Design and Construction Note

Book 1000
Urban Centres: Reinstatement Policies & Vehicle Restrictions
Version 1.0

1000.00 - Amendments
Version 1.0 29/06/2018
V1.0 Book 1000 29/06/2018
Issued For Use
Foreword

Non-standard details are currently in use across the city, details and specifications which are specific to ‘Feature Treatment Locations’ are shown within this manual for the purpose of reinstatement, maintenance and posterity. Details in this manual are not to be reproduced or implemented in new projects without written consent.
Urban Centres: Reinstatement Policies & Vehicle Restrictions

Index

1000.00  Urban Centres:
Reinstatement Policies & Vehicle Restrictions

1000.00  Cover Page
1000.01  Foreword
1000.02  Index (Page 1)
1000.03  Index (Page 2)
1000.04  Index (Page 3)

1001.00  General and City Wide Details

1001.01  Paving Material Base (Page 1)
1001.02  Paving Material Base (Page 2)
1001.03  Paving Material Base (Page 3)
1001.04  Paving Material Base (Page 4)
1001.05  Typical Paving Patterns
1001.06  General Reinstatement Policy (Page 1)
1001.07  General Reinstatement Policy (Page 2)

1002.00  Hay St and Murray St Malls

1002.01  Pedestrian Malls Reinstatement Policy (Page 1)
1002.02  Pedestrian Malls Reinstatement Policy (Page 2)
1002.03  Pedestrian Malls Reinstatement Policy (Page 3)
1002.04  Pedestrian Malls Reinstatement Policy (Page 4)
1002.05  Pedestrian Malls Reinstatement Policy (Page 5)
1002.06  Pedestrian Malls Reinstatement Policy (Page 6)
1002.07  Pedestrian Malls Reinstatement Policy (Page 7)
1002.08  Pedestrian Malls Vehicle Restrictions
1002.09  Pedestrian Malls Telecommunication Service Pits (Page 1)
1002.10  Pedestrian Malls Telecommunication Service Pits (Page 2)
1002.11  Pedestrian Malls Standard Stick Light
1002.12  Hay St Mall Non-Standard Tree-Grate
1002.13  Hay St Mall Non-Standard Gully Grate

1003.00  Northbridge Piazza

1003.01  Northbridge Piazza Reinstatement Policy (Page 1)
1003.02  Northbridge Piazza Reinstatement Policy (Page 2)

(Continued on 1000.02)
Urban Centres: Reinstatement Policies & Vehicle Restrictions

1003.00 Northbridge Piazza

1003.03 Northbridge Piazza Reinstatement Policy (Page 3)
1003.04 Northbridge Piazza Reinstatement Policy (Page 4)
1003.05 Northbridge Piazza Reinstatement Policy (Page 5)
1003.06 Northbridge Piazza Reinstatement Policy (Page 6)
1003.07 Northbridge Piazza Reinstatement Policy (Page 7)
1003.08 Northbridge Piazza Reinstatement Policy (Page 8)
1003.09 Northbridge Piazza Reinstatement Policy (Page 9)
1003.10 Northbridge Piazza Reinstatement Policy (Page 10)
1003.11 Northbridge Piazza Reinstatement Policy (Page 11)
1003.12 Northbridge Piazza Reinstatement Policy (Page 12)
1003.13 Northbridge Piazza Telecommunication Service Pits (Page 1)
1003.14 Northbridge Piazza Telecommunication Service Pits (Page 2)
1003.15 Northbridge Piazza Non-Standard Tree Grate (Page 1)
1003.16 Northbridge Piazza Non-Standard Tree Grate (Page 2)
1003.17 Northbridge Piazza Tree Grate - ACO Powerdrain

1004.00 St George Tce (William St to Barrack St)

1004.01 St Georges Tce Reinstatement Policy (Page 1)
1004.02 St Georges Tce Reinstatement Policy (Page 2)
1004.03 St Georges Tce Reinstatement Policy (Page 3)
1004.04 St Georges Tce Reinstatement Policy (Page 4)
1004.05 St Georges Tce Reinstatement Policy (Page 5)
1004.06 St Georges Tce Reinstatement Policy (Page 6)
1004.07 St Georges Tce Reinstatement Policy (Page 7)
1004.08 St Georges Tce Reinstatement Policy (Page 8)
1004.09 St Georges Tce Reinstatement Policy (Page 9)
1004.10 St Georges Tce Reinstatement Policy (Page 10)
1004.11 St Georges Tce Reinstatement Policy (Page 11)
1004.12 St Georges Tce Vehicle Restrictions
1004.13 St Georges Tce Commemorative Plaque Paving Detail
1004.14 St Georges Paving (Page 1)
1004.15 St Georges Paving (Page 2)
1004.16 St Georges Tce Services & Pit Lid Details (Page 1)
1004.17 St Georges Tce Services & Pit Lid Details (Page 1)
1004.18 St Georges Tce Services & Pit Lid Details (Page 1)
1004.19 St Georges Tce Services & Pit Lid Details (Page 1)
1004.20 St Georges Tce Services & Pit Lid Details (Page 1)
1004.21 St Georges Tce Services & Pit Lid Details (Page 1)
1004.22 St Georges Tce Services & Pit Lid Details (Page 1)

(Continued on 1000.03)
Urban Centres: Reinstatement Policies & Vehicle Restrictions
Index (Continued)

1004.00  St George Tce (William St to Barrack St)

1004.23  St Georges Tce Services & Pit Lid Details (Page 1)
1004.24  St Georges Tce Services & Pit Lid Details (Page 1)
1004.25  St Georges Tce Services & Pit Lid Details (Page 1)
1004.26  St Georges Tce Supply List (Page 1)
1004.27  St Georges Tce Supply List (Page 2)
1004.28  St Georges Tce Supply List (Page 3)
Table 1  Crushed Limestone - Conformity Table

1. Particle Size Distribution grading for portion passing a 75mm AS sieve

<table>
<thead>
<tr>
<th>AS Sieve Size (mm)</th>
<th>Required Percentage (%)passing by mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>75.00</td>
</tr>
<tr>
<td>1.2</td>
<td>19.00</td>
</tr>
<tr>
<td>1.3</td>
<td>2.360 &amp; less</td>
</tr>
</tbody>
</table>

2. % of wear of crushed limestone not to be less than 30% or exceed 55% (calculated by the Los Angeles test)

3. Calcium Carbonate Content (CaCO3) shall not be less than 60% or greater than 80%

4. Maximum Dry Compressive Strength (MDCS) shall not be less than 700 kPa

- Location where “tested material” was placed must be indicated on a locality plan.

Crushed Rock - shall be manufactured from hard, durable stone, free of clay, organic matter and other deleterious material. The crushed rock shall be freshly blended prior to delivery and conform to the following table:

Table 2  Crushed Rock - Conformity Table

1. Particle Size Distribution: (Grading for portion passing a 26.5mm AS Sieve)

<table>
<thead>
<tr>
<th>AS Sieve Size (mm)</th>
<th>Required Percentage (%) Passing by mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>26.50</td>
</tr>
<tr>
<td>1.2</td>
<td>19.00</td>
</tr>
<tr>
<td>1.3</td>
<td>13.20</td>
</tr>
<tr>
<td>1.4</td>
<td>9.500</td>
</tr>
<tr>
<td>1.5</td>
<td>4.750</td>
</tr>
<tr>
<td>1.6</td>
<td>2.360</td>
</tr>
<tr>
<td>1.7</td>
<td>0.425</td>
</tr>
<tr>
<td>1.8</td>
<td>0.075</td>
</tr>
</tbody>
</table>

2. Ratio of the portion passing the 0.075mm sieve to the portion passing the 0.425mm sieve shall fall within the range of 40-60%.
3. Material Constraints: (for portion of sample passing the 0.425mm sieve)

<table>
<thead>
<tr>
<th>Material attribute</th>
<th>Required measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Liquid Limit</td>
<td>not greater than 25%</td>
</tr>
<tr>
<td>2 Plasticity Index</td>
<td>not greater than 5</td>
</tr>
<tr>
<td>3 Liner Shrinkage</td>
<td>not greater than 2%</td>
</tr>
<tr>
<td>4 Maximum Dry Compressive Strength</td>
<td>not less than 2 MPa</td>
</tr>
<tr>
<td>5 Los Angeles Abrasion</td>
<td>loss not greater than 35%</td>
</tr>
<tr>
<td>6 Wet Strength</td>
<td>not less than 100kN</td>
</tr>
<tr>
<td>7 Wet/Dry Strength Variation Ratio</td>
<td>not greater than 40%</td>
</tr>
<tr>
<td>8 Flakiness Index</td>
<td>not greater than 35</td>
</tr>
<tr>
<td>9 Soluble Sulphate Salt Content</td>
<td>not greater than 0.1% (expressed as percentage sulphate by mass of crushed rock)</td>
</tr>
</tbody>
</table>

- Location of where “tested material” was placed must be indicated on a locality plan

3.1 Sampling and Testing Sub-base and Base Course Material

At the commencement of production or supply of base course material, the Contractor shall take two representative bulk-samples from the first 500t of each material. During placement, the Contractor shall take at least one representative bulk-sample of the material from each successive 2000t of material from each source to be used at the site of the works.

All test results shall be submitted to the Superintendent for approval and shall include at least the information listed in the conformity tables in the preceding paragraphs for the sub-base and base course material.

3.2 Construction

- Delivery and Spreading

Pavement material shall not be placed on the sub-grade or previous layers of pavement until City of Perth Superintendent or Representative has given their approval. Material shall not be placed over a layer weakened by moisture.

Crushed materials, when delivered shall have moisture content with ±2% of the modified optimum moisture content.

Spread material in uniform layers as near as practicable to the required thickness by direct tipping from suitable vehicles. Care shall be taken to avoid segregation of material during tipping and spreading. The tipping of material in heaps and spreading by grader is to be avoided. If material becomes segregated it shall be remixed.
Urban Centres: Reinstatement Policies & Vehicle Restrictions

Paving Material Base

Base for Cross-over

Base for Footpath and Road

95% Minimum Compaction
for Footpath

95% Minimum Compaction
for Road

2x25mm Layers Asphalt Aggregate:
Top Layer - 10mm
Bottom Layer - 16mm

Preferred Height 125mm
Variance from Preferred Height
To Be Approved by Engineer

Standard City Pavers
Supplied by Midland Brick

Barrier Kerb

Compacted Limestone Base

98% Minimum Compaction
for Footpath

150 - 200

150 - 200

150 - 200

300x200 DREAMSTONE Pavers

PAVELock Sand or
Similar Approved
34mm

34mm Maximum
Sand Bedding

12mm Expansion Joint
(CELLULAR TYPE)

Compacted
Limestone Base

98% Minimum Compaction
for Cross-over

Reviewed: 29/06/2018

Design and Construction Note

1001.03

City of Perth

This document has been prepared by The City of Perth and is subject to change. It is the responsibility of
the user to ensure that this Design and Construction Note has no further revisions by checking at www.perth.wa.gov.au/dcnotes
1.0 INTRODUCTION

This specification outlines the City of Perth’s requirements for excavation and reinstatement works carried out by service providers and/or contractors within the City of Perth Urban Centers. Urban Centers may include any area with special treatment to public spaces, footpaths and/or roadways (exclusive of malls. Refer Design and Construction Note 10.1).

