City of Ryde

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City of Ryde

Development Control Plan 2014

Part: 6.5

461-495 Victoria Road, Gladesville

Translation

ENGLISH

If you do not understand this document please come to Ryde Civic Centre, 1 Devlin Street, Ryde Monday to Friday 8.30am to 4.30pm or telephone the Telephone and Interpreting Service on 131 450 and ask an interpreter to contact the City of Ryde for you on 9952 8222.

ARABIC

إذا تعذر عليك فهم محتويات هذه الوثيقة، نرجو الحضور إلى موكز بلدية رايد Ryde Civic Centre على العنوان: 1 Devlin Street, Ryde من الاثنين إلى الجمعة بين الساعة 8.30 صباحاً والساعة 4.30 بعد الظهر، أو الاتصال بمكتب خدمات الترجمة على الرقم 131 450 لكي تطلب من أحد المترجمين الاتصال بمجلس مدينة رايد، على الرقم 9952 8222، نيابةً عنك.

ARMENIAN

Եթէ այս գրութիւնը չէք հասկնար, խնդրեմ եկէք՝ Ռայտ Սիվիք Սենթըր, 1 Տեվին փողոց, Ռայտ, (Ryde Civic Centre, 1 Delvin Street, Ryde) Երկուշաբթիէն Ուրբաթ կա. ժամը 8.30 – կէ. ժամը 4.30, կամ հեռաձայնեցէք Հեռաձայնի եւ Թարգմանութեան Սպասարկութեան՝ 131 450, եւ խնդրեցէք որ թարգմանիչ մը Ռայտ Քաղաքապետարանին հետ կապ հաստատէ ձեզի համար, հեռաձայնելով՝ 9952 8222 թիւին։

CHINESE

如果您看不懂本文，請在周一至周五上午 8 時 30 分至下午 4 時 30 分前往 Ryde 市政中心詢問 (Ryde Civic Centre, 地址: 1 Devlin Street, Ryde)。你也可以打電話至電話傳譯服務中心，電話號碼是: 131 450。接通後你可以要求一位傳譯員爲你打如下電話和 Ryde 市政廳聯繫，電話是: 9952 8222。

FARSI

اگر این مدرک را نمی فهمید لطفاً از 8.30 صبح تا 4.30 بعد از ظهر دوشنبه تا جمعه به مرکز شهرداری رایدRyde Civic Centre, 1 Devlin Street, مراجعه کنید یا به سرویس مترجم تلفنی شماره 131 450 تلفن بزنید و از یک مترجم بخواهید که از طرف شما با شهرداری راید شماره 9952 8222 تلفن بزند.

ITALIAN

Se non capite il presente documento, siete pregati di rivolgervi al Ryde Civic Centre al n. 1 di Devlin Street, Ryde, dalle 8.30 alle 16.30, dal lunedì al venerdì; oppure potete chiamare il Telephone Translating and Interpreting Service al 131 450 e chiedere all'interprete di contattare a vostro nome il Municipio di Ryde presso il 9952 8222.

KOREAN

이 문서가 무슨 의미인지 모르실 경우에는 1 Devlin Street, Ryde 에 있는 Ryde Civic Centre 로 오시거나 (월 – 금, 오전 8:30 – 오후 4:30), 전화 131 450 번으로 전화 통역 서비스에 연락하셔서 통역사에게 여러분 대신 Ryde 시청에 전화 9952 8222 번으로 연락을 부탁하십시오.

Amend #	Date Approved	Effective date	Subject of Amendment
	28/04/2015	**Upon Notification of Ryde LEP (amendment 5) 461-495 Victoria Road**	**This new DCP Part 6.5 was included in the Ryde DCP in response to the Planning Proposal to change the land use zone from IN2 to B5 and to introduce new height controls in the Ryde LEP, that would enable a Bunnings / bulky goods development on the site**

Contents

1.0 Introduction

1.1 Objectives of this Part

Objectives

The objectives of this Part are:

1. To provide a site responsive development control framework.
2. To ensure future redevelopment of the site provides for a design that is considerate of adjoining development to minimise any adverse impacts, particularly to surrounding residential land uses.
3. To ensure new development contributes positively to the public domain and streetscape.
4. To ensure facades/elevations of buildings and structures are designed to be sympathetic to surrounding development.
5. To integrate landscaping into the design and site planning to improve the visual quality of the development.
6. To provide safe and convenient vehicular access and servicing of the site and minimise the impact of vehicle access points on the streetscape and on surrounding land uses.
7. To ensure development maximises pedestrian amenity and safety.
8. To protect the visual and acoustic amenity of adjoining properties.
9. To ensure implementation of the recommendations of the Bunnings Gladesville Traffic and Parking Study as adopted by Council.
10. To give detail to the Ryde Local Environmental Plan 2014, Amendment 5

1.2 Land to which this Part applies

This Part applies to the land known as Lot 300 DP 1194688, 461 - 495 Victoria Road, Gladesville.

1.3 Purpose of this Part

The purpose of this DCP Part is to provide guidance to:

- give effect to the aims and objectives of *Ryde Local Environmental Plan 2014*; and
- Facilitate development that is permissible under that *Plan*.

In particular this Part aims to guide the development of a high quality public domain and built form around and on the site in recognition of the following factors:

- The site is sizeable, prominent, and highly visible (due to significant passing traffic) on Victoria Road, Gladesville
- The potential scale of any development permissible on the site (such as bulky foods, commercial retail)
- The site is within proximity of the Holy Cross College - a school and heritage item
- The site is within proximity of the Ryde Aquatic Leisure Centre which is also a significant attractor in the area.

A number of controls address the above matters. These controls are based on development outcomes which in particular relate to:

- achieving desired development outcomes, including mitigating impacts of size and scale,
- the character of the streets in this locality, and
- achieving a desirable streetscape presentation.

This part has been designed to be read in conjunction with the following:

- Ryde Local Environmental Plan (LEP) 2014
- Other parts of Development Control Plan 2014
- Section 94 Development Contributions Plan 2007
- Bunnings Gladesville Traffic and Parking Study, December 2014 (as amended by City of Ryde Council resolutions 28 April 2015).

City of Ryde Council resolutions 28 April 2015 as they affect the subject site

This DCP comprised part of a Planning proposal for 461-495 Victoria Road Gladesville. When the Planning Proposal was publicly exhibited in 2013; significant community interest was expressed in relation to traffic impacts. Accordingly, a traffic and parking study was undertaken.

The Bunnings Gladesville Traffic and Parking Study was publicly exhibited commencing December 2014. On 28 April 2015 the traffic study and community response was reported to Council. Taking into account all submissions Council resolved to adopt the *Bunnings Gladesville Traffic and Parking Study* recommendations as follows:

> *That Council exercise the delegation issued by the Minister for Planning and Infrastructure to make the planning proposal to amend the land use zone applicable to 461-495 Victoria Road from IN2 Light Industrial to B5 Business Development and the permissible height under Ryde Local Environmental Plan (LEP) 2014 applicable to the site from 10m to RL63, RL52 and RL42 (stepping down from 12-15m on Victoria Road to approximately 7-17m on College Street).*
>
> *That in making the LEP amendment Council will adjust the exhibited map site boundaries to reflect the Victoria Road widening in accordance with recent subdivision approval to create LOT 300 DP 1194688, 461-495 Victoria Road, Gladesville.*
>
> *That Council adopt the following for inclusion in the Bunnings Gladesville Traffic and Parking Study:*
>
> - *Trial full closure of College Street to be implemented prior to Bunnings commencing construction (at no cost to Council by Bunnings). The trial shall be reviewed after 12 months of operation of the Bunnings store and the results reported back to Council at that time. The applicant shall cover the full cost of the traffic review, surveys and any supporting technical studies*
>
> - *Cressy Road carriageway widening to be implemented prior to Bunnings commencing operations (at no cost to council by Bunnings)*

- *Cressy Road (eastern side) full width footpath and safety fence from Victoria Road corner to Holy Cross College entry to be implemented prior to Bunnings commencing operations (at no cost to council by Bunnings)*

- *Tennyson Road and Frank Street site access to be implemented at stage 1 and operable on commencement of Bunnings operations (at no cost to Council by Bunnings)*

- *Traffic signals changes and site access at Tennyson Road to be implemented prior to Bunnings commencing operations (at no cost to Council by Bunnings)*

- *Pedestrian and road safety audit and management plan be prepared that considers the high probability that parents will park at Bunnings to pick up school children or for access to sporting fields (at no cost to council by Bunnings) and also to consider the impact of the two proposed child care centres in that location*

- *A parking optimisation plan for Frank Street and College Street between Frank Street and Orient Street be prepared to counteract any loss of parking due to the Bunnings development and implemented (at no cost to Council by Bunnings)*

- *Roundabout at Monash/Buffalo Road intersection*

- *Detailed study into the impacts of a right hand turn at Westminster Street and a right hand turn ban during the evening peak at Jordan Street from Victoria Road (at no cost to Council - developer funded)*

- *Detailed study into the traffic and parking impacts be undertaken for any proposed rezoning that includes land use changes and increased densities for sites adjoining Tennyson Road. The aforementioned traffic and parking impact study is to be modelled on the Bunnings Gladesville Traffic and Parking Impact Study in terms of its scope and deliverables. (at no cost to Council – developer funded).*

- *An additional traffic and parking study, as detailed in part (x) above, be undertaken for the area bounded by Pittwater Road to Monash Road and Ryde Road to Victoria Road. (at no cost to Council – developer funded).*

That a Roundabout at Monash/Buffalo Road intersection be included in the 2016/2017 City of Ryde Delivery Plan with the funds drawn from the Section 94 reserve.

That Council refer the following matters to the Traffic Committee for consideration:

- *Speed management for the area bounded by Cressy, Pittwater, Higginbotham and Victoria Roads*
- *Parking optimisation for Eltham Street*

At this meeting the Council resolved to adopt a site specific Development Control Plan for 461-495 Victoria Road Gladesville amended in accordance with the above changes in the Bunnings Gladesville Traffic and Parking Study.

An objective of this DCP Part is to implement the above Council resolutions as they apply to the subject site.

1.4 The Local Road Authority

This DCP requires that road and public domain works (associated with the development of the subject land) are to be delivered in accordance with the Council resolutions of 28 April 2015. Accordingly this DCP requires the works to be to the satisfaction of the Local Road Authority to ensure that the works are fit-for-purpose and meet the City of Ryde engineering standards.

The Roads and Maritime Services concurrence must be obtained in relation to network changes to Victoria Road and traffic signals. All changes to public domain lighting, footpaths and the local road network* are required to be to the satisfaction of the Local Road Authority. Where the satisfaction of the Local Road Authority is required the matter must be referred to the City of Ryde Group Manager Public Works (or his representative – Manager Assets Systems) for approval. (Note: A private certifier is not the delegate of the Local Road Authority)

It is recommended that discussions are held with the Local Road Authority prior to the lodgement of material for approval (whether at the DA stage or at other milestones as required by this DCP).

*Note: For the purposes of clarity the Local Road Authority satisfaction is required for the public domain (footpaths, lighting etc.) along Victoria Road and the RMS concurrence for changes to the Victoria Road carriageway (including deceleration lanes, traffic signals, bus stops or the like etc.).

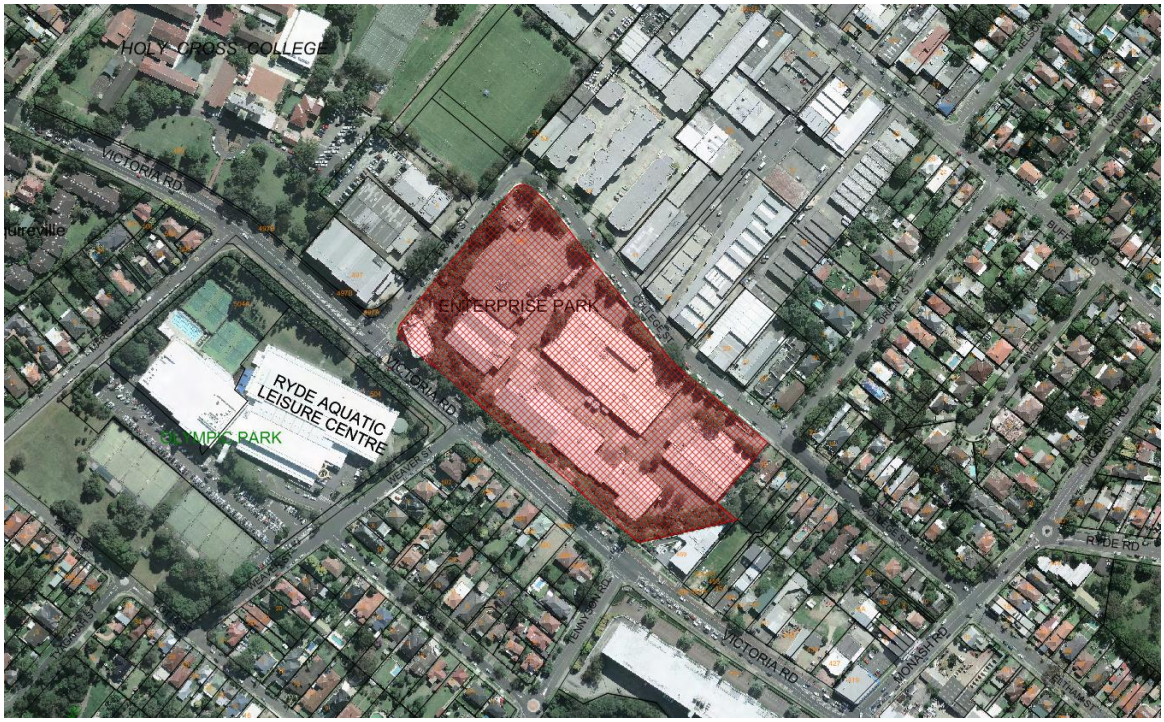


Figure 1.0.1 Aerial photo highlighting Lot 300 DP 1194688, 461 - 495 Victoria Road, Gladesville

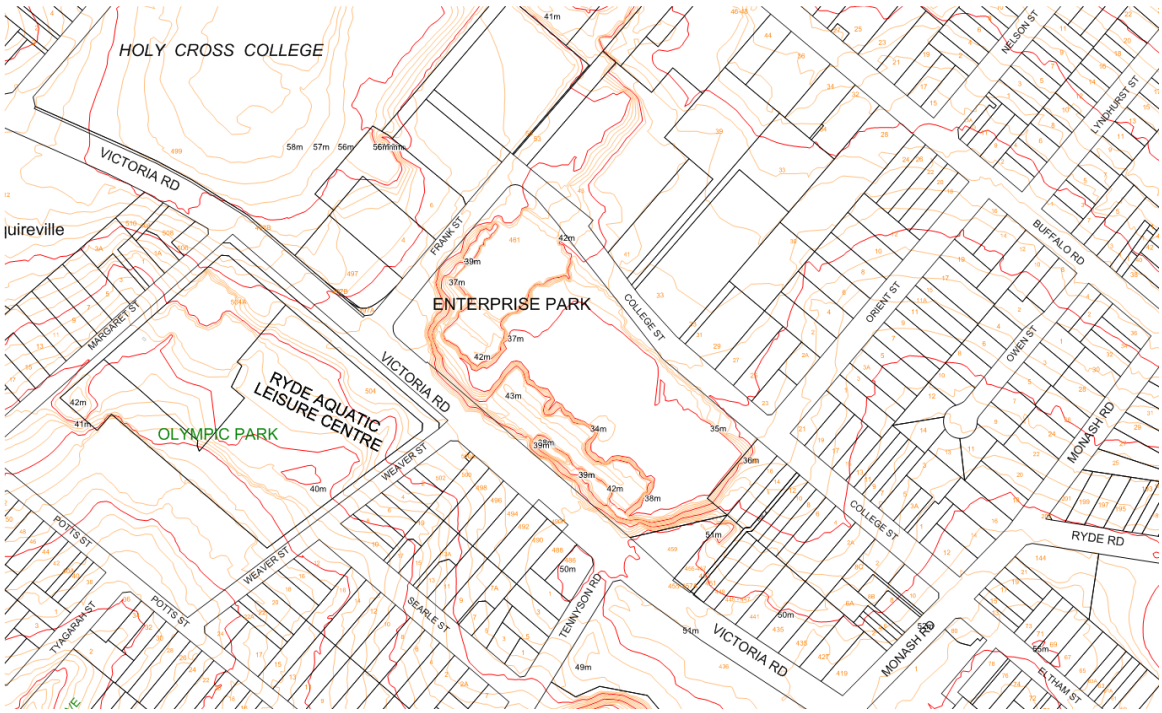


Figure 1.0.2 Cadastre map

Note: the contours are indicative of the former use of the site as a quarry and of relevance to height controls

2.0 DESIGN QUALITY

This section provides detailed planning controls for the subject site designed to ensure the future development is of high design quality. The controls are designed to assist in minimising negative amenity impacts on adjoining and adjacent properties.

Objectives

1. To ensure new buildings contribute positively to the urban built form and environment.
2. To ensure appropriate scale and good environmental amenity, such as sun access.
3. To ensure a built form of a high quality that successfully integrates environmental sustainability with architectural design.
4. To identify appropriate building setbacks for integration with the land uses in the context of the site.
5. To improve the visual and architectural quality of the buildings within the streetscape to reduce the bulk and scale of the buildings from the public domain and neighbouring sites.
6. To ensure well-designed buildings constructed of durable and attractive materials.
7. To maximise outlook and views from habitable rooms and private open space without compromising visual privacy.
8. To protect the amenity of neighbours including
    i. The visual privacy of neighbouring residents
    ii. Eliminate light spill from the Bunnings site to neighbouring residents including from vehicle headlights
    iii. Sunlight access
    iv. To achieve the appropriate acoustic attenuation between the site and neighbouring properties, by giving design consideration to site planning, the location of landscaped buffer zones, plant, and service areas, waste collection and loading docks.

2.1 Built Form

The quality of streets and public spaces may be enhanced by the way buildings address these spaces. Good environmental design includes the control of solar access and overshadowing.

Controls

a. Provide Active Frontage to Victoria Road. Active Frontage will comprise elements including building entries, display windows and retail addressing the street.

b. Development on corners must address all street frontages. Entries, windows and other architectural elements should be placed to reinforce the corner.

c. Provide architectural articulation, modulation and design elements to improve aesthetic appearance and also to minimise blank wall lengths and the bulk and scale of the proposed building. Articulation, modulation or design elements are required at no greater than 30m intervals on the facades facing Victoria Road and College Street. These may include:

i. Vertical or horizontal setbacks in the façade
ii. Pedestrian entries
iii. Windows
iv. Sunshade devices, awnings, and sunscreens,
v. Expressed structural elements including columns, trusses and the like

Figure 2.1.1

Left - expressed structural elements, setbacks and sun shade devices

Below – expressed structure, colour and polycarbonate cladding used to enhance architectural quality.

d. Provide solar protection, including awnings, recessed windows, roof overhangs, external shutters and screens to the western and northern elevations of the buildings.

e. Car parking, driveways, ramps, loading docks and associated vehicular entry/exit structures shall be incorporated into the building façade design and screened from view to improve aesthetic appearance.

f. Car park and vehicular ramp screening is to ensure that vehicular headlights do not shine into residential living spaces and residential outdoor open space.

g. Noise attenuation, sound walls and screens designed to minimise the transmission of noise to residential properties in College Street and Orient Street shall be sympathetically integrated into the design of the building to improve aesthetic appearance and unify other facade elements.

h. Plant and service areas shall be incorporated into the building façade or architecturally screened so that they are not visible from the public domain or neighbouring sites.

i. The building shall incorporate a variety and finishes which create visual interest and are durable.

j. A design quality statement shall be submitted together with the DA that details to the satisfaction of Council;
    i. How the design meets the Built Form requirements of this DCP
    ii. How the building relates to and enhances its context
    iii. Colour and materials selection

2.2 Height

Controls

a. The maximum building height for development on the land is to be in accordance with the heights prescribed by the Height of Buildings Map within the Ryde Local Environmental Plan 2014.

Note: Provisions and definition relating to building height are contained in Ryde LEP 2014. Under Ryde LEP 2014, building height is defined as follows:

Building height *(or* ***height of building****) means the vertical distance between ground level (existing) and the highest point of the building, including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like.*

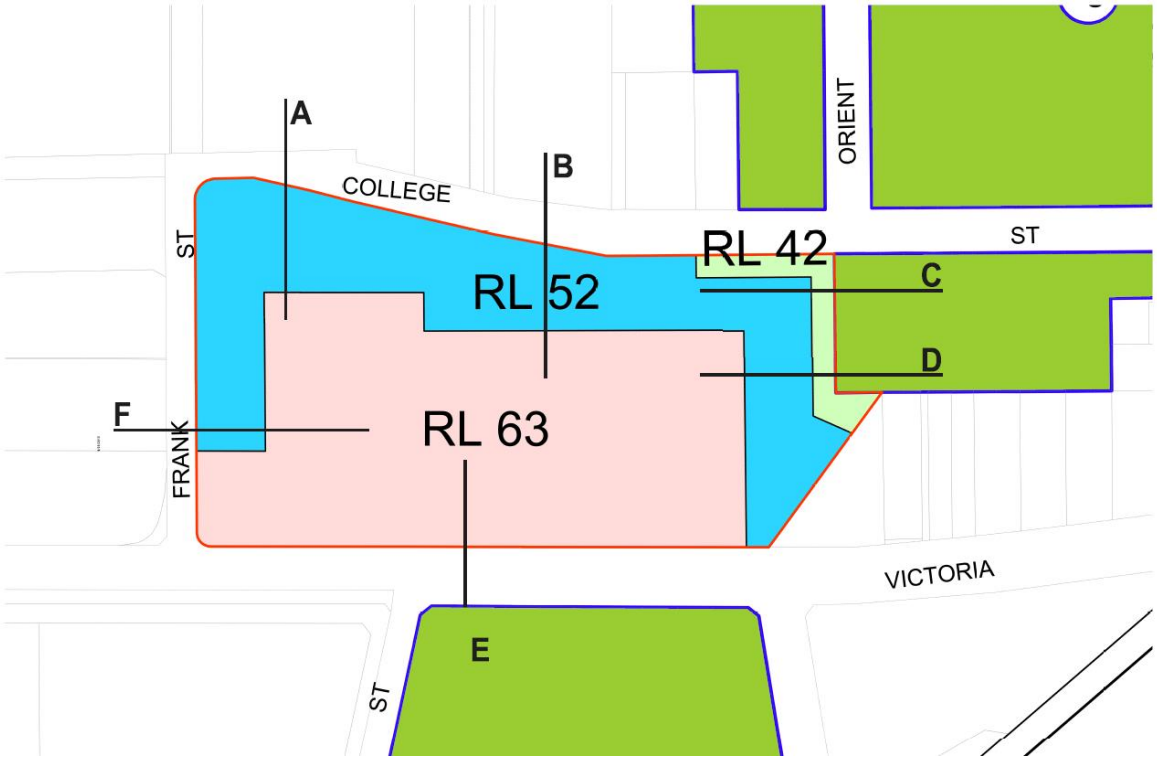


Figure 2.2.1: The above map reflects the Height of Buildings controls applicable to the site under Ryde Local Environmental Plan 2014.

The map also shows the locations of Sections A to F which provide setback controls applicable to built form (Figures 2.3.2 to 2.3.7).

2.3 Setbacks

Controls

a. Buildings are to be set back from the street frontage and other boundaries in accordance with Figure 2.3.1 Building Setback Control Drawing.

b. Minor projections such as entry awnings, sun shading devices and the like may be permissible (see 2.1 Built Form) within the building setback, provided they do not encroach upon the 6m landscaped setback area or impact on the amenity of residential sites.

