WARRNAMBOOL CITY COUNCIL

Standard Drawings

Document History

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<th>Date</th>
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For dimensions (A) (B) & (C) refer to
W.C.C. Design Guidelines Section 4.5

Road Reserve (C)

Pavement (A + 0.6M)

Verge Shoulder (B)

Seal (A)

Shoulder Verge 0.6m

1 in 25

1 in 33

1 in 33

1 in 25

Verge 1.2m

Trapezoidal Ditch

0.3 - 0.5m

0.6m 0.9m

V Ditch

0.3 - 0.6m

0.9m

Seal & pavement composition to be determined in accordance with W.C.C. Design Guidelines.

TYPICAL CROSS SECTION
SEALED ROAD

TYPICAL CROSS SECTION
GRAVEL ROAD

NOTE: ALL PAVEMENT LAYERS MUST BE TESTED IN ACCORDANCE WITH VICROADS SPECIFICATIONS WITH APPROVED A NATA ACCREDITATIONS

PAVEMENT COMPACTION DETAILS

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<th>COMPACTION REQUIREMENTS</th>
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<tr>
<td>SUB BASE</td>
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</tr>
<tr>
<td>SUB GRADE</td>
<td>95% MOD A.A.S.H.O</td>
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Seal & pavement composition to be determined in accordance with W.C.C. Design Guidelines.

KERB SECTIONS REFER WCC-11A & WCC-11B

CHANNELS REFER WCC-12

PAVEMENT AS ABOVE

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NOTE: ALL PAVEMENT LAYERS MUST BE TESTED IN ACCORDANCE WITH VICROADS SPECIFICATIONS WITH APPROVED A NATA ACCREDITATIONS

STANDARD DRAWING

TYPICAL CROSS SECTION - LANEWAY (PLAN 1)

APPROVED DATE STANDARD DRAWING NO REV
Sep 10 WCC-03 C

REFERENCE NOTES
Sep 10

PAVEMENT COMPACTION DETAILS

May 10

Change Standard Drawing No.
Apr 10

REVISION DATE
KERB HAS BEEN SUPERSEDED - MAY BE USED TO MAINTAIN EXISTING KERBING ONLY

Notes:
1. Concrete used must be 25 mpa strength after 28 days.
2. Construction joints must be formed every 3m of kerb.
3. Kerb must have steel float finish.
4. All kerb & channel to be founded on minimum 150mm FCR3 compacted 95%
TRAFFICABLE CHANNELS

CD2

R=285

600

550

110

mm

CD3

R=375

600

550

150

mm

CD4

NON-TRAFFICABLE CHANNELS

Notes:
1. Concrete used must have a minimum cement content of 280 kg/m³ of concrete and shall not be less than 25 Mpa strength after 28 days.

2. Contraction joints must be formed every 3m of kerb.

3. Kerb must have steel float finish.

4. All kerb & channel to be founded on minimum 150mm FOS3 compacted 95%
A. TRENCHES IN ROADS

Notes

ROAD RESERVE WORKS PERMIT
A road reserve works permit must be obtained from council prior to works commencing.
A minimum three working days notice to be given prior to commencement

COMPACATION AND TESTING
Moisture content shall be adjusted to optimum at time of compaction
Compaction tests are required for each layer where density is specified

B. TRENCHES IN NATURE STRIPS

SURFACINGS
Footpaths
(i) 25 MPa concrete, 100mm deep with 1 layer F72 mesh
(ii) bituminous concrete (hotmix) 25 mm, 75 mm base

Concrete vehicular crossing
25 MPa concrete, 125mm deep including F72 mesh

Seal
Bituminous concrete (hotmix) 30mm residual roads 40mm collector roads / industrial roads

150mm compacted depth class 2 F.C.R. in 2 X 150mm layers. Top (base) compacted to 98% modified density ratio. Lower (sub base) layer compacted to 97% modified density ratio.
Class 3 F.C.R. (or approved equivalent material). Backfill and compacted mechanically in 150mm layers using vibrating rammer to 97% modified density ratio.
Authority’s Marker Tape
Authority Service zone Including attachments and appendages
Granular bedding plastic index less than 3
Any unsuitable material to be removed from floor of trench

