Operations

SPECIFICATION

FOR

THE CONSTRUCTION OF

VEHICLE CROSSOVERS

February
2022

Midland Square
Midland
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Midland WA 6936
Administration Telephone: (08) 9267 9000
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OVERVIEW

This document is designed to assist property owners and contractors to construct an appropriate crossover to City of Swan (from here on referred to as CoS) specifications allowing the property owner to request a CoS crossover contribution.

Property owners or contractors are encouraged to contact the CoS and other relevant service authorities prior to the construction of the crossover if unsure on any aspect of this specification.

It is strongly recommended that building plans are not prepared, and building permits not submitted until CoS approval has been obtained for the crossover location. Proceeding without this approval may create additional costs for the owner should redesign be required.

The crossover must be constructed from new materials. During the construction the contractor shall ensure that no damage occurs to the CoS's roads, footpaths, drainage structures, kerbs, pram ramps and verges. Damage to the above mentioned facilities may result in the repairs being carried out by the CoS at the property owner's expense.

IMPORTANT NOTE -:
An existing footpath **must not** be removed under any circumstances during the construction of a crossover. The removal of a footpath is a breach of this specification and creates a legal liability for the owner, who will be required to reinstate the footpath to CoS specifications at the owners expense.

During the construction of the crossover, if a footpath exists, it should be kept open to pedestrians in a safe manner with adequate signage or barricades placed to ensure pedestrian safety.

The location and size of the crossover will be considered during the assessment of the building licence. If a second crossover is required, an application must be submitted including a letter from the owner and a drawing clearly showing crossover size, location and type. Approval will only be granted as a condition on the building licence or in writing from the City.

In rural areas where the road is not kerbed it is highly recommended that a two coat bitumen seal crossover be installed. Concrete and brick paved crossovers may be approved if appropriate. A concrete or brick paved crossover must terminate a minimum of 1.0m from the road shoulder and the distance between the crossover and the road shoulder must be filled with a 30mm thick hotmix asphalt strip.

LOCATION

Crossovers are to be located in such a position that does not interfere with public utilities i.e. telecommunication pits, sewer pits, pram ramps or drainage structures. The crossover is to be constructed at 90 degrees to the kerb line and must not be built through the corner truncation. The location of the crossover should be no closer than 0.5m (clear distance*) from a light pole or other services and 3.5m (clear distance*) from any trees on the verge. The location of the crossover must be no closer than 6m from a street corner as per Section 5.3.5 Clause C5.3 of the State Planning Policy 3.1 Residential Design Codes

Clear distance is the unobstructed distance between any given points between the two objects

CONSTRUCTION

a) Levels
The crossover should be constructed to tie into existing verge levels, including existing footpaths. If unsure please contact CoS to obtain correct levels. No existing footpath shall be removed under any circumstances.

b) Dimensions
For residential crossovers servicing four dwellings or less, the minimum width of the crossover at the property boundary is 3.0m and the maximum width is 6.0m as per Section 5.3.5 Clause C5.2 of the State Planning Policy 3.1 Residential Design Codes.

For residential crossovers servicing five dwellings or more, the minimum width of the crossover at the property boundary must is 4.0m as per Section 5.3.5 Clause C5.2 of the State Planning Policy 3.1 Residential Design Codes.

c) Base Preparation
The base material should be thoroughly moistened and compacted to 95% MMDD (Maximum Modified Dry Density), 7 blows / 300mm (per sand penetrometer). For brick paved crossovers a 25mm layer of bedding sand is required on top of the compacted sub-base.

d) Concrete
All concrete used in the works shall develop a minimum compressive strength of 32 MegaPascals at 28 days with a maximum slump of 50mm and cured for 3 days.

e) Brick Paving
Concrete or Clay solid pavers are permitted and should be a minimum thickness of 60mm. Suitable brick paver edge restrains are shown on the attached plan STD 40-2s.

f) Asphalt
Rural crossovers are usually constructed with 25mm asphalt layer over a minimum 150mm compacted gravel sub-base.

g) Hotmix Asphalt Strip
In rural conditions, the minimum allowable treatment for a crossover 2.7m wide is a 30mm thick, 1.0m wide and 6m long hotmix asphalt strip, used to protect the edge of

the existing sealed road.

h) Kerbing
Mountable kerb need not be removed. Barrier and semi-mountable kerb should be removed equal to the width of the proposed crossover. Brick paved crossovers must have a concrete beam installed between road surface and brick paving to crossover. The installation of the new crossover should reinstate the 20mm water channel (LIP) along the kerb line. Only flush kerbing to be used on the verge between the road and property boundary.

i) Finishing

The surface shall be treated to provide a non-slip surface.

j) Return of Kerbing and Wings
Crossover wings shall be constructed 1.5m wide x 3.0m long for residential and commercial properties. A radius of 1.5m for residential and 3.0m for commercial may be used. Residential crossovers greater than 5.0m in width may construct reduced wing dimensions of 0.75m wide x 1.5m long

k) Crossover Adjacent Side Entry Gully
Refer attached plan STD75-1s for details.

l) **No Wings Required if**: A footpath exists at the back of the kerb, the crossover should butt onto the back of the footpath and does not require wings.

CROSSOVERS IN THE GUILDFORD AREA

ALL crossovers in the Guildford area shall be constructed in either one of the following materials; **Red Asphalt, Red Concrete or Red Brick Paving**.

CONSTRUCTION RESPONSIBILITIES

The person responsible (i.e. client) for the construction of the crossover shall ensure the following;

- **a)** Cutting existing kerbing with concrete saw or removing existing precast kerbing without damage to pavement, kerbing or services.
- **b)** Removal and disposal of all surplus material from the site of the works and leaving the site in a clean and tidy condition at all times.
- **c)** Removal of formwork without damage to concrete, pavement or existing kerbing.
- **d)** Immediate reinstatement to kerbing, road surface, footpaths and all public utilities following damage during the course of the works.
- **e)** The protection of private property from flooding during construction due to the removal of kerbing or water channel.
- **f)** The personal attention to all claims from ratepayers due to the construction of the crossover.

