

2023

CITY
CENTRE
PUBLIC DOMAIN
TECHNICAL
MANUAL

AMENDMENTS

The following table summarises the changes in the document since the last published endorsed version November 2019:

Amendment Sequence No	Key Topic Addressed in Amendment	Amendment Location	Author Initials	Amendment Date
1	Update of Standard Reference	Page 4	FS	October 2022
2	Change of Street Categories	Page 8	FS	October 2022
3	Paint code change	Page 10	FS	October 2022
4	Product Change	Page 10	FS	October 2022
5	Product Change	Page 10	FS	October 2022
6	Product Change	Page 10	FS	October 2022
7	Addition of paving type	Page 12	FS	October 2022
8	Update of Construction Detail	Page 12	AR	October 2022
9	Update of Construction Detail	Page 13	AR	October 2022
10	Update of Construction Detail	Page 14	AR	October 2022
11	Update of Construction Detail	Page 15	FS	October 2022
12	Addition of paving type	Page 16	FS	October 2022
13	Update of Construction Detail	Page 16	AR	October 2022
14	Update of Construction Detail	Page 17	AR	October 2022
15	New Detail	Page 18	AR	October 2022
16	Update of Construction Detail	Page 19	AR	October 2022
17	Addition of CCTV Conduit Installation	Page 21	AR	October 2022
18	Update of Construction Detail	Page 23	AR	October 2022
19	Appendix A Soil Spec Amended	Page 28	FS	October 2022
20	Appendix D added	Page 32	FS	October 2022

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- ii) Purpose
- iii) Design Principles of the City Centre Public Domain Technical Manual
- iv) Structure of the City Centre Public Domain Technical Manual
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- vii) Quality Control & Coordination of Streetscape Upgrades

STREETSCAPE DESIGN

PAGE

Street Hierarchy Map

8

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APPENDIX A - TREE PLANTING SPECIFICATION

APPENDIX B - ADHESIVE BEDDING AND GROUTING SPECIFICATION

APPENDIX C - FLEXIBLE PAVEMENT SURFACE OVER EXISTING STREET TREE ROOTS

APPENDIX D - PAVER STRUCTURAL SPECIFICATIONS

(i) Background

The City Centre Public Domain Technical Manual (CCPDTM) is a management policy which supports Chapter E6 Landscaping of the Wollongong Development Control Plan 2009 (WDCP). The basis of all design within the CCPDTM is:

- AS 1428.1-2021 Design for access and mobility - General requirements for access - New building work, and;
- Transport RMS Technical Direction Continuous Footpath Treatments.

(ii) Purpose

The CCPDTM is a management policy, specifying and coordinating the design and construction of the public domain in the Wollongong city centre. The details and elements contained in the CCPDTM will provide continuity in design language, and a standardisation of materials and construction practices throughout the Wollongong city centre. The choice of materials and furniture reflect the modern urban lifestyle that is associated with the city. This manual is to be used in conjunction with the WDCP documents, and is intended for use by:

- developers, designers and consultants developing proposals affecting the public domain and / or its components;
- consent authorities assessing and approving proposed developments;
- Wollongong City Council's Infrastructure Delivery Program.

The CCPDTM is the reference document for the conditioning of the streetscape / public domain components of development applications that fall within the city centre boundary as defined by the WDCP. In addition it will be the basis for design within the public domain by WCC.

(iii) Design Principles of the CCPDTM

The manual will be a controlled document that will be updated regularly in line with the changes in maintenance requirements, construction technology, and advances in environmentally sustainable design as experienced by the managing authorities. Public domain designers should in all cases also consider the specific qualities, technical requirements and existing site features of each design.

The manual establishes a series of generic design principles, materials, finishes, and performance standards to be used in the public domain. For streets there will be a standard range of high quality furniture, paving and surface treatments to ensure the continuity and unity of the public domain. Squares and small open spaces will incorporate the design principles as per the relevant street type of its address (refer Street Hierarchy Map on page 8). Site specific character and constraints will also influence the design to give each individual space a particular character.

Footway pavements are specified for longevity, neutral colour to minimise the effect of soiling, and provide a modern urban appearance. Unit paving has been selected in high use footways to simplify the footway construction and allow the removal and reinstatement of the surface by service authorities. In general the range has included both basalt (the local naturally occurring stone) and high quality dark grey concrete paving units, depending on the street type in the hierarchy within the city.

The tree planting specification detailed in Appendix A recognises the importance of establishing street trees as part of the revitalisation of the city. Street trees improve the amenity and quality of city streets in measurable ways such as reduction of dust, glare and temperature extremes, and more subtle ways that improve the visual quality of the street. Due to the importance of these streetscape elements in the city, it is vital that correct stock is selected and correct methods of planting are applied, as per the details and specifications contained within this document. The tree species list also reflects the Council policy of a preference for local native species.

Amenity and Security

Streets and open spaces should be safe, convenient and comfortable pedestrian spaces that cater to the needs of all users. The design of the public domain should provide equal access for all users, and the choice of paving and street furniture should meet slip resistance and access codes.

Design for pedestrian amenity should maximise the actual and perceived sense of safety in the public domain. Active use of all spaces and passive surveillance of streets and parks should be encouraged, particularly at night, in line with Safer by Design principles and in accordance with Crime Prevention Through Environmental Design (CPTED).

Services within the Footway

The random location of services and access pits coupled with the sporadic maintenance and access requirements of the utilities has an enormous impact on the appearance of the public domain.

Coordination with all the utilities is required from the earliest stage of the design and needs to be an ongoing process. Coordination in the early stages of the design should attempt to rationalise trenches and access pits to minimise their impact on the homogeneity and simplicity of the paving system and to reduce constraints on future tree planting. The under-grounding of services or bundling of above ground cables should be pursued as part of this process.

Pit lids are to be adjusted and replaced as a part of footway upgrades at the developer's expense. Pit lid types are to be approved by the relevant service authority, and constructed from either concrete, cast iron, concrete infill or paver infill, as directed by WCC.

Enquiries

Enquiries regarding this document may be directed to the Council's Landscape Architecture Section on telephone number (02) 4227 7111.

Disclaimer

The information contained within this document was believed to be correct at the date of its publication. This information is for general information purposes only and should not be relied upon for legal advice.

(iv) Structure of the CCPDTM

The body of the manual comprises a series of standard details and performance criteria, relating to specific areas to be used to determine future design and construction. Materials, finishes and dimensions are specified under the following headings:

1.00 Furniture

2.00 Footway Pavements

3.00 Crossings

4.00 Service Lids in Footways

5.00 Undergrounding of Services

6.00 Tree Planting Details

7.00 Special Areas

Appendix A - Tree Planting Specification

Appendix B - Adhesive Bedding and Grouting Specification

Appendix C - Flexible Pavement Surface Over Existing Street Tree Roots

Appendix D - Paver Structural Specifications

(v) Use of The Manual

The organising principle of the CCPDTM is the following street hierarchy of street types, as shown on the Hierarchy Map on page 8:

- City Core Streets
- Civic Streets and Laneways
- City Entries
- Minor Civic Streets
- Waterfront Streets
- Mixed Use/Residential
- Special Areas

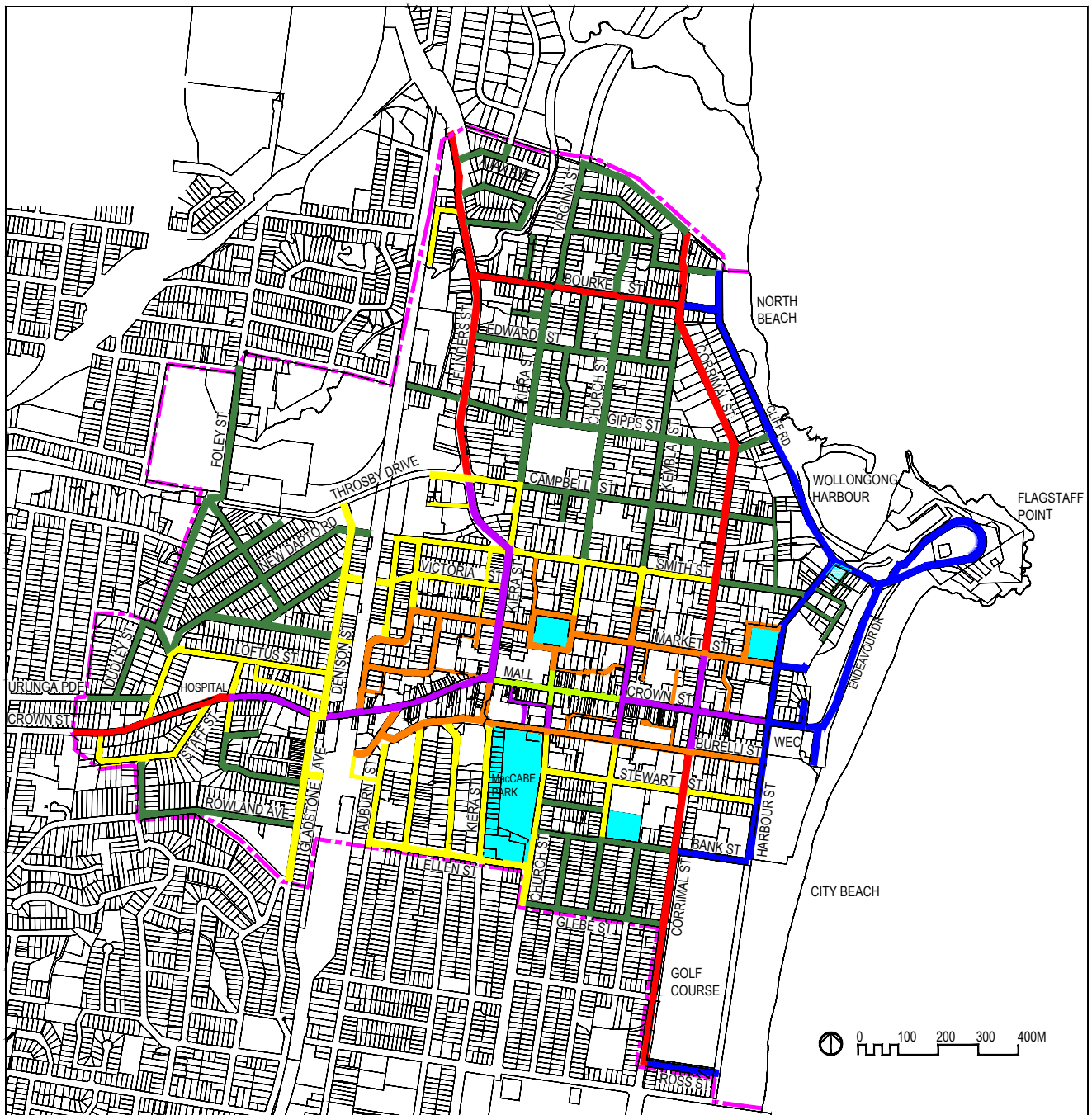
The manual has been divided into sections that address the requirements of each type of street within the hierarchy of city centre streets. The address of the development will determine which part of the manual is relevant, according to the colour coding of the street as shown on the Hierarchy Map.