C. TRENCHES IN FOOTPATHS

Surfacing to match existing See note below

150mm compacted depth class 3 F.C.R.
Approved granular backfill rammed or rolled in 150mm layers.
Any unsuitable material to be removed from floor of trench

DEFECT LIABILITY PERIOD
12 months following date of practical completion.
A bond of $50 per square metre may be required for some roads openings and footpath openings prior to works commencing. The bond will be refunded at the expiry of defects liability period upon approval by council's officer.
Council shall at random do testing and if workmanship or compaction is below the requirement, the trench will be rectified by Council and any Expenses incurred in doing so shall be recharged to the contractor.
SUBSURFACE DRAIN
TYPE 1

SUBSURFACE DRAIN
TYPE 2

NOTES

SUBSURFACE DRAINS

A
Sub Base Dimension
Jan 11

B
Materials
Aug 03

WARRNAMBOOL CITY COUNCIL

APPROVED
DATE
STANDARD DRAWING No
REV

JAN 11
WCC-31
B
Anchor blocks must be placed at maximum intervals of 10 metres when slope of pipe exceeds 1 in 7. Concrete compressive strength must be a minimum of 32 MPa at 28 days.
CONCRETE INFILLED CAST IRON COVER & FRAME

LID LOADINGS

(i) 210 KN FOR LIDS IN ROAD PAVEMENT AREAS

(ii) 150 KN FOR ALL OTHER AREAS

Removal of side entry pit drawing
Dimensions given are for 900mm x 600mm junction pits with 150mm thick walls. FIXING BOLTS ARE LOCATED A MIN. OF 50mm FROM FACE (INTERNAL OR EXTERNAL) OF PIT WALL.
NOTES
1. Pits deeper than 1m shall be fitted with step irons.
2. Material shall be structural grade 250 to AS 1204.
3. Step irons shall be located below an opening
   - desirably on a long side of the pit
   - desirably on a wall without pipe openings
4. Step irons shall have all sharp edges rounded and be
   hot dip galvanised after fabrication.
5. Proprietary steps such as Gothic PS2–PF PPL steps or
   approved alternative may be used.
SIDE ENTRY PIT WITH LINTEL

1. Rectangular precast pits may be used subject to prior approval and installation to manufacturers specification.
2. All kerb & channel to be founded on minimum 150mm FCR3 compacted 95%
SECTION A - A

SECTION B - B

PLAN

PRECAST OR CAST IN STU 240x150mm CONCRETE LINTELS WITH 4 NO. 12 BARS TO TOP AND TO BOTTOM, 20mm CLEAR COVER, MATCH INTO TOP OF M1 WALL.

1. For individual sizes, refer to detail drawings.
2. Concrete compressive strength must be a minimum of 25 MPa at 28 days.
3. Pits deeper than 1m should be provided with step irons. (Refer WCC-34 - Step Irons)
4. Rectangular precast concrete pits may be used subject to prior approval and installation to manufacturer's specification.

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STANDARD DRAWING

DOUBLE SIDE ENTRY PIT

A Additions of lintel

Apr 10

REV

A

APPROVED

DATE

STANDARD DRAWING No

WCC-36

Apr 10

DATE

REV

A
1. For individual sizes, refer to detail drawings.
2. Concrete compressive strength must be a minimum of 25 N/m² at 28 days.
3. Pits deeper than 1m shall be provided with steps. (Refer WCC-34 - Step Irons)
4. Rectangular precast concrete pits may be used subject to prior approval and installation to manufacturer's specification.
1. For individual sizes, refer to detail drawings.
2. Concrete compressive strength must be a minimum of 25 MPa at 28 days.
3. Pits deeper than 1m shall be provided with step irons. (Refer WCC-34 - Step irons)
4. Rectangular precast concrete pits may be used subject to prior approval and installation to manufacturers specification.
1. For individual sizes, refer to detail drawings.
2. Concrete compressive strength must be a minimum of 25 MPa at 28 days.
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1. For individual sizes, refer to detail drawings.
2. Concrete compressive strength must be a minimum of 32 MPa at 28 days.
3. Pits deeper than 1m shall be provided with step irons. (Refer WCC-34 – Step Irons)
4. Rectangular precast concrete pits may be used subject to prior approval and installation to manufacturer’s specification.
Atlantis D-raintank (or equivalent). Tanks to be interlocked together vertically and fully wrapped with geotextile fabric 351 (or equivalent).