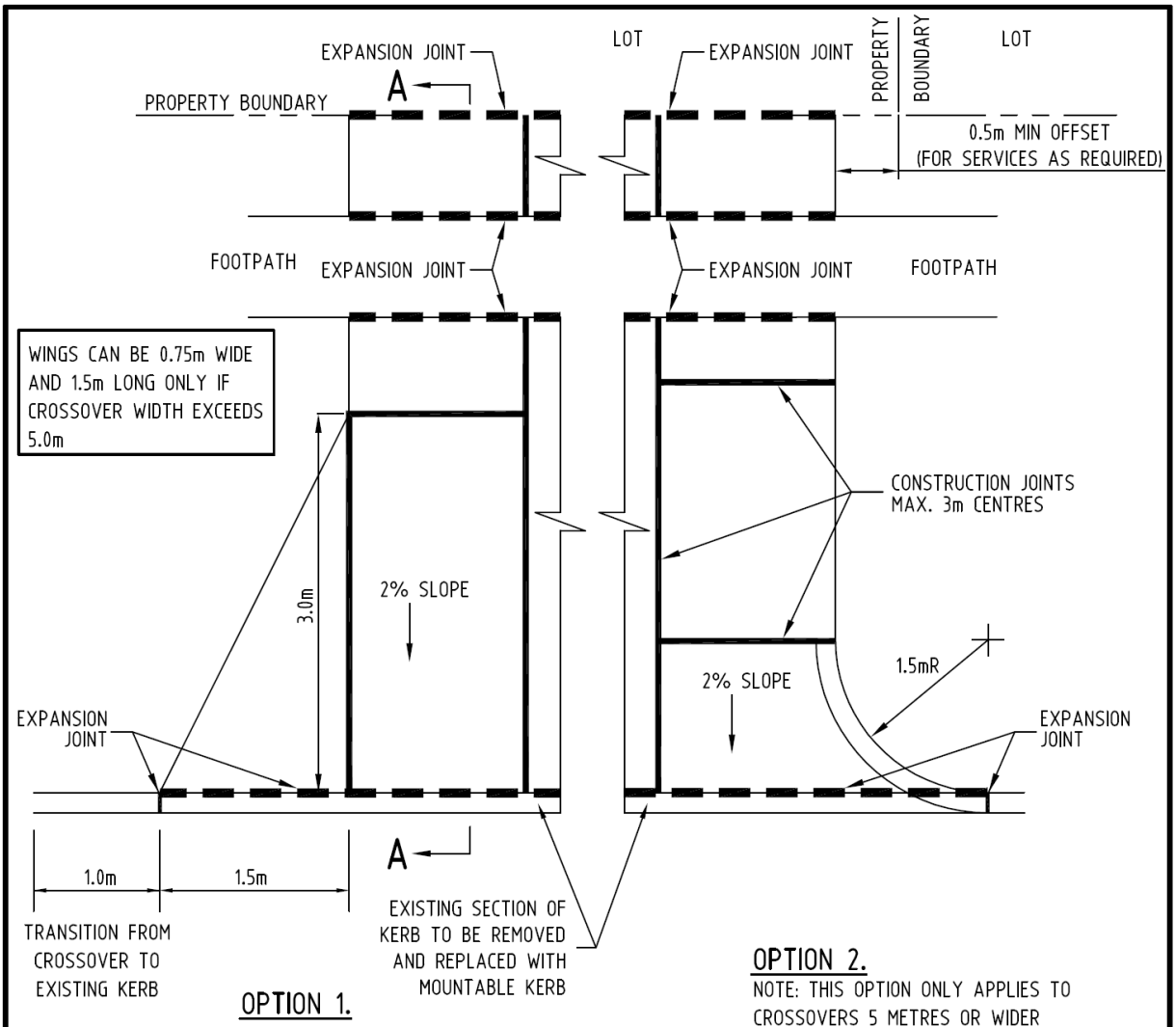
CONTRIBUTIONS

By constructing the crossover to the above guidelines, Council will contribute:

- $400.00 for the first crossover only for approved **residential/rural** areas.
- $550.00 for the first crossover only for approved **commercial or industrial** areas.
  Only one contribution is payable per crossover.

Owners are to make application on a Council 'Crossover Contribution Form' which may be obtained from the City of Swan website at http://www.swan.wa.gov.au or by telephoning the City of Swan Customer Services on (08) 9267 9267.

SCHEDULE OF REQUIREMENTS		
ALL CROSSOVERS		
ITEM	**RESIDENTIAL**	**COMMERCIAL**
Minimum width	3.0m - four or less properties 4.0m - five or more properties	3.5m
Maximum width	6.0m or 40% of the width of the property whichever is the lesser	11.0m
CONCRETE		
ITEM	**RESIDENTIAL**	**COMMERCIAL**
Thickness	100mm	150mm
Steel Reinforcement	F52 mesh	F62 mesh
Concrete Strength capacity @ 28 days	32 MPa / 50mm slump	32 MPa / 50mm slump
BRICKPAVE		
ITEM	**RESIDENTIAL**	**COMMERCIAL**
Thickness	60 – 76mm	76mm minimum
Sub base – Limestone Sub base – Rock base/gravel	150mm 150mm	250mm 200mm
Sand Bedding	25mm	25mm
ASPHALT		
ITEM	**RURAL RESIDENTIAL**	**COMMERCIAL**
Base Course **or**	150mm ferricrete base	200 ferricete base
Sub-Base	200mm limestone sub base	250mm limestone subbase
Bituminous Concrete	25mm thick	40mm thicklift

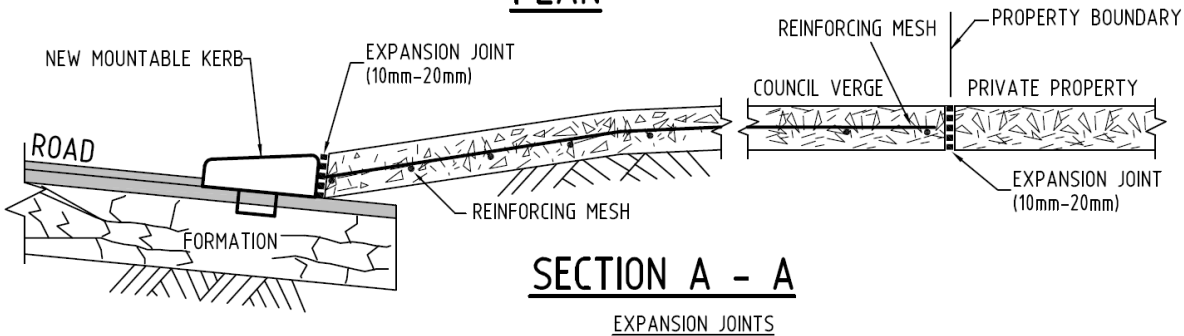


OPTION 1.

OPTION 2.