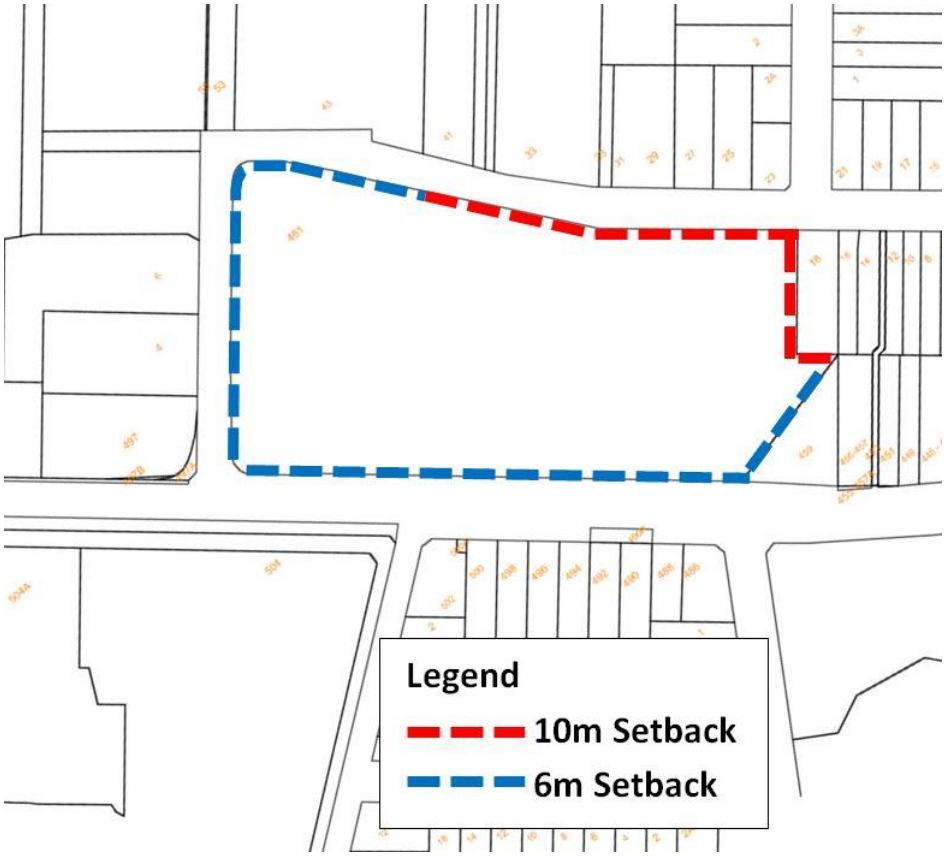


Figure 2.3.1: Building Setback Control Drawing

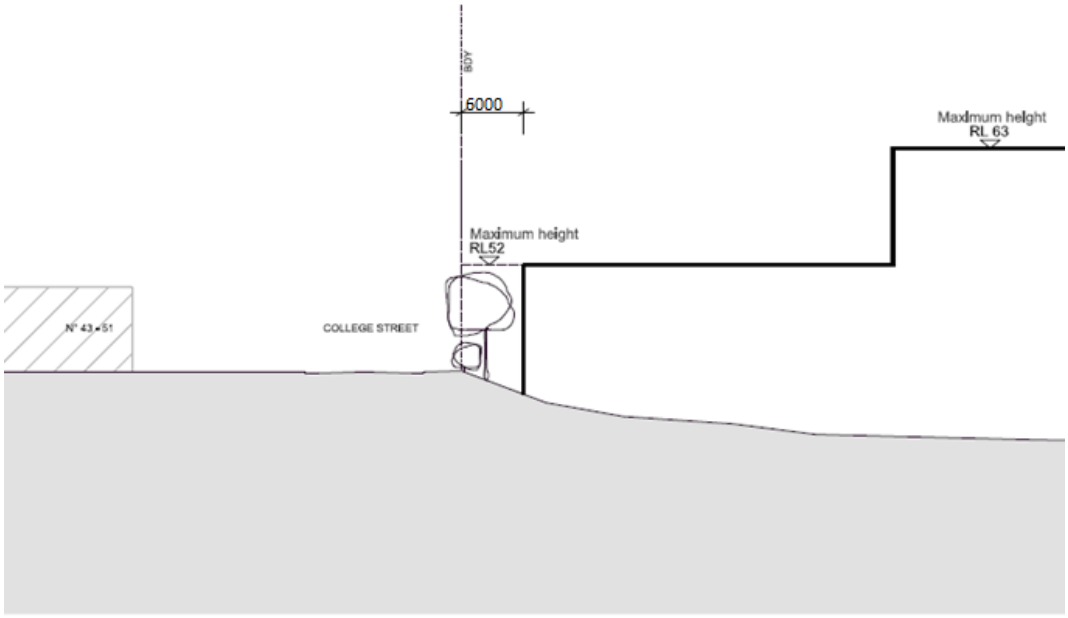


Figure 2.3.2: Section A College Street frontage setbacks

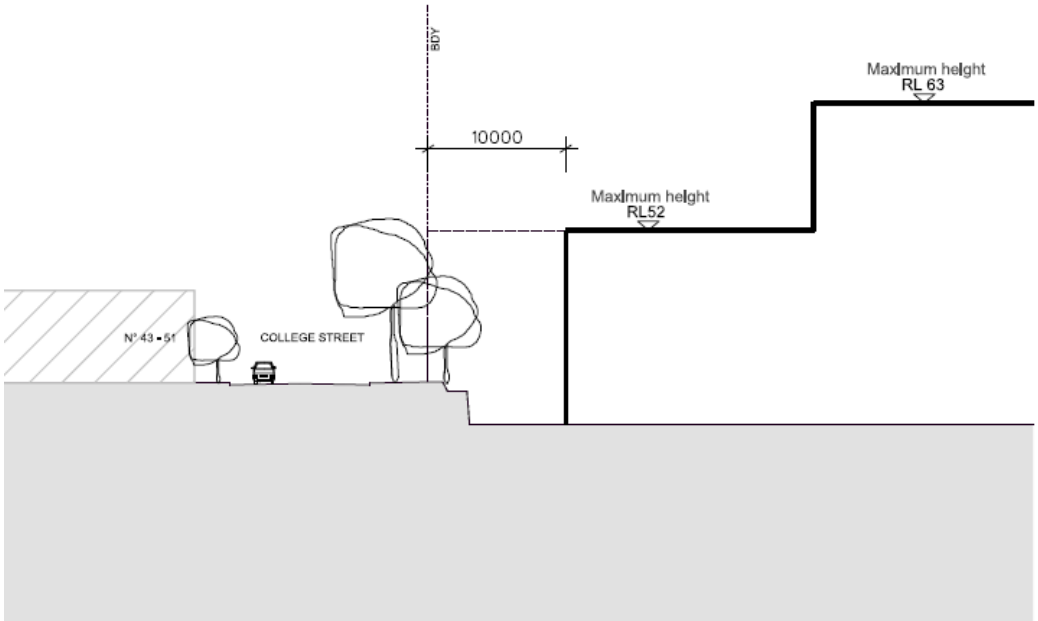


Figure 2.3.3 Section B College Street frontage setbacks

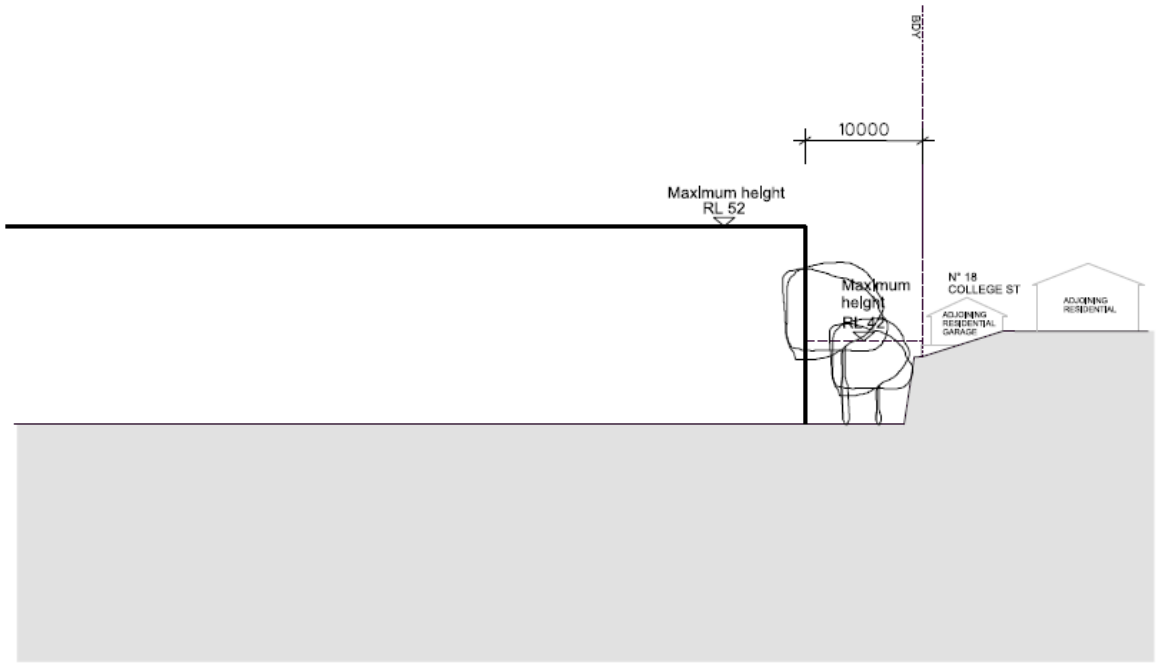


Figure 2.3.4: Section C Setbacks to neighbouring residential property at 18 College Street

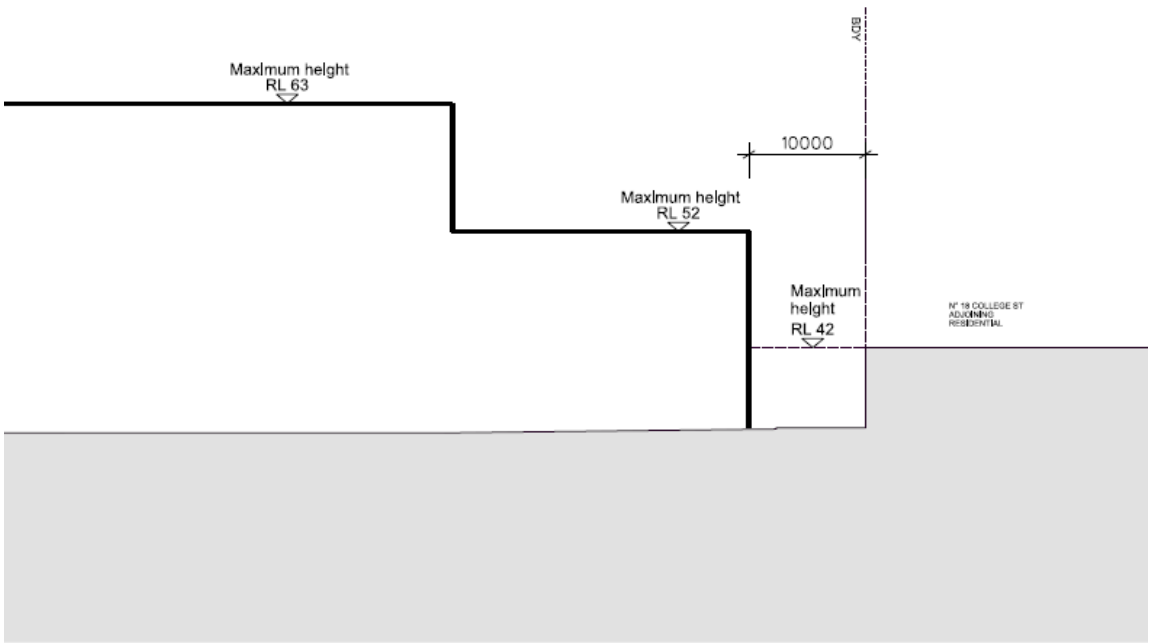


Figure 2.3.5: Section D Setbacks to neighbouring residential property at 18 College Street

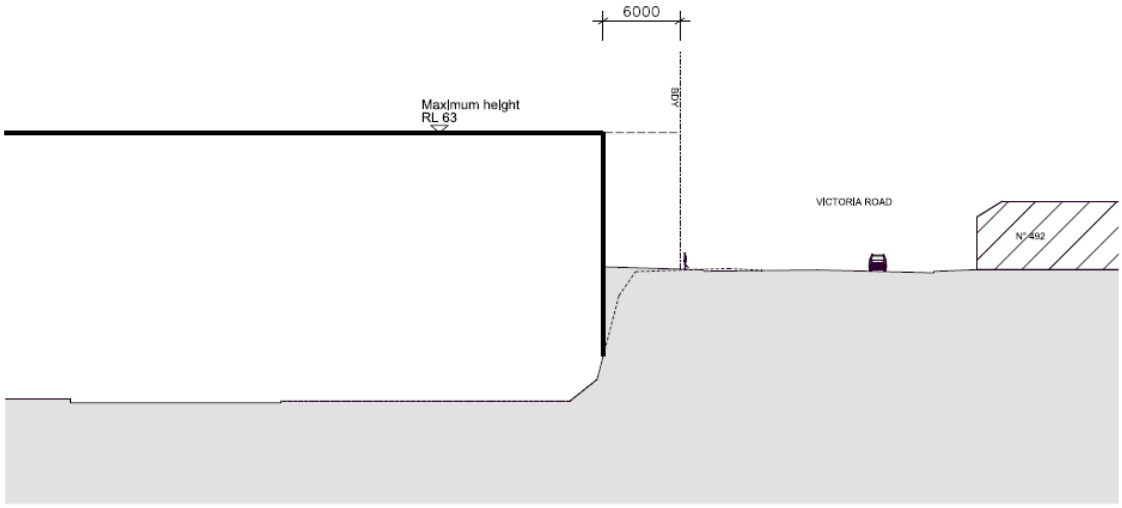


Figure 2.3.6: Section E Victoria Road street frontage setbacks.

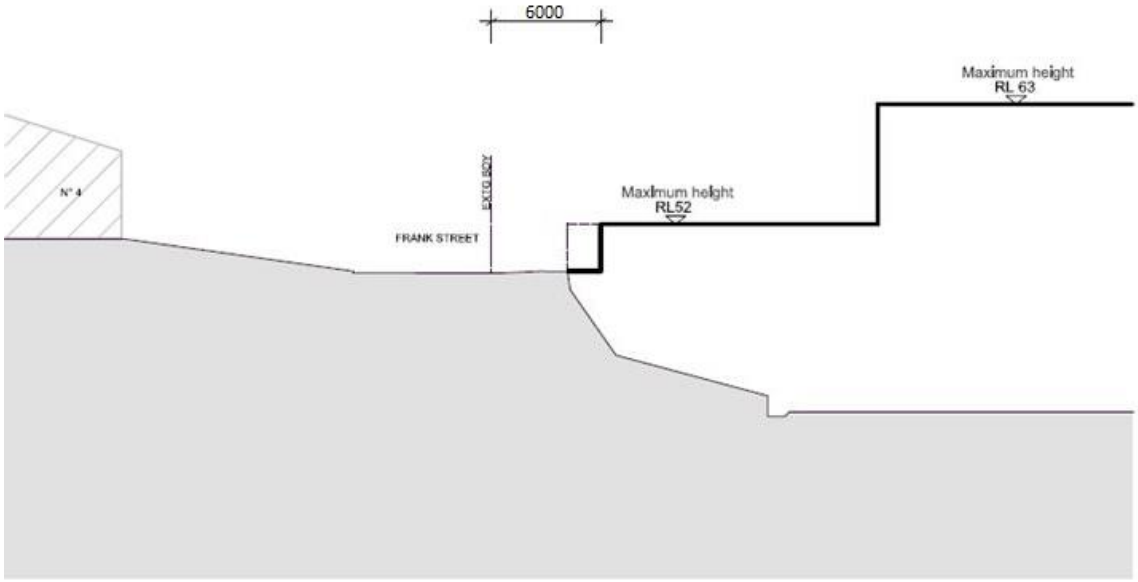


Figure 2.3.7 Section F Frank Street frontage setbacks

2.4 Site Landscaping and Tree Preservation

Controls

a. A minimum 6m landscape setback is required along all street frontages in accordance with Figures 2.3.2, 2.3.6 and 2.3.7.

b. A minimum 10m landscape setback is required on the boundaries that adjoin residential property in accordance with figures 2.3.3, 2.3.4, 2.3.5 and 2.3.6.

c. Landscaping is to be designed to screen the building, (including car parking, loading docks, waste collection and ramp structures) in order to enhance the presentation and architectural quality of the development and to also provide for a landscape buffer for adjoining residential properties that will contribute to neighbours' amenity

d. Retain on site mature trees where appropriate and practicable, and incorporate additional large growing screen trees as key elements of a landscaping plan that seeks to reduce the visual presence of the buildings.

e. Soft landscaping of an appropriate scale is to be provided along the Victoria Road frontage to reduce and soften the visual impact of the buildings, create interest in the streetscape whilst also facilitating active frontage and "Safer by Design" principles.

f. Provide deep soil zone, water capture and recycling in the landscaped area in accordance with City of Ryde *Water Sensitive Urban Design Guidelines*.

g. Existing street trees in College Street are to be retained including protected during the construction period.

h. Development is to comply with the provisions contained in Part 9.6 Tree Preservation of this DCP.

i. A landscape plan prepared by a suitably qualified landscape designer/architect is to be prepared for the subject site and submitted with DA demonstrating compliance with the landscape requirements of this DCP.

Note: A separate public domain plan is also required demonstrating compliance with this DCP Part.

2.5 Solar Access

Controls

a. The development of the land shall not reduce solar access to the habitable rooms (excluding bath, laundry rooms and the like) and private open space areas of any nearby residential development in College and Orient Streets to less than 3 hours of sunlight between 9am and 3pm in midwinter.

2.6 Visual Privacy

Controls

a. Windows may not directly face into nearby residential properties.

b. Apply screens or other façade treatments to parking areas, access, loading docks, storage and waste collection areas, and the like to minimise viewing into and from adjoining residential properties and the public domain.

2.7 Acoustic Privacy

Potential unwanted noise sources increase in more densely developed areas. In mixed use areas, developments need to consider the amenity of a range of surrounding occupants. The impact of commercial and retail noise on residential development and pedestrian amenity needs to be considered. Commercial and retail developments should be designed and managed to minimise noise generation and intrusion.

Controls

a. Provide appropriate acoustic attenuation between the site and neighbouring properties, by giving design consideration to

   i. site planning,
   ii. the location of landscaped buffer zones,
   iii. Location of plant, service areas, waste collection areas and loading docks.
   iv. Acoustic treatments such as sound walls and screens to be provided to reduce the transmission of noise to residential land uses in Orient Street and College Street.

b. The use of premises and any plant, equipment and building services associated with a premises must not:
   i. Create an offensive noise as defined by the Protection of the Environment Operations Act and
   ii. Add significantly to the background noise experienced in the locality. Council may require a statement of compliance.

c. Loading and unloading facilities must not be located immediately adjacent to residential development.

d. Acoustic treatments are to be integrated into the design of the building to provide interest and improve its aesthetic appearance.

e. Above grade carparks, ramps, driveways and loading docks shall be contained within the building envelope.

3.0 PUBLIC DOMAIN

The public domain is made up of streets, pedestrian connections, small civic parks and squares. Controls apply to the land adjoining outside the site.

Streets form the framework of the public domain connecting people to shopping, services, recreation and residential. A well designed public domain can provide a focal point for community interaction.

3.1 Access and the Public Domain

Public domain spaces within Ryde need to be designed and sited so that the areas are safe at all times for all pedestrians and cyclists and so that they are accessible to all.

Objectives

1. To reduce vehicular conflicts through good design of building entrances and reducing footpath cross-overs.
2. To clearly differentiate uses and separate conflicting uses.
3. To use appropriate lighting levels.
4. To encourage and maximise environments for 'safe' pedestrian access and mobility.

Controls

a. Where a development proposal includes new floor space that exceeds 2000 sqm; a pedestrian and road safety audit and management plan must be prepared and submitted with the Development Application that:
   i. Addresses *Safer by Design* principles
   ii. Considers the high probability that people will park at the site to pick up Holy Cross College students, to access to the Holy Cross sporting fields, nearby childcare centres and /or the Ryde Aquatic Leisure Centre.
   iii. Provides safe convenient access to and from the site for pedestrians particularly within Frank and College Streets
   iv. Demonstrates that the proposed road design, traffic mitigation measures and access and egress from the site caters appropriately for future interactions between pedestrians, vehicles and heavy vehicles.
   v. Considers providing safe through-site links between College Street and Victoria Road to facilitate public transport access for local residents and industrial area employees.
   vi. Details how vehicular access points are to be clearly identified with paving, signage and the like.
   vii. Maximise active frontages on Victoria Road including windows and pedestrian entries
   viii. Demonstrates that pedestrian ways are well lit and subject to passive surveillance
   ix. Is to the satisfaction of the Local Road Authority.

Note: In this DCP part the Local Road Authority is the City of Ryde Group Manager Public Works. Where the satisfaction of the Local Road Authority is required the matter is to be referred to the City of Ryde Group Manager Public Works (or his representative – Manager Assets Systems).

b. A public domain plan must be prepared by a suitably qualified landscape architect/designer and submitted with the Development Application to the satisfaction of the Local Road Authority that:

    i. Addresses issues identified by the aforementioned pedestrian and road safety audit and management plan.
    ii. Demonstrates compliance with the requirements of clause 3.2 Public Domain Landscape including:
        i. Details how the existing street trees in College Street are proposed to be protected and retained
        ii. Details of new street tree plantings and nature strips
    iii. Demonstrates compliance with the requirements of clause 3.3 Urban Elements and Finishes including:
        i. Details of new paving (including locations of granite banding, kerb ramps and driveway crossings)
        ii. Details of street lighting (including pole and associated metre box locations)
        iii. Details of street furniture (seats, bins and benches) in accordance with the *City of Ryde Public Domain Technical Manual – Gladesville*.
        iv. Details of seating and shelter at bus stops adjacent the site in accordance with the City of Ryde *Public Domain Technical Manual* as a guide.
    iv. Demonstrates road network changes in accordance with clause 4.1 Traffic Management and consequential changes to the public domain, including:
        i. Carriageway widening in Cressy Road, new full width concrete footpath and safety fence from the Victoria Road to the Holy Cross College entry
        ii. College Street road closure details and consequential footpath changes.
        iii. Victoria Road footpath details, street tree and bus stop locations.
        iv. Frank Street footpath, driveway crossings and landscaping.

c. All kerbs, driveway crossings, carriageway median strips and other elements of the public domain / road network shall be generally in accordance with the relevant sections of Schedule 1: Public Domain Technical Details attached to this DCP Part.

3.2 Public Domain Landscape

Objectives

1. To create memorable landscape image, which builds on the positive characteristics of topography, landscape character and views.
2. To create tree planting, to reinforce spatial quality and build on the palette of existing species in the street, provide shade for pedestrians, and improve the image of the streetscape clearly differentiate uses and separate conflicting uses.

Controls

a. Existing street trees in College Street and Cressy Road are to be protected during construction and retained.

b. Provide landscaped nature strips as part of the public domain. These may include trees and ground covers or grass verge as appropriate.

c. New street trees are to be provided along the Victoria Road frontage. The trees are to be:
   i. 200L size at installation, planted in 3m x 1.5m pits and their health guaranteed for 2 years
   ii. Provided generally in accordance with Figure 3.2.1 and the *City of Ryde Public Domain Technical Manual – Gladesville*. The selection is to be based on the scale of proposed buildings, the context such as the width of the street, aspect, and on environmental parameters such as soil type

Note: The City of Ryde Public Domain Technical Manual - Gladesville. Requires that new street trees in Victoria Road are to be either Pyrus calleryana 'Capital' (Ornamental Pear) or Platinus acerifolia (London Plane Tree)

GLADESVILLE STREET TREES Data sheet

Pyus flower and bark

Pyrus in Victoria Road, Gladesville (summer)

Pyrus calleryana 'Capital' – Capital Pear

- Narrow shape to fit limited space on Victoria Road
- Deciduous - good shade in summer, sun in winter
- Autumn colour
- White flowers in spring
- Tolerates full sun and air pollution

Platanus bark and foliage

Platanus acerifolia – London Plane Tree

- Excellent shade tree, hardy and long-lived
- Tolerates full sun and air pollution
- Quick growing, establishing in 3 to 5 years

Figure 3.2.1 Victoria Road street tree options.

3.3 Urban Elements and Finishes

Objectives

1. To coordinate paving and street furniture with other urban elements for consistency in approach in the City of Ryde
2. To ensure maximised safe and accessible pedestrian environments.
3. To improve the image, quality and amenity of streets and public spaces through quality finishes, lighting and street furniture.
4. To ensure the selection of urban elements and level of provision is based on the hierarchy of streets and intensity of use.