These works may include excavations along or across the roadway or footpath in Urban Centers, required for installation of new services, relocations of existing services or for other reasons. The requirements and ability to excavate, reinstate and install services may vary on different Urban Centers. Refer the Design & Construction Note specific to the Urban Center works are being carried out in.

The cost of compliance with the requirements outlined in this specification shall be borne by the service provider and/or the contractor. (referred to as the ‘applicant’).

Prior to undertaking of any works within the Urban Centers, approval is required by applying for a permit. Application forms can be obtained from the City of Perth Approval Services Unit by phone on 08 9461 3411 or from the City of Perth’s web site - www.cityofperth.wa.gov.au

2.0 TRENCHING SCHEDULE

In certain Urban Centers there will be an inability to carry out trench works due to structural fixings beneath the pavement.

Where trench works are able, these works should be organised so as to cause minimal disruption to pedestrians, and businesses in accordance with these guidelines.

In order to avoid disruption to traders, work should be carried out during the following hours:

Monday - Thursday 7.00pm to 7.00am the following day
Friday 10.00pm to 7.00am Saturday
Saturday 6.00pm to 10.00am Sunday
Sunday 6.00pm to 7.00am Monday

Prior to any application being approved a bond may be requested. Refer the Design & Construction Note specific to the Urban Center works are being carried out in.

3.0 ELECTRICAL CABLES AND CCTV CABLES

All necessary care and precautions should be taken to prevent damage occurring to the City of Perth’s electrical and CCTV cables.

Where damage has occurred, the applicant should contact the City of Perth’s Project Officer Electrical on 9461 3122 or mobile 0418916737 or the Police Post to arrange for the replacement of the damaged cables at the applicant’s expense.
4.0 LIFTING OF PAVERS

When lifting off pavers, the pavers should be stacked neatly on the footpath in a location, which will not unduly compromise the safe passage of pedestrians, or obstruct access to businesses and should be suitably barricaded to the approval of the City of Perth Works and Services.

If a suitable site location cannot be provided, pavers must be stored off site in a secure location, inaccessible to the public and to the approval of City of Perth Works and Services.

5.0 REMOVAL OF EXCAVATED MATERIAL

Any excavated material shall be separated and stockpiled separately if the excavated materials are to be used for reinstatement. If not, excavated material must be removed from the site and appropriately disposed of, by the applicant.

6.0 BACKFILLING AROUND DUCTS, PIPES OR CABLES

Prior to backfill operations, all loose rubbish and foreign material should be removed from the trenches.

Sand backfill should be placed around the ducts, pipes or cables and compacted by mechanical means or by watering in.

7.0 TRENCH BACKFILLING

Trenches must be backfilled with limestone and compacted in layers not more than 150mm thick with mechanical rammers to 95% Modified Density, in accordance with AS1289.

8.0 PAVING REINSTATEMENT

Reinstatement of pavement will be particular to the Urban Center which works are being carried out in. Refer the Design and Construction Note specific to the Urban Center related to the works.

If the City of Perth Work and Services Unit is to reinstate the pavement, the applicant shall pay the cost of the works as per a quote from the Construction Supervisor prior to commencement of the reinstatement works.

9.0 MAINTENANCE PERIOD

The applicant is responsible for the cost of any maintenance of the reinstatement works for a period of 12 months from completion, to a standard that is acceptable to the City of Perth, if the reinstatement is carried out by the applicant.

Where the applicant is required to undertake additional works due to a defect occurring during the maintenance period, the maintenance shall be extended for 3 months from when the Manager, Works and Services is notified of the completion of the additional works or to the end of the original maintenance period, whichever is longer.
1.0 INTRODUCTION

This specification outlines the City of Perth's requirements for excavation and reinstatement works carried out by service providers and/or contractors within the City of Perth Malls. These works may include excavations along or across the roadway or footpath in the Malls, required for new service installations, relocations of existing services or for other reasons.

The cost of compliance with therequirements outlined in this specification shall be borne by the service provider and/or the contractor. (referred to as the 'applicant').

Prior to undertaking of any works within the Malls, approval is required by applying for a permit. Application forms can be obtained from the City of Perth Approval Services Unit by phone on 08 9461 3411 or from the City of Perth's web site - www.cityofperth.wa.gov.au

2.0 TRENCHING SCHEDULE

Works should be organised so as to cause minimal disruption to pedestrians, and businesses in accordance with these guidelines.

In order to avoid disruption to traders, work should be carried out during the following hours:

Monday - Thursday 7.00pm to 7.00am the following day
Friday 10.00pm to 7.00am Saturday
Saturday 6.00pm to 10.00am Sunday
Sunday 6.00pm to 7.00am Monday

Prior to any application being approved a bond of $450 per square metre or linear metre, whichever is greater, must be paid.

3.0 ELECTRICAL CABLES AND CCTV CABLES

All necessary care and precautions should be taken to prevent damage occurring to the City of Perth's electrical and CCTV cables.

Where damage has occurred, the applicant should contact the City of Perth's Project Officer Electrical on 9461 3122 or mobile 0418916737 or the Police Post to arrange for the replacement of the damaged cables at the applicant's expense.

4.0 LIFTING OF PAVERS

When lifting of granite pavers within the Malls, the granite pavers should be stacked neatly on the footpath in a location, which will not unduly compromise the safe passage of pedestrians, or obstruct access to businesses and should be suitably barricaded to the approval of the City of Perth Operations Unit.

If a suitable site location cannot be provided, granite pavers must be stored off site in a secure location, inaccessible to the public and to the approval of City of Perth Operations Unit.

5.0 REMOVAL OF EXCAVATED MATERIAL

Sand and limestone shall be separated and stockpiled separately if the excavated materials are to be used for reinstatement. If not, excavated material must be removed from the site and appropriately disposed of, by the applicant.
6.0 BACKFILLING AROUND DUCTS, PIPES OR CABLES

Prior to backfill operations, all loose rubbish and foreign material should be removed from the trenches.

Sand backfill should be placed around the ducts, pipes or cables and compacted by mechanical means or by watering in.

7.0 TRENCH BACKFILLING

Trenches must be backfilled with limestone and compacted in layers not more than 150mm thick with mechanical rammers to 95% Modified Density, in accordance with AS1289.

8.0 PAVING REINSTATEMENT

OPTION 1:

The applicant may reinstate the granite pavers for all excavations to comply with the details shown in this specification, (see page 3 of this Design and Construction Note 10.1), and to the satisfaction of the City of Perth Construction Supervisor. If any of the pavers have been damaged, they are to be replaced with new pavers at cost to the applicant.

All work associated with the reinstatement of the pavers should comply with the requirements specified on page 3 of this Design and Construction Note 10.1

OPTION 2:

If the City of Perth Work and Services Unit is to reinstate the granite pavers, the applicant shall pay the cost of the works as per a quote from the Construction Supervisor prior to commencement of the reinstatement works.

9.0 MAINTENANCE PERIOD

The applicant is responsible for the cost of any maintenance of the reinstatement works for a period of 12 months from completion, to a standard that is acceptable to the City of Perth, if the reinstatement is carried out by the applicant.

Where the applicant is required to undertake additional works due to a defect occurring during the maintenance period, the maintenance shall be extended for 3 months from when the Manager, Work and Services is notified of the completion of the additional works or to the end of the original maintenance period, whichever is longer.
GREEN GRANITE TILES 148x148x40
BUILDING LINE
2-3mm SPACING
450x450 (WATER AND GAS SERVICE PIT AND LID)

GREEN GRANITE PAVERS EXFOLIATED FINISH 450x300x75
GREEN GRANITE TILES 148X148X40 LAID TO FIT SURROUNDING PAVING. ALL CUTS TO BE MADE AGAINST FRAME TO PIT COVER
640x400 SERVICE PIT AND LID (TELECOMMUNICATIONS)
DRAINAGE BEAM HEADER COURSE

NOTES

1. SNAP THE LOCATION OF THE PIT LID AND FRAME TO THE GRID CREATED BY THE 450X300X75 PAVERS WHERE POSSIBLE.

2. WHEN IT IS NOT POSSIBLE TO SNAP TO THE GRID DUE TO THE POSITION OF THE SERVICE, THE SURROUNDING TILES MAY BE CUT TO A MINIMUM OF 75mm.
10.0 SERVICE PIT COVERS

All new service access covers should be installed beneath the granite pavers. Upon request, the City of Perth shall consider permitting service covers installed at pavement level.

The following best practise design and construction standards shall apply:

Service authorities and telecommunication providers shall use infill covers to match the existing covers for the Mall. These covers may be purchased via the City’s Operations Unit. A minimum of seven weeks notice must be given for the purchase.

All work associated with the pits and lids should comply with the requirements specified in the details on pages 4 - 7 of this Design and Construction Note 10.1.

Following is an indication of the type of pit lids currently in use.

<table>
<thead>
<tr>
<th>LID TYPE</th>
<th>SIZE</th>
<th>LOGO</th>
<th>TYPE OF SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wang 3</td>
<td>635x605</td>
<td>incorporated on lid</td>
<td>Telstra</td>
</tr>
<tr>
<td>Wang 5</td>
<td>650x400</td>
<td>100x100 embedded brass plaque</td>
<td>Telecom West. Power Electrical</td>
</tr>
<tr>
<td>Wang 6</td>
<td>650x500</td>
<td>100x100 embedded brass plaque</td>
<td>Telecom West. Power CCTV Irrigation</td>
</tr>
<tr>
<td>City of Perth</td>
<td>450x450</td>
<td>50dia disc Aluminium</td>
<td>Water Gas FESA Irrigation</td>
</tr>
</tbody>
</table>

Typical Logo insert for Wang 5 and Wang 6 Pit Lids. Includes services for Telecom, CCTV, Electrical, Irrigation and Western Power.

