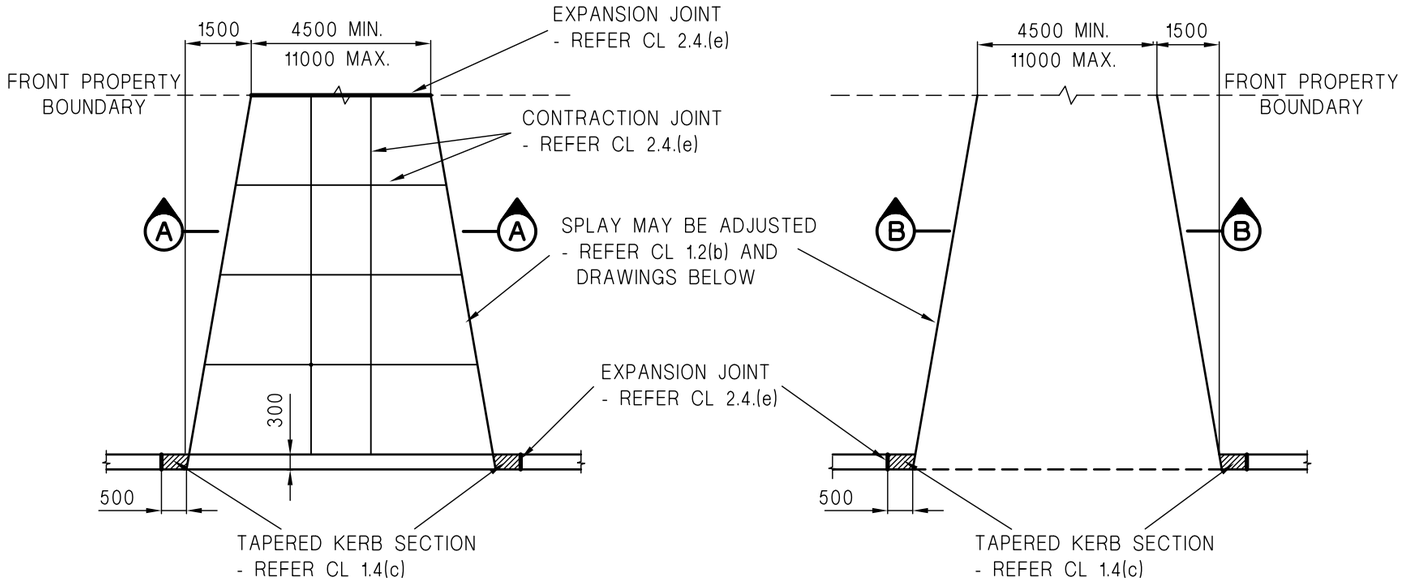
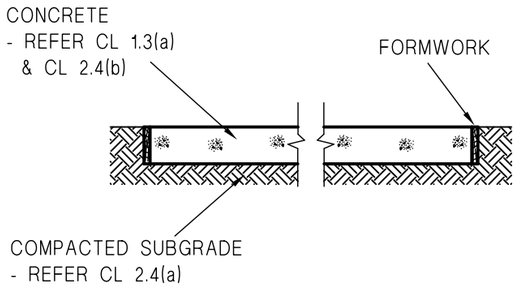


