

Driveway Crossover Specifications



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Revision	Date	Created	Approved
A	12.05.2014	B. DeGilio	J. Dy.
B	05.11.2015	N. Wicker	R. Tiggemann.

GENERAL REQUIREMENTS

Driveway crossover refers to the section of driveway located between the kerb and property boundary. New crossovers including kerbing and kerb inverts shall be designed and constructed using materials and methods outlined in this specification.

This specification should be read in conjunction with the following Council documents:

- City of Port Adelaide Enfield Standard Engineering Details:
 - SK1006 - Driveway Crossover Invert (Residential and Industrial)
 - SK1007 - Driveway Crossover Layout (Concrete)
 - SK1008 - Driveway Crossover Layout (Block Paved)
 - SK1009 - Driveway Crossover Section (Concrete), Driveway Crossover Section (Block Paved)
 - SK1010 - Driveway Crossover Dimensions

All unused existing crossovers must be removed with all driveway inverts reinstated with upright kerbing. Existing crossovers and kerb inverts shall only remain if specifically approved by Council. All crossover works must be **installed within three months** of the date of occupation of a dwelling.

Property owners are responsible for the construction and ongoing maintenance of driveway crossovers between the kerb and property under section 218 of the Local Government Act, 1999. Driveway crossovers shall be constructed by either the applicant (where works do not exceed \$10,000), a contractor engaged by the applicant, or Council. Any alterations made to kerbing or new driveway crossovers shall be approved by Council with all costs associated with the work borne by the property owner.

An applicant may wish to construct crossovers in accordance with this specification and construction details noted above or enter into an agreement with Council to complete the proposed works. In both instances the owner is required to contact Council and gain approval to undertake the proposed works.

APPROVALS REQUIRED

The following approvals may be required when proposing to construct a new driveway crossover:

Council

Under Section 221 of the Local Government Act, a person (other than the Council or a person acting under some other statutory authority) must not make an alteration to a public road unless authorised to do so by the Council - Maximum Penalty \$5000. An *Application to Install Driveway Crossover* form must be completed and approved by Council prior to any construction works commencing. **Before constructing driveways, erecting fences adjacent to the footpath or laying stormwater pipes across the verge a person must contact Council for footpath levels as existing levels may not be final.**

Department of Planning, Transport and Infrastructure (DPTI)

Where driveway crossovers are proposed along Arterial Roads, schedule 8 of the Development Regulations 2008-9.4.(2009) states:

"Development (including crossovers) which in the opinion of the Council is likely to:

- o Alter an existing access; or*
- o Change the nature of movement through an existing access; or*
- o Create a new access; or*
- o Encroach within a road widening setback under the Metropolitan Adelaide Road Widening Plan Act 1972*

will require a referral with written approval from the Commissioner of Highways in respect to the proposed crossover".

Council may request written confirmation from the Commissioner of Highways that they support the proposed crossover, prior to Council approving any crossover works.

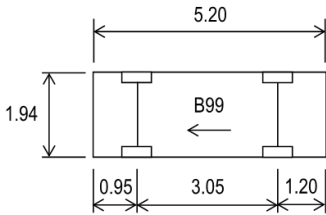
Other Service Providers

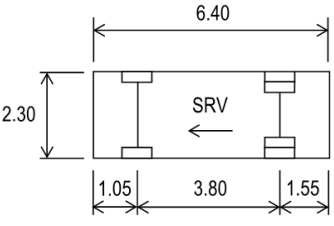
Where driveway crossovers or kerbing works affect a service not owned by Council i.e. power, gas, water and sewer, it is the responsibility of the applicant or land owner to consult with the relevant service providers to determine their requirements, obtain relevant approvals and ensure all works are completed to their satisfaction. Council may request written confirmation from the relevant service providers prior to approving any crossover works.

CROSSOVER TYPES

Crossovers are defined as either Residential or Industrial depending on the type of vehicles that are expected to access the site. Applicants may wish to nominate their preferred method of crossover construction however Council will confirm the required type of crossovers that shall be constructed.