NOTE: THIS OPTION ONLY APPLIES TO CROSSOVERS 5 METRES OR WIDER

PLAN



SECTION A - A

EXPANSION JOINTS

1. SUITABLE EXPANSION JOINT MATERIAL: MELJOINT OR LOCK JOINT
2. EXPANSION JOINT TO BE THE FULL THICKNESS OF THE CONCRETE
3. EXPANSION JOINT MUST BE PROVIDED AT THE PROPERTY BOUNDARY

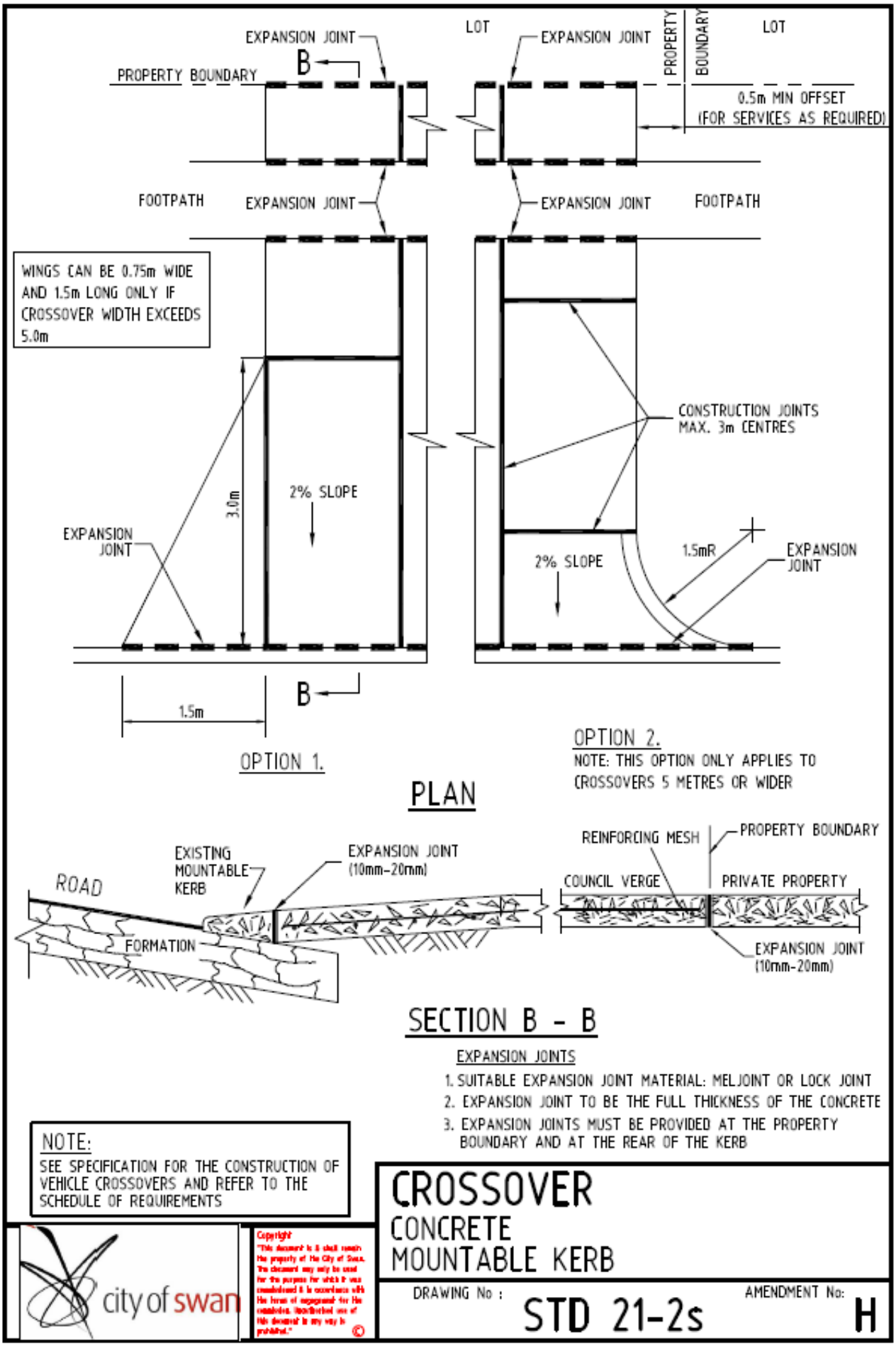
NOTE:
SEE SPECIFICATION FOR THE CONSTRUCTION OF VEHICLE CROSSOVERS AND REFER TO THE SCHEDULE OF REQUIREMENTS

city of swan

CROSSOVER
CONCRETE
BARRIER/SEMI-MOUNTABLE KERB

DRAWING No : STD 21-1s

AMENDMENT No: J



EXPANSION JOINTS

1. SUITABLE EXPANSION JOINT MATERIAL: MELJOINT OR LOCK JOINT
2. EXPANSION JOINT TO BE THE FULL THICKNESS OF THE CONCRETE
3. EXPANSION JOINTS MUST BE PROVIDED AT THE PROPERTY BOUNDARY AND AT THE REAR OF THE KERB

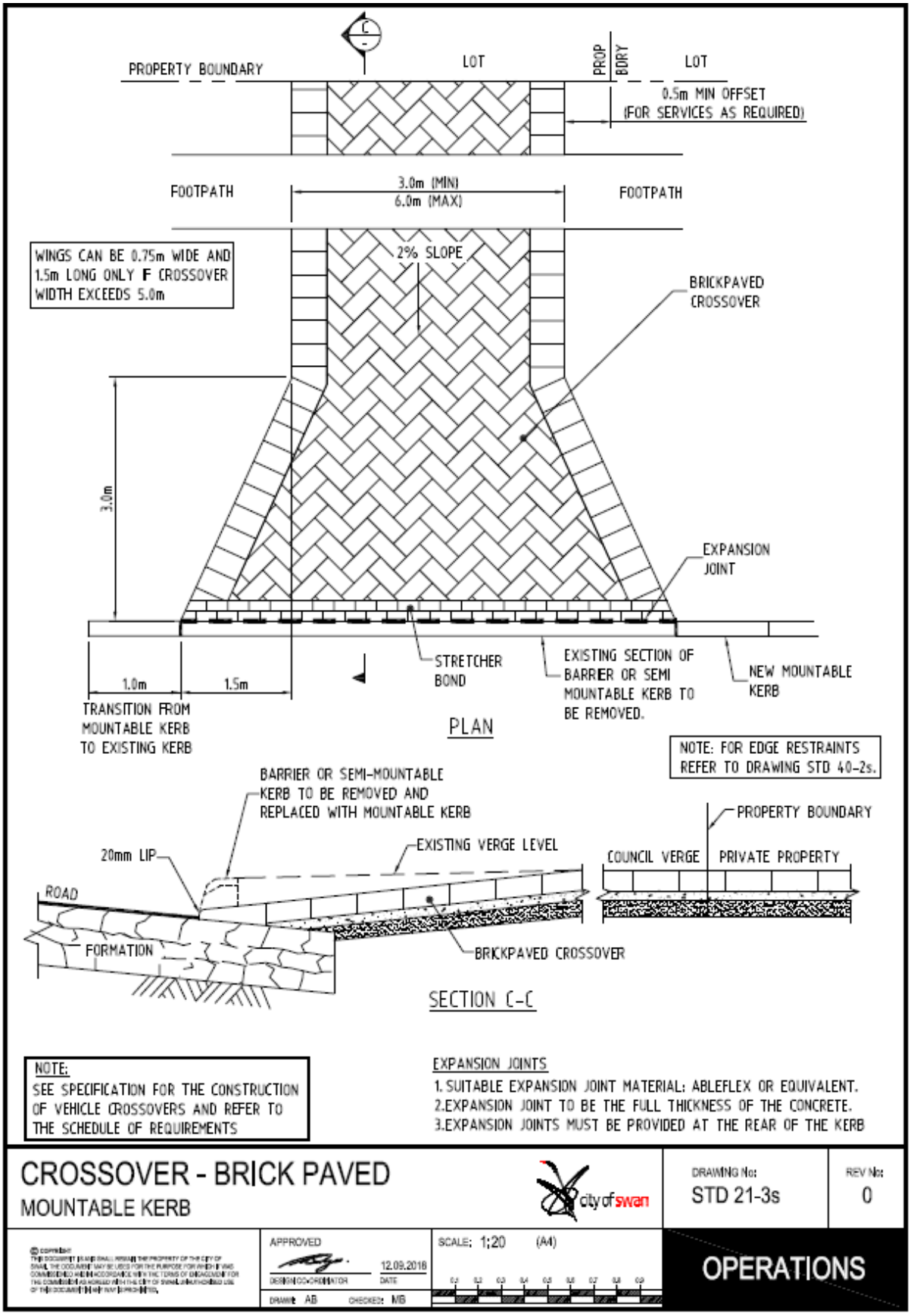
NOTE:
SEE SPECIFICATION FOR THE CONSTRUCTION OF VEHICLE CROSSOVERS AND REFER TO THE SCHEDULE OF REQUIREMENTS

