City of Melville
Crossover Guidelines and Specifications

Acknowledgement:

This guideline has been prepared with reference to the Western Australian Local Government Association (WALGA)
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# Glossary

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<thead>
<tr>
<th>Name</th>
<th>Definition / Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alignment of Path</strong></td>
<td>The location of the path within the verge area</td>
</tr>
<tr>
<td><strong>Battle-axe lots</strong></td>
<td>A block of land behind another, with access from the street via a separate crossover</td>
</tr>
<tr>
<td><strong>Block pavement structure</strong></td>
<td>Block patterns which are generally used in the construction of driveways</td>
</tr>
<tr>
<td><strong>Clearance</strong></td>
<td>The space required between the path and an obstruction</td>
</tr>
<tr>
<td><strong>Concrete Apron</strong></td>
<td>The transition between the road surface and the crossover</td>
</tr>
<tr>
<td><strong>Crossfall</strong></td>
<td>Grade across the path width; necessary for adequate drainage</td>
</tr>
<tr>
<td><strong>Crossover</strong></td>
<td>The extension of a driveway from the edge of the property boundary to the edge of the road</td>
</tr>
<tr>
<td><strong>Crossover wings</strong></td>
<td>The flared edges of a driveway</td>
</tr>
<tr>
<td><strong>Culvert</strong></td>
<td>A tunnel carrying an open drain under a road</td>
</tr>
<tr>
<td><strong>Edge Restraint</strong></td>
<td>A support constructed at the edge of a driveway to improve longevity</td>
</tr>
<tr>
<td><strong>Gates</strong></td>
<td>Vertical elements to control access to the path</td>
</tr>
<tr>
<td><strong>Grade</strong></td>
<td>The slope of a path or driveway</td>
</tr>
<tr>
<td><strong>Gutter</strong></td>
<td>Edge of road where it meets the kerb</td>
</tr>
<tr>
<td><strong>Hazards</strong></td>
<td>Any object or situation that constitutes a risk to users</td>
</tr>
<tr>
<td><strong>Kerb</strong></td>
<td>Roadway edge treatment</td>
</tr>
<tr>
<td><strong>Narrow lots</strong></td>
<td>Describes lots with a frontage width of &lt;12m</td>
</tr>
<tr>
<td><strong>Obstructions</strong></td>
<td>An object that constitutes an obstacle to crossover/path users</td>
</tr>
<tr>
<td><strong>Paired crossovers</strong></td>
<td>Combined crossovers which service more than one property and located adjacent to one another</td>
</tr>
<tr>
<td><strong>Shared Path</strong></td>
<td>A pathway that is specifically intended to be used by both pedestrians and bike riders. Note that all paths may be used by cyclists and pedestrians.</td>
</tr>
<tr>
<td><strong>Side-entry pits</strong></td>
<td>A stormwater pit located adjacent to the kerb and designed to collect stormwater from the road surface</td>
</tr>
<tr>
<td><strong>Sightlines</strong></td>
<td>The visual envelope of vehicles and path users</td>
</tr>
<tr>
<td><strong>Standards and Policies</strong></td>
<td>Applicable guidelines for use in Western Australia</td>
</tr>
<tr>
<td><strong>Stopping sight distance</strong></td>
<td>The distance a vehicle driver needs to be able to see in order have room to stop before colliding with something in the roadway</td>
</tr>
<tr>
<td><strong>Street Lights</strong></td>
<td>A light which illuminates surrounding roads and footpaths, usually mounted on a tall post</td>
</tr>
<tr>
<td><strong>Street Trees</strong></td>
<td>Trees located within the verge area</td>
</tr>
<tr>
<td><strong>Utility boxes</strong></td>
<td>An enclosure which houses utility services for electrical, communications, etc.</td>
</tr>
<tr>
<td><strong>Vegetation</strong></td>
<td>Soft landscaping element</td>
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1.0 Introduction

1.1 Objective
To provide property owners, builders and designers with the information required to ensure that crossovers meet the requirements of the City of Melville.