Table 1 - Crossover Classification Table

Classification	Design Vehicle	Description
RESIDENTIAL		<p>The passenger vehicle is represented as the B99 Vehicle dimensions outlined in AS 2890.1.</p> <p>Vehicles of this size or smaller require residential sized crossovers. Site owners may prefer to construct industrial grade crossovers where high traffic volumes are anticipated.</p>

INDUSTRIAL	 <p>Small Rigid Vehicle (SRV) or LARGER</p>	<p>The SRV represents light trucks to a maximum load capacity of 4.0 tonne and typically having a single rear axle and either single or dual tyres. Typically used in service areas where small commercial vehicles are preferred.</p> <p>Vehicles of this size or larger require industrial sized crossovers.</p>
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ALLOWABLE CROSSOVER LOCATIONS

Crossovers should be located to minimise conflict with existing obstructions, maximise the availability of on-street car parking, and to ensure safe convenient access to a property is achieved. Below is a list of design objectives that should be adopted when proposing a new location for a driveway crossover:

- Crossovers should ensure one easily accessible on-street car parking space is available adjacent every two allotments, with the exception of along an arterial road as required in Council's Development Plan (*General Section: Residential Development PDC 51*)
- Driveway crossovers should be paired and oppose one another wherever possible to maximize on-street car parking opportunities
- Driveway crossovers should not be located within the sections of kerb shown by heavy lines in figure 1 with the exception of domestic driveways opposing the entering road at any intersection, or when a property would otherwise be denied access due to the physical impossibility of meeting the requirement
- Provide adequate clearance from existing obstructions as outlined below

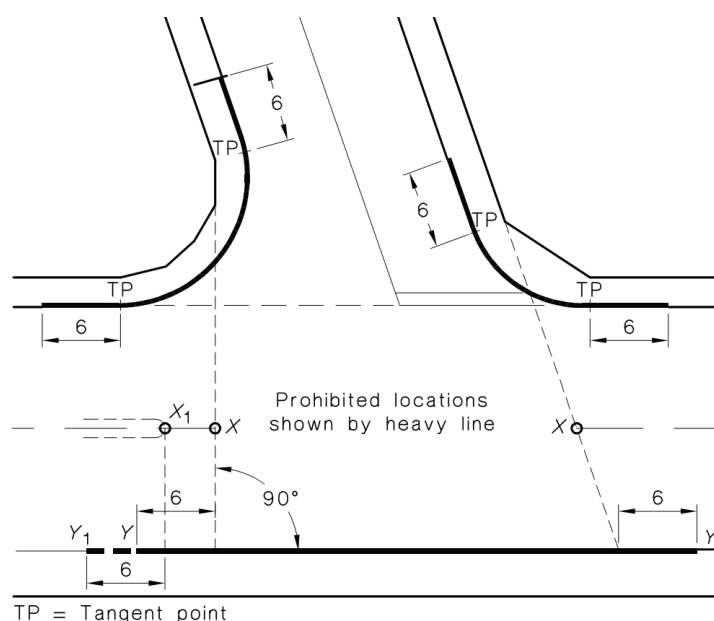


Figure 1 - Prohibited Driveway Locations

Source: AS/NZS 2890.1:2004 figure 3.1.

MINIMUM CLEARANCES FROM OBSTRUCTIONS

The applicant shall demonstrate that crossover provide minimum clearances to existing infrastructure as outlined below. Alternatively the applicant can request to remove, reconstruct or relocate existing infrastructure (at their expense) subject to obtaining approval from the relevant authorities.

It is critical that the size and layout of crossovers comply with section 'Crossover Dimensions' further below in addition to satisfying these minimum clearances. In the event that an existing obstruction is not approved for removal, the applicant will be required to provide amended access details.