Tanks to have the following performance criteria:
1. Tanks to have a minimum flow rate of 2000 L/min under static head.
2. Tanks solid wall area not to exceed 25%.
3. Tanks to be made from recycled plastic materials.

Soak area to be located in a natural or created basin (turkeys nest). The disturbed area to be rolled with hand roller and sown with approved grass seed. Created basins must be constructed so they appear natural.

Test holes to be full depth of the proposed soakage pit must be dug to determine whether the soil is suitable and test carried out by a qualified geotechnical engineer to establish the infiltration rate of the soil before the location and depth of pit is finalised.

Minimum soakage pit volume 6.8 cubic metres.

All concrete used on pit to be 32MPa and vibrated into position as per AS3600, Section 19.

All measurements in millimetres.

Step irons to WCC-34.

See sheet 2 for soakage pit sizing design guidelines.

Pit lid and frame to WCC-33.

1. Soak area to be located in a natural or created basin (turkeys nest).
2. Test holes to be full depth of the proposed soakage pit must be dug to determine whether the soil is suitable and test carried out by a qualified geotechnical engineer to establish the infiltration rate of the soil before the location and depth of pit is finalised.
3. Minimum soakage pit volume 6.8 cubic metres.
4. All concrete used on pit to be 32MPa and vibrated into position as per AS3600, Section 19.
5. All measurements in millimetres.
6. Pit lid and frame to WCC-33.
7. Step irons to WCC-34.
8. See sheet 2 for soakage pit sizing design guidelines.
9. No and size of weep holes subject to filtration capacity & design.
SOAKAGE PIT SIZING DESIGN

DESIGN CRITERIA

The total volume of runoff from the catchment area to the soakage pit should be calculated using a 1 in 5 year ARI design storm, as per the procedures detailed in Chapter 11 of the WSUD Engineering Procedures - Stormwater (CSIRO, 2005). Runoff volume is to be determined by applying combined equivalent catchment area with design rainfall depth (using WCC Infiltration Spreadsheet). The engineer shall determine appropriate proportions of contributing impervious and pervious areas.

The soakage pit is required to empty from full to less than 50% volume within 24 hours of the storm event. No surface water is to result from the peak volume in 1 in 5 year ARI storm event (i.e. contained within soakage pit). Maximum roadway flooding is 150mm depth and is to be contained within the road kerb and channel for a 1 in 10 year ARI storm event.

There shall be no encroachment within 300mm of the level of any habitable or non-habitable floor resulting from the inundation by a 1 in 100 year 24 hour ARI storm event.

DESIGN METHODOLOGY

The design of soak pits is to be undertaken in accordance with the procedures detailed in Chapter 11 of the WSUD Engineering Procedures - Stormwater (CSIRO 2005). A spreadsheet for use in the sizing of infiltration systems is available from the City of Warrnambool. Appropriate blockage percentages are to be applied for soakage systems where sediment and litter intrusion are likely.

It is assumed that water percolates at a rate of Kh from the entire base of the system and through the walls of the system hydrostatically (i.e. the full wall area at 0.5Kh).

Field soil hydraulic conductivity should be tested using the falling head augerhole method of Jonasson. The measured 60 minute falling head hydraulic conductivity (K60) value is a reasonable estimate of the saturated hydraulic conductivity (Ksat). The measured point Kh is converted to the areal Kh used for design through the use of a multiplied moderation factor.

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<th>Soil type</th>
<th>Moderation Factor (F)</th>
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<tr>
<td>Sandy Soil</td>
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<tr>
<td>Sandy Clay</td>
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<tr>
<td>Medium and Heavy Clay</td>
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EXAMPLE CALCULATION

DESIGN DATA

Assume that the total catchment is 0.34ha (3400 sqm), that the impervious area is 0.09ha (900 sqm) and the pervious area is 0.25ha (2500 sqm).

Assume that 90% of impervious and 30% of pervious area contribute as runoff.

