



# STANDARD SPECIFICATIONS FOR CONSTRUCTION OF CROSSOVERS

## Definition:

A crossover is the section of the driveway that crosses over the verge area in front of a property (i.e. from the road edge surface to the property boundary line).

## Introduction:

1. This document is designed to assist property owners and contractors to construct an appropriate crossover to the satisfaction of the Shire of Serpentine Jarrahdale (the Shire), allowing the property owner upon request, to receive a crossover subsidy rebate from the Shire.
2. In this regard, property owners should ensure that their contractor is in possession of these documents as crossovers not constructed to these specifications will not be eligible for the Shire's crossover rebate. Additionally, in accordance with regulation 13 of the *Local Government (Uniform Local Provisions) Regulations 1996*, the Shire may also issue a notice requiring the crossover to be repaired or removed at the owners' expense.
3. All works must comply with Council's Policy – Crossovers, these specifications and approved site plan unless otherwise approved in writing by a delegated Shire Officer.
4. It is the responsibility of property owners and contractors to establish the location of all services within the road reserve, prior to any works proceeding.
5. Any requirements placed on the construction or location of the crossover by a Shire delegate, must be adhered to.
6. Where crossovers are constructed, all repairs and maintenance shall be the responsibility of the property owner to the satisfaction of the delegated Shire Officer.
7. This specification applies only to residential properties where traffic is predominantly of passenger vehicle type, with only occasional light use of service or commercial vehicles. This specification does not apply to commercial or industrial properties where vehicle traffic loadings exceed a residential situation.
8. At the completion of constructing a new dwelling or the re-development of an existing dwelling, a crossover conforming to the Shire's specifications shall be installed.



## 1. Approval:

- 1.1 Design for the proposed crossover shall be in accordance with this specification and drawings SJ-SD-21 to SJ-SD-26.
- 1.2 For new dwellings, it is noted on the building permit that a separate Application for Crossover Construction and Crossover Plan is required to be submitted by the property owner to the Shire for assessment, in accordance with Council Policy – Crossovers and this specification.
- 1.3 Existing dwellings shall submit a scaled crossover plan to the Shire for approval, in accordance with Council Policy - Crossovers.

## 2. Design

### 2.1 Width:

The width at the property boundary for the primary crossover is to be a minimum 3.0m to a maximum 6.0m. The width at the kerb line is to be a maximum 7.0m including wings. Wings of the crossover are to be a minimum 0.5m up to a maximum of 1.5m.

### 2.2 Alignment:

Crossover shall be perpendicular to kerb or edge of carriageway.

### 2.3 Level:

The surface level of the crossover shall rise by 2% to the lot boundary from the top of the kerb, where the level of the lot is higher than the road and the edge of the road is kerbed.

If the property is lower than the road level, the crossover shall rise at 2% from the top of the kerb for an absolute minimum length of 2.5m from the road. The crossovers may then grade to the property boundary at a grade of 1 in 6.

The cross-sectional grade of the crossover shall be the same as the road grade.

The transitions from grade to level must be made inside the property boundary. Where internal driveways are constructed prior to vehicle crossovers, the property line levels and access to the street must be to Shire specifications. Failure to obtain this information from the Shire may lead to the property owner having to alter the internal driveway at their own expense.

### 2.4 Position:

At the boundary the minimum distance from the crossover to the side boundary is 0.5m. Refer to drawing SJ-SD-23.

The crossover is not to extend beyond the extension of boundary into the neighbouring verge or crossover. Dimensions of wings can be reduced to a minimum of 0.5m x 1.5m. Refer to drawings SJ-SD-21, SJ-SD-22 and SJ-SD-24.

### 2.5 Corner Blocks:

No part of the crossover, including the wings, shall be located in the truncation area. This is applicable to all dwellings, rear and front loaded. Refer to drawing SJ-SD-23.

### 2.6 Combined Crossovers:

Where, in residential areas two residential crossovers are adjacent, they may be joined as one, so long as there is consent between the property owners concerned and their grades match.

## 2.7 Additional Crossover:

An additional crossover may be applied for. The additional crossover may only be a maximum width of 3.0m at the boundary, where an existing crossover of 6.0m exists. The width at the kerb line is to be a maximum width of 4.0m including wings (0.5m x 1.5m). If the additional crossover is combined with the existing standard size crossover the maximum width of the crossover is to be 10m at the kerb including the wings.

All other items in the Standard Specifications for Construction of Crossovers must be applied to the design of the additional crossover.

A crossover subsidy rebate is not available towards construction of additional crossovers.

## 3. Construction

3.1 This specification applies only to single or multi-unit residential properties where traffic is predominantly of the passenger car type with occasional light service or commercial vehicles.

### 3.2 Concrete and poured limestone: refer to drawing SJ-SD-21.

3.2.1 All concrete used shall develop a minimum compressive strength of 25MPa at 28 days and shall be composed of a mixture of crushed metal screening, sand and cement.

3.2.2 The excavation shall be made to provide a firm, sound base free from depression or soft spots or any deleterious material to give a minimum of 100mm depth of concrete pavement for residential crossovers.

3.2.3 The concrete shall be evenly placed onto the evenly compacted and moistened base. The foundation is to be compacted to 95% Maximum Dry Density. No break in operations shall be permitted from time of placing to finishing.

3.2.4 The finish shall be obtained by screening to correct levels and broom finish to provide a non-slip, dense surface free of any depressions, float marks, joining marks, honeycomb sections or accumulation of fine dusty accretion liable to cause excessive surface wear.

3.2.5 Joints shall be made in the form of plain dummy construction joints with an approved joining tool as follows:

- a. In line with and parallel to the property line junction, the edge of footpath construction or future footpath line, both back and front edge line of the path.
- b. The centre of the crossover at 90 degrees to the street kerb line or at such other spacing as may be directed by a delegated Shire Officer and not more than 1.8m apart.
- c. All dummy joints shall only be cut with a grooving tool to a minimum depth of 10mm.