Table 2 - Minimum Clearances from Obstructions

Obstruction	Clearance	Comments
Lamp Post or Stobie Pole	0.3m	Should an applicant wish to remove or relocate an existing lamp post or stobie pole the applicant must consult with all relevant authorities and obtain the required approvals for its removal and/or relocation. Developers are required to pay all costs associated with the works and ensure the works are constructed prior to section 51 clearance being granted (land division application) or certificate of occupation being granted (development application).
Stormwater Outlet	0.5m	The construction of driveway crossovers must not affect neighbouring stormwater pipes unless written approval is obtained from the affected property owner along with details for the pipes relocation.
Stormwater Pit	1.0m	Should an applicant wish to modify or relocate an existing stormwater pit the applicant must engage a suitably qualified stormwater engineer and consult with Council's Technical Services Department to ensure an engineering design is submitted that complies with Council's technical requirements. Developers are required to pay all costs associated with the works and ensure the works are constructed prior to section 51 clearance being granted (land division application) or certificate of occupation being granted (development application).
Street Tree	1.5m (unless otherwise approved by Council)	Should an applicant wish to apply for the removal of an existing street tree a separate application must be made to Council's Technical Services Department. In most instances approval to remove a tree will not be supported if alternate design solutions exist, however in the event that Council do support removal of the tree, developers will be required to compensate Council for the loss of street trees. Council uses a recognised formula to value its street trees based upon amenity value.
Street Furniture (e.g. seat or planter box)	To be determined in consultation with Council	A separate application is to be made to Council's Technical Services Department for permission to remove or relocate existing street furniture. If approved, developers are required to pay for all relocation costs and enter into an agreement with Council for the works.
Bus Stop	To be determined in consultation with DPTI and Council	Written approval to relocate an existing bus stop must be obtained from the Department of Planning, Transport and Infrastructure (DPTI). Written approval from all property owners immediately adjacent the proposed new bus stop location must be obtained. Developers are required to pay for all relocation costs and ensure bus stops are designed and constructed in accordance with DPTI and Council requirements. In most instances, relocation of an existing bus stop will not be approved.
Traffic Installation in Roadway (e.g. median island or speed hump)	Not permitted unless approved by Council	Driveways that require existing traffic control devices located on the roadway to be modified will not be accepted unless approved by Council.

CROSSOVER DIMENSIONS

Residential Crossovers

Crossovers and driveways need to be constructed so that access from a property is not restricted in the event that vehicles are legally parked on the street. Parking may occur on the opposite side of the road, in front of the property, or directly against the edge of the driveway crossover.

Council analysed a range of different road and verge configurations and prepared Standard Detail SK1010 - *Driveway Crossover Dimensions* shown in figure 2 below. This detail can be used to determine recommended crossover dimensions.

It must be noted that the crossover dimension depicted on Standard Detail SK1010 are only applicable to driveways that are straight, without bends and are symmetrical about the centreline (even on both sides). Driveways which are curved or driveways that need to avoid existing obstructions will need an individual assessment carried out by a suitably qualified traffic engineer to determine adequate driveway and crossover dimensions.

An applicant may wish to undertake their own assessment to determine crossover dimensions. If doing so it is critical that the following design principles be adopted:

- Undertake the assessment using a B85 sized vehicle (minimum) or the largest sized vehicle that is expected to access the site.
- Swept paths are undertaken using only an approved software design package, Austroads or Australian Standard turning path templates.
- Swept paths and plans must be drawn from accurate site measurements.
- Swept paths should make the assumption that all on-street and off-street parking spaces are full.
- Ensure that a minimum manoeuvring clearance of 0.3m is provided from all obstructions consistent with the requirements of AS NZS 2890.1:2004.
- Swept paths comply with all relevant Australian road rules, Austroads and Australian Standards.

Standard Detail SK1010 can be obtained from Council's website or by contacting Council's Technical Service Department.