Logo inserts for City of Perth Pit Lids. Includes services for Water Corporation, Gas, FESA and Irrigation.
This document has been prepared by The City of Perth and is subject to change. It is the responsibility of the user to ensure that this Design and Construction Note has no further revisions by checking at www.perth.wa.gov.au/dcnotes

Reviewed: 29/06/2018

BOOK 1000 - Issued For Use

Design and Construction Note

1002.05

Pedestrian Malls Reinstatement Policy

Urban Centres: Reinstatement Policies & Vehicle Restrictions

City of Perth

PLAN

WANG 3

ELEVATION

LOGO INSERT
FOR CITY OF PERTH SERVICE PIT

LOGO DISK, INSERTED

UTILITIES "LOGO" DISK

58Ø RECESS TO TAKE "LOGO" DISC.
5mm DEEP HOLE

LOGO

WANG 3
NOTES:
LOGO INSERTS SUPPLIED BY CITY OF PERTH
OR ALTERNATIVE SUPPLIER.
ADHESIVE FOR INSERTS: SIKA FLEX 252,
SURFACE TO BE PREPARED WITH SIKA
CLEANER 205 AND SIKA PRIMER 210T

2mm GAP BETWEEN BASE OF
LOGO INSERT AND GRANITE
TO ALLOW FOR EPOXY

LOGO MUST SIT FLUSH WITH
TOP OF GRANITE.
THERE IS TO BE NO GAP BETWEEN
EDGES OF LOGO AND GRANITE INFILL

LOGO INSERT
FOR WANG 5 PITS
LOGO INSERTS SUPPLIED BY CITY OF PERTH OR ALTERNATIVE SUPPLIER.

ADHESIVE FOR INSERTS: SIKA FLEX 252,
SURFACE TO BE PREPARED WITH SIKA CLEANER 205 AND SIKA PRIMER 210T

LOGO MUST SIT FLUSH WITH TOP OF GRANITE,
THERE IS TO BE NO GAP BETWEEN EDGES OF LOGO AND GRANITE INFILL

2 mm GAP BETWEEN BASE OF LOGO INSERT AND GRANITE TO ALLOW FOR EPOXY

NOTES:

LOGO INSERTS SUPPLIED BY CITY OF PERTH OR ALTERNATIVE SUPPLIER.

ADHESIVE FOR INSERTS: SIKA FLEX 252,
SURFACE TO BE PREPARED WITH SIKA CLEANER 205 AND SIKA PRIMER 210T

LOGO MUST SIT FLUSH WITH TOP OF GRANITE,
THERE IS TO BE NO GAP BETWEEN EDGES OF LOGO AND GRANITE INFILL

2 mm GAP BETWEEN BASE OF LOGO INSERT AND GRANITE TO ALLOW FOR EPOXY
WEIGHT OF VEHICLES AND MACHINERY

Only vehicles and machinery listed on this page are permitted into the Malls, subject to the following restrictions:

VEHICLES AND MACHINERY

- Types 1, 2 & 3, no bond required;
- Greater than Type 3 and less than Type 4, and without outriggers, bond of $1000 per linear metre of vehicle length.
  Must travel on suitable plinths and the tyres must also be on suitable plinths once stationary;
- Greater than Type 3 and less than Type 4, with outriggers, bond of $2000 per linear metre of vehicle length.
  Must travel on suitable plinths and the tyres must also be on suitable plinths once stationary.

OUTRIGGERS

- Outriggers must be placed on suitable plinths only and the minimum plinth size must be 750x750x75mm for a point load of 2.7 tonne;

GROSS VEHICLE MASS (GVM) NOT TO EXCEED 5 TONNE

GROSS VEHICLE MASS (GVM) NOT TO EXCEED 14 TONNE

GROSS VEHICLE MASS (GVM) NOT TO EXCEED 20 TONNE

GROSS VEHICLE MASS (GVM) NOT TO EXCEED 34 TONNE, AND MUST BE ON SUITABLE PLINTHS ONCE STATIONARY
NOTE:
- PIT MODIFICATION BY TELSTRA, OTHER COMMUNICATION PROVIDER OR CITY OF PERTH.
- ALL CONCRETE COLLARS - NOMINAL 150mm WIDE, 100mm DEEP.
- RE-INSTATMENT BY CITY OF PERTH. COMMUNICATION PROVIDER RESPONSIBLE FOR ALL COSTS INCURRED.
TOP OF TYPICAL PIT LID FRAME
WITH GRANITE INFILL

2mm GAP BETWEEN BASE OF LOGO INSERT AND GRANITE TO ALLOW FOR EPOXY

LOGO INSERT
LOGO MUST SIT FLUSH WITH TOP OF GRANITE.
THERE IS TO BE NO GAP BETWEEN EDGES OF LOGO AND GRANITE INFILL

ELEVATION

FONT: HELVETICA MEDIUM
SIZE: 8mm

ELECTRICITY
FP2

BACKGROUND COLOUR:
DULUX SPECTRUM 9305B

100x100x6mm CAST BRONZE PLAQUE

LOGO INSERT

SCALE 1:2
THE PEDESTRIAN STICK LIGHT USED IN THE MALLS IS FROM THE LIGHTSTEELE IV SERIES' DESIGNED BY ORNARE LIGHTING. SUPPLIED BY: MONDOLUCE SUITE 69 PLAISTOWE MEWS CITY WEST, WEST PERTH.

SPECIFICATION
LIGHT SOURCE: H7 (G 121) 70W ind.
LUMEN: 6680
COLOUR: WHITE RAL 9002
CODE: 9769
NOTE:

1. Entire grate and angle is to be hot dip galvanised.

2. Ensure grate is pressed flat after galvanising.
NOTE:

Gully Grates and Frames supplied by:
Icon-Septech Pty Ltd
PO Box 174
Gosnells WA 6990

Gully Grates and Frames designed by:
City of Perth - Urban Development Unit
to fit existing drainage beam in Hay Street Mall.

Gully grates and frames supplied by:
Icon-Septech Pty Ltd
PO Box 174
Gosnells WA 6990
- Tactile floor indicators to paving, incorporating:
  - Proprietary item: LATHAM LTSSI (with 25mm long stud) spiral top tactile ground surface indicator studs.
  - Finish: Mill finish grade 316 stainless steel
  - Installation: Set out to comply with AS 1428.4 and epoxy into stone paving as recommended by the manufacturer

- Expansion joints (major) in paving corresponding to shrinkage joints in the concrete substrate, incorporating:
  - Proprietary item: CONSTRUCTION SPECIALTIES Metazeal MZ25 compressed foam sealing strip
  - Nominal joint width: 13mm
  - Locations:
  - Installation: In accordance with the manufacturer’s recommendations.

- Control Joints in paving; incorporating:
  - Proprietary item: TREMCO Dymonic NT elastomeric polyurethane sealant
  - Nominal joint width: 6mm
  - Locations:
  - Installation:

- Basalt (Bluestone) kerbing, incorporating:
  - Supplier: BAM STONE
    Address: PO Box 156 Port Fairy, VIC 3284
    Contact: Tony Rowe (phone 03-5568 2655 or 0419 522 709)
  - Straight, barriers: Size ex. 300x300mm x 800-1200mm long
  - Radial pieces, barriers: Size as detailed; ex. 300x300mm cross-section
  - Semi-mountable kerbs: Size as detailed.
  - Pram ramps: Size as detailed

TOTAL SYSTEM:

General: The contractor shall be entirely responsible for the method for fixing stonework, together with the supply of materials, workmanship, and completion of work included in this trade section of the specification, which may require consultation with other trades in complying with this intent.

STANDARDS

Included: The following standards and codes are applicable to the works included in this specification, and unless otherwise described shall be regarded as describing the minimum standard of materials and workmanship to be provide.

Standards and Codes Schedule:
- AS 1379-1997 The specification and supply of concrete
- AS 2758.1-1998 Aggregates and rock for engineering purpose - Concrete aggregates
- AS 3600-2001 Concrete Structures
- AS 3958.1-2007 Ceramic tiles - Guide to the installation of ceramic tiles
- AS 3972-1997 Portland and blended cements
- AS/NZS 4586-1999 Slip resistance classification of new pedestrian surface materials
- AS/NZS 4663-2002 Slip resistance measurement of existing pedestrian surfaces
- AS HB197-1999 An introductory guide to the slip resistance of pedestrian surface materials

ADHESIVE

Pre-Preperation:
- Removal of sand, oils and deleterious products from surface of concrete with the use of brooms and pressure washer.
- Check line level and setout as per existing pattern.
- Paving colours checked and pellets set within area prior to laying (Colours mixed)

General: Adhesive to be monoflex tile adhesive or approved equivalent. Apply as per manufacturers specification.
6.0 STONE INSTALLATION

INSTALLATION

Visual Variations:
Requirement: If the natural stone has a range of variation in colour, pattern, texture or surface finish, distribute the stone throughout the works so the local concentrations of similar variations do not occur.

Surveying & work sequence:
Setting out: It is the Contractor’s responsibility to provide precise setting out points and levels for the stonework.

Cleaning stonework:
General: Clean stonework progressively as the work proceeds. Clean stonework to remove mortar smears, stains and discolouration.
Methods: Do not use acid as this will discolor the stone material, but use an approved method using clean water only. Provided details for approval prior to commencing stonework.

Laying tolerances
General: Laying of stone shall be carried out to the following tolerances:
- Deviation from the levels or vertical plane indicated: ± 3mm
- Deviation of paving and stone walls over a 3 metre straight edge: ± 3mm, non-accumulative
Maximum deviation across joints: 2mm

MORTAR BEDDING & GROUT

Grout:
Sand stockpile:
Colour control: Provide evidence that sufficient quantity of sand has been stockpiled off-site so as to provide consistency of colour for grouting mixes.
Keep stockpiled sand dry.

Bond:
Patterns: Bond the masonry as required.

Control joints locations - dimensioned stone: In approved locations or at no more than 5.0x5.0 metre centres and at junctions of different stone material.

Control joint locations - cobble stones: In approved locations and at the junctions of different stone material.

Structural shrinkage joint locations: In approved locations only.

SURFACE TREATMENTS

Surface sealing after cleaning:
General: Seal exposed faces of stone to protect the material from soiling. Apply Spirit Water Based Premium Seal as per manufacturer’s specification to paving surface and allow 24 hours to dry prior to opening up. The use of acid for cleaning the stonework is forbidden, as the acid will stain the stone material.
Provisional sealing material:
SPIRIT MARBLE & TILE CARE - Spirit Premium Seal,
applied as recommended by manufacturer.

Application:
General: Apply sealing material in accordance
with the manufacturer's recommendations.

Cleaning:
Cleaning: Leave the stonework clean on
completion

GROUT JOINTING

General:
- Mix Epirez Super-strength grout to
  manufacturers specifications and screed in
to paving gaps
- Wipe excess off paving surface and clean
  surface with damp sponge

Requirement: Carry out jointing and pointing
simultaneously to form a homogenous bed.

Form: Raked to a depth as determined in the
prototype area.

Joints:
Size (mm):
- Cobble stones: 8mm nominal; ± 2mm
- Dimensioned (finished) stone: 5mm
  nominal; ± 2mm

Jointing material: Grout is to match an
approved sample; that is mid-grey using
selected sand and normal Portland cement.

EXPANSION JOINTS

Description:
General: Provide expansion joints in the stone
paving that corresponds to the structural
shrinkage joints in the concrete substrate.