3.2.6 The concrete crossover shall be adequately cured prior to traffic.

### 3.3 Brick or block paving units: refer to drawing SJ-SD-22.

- 3.3.1 Paving units shall be trafficable with a minimum of 60mm in thickness. Block paving is permitted when the blocks are held in place by the 100/150mm concrete edging or haunching.
- 3.3.2 The existing ground shall be boxed out and shaped to required dimensions and levels. Compacting of the ground shall be carried out using overlapping passes of a vibrating plate compactor. The excavation shall be firm, free from depressions and soft spots, and any deleterious material is to be removed.
- 3.3.3 The bedding layer shall be compacted and be a minimum of 30mm loose screed thickness such that the final compacted thickness is a minimum 20mm.
- 3.3.4 The bedding layer shall be well-graded concreting sand passing a 5.0mm sieve and 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. Single-sized dune sands are not suitable for the purpose.
- 3.3.5 Base course shall consist of either crushed limestone or crushed rock (50mm maximum particle size) or laterite gravel compacted to give a 100mm thickness having a density of at least 95% of the modified Maximum Dry Density determined in accordance with AS1289.
- 3.3.6 The paving unit shall be laid onto the bedding sand. Part bricks shall be neatly cut to size with a hydraulic guillotine bolster or saw.
- 3.3.7 The units are to be immediately compacted and brought to level by three passes of a 500mm x 500mm vibrating plate compactor. Joints in the paving shall be filled by brooming sand over the pavement and into the joints. Ideally the sand used for joint filing should be finer for the bedding layer with a nominal maximum particle size of 2.0mm. Sand should be free from salts and excess sand shall be removed.
- 3.3.8 An edge resistant shall be provided by the placing of a 150mm x 150mm in-situ concrete strip along the perimeter of the crossing. The base course must be compacted beneath the edge restraint. Alternatively, the edge of the paving may be haunched.

#### 3.4 Asphalt: refer to drawing SJ-SD-26.

- 3.4.1 Asphalt thickness shall be a minimum of 25mm thick AC7.
- 3.4.2 The existing ground shall be boxed out and shaped to required dimensions and levels. Compacting of the ground shall be carried out using overlapping passes of a vibrating plate compactor. The excavation shall be firm, free from depressions and soft spots, and any deleterious material is to be removed.
- 3.4.3 The bedding layer shall be compacted and be a minimum of 30mm loose screed thickness such that the final compacted thickness is a minimum 20mm.
- 3.4.4 The bedding layer shall be well-graded concreting sand passing a 5.0mm sieve and 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. Single-sized dune sands are not suitable for the purpose.
- 3.4.5 Base course shall consist of either crushed limestone or crushed rock (50mm maximum particle size) or laterite gravel compacted to give a 150mm thickness

having a density of at least 95% of the modified Maximum Dry Density determined in accordance with AS1289.

- 3.4.6 The finished level of the base course shall be 25mm below the kerbing. The prepared base shall be inspected and approved by the Shire of Serpentine Jarrahdale prior to placement of asphalt.
- 3.4.7 Prior to laying of the asphalt, a tack coat/primer seal shall be sprayed on the road base. Tack coat seal shall comprise of an anionic bitumen emulsion which may be diluted by the addition of up to 50% clean water. The application rate shall be half to three quarters (0.5 to 0.75) of a litre, per square meter.
- 3.4.8 The asphalt shall be evenly spread over the area and immediately rolled with a pedestrian roller.
- 3.4.9 Surplus asphalt shall be removed from site and disposed of at an approved disposal site.
- 3.4.10 An edge resistant shall be provided by the placing of a 150mm x 150mm in-situ concrete strip along the perimeter of the crossing. The base course must be compacted beneath the edge restraint.

#### 4. Culverts

Where necessary, a culvert of reinforced concrete or Helcor pipe complete with masonry headwalls shall be constructed.

The pipe size is to be a minimum 450mm diameter or as determined by the delegated Shire Officer.

Pipes shall be laid at the same grade and level as the existing open drain, unless otherwise noted.

Pipes shall be placed in the existing drain and, where practicable, parallel to the road edge, or as determined by the delegated Shire Officer.

Headwalls are to be constructed of either:

- a) Concrete: 150mm minimum thick either precast or cast in-situ
- b) Brick: thickness dependent on the wing wall height
- c) Stone: mortared thickness dependent on wing wall height.

Headwalls to include rock pitching at the end of headwalls for a minimum of 1.0m past the end of the headwall. Refer drawings SJ-SD-24 and SJ-SD-25.

Where a culvert is installed, the drain is to be shaped and maintained for 3.0m on either side of the culvert.

#### 5. Exiting Infrastructure

- 5.1 Mountable Kerb: The approved crossover is to be constructed abutting the back of the mountable kerb. No part of the kerb is to be removed.
- 5.2 Non-Mountable Kerb: At the location of the approved crossover, the non-mountable kerb profile is to be removed and replaced with mountable kerb profile ensuring that it matches into the existing kerb, footpath and verge. The kerb shall be cut by means of a concrete saw and removed for the width of the crossing at the owners' expense.

5.3 Footpath: Where a crossover crosses an in-situ concrete footpath, the crossover must terminate on either side of the footpath. Where the footpath is kerb aligned, the crossover must terminate at the footpath edge. No part of the footpath is to be removed, modified or altered.

5.4 Side Entry Pit: The minimum offset from a side entry pit is to be 1.0m from the edge of the pit to the edge of the crossover wing at the kerb.

The owner may apply to have a side entry pit relocated or modified at the owners' expense, except for where the side entry pit is located at a low point in the road and the pit cannot be relocated.

For all rear loaded properties where there is a stormwater connection provided by the Shire within the private property, the minimum offset to the stormwater pit is to be 0.5m.

5.5 Poles, Posts and Other Obstructions: The minimum offset from a pole, post or other obstruction is to be 1.0m from the edge of the obstruction to the closest edge of the crossover.

5.6 Verge Trees: The minimum offset from a verge tree is to be 1.0m. All efforts to comply with these specifications shall be made in the first instance through appropriate design and location of the crossover before the Shire will consider relocating a verge tree. If the relocation of the verge tree is the final opinion, then the relocation will be at the property owners' expense.

5.7 Traffic Islands: Where a crossover is designed to be located near road corners or intersections, they may be obstructed by traffic islands. Crossovers shall be designed to be in a position to avoid traffic islands, as the removal or alternation of islands may not be considered in all instances. Where a traffic island is able to be relocated and the Shire considers it a requirement to be modified, all modifications are at the property owners' expense.