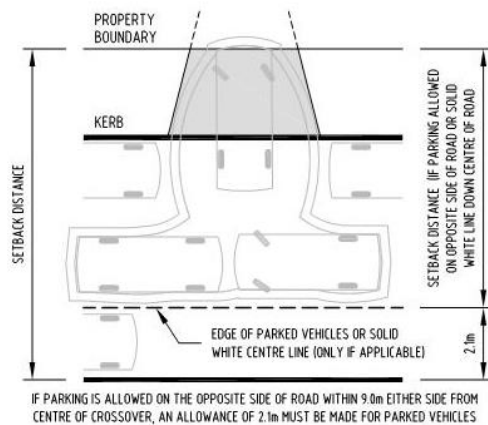
CALCULATING CROSSOVER DIMENSION:

TO DETERMINE CROSSOVER DIMENSIONS THE MAXIMUM SETBACK DISTANCE A VEHICLE HAS TO TURN INTO A SITE MUST BE DETERMINED. THIS IS SHOWN AS THE SETBACK DISTANCE IN THE DIAGRAMS BELOW.

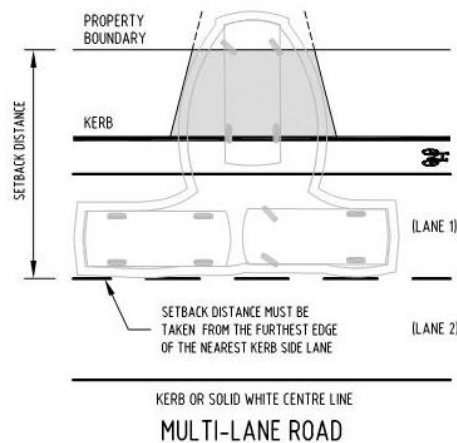
THE FOLLOWING STEPS MUST BE TAKEN TO DETERMINE CROSSOVER DIMENSIONS:

1. DETERMINE IF THE ROAD IS A LOCAL ROAD OR MULTI-LANE ROAD AND REFER TO THE RELEVANT DIAGRAM.
2. IF DEVELOPMENT IS ON A LOCAL ROAD, CONFIRM IF PARKING IS AVAILABLE ON OPPOSITE SIDE OF ROAD.
3. REFERRING TO THE RELEVANT DIAGRAM, TAKE MEASUREMENT FROM SITE AND CONFIRM THE APPLICABLE SETBACK DISTANCE.
3. CONFIRM WHETHER THE DRIVEWAY AND CROSSOVER IS TO ALLOW FOR ONE OR TWO VEHICLES (SINGLE OR DOUBLE).
4. WITH THE SETBACK DISTANCE AND NUMBER OF VEHICLES CONFIRMED, DETERMINE THE REQUIRED CROSSOVER DIMENSIONS FROM THE TABLE BELOW.

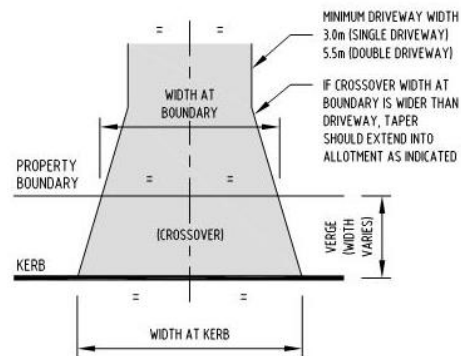
CROSSOVER DIMENSIONS PROVIDED IN THE TABLE BELOW ARE ONLY APPLICABLE TO DRIVEWAYS THAT ARE STRAIGHT WITHOUT BENDS AND ARE MIRROR IMAGE ABOUT THE CENTER LINE. DRIVEWAYS THAT ARE CURVED (E.G. TO AVOID OBSTRUCTIONS) WILL NEED AN INDIVIDUAL ASSESSMENT CARRIED OUT BY A QUALIFIED TRAFFIC ENGINEER TO DETERMINE THE REQUIRED DRIVEWAY AND CROSSOVER DIMENSIONS. SHOULD ALTERNATE CROSSOVER DIMENSIONS BE PROPOSED BY AN APPLICANT, THEY MUST BE VERIFIED BY A QUALIFIED TRAFFIC ENGINEER. CROSSOVERS PROVIDING ACCESS TO INDUSTRIAL OR COMMERCIAL PROPERTIES SHOULD BE ASSESSED INDIVIDUALLY.