Assume overall height of soakage pit (h) to be 0.90m

From a soil test the infiltration rate (f) was determined to be 1.15 x 10^-4 m/s

Porosity of the soakage pit (atlantis cells) is 0.9

Convert infiltration rate to mm/h = 1.15 x 10^-4 x 1000 x 3600 = 414 mm/h

Soil type is Sandy (kc > 180 mm/h), therefore moderation factor is 0.5. Effective infiltration rate is 212 mm/h

Determine runoff coefficient = (900 * 0.9) + (2500 * 0.3) / 3400 = 0.46

Use Spreadsheet to determine height and width of Soakage pit by trial and error (changing length and width).
NOTES
1. Concrete compressive strength must be a minimum of 30MPa at 28 days.
2. Frame and grate unit shall be protected with an approved coating.

GRATED PIT FOR FOOTPATH DRAIN

Frame unit
Footpath width (Refer WCC-51 Pedestrian Paths)

Footpath and drain width
(Refer WCC-51 Pedestrian paths)

Line of invert of footpath

Taper edge of concrete at 1 in 10 max dev.

Invert of footpath drain

150ø PVC

45 x 45 x 3 MS butt welded

40 x 12 MS 13mm spaces butt welded

FRAME UNIT

GRATE UNIT
Inlet openings are to be located on pit walls facing direction of inflows. Total waterway area of inlets to be 1.5 times total waterway area of outlets.
SM TYPE  BARRIER TYPE

Fillet concrete edges around opening

Horizontal break out line
25mm min depth sawcut at kerb invert

90° - 125 x 50 UPVC adaptor
or other adaptors approved by council

Vertical break break out lines
sawcut full depth

300min

Top of kerb
Lip of kerb
Invert of kerb
Base of kerb

Reinstate to profile with 25MPa concrete
prime scabbled surfaces with approved bonding agent.

SM TYPE  BARRIER TYPE

All surfaces must be restored to original condition
Refer WCC21 trench backfill

1m min

90° PVC pipe
1 in 100 min grade

Approved galvanized steel or UPVC
Kerb adaptor
(See detail and note 1)

NOTES:
Council requires all property drains to be connected to underground drains where possible.
Connection to kerb and channel requires specific council approval and will only be considered when there are no other options.

STANDARD DRAWING
PROPERTY CONNECTIONS

WARRNAMBOOL
CITY COUNCIL

APPROVED  DATE  STANDARD DRAWING No
WCC-44

1. Proprietary kerb adaptors may be used providing installation is in accordance with manufacturer's specification and council grants prior approval.
2. Concrete compressive strength must be a minimum of 25MPa at 28 days.

A  Materials  Aug 03

REVISON  DATE
NOTES
1. Standard lintels are required to support a test load of 100kN.
2. Steel reinforcement shall comply with section 611 of Vicroads specification.
3. Concrete shall be concrete grade H40 or higher complying with AS 1379. Exposure classifications up to and including B1.
4. Minimum clear cover to reinforcement 25mm for precast concrete units.

10 x 10 CHAMFER
25 x 25 CHAMFER

B TYPE LINTELS

cement

25 RAD
10 RAD
100 115
87.5
112.5
100
75
125
340

SECTION E-E
SM TYPE LINTELS

REINFORCING RODS

ELEVATION

PLAN

REINFORCING RODS

ELEVATION

PLAN

STORMWATER PIT LINTEL DETAILS

WARRNAMBOOL CITY COUNCIL

STANDARD DRAWING WCC-45

APPROVED DATE

REVISION DATE

1. Kerbs – SD 2001
2. All dimensions are in millimetres
STANDARD CONCRETE PATH

First Pour
- 125mm 25 mpa concrete
- F72 Mesh
- 75mm min compacted FCR
- Or suitable approved granular material

Second Pour
- CF Dowel

Danley "cf" joint system or approved equivalent with load transfer dowels spaced at 450mm centres

FOOTPATH DRAINS

Drains shall be graded to an approved discharge point.
Footpath spoon drains will only apply when requested by council.

