Vehicle Crossover Specifications and Design Plans

Introduction:

1. This document is designed to assist property owners and contractors to construct an appropriate crossover to the satisfaction of the City of Kwinana, allowing the property owner upon request, to receive the City's crossover rebate.

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 City's crossover rebate.

3. All work is to comply with Councils Crossovers Policy, these specifications and an approved site plan unless approved in writing by the Manager of Engineering Services.

4. It is the owners and or contractor's responsibility to establish the location of all services within the road reserve prior to any works proceeding.

5. Notice can be given for the removal of any illegal crossover, and council may remove the crossover at the property owners' expense.

6. Any requirement placed on the construction or location of the crossover by the Manager of Engineering Services or their nominated representative must be adhered to.

7. Where crossovers are constructed, all repairs and maintenance shall be the responsibility of the property owner to the satisfaction of the Manager of Engineering Services or their nominated representative.

8. Crossovers that fail to comply with these specifications will not be eligible for the crossover rebate. In addition any required remedial works shall be undertaken by the contractor or owner at their expense.

9. This specification applies only to residential properties where traffic is predominantly of passenger vehicle type with only occasional light service or commercial vehicles. This specification does not apply to commercial or industrial properties where vehicle traffic loadings are in excess of a residential situation.

10. At the completion of constructing a new dwelling or the re-development of an existing dwelling, a crossover conforming to Councils specifications shall be installed.

1. APPROVAL:

1.1 Design for the proposed crossover shall be in accordance with this specification and drawings STD-CR01, STD-CR02, STD-CR03.

1.2 For new dwellings, the approval of the crossover design is granted in conjunction with the approved building licence. The building licence shall show a crossover designed in accordance with this specification.

1.3 Existing dwellings shall submit a scaled plan to the Manager of Engineering Services for approval. The plan shall show the location of the crossover in relation to the road carriageway and property boundaries, designed in accordance with these specifications.

2. DESIGN:

2.1 WIDTH-The width at the property boundary for the primary crossover of a Residential, Special Residential, Rural and Special Rural property is to be a minimum 3.0m to maximum 6.0m. Width at kerb line to be a maximum of 7.0m including wings. Wings of the crossover are to be 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 crossover 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.

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 Council specifications. Failure to obtain this information from Council may lead to the property owner having to alter the internal driveway at the owners' expense.

2.4 POSITION-At the property boundary the minimum distance from the crossover to the side boundary is 0.5 metres. Refer to drawing STD-CR03.

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 STD- CR01, STD- CR02 and STD CR04

2.5 CORNER BLOCKS-No part of the crossover, including the wings, shall be located within the truncation area. Refer to drawing STD-CR03.

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 ADDITONAL CROSSOVER- An additional crossover may be applied for to the Manager of Engineering Services. 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 kerbline is to be a max 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 line including wings (0.5m x 1.5m).

All other items in the Crossover Specifications and Design Plans must be applied to the design of the additional crossover.

The Crossover Rebate is not available to 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.

Design and Specification for commercial and industrial crossovers must be submitted to the Manager of Engineering Services for approval prior to construction. The crossover is to be designed to accommodate size and weight of vehicles proposed.

3.2 CONCRETE AND POURED LIMESTONE - Refer to drawing STD-CR01

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 screenings, sand and cement. Maximum slump to be 80 millimetres. Random slump test shall be taken by the Contractor as directed by the Manager of Engineering Services or his nominated representative.

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 100 millimetre 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 screeding to correct levels and broom finish to provide a non slip, dense surface free of any depressions, float marks, jointing 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 jointing 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 the Manager of Engineering Services and at not more than 1.8 metres 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 STD-CR02

3.3.1 Paving units shall be trafficable with a minimum of 60 millimetres in thickness. Block paving is permitted when the blocks are held in place by the 150/150mm concrete edging or haunching.

