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Introduction

In 1995, the Institute of Public Works Engineering Australasia, Queensland (IPWEAQ) compiled a set of 96 drawings applicable to development and local authority works in Queensland. The drawings were revised in 1997 and reviewed and updated multiple times since by a Working Group comprising representatives from various councils. The Standard Drawings – Homeowner were most recently reviewed in 2014.

Each drawing reflects the latest technology and most up-to-date specifications and standards for modern land developments. The drawings are referenced in a significant number of council planning schemes and are an important technical reference for those working on public works projects in Queensland. Drawings offer councils, planners, developers and engineers, efficiencies with time and costs.

IPWEAQ wishes to thank the joint consultative efforts of the original steering committee and a 2006 Technical Reference Group including representatives from:

• The Department of Primary Industries – Water Resources
• Civil Contractors Federation
• Urban Development Institute of Australia
• Brisbane City Council
• Association of Consulting Engineers Australia
• Moreton Bay Shire Council (and predecessors)
• Sunshine Coast Council (and predecessors)
• Logan City Council
• And consultative designer, Kai Pelgrave

And we are indebted to the ongoing efforts of our dedicated Working Group chaired by Paul Paszek of Moreton Bay Regional Council:

• Brisbane City Council: Dallas Lee
• City of Gold Coast: Peter Crutch, Dean Ostrofski
• City of Ipswich: Raad Jarjees, Robert Young
• Moreton Bay Regional Council: Paul Paszek (Chair), Andrew Golkowski, Ruth Holliday
• Noosa Council: Craig Eldridge
• Redland City Council: Bradley Salton, Len Purdie
• Sunshine Coast Council: Gary Schulz, Darren Meredith
• TMR: Mark McDonald, Kevin R Mahoney
• Toowoomba Regional Council: Gary Natalier

Leigh Cunningham
CEO, IPWEAQ
### Allowable Number and Width of Residential Vehicle Crossings

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Allowable No. of Crossings</th>
<th>Max Width at Kerb Invert (W1)</th>
<th>Max Width at Property Boundary (W2)</th>
<th>Special Conditions Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single House</td>
<td>1 Single garage</td>
<td>1</td>
<td>4.0m</td>
<td>3.0m</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Double garage or more</td>
<td>1</td>
<td>4.0m</td>
<td>3.0m</td>
<td>1. min 40.0m frontage; 2. min 12.0m between two crossings.</td>
</tr>
<tr>
<td></td>
<td>3 Double garage or more</td>
<td>2</td>
<td>4.0m</td>
<td>3.0m</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 Double garage or more or property boundary</td>
<td>1</td>
<td>5.0m</td>
<td>4.0m</td>
<td>Subject to carport/garage approval.</td>
</tr>
<tr>
<td>Duplex</td>
<td>5 Duplex with frontage 20.0m or less</td>
<td>1</td>
<td>5.0m</td>
<td>4.0m</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 Duplex with frontage greater than 20.0m</td>
<td>2</td>
<td>5.0m</td>
<td>4.0m</td>
<td>min 7.0m between crossings.</td>
</tr>
</tbody>
</table>

**Legend**

- **NKL** nominal kerb line (face of kerb)
- **TP** Tangent point on NKL
- **Prohibited Locations shown in a heavy line, based on AS 2890.1**
- **X** The points marked 'X' are either at the median on a divided road, or at the intersection of the main road centreline and the prolongation of the side road NKL line on an undivided road.

**Setout Requirements**

- Services & road furniture will not be moved for Vehicle Crossings.
- This drawing to be read in conjunction with RS-050.

**Vehicle Crossing Prohibited Locations**

<table>
<thead>
<tr>
<th>Collector</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>VEHICLE CROSSING RESIDENTIAL DRIVEWAYS PLAN 1 OF 2</td>
<td>INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STANDARD DRAWINGS</td>
</tr>
<tr>
<td>RS-049</td>
<td></td>
</tr>
</tbody>
</table>
**NOTE:**