LOCAL ROAD



MULTI-LANE ROAD



CROSSOVER SETOUT

RECOMMENDED CROSSOVER DIMENSIONS		
SETBACK DISTANCE	SINGLE DRIVEWAY	DOUBLE DRIVEWAY
WIDTH AT KERB		
ALL	5.0m	8.0m
WIDTH AT BOUNDARY		
3.00m - 3.49m	5.0m	8.0m
3.50m - 3.99m	5.0m	7.0m
4.00m - 4.49m	5.0m	6.6m
4.50m - 4.99m	5.0m	6.2m
5.00m - 5.49m	4.9m	6.0m
5.50m - 5.99m	4.8m	5.8m
6.00m - 6.49m	4.6m	5.7m
6.50m - 6.99m	4.3m	5.6m
7.00m - 7.49m	4.0m	5.5m
7.50m - 7.99m	3.5m	5.5m
8.00m >	3.0m	5.5m

STANDARD DETAIL DRIVEWAY CROSSOVER DIMENSIONS



File Name

SK1010

Revised 16 OCT 2015

Approved A. WOOD

Revision A

Figure 2 - Recommended Crossover Dimensions (Residential Crossovers Only)

Industrial Crossovers

A qualified traffic engineer should be consulted to determine the required driveway and crossover dimensions for industrial crossovers.

Australian Standard 2890.2 "Off-Street Commercial Vehicle Facilities" section 3.4 provides guidance on the appropriate design of crossovers for commercial developments. Australian Standard 2890.2. provides turning path templates that can be overlaid on plans to determine appropriate crossover dimensions. It is however recommended that a qualified traffic engineer be engaged to review each proposal and undertake an assessment using an approved software design package to ensure that proposed crossover dimensions are adequate.

Industrial crossovers for commercial vehicles should be designed to accommodate the largest sized vehicle that is expected to access a site.

ADDITIONAL LAYOUT CONSIDERATIONS

On-street Parking

Consideration should be given to the number of available on-street parks when locating and sizing driveway crossovers to ensure that on-street parking spaces are not reduced or compromised due to the installation of additional driveway crossovers.

Proximity to Adjacent Crossover

When the distance between crossovers provides an opportunity for a small vehicle to park on the roadway, it is critical that crossover flares are of adequate dimensions to ensure access to and from a property is not restricted by vehicles parked on-street.

Narrow Streets

Narrow streets are affected by a number of additional issues due to the limited area that is available for vehicles to manoeuvre. Wider driveways, crossovers, and gates openings are generally required as a larger portion of the turning manoeuvre will need to be carried out on-site as opposed to on the roadway. Manoeuvring is more likely to be restricted due to the closer proximity of vehicles parked on-street.

Common Driveways

Council's Development Plan (General Section: Residential Development PDC 57) states: '*common driveways that provide access to more than four dwellings are required to be 6.0 meters wide at the property line, extending into the property for a distance of 6.0m, after which the driveway may taper to a width of not less than 3.5m.*'

Passenger vs. Commercial Vehicles

Developments that are accessed by both passenger and commercial vehicles should have access points for each vehicle type separated where possible to improve safety.

Arterial and Collector Roads

Developments abutting arterial or collector roads listed in Council's Development Plan Table PAdE/6 – "*Road Hierarchy and Function*" should have driveways designed such that all vehicles are able to enter and exit the land in a forward direction and cater for the simultaneous two-way movements of the largest anticipated vehicles to enter and exit the site

CROSSOVER AND DRIVEWAY LEVELS

Consideration should be given to the following items when determining crossover levels. Council may request a detailed plan be submitted, which is prepared by a qualified engineer to demonstrate compliance with any relevant items.

Flood Protection

Property boundary levels at the street frontage should be maintained above top of kerb to protect the site against inundation from street stormwater flows during major storm events. Council recommends a minimum 80mm above top of kerb at the boundary however an engineer should be engaged to determine what level is adequate to protect the site against inundation from street flows. Sites located in flood zones may need to be higher to provide adequate protection against floodwaters.

Access for People with a Disability

Where practical, footpaths and crossovers should provide suitable access for people with a disability and comply with the requirements of Australian Standard AS 1428 *"Design for Access and Mobility"*. This standard provides details on the correct design of footpaths and ramps to create an environment which can be negotiated by people with a disability. When existing footpath grades are steep and the requirements of this standard cannot physically be met Council should be contacted to discuss a suitable solution.