3.3.2 The existing ground shall be boxed out and shaped to required dimensions and levels. Compaction 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 to be removed.

3.3.3 The bedding layer shall be compacted and be a minimum of 30 millimetres loose screed thickness such that the final compacted thickness is a minimum 20 millimetres.

3.3.4 The bedding layer shall be well-graded concreting sand passing a 5.0 millimetre 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 100 millimetre thickness having a density of at least 95% of the modified Maximum Dry Density determined in accordance with AS 1289 EZ. 1 1977.

3.3.6 The paving units 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 500 millimetre x 500 millimetre 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 filling should be finer than for the bedding layer with a nominal maximum particle size of 2 millimetres. Sand should be free from salts and excess sand shall be removed.

3.3.8 An edge restraint shall be provided by the placing of a 150 millimetres x 150 millimetres in-situ concrete strip along the perimeter of the crossing. The base course must be compacted beneath the edge restraint and extend 100 millimetres beyond the edge restraint. Alternatively the edge of the paving may be haunched.

4. EXISTING INFRASTRUCTURE:

4.1 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.

4.2 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.

4.3 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.

4.4 SIDE ENTRY PIT-The minimum offset from a side entry pit is to be 1.0 metre from the edge of the pit lid 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 owner's expense, except for where the side entry pit is located at a low point in the road and the pit cannot be relocated.

4.5 POLES, POSTS AND OTHER OBSTRUCTIONS-The minimum offset from a pole, post or other obstruction is to be 1.0 metre from the edge of the obstruction to the closest edge of the crossover.

The property owner may apply to have a street name sign post relocated in the event that all other locations for the crossover have be examined and deemed inappropriate.

4.6 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 City will consider relocating a verge tree. If the relocation of the verge tree is the final option, then the relocation will be at the property owners expense

4.7 TRAFFIC ISLANDS-Where Crossovers are 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 alteration of islands may not be considered in all instances. Where a traffic island is able to be relocated and is considered required to be modified by the City, all modifications are at the property owners expense.

4.8 REDUNDANT CROSSOVER-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 removal of kerbing is to be obtained by the Manager of Engineering Services or their nominated representative. Removal or modifications to existing kerb is at the expense of the property owner. Refer to drawing STD-CR01

4.9 SPECIAL RESIDENTIAL – where a crossover is located in a special residential area they must comply with the specifications for residential crossovers.

4.10 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 i.e.: limestone, gravel, roadbase, bitumen. The material shall not encroach onto the road carriage way.

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

Where the crossover is to be constructed over an open drain, Council may supply storm water pipe for the owner to install under their crossover. The pipe shall be set at an approved level to maintain the flow of stormwater. Refer to drawing STD-CR04

Where rural and special rural crossovers are constructed in accordance with the residential materials, concrete or brick paving, then the property owner is eligible to apply for the crossover rebate. The crossover rebate does not apply to construction with limestone, gravel, roadbase, bitumen or similar non-residential materials.

5. COMPLETION OF WORKS:

5.1 On completion of the 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 top soil and left level at the original verge height.

5.2 The owner is to ensure that they have completed all items as per City's specifications and may apply for the crossover rebate if the property has not been reimbursed previously.