Controls

a. Where road network changes are required to be implemented under the provisions of clause 4.1 Traffic Management, new footpaths shall be installed to the satisfaction of the Local Road Authority.

b. Provide paving of a strength, grade and finish which maximises safe pedestrian usage to the satisfaction of the Local Road Authority as follows:
   i. Comply with Australian Standard 1428 and Ryde DCP Part 9.2 Access for People with Disability.
   ii. A minimum 1.5m wide concrete footpath on all street frontages to the subject site
   iii. The footpath shall be full width from boundary to kerb at the Victoria Road and Frank Street corner, at bus stops and at pedestrian entries to the building.
   iv. Granite banding at 7.5m intervals maximum in accordance with Figure 3.3.3 and Detail Pv1.2a Schedule 1: Public Domain Technical Details attached to this DCP Part.

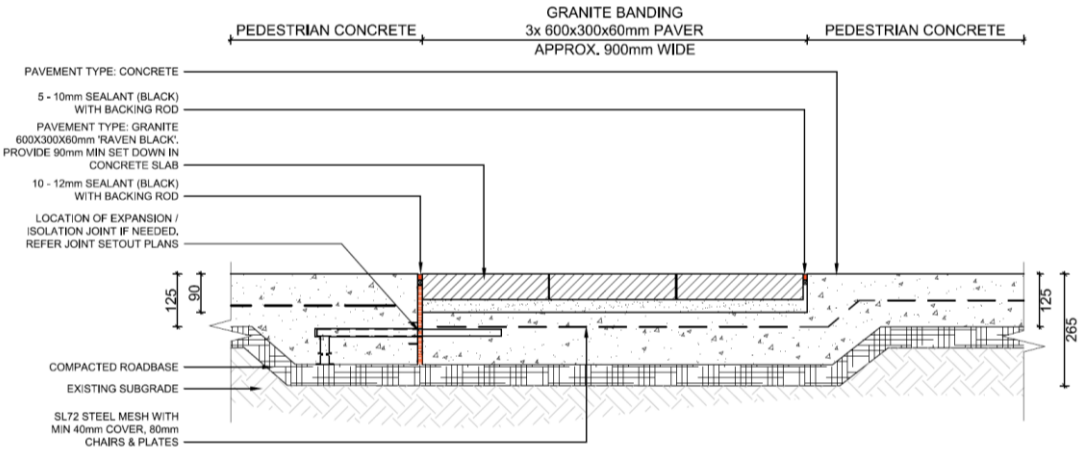


Figure 3.3.3 Detail: Granite banding in concrete footpath

c. Provide a pedestrian safety fence and new full width concrete footpath from kerb to boundary along the eastern side of Cressy Road from Victoria Road to the Holy Cross College entry.

d. Provide lighting of public domain areas, including installation of multi-function light poles in the road reserve along the Victoria Road frontage accordance with Figure 3.3.2 to the satisfaction of the Local Road Authority.

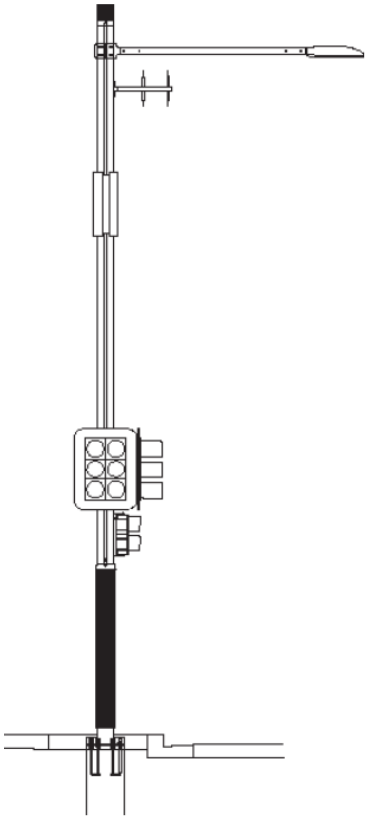


Figure 3.3.2 Multi-Function Light Pole

- To achieve P2 Light levels in accordance with the relevant Australian Standard and the satisfaction of the Local Road Authority
- Capable of taking banners

3.4 Signage

Objectives

1. To minimise visual clutter through the control and coordination of signage.
2. To reinforce the streetscape and enhance the character of the area.

Controls

a. Signage is to designed to comply with the provisions contained in Part 9.1 Signage of this DCP.

b. Signage may not dominate the Victoria Road façade of the development.

c. A signage plan is to be prepared and submitted with DA detailing locations and size of signage and demonstrating compliance with Part 9.1 Signage under this DCP.

4.0 TRAFFIC, ACCESS AND PARKING

Objectives

1. To ensure the recommendations of the Bunnings Gladesville Traffic and Parking Study, as adopted by Council, are implemented through development.
2. To provide a framework for ensuring effective monitoring and review of operation of traffic
3. To provide adequate and accessible parking and on-site service areas.
4. To manage traffic in and around the site so as to minimise disruption to the local road network
5. To protect the amenity of neighbouring residents, business and workers
6. To manage potential through traffic
7. To enhance road safety in the local area

4.1 Traffic Management

Controls

a. Prior to the issue of a Construction Certificate for new works on the subject site, the closure of College Street (in both directions) at approximately the boundary between the R2 Low density residential zone and the IN2 Light Industrial zone is to be implemented by the developer at no cost to Council and to the satisfaction of the Local Road Authority.

Note: To determine the location for the College Street Road closure and boundary of the IN2 Light Industrial and the R2 Low Density Residential land use zones refer to Ryde LEP 2014 Land Use maps. The College Street road closure shall be implemented such that it may be readily converted to a partial / one way road closure.

The procedure for knowing the "satisfaction of the Local Road Authority" is to submit plans for the road closure to the Local Road Authority for approval allowing at least 3 weeks for a response – see clause 1.4. Approval will be provided in a written format.

b. The proponent shall provide a quarterly traffic management report to the Local Road Authority for the first 12 months of site operations to document any traffic and parking issues arising that have affected the external road system and how they have been or are proposed to be mitigated.

Note: In accordance with City of Ryde Council resolutions 28 April 2015, the abovementioned traffic management reports will be presented to the Council 12 months after commencement of operations on site. Should it be warranted, the full closure of College Street may subsequently be converted to a partial / one-way closure and / or other network changes considered.

c. Prior to the commencement of on-site operations and the issue of any occupation certificate (including “interim”) provide the following traffic management mitigation measures at no cost to Council and to the satisfaction of the Local Road Authority:
   i. Cressy Road carriageway widening to include an additional traffic lane at the northern approach to the Victoria Road intersection.
   ii. Cressy Rd (eastern side) full width concrete footpath and safety fence from the Victoria Road intersection to the Holy Cross College entry
   iii. Tennyson Road and Frank Street site access to be implemented at stage 1 of the site development
   iv. Traffic signals changes at Tennyson Road, Cressy Road and Frank Street to be implemented as required by the Roads and Maritime Services and / or the Local Road Authority

d. Together with any Development Application (for new floor space on the site) that is submitted to Council; provide a Traffic and Parking Report detailing:
   i. The quantum of proposed parking on the site
   ii. The traffic generation of the proposed development and land uses
   iii. How controls 4.1(a) and 4.1(b) traffic management mitigation measures are proposed to be implemented to the satisfaction of the Local Road Authority
   iv. A Statement of Commitment to provide the required traffic mitigation measures

4.2 Vehicular Access

Controls

a. No vehicular entries or exits to the site are to be located on College Street.

b. A new vehicular entry/exit is to be provided on Victoria Road at the signalised intersection at Tennyson Road. This access is to be implemented at stage 1 of the on site development.

c. Vehicular entries and exits are to be provided on Frank Street and implemented at stage 1 of the development.

d. Ensure vehicular entries, vehicular circulation and loading docks are designed in accordance with Australian Standards AS 2890.1, 2, 3, 5, and 6 Parking Facilities.

e. All kerbs, driveway crossings, carriageway median strips and the like shall be generally in accordance with the relevant sections of Schedule 1: Public Domain Technical Details attached to this DCP Part.

4.3 Car Parking

Controls

a. Provide a parking optimisation and implementation plan for Frank Street and College Street to counteract any loss of parking due to the Bunnings development Implementation of the parking optimisation plan:
   i. is to occur prior to the commencement of on-site operations and the issue of any occupation certificate (whether interim or final)
   ii. be at no cost to Council and to the satisfaction of the Local Road Authority

b. Ensure car parking areas and ramps are designed in accordance with Australian Standards AS 2890.1, 2, 3, 5, and 6 Parking Facilities.

c. Off street car parking is to be provided in accordance with Ryde DCP Part 9.3 and must provide adequate parking for employees and patrons.

d. Where possible, parking, loading docks ramps and driveways shall be located underground or under cover and within the building envelope. As a minimum, a high quality architectural screen is required so that these facilities are not visible from the public domain and so that acoustic intrusion and headlights from vehicle movements is minimised for residential properties in College Street and Orient Street.

e. Parking is to be accessible to all stages and components of the eventual development. All vehicular site entries and exits are to access all vehicular parking areas.

f. Parking within the development is to be designed so as to minimise impacts on the road network such as queuing in Frank Street and Victoria Road.

5.0 SITE SERVICES

Objectives

1. To provide for the size and number of service areas in proportion to the scale and intensity of the proposed use.
2. To ensure that service facilities do not detract from the amenity of nearby public spaces and residential areas.
3. To ensure appropriate stormwater design and management having regard to the characteristics of this site and catchment area.
4. To ensure that the design of waste storage and collection facilities are integrated into the design of the development.

5.1 Tree Preservation

Controls

a. Street trees in College Street are to be retained and protected during the construction period.

b. Development is to comply with the provisions contained in Part 9.6 Tree Preservation under this DCP.

5.2 Stormwater and Water Management

Controls

a. Stormwater management system is to be designed and provided in accordance with the requirements of the:
   i. City of Ryde DCP 2014 - Part 8.2 Stormwater and Floodplain Management and supporting documents
   ii. City of Ryde Water Sensitive Urban Design Guidelines (WSUD)
   iii. Stormwater and Floodplain Management Technical Manual

b. A detailed site specific flood study report and stormwater drainage plan are required to be submitted with the Development Application, demonstrating compliance with the requirements of DCP Part 8.2 Stormwater Management. The study should consider the downstream draining system in the analysis. In addition, a design solution is required to ensure the downstream properties will not be subject to increased risk of flooding after the development. If required the downstream stormwater pipe system shall be amplified to the current standard.

5.3 Waste Minimisation and Management

Controls

a. The storage, management and collection of waste is to be designed and provided in accordance with the requirements contained in Part 7.2 Waste Minimisation and Management of this DCP.

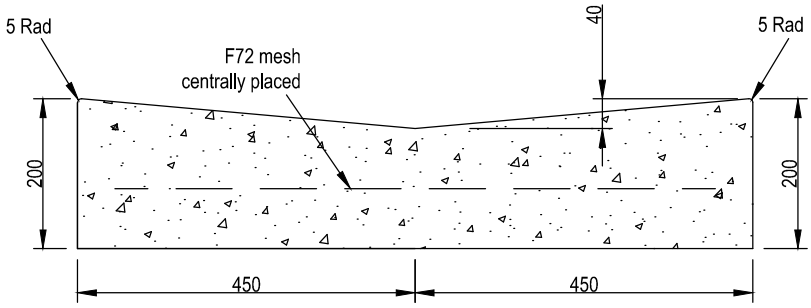
5.4 Services

Controls

a. All services infrastructure including the fire hydrant, gas meters and the like shall be located within the building envelope and, where not otherwise required to be visible, to be screened from view from the public domain.

b. Power shall be undergrounded all-round the site.

SCHEDULE 1 – Public Domain Technical Details



DISH CROSSING
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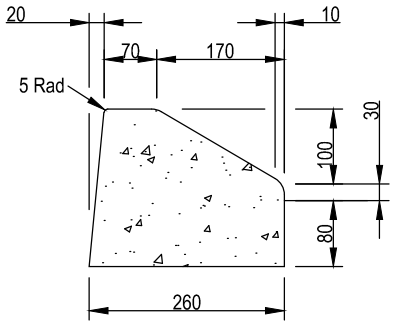

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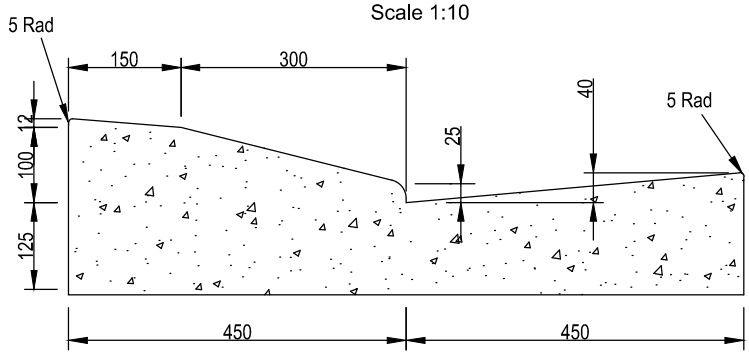

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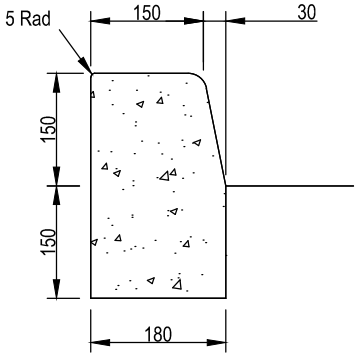

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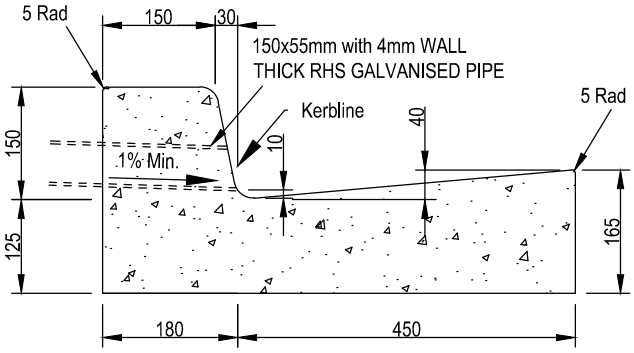

STANDARD KERB & GUTTER
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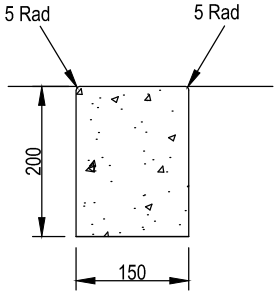

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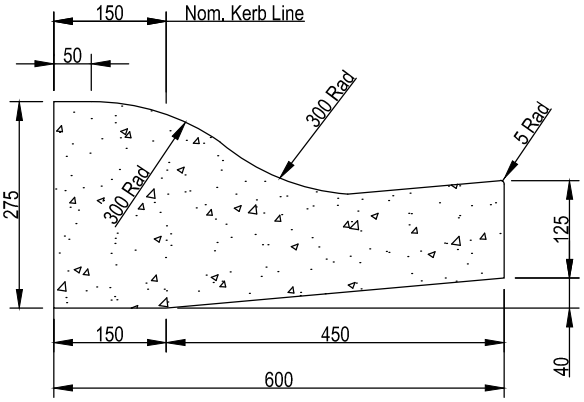


ROLL KERB
Scale 1:10

NOTES

1. Scales shown are for A4 size drawing.
2. All roadside kerbs shall be laid on a minimum 150mm thickness compacted Porters Creek or equivalent recycled roadbase.
3. All corners shall have a 25mm radius unless noted otherwise.
4. All kerbs, gutters and edge strips shall be steel float finished.
5. Expansion joints shall be full depth 6mm bituminous mastic jointing material at intervals of 6m maximum and 4m minimum.
6. Concrete shall have a 28 day strength of 25MPa minimum.
7. Concrete shall be placed with a maximum slump of 80mm.
8. Refer to Drawing CIV 02 for standard kerb ramps.
9. Refer to Drawings CIV 03 and CIV 04 for standard and heavy duty driveway laybacks.
10. All dimensions in mm unless noted otherwise (U.N.O)

DISCLAIMER:

City of Ryde
Public Works - Project Development

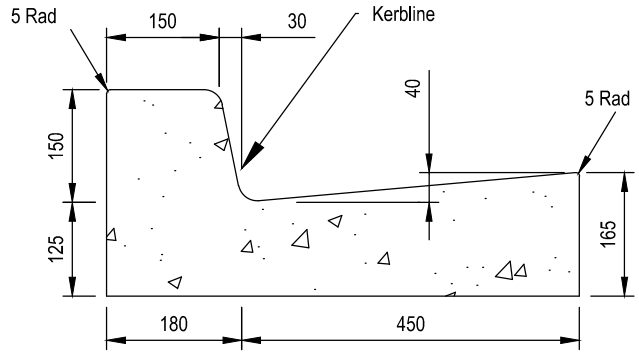
STANDARD DRAWING:

KERBS AND GUTTERS

DRAWING N0: CIV 01

DRAWN: M.C	APPROVED: I.A
CHECKED: JSB/TM	DESIGN MANAGER
VERIFIED: V.P	...../...../.....

SCALE: 1:10@A4
SHEET: 1 OF 1
DATE: 20/05/2014
REV: B



KERB & GUTTER
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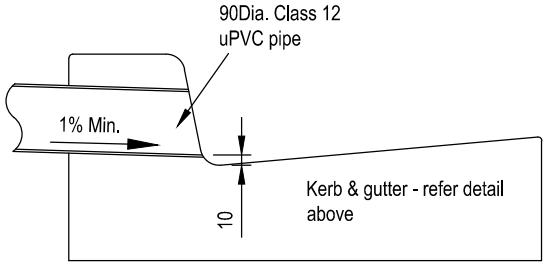

KERB OUTLET PIPE
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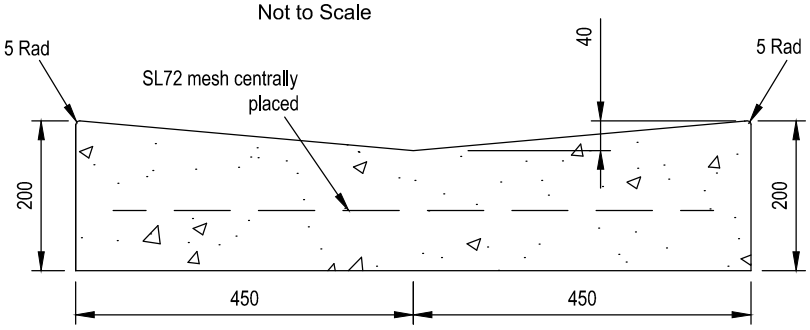

DISH CROSSING
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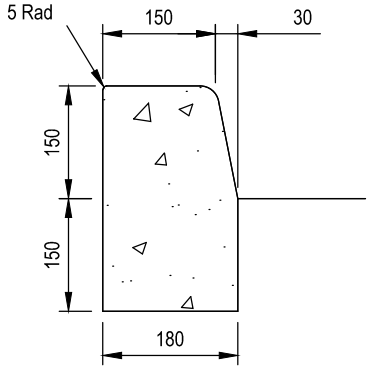
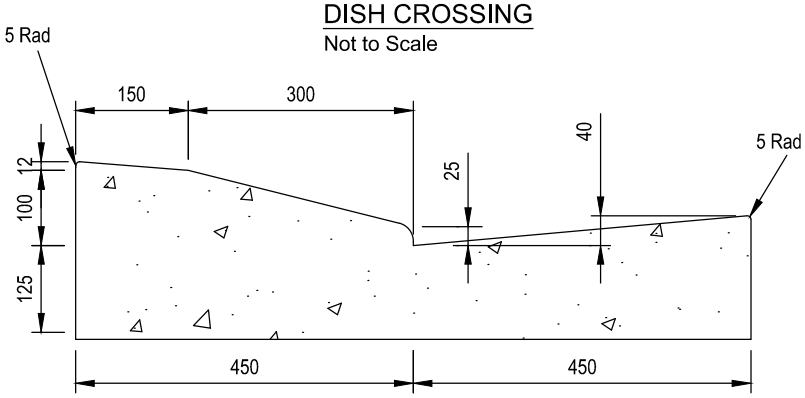


KERB ONLY
Not to Scale



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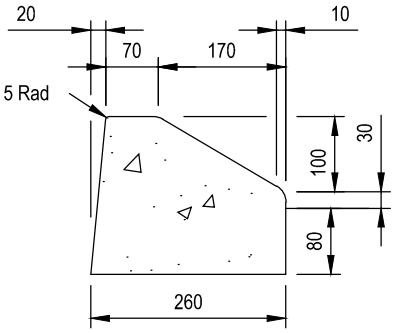

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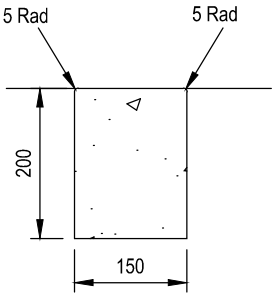

EDGE STRIP
Scale 1:10

NOTES

1. Scales shown are for A4 size drawing.
2. All roadside kerbs shall be laid on a minimum 150mm thickness compacted Porters Creek or equivalent recycled roadbase.
3. All corners shall have a 25mm radius unless noted otherwise.
4. All kerbs, gutters and edge strips shall be steel float finished.
5. Expansion joints shall be full depth 6mm bituminous mastic jointing material at intervals of 6m maximum and 4m minimum.
6. Concrete shall have a 28 day strength of 25MPa minimum.
7. Concrete shall be placed with a maximum slump of 80mm.
8. Refer to Drawing CIV 02 for standard kerb ramps.
9. Refer to Drawings CIV 03 and CIV 04 for standard and heavy duty driveway laybacks.
10. All dimensions in mm unless noted otherwise (U.N.O)

DISCLAIMER:

City of Ryde
Public Works - Project Development

STANDARD DRAWING:

KERBS AND GUTTERS

DRAWN: M.C	APPROVED: I.A
CHECKED: JSB/TM	DESIGN MANAGER
VERIFIED: V.P	...../...../.....