1.2 Purpose
This document comprises guidelines for planning and design of residential crossovers. It provides a consistent framework to assist builders and their contractors to understand and meet the requirements of the City of Melville. This Guideline provides for crossover design that references statutory and best-practice guidance documentation which includes the following:
- Austroads Guide to Road Design
- State Planning Policy 3.1 - Residential Design Codes (R-Codes)
- WAPC Liveable Neighbourhoods
2.0 Planning Guidelines

2.1 Crossover Approval
In accordance to Schedule 9.1, Clause 7 of the Local Government (Uniform Local Provisions) Regulations 1996, an application to the City of Melville must be made by the landowners to request approval to construct a crossover.

Contact:

Verge Infrastructure Officer
Technical Services
City of Melville
10 Almondbury Road
BOORAGOON, W.A. 6154

2.2 Crossover Density
The 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.
All residential lots are entitled to access irrespective of the constraints of location (AS2890.1: Clause 3.2.3a).

2.3 Crossover Location and Position
Crossover location shall be determined and crossovers designed to address the following issues and criteria:

2.3.1 Prohibited Locations
Australian Standards (AS2890.1: Figure 3.1) sets out exclusion zones for access driveways related to the proximity of adjacent intersections (refer to Drawing No.1146A3-11E). This exclusion zone may be increased if necessary for signalised intersections to ensure that the driveway is not within the influence of traffic queues. This requirement does not apply to any access driveway serving a property which would otherwise be denied access due to the physical impossibility of meeting the requirement. Additional restrictions are placed on non-domestic driveways and should be discussed with the City of Melville.

2.3.2 Sightlines to Path Users
Crossovers are to be positioned such that sight lines between path users (pedestrians and cyclists) and vehicles are unobstructed by permanent fixtures (fences, trees, etc.).
### 2.3.3 Distance to Obstructions

All elements of the crossovers shall be located at a minimum distance to obstructions, including wings, as follows:

- Side-entry pits: 1.0m
- Street trees: 2.0m
- Utility boxes: 1.0m (recommended)
- Street lights/Power poles: 1.0m (recommended)
- Bus stops: 1.0m
- Bus shelters: 1.5m
- Pedestrian ramps: 1.0m (recommended)

If crossovers must be constructed within this distance, the obstruction shall be relocated wherever possible at the property owner’s cost. In special cases (e.g. development at brownfield sites, narrow battle-axe driveways and/or paired aprons) where relocation of obstructions is not feasible, justification should be provided to the City of Melville and a decision to be made on a case by case basis.

### 2.3.4 Paired Aprons

Paired aprons are recommended for narrow lots. Refer Drawing No.1148A3-11E for adjacent crossovers.

### 2.3.5 Geometry

Crossovers shall be aligned at right angles to the street alignment, wherever possible (R-Codes).

### 2.3.6 Assessment Criteria

A list of criteria for crossover designs are provided below:

- Crossovers shall be adequately paved and drained in accordance with City of Melville requirements.
• The visual and physical continuity of the footpath is to be maintained (or reinstated) through the crossover.

• Crossovers shall provide unobstructed vehicle access to the individual lots and motorists must be able to enter or reverse from the lot in a single movement. (For roads with more than 5,000 vpd, all vehicles must be able to exit in forward gear.)

• If the frontage road is two-way and has more than two lanes and there is a provision for right turns either into or out from the crossover, then additional consultation with City of Melville may be required.
3.0 Design Guidelines

3.1 Layout
Crossover configuration must be provided for the safe turning movement of vehicles both from and onto the road carriageway.

3.1.1 Width
Residential crossover width is defined as follows:

- A minimum of 3.0m for all developments.
- A maximum of 4.5m for lots with a frontage of 12.5m or less.
- A maximum of 6m for lots with a frontage in excess of 12.5m.

Commercial crossover width – 4.5m minimum to 10m maximum.