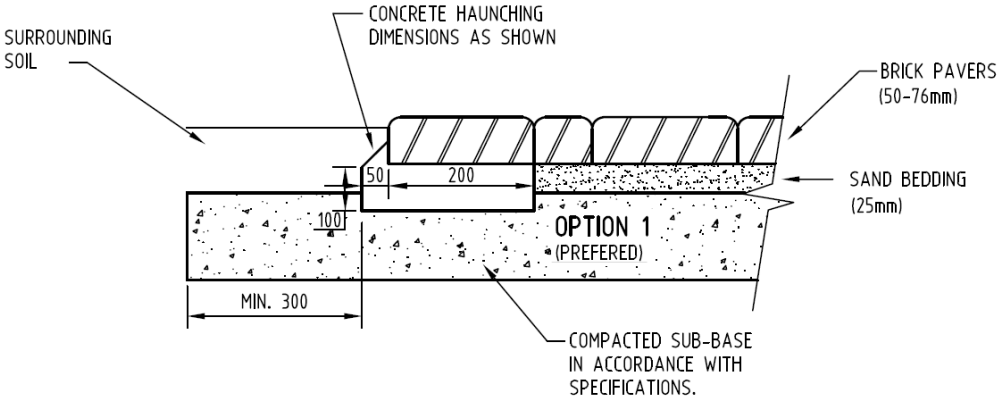
CROSSOVER
CONCRETE MOUNTABLE KERB

city of swan

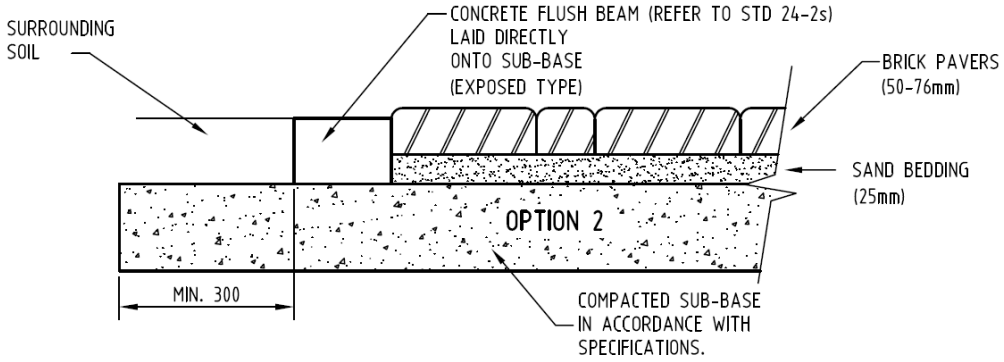
DRAWING No : STD 21-2s

AMENDMENT No: H


PROPERTY BOUNDARY
LOT
PROP BDRY
LOT
0.5m MIN OFFSET
(FOR SERVICES AS REQUIRED)
FOOTPATH
3.0m (MIN)
6.0m (MAX)
FOOTPATH
WINGS CAN BE 0.75m WIDE AND 1.5m LONG ONLY IF CROSSOVER WIDTH EXCEEDS 5.0m
2% SLOPE
BRICKPAVED CROSSOVER
3.0m
EXPANSION JOINT
STRETCHER BOND
EXISTING SECTION OF BARRIER OR SEMI MOUNTABLE KERB TO BE REMOVED.
NEW MOUNTABLE KERB
1.0m
1.5m
TRANSITION FROM MOUNTABLE KERB TO EXISTING KERB
PLAN
NOTE: FOR EDGE RESTRAINTS REFER TO DRAWING STD 40-2s.
BARRIER OR SEMI-MOUNTABLE KERB TO BE REMOVED AND REPLACED WITH MOUNTABLE KERB
PROPERTY BOUNDARY
20mm LIP
EXISTING VERGE LEVEL
COUNCIL VERGE
PRIVATE PROPERTY
ROAD
FORMATION
BRICKPAVED CROSSOVER
SECTION C-C
NOTE:
SEE SPECIFICATION FOR THE CONSTRUCTION OF VEHICLE CROSSOVERS AND REFER TO THE SCHEDULE OF REQUIREMENTS
EXPANSION JOINTS
1. SUITABLE EXPANSION JOINT MATERIAL: ABLEFLEX OR EQUIVALENT.
2.EXPANSION JOINT TO BE THE FULL THICKNESS OF THE CONCRETE.
3.EXPANSION JOINTS MUST BE PROVIDED AT THE REAR OF THE KERB
CROSSOVER - BRICK PAVED
MOUNTABLE KERB
city of swan
DRAWING No: STD 21-3s
REV No: 0
APPROVED
DESIGN CO-ORDINATOR
12.09.2018
DATE
DRAWN: AB
CHECKED: MB
SCALE: 1:20 (A4)
OPERATIONS



NOTE: BRICK PAVERS TO BE SOLIDS ONLY, SPLITS ARE NOT APPROVED PAVERS.