Joints widths:
- Structural shrinkage joints: 7mm
  nominal; that may expand up to 17mm
  and contract due to thermal
  movement up to 2mm
- Expansion joints in stone paving
  located over structural shrinkage joints:
  13mm wide nominal width that could
  expand up to 23mm wide

Joint filler in stonework: CONSTRUCTION
SPECIALTIES Metazeal MZ25 that is
compressed to fit into the 13mm wide joint.
Material is 25mm in its relaxed state and can
expand up to 31mm in width.

Installation of joint filler:
General: Install Metazeal MZ25 in
accordance with the manufacturer's
recommendations, including masking the
joints and bonding the filler material each
side of the joint to the stonework. Top of the
joint filler shall match the adjacent grouted
joints.

CONTROL JOINTS

Description:
General: Provide control joints in stone
paving and walling to prevent cracking due
to thermal movement and shrinkage of the
concrete substrate.
Approval of locations: Unless an already
approved location, obtain approval prior to
setting out for the position of all control joints.

Filler material:
System: Use compatible sealant and bond
breaking backing materials that are
non-staining to masonry. Do not use
bituminous materials with absorbant masonry
units.
- Back-up rods: Closed cell polyethylene
- Primer: As recommended by the
  manufacturer; and
- Elastomeric sealant: Single component
  polyurethane

Elastomeric sealant: Equivalent to TREMCO
Dymonic NT.

Installation:
Cleaning: Clean out all joints thoroughly
before sealing.

Nominal Joint width: 6mm

Elastomeric sealant depth: Depth to be a
minimum of 50% of joint width with minimum
depth and width of the sealant of 6mm.
7.0 BLUESTONE KERBING

BLUESTONE INSTALLATION

Cutting:
Requirement: Perform the necessary cutting and shaping of stone to designated profiles including weathering, jointing, chasing, forming grooves and drilling for handling and fixing. Work the bed, face and back joints of the stone, square and true.

Visual Variations:
Requirement: If the quality control sample panels have a range of variation in colour, pattern, texture or surface finish, distribute the production panels throughout the work so that local concentrations of similar variations do not occur.

Bedding:
Requirements: Remove dust and foreign material from the bedding surface. If necessary adjust the moisture content of the stone unit so that adverse effects, such as reduced bond, are kept within acceptable limits. Where possible, bed and joint the stone in one operation. Lay each stone on a full bed of mortar. Solidly fill and grout vertical joints, joggles and joggles and cramps as the work proceeds. Point up joints around flashing as necessary.

Temporary support:
General: Provide support as necessary to the stone while the mortar is curing, using bracing, joint spacers, or both.

Bracing and joint spacers: Non-damaging and non staining softwood wedges or laths soaked in water. Do not allow metal pinch bars to bear directly on the stone.

Bonding:
Requirement: Bond the masonry as required, and as necessary to provide stability and monolithic structural action to the stonework assembly.

Laying stone kerbing:
Preparation: The underside of the bluestone shall be coated with a cement slurry.

Cutting: The Contractor shall allow for all cutting of bluestone kerbing with an approved diamond saw.

Placing: After the required drying time has expired, the bluestone kerbing shall be laid with the bevel face as the finished surface and set in the cement mortar mix while it is still freely workable. The coloured cement mortar mix shall be grouted into the gaps, raked to a depth of 2mm below the surface level then ironed. Failure to lay the slabs in the mortar while it is still workable and manageable shall result in the entire condemnation and removal of the paving and the cement mortar base.

Tolerances in kerbing: Finished surfaces shall be uniform and even, conforming to the following tolerances:
- Departure from design level: Not more than 5mm
- Lipping of adjacent units: Not more than 1mm
- Departure from a 2 metre long straight edge placed longitudinally to the kerbing: Shall not exceed 2mm

Cleaning: After creating a uniform, evenly graded surface, the slabs shall then be cleanly washed, and pedestrian traffic prevented from access over the kerbing for at least 24 hours, or as otherwise directed.

JOINTING & POINTING BLUESTONE

General:
Requirement: Carry out jointing and pointing simultaneously to form a homogeneous bed.

Joints:
Size (mm): 5mm

Jointing material between bluestone: coloured mortar, as previously specified.

Isolation joints:
Joints around vertical abutments: 10mm thick ABELFLEX closed cell polyethylene
8.0 SELECTIONS

SEALANT JOINTING AT CONTROL JOINTS

Preparation for jointing:
Requirement: Immediately before jointing remove loose particles from the joint, using oil-free compressed air.

Joints in cobble stonework: Use back to back natural anodised aluminium angles to determine the location of control joints in cobble stonework; generally in approved locations or a maximum 12x12 metre centres, ready for sealing with the elastomeric sealant material.

Jointing at building line:
Joint material between building line and pavement is to be ABELFLEX.

Joints in dimensioned stone paving: Control joints in dimensioned stone are to align with saw cuts in the wearing slabs under the stonework, located at 5x5 metre maximum centres; do not bridge control joints in slabs.

Joints in kerbing: Control joints in kerbing are to be located in approved locations. Joints shall have the following properties:
- Control joints between kerbing pieces: 5mm wide sealed joint
- Control joints between kerbing pieces and dimensioned stone: 7mm wide sealed joint

Taping:
Protect the stonework surface on each side of the joint using 50mm wide masking tape or equivalent means. On completion of pointing remove the tape and remove any stains or marks from the stonework surface.

Sealant proportions:
Depth of elastomeric sealant: One half the joint width, or 6mm, whichever is the greater.
1. AFTER CUTTING TRENCH, EXPOSED RE-INFORCEMENT SHOULD BE TREATED TO PREVENT CORROSION
2. IF THE PIT REQUIRES A COLLAR FOR STRENGTH, IT SHOULD BE FORMED BELOW THE PAVING LEVEL AND LAY THE PAVEMENT ON TOP OF THE COLLAR AS PER PAVING INSTALLATION
Urban Centres: Reinstatement Policies & Vehicle Restrictions
Northbridge Piazza
Reinstatement Policy

RE-INSTATED PAVING WITH A 95x95x40mm HEADER COURSE TO MATCH SURROUNDING PAVING
INFILL TO MATCH SURROUNDING PAVING

REFER ENLARGEMENT

PAVING ENLARGEMENT

IF IT IS THEN THE PAVER IS TO BE CUT ALONG THIS LINE

PAVING AND SLAB CUT LINE

BUILDING LINE
9.0 Service Pit Covers

All new service access covers should be installed beneath the stone pavers. Upon request, the City of Perth shall consider permitting service covers installed at pavement level.

The following best practice design and construction standards shall apply:

Service authorities and telecommunication providers shall use infill covers to match the existing covers for the Piazza. These covers may be purchased via the City's Works and Services Unit. A minimum of seven weeks notice must be given for the purchase.

All paving for the Northbridge Piazza is laid on a 100-250mm concrete slab. Service providers will need to cut through the slab when installing a new service pit. The correct process is specified on page 1 of this Design and Construction Note 11.2

All work associated with the pits and lids should comply with the requirements specified in the details on pages 3 - 6 of this Design and Construction Note 11.2

<table>
<thead>
<tr>
<th>Lid Type</th>
<th>Size</th>
<th>Logo</th>
<th>Type of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wang 3</td>
<td>635x605</td>
<td>incorporated on lid</td>
<td>Telstra</td>
</tr>
<tr>
<td>Wang 5</td>
<td>650x400</td>
<td>100x100 embedded brass plaque</td>
<td>Telecom West. Power Electrical</td>
</tr>
<tr>
<td>Wang 6</td>
<td>650x500</td>
<td>100x100 embedded brass plaque</td>
<td>Telecom West. Power CCTV Irrigation</td>
</tr>
<tr>
<td>City of Perth</td>
<td>450x450</td>
<td>50dia disc Aluminium</td>
<td>Water Gas FESA Irrigation</td>
</tr>
</tbody>
</table>

Following is an indication of the type of pit lids currently in use.

Typical Logo insert for Wang 5 and Wang 6 Pit Lids. Includes services for Telecom, CCTV, Electrical, Irrigation and Western Power.

Logo inserts for City of Perth Pit Lids. Includes services for Water Corporation, Gas, FESA and Irrigation.
Urban Centres: Reinstatement Policies & Vehicle Restrictions

Northbridge Piazza
Reinstatement Policy

Reviewed: 29/06/2018

Design and Construction Note
1003.10

This document has been prepared by The City of Perth and is subject to change. It is the responsibility of the user to ensure that this Design and Construction Note has no further revisions by checking at www.perth.wa.gov.au/dcnotes
Urban Centres: Reinstatement Policies & Vehicle Restrictions
Northbridge Piazza
Reinstatement Policy

PLAN

650
275
275

ELEVATION

630
265
100
265

WANG 5

2mm GAP BETWEEN BASE OF LOGO INSERT AND STONE TO ALLOW FOR EPOXY

LOGO MUST SIT FLUSH WITH TOP OF STONE. THERE IS TO BE NO GAP BETWEEN EDGES OF LOGO AND STONE INFILL

NOTES:
LOGO INSERTS SUPPLIED BY CITY OF PERTH OR ALTERNATIVE SUPPLIER.
ADHESIVE FOR INSERTS: SIKA FLEX 252,
SURFACE TO BE PREPARED WITH SIKA CLEANER 205 AND SIKA PRIMER 210T

LOGO INSERT FOR WANG 5 PITS
Design and Construction Note
1003.12
Urban Centres: Reinstatement Policies & Vehicle Restrictions
Northbridge Piazza
Reinstatement Policy
Reviewed: 29/06/2018

Plan

Elevation

WANG 6

Notes:
Logo inserts supplied by City of Perth or alternative supplier.
Adhesive for inserts: Sika Flex 252.
Surface to be prepared with Sika Cleaner 205 and Sika Primer 210T.

Logo must sit flush with top of stone. There is to be no gap between edges of logo and stone infill.