DRAWING N0: CIV 01-2

SCALE:	SHEET:
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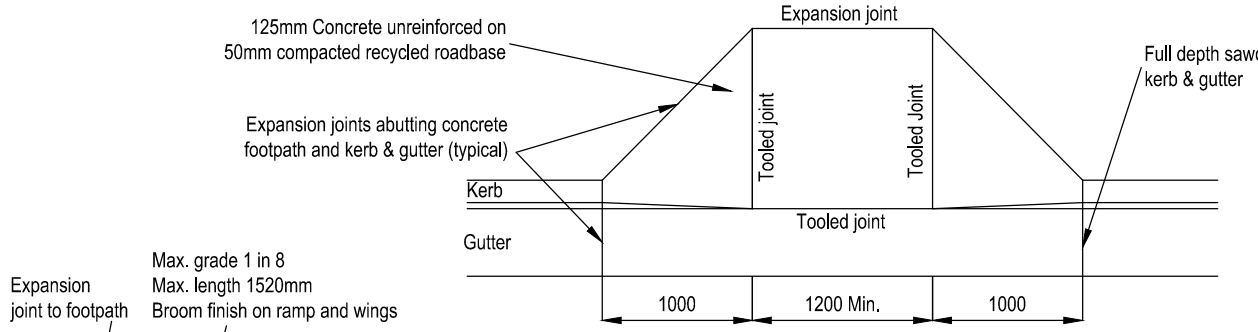
DATE:	REV:
20/05/2014	B



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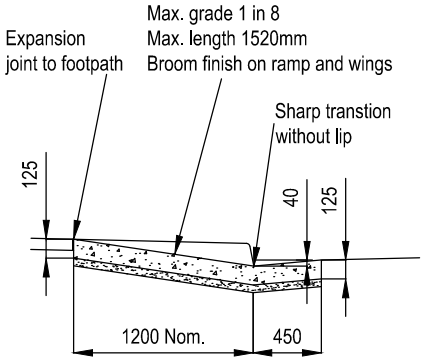
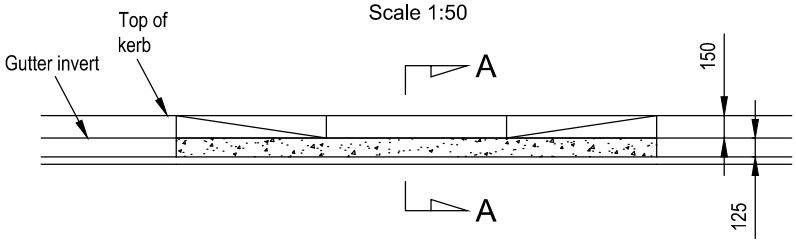
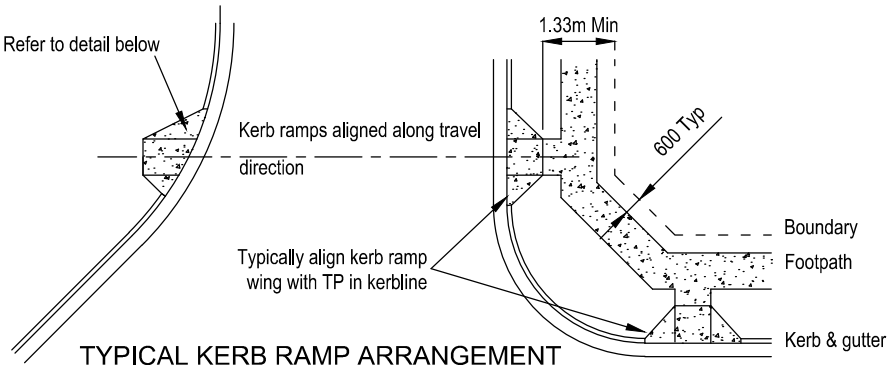


SECTION A-A
Scale 1:50



ELEVATION
Scale 1:50



TYPICAL KERB RAMP ARRANGEMENT
AT INTERSECTIONS
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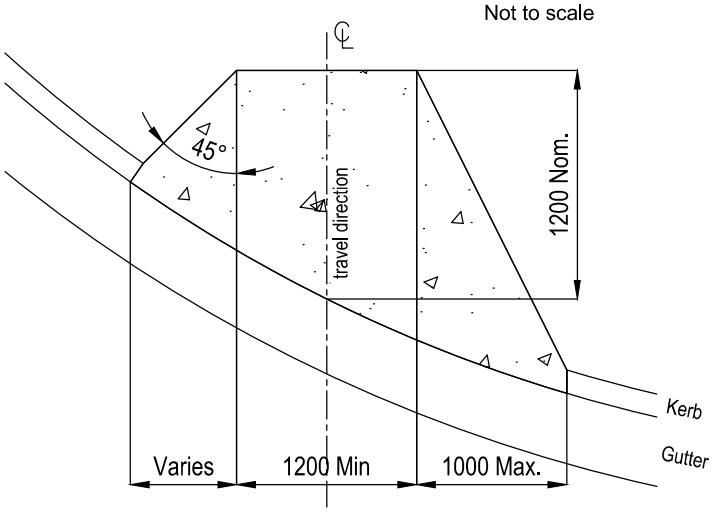


PLAN AT ANGLED INTERSECTION
OR KERB RADIUS
Not to scale

NOTES

1. Scales shown are for A4 size drawing.
2. Kerb ramps shall consist of 125mm thick broom finished unreinforced concrete over 50mm thick recycled roadbase.
3. The gutter shall be steel float finished.
4. Expansion joints shall be full depth 6mm bituminous mastic jointing material.
5. Kerb ramps shall be aligned with the direction of pedestrian travel.
6. Concrete shall have a 28 day strength of 25MPa minimum.
7. Concrete shall be placed with a maximum slump of 80mm.
8. Refer to Drawing CIV 07 for standard concrete footpath details.
9. Refer to Drawing CIV 02 Sheet 2 of 2 for kerb ramps on Shared Paths.
10. All dimensions in mm Unless Noted Otherwise (U.N.O)

DISCLAIMER:

City of Ryde
Public Works - Project Development

DRAWN: M.C
CHECKED: JSB/TM
VERIFIED: V.P

APPROVED: I.A
DESIGN MANAGER
...../...../.....

STANDARD DRAWING:

KERB RAMP - FOOTPATH

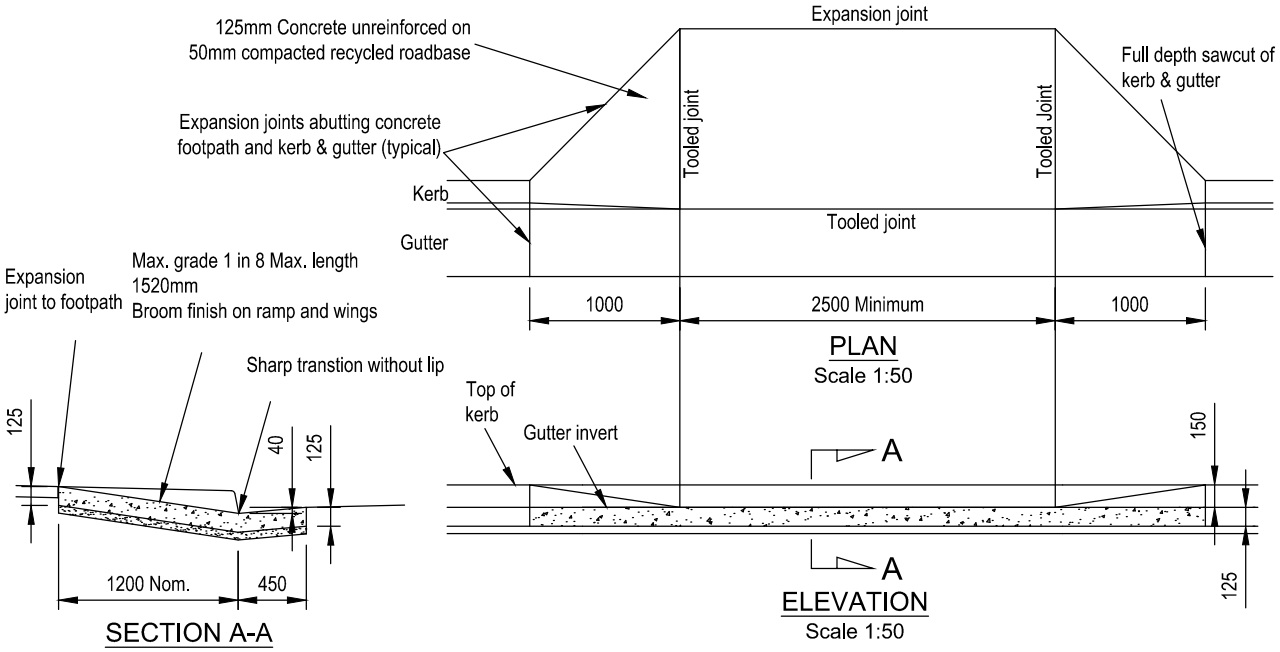
DRAWING N0: CIV 02-1

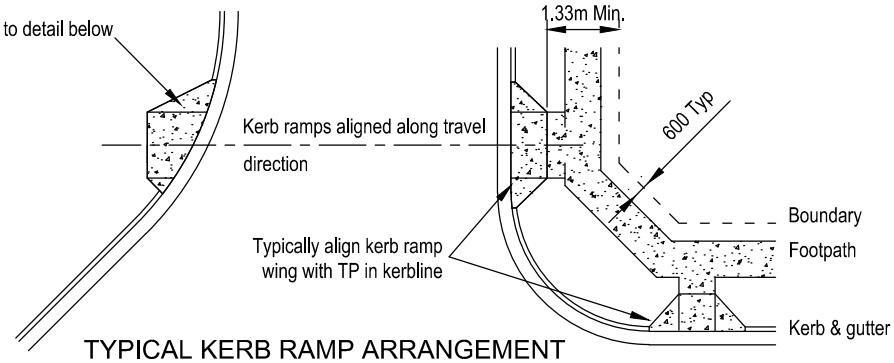
SCALE: AS SHOWN

SHEET: 1 OF 2

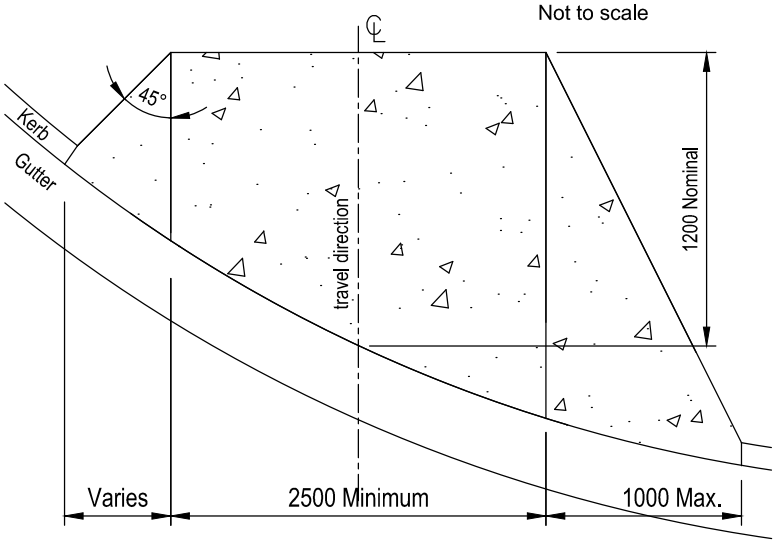
DATE: 20/05/2014

REV: B





TYPICAL KERB RAMP ARRANGEMENT
AT INTERSECTIONS
Not to scale



PLAN AT ANGLED INTERSECTION
OR KERB RADIUS
Not to scale

NOTES

1. Scales shown are for A4 size drawing.
2. Kerb ramps shall consist of 125mm broom finished concrete (SL72 reinforced or unreinforced according to design) over 50mm thick layer of Porters Creek or equivalent recycled roadbase.
3. The gutter shall be steel float finished.
4. Expansion joints shall be full depth 6mm bituminous mastic jointing material.
5. Kerb ramps shall be aligned with the direction of pedestrian travel.
6. Concrete shall have a 28 day strength of 25MPa minimum.
7. Concrete shall be placed with a maximum slump of 80mm.
8. Refer to Drawing CIV 08 for standard concrete footpath details.
9. Refer to Drawing CIV 02 Sheet 1 of 2 for kerb ramps on Footpaths only.
10. All dimensions in mm Unless Noted Otherwise (U.N.O)

DISCLAIMER:

City of Ryde
Public Works - Project Development

DRAWN: M.C
CHECKED: JSB/TM
VERIFIED: V.P

APPROVED: I.A
DESIGN MANAGER
...../...../.....

STANDARD DRAWING:

KERB RAMP - SHARED PATH

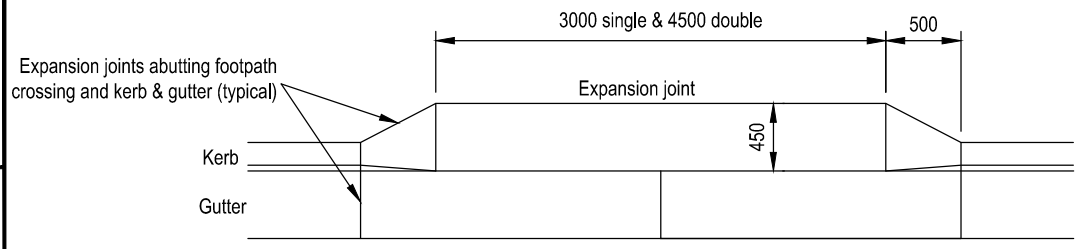
DRAWING N0: CIV 02-2

SCALE: AS SHOWN

SHEET: 2 OF 2

DATE: 20/05/2014

REV: B



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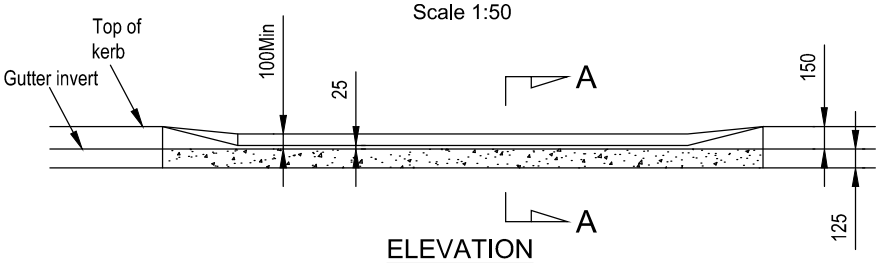

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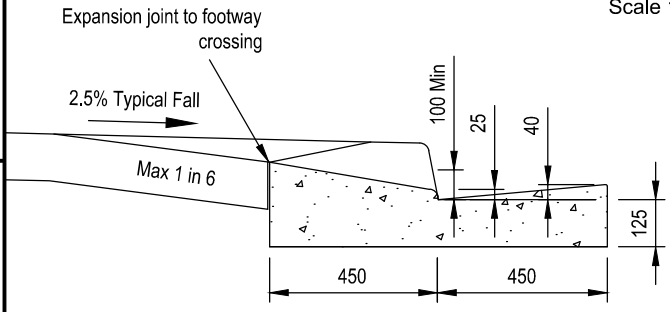
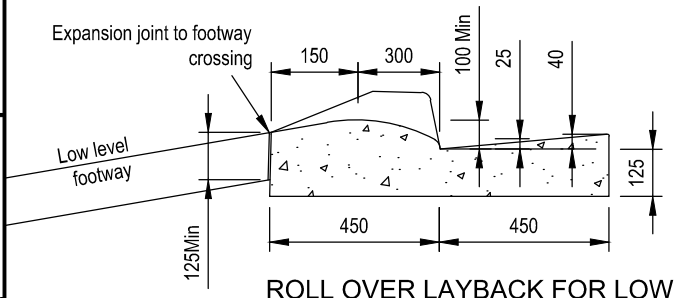


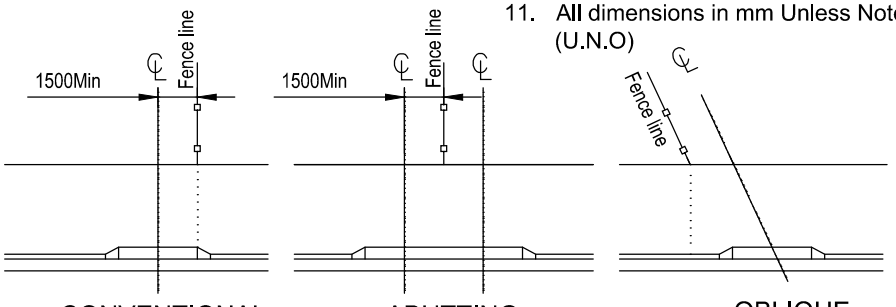
SECTION A-A
STANDARD LAYBACK
Scale 1:20



ROLL OVER LAYBACK FOR LOW LEVEL FOOTWAYS
Scale 1:20

NOTES

1. Scales shown are for A4 size drawing.
2. Standard laybacks are typically used for access to domestic residential and residential flats.
3. Standard laybacks shall consist of 125mm minimum thickness broom finished unreinforced concrete over 150mm minimum thickness compacted Porters Creek or equivalent recycled roadbase.
4. The gutter shall be steel float finished.
5. Expansion joints shall be full depth 6mm bituminous mastic jointing material and placed at intervals of 6m maximum and 4m minimum.
6. Concrete shall have a 28 day strength of 25MPa minimum.
7. Concrete shall be placed with a maximum slump of 80mm.
8. The Council Engineer requires 24 hours notice prior to pouring of concrete to inspect the formwork. No concrete shall be poured until the excavation and formwork have been inspected.
9. Refer to Drawing CIV 05 for standard footway crossing details.
10. Refer to Drawings CIV 04 and CIV 06 for heavy duty laybacks and footpath crossings.
11. All dimensions in mm Unless Noted Otherwise (U.N.O)



CONVENTIONAL ABUTTING OBLIQUE

DISCLAIMER:

City of Ryde
Public Works - Project Development

STANDARD DRAWING:

STANDARD DRIVEWAY LAYBACK

DRAWING N0: CIV 03

DRAWN: M.C	APPROVED: I.A
CHECKED: JSB/TM	DESIGN MANAGER
VERIFIED: V.P	...../...../.....

SCALE: AS SHOWN	SHEET: 1 OF 1
DATE: 20/05/2014	REV: B

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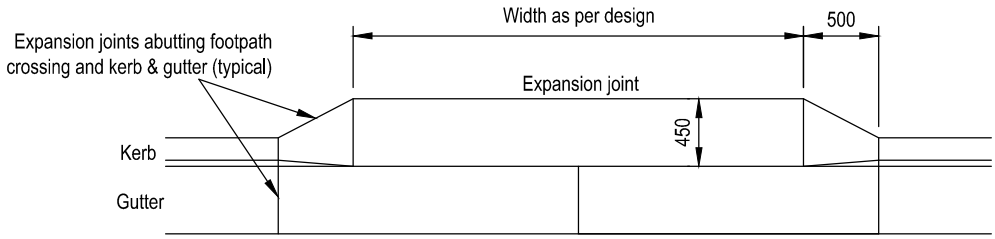
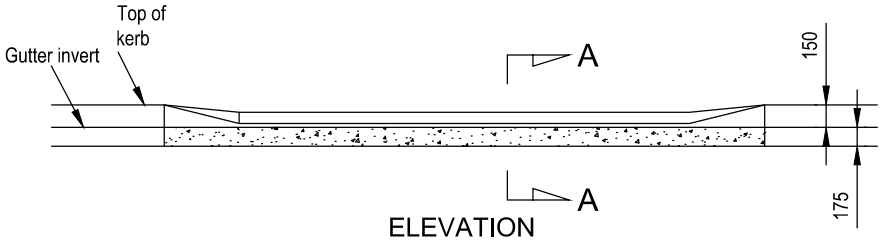
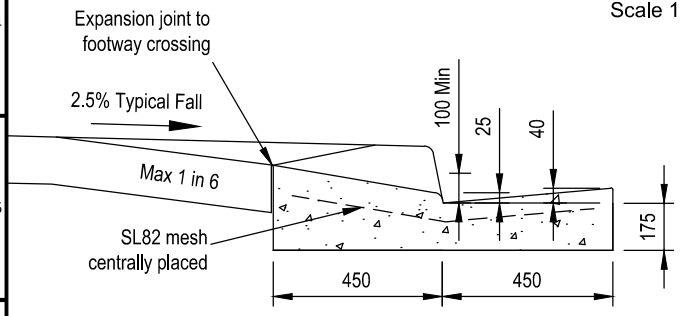


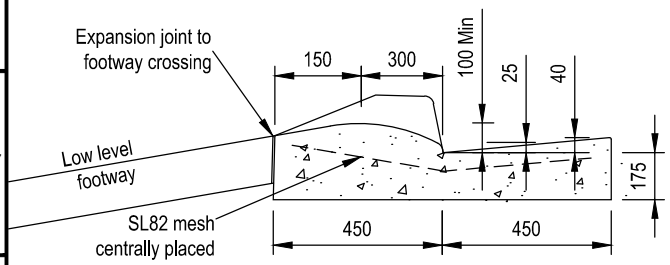
PLAN
Scale 1:50



ELEVATION
Scale 1:50



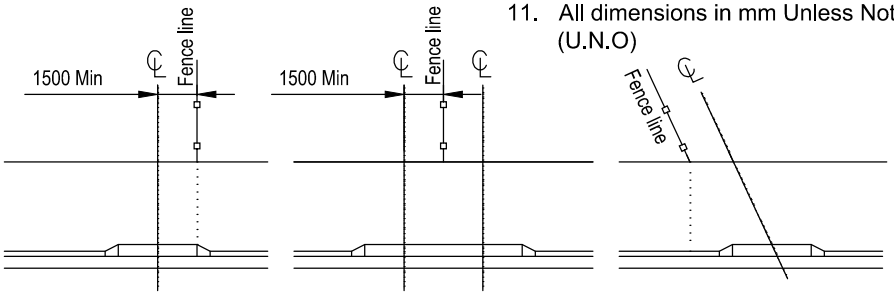
SECTION A-A
STANDARD LAYBACK
Not to Scale



ROLL OVER LAYBACK FOR LOW LEVEL FOOTWAYS
Not to Scale

NOTES

1. Scales shown are for A4 size drawing.
2. Standard laybacks are typically used for accesses to industrial and commercial properties.
3. Heavy duty laybacks shall consist of 175mm minimum thickness broom finished concrete with SL82 mesh over 150mm minimum thickness compacted Porters Creek or equivalent recycled roadbase.
4. The gutter shall be steel float finished.
5. Expansion joints shall be full depth 6mm bituminous mastic jointing material and placed at intervals of 6m maximum and 4m minimum.
6. Concrete shall have a 28 day strength of 32MPa minimum.
7. Concrete shall be placed with a maximum slump of 80mm.
8. The Council Engineer requires 24 hours notice prior to pouring of concrete to inspect the formwork. No concrete shall be poured until the excavation and formwork have been inspected.
9. Refer to Drawing CIV 06 for heavy duty footway crossing details.
10. Refer to Drawings CIV 03 and CIV 05 for standard duty laybacks and footpath crossings.
11. All dimensions in mm Unless Noted Otherwise (U.N.O)



CONVENTIONAL ABUTTING OBLIQUE

DISCLAIMER:

City of Ryde
Public Works - Project Development

STANDARD DRAWING:

HEAVY DUTY DRIVEWAY LAYBACK

DRAWING N0: CIV 04

DRAWN: M.C	APPROVED: I.A
CHECKED: JSB/TM	DESIGN MANAGER
VERIFIED: V.P	...../...../.....