LIGHT INDUSTRIAL/COMMERCIAL CONCRETE CROSSOVER

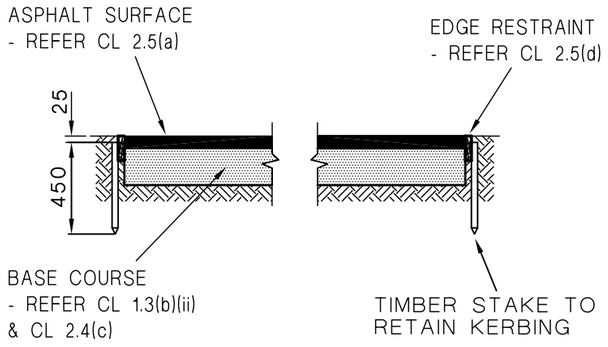
INDUSTRIAL/COMMERCIAL ASPHALT CROSSOVER

NOTES

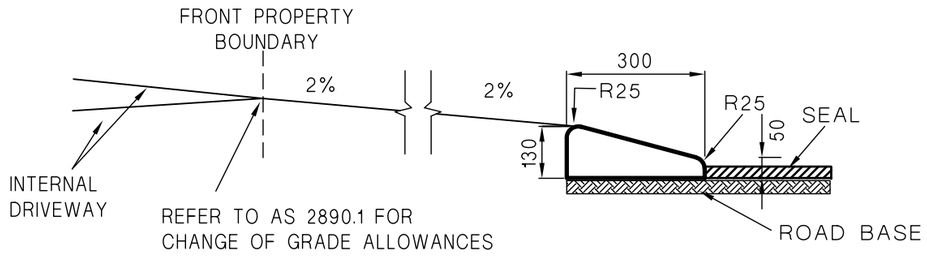
1. THIS PLAN SHALL BE READ IN CONJUNCTION WITH THE WRITTEN SPECIFICATION. ALL REFERENCES IN THIS PLAN ARE TO CLAUSES IN THE WRITTEN SPECIFICATION.
2. ALL DIMENSIONS IN MILLIMETRES.
3. PRIOR TO COMMENCEMENT OF WORKS, AN APPLICATION FOR APPROVAL TO CONSTRUCT CROSSOVER SHALL BE MADE TO THE CITY.
4. ANY VARIATION TO THE DETAILS IN THE WRITTEN SPECIFICATION AND/OR THIS PLAN WILL REQUIRE APPROVAL BY THE CITY OF CANNING IN WRITING PRIOR TO ANY WORKS COMMENCING.
5. ANY CONFLICTING PUBLIC UTILITIES SHALL BE MODIFIED OR RELOCATED AT THE OWNER'S EXPENSE. THE OWNER SHALL LIAISE WITH THE RELEVANT SERVICE AUTHORITY.
6. ON COMPLETION OF WORKS, CONTACT THE CITY ON 1300 422 664 TO ARRANGE FINAL INSPECTION.



SECTION A-A



SECTION B-B



MOUNTABLE KERB SECTION

NOTE: IPWEA SUBDIVISION GUIDELINES STANDARD MOUNTABLE KERB MAY BE USED AS AN ALTERNATIVE.

REV.	AMENDMENTS	DRAWN	AUTH'D	DATE
	SUPERSEDES PLAN C1633 AND C1640	CPG	TB	JAN'05
1	REFERS TO SPECIFICATION CLAUSES	CPG	BM	8.11.17

SHEET 01 OF 01

NOT TO SCALE

DESIGNED	ST	MAR'05
DRAWN	RD/CPG	MAR'05
CHECKED	C GOMES	1/3/05
RECOMMENDED	T BOZICH (MANAGER)	1/3/05
APPROVED	S TRINCA (EXECUTIVE)	1/3/05

CITY OF CANNING

INDUSTRIAL/COMMERCIAL CROSSOVER STANDARD DETAILS

FILE No.	PLAN No.	REVISION	ORIGINAL
CAD179	STD 02	1	A3

CITY OF CANNING

CROSSOVER SPECIFICATIONS INDUSTRIAL / COMMERCIAL

1.0 CROSSOVERS

1.1 Crossover Location and Position

a) Crossovers shall be aligned at right angles to the street alignment wherever possible.

b) For a standard crossover, the minimum clearance to the side property line as measured along the front property line is 1.5m.

c) For corner lots, locating the crossover on the secondary/minor road is preferred.

d) All elements of the crossovers shall be located at a minimum distance to obstructions as follows:

- Side-entry and utility pits: 0.5m
- Street trees: 2.0m
- Street poles: 0.5m (as per the R-Codes)
- Bus stops: 1.0m
- Bus shelters: 1.5m

If crossovers must be constructed within this distance, the obstruction shall be relocated wherever possible at the cost of the applicant.