2mm gap between base of logo insert and stone to allow for epoxy.
NOTE:
- Pit modification by Telstra, other communication provider or City of Perth.
- All concrete collars - nominal 150mm wide, 100mm deep.
- Re-instatement by City of Perth. Communication provider responsible for all costs incurred.
TOP OF TYPICAL PIT LID FRAME
WITH STONE INFILL

2 OFFSET

2mm GAP BETWEEN BASE OF LOGO INSERT AND STONE TO ALLOW FOR EPOXY

LOGO INSERT
LOGO MUST SIT FLUSH WITH TOP OF STONE, THERE IS TO BE NO GAP BETWEEN EDGES OF LOGO AND STONE INFILL

ELEVATION

FONT: HELVETICA MEDIUM
SIZE: 8mm

ELECTRICITY
FP2

BACKGROUND COLOUR:
DULUX SPECTRUM 9305B

100x100x8mm CAST BRONZE PLAQUE

LOGO INSERT
SCALE 1:2
Non-standard Tree Grate with Infill (Design and Construction Note 11.4b) is to be used for all mature trees which cannot be planted in the standard sized tree well.
Design and Construction Note

1003.17

Urban Centres: Reinstatement Policies & Vehicle Restrictions

Northbridge Piazza

Tree Grate - ACO Powerdrain

Reviewed: 29/06/2018

PLAN

1200

3x75# PVC PIPES (EXTEND 200 INTO TREE WELL WITH 1/200 SLOPE)

PAVING

KERB

ACO POWERDRRAIN
SK2-020

SLAB ALTERED TO SUIT LEVEL OF TREE GRATE

TREE GRATE

NON-TYPICAL 150x300x500mm SAWN BLUESTONE KERB WITH 25mm BULLNOSE. TYPICAL KERB FACE HEIGHT 100mm

MIN 35 MPa BRIGHT TO BOTTOM OF KERB

ACO POWERDRRAIN SLOTTED DUCTILE IRON SK2-020

SURROUNDING CONCRETE STRENGTH TO MATCH ROAD REINFORCED CONCRETE SLAB STRENGTH

INCREASE SLAB THICKNESS LOCALLY AT ACO DRAIN LOCATIONS

3x75# PVC PIPES (EXTEND 200mm INTO TREE WELL WITH 1/200 SLOPE)

OPTIONAL 100# PVC PIPE FOR OVER FLOW, CONNECT TO EXISTING STORMWATER DRAIN

COMPACTED SUBGRADE

SECTION A-A

Book 1000 - Issued For Use  This document has been prepared by The City of Perth and is subject to change. It is the responsibility of the user to ensure that this Design and Construction Note has no further revisions by checking at www.perth.wa.gov.au/dcnotes

SHEET 1 of 1
1.0 INTRODUCTION

This specification outlines the City of Perth's requirements for excavation and reinstatement works carried out by service providers and/or contractors within St Georges Tce, between William St - Barrack St. These works may include excavations along or across the roadway or footpath, required for new service installations, relocations of existing services or for other reasons.

The cost of compliance with the requirements outlined in this specification shall be borne by the service provider and/or the contractor (Referred to as the 'applicant').

Prior to undertaking of any works, approval is required by applying for a permit. Application forms can be obtained from the City of Perth Approval Services Unit by phone on 08 9461 3411 or from the City of Perth's website - www.cityofperth.wa.gov.au

Once City of Perth Approvals unit has received a notice of Land Access Certificate from the applicant to access the road reserve for the laying of their conduits, the Approvals unit should notify the Works & Services External Services Coordinator for reviewing the alignment and giving formal approval for laying conduits. If the alignment and depth do not comply with the Utility code of practice guidelines, the request shall need to be referred to the City Design Principal Engineer for approval.

The procurement of materials listed in this specification and following St Georges Tce Design & Construction Notes to be through recommended suppliers as listed on the suppliers page: 10.30

2.0 STANDARDS

All procedures described within this specification are to comply with appropriate Australian Standards. It is up to the applicant to ensure that all works carried out are to a safe and high quality standard.

Particular standards that are required to be met are stated below:

- **AS 1160** Bituminous emulsions for the construction and maintenance of pavement.
- **AS 1289** Methods of testing soils for engineering purposes.
- **AS 2008** Residual bitumen for pavements.
- **AS 2157** Cutback bitumen.
- **AS 2758** Aggregates and rock for engineering purposes.
- **AS 3610** Formwork for concrete.
- **AS 3799** Liquid membrane - forming curing compounds for concrete.
- **AS 3958.1** Ceramic tiles - Guide to the installation of ceramic tiles.
- **AS/NZS 4586** Slip resistance classification of new pedestrian surface materials.
- **AS/NZS 4663** Slip resistance measurement of existing pedestrian surfaces.
- **AS/NZS 4671** Steel reinforcing materials.
- **AS HB 197** An introductory guide to the slip resistance of pedestrian surface materials.
- **EN 14889-1** European Standards: Fibres for concrete; Steel fibres - Definitions, specifications and conformity.

3.0 SCHEDULING

Works should be organised so as to cause minimal disruption to pedestrians, and businesses in accordance with these guidelines.

In order to avoid disruption to traders, work should be carried out during the following hours:

- Monday - Thursday 7.00pm to 7.00am
- Friday 10.00pm to 7.00am
- Saturday 6.00pm to 10.00am
- Sunday 6.00pm to 7.00am

Monday - Thursday 7.00pm to 7.00am the following day
Friday 10.00pm to 7.00am Saturday
Saturday 6.00pm to 10.00am Sunday
Sunday 6.00pm to 7.00am Monday
4.0 SITE MANAGEMENT

Soil erosion, sediment and litter from works conducted within the road reserve can be a major source of stormwater pollution. These guidelines must be followed by those excavating or trenching in the road or footpath to lay cables and pipes or to conduct any road works like paving and resurfacing.

4.1 Site Enclosure

The work site should be enclosed by an approved barrier or fence. Materials to be used in the works should be scheduled to avoid any stockpiles on site.

4.2 Noise Pollution

For the management of noise pollution, the appropriate EPA Noise Pollution Requirements are to be followed.

4.3 Pollutants

Activities such as the cutting of bricks, tiles, masonry; concrete works, washing of tools and painting equipment should be done in designated areas. Where practicable, these activities should be done on a permeable surface where pollutants can be contained (e.g. Grass, sand or loosened soil). This especially applies to water cooled cutting equipment that can generate significant quantities of polluted wastewater. Concrete mixers and trucks should not be washed in the road or footpath.

4.4 Hard Waste

All hard waste should be stored in such a manner that it is prevented from leaving the site either by the action of wind or water. Smaller materials such as litter should be contained in covered bins or litter traps. Wastes should be recycled or taken to authorised disposal sites that are appropriate for the types of waste generated from the site. Collection events should be scheduled to prevent waste containers from overfilling.

4.5 Spill of Materials

Accidental spills of soil or other materials into the road, gutter or drains should be removed expeditiously, at least upon completion of each days work and prior to storms. Materials should be swept from the road - not washed down the gutter. Sediment barriers should be located within enclosed site for reasons of safety and sediment control efficiency. Following storm events, the road reserve and all sediment barriers should be inspected and any excessive sediment residue should be appropriately removed.

4.6 Sediment

All ground disturbed by construction activity in the road or footpath should be promptly removed or progressively stabilised so that it can no longer act as a source of sediment.

5.0 ELECTRICAL & COMMUNICATION CABLES

5.1 General

All necessary care and precautions should be taken to prevent damage occurring to the City of Perth's electrical and CCTV cables. Where damage has occurred, the applicant should contact the City of Perth's Electrical Project Officer on 9461 3757 or mobile 0407657085 or the Police Post on 9229 2970 to arrange for the replacement of the damaged cables at the applicant’s expense.

5.1 National Broadband Network [NBN]

Access to conduits under the NBN Scheme is monitored by Telstra. For application to access and use these conduits contact:

Telstra,
Damage Minimisation, Asset Relocations & Commercial Works Network Integrity.
T: 1800 810 443
6.0 TRENCHING

Trenching requires approval from the City of Perth, City Design Engineers.

Trenching in the Footpath: The paving along St Georges Tce (William St - Barrack St) is attached to a fibre reinforced concrete slab by adhesive tile glue. To trench in the footpath, Pavers and slab must be saw cut and removed. All removed material must be disposed and not used for reinstatement. Pavers along cut line and damaged pavers must be entirely removed, and not used for reinstatement.

Trenching in the Roadway: Method of trenching to be determined by applicant. If the excavated materials are to be used for reinstatement, limestone shall be stockpiled separately. If not, excavated material must be removed from the site and appropriately disposed of, by the applicant.

Prior to approval: Method of cutting and excavation must be submitted to City of Perth, City Design Engineers. A bond of $1000 per square metre or linear metre, whichever is greater, must be paid.

7.0 INSTALLATION OF NEW PIT

This requires approval from the City of Perth, City Design Engineers. Applicants should submit method of removal of stone and slab. Applicants shall be responsible for reinstatement of paving and slab as per city's requirement. Service Pits are covered in Chapter 14 of this specification.

8.0 BACKFILLING

Prior to backfill operations, all loose rubbish and foreign material should be removed from the trenches.

Sand backfill should be placed around any ducts, pipes or cables and compacted by mechanical means or by watering in.

Trenches must be backfilled with limestone and compacted in layers not more than 150mm thick with mechanical rammers to 95% Modified Density, in accordance with AS1289.

9.0 REINSTATEMENT OF FOOTPATH

The applicant should reinstate the granite stone pavers & concrete slab, to comply with the details shown in this specification and to the satisfaction of the City of Perth Maintenance Supervisor. If any pavers have been damaged, they are to be replaced with new pavers at cost to the applicant.

All work associated with the reinstatement of the pavement should comply with all requirements and details specified in the St Georges Tce Design and Construction Notes.

9.1 Concrete

Prior to reinstating the concrete slab on the footpath the sub-grade must be compacted to a minimum of 95% maximum dry density.

IMPORTANT: All structures and sub-structures removed during works must be reinstated, this includes: Expansion and Isolation Joints. All related Steel Reinforcement; and Gas vents.

For Gas vents refer chapter 13 of this specification and details specified in the St Georges Tce Design and Construction Notes.

All reinstated concrete to be Fibre Reinforced Concrete, fibres as stated below. Concrete strength to be C32/40 with a maximum 20mm aggregate.

Fibre Name: Dramix
Fibre Type: RC 65 / 60 BN
Fibre Dosage: 20kg/m3.
Supplier code: DC103.02 (supplier list: 10.30)
Mix concrete until all materials are uniformly dispersed and every particle of aggregate is coated with mortar. Place concrete into final position by conveyor, skip, chute or shovelling within 90 minutes of the cement placed into the mixer, so segregation and loss of fluids does not occur.

Once placed concrete must be fully compacted by mechanical vibrator. Vibrators shall be withdrawn from the concrete slowly at a speed not exceeding 25mm per second so that the void created by the vibrator closes behind it. Care shall be taken that vibrators be kept out of contact with reinforcement and formwork. Concrete shall be cured for seven days by covering with an approved sealed waterproof membrane kept in contact with the concrete which is kept moist at all times.

9.2 Granite Paving

The granite paving to be used is called Austral Verde. Finish to be exfoliated. Stone type to be confirmed by Geological Survey of Western Australia as being the correct stone type. The applicant shall be liable for any additional costs associated with allowing for the correct stone type.

Supplier code: DC103.01 (supplier list 10.30)

For details of laying pavers and correct paving unit size refer the details in the St Georges Tce Design and Construction Notes.

9.3 Adhesive

Prior to application: Remove sand, oils and deleterious products from surface of concrete with the use of brooms and pressure washer. Check line level and set out as per existing pattern. Paving pellets set within area prior to laying.

Adhesive to be:

Parex Davco SE7 with S0/50 Davelastic mix with water, or approved equivalent. Apply as per manufacturers specification.