Notes:

- Where less than 50% of a street is likely to be redeveloped to its urban potential within a 10 year time frame, and the footpath requires replacement, Council reserves the right to repair or replace the footway with an appropriate pavement as an interim measure.
- Surface finishes for footways on unused road reserves not shown on the Hierarchy Map (page 8) are to be determined by WCC's Design and Technical Services section.
- Where the document refers to the Wollongong City Council Engineering Standard Drawings, these can be found at:

https://www.wollongong.nsw.gov.au/__data/assets/pdf_file/0011/43103/Standard-Drawings.pdf

HEIRARCHY MAP



1.0 FURNITURE

CORE / CIVIC / WATERFRONT STREETS



Seats:

Stoddart Town and Park Metro Seat (or approved equal) with with cast aluminium frame, leg foot, polished arm rests end and middle and edge guards, with oiled FSC certified hardwood 40 x 30mm timber planks or approved equal.

Standard bench length 2m.



Bench

Stoddart Town and Park City Metro Bench (or approved equal) with with cast aluminium frame, leg foot, polished arm rests end and middle, edge guards and oiled FSC certified hardwood 40 x 30mm timber planks or approved equal.

Standard bench length 2m.

Stoddart Town and Park City Metro Bench subsurface mounted - Leg Foot (see above image) is required for surface mounted bench

Where possible seats / benches should be positioned to receive shade and in consideration of access and mobility. Location of the seat / bench should not impede building frontages. When positioned on a concrete pad on grass, the concrete pad should be placed flush with adjoining grades for ease of access and mowing.

Note:

Council is continuing to research the use of recycled plastic/wood composite materials for use in furniture planking. The above specified seating can incorporate composite planking when a suitable product becomes available.

1.0 FURNITURE

CORE / CIVIC / WATERFRONT STREETS



CBD Litterbin:

Perforated aluminium, powder coated chute, hood and panels, charcoal metallic gloss colour code C0198 by Street Furniture Australia (or approved equal).

Size to be 120 litre or 240 litre as directed by WCC.

Note: Bin can include art panels subject to council approval.



CBD Planter Boxes:

Perforated aluminium, powder coated panels, charcoal metallic gloss colour code C0198 by Street Furniture Australia (or approved equal).

Size to be 500mm wide x 1000mm long x 700 high (nominal) for low scale planting or 1000mm x 1000mm x 860mm high (nominal) for specimen trees as directed by WCC.

Note: Planters to be supplied with self-watering reservoirs.



Standard and Removable Bollard

A) Removable Bollard:

Moodie Products
Grade 316 stainless steel
lockable/removeable bollard model
no. BG-BCL140-SS (or approved equal).
Subsurface mounted.

B) Standard Bollards:

Moodie Products
Grade 316 stainless steel bollard
model no. BG-CA140BG-SS
(or approved equal). Subsurface mounted.

1.0 FURNITURE

CORE / CIVIC / WATERFRONT STREETS



Waterfront Litter Bin:

Emerdyn Wollongong Foreshore
(or approved equal)

Materials: stainless steel with stained timber slats or approved plastic/wood composite.

The 240 litre bin is located at regular intervals in areas of high pedestrian traffic. It should be placed within easy walking distance of take away food outlets or areas where people are likely to sit and consume food or drink. The litter bin will often be positioned along side recycling bin.



Bike Rack:

Draffin Product No. 88981
(or approved equal)

Materials: stainless steel
Subsurface or surface mounted.

Install bike racks at 1.2m centres in accordance with AS2890.3 Part 3 Bicycle Parking Facilities unless otherwise directed by WCC.

2.0 FOOTWAY PAVEMENTS

2.1 CORE AND CIVIC STREETS

Pavement:

Main body of pavement to be Basalt Dark by Nustone (or approved equal) dark grey basalt, exfoliated finish or Bluestone by Nustone (or approved equal) diamond sawn finish, 600 x 300 x 40mm, lay perpendicular to kerb, maximum crossfall 2.5% (see Section 3.1 for driveway crossing and pedestrian ramp details). Refer to Appendix D for structural requirements.

Samples to be approved by WCC Manager Project Delivery prior to construction.

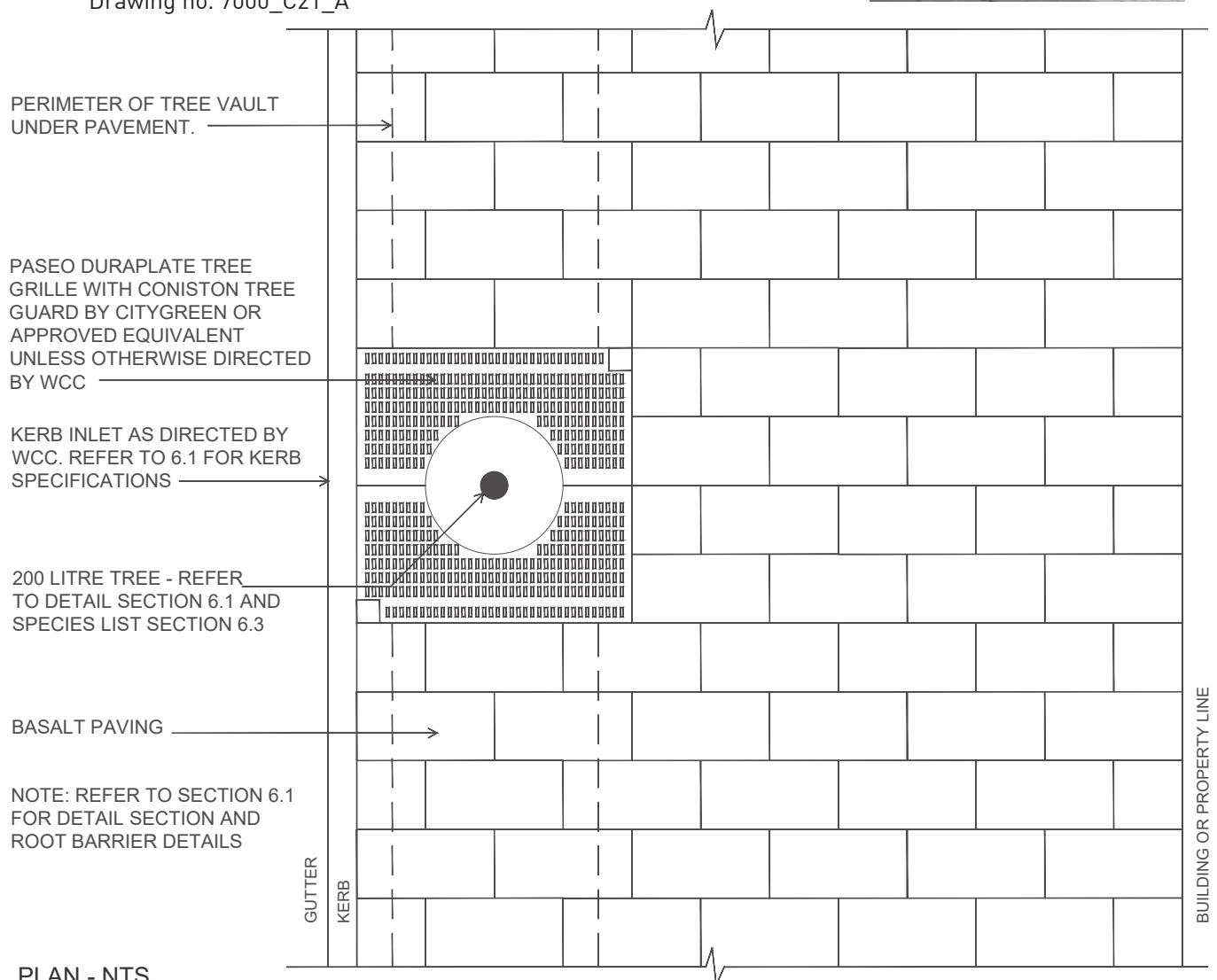
Sealant (for Exfoliated Basalt only): Penetrating sealer 'Spirit Natural Paving Sealer' by Spirit Marble & Tile Care Pty Ltd (or approved equal).

Tree Pit Requirements:

Tree Grate: Duraplate Paseo by Citygreen, 1200mm x 1200mm with integrated watering inlet model no. RRPREC-ALU (or approved equal).
Tree Guard: Coniston by Citygreen, 1800mm high x 600mm diameter (or approved equal).

Structural Design Requirements:

See Wollongong City Council Engineering Standard Drawings
Drawing no. 7000_C21_A



2.0 FOOTWAY PAVEMENTS

2.2 CITY ENTRY & MINOR CIVIC STREETS

Pavement:

Stradapave by Adbri Masonry Pty Ltd (or approved equal) colour Ebony Basalt (dark grey), honed finish, 300 x 300 x 50mm or Urbanstone Gunmetal (dark grey) milled finish, 300 x 300 x 60mm (or approved equal). Samples to be approved by WCC Manager Project Delivery prior to construction. Refer to Appendix D for structural requirements.

Sealant :

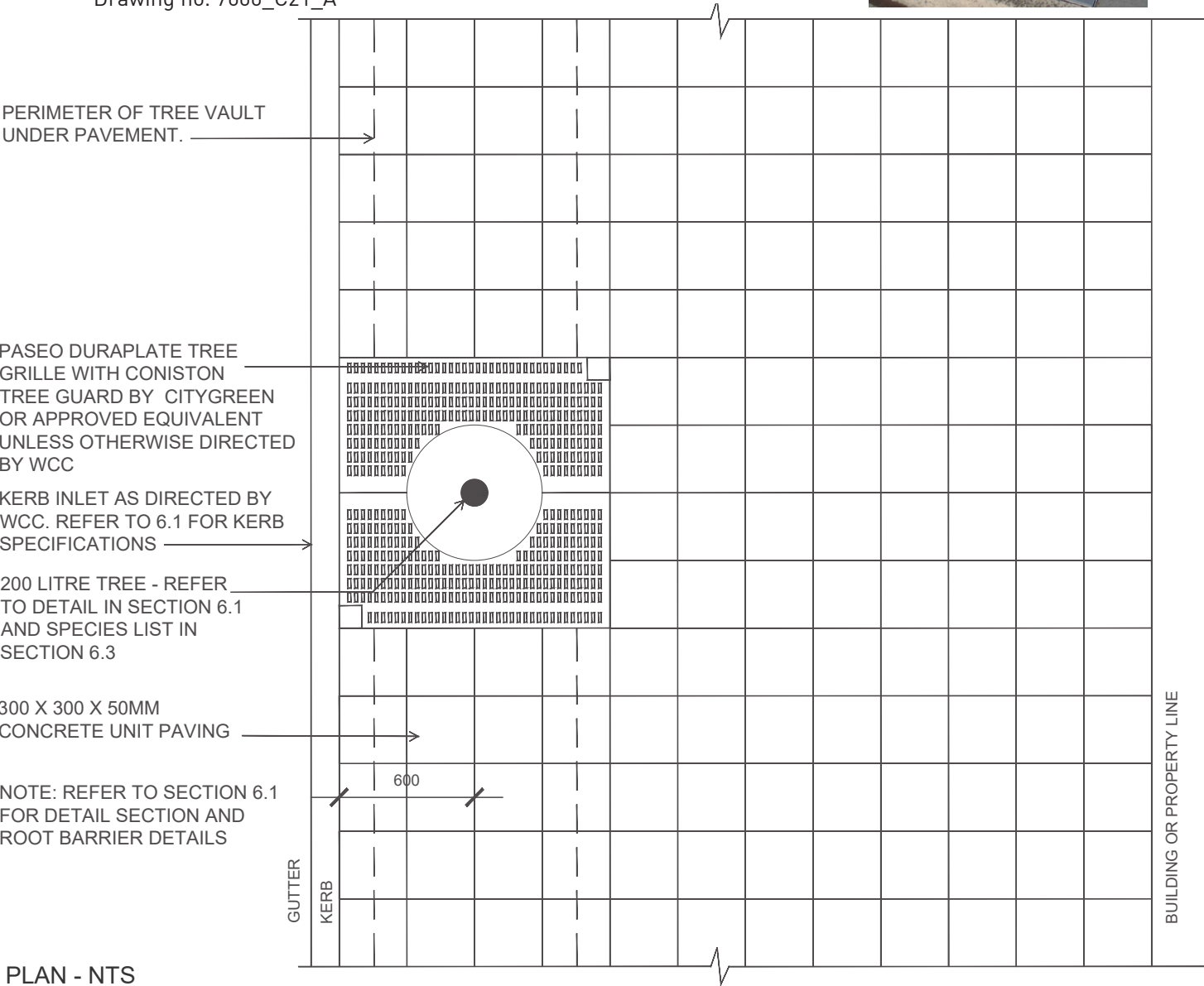
Penetrating sealer 'Spirit Premium Seal' by Spirit Marble & Tile Care Pty Ltd (or approved equal).