5.8 Redundant Crossovers: Where a crossover becomes redundant and a new crossover is constructed, the redundant crossover shall be removed. The verge shall be reinstated to match the adjacent verge.

Where a redundant crossover is removed, the kerb shall be replaced to match the existing kerb along the street, if it is not of a mountable kerb profile. If a footpath exists that is kerb aligned, then the footpath must be replaced should any levels change.

Prior approval for the removal of kerbing is to be obtained from a delegated Shire representative. Removal or modifications to existing kerb is at the expense of the property owner. Refer to drawing SJ-SD-21.

5.9 Rural and Special Rural Crossovers: Where a crossover is located in a rural or special rural area, the crossover construction may be of any suitable material other than the standard residential materials (as detailed under 3. Construction) i.e limestone, gravel, roadbase, or bitumen. The material shall not encroach onto the carriageway.

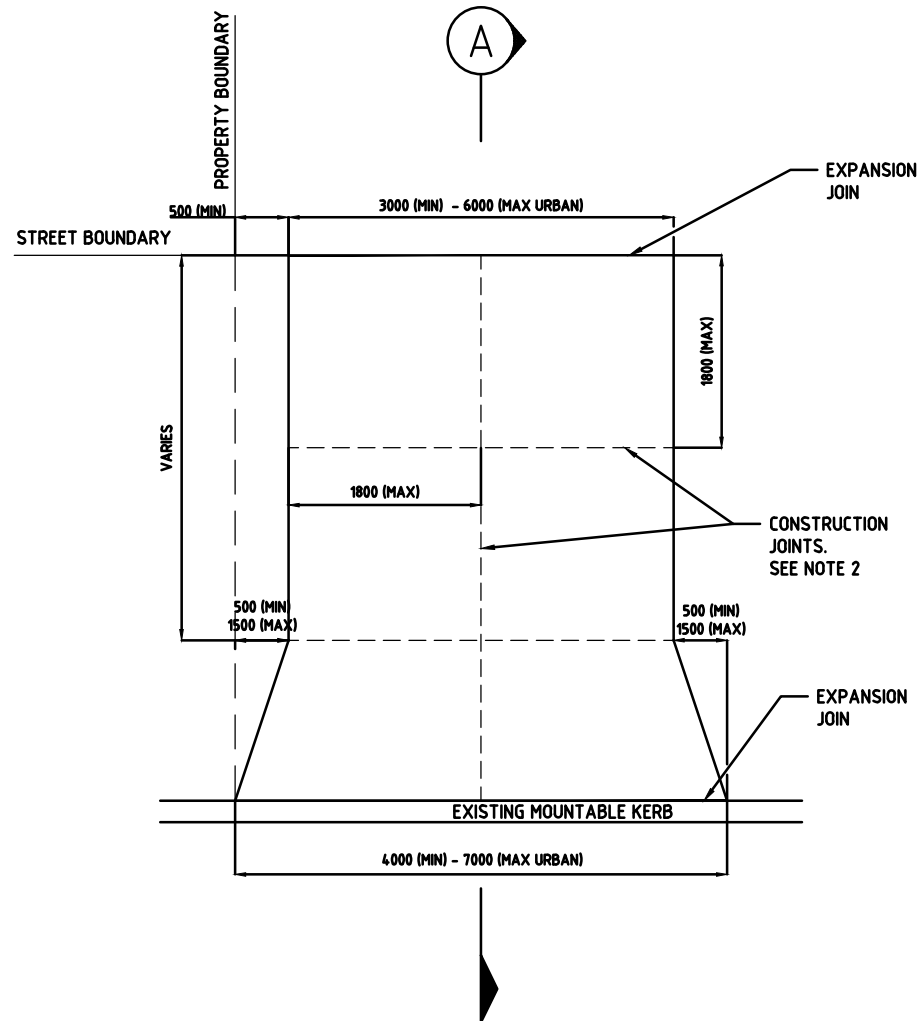
All other design aspects, specifications and approval for the crossover apply to rural and special rural crossovers and must be adhered to.

Where rural and special rural crossovers are constructed in accordance with the residential materials of concrete, poured limestone, brick or block paving units or asphalt, the property owner is eligible to apply for the crossover subsidy.

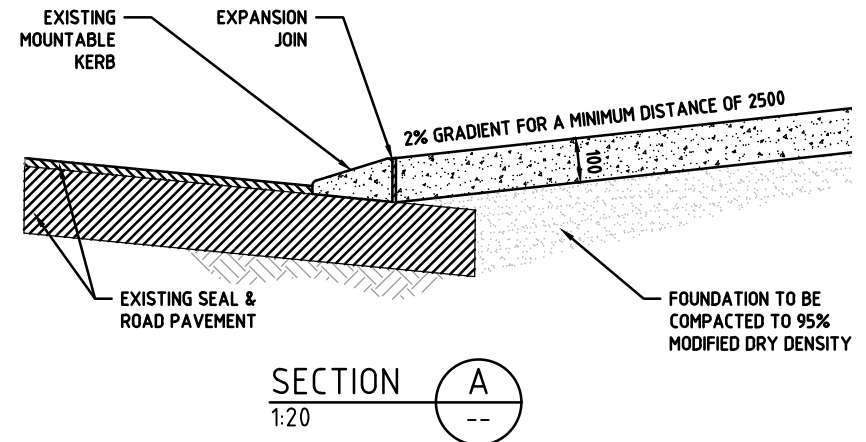
The crossover subsidy rebate does not apply to crossovers constructed with limestone, gravel, roadbase, bitumen or similar non-residential materials.

## **6. Completion of Works**

- 6.1 On completion of work, any surplus materials are to be removed and the site left in a clean and tidy condition. All crossover edges must be back filled with clean sand or topsoil and left at the original verge height.
- 6.2 The owner is to ensure that they have completed all items as per Shire specifications and may apply for the crossover subsidy rebate if the property has not been reimbursed previously.