SCALE: AS SHOWN	SHEET: 1 OF 1
DATE: 20/05/2014	REV: B

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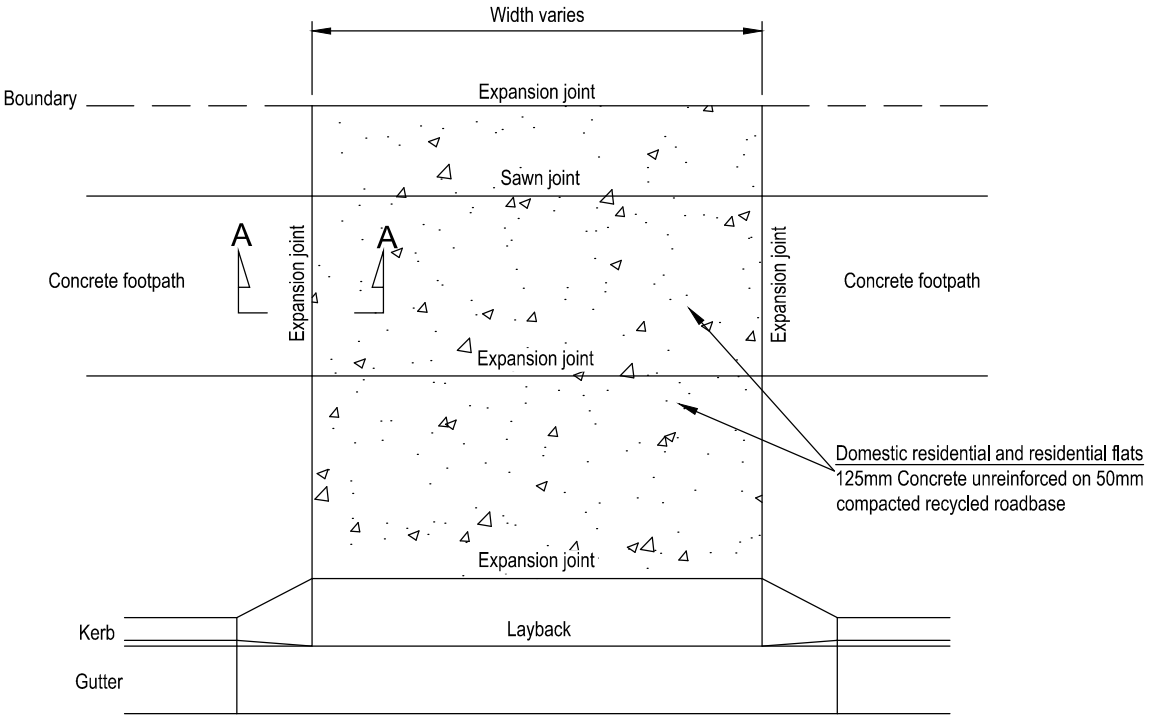
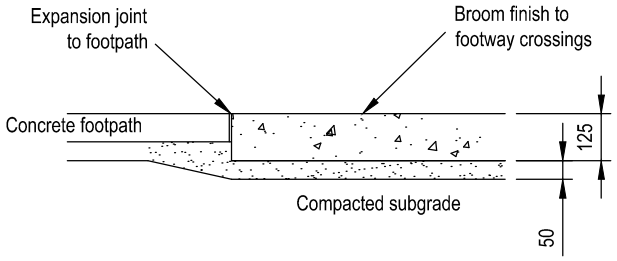


PLAN
Not to scale



SECTION A-A
Scale 1:20

NOTES

1. Scales shown are for A4 size drawing.
2. Footpath crossings shall consist of 125mm thick broom finished unreinforced concrete over 50mm thick compacted Porters Creek or equivalent recycled roadbase.
3. Expansion joints shall be full depth 6mm bituminous mastic jointing material.
4. Sawn joints shall be 40mm deep.
5. Concrete edges shall be finished with an edging tool.
6. Concrete shall have a 28 day strength of 25MPa minimum.
7. Concrete shall be placed with a maximum slump of 80mm.
8. The Council Engineer requires 24 hours notice prior to pouring of concrete to inspect the formwark. No concrete shall be poured until the excavation and formwork have been inspected.
9. Refer to Drawing CIV 07 for standard footpath details.
10. Refer to drawing CIV 03 for driveway layback details.
11. All dimensions in mm unless noted otherwise (U.N.O)

DISCLAIMER:

City of Ryde
Public Works - Project Development

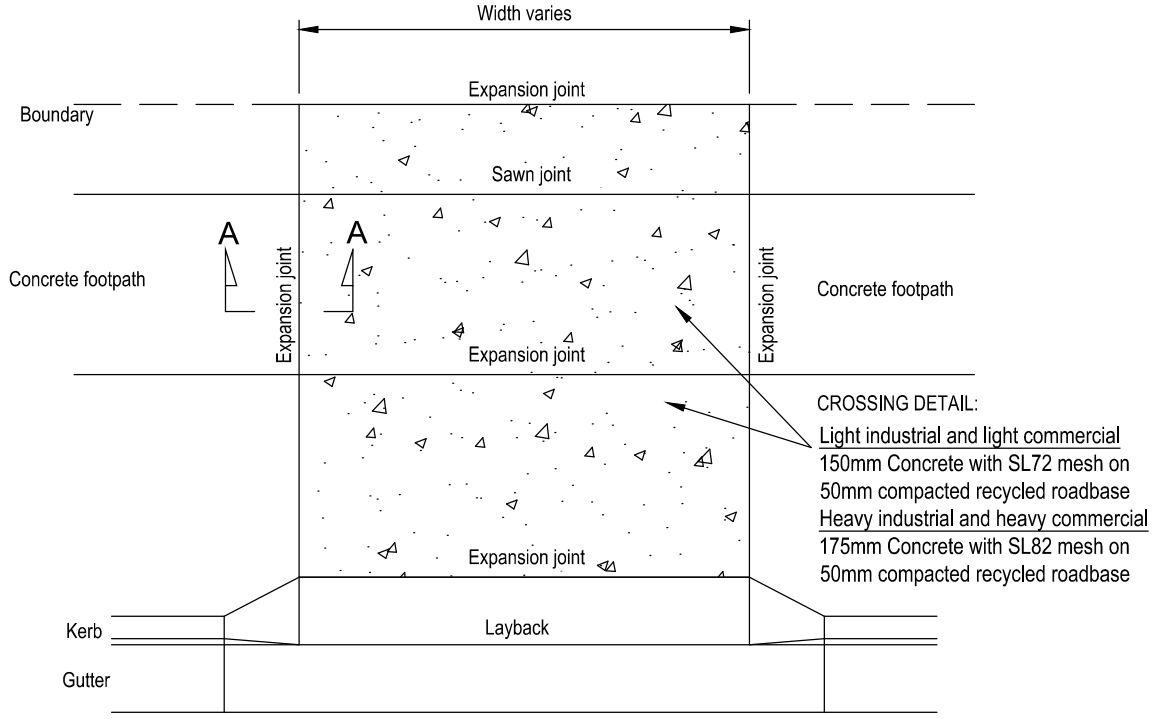
STANDARD DRAWING:

STANDARD FOOTWAY CROSSING

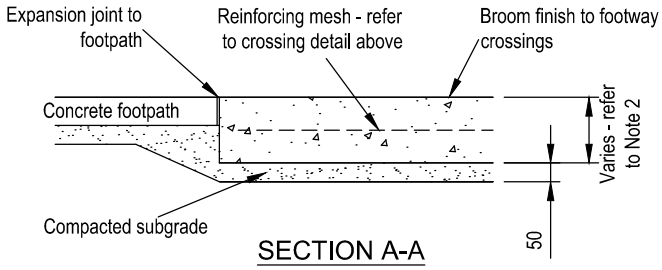
DRAWING N0: CIV 05

DRAWN: M.C	APPROVED: I.A
CHECKED: JSB/TM	DESIGN MANAGER
VERIFIED: V.P	...../...../.....

SCALE: 1:20@A4	SHEET: 1 OF 1
DATE: 20/05/2014	REV: B



PLAN
Not to scale



SECTION A-A
Scale 1:20

NOTES

1. Scales shown are for A4 size drawing.
2. Heavy duty laybacks shall consist of:
   Light industrial and light commercial
   150mm thick broom finished concrete with SL72 mesh over
   50mm thick compacted Porters Creek or equivalent recycled roadbase.
   Heavy industrial and heavy commercial
   175mm thick broom finished concrete with SL82 mesh over
   50mm thick compacted Porters Creek or equivalent recycled roadbase.
3. The gutter shall be steel float finished.
4. Expansion joints shall be full depth 6mm bituminous mastic jointing material and placed at intervals of 6m maximum and 4m minimum.
5. Concrete shall have a 28 day strength of 32MPa minimum.
6. Concrete shall be placed with a maximum slump of 80mm.
7. The Council Engineer requires 24 hours notice prior to pouring of concrete to inspect the formwork. No concrete shall be poured until the excavation and formwork have been inspected.
8. Refer to Drawing CIV 04 for heavy duty layback details.
9. Refer to Drawing CIV 03 and CIV 05 for standard laybacks and footpath crossings.
10. All dimensions in mm Unless Noted Otherwise (U.N.O)

DISCLAIMER:

City of Ryde
Public Works - Project Development

DRAWN: M.C
CHECKED: JSB/TM
VERIFIED: V.P

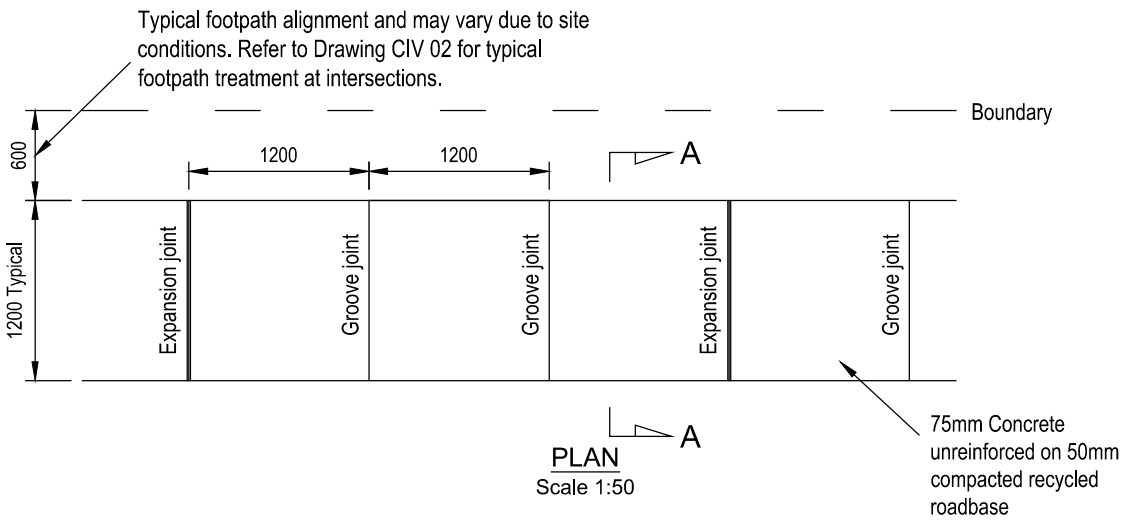
APPROVED: I.A
DESIGN MANAGER
...../...../.....

STANDARD DRAWING:

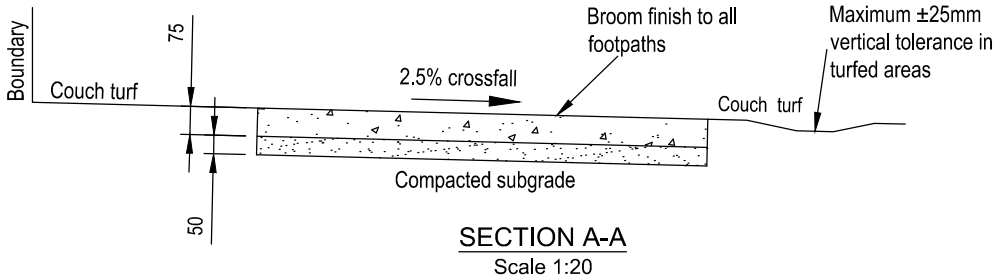
HEAVY DUTY FOOTWAY CROSSING

DRAWING N0:
CIV 06

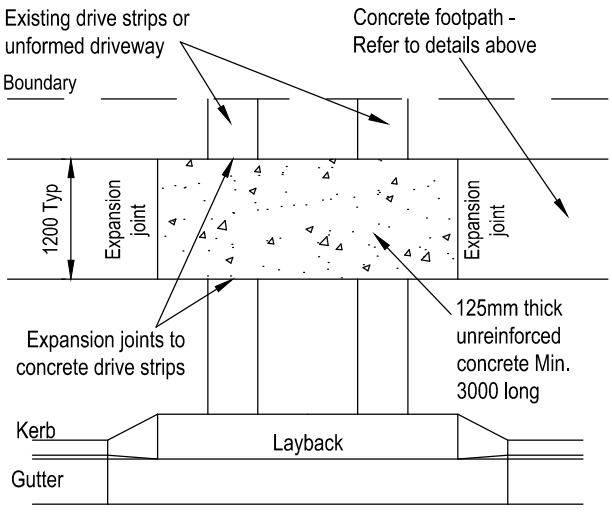
SCALE: AS SHOWN
SHEET: 1 OF 1
DATE: 20/05/2014
REV: B



PLAN
Scale 1:50



SECTION A-A
Scale 1:20



FOOTPATH THICKENING
Not to scale

NOTES

1. Scales shown are for A4 size drawing.
2. Footpaths shall consist of 75mm thick broom finished unreinforced concrete over 50mm thick compacted Porters Creek or equivalent recycled roadbase.
3. Footpaths shall have a 2.5% crossfall towards the kerb - this is a 30mm fall over a 1.2m wide footpath.
4. Expansion joints shall be full depth 6mm bituminous mastic jointing material.
5. Groove joints shall be provided every 1.2m.
6. Concrete edges shall be finished with an edging tool.
7. Concrete shall have a 28 day strength of 25MPa minimum.
8. Concrete shall be placed with a maximum slump of 80mm.
9. The Council Engineer requires 24 hours notice prior to pouring of concrete to inspect the formwork. No concrete shall be poured until the excavation and formwork have been inspected.
10. Refer to Drawing CIV 02 for standard kerb ramps.
11. Refer to Drawing CIV 08 for shared path details.
12. All dimensions in mm Unless Noted Otherwise (U.N.O)

DISCLAIMER:

City of Ryde
Public Works - Project Development

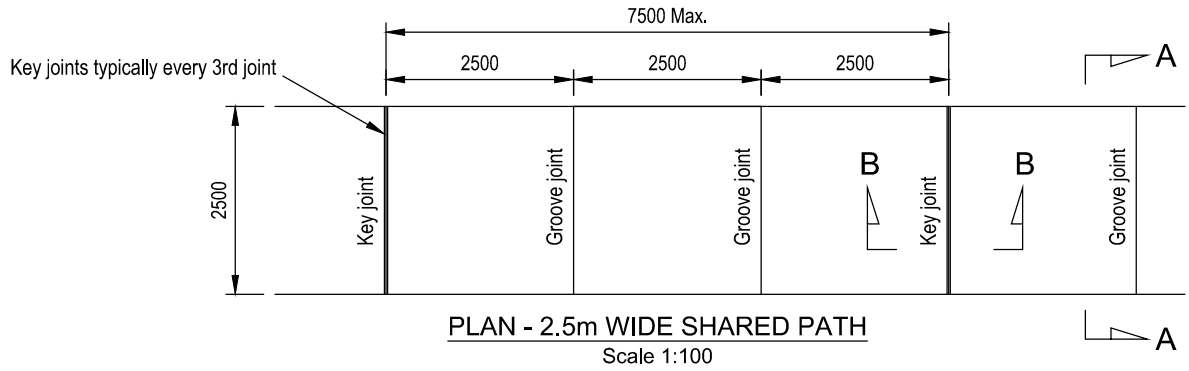
STANDARD DRAWING:

CONCRETE FOOTPATH

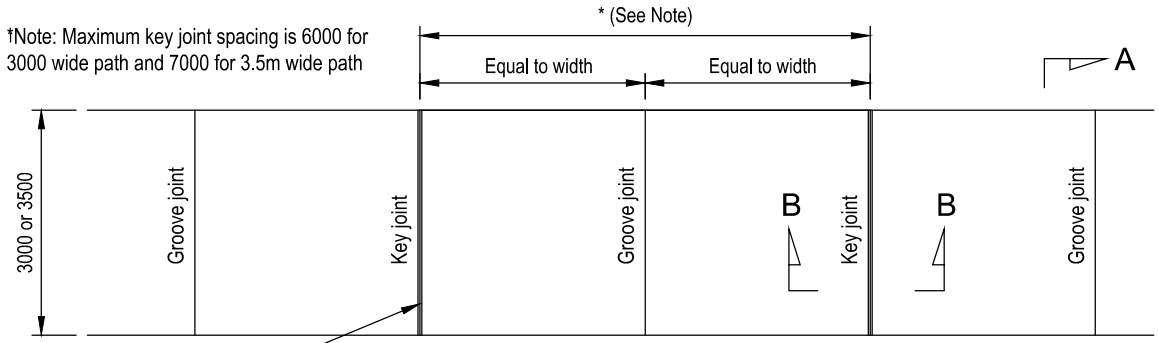
DRAWING N0: CIV 07

DRAWN: M.C	APPROVED: I.A
CHECKED: JSB/TM	DESIGN MANAGER
VERIFIED: V.P	...../...../.....

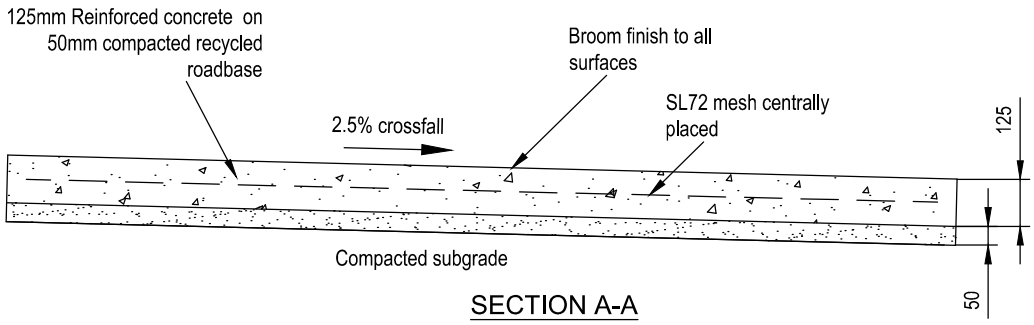
SCALE: AS SHOWN	SHEET: 1 OF 1
DATE: 20/05/2014	REV: B



PLAN - 2.5m WIDE SHARED PATH
Scale 1:100

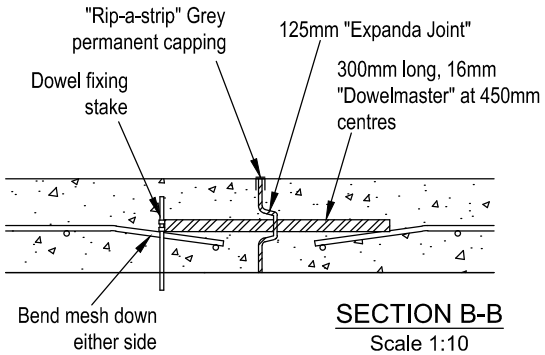


PLAN - 3.0m AND 3.5m WIDE SHARED PATH
Scale 1:100



SECTION A-A
Scale 1:20

Note: Key joints and dowels shown are by Danley Construction Products or approved equivalent



SECTION B-B
Scale 1:10

NOTES

1. Scales shown are for A4 size drawing.
2. Shared paths and bikeways shall consist of 125mm thick broom finished concrete with SL72 mesh over 50mm thick compacted Porters Creek or equivalent recycled roadbase.
3. Key joints and dowels shall be placed and staked according to the Manufacturer's specification.
4. Groove joints shall be provided every 2.5m.
5. Paths shall have a 2.5% crossfall towards the kerb.
6. Concrete edges shall be finished with an edging tool.
7. Concrete shall have a 28 day strength of 25MPa minimum.
8. Concrete shall be placed with a maximum slump of 80mm.
9. The Council Engineer requires 24 hours notice prior to pouring of concrete to inspect the formwork. No concrete shall be poured until the excavation and formwork have been inspected.
10. Refer to Drawing CIV 09 for signage and linemarking details.
11. All dimensions in mm Unless Noted Otherwise (U.N.O)

DISCLAIMER:

City of Ryde
Public Works - Project Development

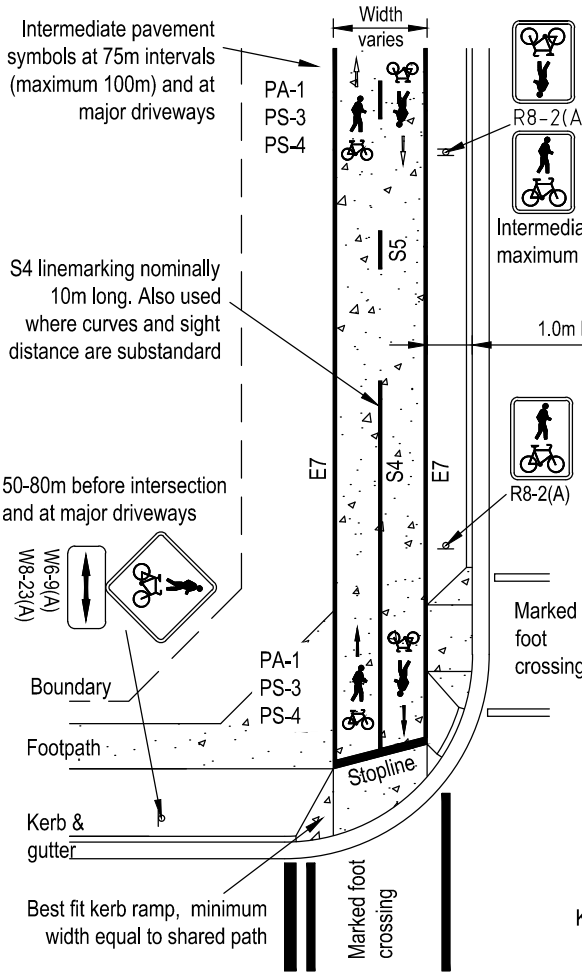
STANDARD DRAWING:

SHARED PATH TWO WAY, OFFROAD PAVEMENT AND JOINTING

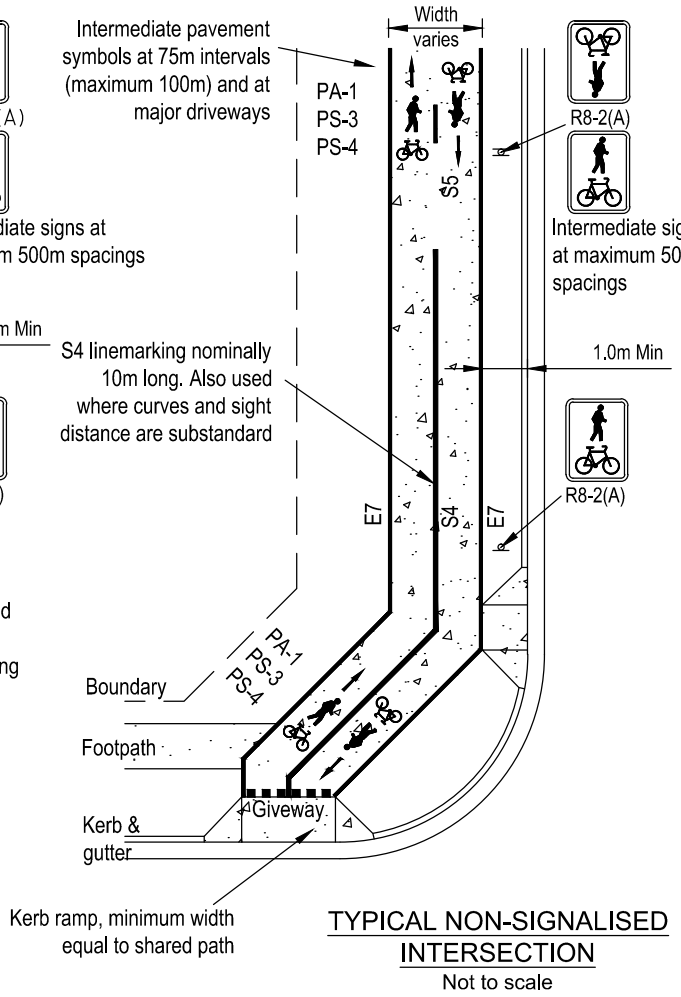
DRAWING N0: CIV 08

DRAWN: M.C	APPROVED: I.A
CHECKED: JSB/TM	DESIGN MANAGER
VERIFIED: V.P	...../...../.....

SCALE: AS SHOWN	SHEET: 1 OF 1
DATE: 20/05/2014	REV: B



TYPICAL SIGNALISED INTERSECTION
Not to scale



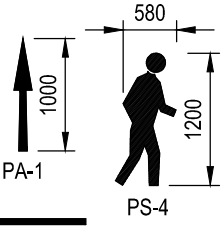
TYPICAL NON-SIGNALISED INTERSECTION
Not to scale

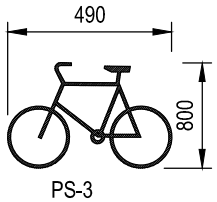
NOTES

1. All linemarking shall be white paint.
2. Also refer to the Roads and Maritime Services "NSW Bicycle Guidelines" for further layout details.
3. Refer to Drawing CIV 08 for pavement and jointing details.

LEGEND OF SIGNS, LINEMARKING AND SYMBOLS
Not to scale

PAVEMENT SYMBOLS





SIGNAGE

LINEMARKING

S4 Continuous separation line 80mm wide

S5 Broken separation line 80mm wide, 1000mm long with 3000mm gap

E7 Continuous edge line line 80mm wide

LINEMARKING

Stop line 200mm wide

Give way line 200mm wide, 200mm long, 200mm gap

DISCLAIMER:

City of Ryde
Public Works - Project Development

STANDARD DRAWING:
SHARED PATHS TWO WAY, OFFROAD SIGNAGE AND LINEMARKING

DRAWING N0: CIV 09

DRAWN: M.C/R.L	APPROVED: I.A
CHECKED: JSB/TM	DESIGN MANAGER
VERIFIED: V.P	...../...../.....