Tree Pit Requirements:

Tree Grate: Duraplate Paseo by Citygreen, 1200mm x 1200mm with integrated watering inlet model no. RRPREC-ALU (or approved equal).
Tree Guard: Coniston by Citygreen, 1800mm high x 600mm diameter (or approved equal).

Structural Design Requirements:

See Wollongong City Council Engineering Standard Drawings
Drawing no. 7000_C21_A



PLAN - NTS

2.0 FOOTWAY PAVEMENTS

2.3 WATERFRONT STREETS

Pavement:

Main body of pavement is to be quartz / blue metal aggregate concrete with a honed finish to WCC approved method (see below). (See Section 3.3 for driveway crossing and pedestrian ramp details).

Adjacent to commercial sites and nodal areas, body of pavement is to be exposed aggregate concrete—mix as specified by WCC (see below).

On graded or elevated pathways, where higher slip resistance is required, the main body of pavement is to be 300 x 300 x 60mm Albany Grey shotblast finish Urbanstone (or approved equal). In all cases the header course to be 300 x 300 x 60mm Golden Gunmetal milled finish Urbanstone (or approved equal).

Refer to Appendix D for structural requirements.

Tree Pit Requirements:

Tree Grate: Duraplate Paseo by Citygreen, 1200mm x 1200mm with integrated watering inlet model no. RRPREC-ALU or approved equal.

Tree Guard: Coniston by Citygreen, 1800mm high x 600mm diameter or approved equal.

Samples to be approved by WCC Manager Project Delivery prior to construction.

Sealant:

Penetrating sealer ‘Spirit Premium Seal’ by Spirit Marble & Tile Care Pty Ltd (or approved equal).

Structural Design Requirements:

See Wollongong City Council Engineering Standard Drawings
Drawing no. 7000_C22_A



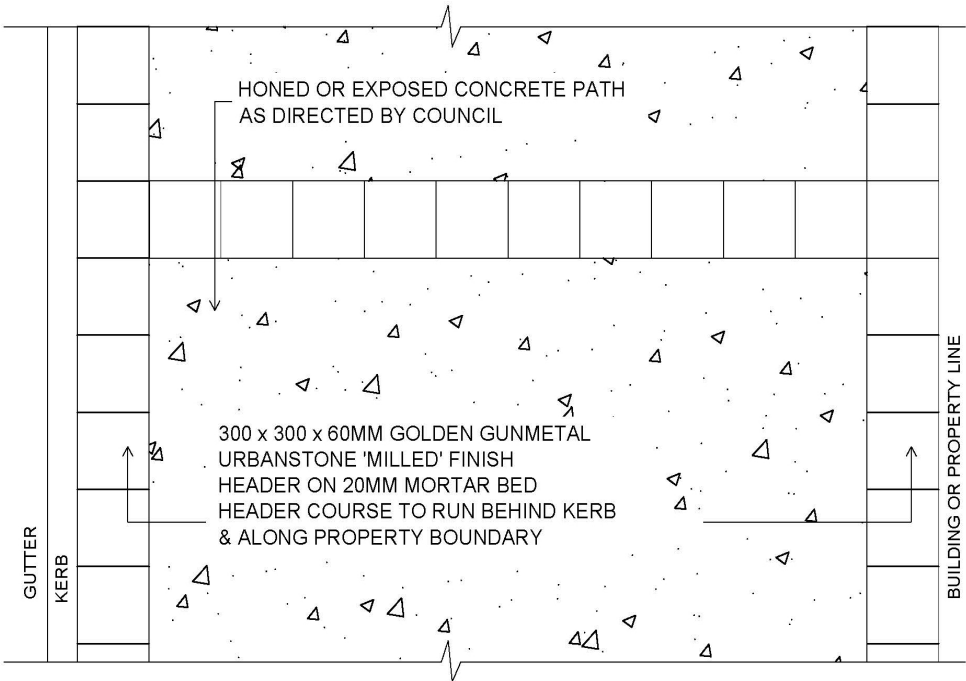
The main body of the pathway is honed concrete.



Nodal section pathway with an exposed aggregate concrete finish.



Elevated pathway finished with unit paving.



PLAN - NTS

2.0 FOOTWAY PAVEMENTS

2.4 MIXED USE / RESIDENTIAL STREETS

Concrete Paving Unit Tree Pit Surround:

Stradapave by Adbri Masonry Pty Ltd (or approved equal) colour Ebony Basalt (dark grey), honed finish, 300 x 300 x 50mm, or Urbanstone Gunmetal (dark grey) milled finish, 300 x 300 x 60mm (or approved equal) on a 150mm deep x 350mm wide concrete footing. Refer to Appendix D for structural requirements.

Samples to be approved by WCC Manager Project Delivery prior to construction.

Concrete footpath:

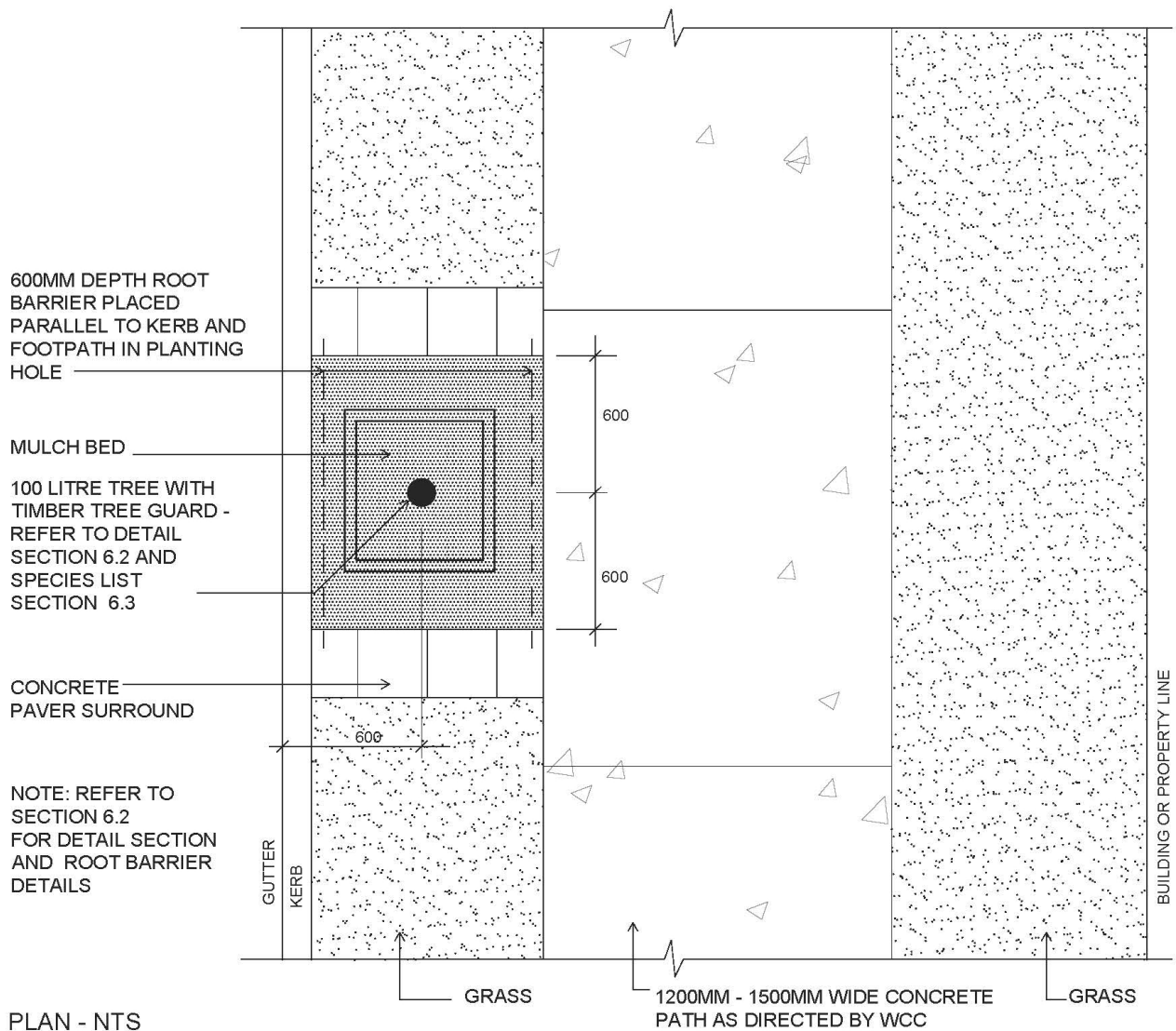
1200/1500mm wide, black oxide coloured concrete (see structural requirements below), exposed blue metal aggregate finish, unless otherwise directed by WCC.

Sealant:

Penetrating sealer 'Spirit Premium Seal' by Spirit Marble & Tile Care Pty Ltd (or approved equal).