**TYPICAL CONCRETE CROSSOVER**  
SCALE 1:50



### NOTES:

- ALL DIMENSIONS IN MILLIMETERS.
- CONSTRUCTION JOINTS TO ALIGN WITH FRONT AND BACK EDGES OF THE FOOTPATH OR KERB.
- CONCRETE DETAIL TO BE:
  - 25MPa @ 28 DAYS,
  - 14mm AGGREGATE
  - 80mm MAXIMUM SLUMP BROOMED,
  - NON-SLIP FINISH.
- DRAWING TO BE READ IN CONJUNCTION WITH SHIRE OF SERPENTINE JARRAHDALE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF CROSSOVERS.

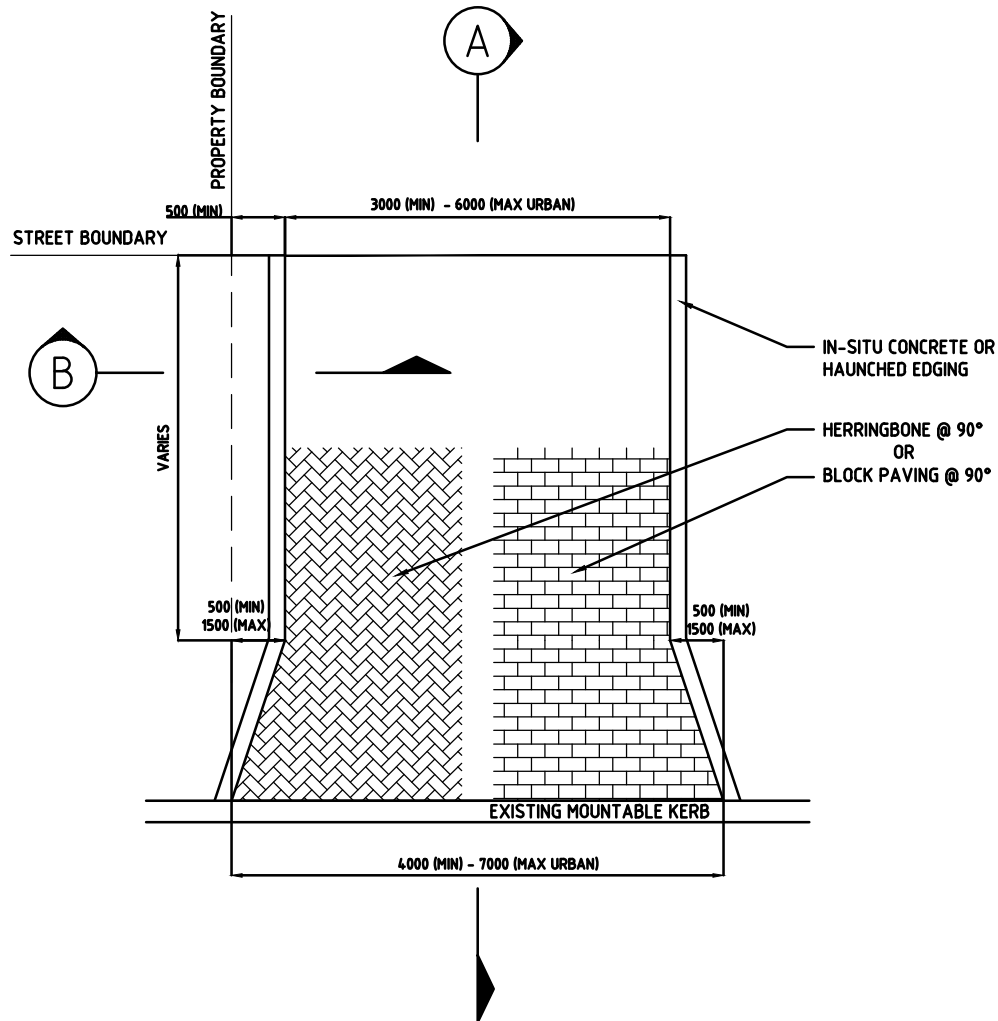
No.	DESCRIPTION	APPROVED & DATE
B	UPDATED AS PER COMMENTS	N. SCIDONE
A	ACCEPTED BY SHIRE	N. SCIDONE
AMENDMENTS		



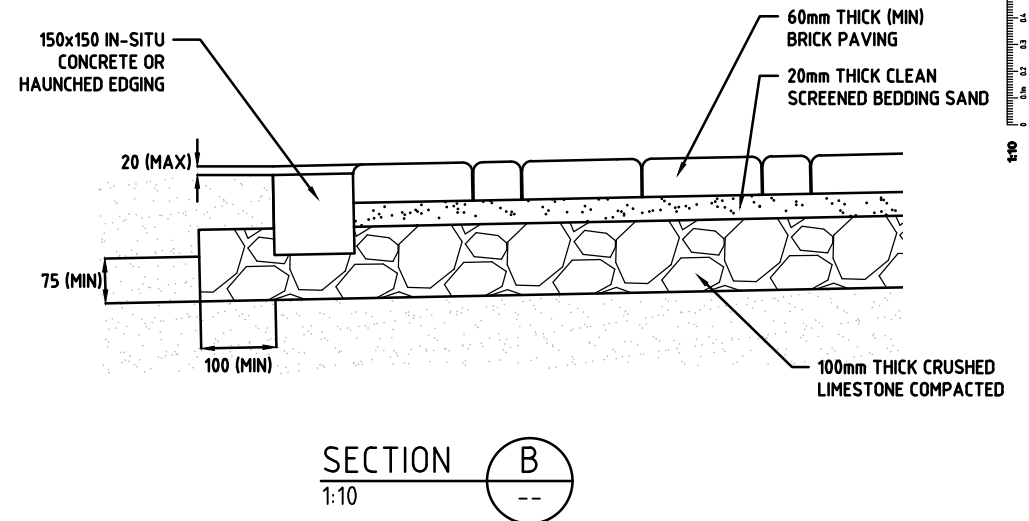
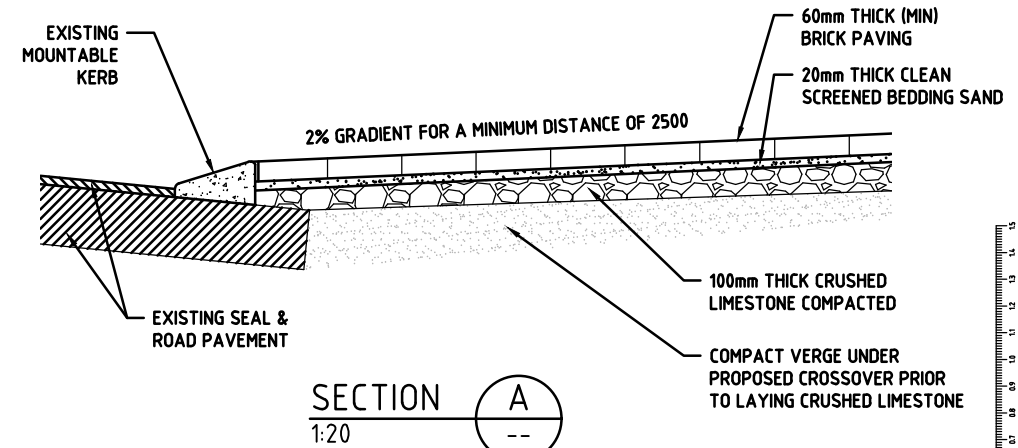
Infrastructure and Design

