

Crossover Specifications Infrastructure Services



June 2017

Infrastructure Service Standards

This specification is made pursuant to the provisions of sections of the Local Government Act, 1995, Schedule 9.1(7) and the Local Government (Uniform Local Provisions) Regulation 1996, Sections 12, 13, 14, 15 and 16.

Introduction

- Under the Council's Policy Manual a 'Standard Crossing' place shall provide a minimum 2.80m wide pavement splayed at the kerb with a one (1) metre x three (3) metre splay on each side, constructed in accordance with Council's specifications for URBAN properties;
OR
- A 'Standard Crossing' place shall provide a minimum 4.00m wide trafficable area splayed at the road edge with an area sufficient to accommodate turning vehicles that is constructed in accordance with the specifications for RURAL properties.
- It should be noted that these specifications only apply to roads controlled by the Shire. Roads controlled by Main Roads Western Australia (Bussell Highway, Brockman Highway and Caves Road) must have vehicle crossing places built to Main Roads WA standards.

1. Crossover Density

- The design principle for designing crossovers in Western Australia is to design for the least amount of crossovers in a given area where possible (*R-Codes*). This improves the safety of path users and lowers costs associated with constructing and maintaining crossovers. Minimising the number of crossovers also reduces the level of conflict and friction along busier roadways, and creates additional space for street trees, pedestrian crossing and on-street parking.
- The *R-Codes* specify a maximum density of 1 crossover per 20m of frontage, where housing density is greater than R30. Crossovers to be provided where required for housing density less than R30.
- Narrow lots shall be constructed with paired crossovers to minimise conflict and retain verge space for street trees, lighting, overhead power and on-street parking.
- All residential lots are entitled to access irrespective of the constraints of location and sightlines *AS2890.1: Clause 3.2.3a*).

2. Urban Properties

Council subsidy is payable if the crossover is constructed with a sealed pavement surface being of;

- Sprayed Bitumen (i.e. two coat seal).
- Bituminous Concrete (hot mix or asphalt).
- In-Situ Concrete.
- Paving Bricks or Blocks.

NOTE: Compacted gravel or limestone crossovers are not acceptable where a property fronts a sealed road. Concrete is the preferred construction material as it provides a low maintenance and long lasting surface.

3. Rural Properties

Council subsidy is payable for sealed crossovers fronting sealed roads providing all other aspects of the specification are adhered to.

4. Multiple Crossovers

Council may permit a second crossover subject to application and approval from the Director of Infrastructure Services. No driveway wider than 6m at the street boundary and driveways in aggregate no greater than 9m for any one property.

NOTE: There is no subsidy payable for additional crossovers.

5. Principle requirements for BRICK PAVED CROSSOVERS

- A clay brick or concrete paving block crossing shall consist of a minimum of:
 - 100mm (residential), 150mm (commercial) or 200mm (industrial) of compacted thickness of approved base course material (i.e. approved road making gravel or road base). It is to be spread, rolled, water bound and levelled to conform to the proposed shape and grade of the crossover.
 - Compacted sand bedding layer of 30mm.
 - Firm edge restraints to prevent lateral movement of paving blocks at edges.
 - Minimum paver thickness – 50mm
- Construction of Pavement
 - Sheets of plywood of minimum thickness of 12mm shall be laid on the pavers to prevent the compactor coming in direct contact with the surface. Two (2) passes with a high frequency, low amplitude plate compactor (having an area sufficient to cover a minimum of 12 pavers) shall be used for compaction.
 - After compaction, the joints shall be filled with clean dry siliceous sand 100% passing a 2.36mm sieve which should be brushed into joints. A further two (2) passes with the plate compactor shall be applied.
 - Road and Property Edge – Where the street has not been kerbed a 20 MPa concrete beam 150 x 150mm shall be constructed at the carriageway, to a neatly cut edge. If the crossing construction is not continuous with the internal driveway, a beam is also to be constructed on the boundary. The edge restraint at the carriageway is to coincide with the future street kerb face line as advised by Council. Soldier course pavers set on 100mm of concrete may be used as an alternative to the beam.
 - Where the street is kerbed a soldier course is to be used immediately behind the kerbing.