3.1.2 Length
Storage length must be provided (crossover and/or driveway length) for a vehicle to stand clear of the roadway. Where the entrance has a gate, the set back from the road edge to the gate shall be a minimum of 6m to allow for this (Main Roads Driveways Design Guide). Physical limitation such as verge depth will affect this value. A length less than 6m requires justification and is subject to the City of Melville’s approval.

3.1.3 Pedestrian Interface
Crossovers are defined to be ‘Road-Related Areas’ under the Road Traffic Code 2000. Pedestrians and cyclists in these areas have priority over vehicles. For this reason it is a requirement that the pedestrian infrastructure be provided in a continuous manner across all crossovers, maintaining path crossfall and material in preference to the crossover construction. Therefore, the crossover must be designed to match path levels, where applicable.

3.1.4 Grades and Levels
- Path construction guidelines dictate a maximum crossfall of 2.5% to cater for people who have a disability (Austroads Guide to Road Design 6A, Clause 7.6). To allow the path to shed water and to avoid ponding, a crossfall of 2.0-2.5% is recommended.
- The maximum longitudinal gradient of a crossover at the property boundary is defined by Australian Standards to be 5% (AS2890.1:2004, Clause 2.6.2 and Clause 3.3a). This allows safe Disability Access from the path to the property boundary.
- The maximum gradient of a crossover is defined in Section 2.2.1.2 in IPWEA’s Subdivision Guidelines is 1 in 8 (12.5%)
- In areas of steep grades, the IPWEA Subdivision Guidelines Section 3.3.4: Verge and property grades states that the verge on the high side may be graded at 2.0% for three metres and then battered to suit the finished contours at a maximum of 16%.

3.2 Kerbing and Edging
Existing kerbing shall be removed from the crossover location and replaced with a standard City of Melville crossover apron.
3.2.1 Crossover Apron Design
To provide smooth transition from the road edge to the crossover, and particularly to the pedestrian path, a concrete apron shall be constructed in accordance with City of Melville Drawing No.1145A3-11E.

3.2.2 Edging
A restraining edge is required for block paving residential crossovers, as follows:

Rigid block or concrete edging is to be provided at the perimeter of all block paved crossovers to prevent lateral movement of the header course.

Restraints shall be robust enough to withstand vehicle impact and prevent the lateral movement of the paving blocks. Edge restraints shall be installed to the same level as the crossover.

3.3 Block Pavers
Block pavers shall be a minimum thickness of 60mm.

Applicable block paving patterns for driveway crossovers are 45 or 90 degree herringbone 45 degree diamond pattern as shown on City of Melville Drawing No. 1148A3-11E. The most preferred pattern is 45 or 90 degree herringbone because the pattern tightly interlocks the bricks and it can handle significant weight, which is ideal for driveways. Rectangular stretcher bond are not permitted, as the structural integrity is inferior to other patterns.

3.4 Existing Paths
The path shall be kept in a safe condition at all times, with appropriate signage installed, in accordance with the relevant Australian Standards (AS1742), warning pedestrians of construction works until reinstatement work is completed.

Where the existing footpath or shared path is in-situ concrete, in good condition and is over 100mm thick, the footpath must be preserved, otherwise it should be reinstated to meet the above. The crossover shall be constructed to match levels of the existing/reinstated concrete path.

Paths must be reinstated within two (2) days of commencement of works.

3.5 Redundant Crossovers
Redundant crossovers shall be removed and the verge, kerbing and footpath reinstated to match existing and be in accordance with the City of Melville Verge Treatment Policy.
4.0 References

Austroads Guide to Road Design - Part 3: Geometric Design

Austroads Guide to Road Design - Part 6A: Pedestrian and Cyclist Paths


Australian Standard AS1428.1: Design for access and mobility

Guidelines for Placement of Power Poles within Road Reserves in Built-Up Areas (Western Power, 2006)

IPWEA Local Government Guidelines for Subdivisional Development

Local Government (Uniform Local Provisions) Regulations 1996

Road Traffic Code 2000 (WA)

State Planning Policy 3.1 - Residential Design Codes (R-Codes)