DESIGNED	P. BARUA	SIGNED		STANDARD DETAIL	STANDARD DRAWING NO:
DRAWN	P. BARUA	SIGNED		CONCRETE CROSSOVER	SJ-SD-21
MANAGER	N. SCIDONE	SIGNED		ADJACENT TO BARRIER/ SEMI-MOUNTABLE & MOUNTABLE KERB	INFRASTRUCTURE & DESIGN
DIRECTOR	R. NAJAFZADEH	SIGNED		DATE 25/01/2022	REV B
TOWN NUMBER	FILE NUMBER	SCALE	1:50 & 1:20	Ordinary Council Meeting - 20 March 2023	

SCALE: 1:50 1:20



**TYPICAL BRICK PAVED CROSSOVER**  
SCALE 1:50



### NOTES:

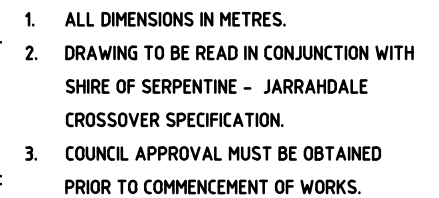
1. ALL DIMENSIONS IN MILLIMETERS.
2. DRAWING TO BE READ IN CONJUNCTION WITH SHIRE OF SERPENTINE JARRAHDALE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF CROSSOVERS.