1.2 Crossover Shape

a) The minimum width of crossover shall be 4.5m as measured along the front boundary. The maximum width shall be 11.0m.

b) Crossover splays shall be 1.5m wide along the kerb line by 0 (zero) m at the front property boundary. Crossover splays may be adjusted to allow for large vehicle turning movements with the approval of the City's Development Engineers. For asphalt crossovers, a curved splay must be approved by the City's Development Engineers prior to construction.

1.3 Crossover Profile

a) Concrete crossovers shall be a minimum of 150mm deep.

b) Asphalt crossovers:

i. Surface shall be of minimum compacted thickness of 50mm of 14G 75 blow asphalt.

ii. Base material depth varies depending on expected traffic loads but shall be a minimum of 250mm thick and shall consist of compacted crushed limestone or road base to the City of Canning or Main Roads Western Australia (WA) specifications. A recognised recycled material with a Main Roads WA certificate may be used as an alternative base course.

c) The maximum crossover gradient from the kerbline to the property boundary is 2.0%. Any deviation from this requirement must be approved by the City's Development Engineers.

d) The maximum change of grade along a crossover and driveway shall meet the requirements of Australian Standard (AS), which is AS 2890.1. This is to prevent bottoming or scraping of vehicles. If these conditions are not able to be satisfied, a grade transition will be required either via a vertical curve or intermediate straight sections.

e) Crossovers shall provide a non-slip surface finish.

1.4 Crossover kerbing

a) Existing fully mountable kerbing where the crossover is to be located shall not be removed without approval from the City. Where a fully mountable kerb exists, the crossover is to abut the existing kerb.

b) Existing semi-mountable and barrier kerbing where the crossover is to be located shall be removed and replaced with the crossover kerb type as shown on the 'City of Canning Industrial / Commercial Standard Crossover Details. The IPWEA Subdivision Guidelines Standard Mountable Kerb may be used as an alternative.

c) Where an adjacent kerb is of dissimilar type, a 500mm long taper shall be constructed from the edge of the crossover kerb to the adjoining kerb.

1.5 Brick Paved Crossovers

Crossovers proposed within the Canning City Centre area and the Bentley Regeneration Centre area, are to be brick paved. The contractor shall contact the City's Development Engineers to ascertain the type, pattern, colour and pavement requirements of the crossover.

1.6 Existing Paths

In order to reinforce priority to cyclists and pedestrians, where there is an existing footpath or shared path that is in-situ concrete, that path shall be removed and reconstructed to concrete crossover requirements as specified in section 2.4 of this document. The colour of the path shall match that of the existing path. The crossing shall be constructed on both sides of the concrete path and made to match.

1.7 Redundant Crossovers

Any redundant crossovers shall be removed and the verge and footpath (if present) reinstated to fit in with the surrounding form/development pattern. Where the redundant crossover previously crossed

the footpath, a new section of footpath is to be constructed on both sides of the existing concrete path and made to match.

2.0 CONSTRUCTION

2.1 Protection of Works

The Contractor shall provide for the safety of the public at all times around the works by erection of adequate signs, barricades, flashing warning lights or any other necessary safety items. Footpaths shall be kept in a safe condition for public use at all times. Where a footpath is to be closed, an alternative link is to be provided.

2.2 Utility Services within the verge

It is the responsibility of the Applicant to liaise with utility service providers regarding infrastructure that may be buried in the verge. This can be achieved using the free Dial Before You Dig service at www.1100.com.au.