6. CROSSOVER REBATE:

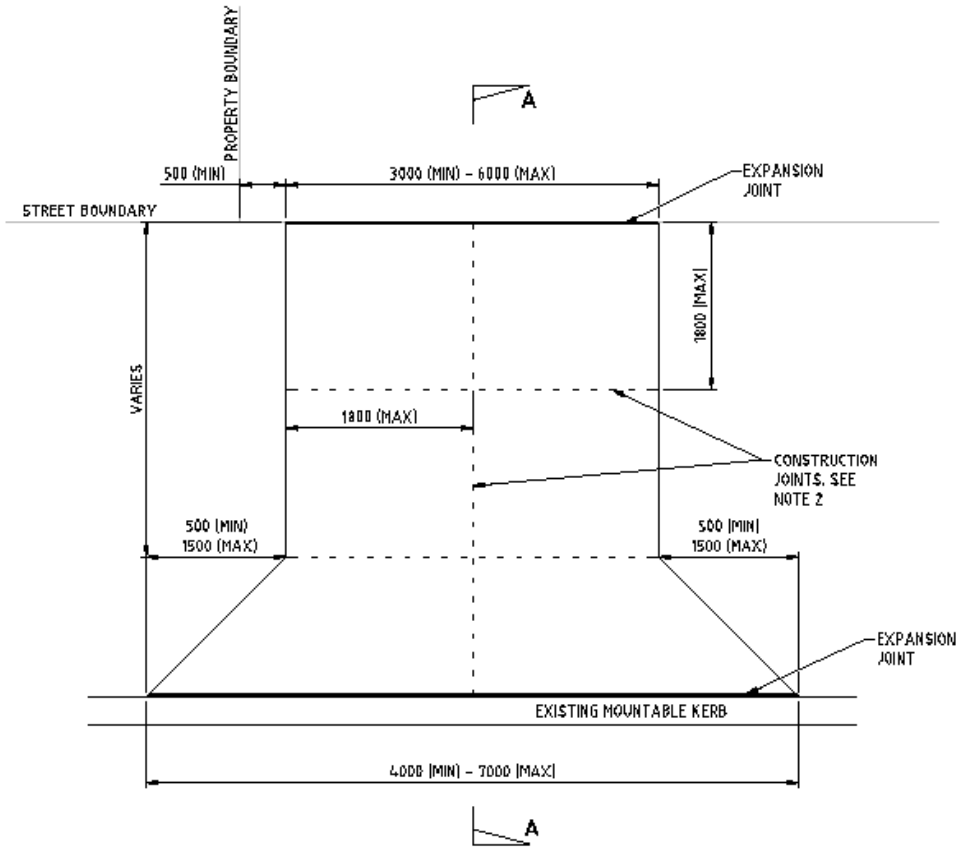
6.1 Once the crossover is completed to council specifications and the property is eligible, then the owner may apply for the rebate by completing the Crossover Rebate form found at www.kwinana.wa.gov.au

6.2 All items in 6.0 must be completed prior to Council inspection or processing of the Crossover Rebate.

6.3 Council will contribute toward one crossover per property only.

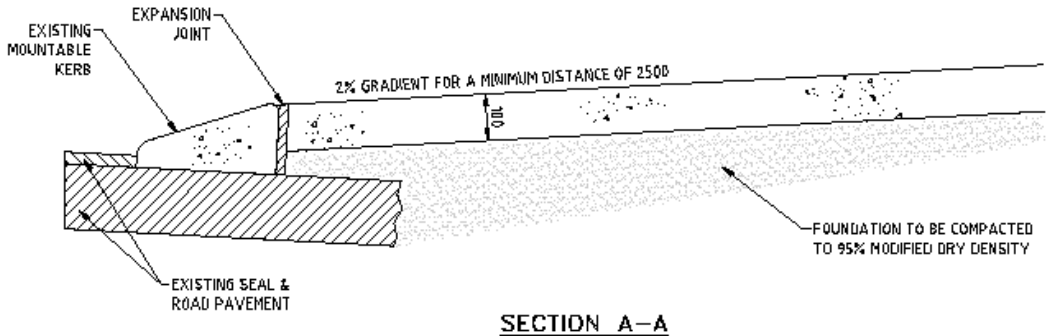
APPROVED BY: _____

TITLE: Reza Najafzadeh
Manager Engineering Services DATE 21 August 2018



TYPICAL CONCRETE CROSSOVER

SCALE 1:50



SECTION A–A

SCALE 1:10

NOTES:

1. ALL DIMENSIONS IN MILLIMETERS.
2. CONSTRUCTION JOINTS TO ALIGN WITH FRONT AND BACK EDGES OF THE FOOTPATH OR KERB.
3. CONCRETE DETAILS TO BE:
   - 25MPa @ 28 DAYS,
   - 14mm AGGREGATE,
   - 80mm MAXIMUM SLUMP BROOMED,
   - NON-SLIP FINISH.
4. DRAWING TO BE READ IN CONJUNCTION WITH CITY OF KWINANA CROSSOVER SPECIFICATION.