SCALE: NTS	SHEET: 1 OF 1
DATE: 20/05/2014	REV: B

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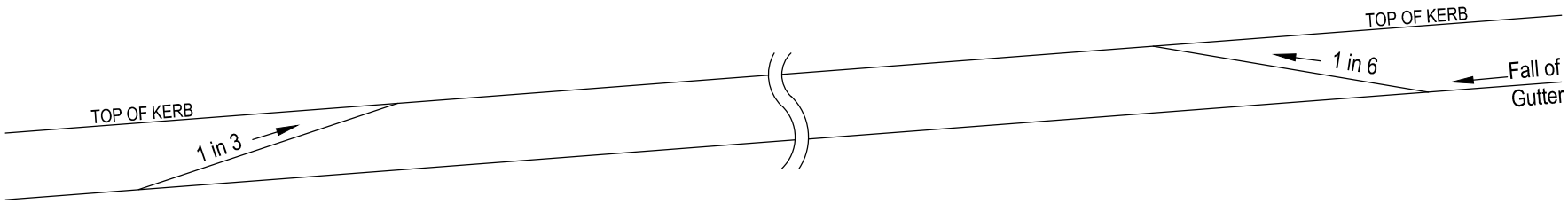
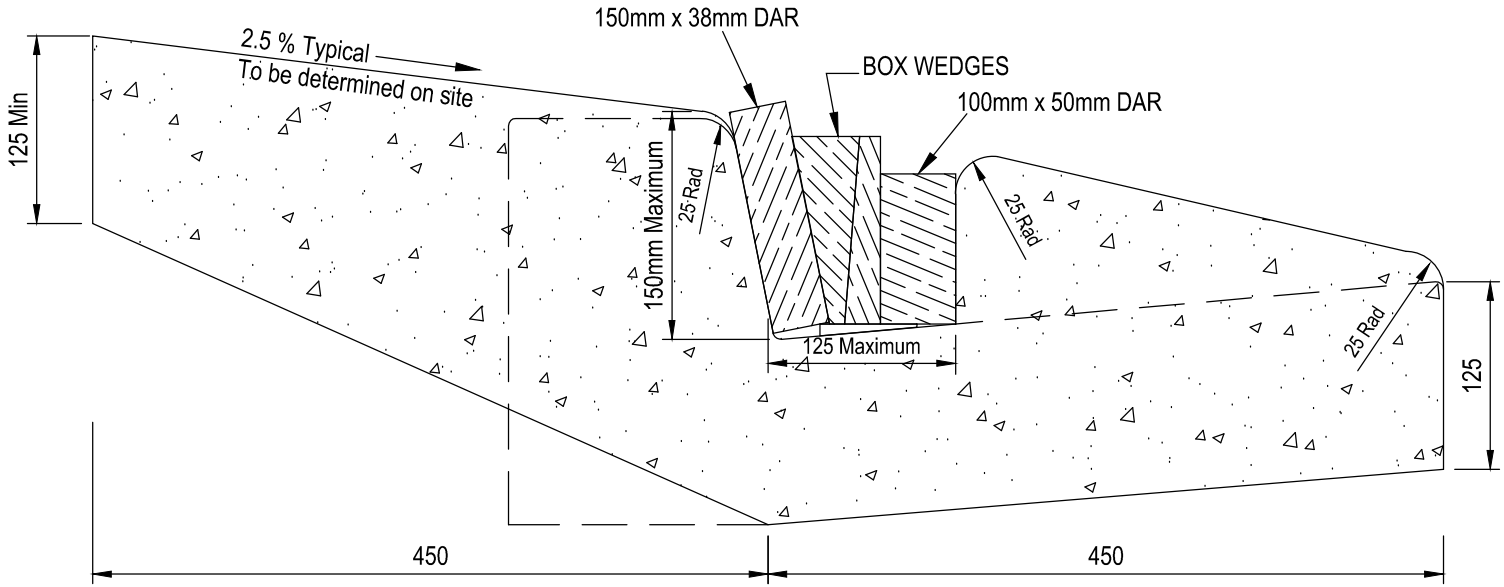


GUTTER ELEVATION SHOWING TREATMENT OF ENDS

Not to Scale



SECTION THROUGH CROSSING SHOWING DETAILS OF GUTTER BLOCK

Scale 1:5

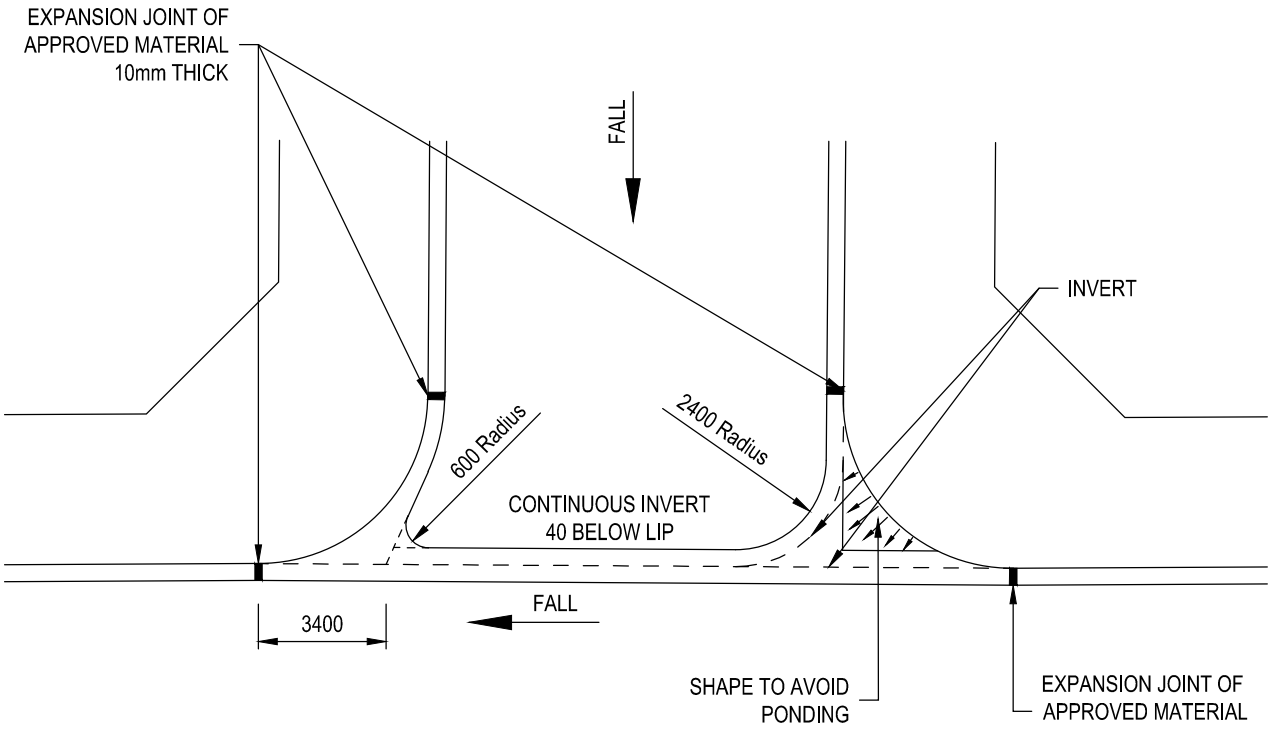
NOTES

1. Scales shown are for A4 size drawing.
2. Installation of Gutter block involves the removal of the existing layback and gutter and the construction of the Gutter Block/Layback/Gutter as one unit.
3. Concrete edges shall be finished with an edging tool.
4. Concrete shall have a 28 day strength of 25MPa minimum.
5. Concrete shall be placed with a maximum slump of 80mm.
6. All dimensions in mm Unless Noted Otherwise (U.N.O)

DISCLAIMER:

City of Ryde
Public Works - Project Development

DRAWN: M.C	APPROVED: I.A	STANDARD DRAWING: STANDARD VEHICLE CROSSING GUTTER BLOCK	DRAWING NO: CIV 10
CHECKED:	DESIGN MANAGER		SCALE: AS SHOWN / SHEET: 1 OF 1
VERIFIED: V.P	...../...../.....		DATE: 20/05/2014 / REV: B



STANDARD DISH DRAIN PLAN VIEW

Not to Scale

NOTES

1. Gutters shall be reinforced with SL72 Mesh and formed integral with kerbs.
2. All kerbs, gutters and edge strips shall be steel float finished
3. Concrete shall have a 28 day strength of 25MPa minimum.
4. Concrete shall be placed with a maximum slump of 80mm.
5. Refer to Drawing CIV 01 for Dish Drain Profile.
6. All dimensions in mm Unless Noted Otherwise (U.N.O)

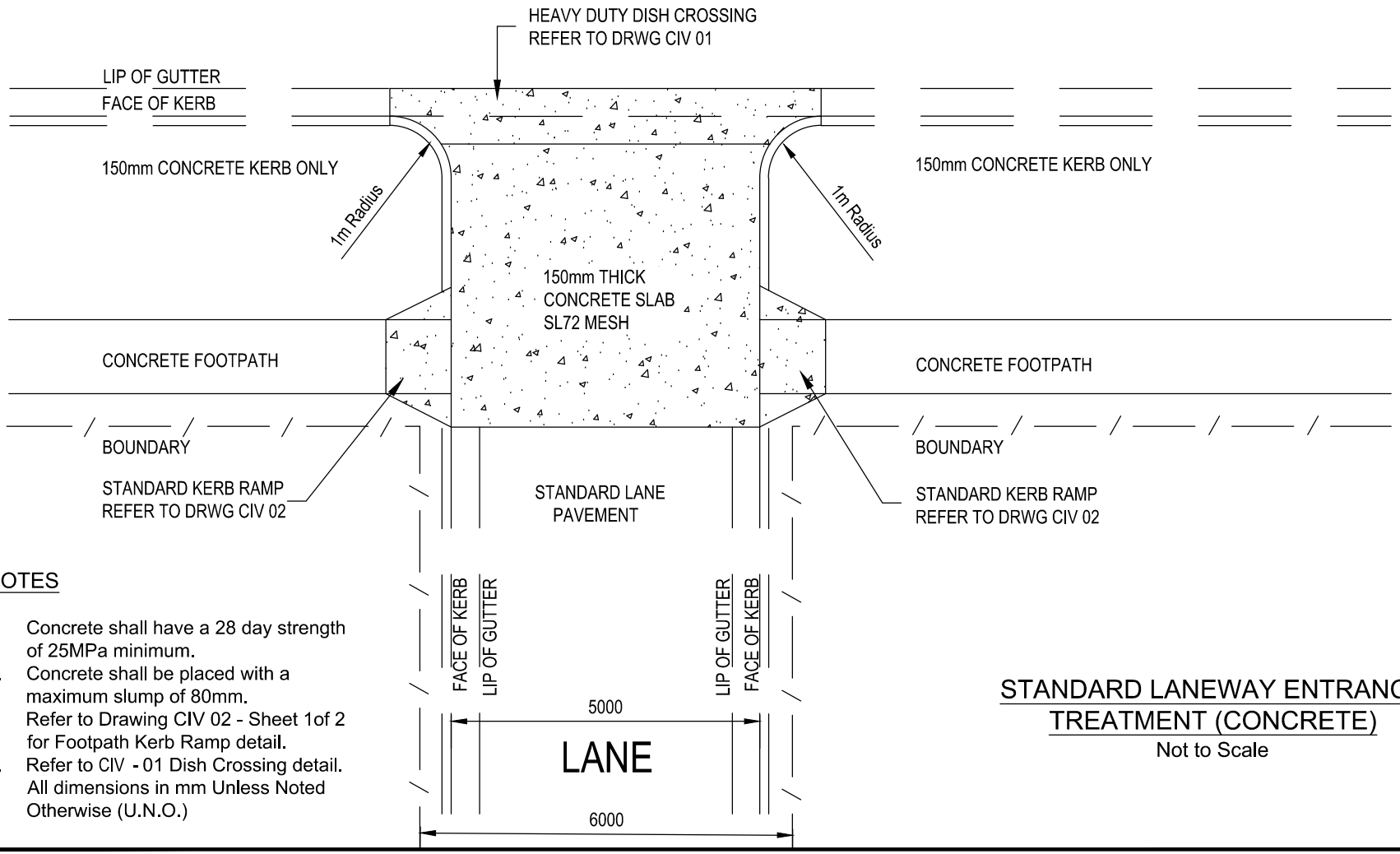
DISCLAIMER:

City of Ryde

Public Works - Project Development

DRAWN: M.C / D.S	APPROVED: I.A	STANDARD DRAWING: DISH DRAIN CROSSING DETAIL	DRAWING NO: CIV 11	
CHECKED:	DESIGN MANAGER		SCALE: NTS	SHEET: 1 OF 1
VERIFIED: V.P	...../...../.....		DATE: 20/05/2014	REV: B

STREET



NOTES

1. Concrete shall have a 28 day strength of 25MPa minimum.
2. Concrete shall be placed with a maximum slump of 80mm.
3. Refer to Drawing CIV 02 - Sheet 1of 2 for Footpath Kerb Ramp detail.
4. Refer to CIV - 01 Dish Crossing detail.
5. All dimensions in mm Unless Noted Otherwise (U.N.O.)

STANDARD LANEWAY ENTRANCE TREATMENT (CONCRETE)

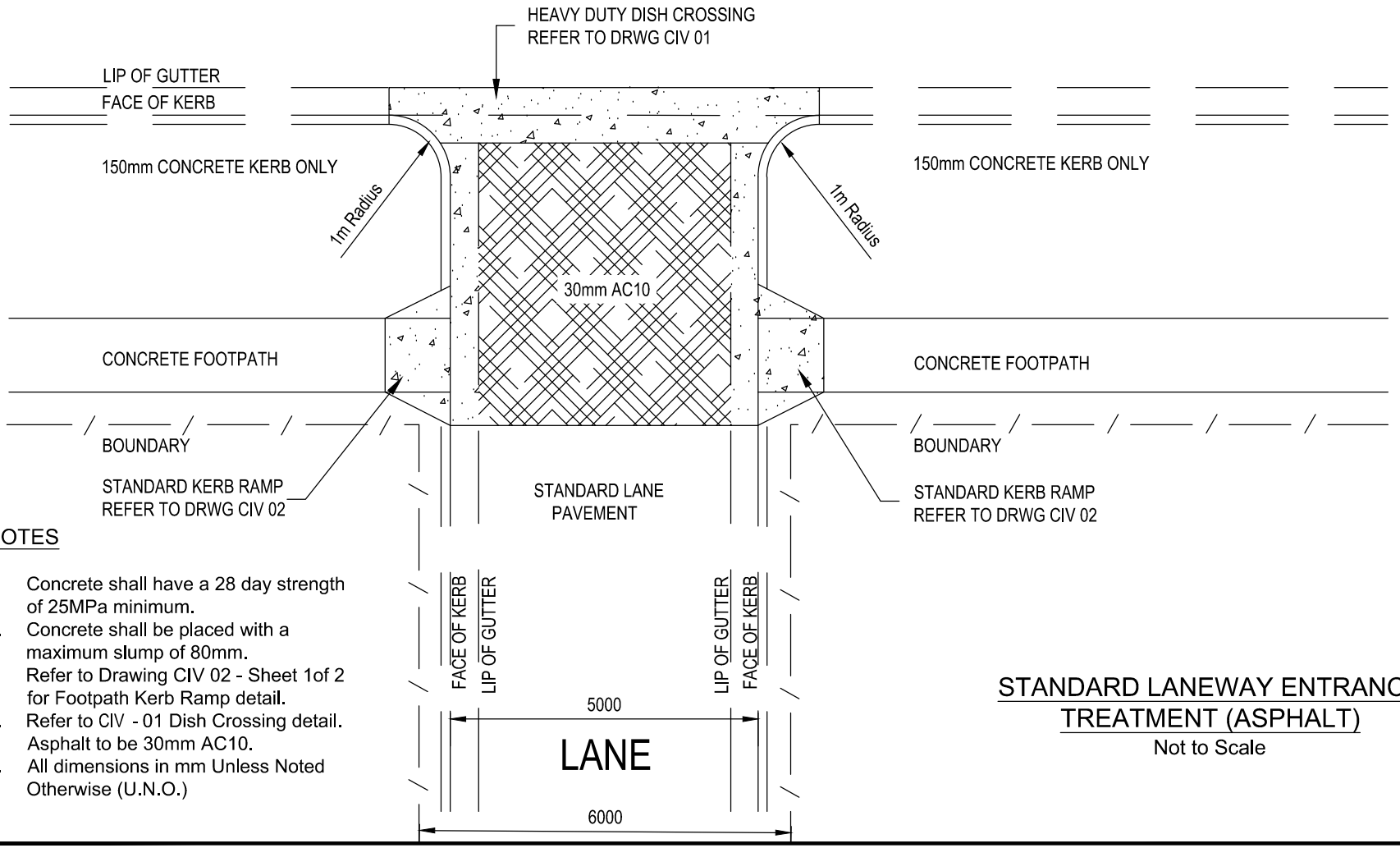
Not to Scale

DISCLAIMER:

City of Ryde
Public Works - Project Development

DRAWN: JSB	APPROVED: I.A	STANDARD DRAWING: LANEWAY ENTRANCE CONCRETE TREATMENT	DRAWING NO: CIV 12-1
CHECKED: TM	DESIGN MANAGER		SCALE: NTS / SHEET: 1 OF 2
VERIFIED: V.P	...../...../.....		DATE: 20/05/2014 / REV: B

STREET



NOTES

1. Concrete shall have a 28 day strength of 25MPa minimum.
2. Concrete shall be placed with a maximum slump of 80mm.
3. Refer to Drawing CIV 02 - Sheet 1of 2 for Footpath Kerb Ramp detail.
4. Refer to CIV - 01 Dish Crossing detail.
5. Asphalt to be 30mm AC10.
6. All dimensions in mm Unless Noted Otherwise (U.N.O.)

STANDARD LANEWAY ENTRANCE TREATMENT (ASPHALT)

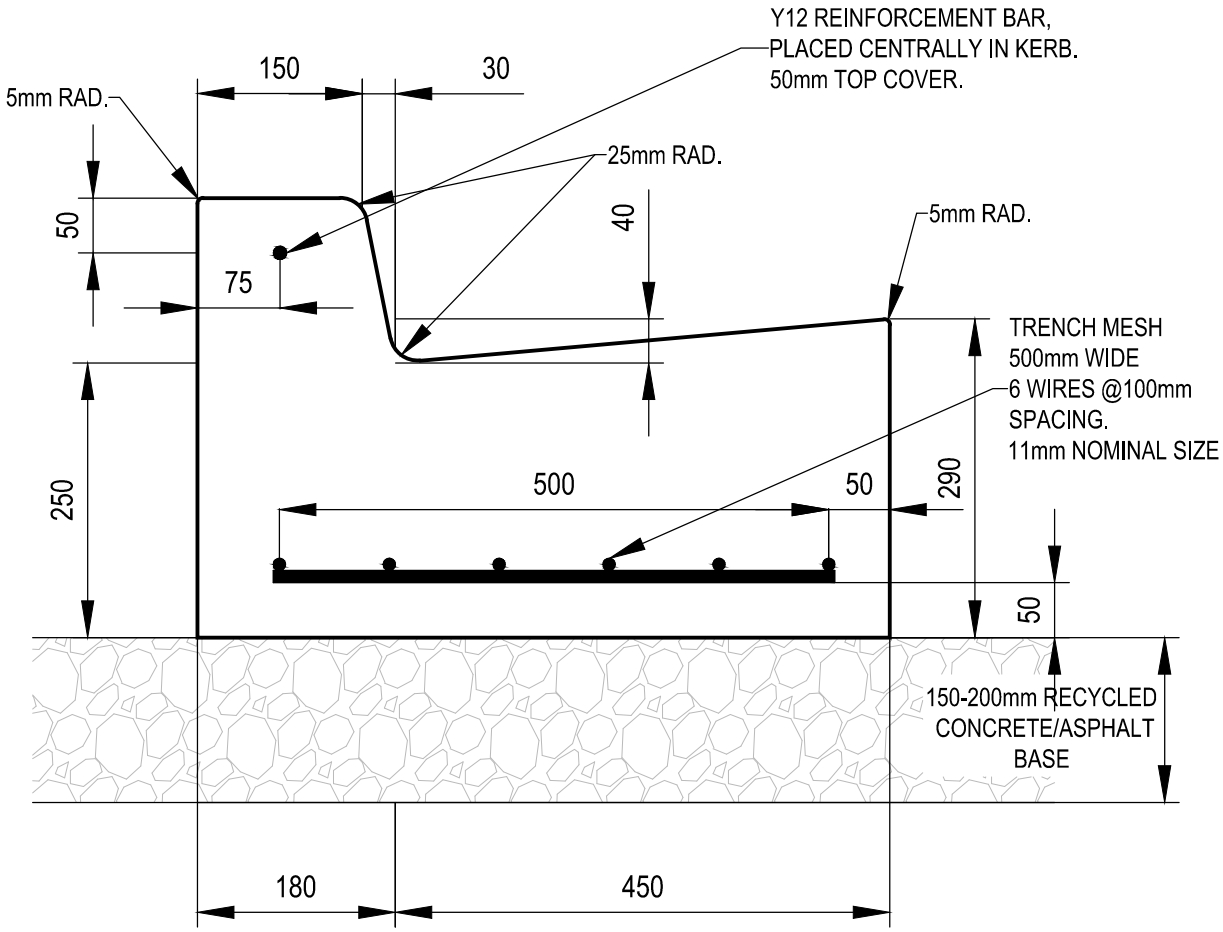
Not to Scale

DISCLAIMER:

City of Ryde

Public Works - Project Development

DRAWN: JSB	APPROVED: I.A	STANDARD DRAWING: LANEWAY ENTRANCE ASPHALT TREATMENT	DRAWING NO: CIV 12-2
CHECKED: TM	DESIGN MANAGER		SCALE: NTS / SHEET: 2 OF 2
VERIFIED: V.P	...../...../.....		DATE: 30/03/2012 / REV: B



NOTES:

1. THIS TYPE OF KERB AND GUTTER T0 BE USED WHERE BUSSES TRAVERSE THE GUTTER.
2. USE TRENCH MESH 500mm WIDE WITH 6 WIRES OF 11mm NOMINAL DIAMETER AT 100mm SPACING TO REINFORCE THE HORIZONTAL FACE.
3. MINIMUM COVER FOR REINFORCEMENT IS 50mm.
4. REINFORCE KERB WITH A Y12 REINFORCEMENT BAR PLACED CENTRALLY (75MM FROM THE VERTICAL FACE) WITH 50mm MINIMUM COVER FROM THE TOP.
5. USE EARLY SETTING 32MPa STRENGTH CONCRETE (32MPa IN 3 DAYS).
6. MAXIMUM SLUMP 80mm.
7. LAY THE KERB AND GUTTER ON A 150-200mm THICK COMPACTED PORTERS CREEK OR EQUIVALENT RECYCLED ROADBASE.