Structural Design Requirements:

See Wollongong City Council Engineering Standard Drawing Drawing no. 7000_C22_A



3.0 CROSSINGS

3.1 CORE AND CIVIC STREETS

Pavement:

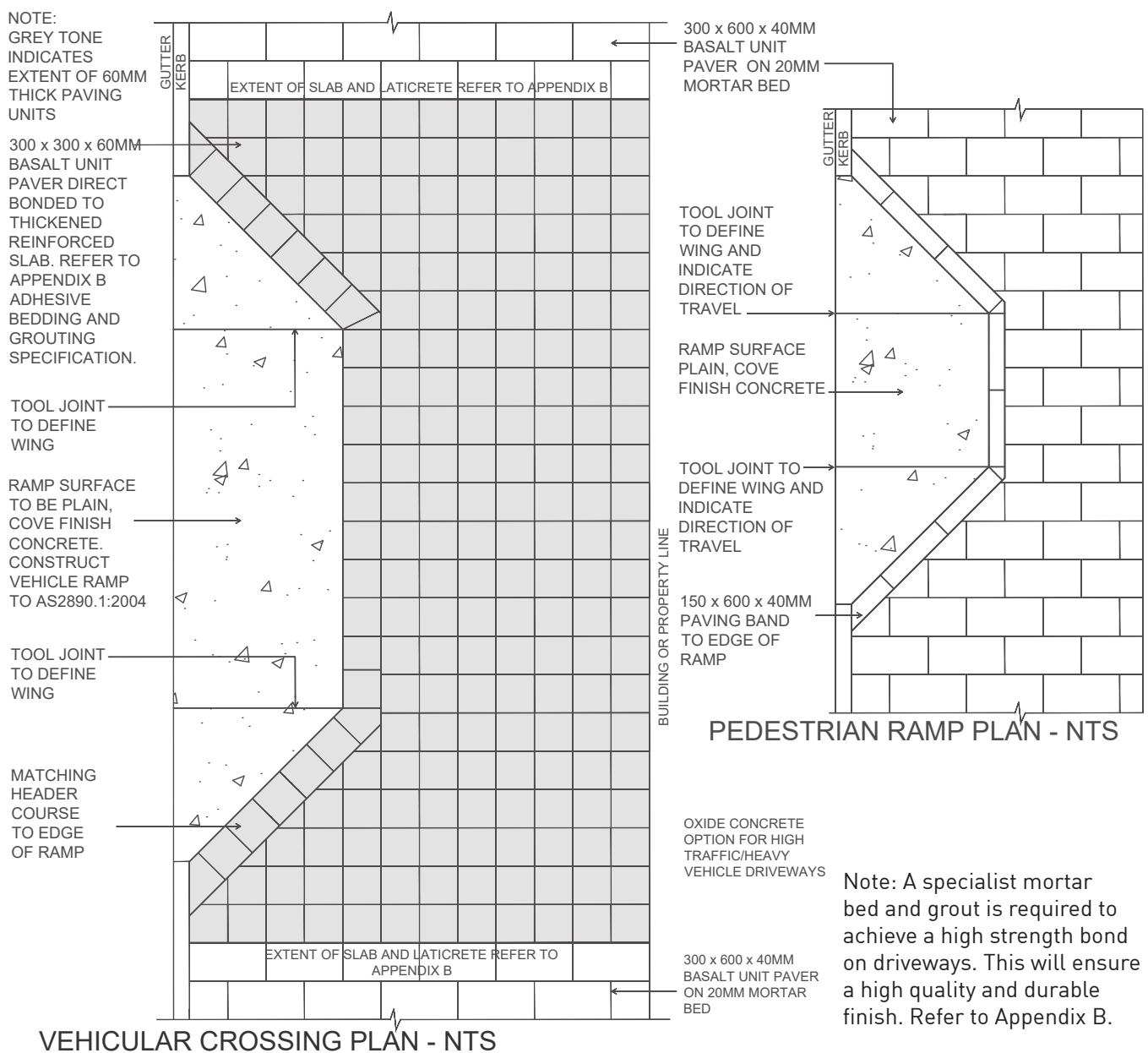
Vehicle Crossing: Main body of pavement to be Basalt Dark by Nustone (or approved equal) dark grey basalt with an exfoliated finish and or Bluestone by Nustone (or approved equal) diamond sawn finish, 300 x 300 x 60mm, maximum crossfall 2.5%. Samples to be approved by WCC Manager Project Delivery prior to construction. Pedestrian & Vehicle Ramp: Plain, cove finish concrete. Note: See Appendix B for Adhesive Bedding and Grouting Specification. Refer to Appendix D for structural requirements.

Sealant (for Exfoliates Basalt only):

Penetrating sealer 'Spirit Premium Seal' by Spirit Marble & Tile Care Pty Ltd (or approved equal).

Structural Design Requirements:

See Wollongong City Council Engineering Standard Drawings Drawing no. 7000_C23_A



3.0 CROSSINGS

3.2 CITY ENTRY & MINOR CIVIC STREETS

Pavement:

Driveway pavement to be Trupave, 222 x 112 x 80mm, by Adbri Masonry Pty Ltd (or approved equal) colour charcoal, honed finish paving units in a herringbone pattern. Samples to be approved by WCC Manager Project Delivery prior to construction. Refer to Appendix D for structural requirements.

Pedestrian Ramps:

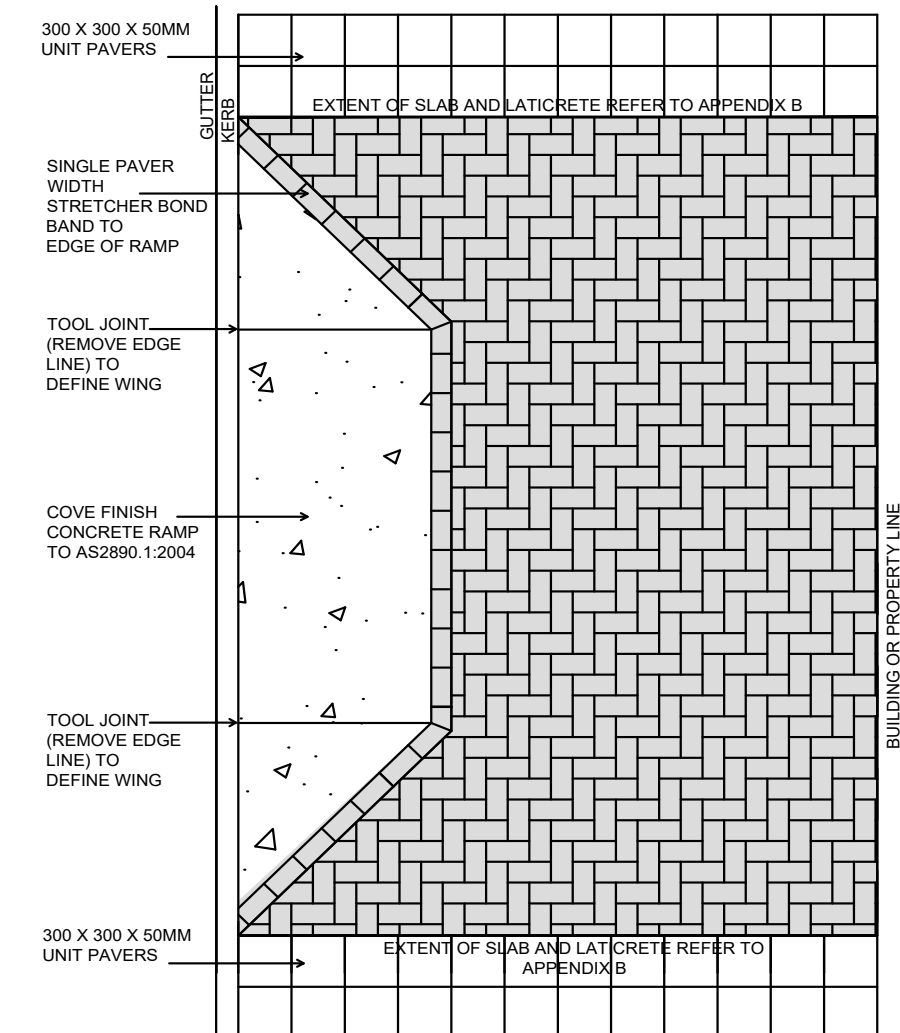
See Wollongong City Council Engineering Standard Drawings, Drawing no. 7000_C11_A

Sealant:

Penetrating sealer 'Spirit Premium Seal' by Spirit Marble & Tile Care Pty Ltd (or approved equal).

Structural Design Requirements:

See Wollongong City Council Engineering Standard Drawings, Drawing no. 7000_C24_A



VEHICULAR CROSSING PLAN - NTS

3.0 CROSSINGS

3.3 HEAVY VEHICLE CROSSING

Pavement:

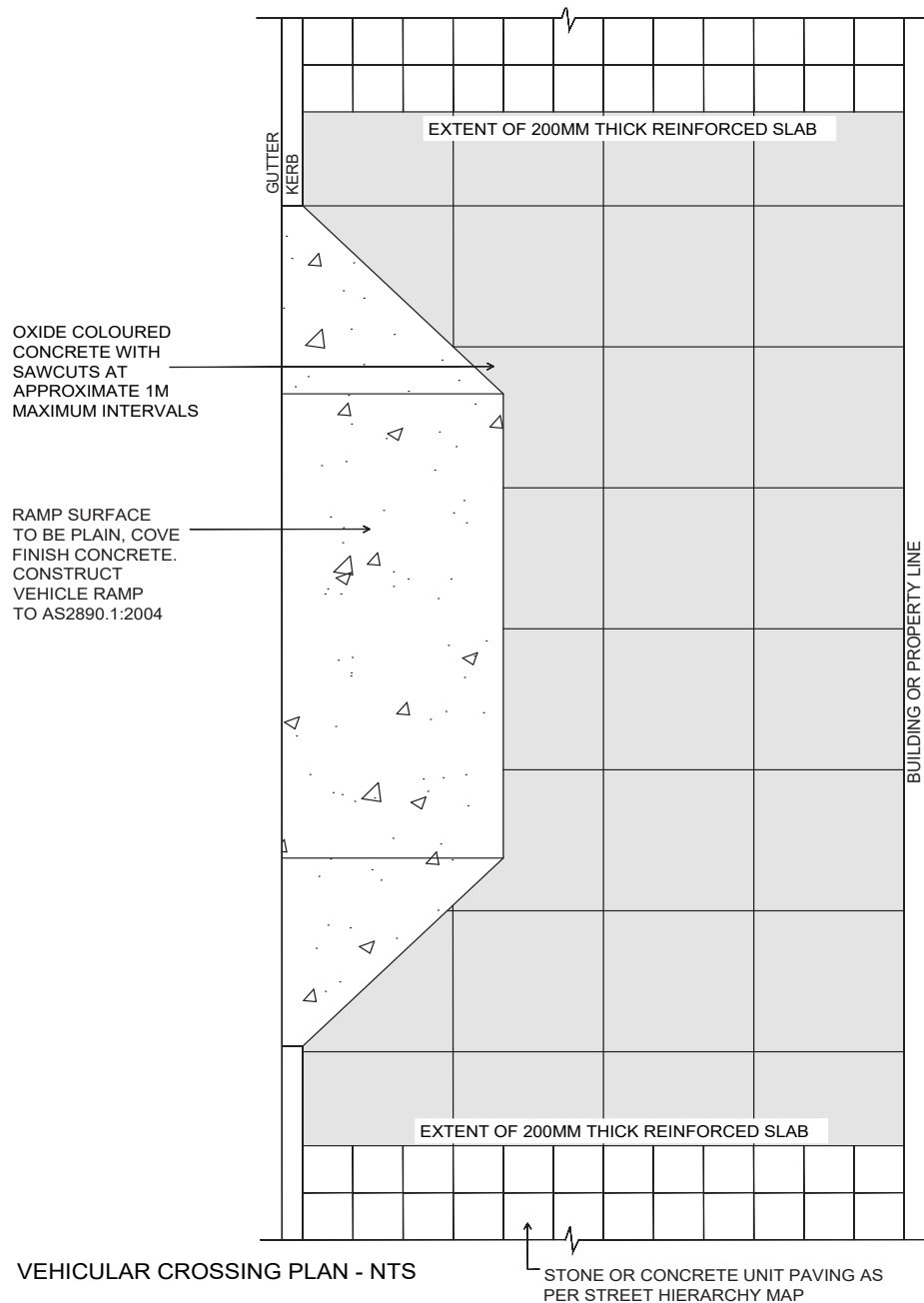
Black Oxide - Concrete Colour System 'Obsidian' or 'Stallion' (or approved equal), 24kg/cubic metre.