WAPC Liveable Neighbourhoods
5.0 Specifications

5.1 Crossover Positioning

a) Minimum 0.5m from the side property line (as per R-Codes - including battle-axe driveways servicing a subdivided block).

b) Minimum 6.0m from truncation intersection as per drawing 1146A3-11E.

c) Roads under the control of Main Roads Western Australia (MRWA) require a minimum of 6m clearance from the intersection tangent point in accordance with AS2890 and MRWA Driveway Policy.

d) Crossovers shall not be constructed closer than 6m, measured from the crossover wing, to the intersection of property lines at street corners as per AS2890.1, wherever practicable. For crossovers located near traffic lights, Main Roads Western Australia guidelines and standards apply. Additional restrictions are placed on non-domestic driveways and should be discussed with the City of Melville.

e) Crossovers shall be constructed at right angles (90 degrees) to the street alignment, wherever practicable. Refer City of Melville Drawing No. 1146A3-11E.

f) Street Furniture Clearance

- Side-entry pits: 1.0m
- Street trees: 2.0m
- Utility boxes: 1.0m (recommended)
- Street lights/Power poles: 1.0m (recommended)
- Bus stops: 1.0m
- Bus shelters: 1.5m
- Pedestrian ramps: 1.0m (recommended)

Where physical limitations may prevent attaining these minimum clearances, contact the City of Melville.

5.2 Schedule of Requirements

5.2.1 Residential

a) Width –

- A minimum of 3m for all developments.
- A maximum of 4.5m for lots with a frontage of 12.5m or less.
- A maximum of 6m for lots with a frontage in excess of 12.5m.

b) Depth –

- Concrete: 100mm minimum.
Specifications for Crossovers

- Brick paving: paver depth to be 60mm minimum (in accordance to AS 2890.1 2004).

c) **Wings** –

The width of ‘wings’ on the apron at kerb line shall be 1.2m. In special cases where the standard wing width cannot be achieved, approval must be sought from the City of Melville. Please refer to Paired Aprons Drawing No. 1148A3-11E.

d) **Gradient** –

- Maximum crossover gradient over paths is 2.5% for the first 2.1m.
- At the property boundary, the maximum longitudinal gradient is 5%.
- In areas of steep grade – the verge on the high side may be graded at 2.0% for three metres and then battered to suit the finished contours at a maximum of 16%.

e) **Levels** –

The back of apron must be a vertical height of at least 150mm above the channel level of the road, or level to the top of kerb. The crossover shall match up with:

- The existing verge level if it is of uniform height with the adjacent verges.
- The average level of the two adjacent crossovers or verge levels where there are no crossovers.

**5.2.2 Commercial**

a) **Width** – 4.5m minimum to 10m maximum.

b) **Depth** – Concrete: 150mm minimum including F62 mesh.

c) **Concrete** – High early strength – 32Mpa at twenty-eight (28) days with a non-slip finish.

d) **Wings** – The width of ‘wings’ on the apron at kerb line shall be 1.5m. In special cases where the standard wing width cannot be achieved, approval must be sought from the City of Melville.

e) **Gradient** – Maximum crossover gradient over paths is 2.5% for the first 2.1m.

- At the property boundary, the maximum longitudinal gradient is 5%.
- In areas of steep grade – the verge on the high side may be graded at 2.0% for three metres and then battered to suit the finished contours at a maximum of 16%.

f) **Levels** – The back of apron must be a vertical height of at least 150mm above the channel level of the road, or level to the top of kerb. The crossover shall match up with:

- The existing verge level if it is of uniform height with the adjacent verges.
- The average level of the two adjacent crossovers or verge levels where there are no crossovers.
5.3 Construction

5.3.1 Excavation

Excavation for the crossover shall be taken to the levels, lines and grades as set by the City of Melville crossover specifications. All excavations shall be executed cleanly and efficiently to provide for a consolidated sound base free of depressions, soft spots or any deleterious materials.

1. The contractors shall be responsible for ensuring that all excavated material is removed from the site at the same time as the excavation is carried out. No excavated material shall be stockpiled on site or buried in the verge.