2.3 Excavation

Excavation shall be shaped to the required dimensions and levels to allow for pavement thickness. The base of the excavation shall be compacted to a minimum of eight (8) blows per 300mm of the standard Perth Sand Penetrometer and shall be executed cleanly and efficiently to provide for a consolidated sound base free of depressions, soft spots or any deleterious materials.

a) The contractors shall be responsible in 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 within the verge.

b) Existing non-fully mountable 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.

c) When an existing concrete path has a thickness of 100m or more, is in good condition, and is adjacent to the lot boundary or kerbline, the crossing shall be constructed either side of the concrete path.

d) When an existing concrete path is damaged, is less than 100mm thick, has an incorrect gradient, and/or where the removal of the path is necessary for the construction of the crossover to take place, the existing path shall be removed and replaced with a new path constructed to the City's standard. The crossover should never take precedence over the path (AS 1428.1).

2.4 Concrete Crossover

a) **Compaction** – The subgrade shall be compacted to a minimum of 95% Maximum Dry Density. This corresponds to a Perth penetrometer reading of eight (8) blows per 300mm.

b) **Concrete** – All concrete used shall develop compressive strength of 32 MPa at 28 days. 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. Concrete and its placement shall conform to AS 1379 (1991) and AS 3600 (1988) respectively.

c) **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.

d) **Kerbing** – Where existing kerb is of a type other than fully mountable it is to be removed and replaced with the crossover kerb type as shown on the 'City of Canning Industrial / Commercial Crossover Standard Details'. Existing fully mountable type kerb shall not be removed without approval from the City.

e) **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:

   i) The lot boundary and both sides of a path where there is a path and also at the back of the kerb section adjoining the crossing.

   ii) Where it adjoins rigid structure or any public utility structure.

   iii) The ends of the existing kerbing where kerbing has been removed.

   iv) 6m maximum spacing on long crossings.

   v) Contraction joints shall be made with an approved jointing tool with 1.50 metre maximum spacing either laterally or longitudinally.

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

2.5 Asphalt Crossover

a) **Asphalt** – Asphalt shall be of minimum compacted thickness of 50mm and shall be of type AC14 with 75 Marshall Blow.

b) **Laying** – Asphalt work should not be done in cold, windy or wet conditions as thin layers of asphalt (30mm or less) cool rapidly in these situations and will not be compacted adequately. The finishing work shall be undertaken while the material is hot, to produce a fine, dense, smooth surface, free of surface voids.

c) **Base** – Base course material is to have a total consolidated thickness of not less than 250mm. Material to be spread, rolled, water-bound and corrected as necessary to shape, grade, etc. Base course material shall have a minimum CBR of 80 with a MMDD of 95%.

d) **Edging** – The edges of the crossover are to be formed using a flexible 30mm deep steel border pegged to shape (to be removed on completion), to provide a symmetrical and uniform shape and appearance. A shoulder of the same material, 500mm wide and 250mm thick, should be provided at the edges of the crossover to finish flush with the top of the asphalt surface.

Alternatively, a concrete flush kerb or kerb type to match the road kerb and laid to finish flush with the final surface of the crossover may also be used as edge restraints.

e) **Kerbing** – Where existing kerb is of a type other than fully mountable, it is to be removed and replaced with the crossover kerb type as shown on the 'City of Canning

Industrial / Commercial Crossover Standard Details'. Existing fully mountable type kerb shall not be removed without approval from the City.

f) **Compaction** – The base course shall be compacted to 98% of the maximum dry density when tested in accordance with AS 1289 E2.1-1977. The subgrade shall be compacted to a minimum of 95% MMDD in accordance with AS 1289 clause 5.4.1 or AS 1289 clause 5.4.2.

g) **Surface** – The surface is to be again reshaped and gravel added where required to give correct shape. The surface is to be well watered and rolled with a vibrating roller, slurried and swept clean of any loose material.

1317 Albany Highway, Cannington
Locked Bag 80, Welshpool WA 6986
P 1300 422 664