Notes
1. Chamfer are 15mm x 15mm.
2. Where concrete is cast against an existing structure, street furniture and pits, a full depth expansion joint must be installed.
3. Footpath must have steel float finish with a lightly textured non-skid twirled surface.
4. Intermediate joint distance = lesser of path width or 2 metres
5. Expansion joints comprising of polystyrene foam expanded with dowels. (Danley's system or approved equivalent):
   (i) Each side of driveway cross overs 1.5m from driveway,
   (ii) At intersections,
   (iii) Where directed,
   (iv) At no more than 25 m intervals.
1. Pedestrian traffic should be directed perpendicular to vehicular traffic.
2. Exposed edges should have a 20mm fillet.
3. Footpath surfaces shall be slip resistant.
4. Concrete compressive strength shall be a minimum of 20MPa at 28 days.
5. Crossings at kerb should be cast as a single unit.

**TACTILE NOTE**

**SPLAY DISTANCE**

**RAMP DETAIL & TACTILE INDICATOR**

**MATERIALS**

**ELEVATION B**

**SECTION A - A**

**STANDARD DRAWING**

**RAMPS PATH CROSSING AT PATH**

**APPROVED**

**DATE**

**STANDARD DRAWING NO.**

**REV.**

**WARRNAMBOOL CITY COUNCIL**

**WCC-52**
OTHER PAVEMENT MATERIALS
Upon council approval the 125mm min 25 MPa concrete surface shall be replaced with the following:
- 30mm thick asphalt / 125mm class 2 for pavement base
- brick paving laid on 125mm thick concrete base.

1. Written authorization must be obtained prior to any works being undertaken on council property and roads reserves.
2. Concrete compressive strength must be a minimum of 25MPa at 28 days.
3. Vehicle crossings should be cast as a single unit.
4. Vehicle crossings should be constructed perpendicular to the general flow of traffic.
5. All exposed edges must be a 25mm step.
125mm min 25MPa concrete
75mm compacted fine crushed rock or approved granular material.

SECTION A - A
(NORMAL FALL)

SECTION A - A
(REVERSE FALL)

OTHER PAVEMENT MATERIALS
Upon council approval the 125mm min 25 Mpa concrete surface shall be replaced with the following:
30mm thick asphalt / 125mm class 2 for pavement base brick paving layered on 125mm thick concrete base.

C TOOL JOINT ALTERATIONS
Sept 08

B SECTION B - B
Aug 04

A Materials
Aug 03

REVISION DATE

1. Written authority must be obtained prior to any works being undertaken on council property and road reserves.
2. Concrete compressive strength must be a minimum of 25MPa at 28 days.
3. Vehicle crossings should be cast as a single unit.
4. Vehicle crossings should be constructed perpendicular to the general flow of traffic.
5. All exposed edges shall have a 20mm fillet.
1. Written authorisation must be obtained prior to any works being undertaken on council property and road reserves.
2. Concrete compressive strength must be a minimum of 25MPa at 28 days.
3. The concrete shall be thickened a minimum of 150mm to form a concrete collar.
4. Where the service pit is located in the footpath it shall be installed with its outer edge not less than 150mm from the edge of the footpath.
Install inlet and outlet structures as directed.
- Precast headwall to manufacturer specification.
- Inlet catch pit to WCC 43.
- Cast in situ headwall to WCC 63.

Pipe or box culvert to suit hydraulic design
(3000 or 300 X 300 minimum)

Install scour protection at outlet as directed.

Install culvert to manufacturer's specification on type B bedding or as directed.

Where inlet channel gradient exceeds 1 in 10, install inlet catch pit.
Where inlet channel gradient is less than 1 in 50, depress channel 300mm over 5m.

Road crown

NOTES

STANDARD DRAWING

CULVERT INSTALLATION

WARRNAMBOOL CITY COUNCIL

APPROVED

DATE

STANDARD DRAWING No

WCC–61

REV
Gates must open into property. Any cattle grids must be inside property.  

3m nominal radius.  

Precast driveable endwall. (Refer Vicroads standard drawing SD 1991)  

Max batter slopes 1 in 3.  