Sealant:

Penetrating sealer 'Spirit Premium Seal' by Spirit Marble & Tile Care Pty Ltd (or approved equal).

Structural Design Requirements:

See Wollongong City Council Engineering Standard Drawings, Drawing no. 7000_C32_A



3.0 CROSSINGS

3.4 WATERFRONT STREETS

Pavement:

Main body of pavement is to be quartz / blue metal aggregate concrete with a honed finish to WCC approved method (see below). Adjacent to commercial sites and nodal areas, body of pavement is to be exposed aggregate concrete—mix as specified by WCC (see below). If grades steeper than 10%, the main body of pavement is to be Urbanstone (or approved equal) 300 x 300 x 60mm Albany Grey, shotblast finish. In all cases, the header course to be Urbanstone (or approved equal) 300 x 300 x 60mm Golden Gunmetal milled finish. Samples to be approved by WCC Manager Project Delivery prior to construction. Refer to Appendix D for structural requirements.

Pedestrian Ramps:

See Wollongong City Council Engineering Standard Drawings, Drawing no. 7000_C11_A

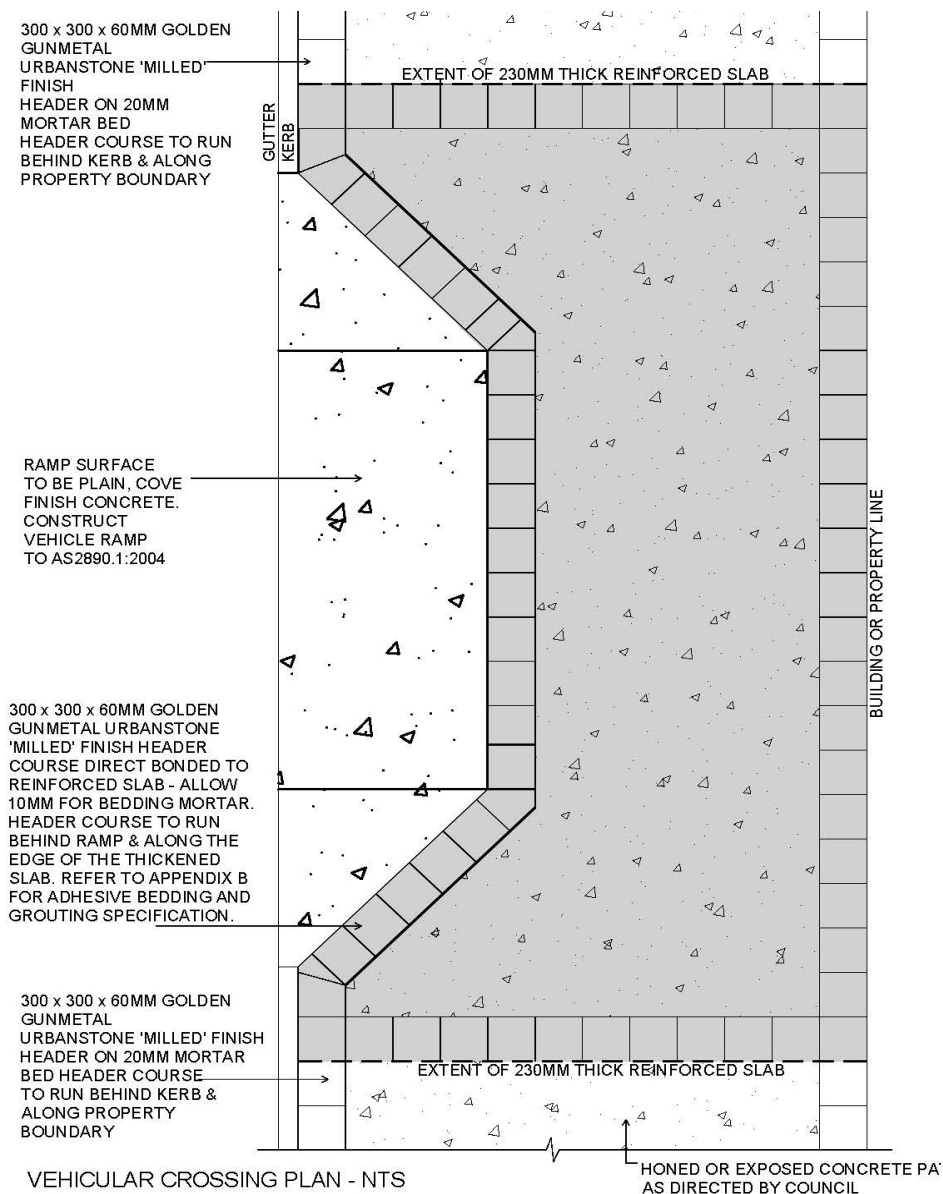
Note: include a matching header course around pedestrian ramps

Sealant:

Penetrating sealer 'Spirit Premium Seal' by Spirit Marble & Tile Care Pty Ltd (or approved equal).

Structural Design Requirements:

See Wollongong City Council Engineering Standard Drawings, Drawing no. 7000_C26_A



3.0 CROSSINGS

3.5 MIXED USE / RESIDENTIAL STREETS

Concrete Pavement:

Black oxide, coloured concrete, exposed blue metal aggregate finish, unless otherwise directed by WCC. Oxide to be Concrete Colour Systems, colour: Obsidian (or approved equal).

Pedestrian Ramps:

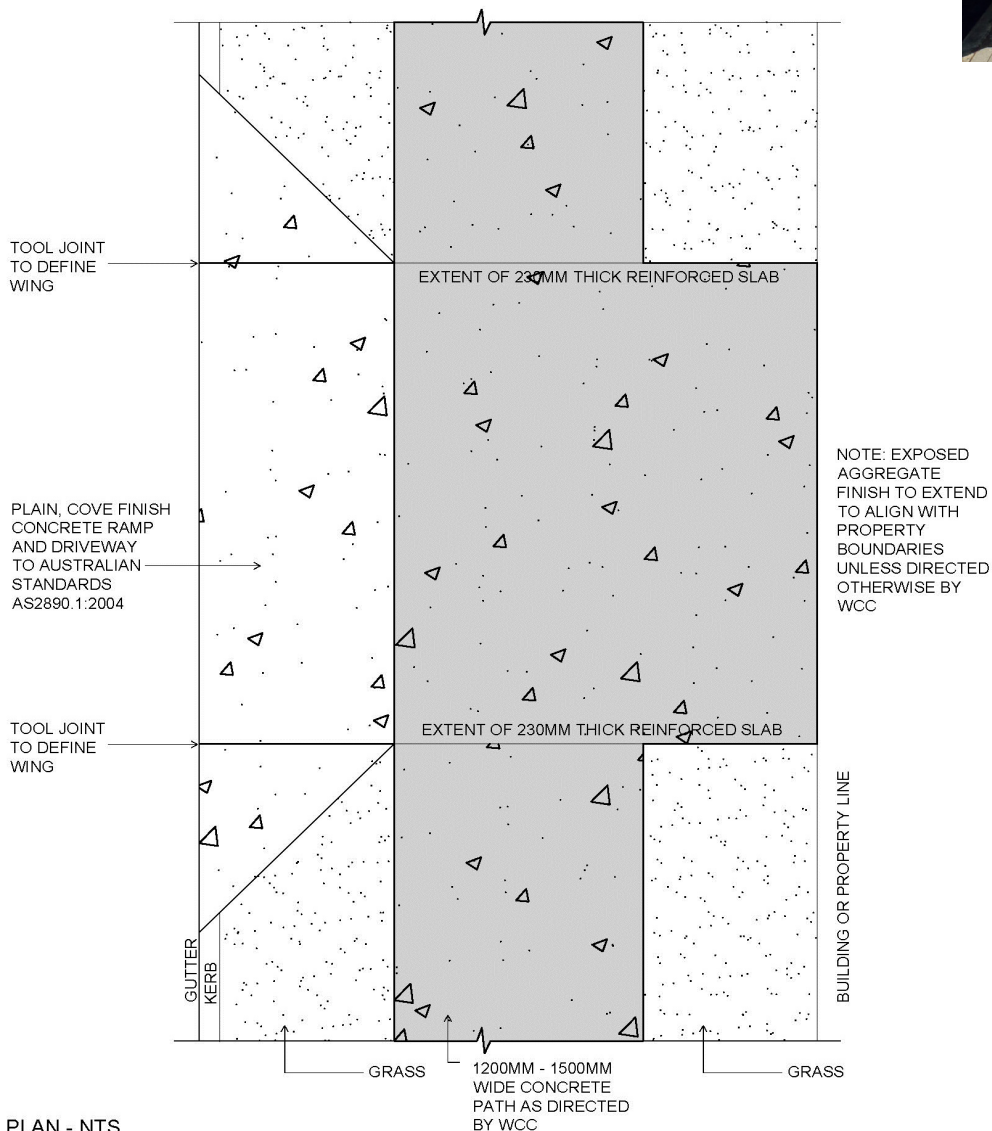
See Wollongong City Council Engineering Standard Drawings, Drawing no. 7000_C11_A

Sealant:

Penetrating sealer 'Spirit Premium Seal' by Spirit Marble & Tile Care Pty Ltd (or approved equal).