REV	DATE	DESCRIPTION	AUTH
E	[illegible]	REVIEW OF DRAWING WITH DRIVEWAY MODIFICATIONS MADE	JH
D	[illegible]	GENERAL MODIFICATION	SH
C	[illegible]	GENERAL MODIFICATION	SH
B	[illegible]	CITY OF KWINANA LOGO ADDED	SH
A	[illegible]	ADOPTED BY COUNCIL	V.C

ASSOCIATE CONSULTANT:

City of Kwinana

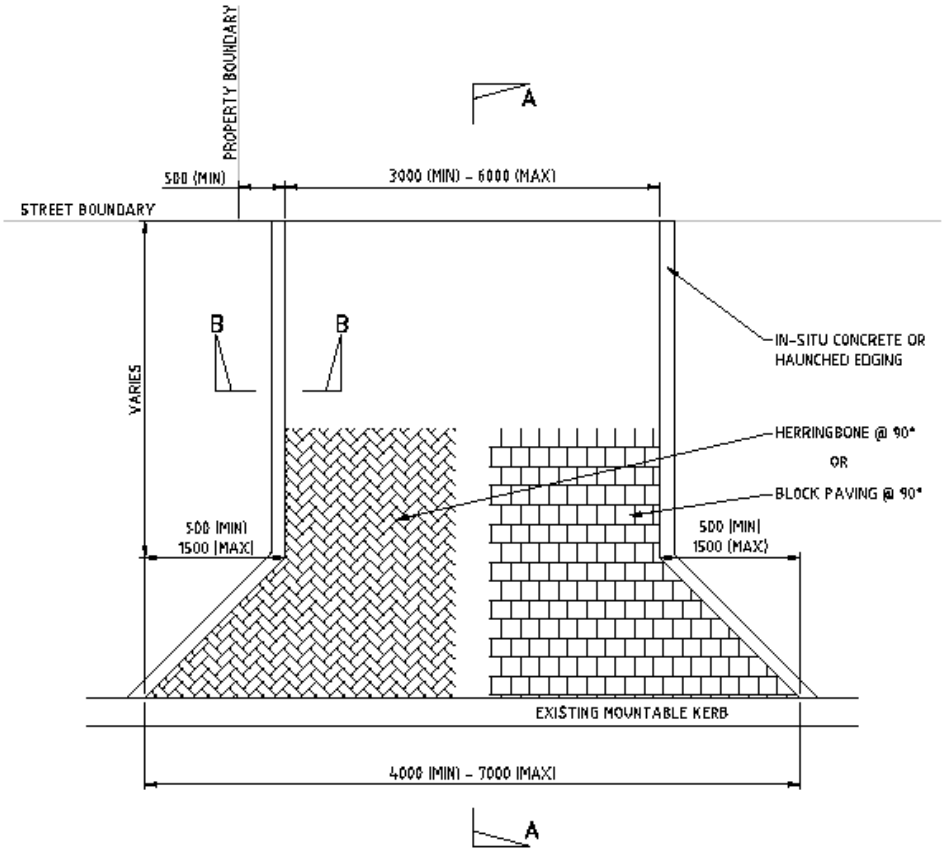
PROJECT: CITY OF KWINANA
CROSSOVER STANDARD DETAIL

ADDRESS: Cnr Gilmore Avenue and Sulphur Road, Kwinana WA 6167
PHONE: (08) 9439 0200
FAX: (08) 9439 0222
EMAIL: admin@kwinana.wa.gov.au
WEB: http://www.kwinana.wa.gov.au