BRICK PAVING - EDGE RESTRAINT

FOR RESIDENTIAL CROSSOVERS

city of swan

DRAWING No: STD 40-2s

REV No: 0

APPROVED

DESIGN CO-ORDINATOR 12.09.2018 DATE

DRAWN: AB CHECKED: MB

SCALE: 1:20 (A4)

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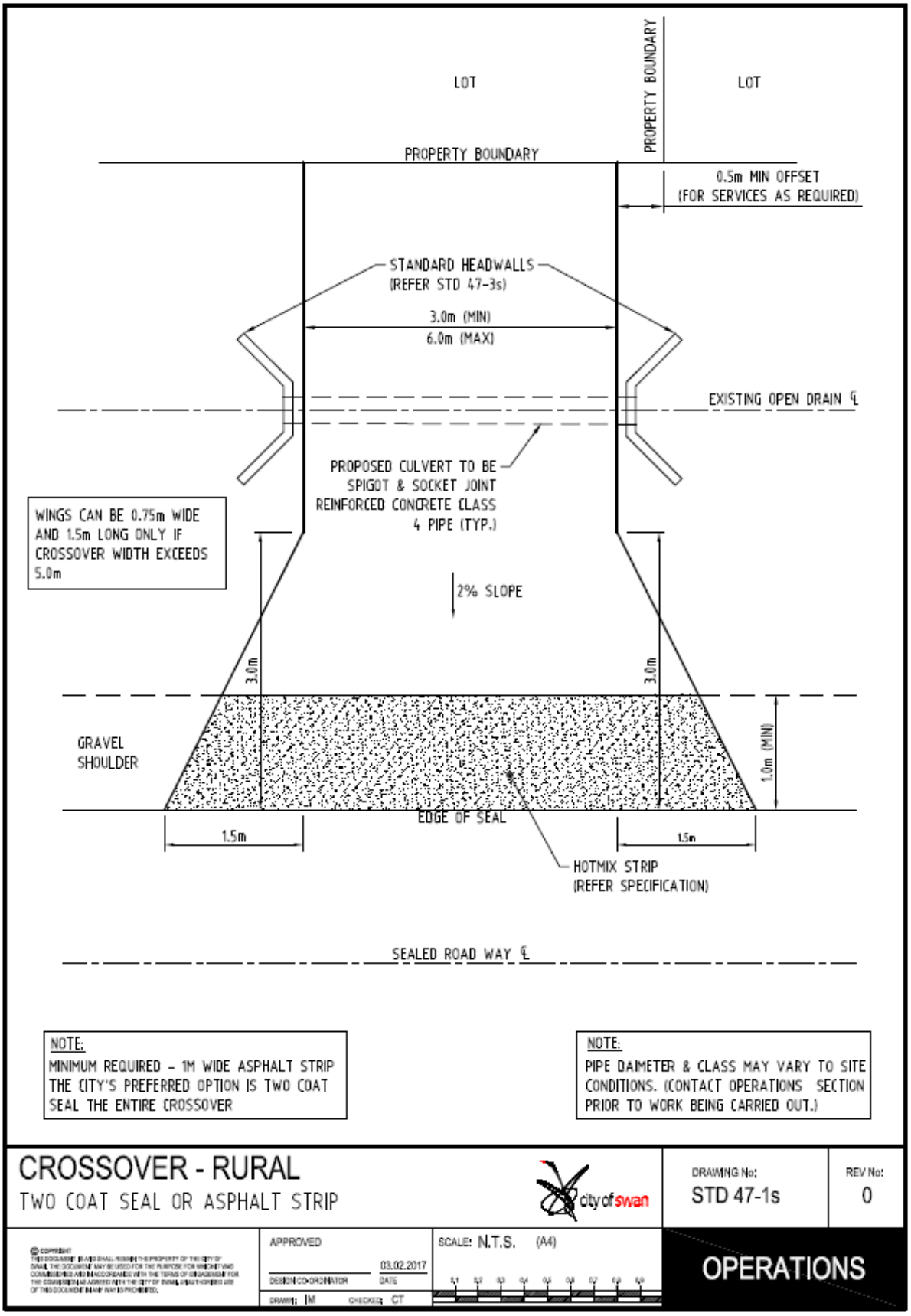
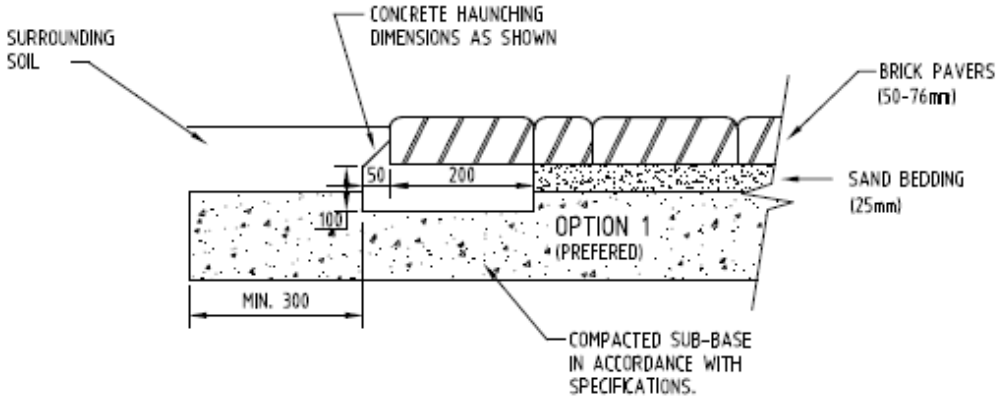
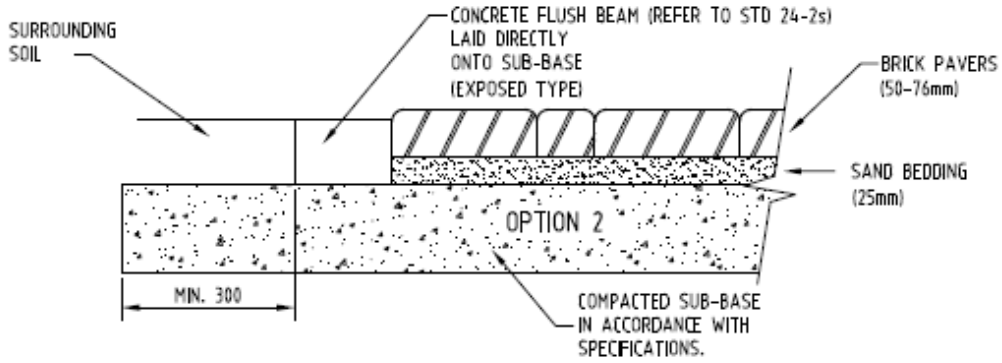
OPERATIONS


LOT
PROPERTY BOUNDARY
LOT
PROPERTY BOUNDARY
0.5m MIN OFFSET
(FOR SERVICES AS REQUIRED)
STANDARD HEADWALLS
(REFER STD 47-3s)
3.0m (MIN)
6.0m (MAX)
EXISTING OPEN DRAIN ℄
PROPOSED CULVERT TO BE
SPIGOT & SOCKET JOINT
REINFORCED CONCRETE CLASS
4 PIPE (TYP.)
WINGS CAN BE 0.75m WIDE
AND 1.5m LONG ONLY IF
CROSSOVER WIDTH EXCEEDS
5.0m
2% SLOPE
3.0m
3.0m
GRAVEL
SHOULDER
1.0m (MIN)
EDGE OF SEAL
1.5m
1.5m
HOTMIX STRIP
(REFER SPECIFICATION)
SEALED ROAD WAY ℄
NOTE:
MINIMUM REQUIRED - 1M WIDE ASPHALT STRIP
THE CITY'S PREFERRED OPTION IS TWO COAT
SEAL THE ENTIRE CROSSOVER
NOTE:
PIPE DAIMETER & CLASS MAY VARY TO SITE
CONDITIONS. (CONTACT OPERATIONS SECTION
PRIOR TO WORK BEING CARRIED OUT.)
CROSSOVER - RURAL
TWO COAT SEAL OR ASPHALT STRIP
city of swan
DRAWING No:
STD 47-1s
REV No:
0
APPROVED
03.02.2017
DESIGN COORDINATOR
DATE
DRAWN: JM
CHECKED: CT
SCALE: N.T.S. (A4)
OPERATIONS



NOTE: BRICK PAVERS TO BE SOLIDS ONLY, SPLITS ARE NOT APPROVED PAVERS.