2. Existing barrier or semi-mountable type kerbing is to be cut with a concrete saw and removed without damage to road pavement, remaining kerbing or services. To facilitate neat removal and subsequent reinstatement, the concrete or bitumen to be removed shall be completely separated from the adjoining concrete or bitumen by means of a concrete or bitumen saw.

3. When an existing concrete path has thickness of 100m or more, in good condition, and adjacent to the lot boundary or kerb line, the crossing shall be constructed either side of the concrete path.

4. The existing path shall be removed and replaced where it is damaged, is less than 100mm thick or has an incorrect gradient. Crossovers must never take precedence over the path (AS1428.1).

5. The subgrade shall be watered, thoroughly compacted and shaped to provide a dense uniform surface.

5.3.2 Concrete Crossover

Compaction – The subgrade shall be compacted to a minimum of 95% Maximum Dry Density (MMDD).

Concrete – Only ready-mixed concrete shall be used in all works, and all concrete used shall develop a minimum compressive strength of 25MPa at twenty-eight (28) days for residential crossovers, and 32MPa at twenty-eight (28) days for commercial crossovers. The concrete to be used shall be composed of a mixture of sand, cement, aggregate and water to give strength specified with a maximum slump of 80mm. The maximum aggregate size shall be 20mm. Concrete and its placement shall conform to AS1379 (1991) and AS3600 (1988) respectively. A copy of the concrete delivery docket is to be provided to the City of Melville as part of the subsidy application.

Reinforcement – Steel reinforcement may be required in the construction of concrete crossovers, for multi-unit developments with higher levels of projected traffic and load.

Placing concrete – The base shall be thoroughly and evenly moistened, but not saturated, prior to placing concrete. All stones or other deleterious materials shall be removed from the base prior to pouring concrete. Concrete shall be evenly placed to the depth specified and shovelled into position continuously and spaded, especially at all edges, to give maximum density. No concrete shall extend on the road surface. No break in operation shall be permitted from time of placing concrete to finishing.
Specifications for Crossovers

Kerbing – Reinstatement of existing kerbing to match existing profile on the street. Concrete strength to be a minimum of 25MPa @ twenty eight (28) days.

Finishing – Surface finish shall be obtained by screeding to the correct levels and finished with a non-slip dense surface, free of any depressions, float marks, irregularities, honeycomb sections or slurry likely to cause excessive surface wear.

Jointing – Expansion joints shall be full depth joints and filled with bitumen-impregnated canite or similar approved material and butyl mastic sealer. Expansion joints should be located at:
1. The lot boundary and both sides of a path where there is a path, and also at the back of the apron adjoining the crossing.
2. Where it adjoins a rigid structure or any public utility structure.
3. The ends of the existing kerbing where kerbing has been removed.
4. 6m maximum spacing on long crossings.

Contraction joints shall be made with an approved jointing tool or saw cutting with 2m maximum spacing both laterally and longitudinally.

5.3.3 Block Paved Crossover

Base Course – Base course shall consist of road base or crushed limestone (50mm maximum particle size) compacted to give a 100mm thickness. Material to be spread, rolled, water-bound and corrected as necessary to the required shape and grade.

A copy of the base material delivery docket is to be provided to the City of Melville as part of the subsidy application.

Compaction – The base course and subgrade shall have a density of not less than 95% MMDD in accordance with AS1289.5.7.1-2006

Bedding layer – The bedding layer shall be a minimum of 30mm loose screeded thickness such that the final compacted thickness is a minimum 20mm. The bedding layer shall be paving sand, free of deleterious soluble salts and other contaminants. The sand should be of uniform moisture content, and is to be spread over the compacted base course and screeded in a loose condition.

Paving Blocks – The paving units shall be either clay or concrete, with a minimum thickness of 60mm thick complying with AS4455.2:2010.

A copy of the paving units delivery docket is to be provided to the City of Melville as part of the subsidy application.

Laying – The paving units shall be laid onto bedding sand. Part bricks shall be neatly cut to size with hydraulic guillotine, bolster or saw.