1. All appropriate permits must be obtained from relevant council specifying crossing type, construction materials, location, levels, surface finishes and dimensions, prior to any excavation.
2. Alternatively, materials for construction, other than reinforced concrete, refer to relevant council for approval.
3. Crossings to be constructed square to the street alignment, wholly contained within the site frontage from invert of channel to property boundary.
4. One access to be constructed per alignment unless otherwise approved by relevant Council.
5. To reduce impact on available street parking, consideration is to be given to visitor’s and adjoining property’s parking needs when selecting a crossing location.
6. Crossings to be located clear of existing gully pits. Where this cannot be achieved, the gully pit and pipework may be relocated at the property owner’s expense, subject to approval of the relevant council.
7. Crossings to be located clear of all service authority’s fittings, manholes and pits. Subject to relevant Council approval, where this cannot be achieved, existing service pits are to be contained within the area of new driveway, pit surface to match approved driveway finished levels.
8. Kerb adaptors and associated roofwater drainage to be located clear of crossings.
9. Council will not relocate traffic islands or provide breaks in traffic islands to allow driveway access.
10. For water sensitive urban design verges, the crossing is subject to relevant council design and approval.
11. **Design of crossings must achieve a high point of 200mm above invert of kerb to ensure stormwater in contained within the road reserve as per requirement of O.L.D.M. (Queensland Urban Drainage Manual). The constraint may be varied at the approval of the relevant Council.
12. Under special circumstances Council may approve a rising grade of 1:10 max or falling grade of 1:20 min. Longitudinal grades along property boundary must allow for free drainage and pedestrian safety.
13. Path zone with may vary to match existing concrete pathways and verge profiles. Path earthworks adjoinig concrete must be well compacted.
14. Earthworks cut and fill batters from edge of crossing or path to natural surface to be maximum grade at 1 in 10 and fully turfed prior to council inspection.
15. Existing path to be longitudinally transitioned to new crossing at a maximum grade of 1 in 10.
16. Flat concrete surfaces to be heavy beem finished.
17. Decorative surfaces are subject to relevant council approval, where approved, to have a 5mm max depth variation in the finished surface profile. Exposed aggregate finish subject to relevant council approval due to environmental reasons.
18. Expansion joints to be 10mm thick full depth closed cell cross linked polyethylene foam (RS - 150 kg/m3) or 8.5mm thick bitumen impregnated compressed granulated cardboard. Installation to manufacturers’ instructions. Seal surface of joint with a suitable polyurethane sealant.

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**TYPICAL PROFILE VEHICLE CROSSING/DRIVEWAY ACCESS**

**SECTION A**

Refer drawing RS-049

**Vehicle Crossing**

- Height above invert of channel (mm)
- Distance from invert of channel (m)
- Road surface
- Transition
- Path zone
- Driveway

**Section B**

Refer drawing RS-049

- Property boundary
- Roll over
- Garage/Carport slab
- Grated drain

**NOTE:**

- Concrete surface tolerance to be 3mm over 3 meter sections.
- Concrete to be minimum grade NS2 in accordance with AS 1379 and AS 3600.
- Concrete construction to comply with the requirements of AS 3600, concrete code.
- Control joints to be sealed with a low modulus self-pining sealant to the manufacturer's specification, refer RS-065.
- Framework and reinforcement shall be in place and inspected and approved by the relevant council prior to placement of concrete.
- Maintenance of the crossings are the responsibility of the property owner.
- Drawing to be read in conjunction with RS-049.
- Cross fall of existing pavement adjacent to the crossing to be checked. If cross fall exceeds 3%, relevant council will decide if crossing needs to be re-designed to ensure satisfactory clearance for vehicles.
- Construct grouted drain to prevent water entering garage/Carport slab.
- Driveways to be constructed in accordance with Queensland Development Code NMP 1.1 - Driveways (However, drawings RS-049 and RS-050 take precedence in the extent of any inconsistency).

All surfaces subject to pedestrian traffic (including vehicle crossings) will meet the minimum pavement or ramp recommendations contained in Table 5 of Australian Standard Handbook HS 198:2014 – Guide to the specification and testing of slip resistance of Pedestrian Surfaces.

Compliance with the recommendations to be verified by testing to either AS/NZS 4588:2013 – Slip Resistance Classification of New Pedestrian Surface Materials or, AS/NZS 4663:2013 – Slip Resistance measurement of existing Pedestrian Surfaces as appropriate.


In general, the classification of a surfacing material or finish to be made on a worst case basis as determined by pendulum testing using both the Four S (Slider 96) and TRL (Slider 65) rubber sliders.

Where additional test results are available (Ir-Wet Ramp, Ir-Dryfront Ramp) they will be taken into consideration. Only those test reports/ certificates produced by an appropriately NATA accredited laboratory will be deemed acceptable for consideration.

All Dimensions are in millimetres unless shown otherwise.