Transition with Footpath

Roads with steep longitudinal grade must have consideration for how footpaths will transition on either side without creating footpath grades that are in excess of 1 in 20 (5%) over a maximum of 1.52m. When grades exceed this, consideration must be given to providing suitable access for people with a disability as outlined above.

Where driveway crossovers intersect an existing Council footpath, the cross fall of the footpath area in the new crossover should resemble that of the existing footpath and ensure footpath cross falls do not exceed 1 in 40 (2.5%).

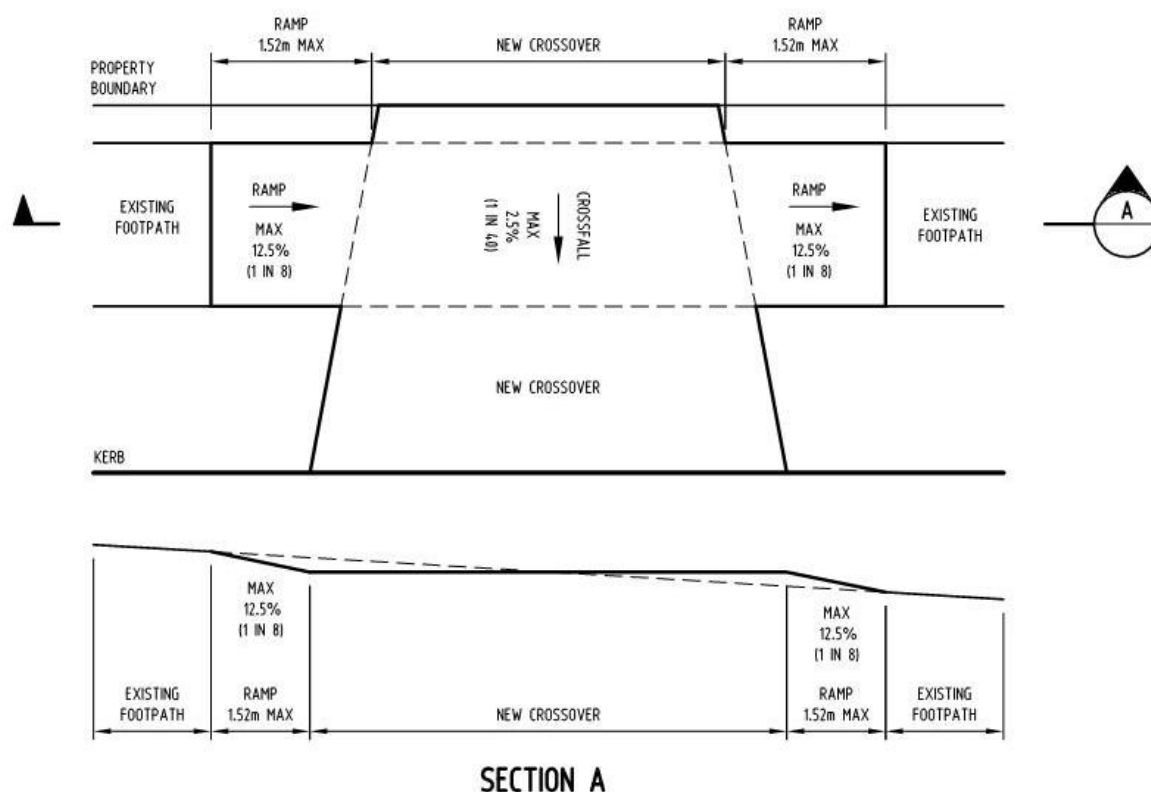


Figure 3 - Footpath Transition

CONSTRUCTION MATERIALS

CONCRETE CROSSOVERS

General

Crossover Type	Concrete Thickness	Reinforcement
Residential	100mm	SL62
Industrial	150mm	SL72

Concrete used for driveway crossovers shall have a minimum slump of 80mm and characteristic strength of 25MPa when cured.