BRICK PAVING - EDGE RESTRAINT
FOR RESIDENTIAL CROSSOVERS

city of swan

DRAWING No: STD 40-2s

REV No: 0

APPROVED

DESIGN CO-ORDINATOR 12.09.2018 DATE

DRAWN: AB CHECKED: MB

SCALE: 1:20 (A4)

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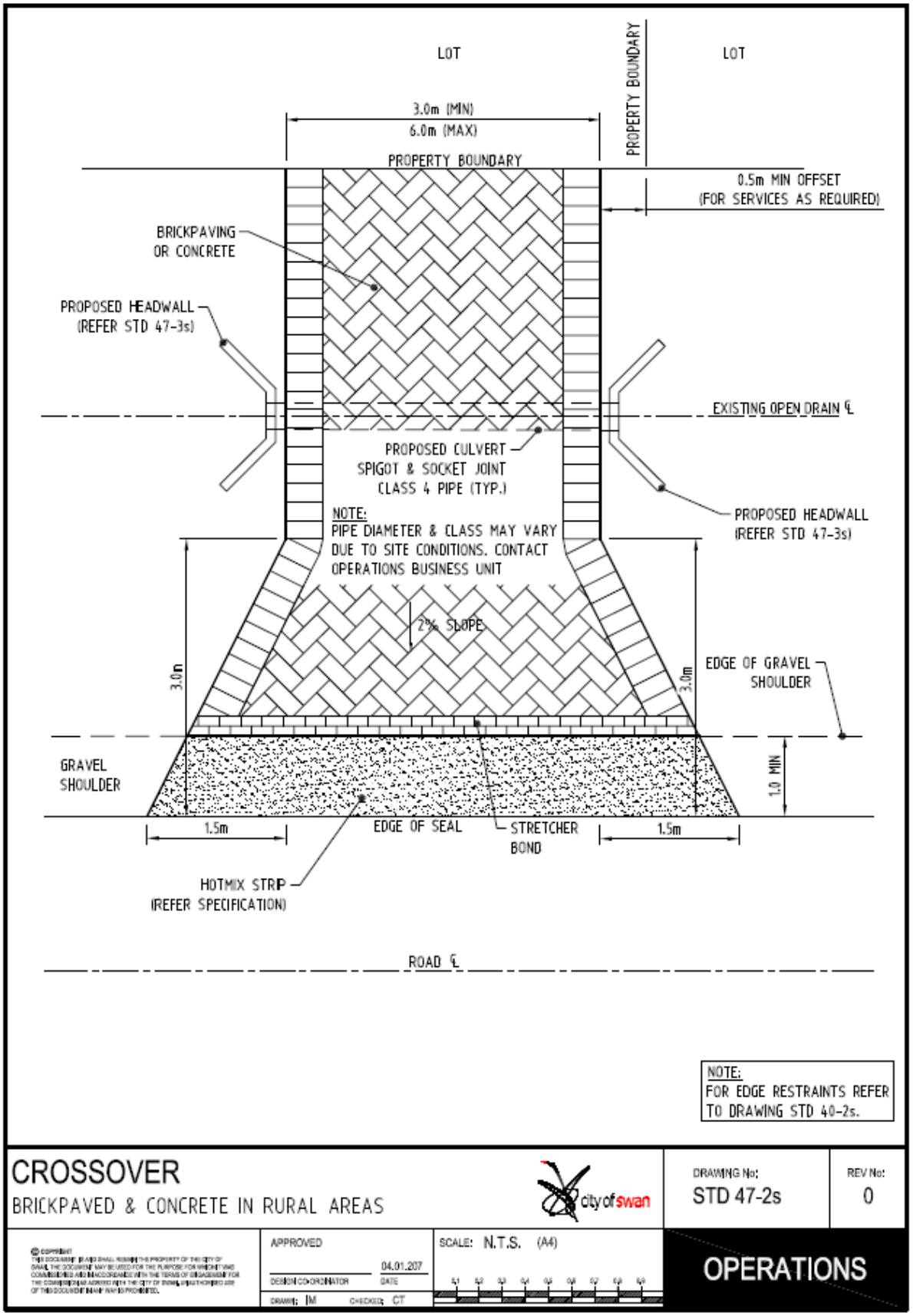
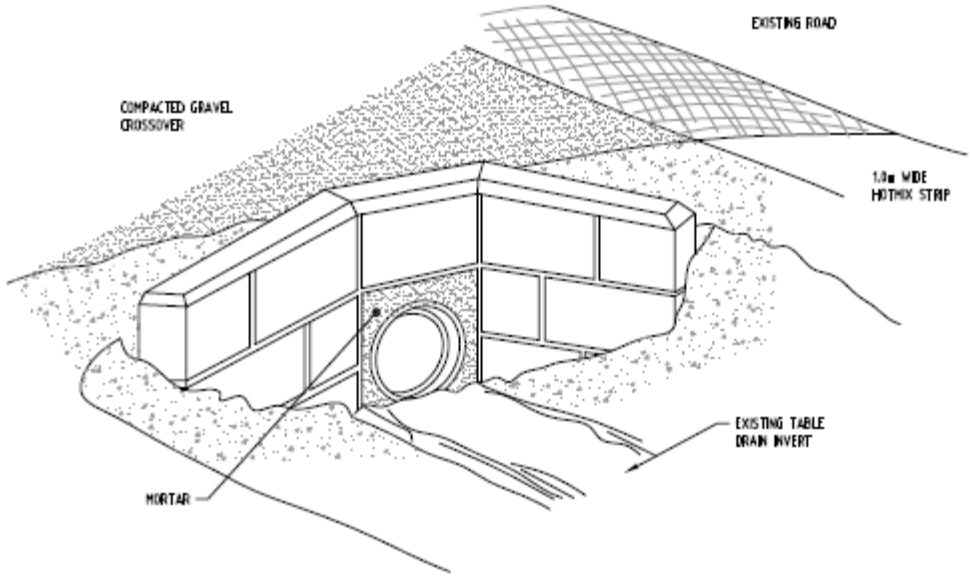
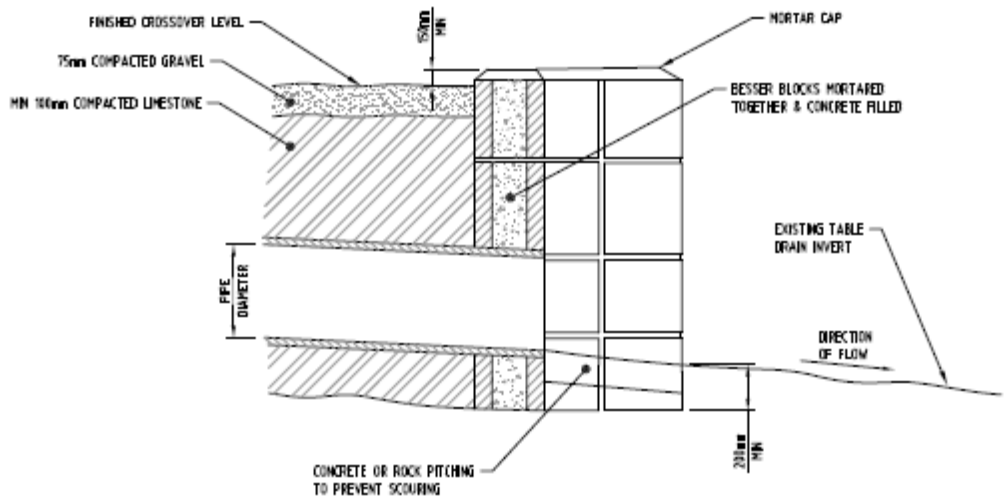
OPERATIONS