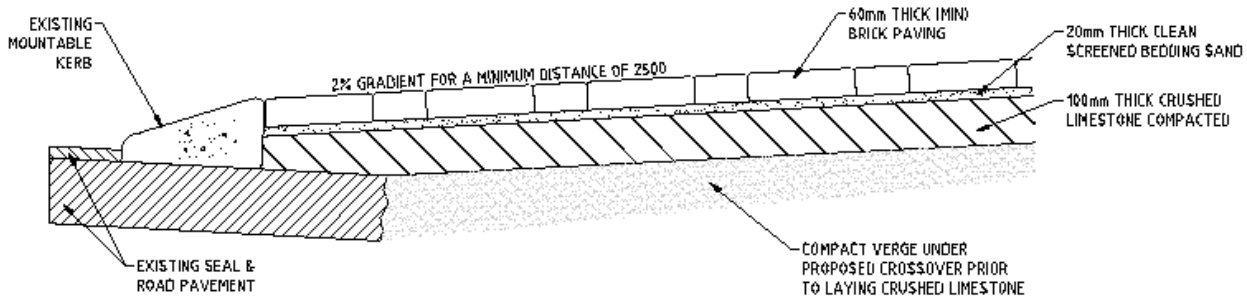
SCALE AS SHOWN (A3)
DESIGN N.S CHECK R.N
DRAWN J.M DATE 08/11
AUTHORISED PRINCIPAL ENGINEERING SERVICES
R.NAJAFZADEH

DRAWING TITLE
CONCRETE CROSSOVER STANDARD DETAIL

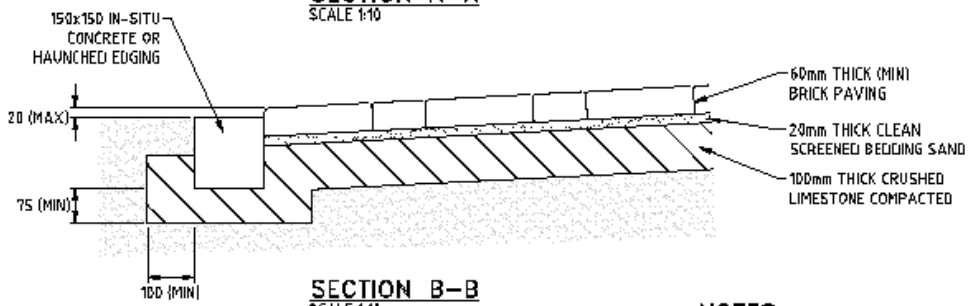
FILE NO.
DRAWING NUMBER STD–CR01
REVISION E



TYPICAL BRICK PAVED CROSSOVER
SCALE 1:50



SECTION A–A
SCALE 1:10



SECTION B–B
SCALE 1:10

NOTES:

1. ALL DIMENSIONS IN MILLIMETERS.
2. DRAWING TO BE READ IN CONJUNCTION WITH CITY OF KWINANA CROSSOVER SPECIFICATION.

REV	DATE	DESCRIPTION	AUTH
D	30/8	REVIEW OF DRAWING WITH CHANGES OF PROFILE TYPES MADE	JH
C	28/6	GENERAL MODIFICATION	SH
B	19/5	CITY OF KWINANA LOGO ADDED	SH
A	24/11	ADOPTED BY COUNCIL	VLC

ASSOCIATE CONSULTANT:

City of Kwinana

PROJECT: CITY OF KWINANA
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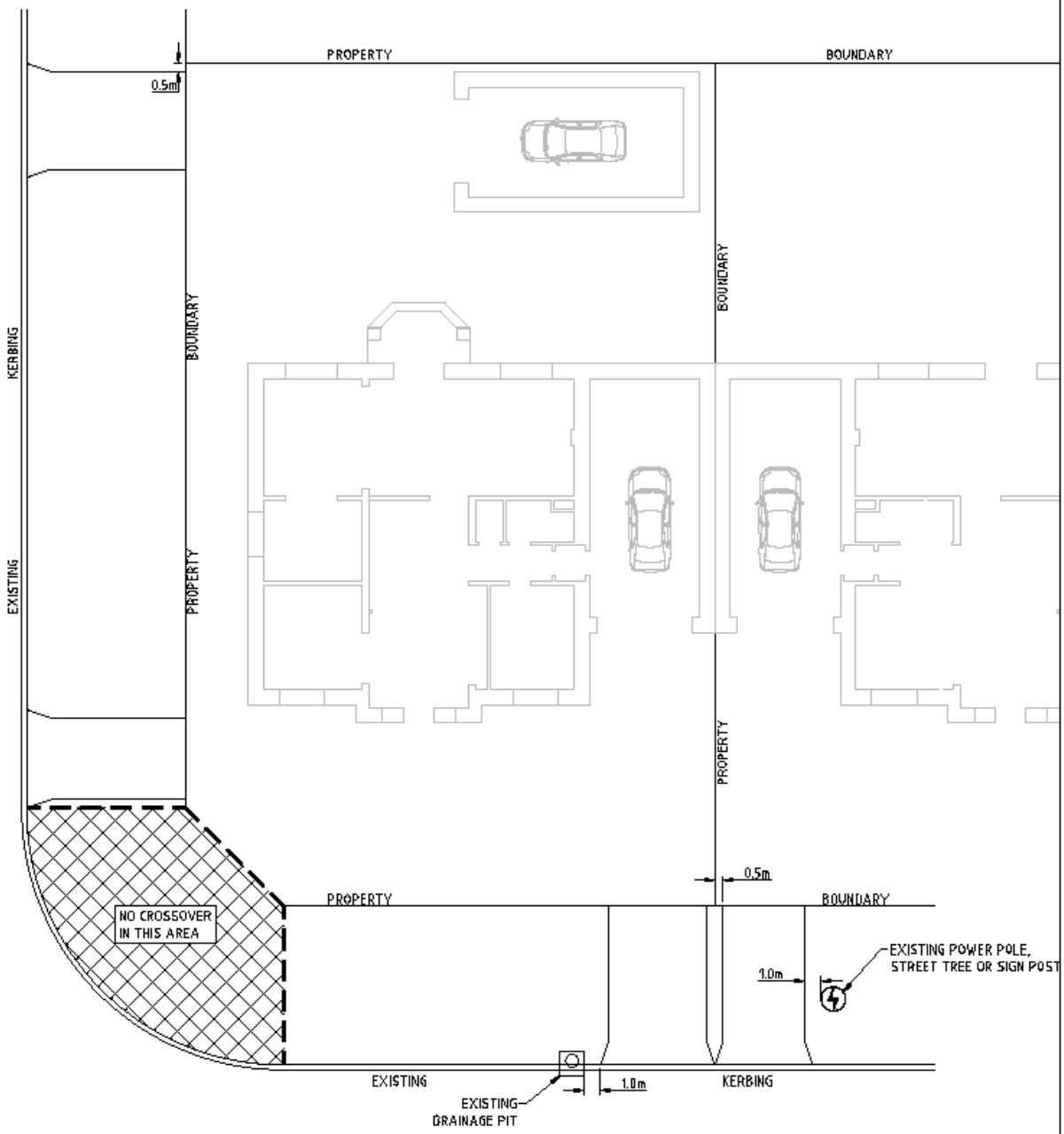
SCALE AS SHOWN (A3)
DESIGN N.S CHECK R.N
DRAWN J.M DATE 08/11
AUTHORISED MANAGER ENGINEERING SERVICES
R.NAJAFZADEH

DRAWING TITLE
BRICK PAVED
STANDARD DETAIL

FILE No.
DRAWING NUMBER STD–CR02
REVISION D



CROSSOVER LOCATION PLAN

SCALE 1:250

NOTES:

1. ALL DIMENSIONS IN METRES.
2. DRAWING TO BE READ IN CONJUNCTION WITH CITY OF KWINANA CROSSOVER SPECIFICATION.
3. COUNCIL APPROVAL MUST BE OBTAINED PRIOR TO COMMENCEMENT OF WORKS.