All concrete for the works shall comply with Australian Standard 3600 *"Concrete Structures"*

Base

Base material shall consist of 100mm thick quarry rubble (PM2/20QG or similar).

Compaction

Sub-base material below the concrete shall be compacted in layers not exceeding 150mm to achieve a minimum of 95% modified compaction (MMDD) in accordance with AS 1289.5.2.1. The existing subgrade material below the sub-base shall be compacted to achieve a minimum of 98% standard compaction (SMDD) in accordance with AS 1289.5.1.1.

Hot weather

It is not recommended to pour concrete in weather conditions below 10 degrees Celsius or above 32 degrees Celsius unless undertaken by an experienced contractor. During the curing process it is recommended to wet the concrete frequently to minimise the formation of shrinkage cracks and adopt curing methods such as the use of curing blankets.

Colour

The applicant shall propose the colour of the concrete to Council's Technical Services Department for approval prior to commencing construction.

Additives

Additives or other setting accelerants must not be used without prior approval from Council's Technical Services Department.

Finish

The wearing surface shall have a soft broom finish with a steel edging tool being used on joints and edges.

Curing

Most concrete will take approximately 25 to 30 days to achieve optimal strength unless a rapid setting agent is added into the concrete mix.

Reinforcement

Reinforcement mesh shall extend across the full length and width of the driveway crossover, placed centrally on bar chairs or similar with minimum 50mm cover.

BLOCK PAVED CROSSOVERS

Paver type

Crossover Type	Paver Thickness
Residential	60mm
Industrial	80mm

All segmental pavers shall comply with Australian Standard 4455 *"Masonry Units and Segmental Pavers"*

Base

Base material shall consist of 100mm thick quarry rubble (PM2/20QG or similar).

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Civic Centre 163 St Vincent Street Port Adelaide South Australia • PO Box 110 Port Adelaide SA 5015
Regional Offices Enfield Library - Council Office • Greenacres Library - Council Office

Compaction

Sub-base material below the pavers shall be compacted in layers not exceeding 150mm to achieve a minimum of 95% modified compaction (MMDD) in accordance with AS 1289.5.2.1. The existing subgrade material below the sub-base shall be compacted to achieve a minimum of 98% standard compaction (SMDD) in accordance with AS 1289.5.1.1.

Colour

The applicant shall propose the colour of the pavers to Council's Technical Services Department for approval prior to commencing construction.

OTHER REQUIREMENTS

Traffic Management

If construction activities are expected to obstruct public walkways or roadways in Council's road reserve, traffic management will be required to limit the risk to public safety. Traffic management is the responsibility of the applicant or property owner. All construction works shall not increase the level of risk to public safety in comparison to the existing streetscape environment prior to commencement of construction works.

Existing Parking Controls

Where existing on-street parking controls (linemarking or signage) are affected by the proposed works and require review, removal or relocation of a street sign, an application should be made to Council by the property owner to review existing parking controls. Developers are required to pay for all costs associated with the modifications.

Damage to Council Property

The Applicant is liable for any damage to Council property including kerb, footpath, drains, signs etc. under Section 233 of the Local Government Act. If any damage exists prior to construction commencing, Council should be notified immediately and it is advisable to supply dated photographs and measurements which provided proof of any defects. If Council is not notified it will be assumed that all damage was caused during construction and the land owner will be required to rectify to Council's satisfaction. Should the damages not be rectified by the property owner to Council satisfaction, the required work will be completed by Council and costs charged to the property owner.

Spoil

Any excess spoil from driveway crossover construction shall be removed by the property owner or contractor engaged by the property owner, at the property owners expense.

Inspections

A Council Officer will inspect the works upon completion to determine if the works are acceptable to Council satisfaction. Should the works not be completed to Council specifications, the owner will be contacted in writing and be asked to remediate the work within twenty-eight days. Should the work not be completed within this time the required work will be completed by Council and charged to the property owner.

Further Information

For more information or to discuss any of the items outlined in this specification please contact Council's Technical Services Department on (08) 8405 6600.