Structural Design Requirements:

See Wollongong City Council Engineering Standard Drawings, Drawing no. 7000_C24_A



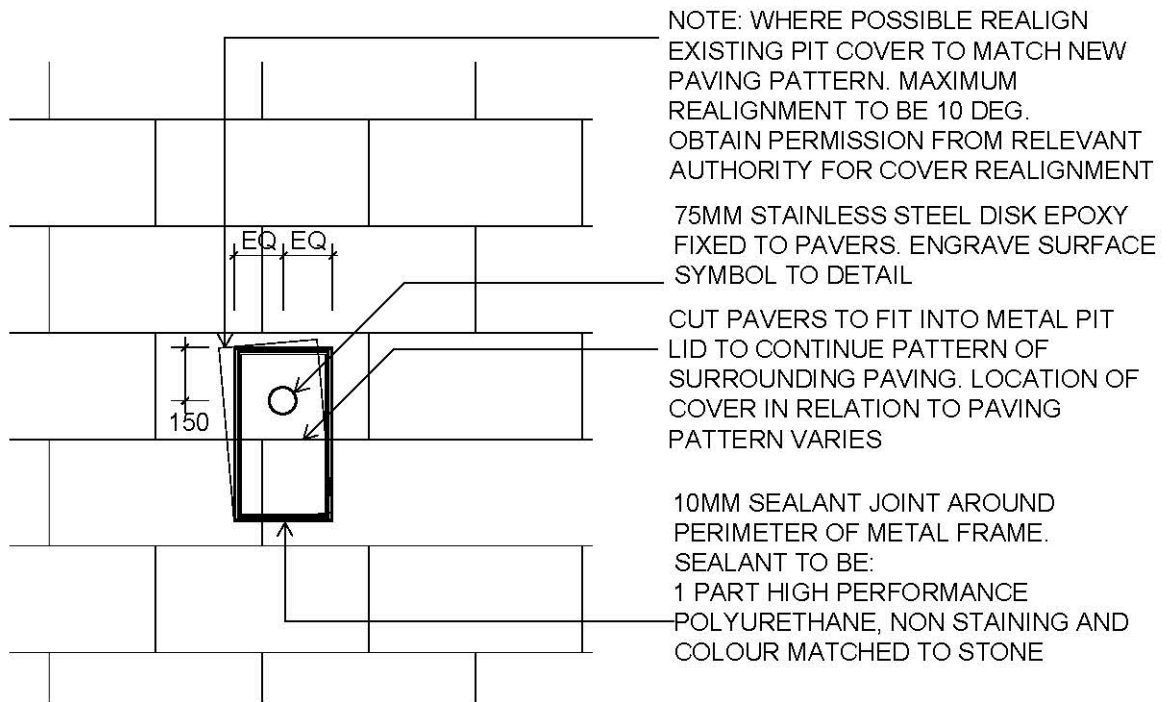
PLAN - NTS

4.0 SERVICE LIDS IN FOOTWAY

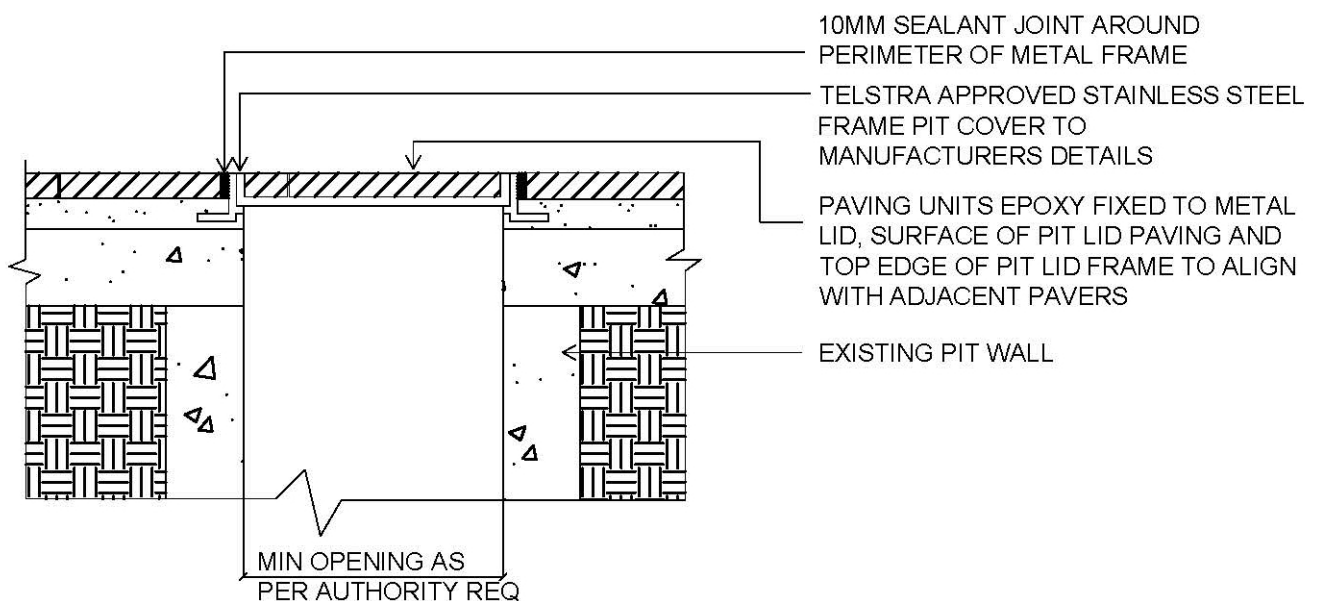
CORE / CIVIC / CITY ENTRY STREETS

Pit lids are to be adjusted and replaced as a part of footway upgrades at the developer's expense. Pit lid types are to be approved by the relevant service authority, and constructed from either concrete, cast iron, concrete infill or paver infill, as directed by WCC.

See Wollongong City Council Engineering Standard Drawings, Drawing no. 7000_C25_A



PLAN - NTS



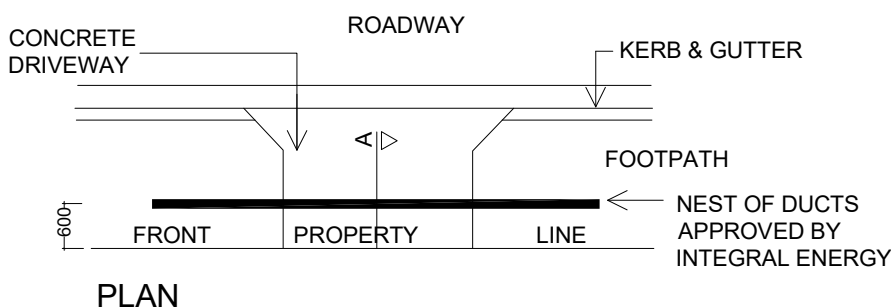
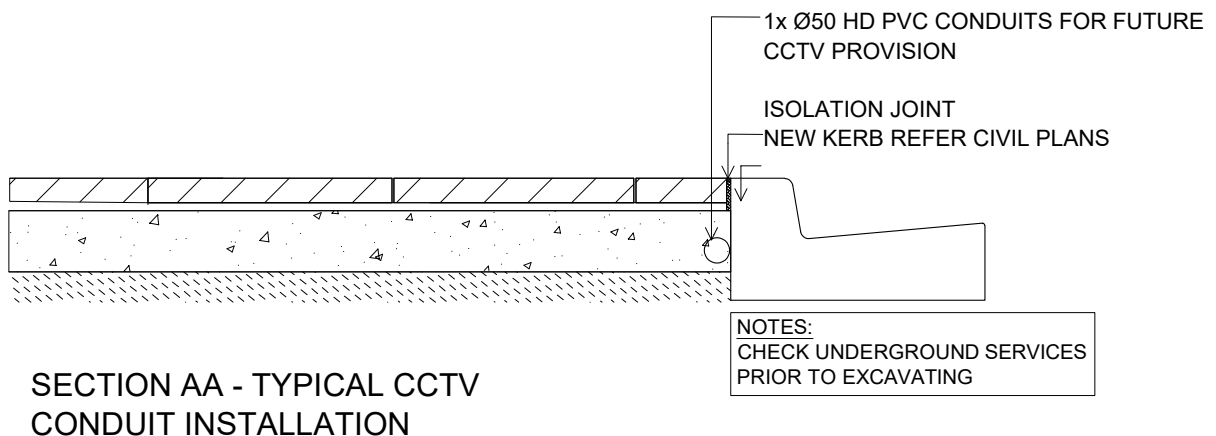
SECTION - NTS

5.0 UNDERGROUNDING OF SERVICES / CCTV CONDUITS

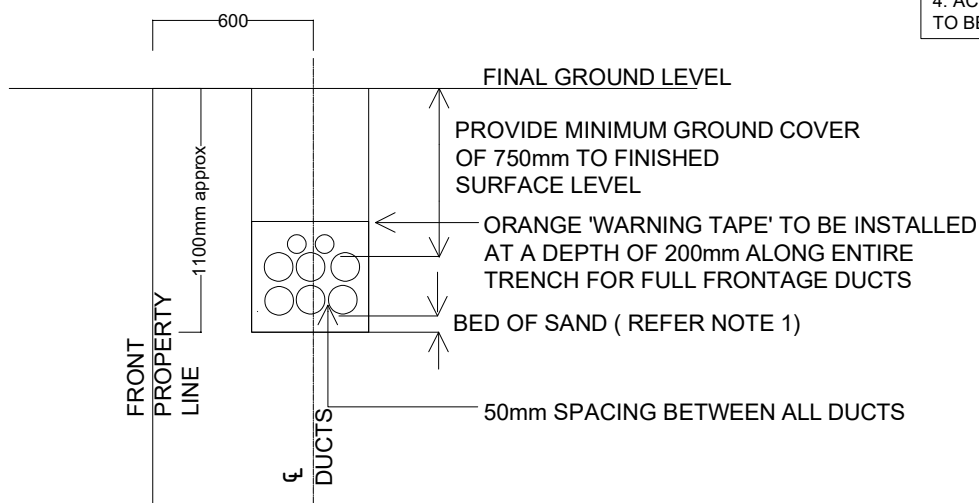
ALL AREAS

The provision for underground power is an Endeavour Energy requirement. The sheet below is an indicative detail for underground ducting of electricity in urban areas. The developer shall contact Endeavour Energy for their requirements.

The NSW Streets Opening Coordination Council is the coordinating body for all underground utility services (www.streetsopening.com.au). The reference document is "SOCC Guide to Codes and Practices for Streets Opening."



- NOTES:
1. DUCTS TO BE INSTALLED ON 50mm BED OF SAND.
 2. DUCTS TO BE INSTALLED PARALLEL TO THE PROPERTY LINE AT 600mm CENTRE OF TRENCH AND AT AN EVEN GRADE END OF DUCTS TO BE LEFT OPEN FOR INSPECTION BY INTEGRAL ENERGY.
 3. EACH END TO BE PLUGGED WITH PVC PLUGS (PROVIDED BY ENDEAVOUR ENERGY PRIOR TO BACK FILLING)
 4. ACTUAL NUMBER OF DUCTS TO BE ADVISED.