REV	DATE	DESCRIPTION	AUTH
C	04/08	REVIEW OF DRAWING WITH MINOR AMENDMENTS	JM
B	09/12	CITY OF KWINANA LOGO ADDED	SH
A	08/11	ADOPTED BY COUNCIL	VLC

ASSOCIATE CONSULTANT:

City of Kwinana

PROJECT: CITY OF KWINANA
CROSSOVER STANDARD DETAIL

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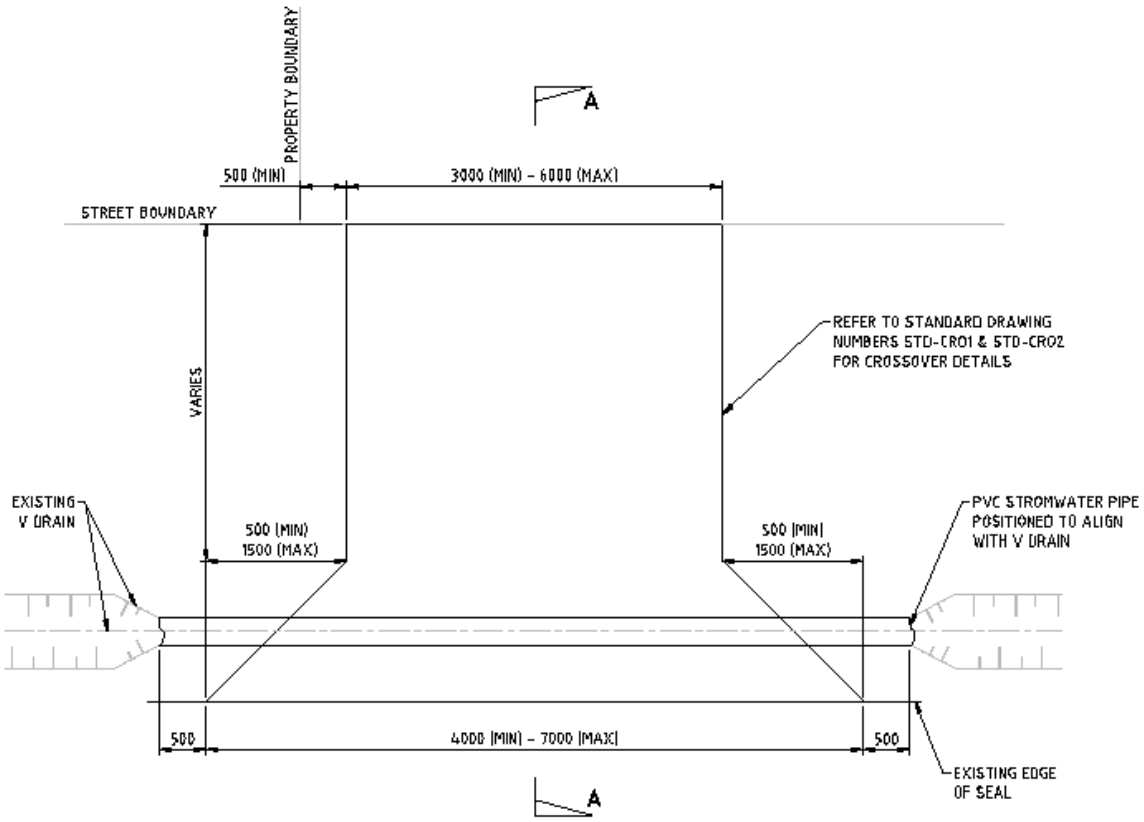
SCALE AS SHOWN (A3)
DESIGN N.S CHECK R.N
DRAWN J.M DATE 08/11