No.	DESCRIPTION	APPROVED & DATE
B	UPDATED AS PER COMMENTS	N. SIDONE
A	ACCEPTED BY SHIRE	N. SIDONE
AMENDMENTS		



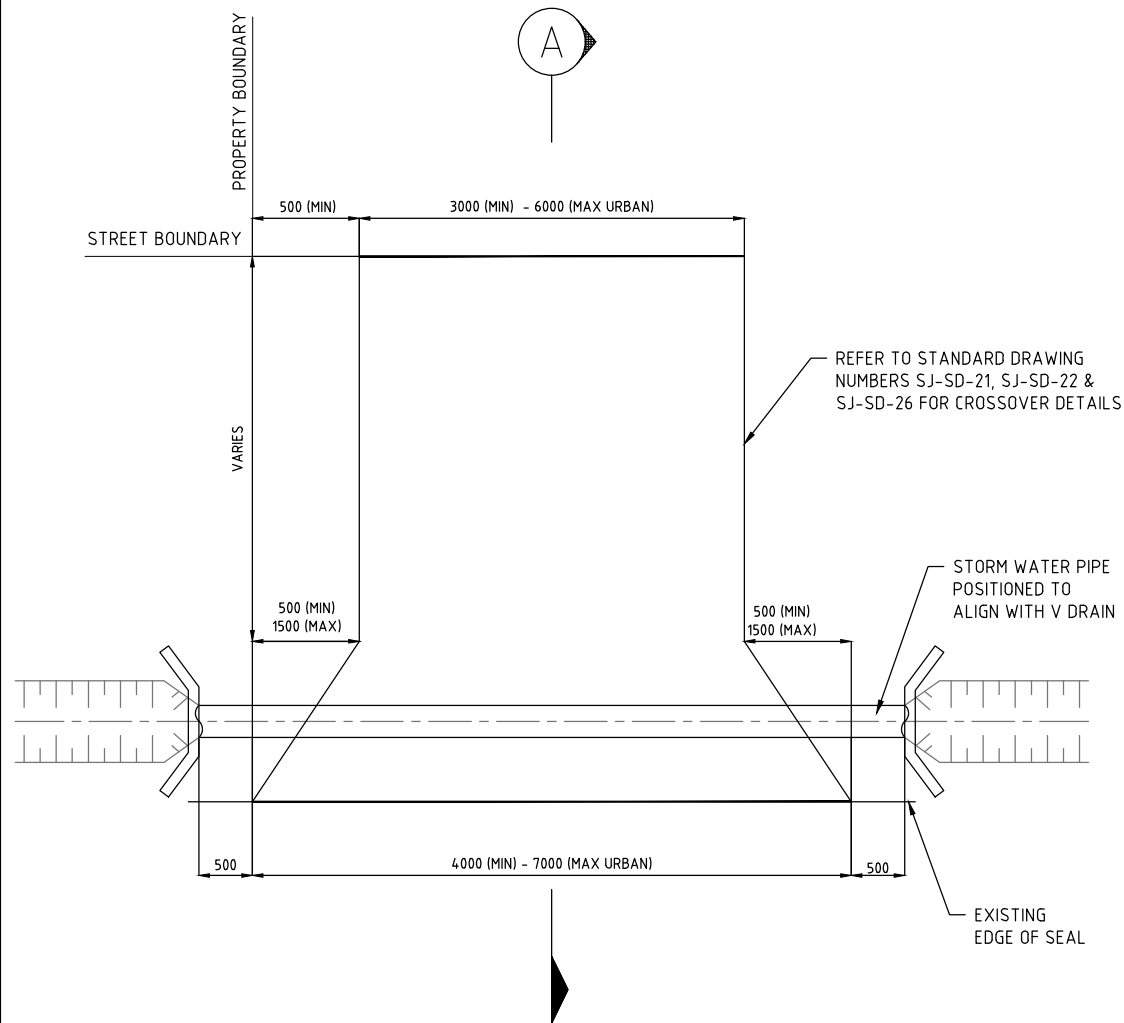
Infrastructure and Design

DESIGNED	P. BARUA	SIGNED		STANDARD DETAIL		STANDARD DRAWING NO:
DRAWN	P. BARUA	SIGNED		BRICK PAVED CROSSOVER		SJ-SD-22
MANAGER	N. SIDONE	SIGNED		ADJACENT TO BARRIER/ SEMI-MOUNTABLE & MOUNTABLE KERB		INFRASTRUCTURE & DESIGN
DIRECTOR	R. NAJAFZADEH	SIGNED		DATE	25/01/2022	REV B
TOWN NUMBER	FILE NUMBER			SCALE	Ordinary Council Meeting 20 March 2023 1:20 & 1:10	

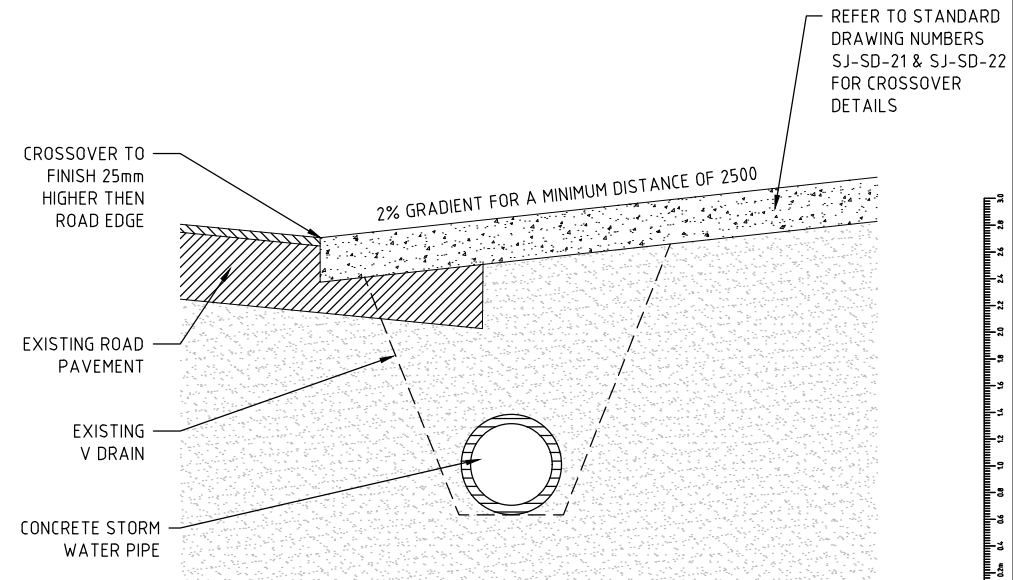


SCALE: 1:500

			 Shire of Serpentine Jarrahdale	DESIGNED P. BARUA		SIGNED	STANDARD DETAIL		STANDARD DRAWING NO:
				DRAWN P. BARUA		SIGNED	CROSSOVER LOCATION PLAN		SJ-SD-23
				MANAGER N. SCIDONE		SIGNED			INFRASTRUCTURE & DESIGN
A	ACCEPTED BY SHIRE	N. SCIDONE							
No.	DESCRIPTION	APPROVED & DATE							
AMENDMENTS					DIRECTOR R. NAJAFZADEH	SIGNED	DATE 25/01/2022		
					TRM NUMBER		SCALE	Ordinary Council Meeting - 20 March 2023	
								REV A	



**TYPICAL RURAL CROSSOVER**  
SCALE 1:50



SECTION  
1:20



### NOTES:

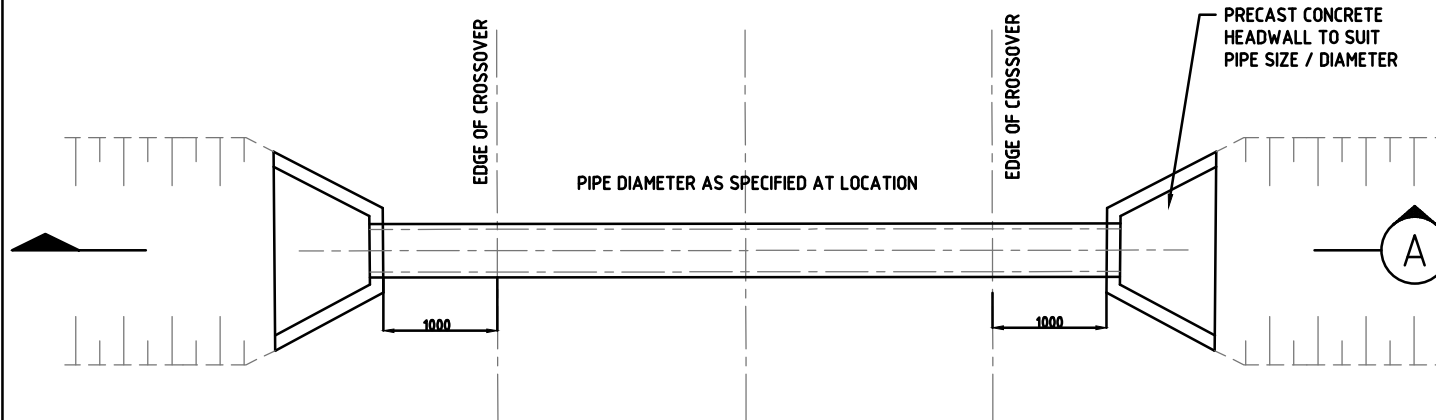
- ALL DIMENSIONS IN MILLIMETERS.
- DRAWING TO BE READ IN CONJUNCTION WITH SHIRE OF SERPENTINE - JARRAHDALE CROSSOVER SPECIFICATION.
- CULVERT MUST BE SIZED TO SUITE V DRAIN CAPACITY (MINIMUM  $\phi 450$ )