LOT
PROPERTY BOUNDARY
LOT
3.0m (MIN)
6.0m (MAX)
PROPERTY BOUNDARY
0.5m MIN OFFSET
(FOR SERVICES AS REQUIRED)
BRICKPAVING
OR CONCRETE
PROPOSED HEADWALL
(REFER STD 47-3s)
EXISTING OPEN DRAIN ℄
PROPOSED CULVERT
SPIGOT & SOCKET JOINT
CLASS 4 PIPE (TYP.)
NOTE:
PIPE DIAMETER & CLASS MAY VARY
DUE TO SITE CONDITIONS. CONTACT
OPERATIONS BUSINESS UNIT
PROPOSED HEADWALL
(REFER STD 47-3s)
2% SLOPE
3.0m
3.0m
EDGE OF GRAVEL
SHOULDER
GRAVEL
SHOULDER
1.0 MIN
1.5m
EDGE OF SEAL
STRETCHER
BOND
1.5m
HOTMIX STRIP
(REFER SPECIFICATION)
ROAD ℄
NOTE:
FOR EDGE RESTRAINTS REFER
TO DRAWING STD 40-2s.
CROSSOVER
BRICKPAVED & CONCRETE IN RURAL AREAS
city of swan
DRAWING No:
STD 47-2s
REV No:
0
APPROVED
04.01.207
DESIGN CO-ORDINATOR
DATE
DRAWN: IM
CHECKED: CT
SCALE: N.T.S. (A4)
OPERATIONS