AUTHORISED ENGINEER ENGINEERING SERVICES
R.NAJAFZADEH

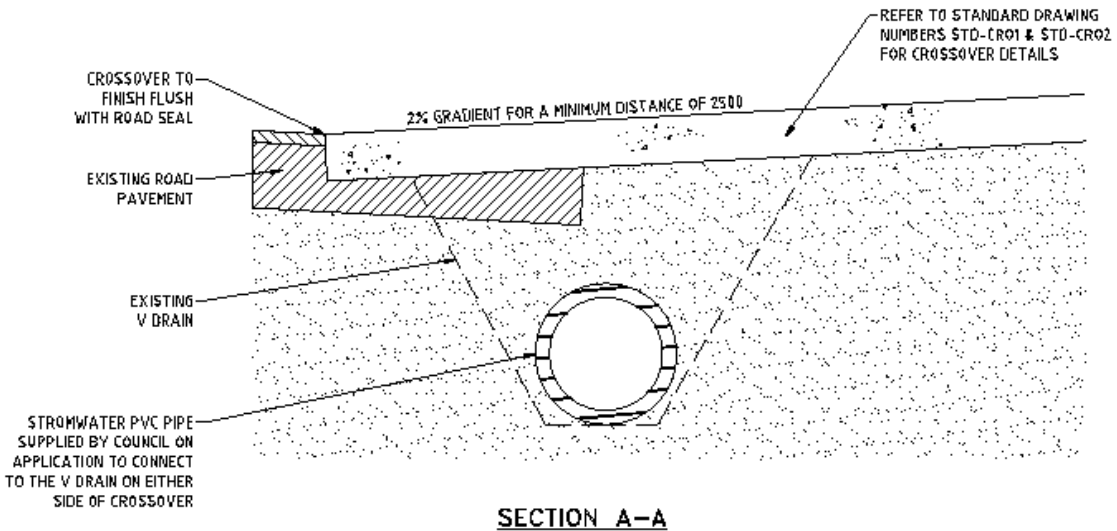
DRAWING TITLE
CROSSOVER LOCATION STANDARD DETAIL

FILE NO.
DRAWING NUMBER STD-CR03 REVISION C



TYPICAL RURAL CROSSOVER

SCALE 1:50



SECTION A–A

SCALE 1:10

NOTES:

1. ALL DIMENSIONS IN MILLIMETERS.
2. DRAWING TO BE READ IN CONJUNCTION WITH CITY OF KWINANA CROSSOVER SPECIFICATION.
3. THIS STANDARD DETAIL DOES NOT APPLY TO CROSSOVERS CONSTRUCTED BY DEVELOPERS.
4. CULVERT MUST BE SIZED TO SUITE V DRAIN CAPACITY (MINIMUM Ø300).

REV	DATE	DESCRIPTION	AUTH
C	08/11	REVIEW OF DRAWING WITH DIMENSION MODIFICATIONS MADE	JM
B	09/02	CITY OF KWINANA LOGO ADDED	S.R
A	09/01	ADOPTED BY COUNCIL	V.C

ASSOCIATE CONSULTANT:

City of Kwinana

PROJECT: CITY OF KWINANA
CROSSOVER STANDARD DETAIL

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SCALE AS SHOWN (A3)
DESIGN N.S CHECK R.N
DRAWN J.M DATE 08/11
AUTHORISED MANAGER ENGINEERING SERVICES
R.NAJAFZADEH

DRAWING TITLE
RURAL CROSSOVER & CULVERT STANDARD DETAIL

FILE No.
DRAWING NUMBER STD-CR04
REVISION C