Note: Standard headwalls shall be used where the speed limit is 60km/hr or less, or where the culvert is offset more than 6 metres from the edge of the traffic lane.
CAST IN-SITU HEADWALLS FOR PIPE CULVERTS

1. Reinforcement shall be continuous around corners and located as shown on Section A and Section B with clear cover of 50mm and laps of 300mm for fabric and 25 times bar diameter for bars.
2. Concrete compressive strength shall be 30MPa.
3. Exposed edges shall have 30 x 30 chamfers.
4. Compaction behind walls shall not exceed 15kPa.
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**Continuous bars as specified around top of structure.**

**For H<600 use 1 No 10@ bars**

**For H>600 use 2 No 12@**

**For H<600 use FB2 fabric**

**For h>= use FB1**

---

**CAST IN-SITU HEADWALLS FOR BOX CULVERTS**

1. Reinforcement shall be continuous around corners and located as shown on Section A and Section B with clear cover of 50mm and laps of 300mm for fabric and 25 times bar diameter for bars.
2. Concrete compressive strength shall be 30MPa.
3. Exposed edges shall have 30 x 30 chamfers.
4. Compaction behind walls shall not exceed 15kPa.

---

**Comparison**

**WARRNAMBOOL CITY COUNCIL**

**REVISION**

**DATE**

**STANDARD DRAWING No.**

**WCC-64**

**APPROVED**

---

**MS dowels 24Ø 200 long.**

**DETAIL**

**END ELEVATION**

**SECTION A**

---

**See detail.**

**Bedding as specified.**

**Beaching.**

---

1.00m WIDE ROCK BEACHING
(ROCK SPAWLS, UP TO 300mm)
1:3 BATTER TO SIDES OF
OPEN DRAIN
MINIMUM LENGTH 10 METRES.

VEGETATED BEACHING

1.00m WIDE ROCK BEACHING
(ROCK SPAWLS, UP TO 300mm)
1:3 BATTER TO SIDES OF
OPEN DRAIN

NOTE: ALL PROPOSALS
REQUIRE APPROVAL FROM
COUNCIL AND GLENEAGL
HOPKINS CMA

SECTION A – A

STORMWATER OUTLET TO CREEK
GUIDE POSTS

LATERAL LOCATION OF GUIDE POSTS

LOCATION OF GUIDE POSTS AT CULVERTS

Spacing Guide
Guide posts are to be spaced:
On straight, in general, 150m apart, in pairs
in foggy areas, 60m apart in pairs
On outside of curves $R \leq 150m$, $(0.03 \times R + 5)m$
$R > 150m$, $0.6 \times R m$
On inside of curves $R \leq 500m$, opposite every second outside post
$R > 1000m$, opposite every outside post $0.6 \times R m$
On transitions, the spacing shall be progressively adjusted.

TYPE B (FLEXIBLE)
100 X 5 white rubber or approved by council.

80Ø Corner - cube delineator
Red on left side and
white on right side.
50mm Galvanised Pipe Rail

Treated pine posts 125mm x 75mm rounded top

Corner / gate / pedestrian posts
120mm x 120mm

Finished Surface

500mm

1000mm

500mm

NOTES
1. This type of fence must be installed at an offset greater than 3 metres from the edge of any trafficable road.
2. Not suitable for use near traffic.

WARRNAMBOOL CITY COUNCIL

STANDARD DRAWING

FENCE – POST AND RAIL

APPROVED
DATE

STANDARD DRAWING No
WCC-73

A

REVISION
DATE

A
This type of fence must be installed at an offset greater than 3 metres from the edge of any trafficable road.
Bollards should be free of any defects relating to strength, durability and appearance and be the product of sound machining.

Galvanised chain shall be of commercial quality, hot dipped galvanised and conforming to relevant Australian Standards.

Concrete Foundations shall be poured such that the finished surface of the foundation is 100mm with the ground surface level and to conform to dimensions shown in the detailed drawings.
Eucalyptus camaldulensis (River Red Gum) undressed 200 x 200 x 1500mm timber post.

90x 45mm hardwood rails.

30° Pyramid top.
10mm rebate
100mm from top.

150mm hardwood corbel fixed as specified.

Eucalyptus camaldulensis (River Red Gum) undressed 180 x 180 x 1500mm timber post.
DOUBLE RAILING TIMBER FENCE

SINGLE RAILING TIMBER FENCE

BRICK FENCE

Holes with bars
Min. 30% void in brickwork

PAILING FENCE

Elevation

Plan

BRICK FENCE

EVERY THIRD BRICK OMITTED
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATELY, AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES IS APPROXIMATELY ONLY, AND THEIR EXACT POSITION SHOULDN'T BE PROVEN ON SITE WITHOUT PROOF. IT IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

STANDARD DRAWING
Fences - Chicanes for Walking and Cycling Paths – type A

WARRNAMBOOL
CITY COUNCIL

NOTES

WCC-76

STANDARD DRAWING

APPROVED

DATE

STANDARD DRAWING No

REV

WCC-76
WARNING
BEWARE OF UNDERGROUND SERVICES
EXACT POSITION SHOULD BE PROVEN ON SITE.