9.4 Laying Pavement

Cleaning stonework: Clean stonework progressively as the work proceeds. Clean stonework to remove mortar smears, stains and discolouration. Do not use acid as this will discolour the stone material, but use an approved method using clean water only. Provide details for approval prior to commencing stonework.

Laying tolerances: Laying of stone shall be carried out to the following tolerances:

- Deviation from the levels or vertical plane indicated: ± 3mm
- Deviation of paving and stone walls over a 3 metre straight edge: ± 3mm, non-accumulative

Maximum deviation across joints: 2mm

Bedding:

If the concrete substrate has inadequate key for mortar bedding, such as steel trowel finish, do not lay bed until the surface has been adequately roughened by mechanical means; such as scabbling.

Stone Placement:

- Wipe clean surface of stone
- Set line and level
- Mix adhesive as per manufacturers recommendations
- Trowel out adhesive to 10mm across a 2 metre square area
- Lay and set level of paver to tolerance
- Allow adhesive to cure
- Treat top surface with pre-sealant

9.5 Pre-sealant (Prior to Grouting)

Prior to application: Allow adhesive appropriate time to cure. Clean stonework to remove mortar smears, stains and discolouration. Do not use acid as this will discolour the stone material, but use an approved method using clean water only.

Apply one coat of Spirit Marble and Tile Care "Pre Seal" as per manufacturers specification.
9.6 Grout

Sand for grout: Colour (Natural Grey), grading and source shall be determined so as to closely match the granite background material colour; and subject to approval of samples.

Colour: Grout colour to match existing grout. Provide evidence that sufficient quantity of sand is available so as to provide consistency of colour for grouting mixes. Keep any stockpiled sand dry.

Characteristic compressive strength: Compressive strength of the granite pavers.

Grout Jointing:
- Mix Lanko 701 grout to manufacturers specifications & screed into paving gaps
- Wipe excess off paving surface and clean surface with damp sponge
- Joint size to be 5mm nominal; ± 2mm

Carry out jointing and pointing simultaneously to form a homogenous bed. Raked to a depth to match existing surrounding pavers.

9.7 Surface Treatments

Surface sealing after cleaning: Seal exposed faces of stone to protect the material from soiling. Apply two coats of Spirit Marble and Tile Care “Water Based Premium Seal” as per manufacturer’s specification to paving surface. The use of acid for cleaning the stonework is forbidden, as the acid will stain the stone material.

Cleaning: Leave the stonework clean on completion

9.8A Slab Expansion Joints

General: All Expansion & Isolation Joints must be reinstated in their original locations and/or receive prior approval for new locations by City of Perth, City Design Engineers.

Isolation Joints: 7mm nominal joint; to depth of slab, filled with joint filler.

Expansion Joints: Dowels: R20mm smooth round bars at 300mm centres, 65mm depth from top of slab. 3mm Saw cut: to 45mm depth from top of slab. 7mm Widening Saw cut: that may expand up to 17mm and contract due to thermal movement up to 2mm, to 40mm depth from top of slab.

Filler material: Use compatible sealant and bond breaking backing materials that are non-staining to masonry. Do not use bituminous materials with absorbent masonry units.
- Back-up rods: Closed cell polyethylene
- Primer: As recommended by the manufacturer; and
- Elastomeric sealant: Single component polyurethane

9.8B Pavement Expansion Joints

General: Provide expansion joints in the granite paving that corresponds to all structural joints in the concrete substrate.

Expansion joints in stone paving located over structural joints to be 15mm wide preformed joint of Maxiseal mastic with stainless steel (305) side walls. For detail of expansion joint refer: Design and Construction Note 10.32b

Supplier code: DC103.12 (Supplier list: 10.30)

Installation of joint: Install preformed joint in accordance with the manufacturer’s recommendations, including masking the joints. Top of the joint filler colour shall match the adjacent grouted joints.

9.9 Curing

Opening the works area to traffic can only be done once appropriate time has been permitted for all adhesives and sealants to cure. These time listed below are to be measured from the completion of works:

- Pedestrian traffic: 7 days
- Vehicle traffic: 28 days
10.0 REINSTATEMENT OF ROADWAY

The applicant should reinstate the roadway, to comply with the details provided in this specification and to the satisfaction of the City of Perth Maintenance Supervisor. All work associated with the reinstatement of the roadway should comply with the requirements and details specified in the St Georges Tce Design and Construction Notes as well as all MRWA specifications.

Red bitumen: When resurfacing within red bitumen areas, the colour and mix to be as specified by Main Roads WA. Extent of red bitumen (lane width) to be reinstated as previously existed. Ensure clean neat joint be reinstated at juncture of red and black bitumen.

Typical cross-section of the roadway pavement is shown below.

10.1 MRWA Specifications

Reinstatement of roadway must comply with the MRWA specifications:

Specification 501 - Pavements
Specification 503 - Bituminous Surfacing
Specification 504 - Asphalt Wearing Course
Specification 510 - Full Depth Asphalt Pavement

These specifications can be acquired by contacting Main Roads WA or by visiting their website: www.mainroads.wa.gov.au

10.2 Surface Markings

All surface markings (e.g. traffic lane lines) are to be reinstated as previously existed to Main Roads WA (MRWA) specification. MRWA approval may be required from the following contact.

MRWA Traffic Services Coordinator.
Ph. 9323 4607
11.0 REINSTATION OF KERBING & GUTTER

The applicant may reinstate the black granite kerbing, to comply with the details provided in this specification and to the satisfaction of the City of Perth Maintenance Supervisor.

If the City of Perth Works and Services Unit is to reinstate the black granite kerbing, the applicant shall pay the cost of the works as per a quote from the Works Engineer prior to commencement of the reinstatement works.

11.1 Granite Kerbs & Gutter

The granite for both kerbing and gutter to be used is Western Australian Black Granite (or approved equivalent).

Supplier code: DC103.01 (supplier list: 10.30)

Kerb/Gutter cross-section shape and length vary, as details specify in the St Georges Tce Design and Construction Notes. Existing transition kerbs which have lengths that do not comply to the St Georges Tce Design & Construction Notes details must be reinstated as the relevant details specify and not as previous existing treatment.

Stone Surface: All exposed surfaces of kerbing to be exfoliated surfaces, other kerb surfaces and all gutter surfaces to be saw cut surfaces.

11.2 Footings (Kerbs & Gutters)

General: All footings must be installed on 95% compacted sub-grade to min 150mm depth.

Footing depth and cross-section as details specify in the St Georges Tce Design and Construction Notes.

Concrete: Specifications & installation procedure of concrete footings are to match those used for reinstating concrete slab in the footpath. Refer the Sub-heading ‘9.1 Concrete’ of this specification.

11.3 Kerb Installation

Bedding: Remove dust and foreign material from the bedding surface. Where possible bed and joint the stone in one operation. Lay each stone on a full bed of mortar. Solidly fill and grout vertical joints, joggles and cramps as the work proceeds. Point up joints around flashing as necessary.

Support: Provide support as necessary to the stone while the mortar is curing, using bracing.

Bonding: An adhesive layer of cement based tile adhesive must be applied to the top of the footing and the base of the granite kerb. This is to achieve an adequate bonding of the kerb, bedding and footing to provide stability and for it to work as a monolithic structure.

Placing: After the required drying time has expired, the granite kerbing shall be laid with the bevel face as the finished surface and set in the cement mortar mix while it is still freely workable. The coloured cement mortar mix shall be grouted into the gaps, raked to a depth of 25mm at 25MPa below the surface level and then ironed. Failure to lay the slabs in the mortar while it is still workable and manageable shall result in the entire condemnation and removal of the paving and the cement mortar base.

11.4 Gutter Installation

Gutter to be installed as per granite kerbing, stated above. Gutter to be installed once kerbing is fixed into final position.
12.0 MAINTENANCE PERIOD

The applicant is responsible for the cost of any maintenance of the reinstatement works for a period of 12 months from completion, to a standard that is acceptable to the City of Perth, if the reinstatement is carried out by the applicant.

Where the applicant is required to undertake additional works due to a defect occurring during the maintenance period, the maintenance shall be extended for 3 months from when the Manager, Works & Services is notified of the completion of the additional works or to the end of the original maintenance period, whichever is longer.

13.0 GAS VENTS

Due to the concrete slab under the footpaths and the vicinity of High Pressure Gas pipelines within St Georges Tce (William St - Barrack St) it is imperative that ‘Gas Vents’ are installed/reinstated along these gas alignments, to allow for any possible gas leaks to be identified.

Gas vents must be placed within 300mm from the gas alignment. If original location of Gas Vents cannot be determined, a service locator from WestNet Energy must be on-site to advise the alignment of the gas main, borne at the applicants cost.

Gas vents to be located at 800mm centres where there will be a joint in the paving pattern. A 25mm diameter sleeve is to be placed in to a 35mm diameter hole in the slab. The sleeve is to end at the top of slab, and no adhesive or grout is to be installed above it.

For the detail to install a Gas vent refer Design and Construction Note 10.32e

14.0 SERVICE PITS & LIDS

Installation of a new service pit requires approval from the City of Perth, City Design Engineers. All paving for St Georges Tce is glued on to a 130mm concrete. Applicants should submit method of removal of stone and slab. Applicants shall be responsible for reinstatement of paving and slab as per city’s requirement and this specification.

All work associated with the pits and lids should comply with all specifications and details in the St Georges Tce Design and Construction Notes. Particularly Design and Construction Note 10.37 ‘Service Pits & Lids’

14.1 Pit Lid Types

Service authorities and telecommunication providers shall use infill covers to match the existing covers for St Georges Tce. Acceptable pit lids are listed in table 14.1.

Table 14.1

<table>
<thead>
<tr>
<th>LID TYPE</th>
<th>SIZE</th>
<th>LOGO</th>
<th>TYPE OF SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wang 3</td>
<td>635x605</td>
<td>Incorporated on lid</td>
<td>Telstra only, Typ. 2x2 or 2x3 Lids</td>
</tr>
<tr>
<td>Wang 5</td>
<td>650x400</td>
<td>100x100 embedded brass plaque</td>
<td>Telecom, West Power, MRWA &amp; other assorted</td>
</tr>
<tr>
<td>Wang 6</td>
<td>650x500</td>
<td>100x100 embedded brass plaque</td>
<td>Telecom, West Power, &amp; other assorted</td>
</tr>
<tr>
<td>COP (1)</td>
<td>450x450</td>
<td>50dia disc aluminium</td>
<td>Water, FESA, Irrigation, MRWA, Sewer valves, Gas &amp; Stormwater</td>
</tr>
<tr>
<td>COP (2)</td>
<td>200x400</td>
<td>50dia disc aluminium</td>
<td>Water Valves</td>
</tr>
<tr>
<td>GATIC</td>
<td>750x750</td>
<td>None</td>
<td>Stormwater &amp; Sewer manholes</td>
</tr>
<tr>
<td>Sika (1)</td>
<td>756x608</td>
<td>None</td>
<td>Optus</td>
</tr>
<tr>
<td>Sika (2)</td>
<td>1276x608</td>
<td>None</td>
<td>Optus</td>
</tr>
</tbody>
</table>

In some cases, due to site and design constraints where the City of Perth City Design Unit advises and approves, Water Corp. standard 165x165 cast iron pits for water valves may be used.
14.2 Pit Lid Logos

Table 3.1 lists the acceptable pit lid types and the logos required for each type. There are two different types of logos used with the pit lid types listed. These are the 100x100 brass plaque with text and the 50dia aluminum disc with a graphic or text. For installation and location of logos refer Design & Construction Note 10.37 ‘Service Pits & Lids’. Some pit lid types do not require logos, i.e. Wang 3 Telstra pits have their logos incorporated as part of the frame during construction.