B	UPDATED AS PER COMMENTS	N. SODONE
A	ACCEPTED BY SHIRE	N. SODONE
No.	DESCRIPTION	APPROVED & DATE
AMENDMENTS		

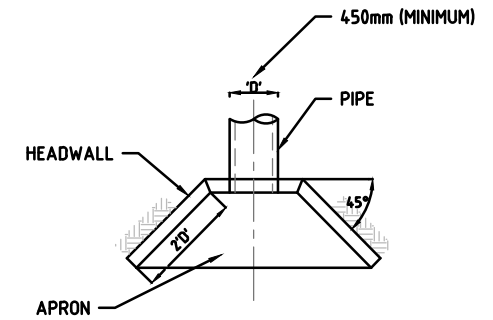
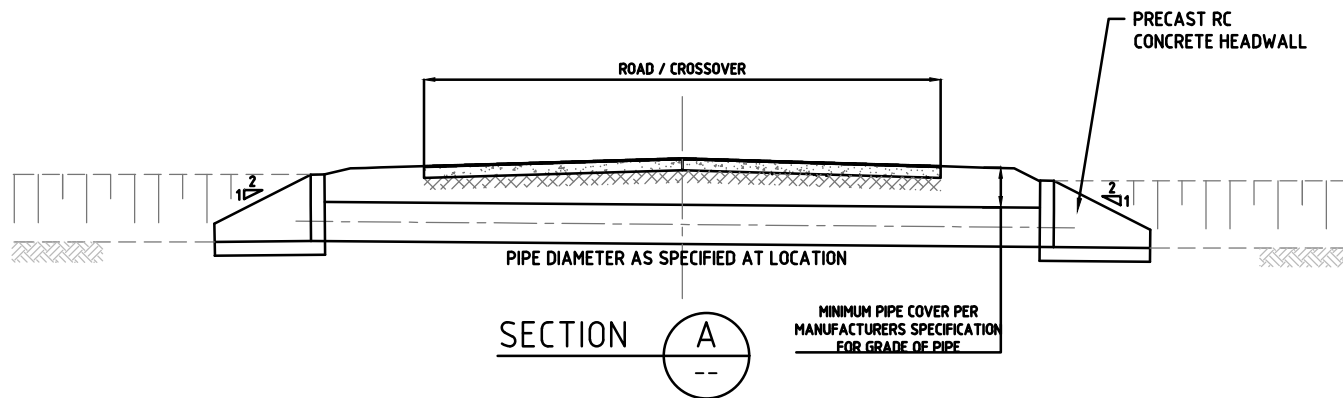
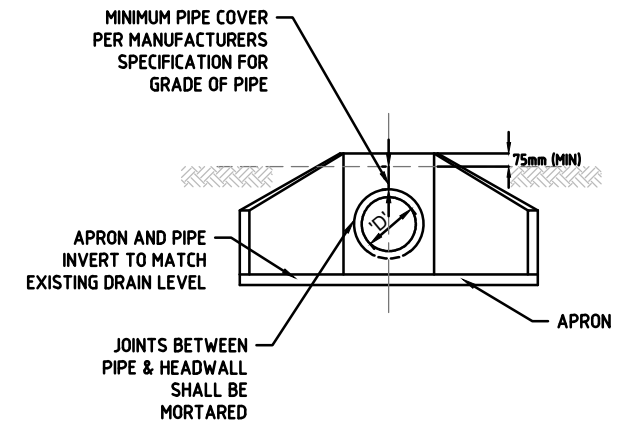


Infrastructure and Design

DESIGNED	P_BARUA	SIGNED		STANDARD DETAIL		STANDARD DRAWING NO:
DRAWN	P_BARUA	SIGNED		RURAL CROSSOVER & CULVERT		SJ-SD-24
MANAGER	N_SCIDONE	SIGNED				INFRASTRUCTURE & DESIGN
DIRECTOR	R_NAJAFZADEH	SIGNED		DATE	27/01/2022	Ordinary Council Meeting - 20 March 2023
TRIM NUMBER	FILE_NUMBER			SCALE	1:50 & 1:20	
						REV B



PLAN VIEW

PLAN  
NTSSECTION  
ATYPICAL ROAD CULVERT DETAIL  
NTSELEVATION  
NOT TO SCALE

SCALE: N.T.S.

No.	DESCRIPTION	APPROVED & DATE
B	UPDATED AS PER COMMENTS	N. SCIDONE
A	ACCEPTED BY SHIRE	N. SCIDONE
AMENDMENTS		



Infrastructure and Design

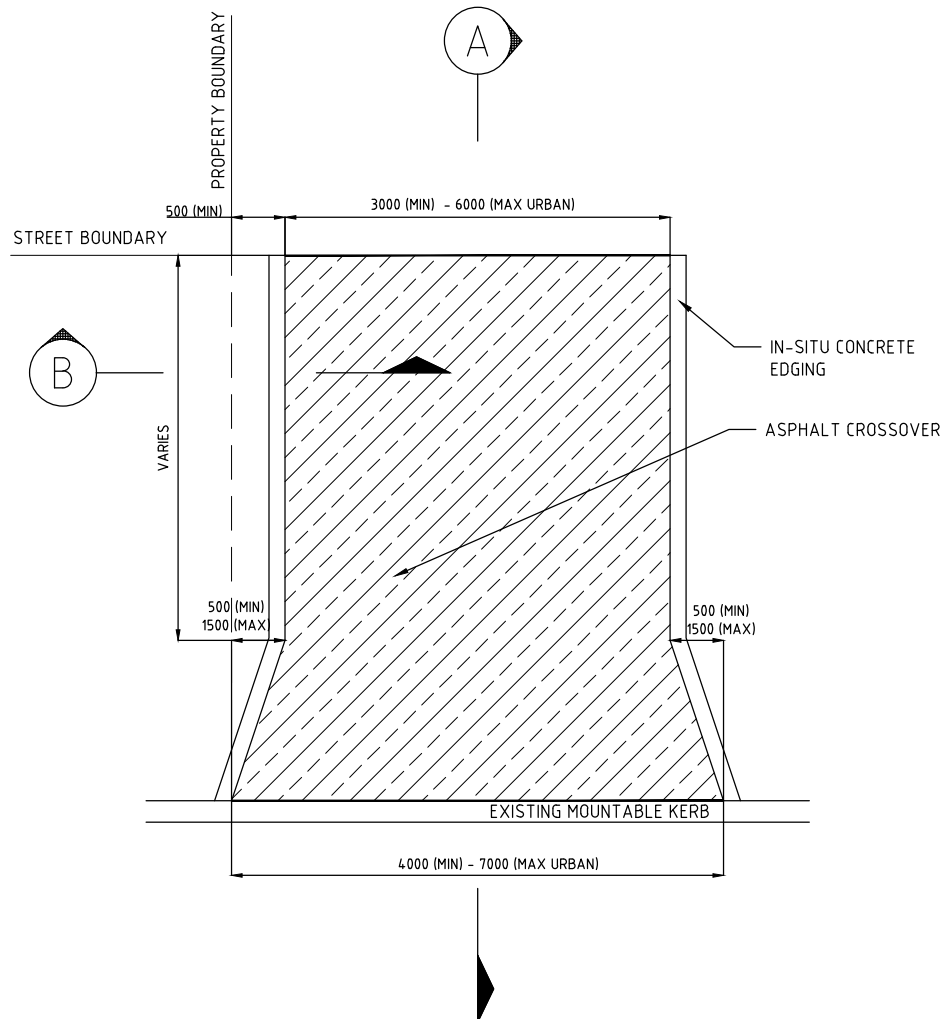
DESIGNED	P. BARUA	SIGNED
DRAWN	P. BARUA	SIGNED
MANAGER	N. SCIDONE	SIGNED
DIRECTOR	R. NAJAFZADEH	SIGNED
TOWN NUMBER	FILE NUMBER	