RECLAIMED OR HARDWOOD RETAINING WALL

TREATED PINE OR HARDWOOD SLEEPERS
(PILES ARE TO HAVE CONCRETE FOOTINGS)

3000L x 200H x 70W
TREATED PINE OR HARDWOOD SLEEPERS

200L x 90H x 70W
TREATED PINE OR HARDWOOD PILES

NOTE:
FOOTINGS ARE TO BE MIN 600mm DEEP
400mm x 400mm FOOTINGS WHEN TIMBER PILES ARE Used
300mm x 300mm FOOTINGS WHEN GALVANISED STEEL PILES ARE USED

TREATED PINE OR HARDWOOD RETAINING WALL
WITH GALVANISED PILES

3000L x 200H x 70W
TREATED PINE OR HARDWOOD SLEEPERS

300PFC GALVANISED PILES
(PILES ARE TO HAVE CONCRETE FOOTINGS)
Tree minimum height 2500mm above natural ground level.

Plant ties (Rubber ring & nylex cord or black PVC, interlock tie, double "Figure 8")

Plant stakes (2 - 50 x 50 x 1800 hardwood)

100mm approved mulch, keep clear of plant. 500mm radius

"Weedblock" mat

Excavation

NOTES

STANDARD DRAWING

TREE PLANTING AND STAKING

AUG 04

WARRNAMBOOL CITY COUNCIL

APPROVED

DATE

STANDARD DRAWING No

REV

WCC-B1

A
PLANTING IN MEDIANS

Notes

Planting
Provide hole 3 to 4 times the size of plant container. The bottom of the hole shall be loosened to a depth of 150mm. Backfill with approved garden soil to 70mm below root ball level. Prior to planting, place 5 litres of water into hole and allow to soak away. Add approved garden soil and place undisturbed root ball into hole so that crown of tree is at correct level, backfill to half root ball height. Add Agriform slow release 10 gram tablets of NPK 20:4:3:4:1 analysis to each tree. Provide 2 tablets for trees up to 500mm high, 3 tablets for trees over 500mm high. Place tablets equidistant around around plant. Complete backfilling with approved garden soil to avoid air pockets. Form a saucer shaped depression around base of tree and water immediately. Weed control mat. Double outer edges and pin with 4mm galvanised pegs.

Root Barriers
Trench width 75mm min, 1200mm nom depth, or to solid material when approved by the superintendent. Provide scoria filter and connect to an outlet pipe when directed by the superintendent. Insert nylex root barrier and backfill using a blend of spoil from the trench and sodium bentonite. The ratio of bentonite to soil may vary depending on the type of soil: 1:10 for clay, 1:1 for light sandy material. Trench shall not be located closer than half the distance from canopy drip line and trunk of tree.

Planting in Medians
Subsoil drain to be diverted around root barrier. uPVC unslotted pipe to be laid for 3m upstream and downstream of trees.
NOTES:
ALL PERMANENT SURVEY MARKS MUST BE LOCATED IN THE CENTRE OF THE FOOTPATH AS DETAILLED IN THE LOCATION PLAN.
ALL PERMANENT SURVEY MARKS MUST HAVE A COVER APPROVED BY THE OFFICE OF GEOGRAPHIC DATA AND THE CITY OF WARRNAMBOOL TECHNICAL SERVICES DEPARTMENT.
BIKE - SPIRAL HITCHING RAIL

Material - 40NB (48.26) x 2.77mm
Grade 316 Stainless Steel Pipe
Finish - Electro Polished

NOTES

WARRNAMBOOL CITY COUNCIL

APPROVED
DATE
STANDARD DRAWING No
REV
WCC-102
SIGN SPECIFICATIONS

1. HEAVY GAUGE STREET BLADE
2. CLASS 1. REFLECTIVE
3. 120mm TEXT HEIGHT
4. 60mm TEXT HEIGHT (ST)
5. 5. CAPITAL LETTERS