Joint filling – As soon as possible after compaction, dry joint filling sand shall be broomed over the paving units and into the joints. Excess sand shall be removed as soon as the joints are filled.
Specifications for Crossovers

**Edge restraint** – Edge restraint shall be provided to withstand vehicle impact and prevent lateral movement of the paving units. The use of sand/cement mortar is not permitted as an edge restraint. Edge restraint shall be in accordance with Drawing No.1148A3 11E.

**Kerbing** – Reinstatement of existing kerbing to match existing profile on the street. Concrete strength to be a minimum of 25MPa @ twenty eight (28) days.

### 5.4 Contractor Responsibilities

The Contractor shall be responsible for:

1. Setting out of levels, construction, inspections and measuring up of work.
2. Cutting existing kerbing with a concrete saw and removing the same without damage to pavement or remaining kerbing or services.
3. Ensuring that no material run off enters the City's drainage system, or stains the road.
4. Removal and disposal of all surplus material from the site and leaving the site in a clean and tidy condition at all times.
5. Removal of all formworks without damage to concrete or pavement or existing kerbing.
6. Reinstatement to kerbing, concrete or brick paving or bituminous road surfaces damaged during the course of the works.
7. Reinstatement to any verge or private property with a landscape mix soil.
8. The repair of any damage to Public Utility Services, local government assets and private property during the course of the works.
9. The protection of private property from damage and the new crossover surfaces from rain damage or vandalism.
10. Liaising and notifying all parties impacted by the works.
11. Cutting of all bitumen where removal is required.
12. Payment of all fees charged for waste disposal from site.
13. Reinstatement of existing footpaths to have priority through the newly constructed crossover.
14. Ensuring that an approval for crossover construction has been issued by the City of Melville.
15. Traffic management in accordance with AS 1742.3 and the Main Roads Code of Practice for Works on Roads.

### 6.0 Drawings

- Drawing Number 1145A3-11E – Residential concrete crossover standard construction
- Drawing Number 1146A3-11E – Residential crossover standard positioning
Specifications for Crossovers

Drawing Number 1148A3-11E – Residential crossover standard paving styles

Drawing Number 1149A3-11E – Residential crossover standard vertical positioning

Drawing Number 1360A2-17E – Commercial concrete crossover standard construction
Drawings for Crossovers

RESIDENTIAL CONCRETE CROSSOVER

SCALE 1:15

+ SUBJECT TO CONDITIONS IN THE PLANNING AND VERGE POLICY

CROSS-SECTION A-A
SCALE 1:20

NOTE: FOOTPATH USERS TO HAVE PRIORITY

SUPERSEDES PLAN No.
834 A3-05E
Drawings for Crossovers

LOCATION OF CROSSOVER IN CUL-DE-SACS

1. Crossway to be installed at approximately 90° to the kerbs and to be a minimum of 3.0 metres from the boundary, unless approved otherwise.
2. Placing the verge between neighbouring properties is achieved by selecting the angle of the two front boundaries.
3. Crossway portion (clr) may encroach the verge adjacent to neighboring property.
4. Crossways may intersect when they are constructed along the same side boundary if not expected to favour the construction being parallel to verge diverging line.

TYPICAL EXAMPLES

- PRECINTS FOR CROSSWAY LOCATION ARE SHOWN PRIORITISED BY 1, 3, 2 & A.
- INDIVIDUAL CROSSWAYS TO BE NO LESS THAN 3M AND NOT GREATER THAN 6M IN WIDTH. ALL PROPERTIES CROSSWAYS CAN TOTAL BE GREATER THAN 9M OR 30% OF THE PROPERTY BOUNDARY PERIMETER, WHICHER IS THE LESSER.

LOCATION OF CROSSWAY AT INTERSECTIONS

1. Crossways are not permitted within the lot transition area.
2. Crossways should be located in positions to avoid traffic islands, as the speedway shall be considered.
3. Crossways located near road corners may become obstructed by traffic islands if safety concerns increase.
4. Crossways should be located in positions to avoid drainage pits, bus stops and crash pads, as the intersection will only be considered at potentially significant applicant cost.
5. Crossways located near traffic lights must be approved by MVRA and the City, and be in accordance with MVRA standards and guidelines.
6. Unless otherwise approved by the City of Melville, the location of crossways near an intersection shall be at least 10m from the tangent point (TP).