### 100x100 BRASS PLAQUE LOGO

![Western Power Logo](Fig. 14.2)

![Water Corporation Logo](Fig. 14.3)

![AAPT Logo](Fig. 14.4)


### 50 DIA ALUMINUM DISC LOGO

![Water Corp. Valve](Fig. 14.5)

![UH Hydrant Valve](Fig. 14.6)

![Gas Service Valve](Fig. 14.7)

![COP Valve](Fig. 14.8)

![Storm Water Valve](Fig. 14.9)

![Earth Spike](Fig. 14.10)

![MRWA Valve](Fig. 14.11)

![Misc Earth Spike](Fig. 14.12)

Figures 14.5 - 14.12 show the common 50 diameter Aluminum Disc Logo inserts for COP 450x450 and COP 200x200 Pit Lids. The logos shown are to be used on pit lids of:

- Fig. 14.5: Water Corp. valves & meters.
- Fig. 14.6: UH Hydrants & Hydrant valves.
- Fig. 14.7: Alinta/Westnet Energy Gas valves.
- Fig. 14.8: COP Pits (Comms, Electrical, Retic, etc.)
- Fig. 14.9: Water Corp. sewer pits & valves.
- Fig. 14.10: COP & Private stormwater pits
- Fig. 14.11: Miscellaneous Earth spikes.
- Fig. 14.12: Main Roads WA electrical pits.
NOTES:

1) After cutting trench, exposed re-inforcement should be treated to prevent corrosion.

2) If the pit requires a collar for strength, it should be formed below the paving level and lay the pavement on top of the collar as per paving installation.

3) After cutting trench within the roadway, road paving structure must be re-installed as per chapter 9.0 of this specification.

4) All pavement markings must be re-installed by a MRWA approved contractor at cost by applicant.
RE-INSTATED PAVING TO MATCH EXISTING PAVING
INFILL TO MATCH PAVING
STANDARD PIT LID Refer Design & Construction Note 10.37
REINSTALL WHOLE PAVERS ALONG CUT LINES

BUILDING LINE

PAVING ENLARGEMENT

IF \( b < \frac{1}{3} W \) THEN THE PROCEEDING PAVER IS TO BE CUT BACK SO THAT \( b = \frac{1}{3} W \)
WEIGHT OF VEHICLES AND MACHINERY

Only vehicles and machinery listed on this page are permitted onto the granite paved footpaths & parking/loading bays at footpath level along St Georges Terrace (William St - Barrack St), subject to the following restrictions:

VEHICLES AND MACHINERY ON THE FOOTPATH

Types 1, 2 & 3, require a bond of $2000 per linear metre;

Greater than Type 3 and less than Type 4, and without outriggers, bond of $4000 per linear metre of vehicle length. Must travel on suitable plinths and the tyres must also be on suitable plinths once stationary;

Greater than Type 3 and less than Type 4, with outriggers, bond of $6000 per linear metre of vehicle length. Must travel on suitable plinths and the tyres must also be on suitable plinths once stationary.

OUTRIGGERS

Outriggers must be placed on suitable plinths only and the minimum plinth size must be 750x750x75mm for a point load of 1 tonne;

VEHICLES AND MACHINERY ON LOADING ZONES & WAITING BAY AT ENEX100 ENTRANCE

20 TONNE MAX

The loading zones and the waiting bay at ENEX100 entrance can only hold vehicles up to 20 tonnes. Approval from the City Of Perth is required for heavier vehicles.
Note:
1. Granite Commemorative Plaque to be 795x395x40mm
2. Setout plaque to fit paving pattern to avoid cutting.
3. Setout plaques a constant distance from kerb so all plaques line up.
4. Grout joints between plaque & pavers are 5mm ± 2mm.
Note:
1. Granite footpath pavers are 795x395x40mm Austral Verde.
2. Joints between pavers are 5mm ± 2mm.
3. Set out with full paver from back of kerb.
4. Pavers are laid in stretch bond pattern perpendicular to kerb.
5. Contraction, isolation and construction joints set out as per engineers specification.

Fibre Reinforced Concrete:
- Concrete Strength to be C32/40
- Maximum 20mm aggregate.
- Fibre Name: Dramix
- Fibre Type: RC 65 / 60 BN
- Fibre Dosage: 20kg/m³
- Supplier code: DC103.02 (supplier list: 10.30)
To avoid small cuts along building/property boundary.

Pavers against property line minimum length to be 200mm. Where this is not possible using the standard paving unit in stretcher bond pattern the preceding paver ‘A’ to be cut back.

To avoid thin cuts along setout points or obstacles.

The first 2 rows of pavers along setout points or other obstacles (Expansion joints, Furniture, etc.) must maintain their full width, 395mm. To ensure this is achievable the centre paver ‘B’ to be cut thinner. Minimum width of cut pavers to be 300mm.
REINSTATEMENT OF SURROUNDING PAVEMENT

Note: For reinstatement of pavement due to new pits and trenches, Refer the Reinstatement Policy, Design and Construction Note 10.31a.

APPROVED GRANITE INFILLED PIT COVERS

- 'City of Perth 200x200'................................................. pg 2
- 'City of Perth 450x450'................................................. pg 3
- 'GATIC 750x750'.......................................................... pg 4-5
- 'Wang 5' (650x400)..................................................... pg 6-7
- 'Wang 6' (1300x500)................................................... pg 8
- 'Wang 3' (Telstra Only)................................................ pg 9
- SIKA Type Lids (Optus Only)......................................... pg 10
- 'Wang 5' & 'Wang 6' Lockable (Amcom Only)................. pg 11

CLEARANCES & PLACEMENT

1. Where possible pits shall be installed to align with paving pattern.
2. Pit covers to be parallel with kerb.
3. Avoid cuts less than 200mm at edges of pit.
4. For gaps less than 75mm mortar can be used.
5. Minimum offset between Wang pit lids to be 250mm.
6. Minimum offset between 450x450mm & 200x200 to be 150mm.
7. Minimum offset between pit and standard tree pit to be 400mm.
8. Minimum offset between pit and water harvesting tree pit to be 1200mm.
9. Where possible pit covers shall not be positioned in cross overs.
10. Pit covers shall not be positioned over expansion joints.

GRANITE INFILL

All pits and granite required are to be supplied to the infill contractor, where the granite will be inlayed in to the pits using epoxy and grout. Any applicant or contractors installing new pits are required to coordinate the granite supplier, pit supplier & infill contractor to ensure a timely delivery of the finalised infill pit lids.

Refer suppliers list (10.30);
Supply code: DC103.01, for granite paving supplier,
Supply code: DC103.07, for infill contractor.

NOTE

- Where possible pits shall be installed to align with paving pattern.
- Pit covers to be parallel with kerb.
- Avoid cuts less than 200mm at edges of pit.
- For gaps less than 75mm mortar can be used.
- Minimum offset between Wang pit lids to be 250mm.
- Minimum offset between 450x450mm & 200x200 to be 150mm.
- Minimum offset between pit and standard tree pit to be 400mm.
- Minimum offset between pit and water harvesting tree pit to be 1200mm.
Note:
1. To be used for 200x200 & 450x450 pit lids.
2. Adhesive for inserts to be Sika Flex 252
3. Surface to be prepared with Sika Cleaner 205 & Sika Primer 210T

F.R.C. = Fibre Reinforced Concrete.
**GRANITE INFILL TO MATCH PAVING**

**40x15 SLOTTED HOLE WITH 1mm TAPER**

**Ø58 RECESS TO TAKE ‘LOGO’ DISC 5mm DEEP**

**450 FRAME**

**426 LID**

**450 FRAME**

**OPEN HINGED LID**

**PAVEMENT CUT LINE**

**8mm FRAME**

**PAVERS TO BE REINSTATED TO THE CLOSEST GROUT JOINT**

**ADHESIVE**

**F.R.C. COLLAR TO DEPTH OF SLAB**

**F.R.C. SLAB**

**BRICKS (OPTIONAL)**

**SUB-GRADE**

**100x75x8mm CAST IRON ANGLE**

---

**CITY OF PERTH 450x450 PIT LID & FRAME**

Supplier code: DC103.07 (supplier list: 10.30)

**F.R.C. = Fibre Reinforced Concrete.**

---

**F.R.C. = Fibre Reinforced Concrete.**
PAVEMENT CUT LINE

GATIC 750x750

750 CLEAR OPENING

750 CLEAR OPENING

FRAME INSTALLED AS PER MANUFACTURERS SPEC.

BITUMEN AND ROAD BASE TO BE REINSTATED AS PER REINSTATEMENT POLICY. Refer Design & Construction Note 10.31a

CONCRETE COLLAR MAX 150mm WIDE

SUB-GRADE

IN ROADWAY:

TRAFFIC DIRECTION

CONCRETE INFILL

IN FOOTPATH:

S/S EDGING TO BE USED ON GATIC LIDS WITHIN GRANITE PAVING AREAS

GRANITE INFILL

PAVERS TO BE REINSTATED TO THE CLOSEST GROUT JOINT

FRAME INSTALLED AS PER MANUFACTURERS SPEC.

F.R.C. COLLAR TO DEPTH OF SLAB

F.R.C. SLAB

SUB-GRADE

F.R.C. = Fibre Reinforced Concrete.

GATIC 750x750 PIT LID & FRAME

Supplier code: DC103.08 (supplier list: 10.30)
Note:
1. Only internal edge of lid is shown.
2. Stone should be cut 3mm offset from internal lid dimensions.
3. Stone top cut to be 802x793x38mm
100x100 BRASS PLAQUE LOGO

LOGO

Note:
1. To be used for Wang 5 & Wang 6 pit lids.
2. Adhesive for inserts to be Sika Flex 252
3. Surface to be prepared with Sika Cleaner 205 & Sika Primer 210T

100x100 BRASS PLAQUE LOGO
Supplier code: DC103.07 (supplier list: 10.30)

WANG 5 (650x400)

F.R.C. = Fibre Reinforced Concrete.