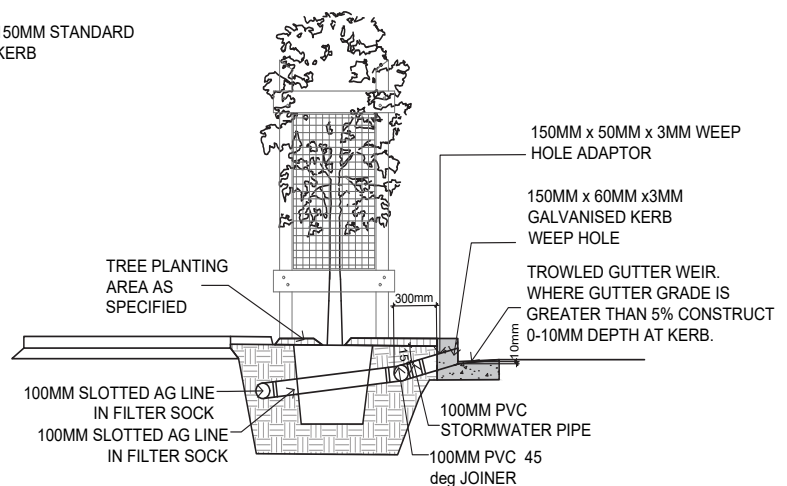
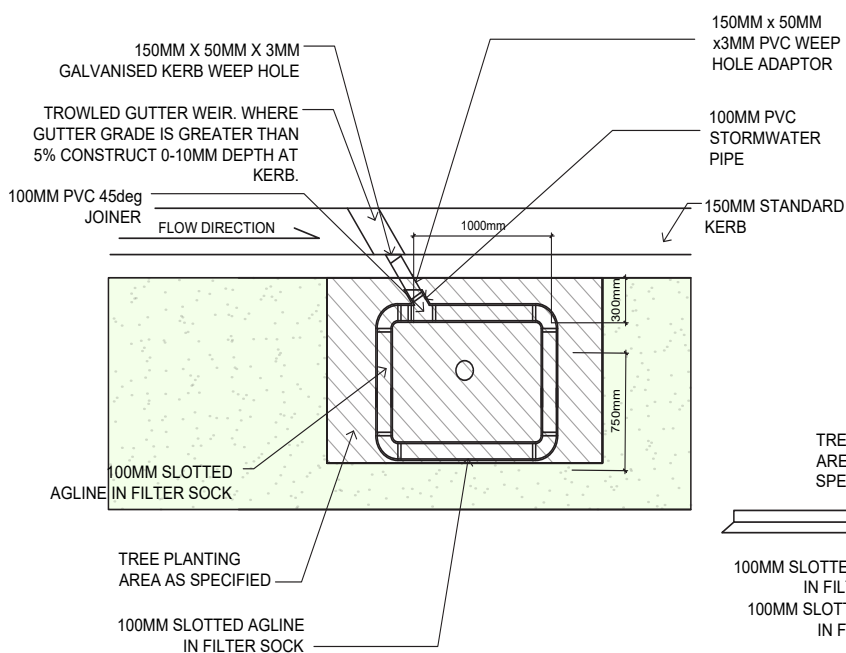
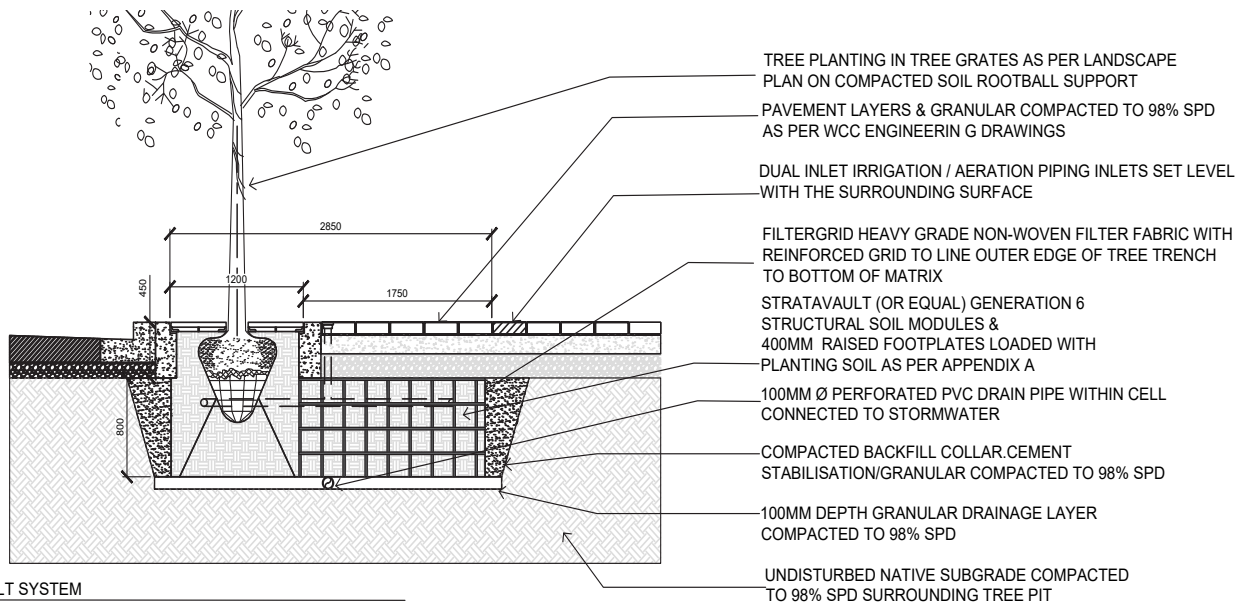


SECTION AA - TYPICAL CONFIGURATION

6.0 STREET TREE PLANTING

6.1 CORE / CIVIC / CITY ENTRY / MINOR CIVIC / WATERFRONT STREETS - SOIL VAULT INSTALLATION

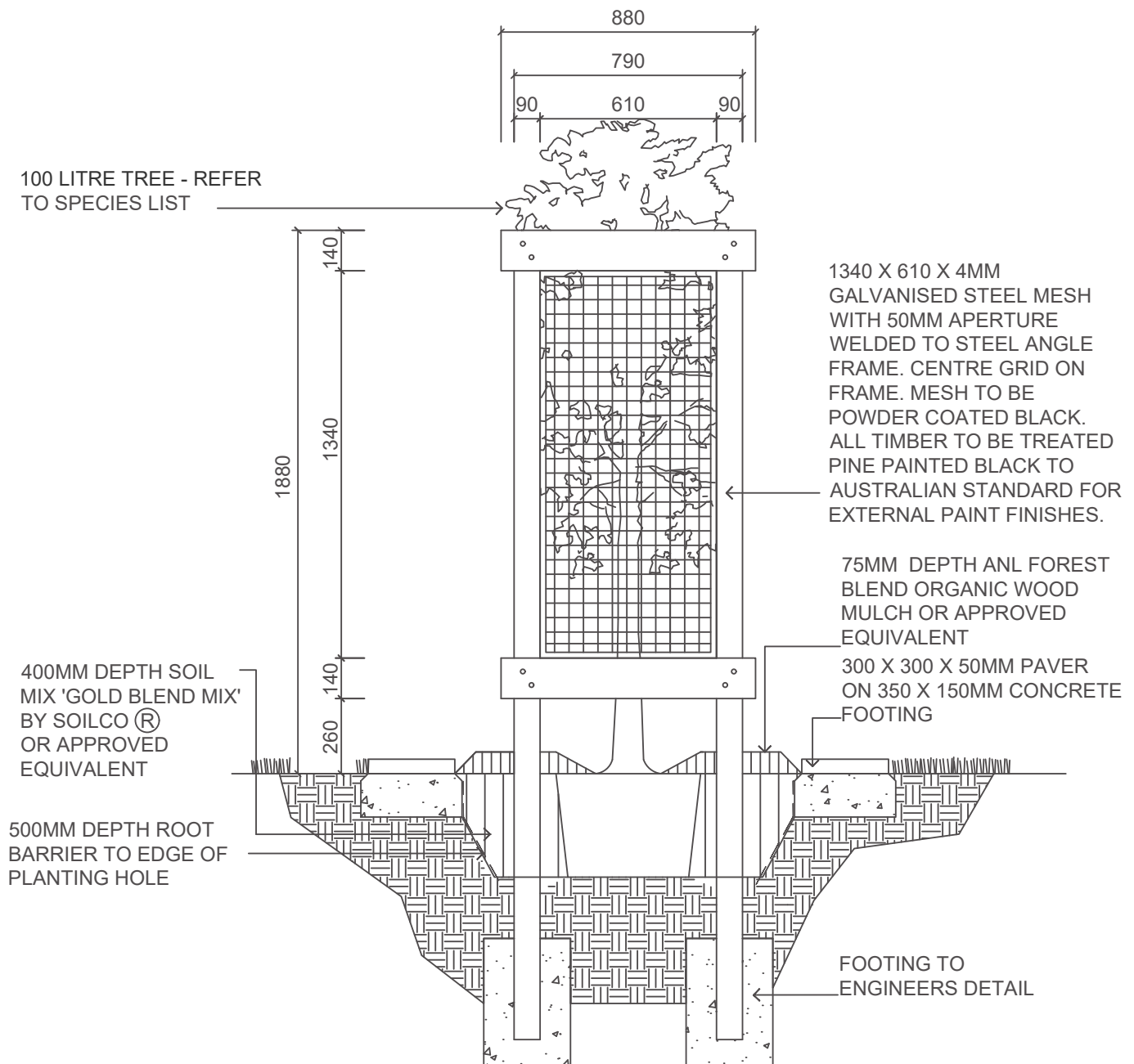
Note: Street trees installed as part of a development will be included in the landscape maintenance contract for the establishment period for the development site. Where there are existing trees to be retained please refer to Appendix C for surface treatment.



6.0 STREET TREE PLANTING

6.2 MIXED USE / RESIDENTIAL STREETS

Note: Street trees installed as part of a development will be included in the landscape maintenance contract for the establishment period of the development site. Where there are existing trees to be retained please refer to Appendix C for surface treatment.



TYPICAL SECTION
PARALLEL TO KERB - NTS

6.0 STREET TREE PLANTING

6.3 SPECIES LIST

BOTANIC NAME	COMMON NAME	CATEGORY
CORE STREETS		
<i>Acer negundo</i> 'Sensation'	Box Elder	Exotic
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	Local Native
<i>Cupaniopsis anacardioides</i>	Tuckeroo	Local Native
<i>Fraxinus pennsylvanica</i> 'Urbanite'	Urbanite Ash	Exotic
<i>Lagerstroemia indica</i> x <i>L. fauriei</i> 'Sioux'*	Sioux Crepe Myrtle	Exotic
<i>Livistona australis</i>	Cabbage Tree Palm	Local Native
<i>Magnolia</i> 'Little Gem'*	Little Gem Magnolia	Exotic
<i>Syzygium paniculatum</i>	Brush Cherry	Local Native
<i>Tristania laurina</i>	Water Gum	Local Native
<i>Ulmus parvifolia</i> 'Todd'	Chinese Elm	Exotic
<i>Waterhousia floribunda</i> 'Green Avenue'	Waterhousia	Native
<i>Zelkova serrata</i> 'Green Vase'	Japanese Elm	Exotic
CIVIC STREETS		
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	Local Native
<i>Cupaniopsis anacardioides</i>	Tuckeroo	Local Native
<i>Lagerstroemia indica</i> x <i>L. fauriei</i> 'Sioux'*	Sioux Crepe Myrtle	Exotic
<i>Livistona australis</i>	Cabbage Tree Palm	Local Native
<i>Magnolia grandiflora</i> 'Sweet Spire'*	Magnolia Sweet Spire	Exotic
<i>Podocarpus elatus</i>	Illawarra Plum	Local Native
<i>Tristania laurina</i>	Water Gum	Local Native
<i>Ulmus parvifolia</i> 'Todd'	Chinese Elm	Exotic
<i>Waterhousia floribunda</i>	Waterhousia	Native
CITY ENTRY		
<i>Cupaniopsis anacardioides</i>	Tuckeroo	Local Native
<i>Livistona australis</i>	Cabbage Tree Palm	Local Native
<i>Lophostemon confertus</i>	Brushbox	Native
MINOR CIVIC STREETS		
<i>Elaeocarpus reticulatus</i> *	Blueberry Ash	Local Native
<i>Lagerstroemia indica</i> x <i>L. fauriei</i> 'Sioux'*	Sioux Crepe Myrtle	Exotic
<i>Syzygium leuhmannii</i>	Weeping Lily Pili	Native
WATERFRONT		
<i>Araucaria cookii</i>	Column Pine	Exotic
<i>Araucaria heterophylla</i>	Norfolk Island Pine	Native
<i>Banksia integrifolia</i>	Coastal Banksia	Local Native
<i>Livistona australis</i>	Cabbage Tree Palm	Local Native
MIXED USE / RESIDENTIAL		
<i>Acmena smithii</i> var. <i>Minor</i> *	Lily Pili	Local Native
<i>Agonis flexuosa</i>	Peppermint Tree	Native
<i>Alphitonia excelsa</i>	Red Ash	Local Native
<i>Backhousia citriodora</i>	Lemon Ironwood	Local Native
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	Local Native
<i>Corymbia ficifolia</i> 'Baby Orange'*	Orange Dwarf Flowering Gum	Native
<i>Corymbia ficifolia</i> 'Baby Scarlet'*	Red Dwarf Flowering Gum	Native
<i>Glochidion ferdinandi</i>	Cheese Tree	Local Native
<i>Hibiscus tiliaceus</i> 'Rubra'	Red Cottonwood	Native
<i>Lophostemon confertus</i>	Brushbox	Native
<i>Pistacia chinensis</i>	Pistachio	Exotic
<i>Podocarpus elatus</i>	Illawarra Plum	Local Native
<i>Polycias elegans</i>	Celery Wood	Local Native
<i>Stenocarpus sinuatus</i>	Queensland Firewheel	Native
<i>Tristania laurina</i>	Water Gum	Local Native
<i>Waterhousia floribunda</i>	Waterhousia	Native

Note: Trees marked with an asterisk (*) are available in smaller cultivars suitable under wires

7.0 SPECIAL AREAS

Where development is proposed within or adjacent to special or heritage areas, liaise with Council to confirm selection of finishes and construction details that will appropriately reflect the nature of the precinct.