CROSSOVER

PIPE CULVERT & BESSER BLOCK HEADWALLS IN RURAL AREAS

city of swan

DRAWING No: STD 47-3s

REV No: 0

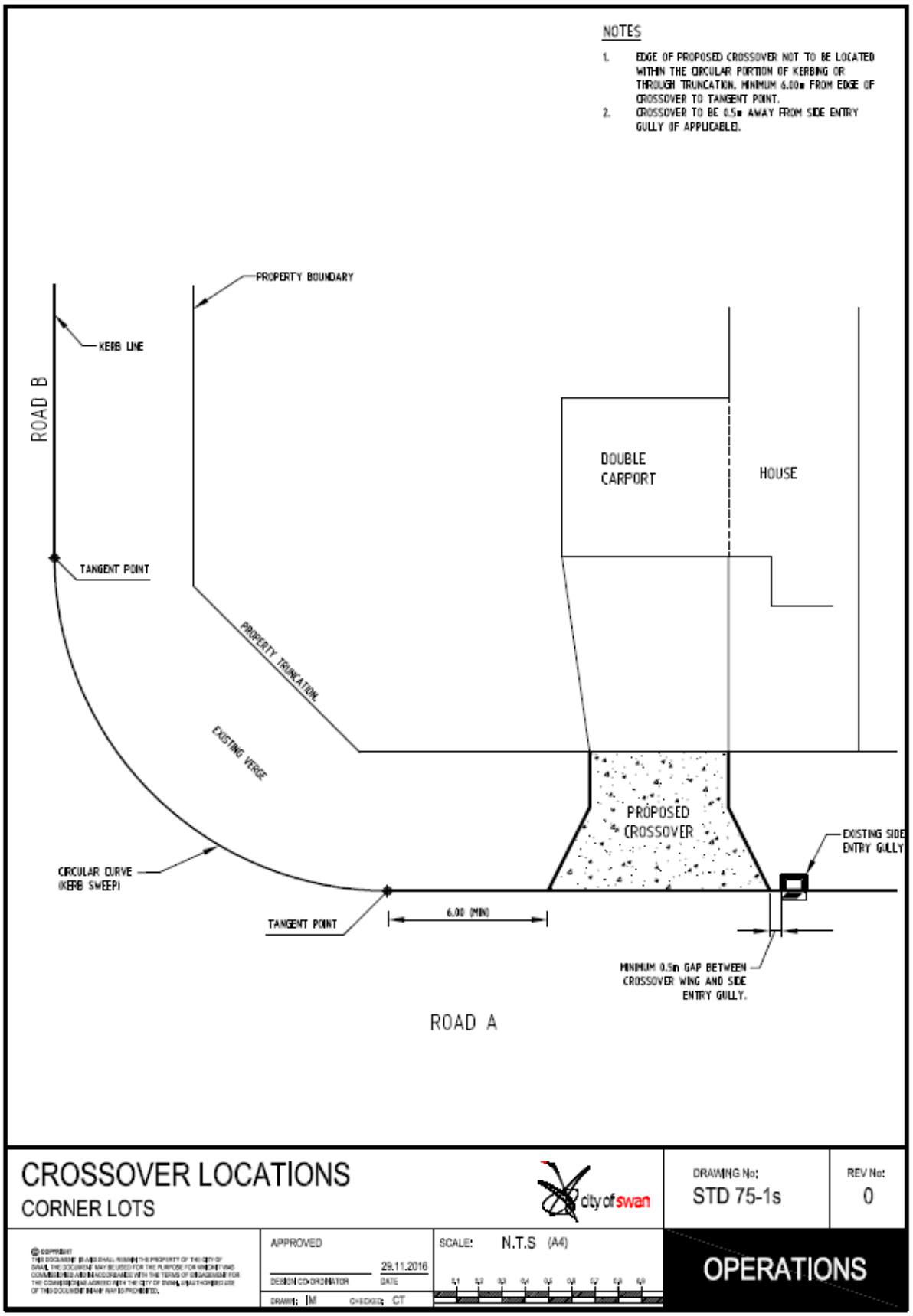
APPROVED

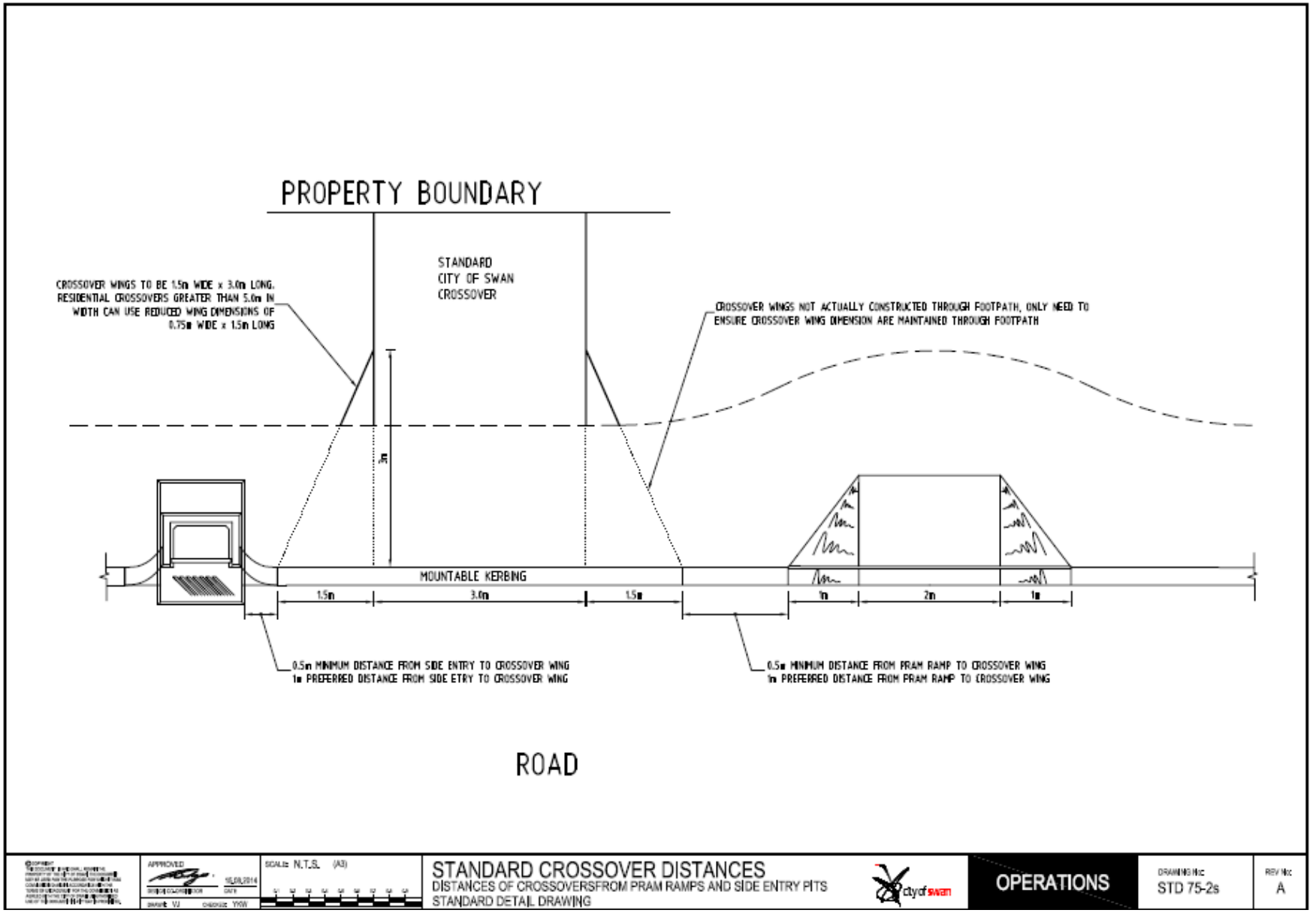
DRAINS COORDINATOR 03/01/2017 DATE

DRAWN: IM CHECKED: CT

SCALE: N.T.S (A4)

OPERATIONS


NOTES
1. EDGE OF PROPOSED CROSSOVER NOT TO BE LOCATED WITHIN THE CIRCULAR PORTION OF KERBING OR THROUGH TRUNCATION. MINIMUM 6.00m FROM EDGE OF CROSSOVER TO TANGENT POINT.
2. CROSSOVER TO BE 0.5m AWAY FROM SIDE ENTRY GULLY (IF APPLICABLE).
PROPERTY BOUNDARY
KERB LINE
ROAD B
DOUBLE CARPORT
HOUSE
TANGENT POINT
PROPERTY TRUNCATION
EXISTING VERGE
PROPOSED CROSSOVER
EXISTING SIDE ENTRY GULLY
CIRCULAR CURVE (KERB SWEEP)
TANGENT POINT
6.00 (MIN)
MINIMUM 0.5m GAP BETWEEN CROSSOVER WING AND SIDE ENTRY GULLY.
ROAD A
CROSSOVER LOCATIONS
CORNER LOTS
city of swan
DRAWING No:
STD 75-1s
REV No:
0
APPROVED
29.11.2016
DESIGN CO-ORDINATOR
DATE
DRAWN: IM
CHECKED: CT
SCALE: N.T.S (A4)
OPERATIONS


PROPERTY BOUNDARY
STANDARD
CITY OF SWAN
CROSSOVER
CROSSOVER WINGS TO BE 1.5m WIDE x 3.0m LONG.
RESIDENTIAL CROSSOVERS GREATER THAN 5.0m IN
WIDTH CAN USE REDUCED WING DIMENSIONS OF
0.75m WIDE x 1.5m LONG
CROSSOVER WINGS NOT ACTUALLY CONSTRUCTED THROUGH FOOTPATH, ONLY NEED TO
ENSURE CROSSOVER WING DIMENSION ARE MAINTAINED THROUGH FOOTPATH
3m
MOUNTABLE KERBING
1.5m
3.0m
1.5m
1m
2m
1m
0.5m MINIMUM DISTANCE FROM SIDE ENTRY TO CROSSOVER WING
1m PREFERRED DISTANCE FROM SIDE ETRY TO CROSSOVER WING
0.5m MINIMUM DISTANCE FROM PRAM RAMP TO CROSSOVER WING
1m PREFERRED DISTANCE FROM PRAM RAMP TO CROSSOVER WING
ROAD
APPROVED
15/08/2014
DATE
DRAWN: VJ
CHECKED: YKW
SCALE: N.T.S. (A3)
STANDARD CROSSOVER DISTANCES
DISTANCES OF CROSSOVERSFROM PRAM RAMPS AND SIDE ENTRY PITS
STANDARD DETAIL DRAWING
city of swan
OPERATIONS
DRAWING No:
STD 75-2s
REV No:
A