SECTION
WANG 5 (650x400) - STONE INFILL

Note:
1. Only internal edge of lid is shown.
2. All dimensions given are internal lid dimensions.
3. Stone should be cut 3mm offset from internal lid dimensions.
4. Stone top cut to be 624x374x35mm
**WANG 6 (1300x500) - STONE INFILL**

**TOP OF LID (SAME AS BASE)**

**Note:**
1. Only internal edge of lid is shown.
2. All dimensions given are internal lid dimensions.
3. Stone should be cut 3mm offset from internal lid dimensions.
4. Stone top cut to be 619x470x30mm.

F.R.C. = Fibre Reinforced Concrete.
WANG 3 (Telstra Only)

Note:
1. Wang 3 Lids are to be used in 2x2 or 3x2 arrangements for Telstra pits only.
2. Wang 3 frame to be supplied and installed by Telstra, for supply of lids refer supply list 10.30.
3. Telstra logos are to be incorporated in the Wang 3 frame.
4. Frame and external lid detail not shown.
5. Wang 3 Pits may have a max. 60mm concrete surround, colour to match paving.

WANG 3 (Telstra Only) - STONE INFILL

ELEVATION

BASE OF LID
SIKA Type Lids (Optus Only)

Note:
1. Frame and external lid detail not shown.
2. SIKA type lids & frames to be supplied & installed by Optus.
3. SIKA type pits may have a max. 60mm concrete surround, colour to match paving.
4. Applicant must coordinate between Optus and the infill contractor.

SIKA Type 1 (Optus Only) - STONE INFILL

SIKA Type 2 (Optus Only) - STONE INFILL

Note:
1. Only internal edge of lid is shown.
2. All dimensions given are internal lid dimensions.
3. Stone should be cut 3mm offset from internal lid dimensions.
4. Stone top cut to be for
   4.1. SIKA type 1: 724x584x30mm
   4.2. SIKA type 2: 1244x584x30mm
ST GEORGES TCE SPECIFICATION - SUPPLY LIST

This supply list states names and contact details of all nominated (contractual) and past (optional) suppliers referenced in the St Georges Tce Design & Construction Notes (10.3). 'Past' suppliers do not have any existing contracts with the City of Perth regarding the supply of referenced items, but are the recommended suppliers which may be substituted for other suppliers if supplied items can be proven same or better quality of the standards specified in the Design & Construction Note. Nominated suppliers are suppliers which the City of Perth has contractual obligations to use for the supply of specified items. All applicants (contractors, sub-contractors and service providers) must use these nominated suppliers for the specified items.

<table>
<thead>
<tr>
<th>SUPPLIER CODE</th>
<th>ITEM(S)</th>
<th>SUPPLIER(S)</th>
<th>SUPPLIER TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC103.01</td>
<td>KERBING GUTTERS PAVING</td>
<td>ABSOLUTE STONE 15 Sundercombe St, OSBORNE PARK WA 6017 TEL: +61 8 9244 7888 WEB: <a href="http://www.aaaabsolutestone.com.au">www.aaaabsolutestone.com.au</a></td>
<td>PAST SUPPLIER*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>URBANSTONE 27 Jandakot Rd JANDAKOT WA 6164 TEL: +61 8 9417 2444 WEB: <a href="http://www.urbanstone.com.au">www.urbanstone.com.au</a></td>
<td>PAST SUPPLIER*</td>
</tr>
<tr>
<td>DC103.02</td>
<td>STEEL FIBRE REINFORCEMENT</td>
<td>BOSFA Pty Ltd 488 Kewdale Rd, KEWDALE WA 6105 TEL: 1300 665 755 MOB: 0419 522 709 FAX: +61 8 9451 3511 WEB: <a href="http://www.bosfa.com.au">www.bosfa.com.au</a></td>
<td>PAST SUPPLIER*</td>
</tr>
<tr>
<td>DC103.03</td>
<td>SILVA CELLS</td>
<td>ENSPEC Pty Ltd 10 Streeton Crt, ROWVILLE VIC 3178 MOB: 0417 027 152 FAX: +61 3 9764 4735 WEB: <a href="http://www.enspec.com">www.enspec.com</a></td>
<td>PAST SUPPLIER*</td>
</tr>
<tr>
<td>DC103.04</td>
<td>LINTEL KERB GRATE</td>
<td>TIAN INDUSTRIES Pty Ltd PO Box 1148 Canning Bridge, Applecross, WA 6153 MOB: 0417 186 392 FAX: +61 3 9313 7275</td>
<td>PAST SUPPLIER*</td>
</tr>
</tbody>
</table>

*PAST & NOMINATED SUPPLIERS:

'PAST' Suppliers listed have been used previously to supply the specified items. City of Perth has no current contractual obligations to the suppliers allowing contractors and service providers to seek out alternative suppliers whom may supply the specified items to same or better quality, provided they meet the specification and details laid out in the relevant Design & Construction Notes.

'NOMINATED' Suppliers listed are suppliers which City of Perth have current contractual obligations to use or are the only sole supplier of this product, this obligation includes all contractors and service providers installing or reinstating specified items, pavement or roadway.
PAST & NOMINATED SUPPLIERS:

*PAST* Suppliers listed have been used previously to supply the specified items. City of Perth has no current contractual obligations to the suppliers allowing contractors and service providers to seek out alternative suppliers whom may supply the specified items to same or better quality, provided they meet the specification and details laid out in the relevant Design & Construction Notes.

*NOMINATED* Suppliers listed are suppliers which City of Perth have current contractual obligations to use or are the only sole supplier of this product, this obligation includes all contractors and service providers installing or reinstating specified items, pavement or roadway.

<table>
<thead>
<tr>
<th>SUPPLIER CODE</th>
<th>ITEM(S)</th>
<th>SUPPLIER(S)</th>
<th>SUPPLIER TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC103.05</td>
<td>S.F.A. BIN</td>
<td>STREET FURNITURE AUSTRALIA Pty Ltd</td>
<td>PAST SUPPLIER*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PO Box 525 Alexandria, NSW 1435</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TEL: 1300 027 799</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FAX: 1300 003 218</td>
<td></td>
</tr>
<tr>
<td>DC103.06</td>
<td>TACTILE INDICATORS</td>
<td>DTAC Pty Ltd</td>
<td>PAST SUPPLIER*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PO Box 2210 Moorabbin, VIC 3189</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TEL: 1300 793 478</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>WEB: <a href="http://www.dtac.com.au">www.dtac.com.au</a></td>
<td></td>
</tr>
<tr>
<td>DC103.07</td>
<td>INFILL CONTRACTOR 200x200 &amp; 450x450 PIT LIDS &amp; FRAMES PIT LOGOS</td>
<td>VEEM Ltd</td>
<td>NOMINATED SUPPLIER *</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22 Baile Rd, CANNING VALE WA 6155</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TEL: +61 8 9455 9355</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FAX: +61 8 9455 9333</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>WEB: <a href="http://www.veem.com.au">www.veem.com.au</a></td>
<td></td>
</tr>
<tr>
<td>DC103.08</td>
<td>GATIC PIT LIDS &amp; FRAMES</td>
<td>ACO POLYCRETE Pty Ltd</td>
<td>PAST SUPPLIER*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>33-35 Sorbonne Cres, CANNING VALE WA 6155</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TEL: +61 8 6250 3700</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>WEB: <a href="http://www.acoaus.com.au">www.acoaus.com.au</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EJ Co.</td>
<td>PAST SUPPLIER*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18 Boulder Rd</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MALAGA WA 6090</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TEL: +61 8 9209 2930</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>WEB: <a href="http://www.ejco.com">www.ejco.com</a></td>
<td></td>
</tr>
<tr>
<td>DC103.09</td>
<td>WANG 5 &amp; WANG 6 PIT LIDS &amp; FRAMES WANG 3 PIT LIDS</td>
<td>TYCO WATER Pty Ltd</td>
<td>PAST SUPPLIER*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>70 Cleaver Tce, BELMONT WA 6105</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PO Box 385, Cloverdale, WA 6105</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TEL: +61 8 9346 8500</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FAX: +61 8 9346 8501</td>
<td></td>
</tr>
<tr>
<td>DC103.10</td>
<td>S/S BOLLARDS</td>
<td>BARRIER GROUP Pty Ltd</td>
<td>PAST SUPPLIER*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PO Box 1148 Canning Bridge, Applecross, WA 6153</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TEL: 0417 186 392</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FAX: +61 3 9313 7275</td>
<td></td>
</tr>
<tr>
<td>DC103.11</td>
<td>S/S TREE-GRATES</td>
<td>NO INFORMATION CURRENTLY AVAILABLE, CONTACT CITY OF PERTH, CITY DESIGN UNIT.</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*NOTES:*

- S.F.A. Bin: Supply List
- TACTILE INDICATORS: Supply List
- INFILL CONTRACTOR 200x200 & 450x450 PIT LIDS & FRAMES PIT LOGOS: Supply List
- GATIC PIT LIDS & FRAMES: Supply List
- WANG 5 & WANG 6 PIT LIDS & FRAMES WANG 3 PIT LIDS: Supply List
- S/S BOLLARDS: Supply List
- S/S TREE-GRATES: Supply List

**Design and Construction Note 1004.27**

Urban Centres: Reinstatement Policies & Vehicle Restrictions

St Georges Tce Supply List

Reviewed: 29/06/2018

City of Perth

---

This document has been prepared by The City of Perth and is subject to change. It is the responsibility of the user to ensure that this Design and Construction Note has no further revisions by checking at https://www.perth.wa.gov.au
**PAST & NOMINATED SUPPLIERS:**

*PAST* Suppliers listed have been used previously to supply the specified items. City of Perth has no current contractual obligations to the suppliers allowing contractors and service providers to seek out alternative suppliers whom may supply the specified items to same or better quality, provided they meet the specification and details laid out in the relevant Design & Construction Notes.

*NOMINATED* Suppliers listed are suppliers which City of Perth have current contractual obligations to use or are the only sole supplier of this product, this obligation includes all contractors and service providers installing or reinstating specified items, pavement or roadway.

<table>
<thead>
<tr>
<th>SUPPLIER CODE</th>
<th>ITEM(S)</th>
<th>SUPPLIER(S)</th>
<th>SUPPLIER TYPE</th>
</tr>
</thead>
</table>
| DC103.12      | PREFORMED PAVING EXPANSION JOINTS | EXPANSION STRIP WA  
UNIT 6, 8 Midas Rd, Malaga  
WA 6062  
TEL: 08 9429 3801 | PAST SUPPLIER* |
| DC103.13      | ADHESIVE AND GROUTS          | PAREXDAVCO (MICK MUGG)  
65 Challenge Blvd, Wangara WA 6065  
TEL: 08 9302 1466  
MOB: 0412016362 | PAST SUPPLIER* |
| DC103.14      | SEALANTS                     | SPIRIT SEALERS WA  
RUSSELL SLATER (DISTRIBUTOR)  
PO Box 338, Cottesloe, WA 6911  
TEL: 08 9335 5930  
MOB: 0418989399 | PAST SUPPLIER* |