DISCLAIMER:

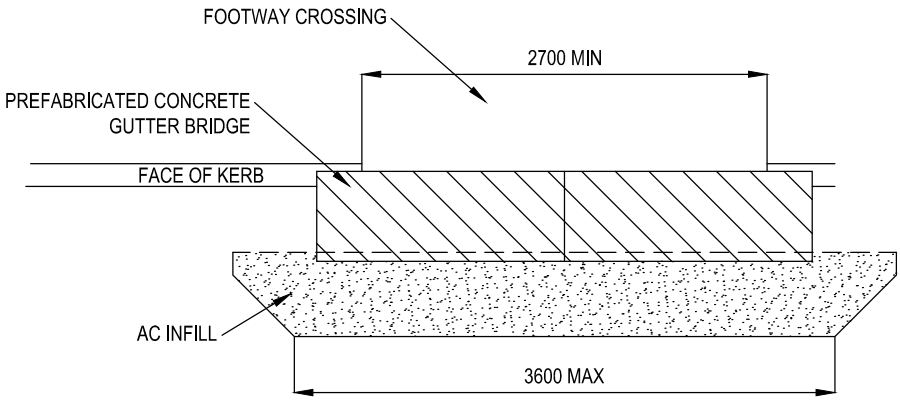
City of Ryde
Public Works - Project Development

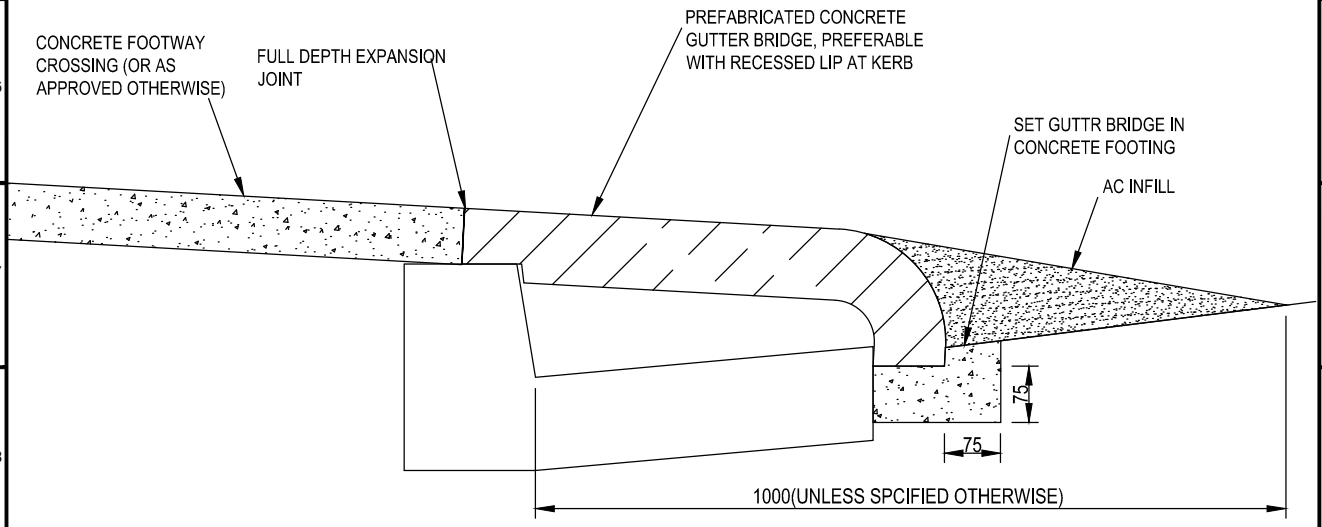
DRAWN: MC	APPROVED: I.A
CHECKED: VM	DESIGN MANAGER
VERIFIED: V.P	...../...../.....

STANDARD DRAWING:

REINFORCED KERB & GUTTER OF BUS STOPS

DRAWING N0: CIV 13	
SCALE: NTS	SHEET: 1 OF 1
DATE: 20/05/2014	REV: B





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City of Ryde

Public Works - Project Development

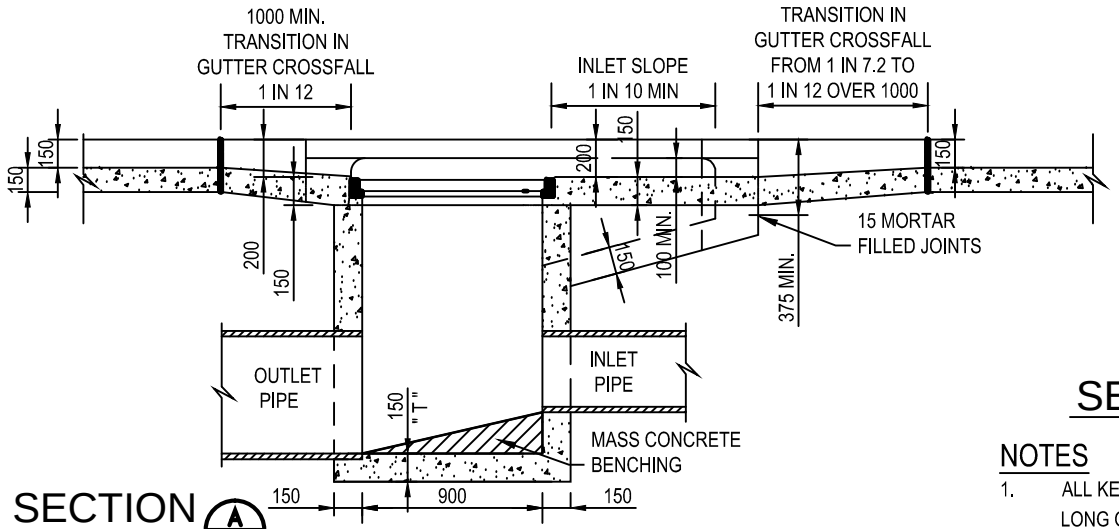
STANDARD DRAWING:

GUTTER BRIDGE

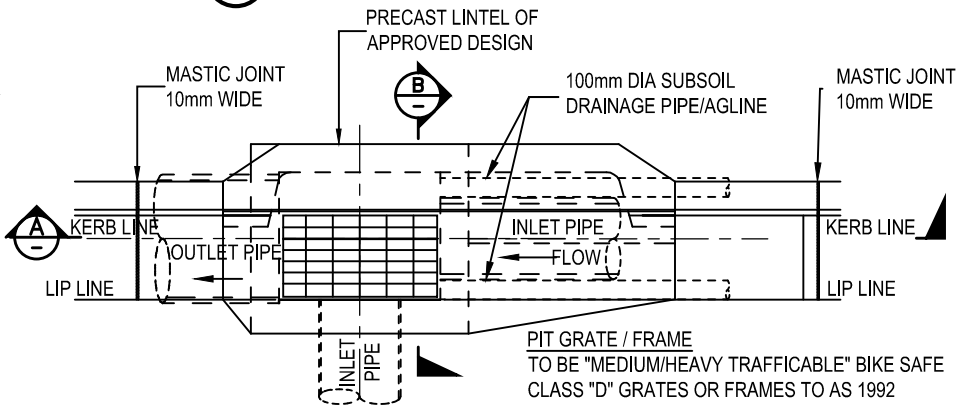
DRAWING N0: CIV 14

DRAWN: MC	APPROVED: I.A
CHECKED: VM	DESIGN MANAGER
VERIFIED: V.P	...../...../.....

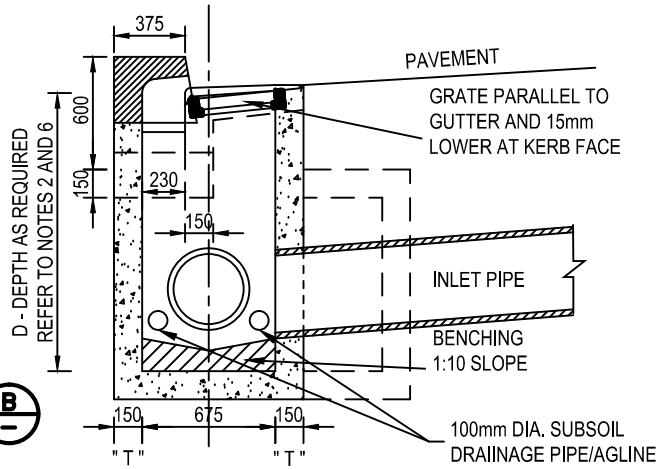
SCALE: NTS	SHEET: 1 OF 1
DATE: 20/05/2014	REV: B



SECTION A



PLAN



SECTION B

NOTES

1. ALL KERB INLET PITS (ON GRADE) SHALL BE PROVIDED WITH AN EXTENDED INLET 900mm (MIN) LONG ON THE HIGHER SIDE.
2. STEP IRONS TO BE PROVIDED AT 300mm CENTRES FOR PITS DEEPER THAN 1200mm AND PLACED ON A WALL CLEAR OF FLOW WHERE POSSIBLE.
3. THE COMPRESSIVE STRENGTH OF ALL CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
4. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450 ELSEWHERE
5. ALL INTERNAL PIT CORNERS TO BE PROVIDED WITH BENCHING TO IMPROVE FLOW.
6. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm WALLS TO BE REINFORCED IN ACCORDANCE WITH THE TABLE SHOWN BELOW.
7. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
8. ALL PIPES TO BE LAID SO THAT THEIR CENTRELINES INTERSECT AT THE CENTRE OF THE PIT.
9. 100mm DIA. SUBSOIL DRAINAGE PIPE/AGLINE 3.0m LONG WRAPPED IN FABRIC SOCK TO BE PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100mm MINIMUM ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE PIPE/AGLINE WITH 10mm AGGREGATE
10. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.)

		SPACING OF "N16" WALL & BASE REINFORCEMENT				
DEPTH TO INVERT "D"	WALL & BASE THICKNESS "T"	MAXIMUM INTERNAL PLAN DIMENSION "W"				
		0 - 1190	1200 - 1790	1800 - 2390	2400 - 2690	2700 - 3000
0 - 1990	150	NIL.REINF.	250 CP	250 CP	250 CP	250 CP
2000 - 2490	200	250 CP	250 CP	250 CP	250 CP	250 CP

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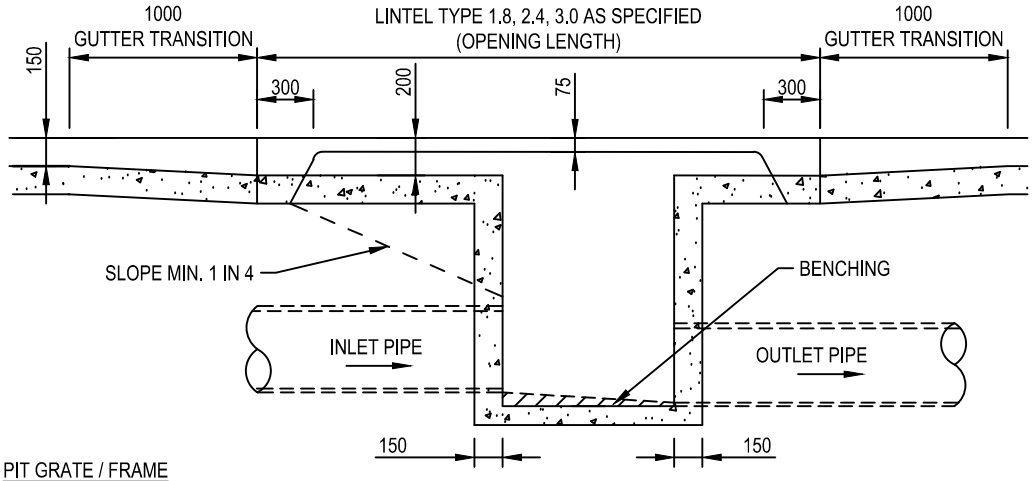
Public Works - Project Development

DRAWN: JSB/MC
CHECKED: JSB/MC
VERIFIED: VP

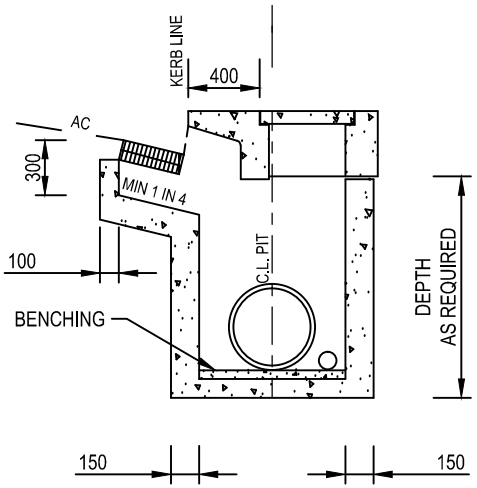
APPROVED: IA
DESIGN MANAGER
...../...../.....

STANDARD DRAWING:
STANDARD KERB INLET PIT (ON GRADE)

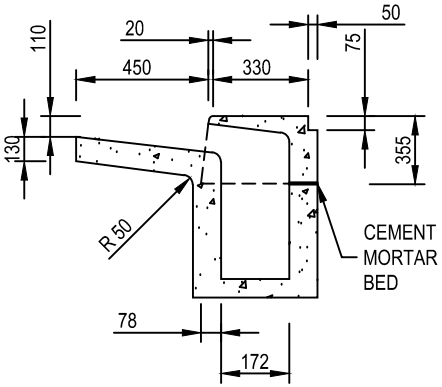
DRAWING NO: SWD 01
SCALE: NTS
SHEET: 1 of 1
DATE: 20/05/2014
REV: B



SECTION C



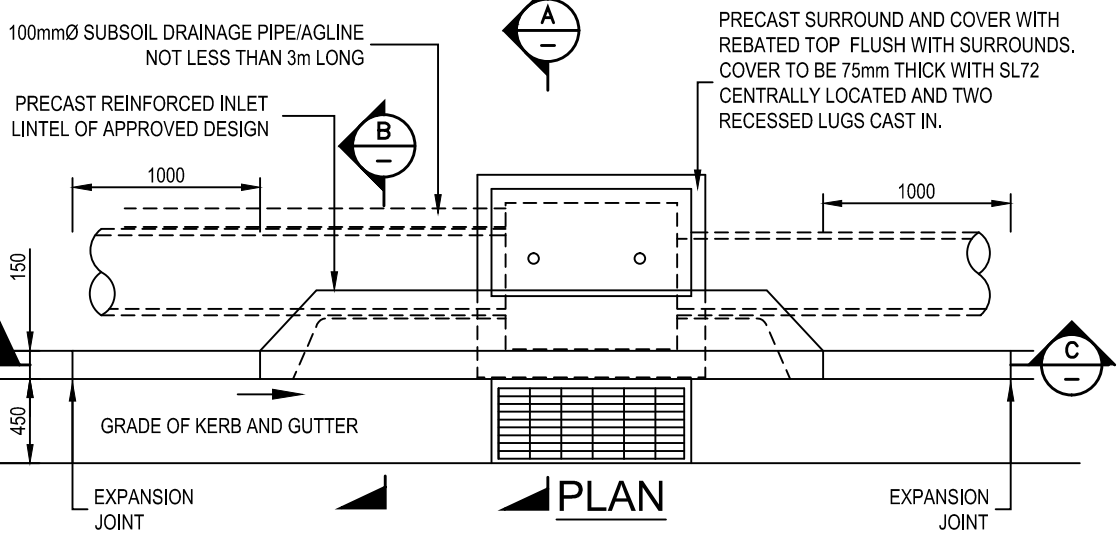
SECTION A



SECTION B

PIT GRATE / FRAME

TO BE "MEDIUM/HEAVY TRAFFICABLE" BIKE SAFE CLASS "D" GRATES OR FRAMES TO AS 3996



PLAN

NOTES

1. MINIMUM COVER FOR ALL PIPES 600mm UNDER ROADS AND 450mm ELSEWHERE.
2. ALL PIPES TO BE LAID SO THAT THEIR VERTICAL CENTRELINES INTERSECT AT THE CENTRE OF THE PIT.
3. CONCRETE PIT WALLS TO BE NOMINAL 150mm THICK.
4. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm WALLS TO BE REINFORCED IN ACCORDANCE WITH THE TABLE SHOWN ON SWD 01.
5. STEP IRONS TO BE PROVIDED AT 300mm CENTRES FOR PITS DEEPER THAN 1200mm AND PLACED ON A WALL CLEAR OF FLOW WHERE POSSIBLE.
6. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
7. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
8. 100mm DIA. SUBSOIL DRAINAGE PIPE/AGLINE 3.0M LONG WRAPPED IN FABRIC SOCK TO BE PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100mm MINIMUM ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE PIPE/AGLINE WITH 10mm AGGREGATE.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.)

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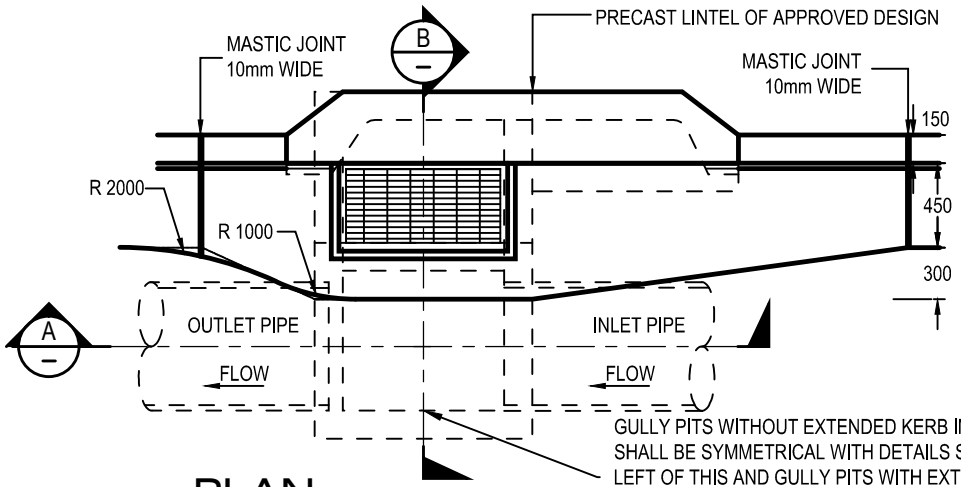
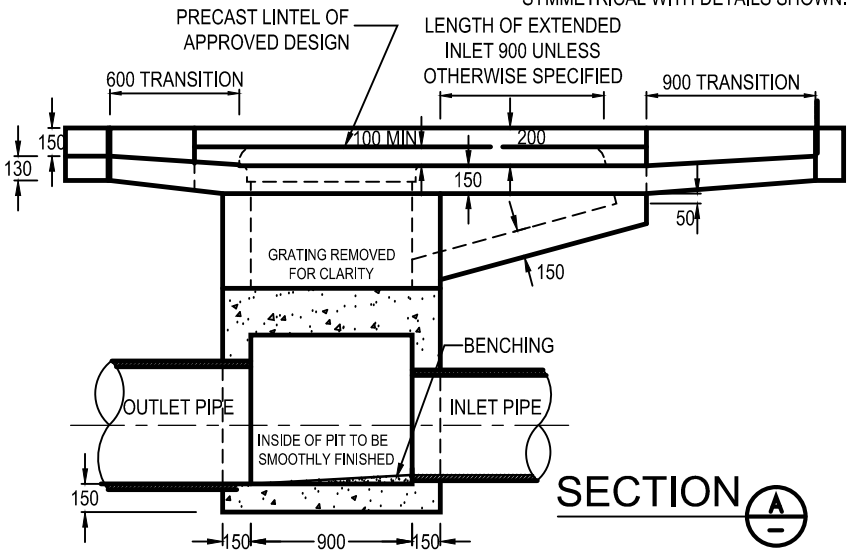
City of Ryde
Public Works - Project Development

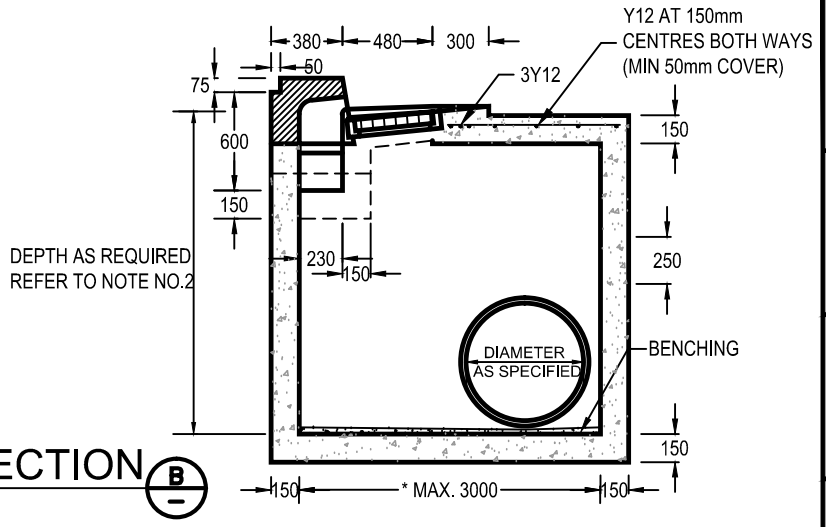
DRAWN: JSB/MC	APPROVED: IA	STANDARD DRAWING:	DRAWING NO: SWD 02
CHECKED: JSB/MC	DESIGN MANAGER	REAR ACCESS PIT	SCALE: NTS / SHEET: 1 of 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B



PLAN



SECTION A



SECTION B

NOTES

1. ALL PITS SHALL BE PROVIDED WITH AN EXTENDED INLET 900mm LONG ON THE HIGHER SIDE OR ON BOTH SIDES OF PITS IN SAGS UNLESS OTHERWISE SHOWN.
2. WHERE DEPTH EXCEEDS 1200mm PROVIDE STEP IRONS AT 300mm INTERVALS PLACING THEM ON A WALL CLEAR OF FLOW WHERE POSSIBLE. (REFER TO SWD 14)
3. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
4. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
5. ALL INTERNAL CORNERS TO BE FINISHED WITH 30mm RADIUS.
6. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm OR PITS UP TO MAXIMUM OF 3000mm INTERNAL PLAN DIMENSION, WALLS TO BE REINFORCED IN ACCORDANCE WITH THE TABLE SHOWN ON SWD 01.
7. WHERE DIRECTED PROVIDE 100mmØ SUBSOIL DRAINAGE PIPE/AGLINE 3.0m LONG WRAPPED IN FABRIC SOCK PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100mm MINIMUM ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE PIPE/AGLINE WITH 10mm AGGREGATE.
8. SELECTED GRANULAR MATERIAL BACKFILL TO BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
9. ALL PIPES SHOULD BE LAID SO THAT THEIR CENTRELINES INTERSECT AT THE CENTRE OF THE PIT.
10. FOR MOUNTABLE KERB USE A GRATED GULLY PIT.
11. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. (U.N.O)

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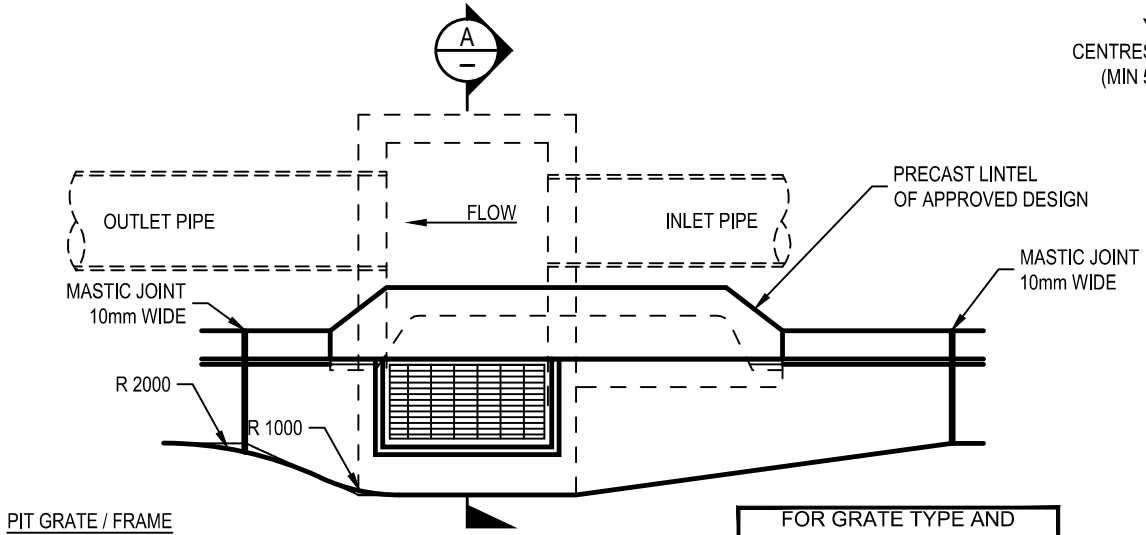
Public Works - Project Development

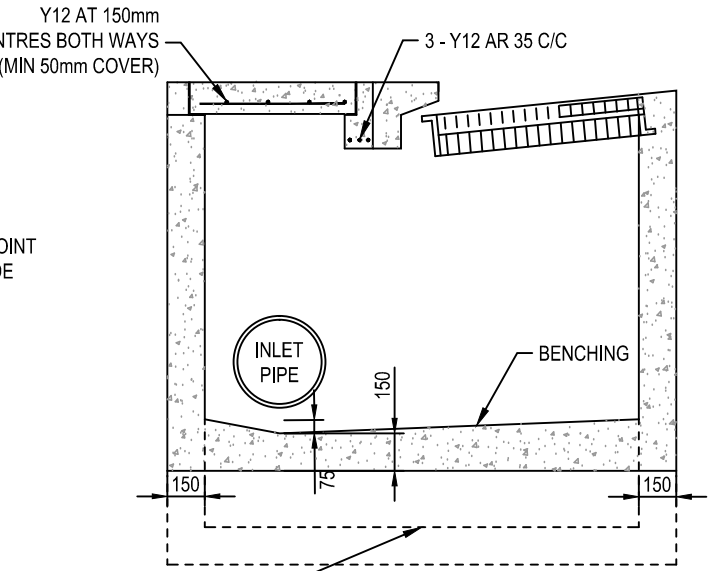
DRAWN: JSB/MC	APPROVED: IA	STANDARD DRAWING: DGG PIT WITH EKI (PIPE UNDER ROADWAY)
CHECKED: JSB/MC	DESIGN MANAGER	DRAWING NO: SWD 03
VERIFIED: VP	...../...../.....	SCALE: NTS / SHEET: 1 OF 1
		DATE: 20/05/2014 / REV: B



PIT GRATE / FRAME
TO BE "MEDIUM/HEAVY TRAFFICABLE"
BIKE SAFE CLASS "D" GRATES
OR FRAMES TO AS 3996

PLAN

FOR GRATE TYPE AND DETAILS REFER TO MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS



CATCH PIT IF CALLED FOR
IN GENERAL DRAWING

SECTION A

NOTES

1. WHERE DEPTH EXCEEDS 1200mm PROVIDE STEP IRONS AT 300mm INTERVALS PLACING THEM ON A WALL CLEAR OF FLOW WHERE POSSIBLE. (REFER TO SWD-14)
2. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
3. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
4. ALL INTERNAL CORNERS TO BE FINISHED WITH 30mm RADIUS.
5. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm OR PITS UP TO MAXIMUM OF 3000mm INTERNAL PLAN DIMENSION, WALLS TO BE REINFORCED IN ACCORDANCE WITH THE TABLE SHOWN ON SWD 01.
6. GRATES SHALL BE PINNED TO THE FRAME.
7. FOR MOUNTABLE KERB USE THE GRATED GULLY PIT ONLY
8. WHERE DIRECTED PROVIDE 100mmØ SUBSOIL DRAINAGE PIPE/AGLINE 3.0m LONG WRAPPED IN FABRIC SOCK PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100mm MINIMUM ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE PIPE/AGLINE WITH 10mm AGGREGATE.
9. SELECTED GRANULAR MATERIAL BACKFILL TO BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
10. ALL PIPES SHOULD BE LAID SO THAT THEIR CENTRELINES INTERSECT AT THE CENTRE OF THE PIT.
11. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.)