STANDARD DETAIL

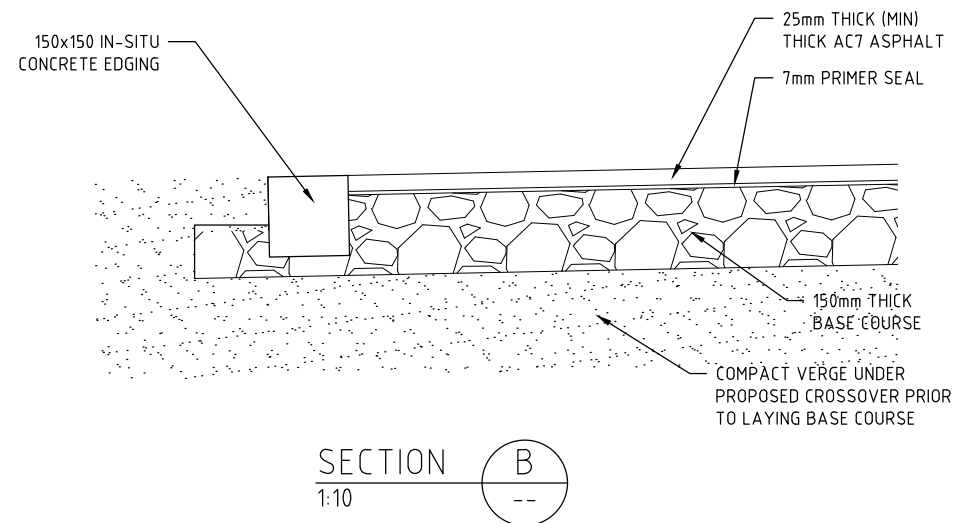
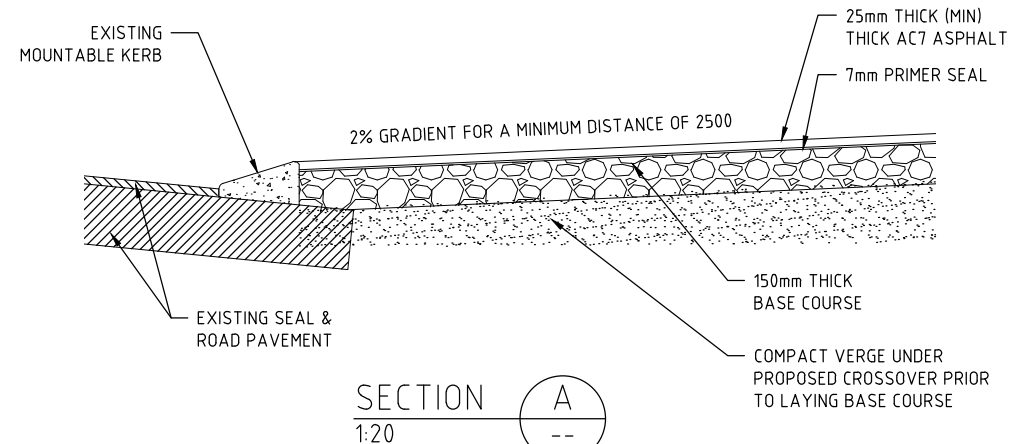
TYPICAL ROAD CULVERT DETAIL

DATE: 27/01/2022  
SCALE: 1:50 & 1:20  
Ordinary Council Meeting - 20 March 2023

STANDARD DRAWING NO:	SJ-SD-25
INFRASTRUCTURE & DESIGN	REV B



TYPICAL ASPHALT CROSSOVER  
SCALE 1:50



### NOTES:

1. ALL DIMENSIONS IN MILLIMETERS.
2. DRAWING TO BE READ IN CONJUNCTION WITH SHIRE OF SERPENTINE JARRAHDALE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF CROSSOVERS.

A	ACCEPTED BY SHIRE	N. SCIDONE
No.	DESCRIPTION	APPROVED & DATE
AMENDMENTS		



Infrastructure and Design

DESIGNED	P. BARUA	SIGNED		STANDARD DETAIL		STANDARD DRAWING NO:
DRAWN	P. BARUA	SIGNED		ASPHALT CROSSOVER		SJ-SD-26
MANAGER	N. SCIDONE	SIGNED		ADJACENT TO BARRIER/ SEMI-MOUNTABLE & MOUNTABLE KERB		INFRASTRUCTURE & DESIGN
DIRECTOR	R. NAJAFZADEH	SIGNED		DATE	25/01/2022	REV A
TRIM NUMBER	FILE NUMBER			SCALE	1:20 & 1:10	

Ordinary Council Meeting 20 March 2023