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**INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA**

**STANDARD DRAWINGS**

**VEHICLE CROSSINGS RESIDENTIAL DRIVEWAYS**

**PLAN 2 OF 4**

RS-050

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These drawings have been developed in consultation with participating councils.

**BEFORE USE** the user shall confirm that the drawing has been adopted by the appropriate Council.
Concrete Pathways - Part Plan

Pathway Widening/Joining (minimum widening 800)

- Joint to be either Tooljoint or Sawcut 1/3 depth x 5 wide or appropriate mechanical joint. Refer Note 11.
- Dowel with proprietary mechanical joint. Refer Note 11.
- SL72 mesh central.
- Cut every second wire and depress reinforcing to maintain cover.

Control Joint (CJ)

Shown CJ on plans

Notes:
1. Refer to relevant Council requirements for pathway width, dimensions and concrete colour.
2. Concrete to be grade N32 AS 1379 and AS 3600 unless approved otherwise.
3. Reinforcing requirements may be amended on written instructions from Council.
4. Fibre reinforcement – When approved for use by the relevant Council, the concrete shall be reinforced with Class 2 macro structural synthetic polymer fibres in accordance with the manufacturer's specification for the specified design load.
5. For steel mesh reinforced paths at dowelled expansion joints, mesh is to be stopped 75 from the joint, be placed under the dowels and chained at 500 mm centres to stop the mesh deflection interfering with the Dowels.
6. Pathway surface finish to comply with Notes 16, 17 and 30 on Standard Drawing RS-060.
7. The dimension between kerb invert and edge of pathway may be varied subject to relevant council approval. For appropriate treatment of grades greater than 1 in 8 (12.5%), refer to AS 1428. Design for access & mobility.
8. Where a vehicle crossing joint, or path is subject to longitudinal traffic the pathway details shall be per relevant residential driveway standard details RS-060.
9. Additional path details shall be as per Austroads Guidelines.
10. Expansion joints to be sealed with a low modulus self priming sealant to the manufacturer’s satisfaction. The colour of the sealant is to match the adjoining surface finish.
11. Saw cut joints to be undertaken between 4 to 12 hours after laying depending on conditions. Joint sealant is required in sandy areas.
12. All dimensions are in millimetres unless otherwise stated.
6 | HOMEOWNER DRAWINGS

SECTION A-A

Approved metal kerb adaptor to be full height of kerb and to conform with kerb and channel profile. Inverts of the kerb adaptor and channel are to match.

100 ID uPVC Rooffwater/Stormwater drain in accordance with AS 1260 min class SN10 with a grade no flatter than 1 in 200 (5 in 1).

SECTION B-B

CAUTION
Verify location of services prior to commencement of work.

Compacted sand for bedding and backfill.

NOTE:
For specifications refer to manufacturer’s product information.

TYPICAL FULL HEIGHT KERB ADAPTOR

NOTES:
1. Kerb adaptors and other ancillary components within the verge are to be designed to cater for residential vehicle loadings and be approved by the relevant Council.
2. Roofwater/Stormwater drains are to transport only clean stormwater runoff from roofed or otherwise uncontaminated areas.
3. The requirements of AS 3500.3.1 Stormwater drainage - Performance requirements and the Queensland Building Code Regulations are to be met.
4. Roofwater/Stormwater drain outlets are not to be positioned within 5 metres of the upstream side of a catchpit. (measured from the nearest catchpit component). Thus providing uncompromised capture efficiency of the catchpit. Outlets in the area are to discharge into the catchpit. The maximum discharge of stormwater drainage allowable to Council’s kerb & channel street drainage system at any one location is 25 litres/second.
5. Council approval is required to connect to stormwater infrastructure such as manholes, catchpits and the like.
6. An alternative Roofwater/Stormwater drain within the verge is two continual lengths of 125x75x3 hot dipped galvanised RHS at a grade no flatter than 1 in 250 and cut to finish flush with the kerb profile. All cut ends are to be cold galvanised and the kerb reinstated. Concrete cover to relevant Council approval.
7. Council’s policy is that provision and maintenance of private Roofwater/Stormwater drains are the responsibility of the property owner. The property owner is also responsible for verge restoration to original conditions after construction.
8. Appropriate measures are to be taken to ensure work site safety during construction.
9. The minimum requirement for new allotments is provision of two kerb adaptors plus piped drainage to the far edge of the concrete footpath where applicable.
10. All dimensions are in millimetres unless shown otherwise.