6. Principle requirements for CONCRETE CROSSOVERS

- Minimum thickness Residential 100mm
Commercial 150mm with F82 mesh
- Concrete strength 25 MPa @28 days
- Finish Non-slip broomed finish, free of depressions
- Contraction Joints Minimum depth of 10mm located at splay junctions or at spacing's not exceeding 1.80m
- Expansion Joints 12mm wide canite material full depth of crossing with spacing not exceeding 3.60m and around any obstructions. Jointing with road and kerb must be neat, matched and free of sharp edges, corners and spillage. An expansion joint is required at the boundary line and at the back of the kerb, to allow for the expansion and contraction of the concrete.

7. Principle requirements for BITUMEN CROSSOVERS

- Minimum thickness Residential 125mm compacted gravel
Commercial & Industrial 200mm compacted gravel
- Bitumen application First coat 1.2litres/1.0m²
Second coat 1.0 litres/1.0m²
- Stone size 5mm Basalt or Diorite rolled between coats (or approved equivalent) per bitumen application.

8. Principle requirements for ASPHALT CROSSOVERS

- Base course thickness Residential 125mm compacted gravel
Commercial 200mm compacted gravel
- Asphalt thickness Residential 20mm Asphalt
Commercial 30mm Asphalt
- Edge Restraints Flush Kerbing (or approved equivalent) providing no trip hazard exist

9. General Dimensions

- Minimum width at roadside (excluding splay)
 - Residential 2.80m
 - Commercial & Industrial 6.00m
 - Rural 4.00m
- Maximum width at roadside (excluding splay)
 - Residential 6.0m
 - Commercial & Industrial crossovers to be assessed
- Minimum Splay Size 1.00m x 3.00m

10. Location

- Every endeavour should be made to avoid public service utility facilities and trees present in the verge when locating the vehicle crossing.
- The removal or relocation of trees to make way for the crossing shall be first approved by the Shire and arranged and paid for by the property owner.
- If the proposed location of a crossover conflicts with the location of existing services, such as manholes, power poles, street trees, etc it is the responsibility of the Owner/Agent/Developer to relocate such services.
- The crossing is not to be positioned within a corner truncation or closer than 7.0m from the property line intersection point at corner sites where no truncation exists on lot or 1.0m where truncation does exist.
- The crossing shall be constructed at 90 degrees to the kerb line.
- In Special Rural and Rural areas with significant vegetation on the verge, the crossover will need to be located to achieve sight distances and avoid unnecessary removal of vegetation. Please contact the Infrastructure Services Department on 9780 5255 for further information and advice.

11. Levels and Shape

- Mountable Kerbed Roads;

The crossover shall commence at the top of the kerb and rise 50mm to a point 2.0m behind the kerb. Beyond that point the crossover may be graded to match the level of the property boundary or internal driveway.

- Barrier Kerbed Roads;

The crossover shall commence at the top of the kerb and rise 50mm to a point 2.0m behind the kerb. Beyond that point the crossover may be graded to match the level of the property boundary or internal driveway.

The kerbing shall be removed to a width sufficient to accommodate the crossing and splays. The drainage channel along the kerb face must be maintained. The crossover shall be 'bull nosed' to rise to the same level as the top of the kerb at a point 450mm behind the kerb.

- Un-kerbed Roads;

The crossover shall commence at the edge of seal and shall be 'bull nosed' to rise 120mm at a point 450mm behind the road edge. The crossover shall then rise 50mm to a point 2.0m behind the road edge. Beyond that point the crossover may be graded to match the level of the property boundary or internal driveway.

- Rural or Special Rural;

The crossover shall commence at the top of the kerb and rise 50mm to a point 2.0m behind the kerb. Beyond that point the crossover may be graded to match the level of the property boundary or internal driveway.

Crossover may be constructed to a profile that best suits the natural ground levels such that there is no significant change in levels. Where the crossover crosses a 'swale drain' it will require a pipe culvert and headwall structure. A minimum 300mm diameter reinforced concrete pipe is to be installed with a mortared stone or precast headwall rising above the crossover level.

All special rural developments require a sealed and drained crossover where they front a sealed road frontage exists. The crossover is to be constructed to a minimum standard two coat seal.

- Trip Hazards;

No edging or kerbs are to protrude above ground level between boundary and road to avoid possible trip hazards.

12. Miscellaneous

- Maintenance

Ongoing maintenance of the crossover is the responsibility of the land owner.

- Traffic management and vegetation

Works are prohibited within the road reserve including any pruning or clearing of vegetation without prior written approval of the Shire. The Proponent shall submit and implement a Traffic Management Plan prepared by a licenced Traffic Manager in accordance with MRWA Traffic Management Code of Practice and Australian Standards AS1742.3- for any works on or within the road reserve (including road).