AMENDMENTS

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<td>CROSSWAY DEPTH AMENDED</td>
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<td>ニー</td>
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# Drawings for Crossovers

## Typical Residential Paved Crossovers

Scale: 1:75

### Laying Patterns for Residential Brick Paving

- **45 Degree Herringbone**
  - (300 x 110mm Standard & 220 x 102mm Pavers)
- **90 Degree Herringbone**
  - (250 x 120mm Standard & 220 x 102mm Pavers)
- **45 Degree Diamond**
  - (195 x 195mm Blocks)

### Adjacent Residential Paved Crossovers

Not to Scale

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### Amendments

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<tbody>
<tr>
<td>1</td>
<td>Laying Pattern Change</td>
<td>MCE</td>
<td>16/02/18</td>
<td>SC VENGER</td>
<td>19/02/18</td>
<td>A BRIDEL</td>
<td>20/02/18</td>
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<td>2</td>
<td>Property Detail Added</td>
<td>MCE</td>
<td>10/02/18</td>
<td>SC VENGER</td>
<td>19/02/18</td>
<td>A BRIDEL</td>
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CITY OF MELVILLE
RESIDENTIAL CROSSOVER
STANDARD PAVING STYLES

Drawing Status: ISSUED

Plan No: 1148A3-11E

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Page 19 of 21
Drawings for Crossovers

MAXIMUM CARPORT LEVEL ABOVE KERR

MAXIMUM CARPORT LEVEL BELOW KERR

NON STANDARD CARPORT LEVEL ABOVE KERR

NOTE: New standard grading shall never be adopted without the approval of the City of Melville.

AMENDMENTS

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<thead>
<tr>
<th>No.</th>
<th>DESCRIPTION</th>
<th>DRAWN APPROVED</th>
<th>DATE</th>
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<tr>
<td>1</td>
<td>MIN VERGE WIDTH AMENDED</td>
<td>+Nancy +Kris</td>
<td>22/06/19</td>
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CITY OF MELVILLE RESIDENTIAL CROSSOVER

STANDARD VERTICAL POSITIONING

DESIGNED
5 FEB 2019
DRAWN
5 FEB 2019
CHECKED
5 FEB 2019
APPROVED
5 FEB 2019

DRAWING STATUS
ISSUED
4 of 4

PLAN No. 1149A3-11E
Drawings for Crossovers

Notes:
1. Crossings are extensions - should any trees, trees, pole or any other obstruction be located on the proposed alignment of the vehicle crossing, the applicant shall be responsible for any costs associated with removal or alterations required.
2. Road MAC - Vehicle crossings abutting closely placed, crossing highways on any other paved controlled-access road shall be subject to approval of closing and paving jointly.
3. Construction - Commercial crossings shall be 30cm thick and simply reinforced concrete in accordance with the Standards Specification of Council.
4. Residential driveway - all existing driveway is to be removed or cut off. The internal driveway is to be removed from the front property line or where this is not practicable 30cm shall be provided to prevent water flowing the road reserve.
5. Expansion joint - the expansion joint shall be full depth and a minimum 60mm wide. The jointing material shall be ethylene:
   - A bituminous impermeable material
   - Resinene or
   - Plastic setting or rubber compounds

Cross-section A-A

Scale 1:20

Commercial Concrete Crossover

Scale 1:50

Amendments:

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Drawn</th>
<th>Author</th>
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<tr>
<td>1</td>
<td>Amend crossover width from 2.5m to 3.0m</td>
<td>MIE</td>
<td>SG</td>
<td>14/05/18</td>
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<td>2</td>
<td>Construction Joint Crossover</td>
<td>MIE</td>
<td>SG</td>
<td>15/05/18</td>
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City of Melville

As shown

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