Heritage listed trees within Market Square

APPENDIX A

TREE PLANTING SPECIFICATION

TREE SELECTION CRITERIA

Trees are to be selected in accordance with AS2303:2018 Tree Stock For Landscape Use

STREET TREE LAYOUT

The limitations to the positioning of street trees on footways immediately behind the kerb line are listed below, assuming a maximum speed of 50km/h:

LIMIT

Street intersection

Telegraph pole

Storm water inlet

Major underground service junction

Bus stops

Traffic lights

Driveways

CLEARANCE NEEDED

10m from intersection kerb line

5m from centre of pole.

2m from edge of inlet

3m from edge of junction box

No trees planted along length of stop.

10m from pole of traffic lights.

4m from vehicle crossing

Note: The above offsets can be applied generally, however sight distances requirements from Austroads Chapters 3 & 4A must be met.

ROOT BARRIER

Lay continuous lengths of root barrier to protect underground services and prevent root penetration directly under pavement surface. When installing the root barrier on the base of the tree pit and link channel create a high point in the middle to prevent water ponding. Sprinkle Casoron (or approved equal) – root growth inhibitor 100mm wide band outside the perimeter of the excavated pit before placing the root barrier. Use 20g of Casoron (or approved equal) – root growth inhibitor per 1sqm.

SUB SOIL DRAINAGE

Ensure positive drainage to all tree pits prior to backfilling. Install sub-soil drainage lines and connect to available stormwater system. Notify the Certifying Authority, giving two days notice for inspection of drainage operation prior to backfilling.

APPENDIX A

TREE PLANTING SPECIFICATION (CONTINUED)

SOIL TYPES

Submit sample from suppliers for testing by a competent laboratory for conformance to AS4419.

A) STANDARD SOIL MIX

To be used as the growing medium in tree pits to surround tree rootball. The soil mix shall be Gold Blend Mix by Soilco ® or approved equal.

B) FILLER SOIL FOR TREE VAULTS

For use in Tree Vaults, the soil shall be City Green Filler Soil (or equal)

WATER RETENTION MATERIAL WITHIN SOIL MIX

Incorporate water retention material through soil mix, such as Urbanscape Landscape Flock (or approved equal) at a rate of 200 litres per cubic metre of soil, as per manufacturers recommendations.

MAINTENANCE

All newly planted street trees must be installed with a watering pipe as per the details in Section 6.1 and 6.2 to allow watering. Newly planted street trees require deep watering once a week during their first 12 months. At each watering the guards should be checked and repaired or tightened as necessary.

The maintenance period is to conclude after a minimum of 12 months.

APPENDIX B

ADHESIVE PAVER BEDDING & GROUT SPECIFICATION FOR DRIVEWAY PAVEMENTS

The complete system from the concrete slab up will be as follows using the Laticrete products (or approved equal):

1. Laticrete 4237 rapid admixture gauged with 211 powder.
2. Grout: 3701 mortar admix / 226 thick bed mortar with Permacolor Select kit added to achieve a specific colour to match pavers.
3. Sealant: Latasil (movement joints shall be installed where tile, screeds and renders abut restraining surfaces, such as perimeter walls, curbs, penetrations, columns, corners, etc. Expansion joints shall be installed at all "changes of plane" in the tile work, renders and screeds)

The concrete substrate shall be prepared/processed by whatever method deemed by the contractor necessary to prepare the concrete surface and to present with a sound, clean open pored surface.

Mortar bedding application - for adhesive 'Laticrete' high strength bed mortar for pavers.

Laticrete 4237 rapid admixture gauged with 211 powder.

1. The Laticrete adhesive shall be applied with a notched trowel using a scraping motion to work the material into good contact with the surface to be covered. A trowel having notches of sufficient size to optimize bedding is recommended. On site test should be carried out to determine the appropriate trowel size to remove voids in the adhesive bed, full bedding of the pavers and complete adhesive distribution once the pavers are installed.

2. Only as much adhesive shall be applied to the substrate as can be covered within 5 minutes or while adhesive surface is still wet and tacky. Prior to placing the paver, an amount of adhesive shall be applied evenly to the back of the entire paver. The paver shall then be set in place manipulated to insure 100% full bedding (this means full contact of adhesive to paver and full contact of adhesive to substrate) and a true surface. Pavers shall be aligned to show uniform joints and then allowed to set until firm. Clean adhesive from the face of the pavers and joints whilst still fresh. Adhesive can be cleaned with a wet cloth or sponge.

3. Allow to dry for a minimum of 12 hours before allowing traffic to cross. If there is a requirement to drive on the area before the said 12 hour drying period, steel plates are to be placed over the newly laid work until such time the pavers are fully cured.

Grout

Joints shall be grouted or pointed with laticrete 3701 latex admix gauged with Laticrete 226 (permacolor select kit can be added to system should you require a specific colour to match pavers).

1. Joints shall be packed full and free of all voids and pits. (tool or rake as specified).
2. Excess grout shall be cleaned from the surface with water and a damp sponge as the work progresses, while grout is fresh and before it hardens.
3. The day after installation grout film or haze shall be removed using a ph neutral detergent solution.

APPENDIX B

ADHESIVE PAVER BEDDING & GROUT SPECIFICATION FOR DRIVEWAY PAVEMENTS (CONTINUED)

Grout Application

The pavement should be inspected prior to jointing. Joints should be cleaned of any dirt or debris, vulnerable surfaces should be protected with polythene sheets or similar. The lifting eyes and the gaps between frame and cover on utility fittings should be sealed or covered to prevent them being inadvertently mortared.

The area of pavement to be jointed should be doused with clean water to ensure the whole surface is thoroughly wet prior to placing the slurry. Placing mixed jointing material onto a dry surface is likely to result in staining of basalt pavers.

As soon as a batch is mixed, it is emptied out onto the pre-wetted pavement surface and chased into the open joints using a soft brush or a squeegee. The grout is spread over the entire surface and not simply chased along the joints. This ensures the whole surface has been subjected to the same treatment and should therefore avoid any difference in finished appearance between grouted and non-grouted areas. As the slurry settles into the empty joints, joints are repeatedly "topped-up" by passing over them with more of the slurry until no further settlement occurs.

Lightly spray or mist the surface during jointing to prevent drying of the slurry before it can be removed. Keep the jointing material wet at all times until it can be cleaned off.

The slurry residue can be washed off using copious amounts of clean water, aided by a soft brush being swept at an angle to the jointing. Never brush along the joints: this can remove jointing material.

Adjacent to walls or shop entries it will be necessary to complete the cleaning with a sponge and a bucket of clean water.

APPENDIX C - FLEXIBLE PAVEMENT SURFACE OVER EXISTING STREET TREE ROOTS

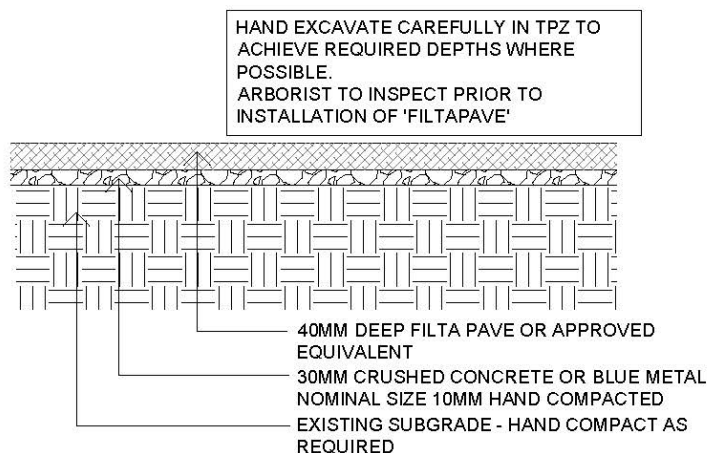
Application

Where street trees are retained and surface roots present, a flexible surface such as 'Filtapave' (or approved equal) shall be implemented (www.filtapave.com.au).

The installation of the product shall be in accordance with the manufacturers recommendations in consultation with Wollongong City Council Design and Technical Services Section and the Consulting Arborist.



EXAMPLE OF INSTALLATION



TYPICAL SECTION NTS

PERMEABLE PAVEMENT TO EXISTING TREES

APPENDIX D - PAVER STRUCTURAL SPECIFICATIONS CONCRETE SEGMENTAL AND FLAG PAVEMENTS

TABLE 1: MINIMUM REQUIREMENTS FOR DIMENSIONS, BREAKING LOAD AND ABRASION RESISTANCE FOR CONCRETE PAVERS AND FLAGS

Specifications for pavers should be in accordance with AS/NZS 4455.2.

The following information is per Table 2.8 AS/NZS 4455.2 has been provided information only.

Pavement Applications			Minimum Characteristic Breaking Load (kN)		Work Size Minimum Thickness (mm)		Dimensional Deviation Category (see Table 2)		Maximum Abrasion Resistance (mean abrasion index)		
			Pavers	Flags	Pavers	Flags	Pavers	Flags			
Relevant Australian Standard			AS/NZS 4455.2 AS/NZS 4456.5		AS/NZS 4455.2		AS/NZS 4455.2 AS/NZS 4456.3		AS/NZS 4455.2 AS/NZS 4456.9		
									Pedestrian Traffic Volume		
									Low	Medium	High
Public Space	Pedestrians and Light Traffic Only	3	3	50	50	DBP2	DBP2	7	5.5	3.5	
	Commercial Vehicles and Pedestrian	5	*	60	*	DBP2	DBP2	7	5.5	3.5	

*No abrasion criteria are specified for residential pavers. Abrasion resistance requirements for aesthetic or other purposes shall be specified to the supplier/manufacturer.

SUMMARY SHEET

Responsible Division	Project Delivery
Latest Version Issued	October 2022
Date of Previous Version	December 2019
Date of Next Review	November 2024
Prepared by	Senior Landscape Architect
Authorised by	Manager Project Delivery