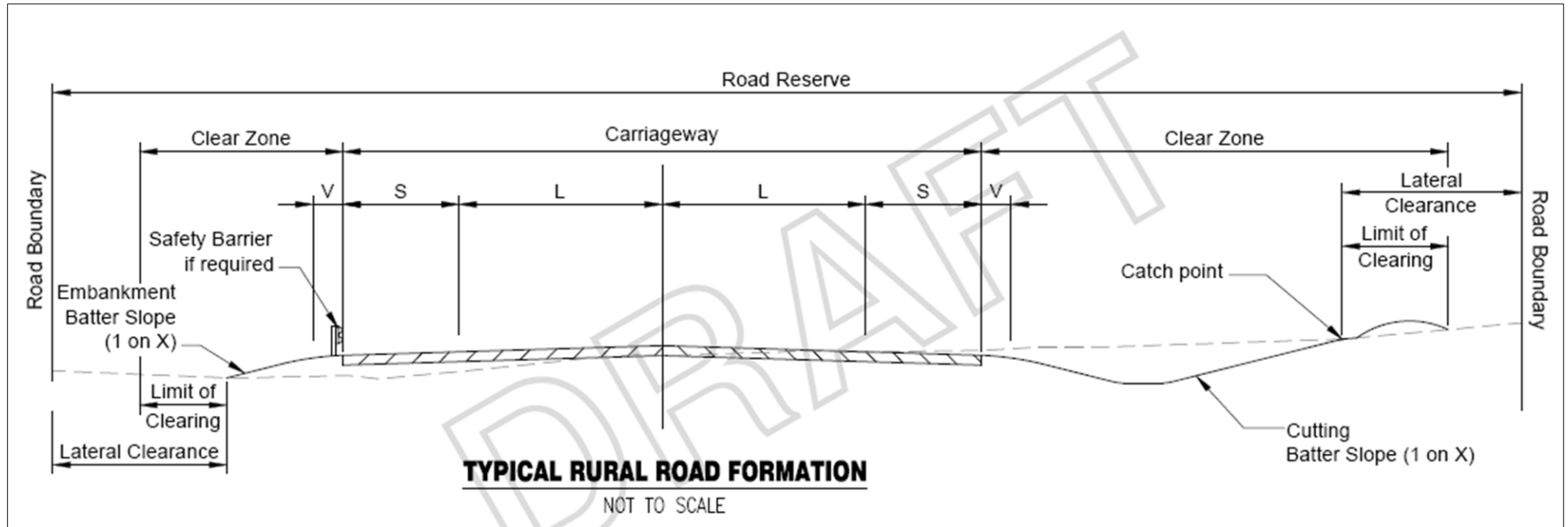


Figure 2 - Rural Areas



7.0 ATTACHMENTS:

Nil

8.1 REVIEW TRIGGER:

This policy will be reviewed when any of the following occurs:

1. The related legislation/documents are amended or replaced.
2. Other circumstances as determined from time to time by a resolution of Council.
3. Periodic Review – 2 years from date of adoption.

TABLE OF AMENDMENTS		
Originally Adopted	2 SEPTEMBER 2014	G/14/2143
Amendment 1	<INSERT DATE COUNCIL MEETING>	<INSERT RESOLUTION NUMBER>
Amendment 2	<INSERT DATE COUNCIL MEETING>	<INSERT RESOLUTION NUMBER>
Amendment 3	<INSERT DATE COUNCIL MEETING>	<INSERT RESOLUTION NUMBER>

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STUART RANDLE
CHIEF EXECUTIVE OFFICER