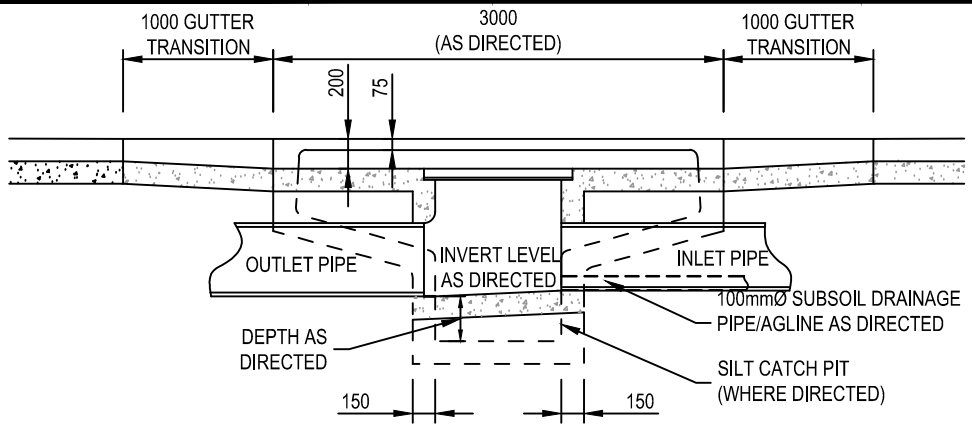
City of Ryde
Public Works - Project Development

DRAWN: JSB/MC
CHECKED: JSB/MC
VERIFIED: VP

APPROVED: IA
DESIGN MANAGER
...../...../.....

STANDARD DRAWING:
DGG PIT WITH EKI (PIPE BEHIND KERB)

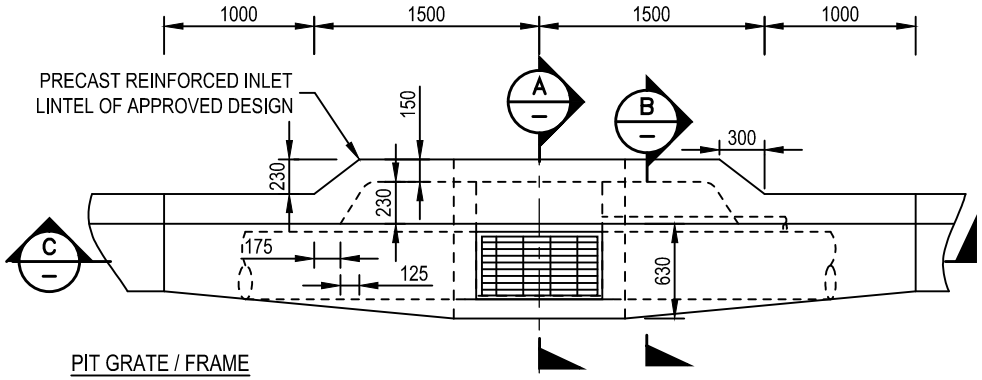
DRAWING NO: SWD 04
SCALE: NTS
SHEET: 1 of 1
DATE: 20/05/2014
REV: B



SECTION C

NOTE

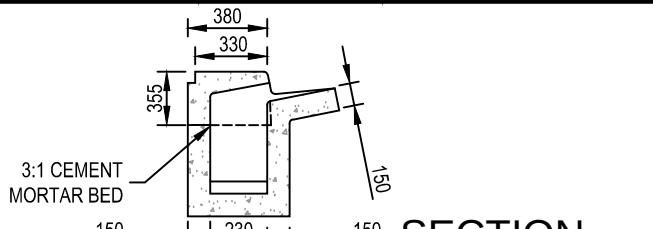
100mm DIA. SUBSOIL DRAINAGE PIPE/AGLINE 3.0m LONG WRAPPED IN FABRIC SOCK TO BE PLACED ADJACENT TO INLET PIPES ON ONE OR BOTH SIDES AS DIRECTED AND 100mm MINIMUM ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE PIPE/AGLINE WITH 10mm AGGREGATE



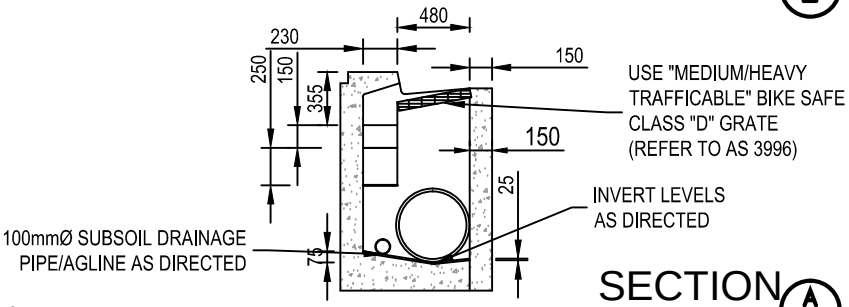
PIT GRATE / FRAME

TO BE "MEDIUM/HEAVY TRAFFICABLE" BIKE SAFE CLASS "D" GRATES OR FRAMES TO AS 3996

PLAN



SECTION B



SECTION A

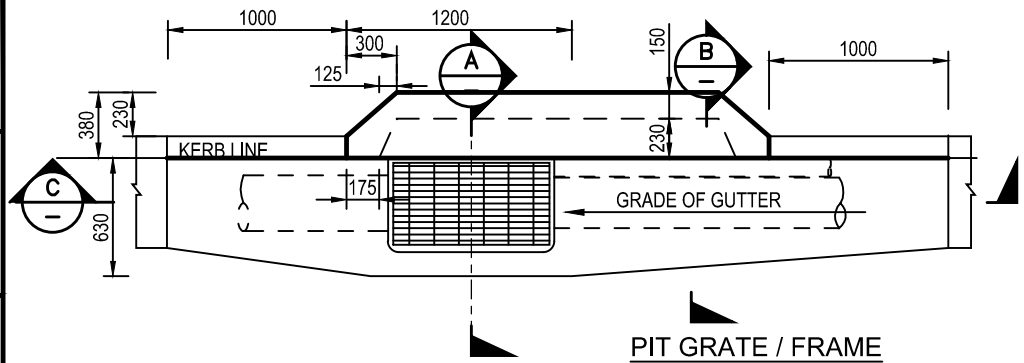
NOTES

1. THE KERB/GUTTER APRON BETWEEN THE EXPANSION JOINTS INCORPORATING THE GRATE FRAME MUST BE POURED AS ONE.
2. PITS DEEPER THAN 1200mm OR PITS TAKING LARGER THAN 750mm DIAMETER PIPES SHALL BE REINFORCED WITH SL72 MESH OR EQUIVALENT PLACED CENTRALLY. (FOR ALTERNATIVE METHOD REFER TO NOTE N°8)
3. PROVIDE STEP IRONS WHERE PIT IS DEEPER THAN 1200mm AT 300mm INTERVALS PLACING THEM ON A WALL CLEAR OF FLOW WHERE POSSIBLE.
4. PIPES SHOULD BE LAID SO THAT THEIR CENTRE LINES INTERSECT WITH THE CENTRE OF THE PIT.
5. IF THE PIPES ARE LARGER THAN 750mm DIAMETER OR WHERE LOCATIONS DO NOT PERMIT THE USE OF STANDARD PITS, PROPOSED VARIATIONS MUST BE INSTRUCTED BY THE SUPERINTENDENT.
6. SILT TRAPS ON INLET PITS SHALL ONLY BE PROVIDED AS DIRECTED BY THE SUPERINTENDENT.
7. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
8. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm WALLS TO BE REINFORCED IN ACCORDANCE WITH THE TABLE SHOWN ON SWD 01.
9. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
10. ALL PIPES TO BE LAID SO THAT THEIR VERTICAL CENTRELINES INTERSECT AT THE CENTRE OF THE PIT.
11. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
12. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

DISCLAIMER:

City of Ryde
Public Works - Project Development

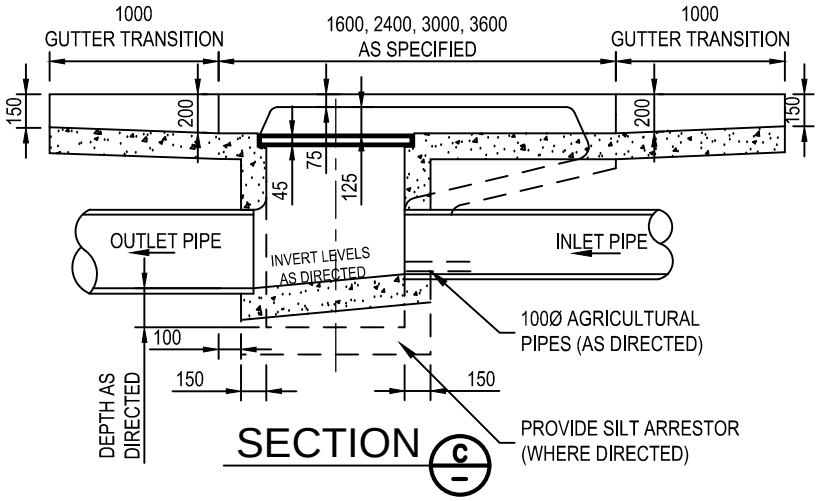
DRAWN: JSB/MC	APPROVED: IA	STANDARD DRAWING: GRATED SAG PIT USING PRECAST LINTEL	DRAWING NO: SWD 05
CHECKED: JSB/MC	DESIGN MANAGER		SCALE: NTS / SHEET: 1 of 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B



PLAN

PIT GRATE / FRAME

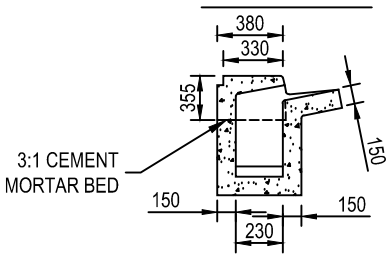
TO BE "MEDIUM/HEAVY TRAFFICABLE" BIKE SAFE CLASS "D" GRATES OR FRAMES TO AS 3996



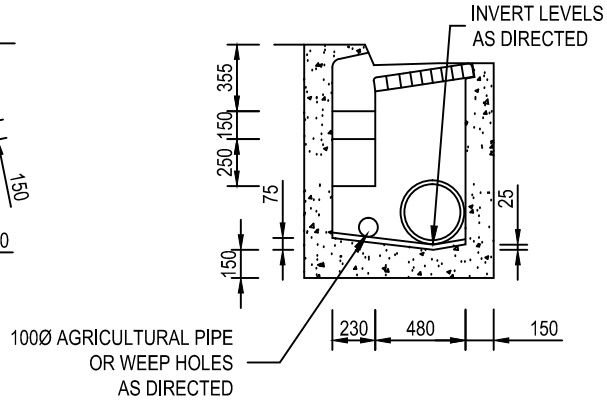
SECTION C

NOTES

1. THE KERB/GUTTER APRON BETWEEN THE EXPANSION JOINTS INCORPORATING THE GRATE FRAME MUST BE POURED AS ONE.
2. PITS OVER 1200mm DEEP OR PITS TAKING LARGER THAN 750mm DIAMETER PIPES SHALL BE REINFORCED WITH SL72 MESH OR EQUIVALENT PLACED CENTRALLY. (FOR ALTERNATIVE METHOD REFER TO NOTE N°8)
3. PROVIDE STEP IRONS WHERE PIT IS DEEPER THAN 1200mm AT 300mm INTERVALS PLACING THEM ON A WALL CLEAR OF FLOW WHERE POSSIBLE.
4. WHERE DIRECTED PROVIDED 100mm DIAMETER SUBSOIL DRAINAGE PIPE/AGLINE 3.0m LONG WRAPPED IN A FABRIC SOCK, PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100mm MINIMUM ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE PIPE/AGLINE WITH 10mm AGGREGATE.
5. PIPES SHOULD BE LAID SO THAT THEIR CENTRE LINES INTERSECT AT THE CENTRE OF THE PIT.
6. IF THE PIPES ARE LARGER THAN 750mm DIAMETER OR WHERE LOCATIONS DO NOT PERMIT THE USE OF STANDARD PITS, PROPOSED VARIATIONS MUST BE INSTRUCTED BY THE SUPERINTENDENT.
7. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
8. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm WALLS TO BE REINFORCED IN ACCORDANCE WITH THE TABLE SHOWN ON SWD 01.
9. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
10. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
11. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.



SECTION B



SECTION A

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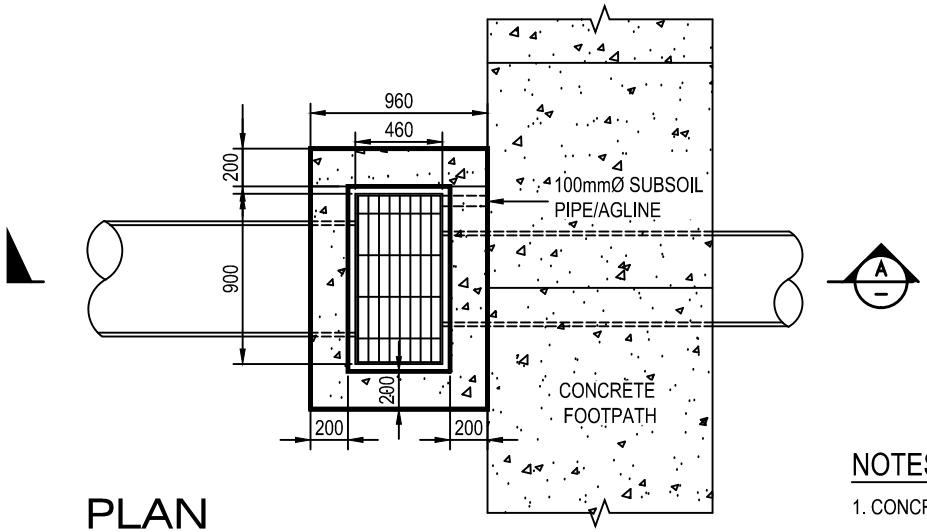
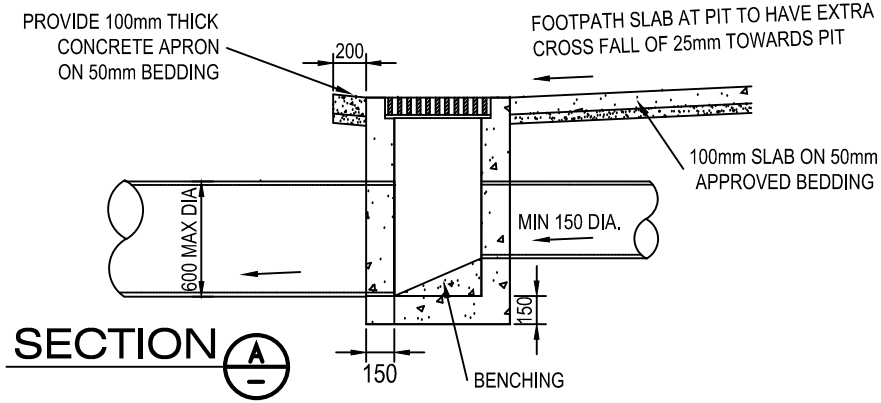
City of Ryde
Public Works - Project Development

DRAWN: JSB/MC	APPROVED: IA	STANDARD DRAWING: GGPIT WITH EKI USING PRECAST LINTEL	DRAWING NO: SWD 06
CHECKED: JSB/MC	DESIGN MANAGER		SCALE: NTS / SHEET: 1 of 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B



PLAN



SECTION

PIT GRATE / FRAME

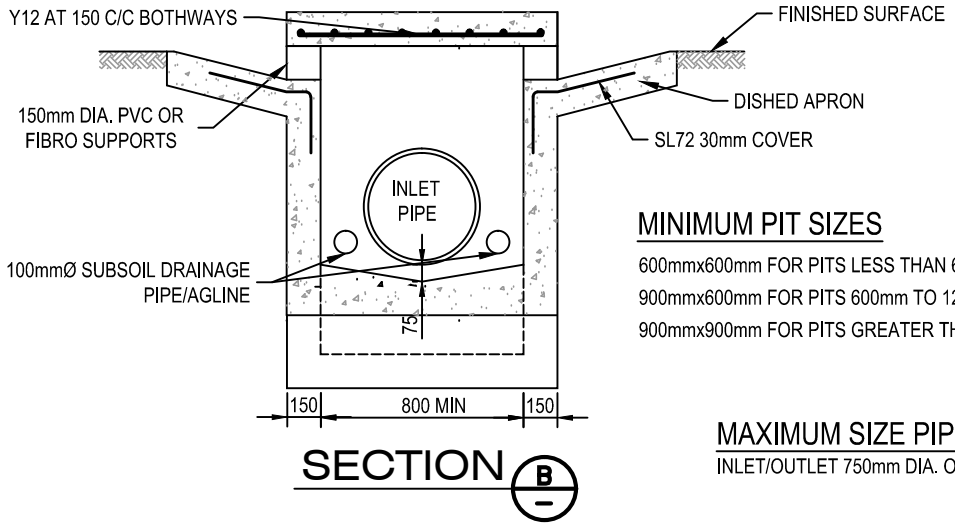
TO BE "MEDIUM/HEAVY TRAFFICABLE"
BIKE SAFE CLASS "C" GRATES OR
FRAMES TO AS 3996 - 1992

NOTES

1. CONCRETE APRONS TO BE INCLUDED WHEN CONSTRUCTING ADJACENT TO CONCRETE PATHS.
2. SILT TRAPS ON INLET PITS SHALL ONLY BE PROVIDED AS DIRECTED BY THE SUPERINTENDENT.
3. ALL PIPES SHOULD BE LAID SO THAT THEIR CENTRELINES INTERSECT AT THE CENTRE OF THE PIT.
4. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
5. PROVIDE STEP IRONS WHERE PIT IS DEEPER THAN 1200mm AT 300mm INTERVALS PLACING THEM ON A WALL CLEAR OF FLOW WHERE POSSIBLE. REFER TO SWD-14)
6. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm WALLS TO BE REINFORCED, ACCORDING TO SWD 01.
7. 100mm SUBSOIL DRAINAGE PIPE/AGLINE 3.0m LONG WRAPPED IN FABRIC SOCK TO BE PLACED ADJACENT TO INLET PIPES ON ONE OR BOTH SIDES AND 100mm ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE PIPE/AGLINE WITH 10m AGGREGATE.
8. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
9. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS.
10. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.).

City of Ryde
Public Works - Project Development

DRAWN: JSB/MC	APPROVED: IA	STANDARD DRAWING: STANDARD FOOTPATH SURFACE INLET PIT	DRAWING NO: SWD 07
CHECKED: JSB/MC	DESIGN MANAGER		SCALE: NTS / SHEET: 1 of 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B



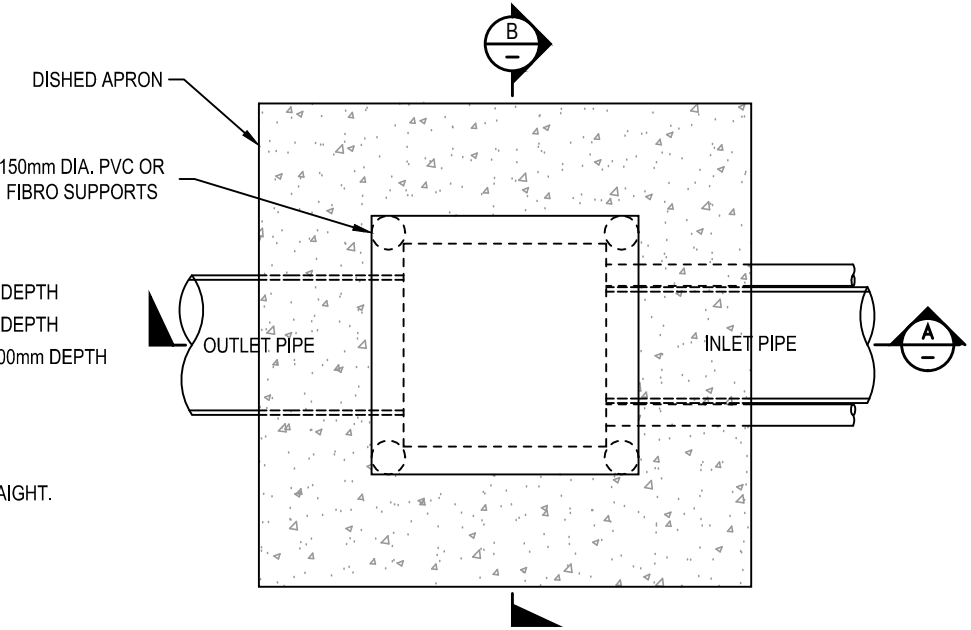
SECTION B

MINIMUM PIT SIZES

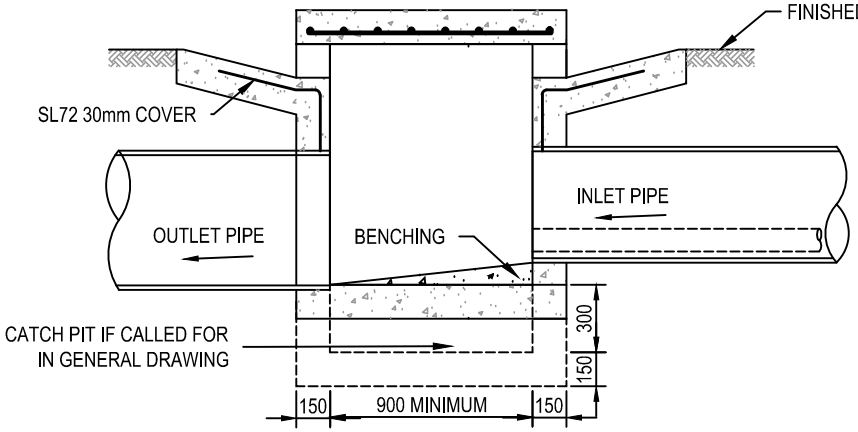
600mmx600mm FOR PITS LESS THAN 600mm DEPTH
900mmx600mm FOR PITS 600mm TO 1200mm DEPTH
900mmx900mm FOR PITS GREATER THAN 1200mm DEPTH

MAXIMUM SIZE PIPES

INLET/OUTLET 750mm DIA. ON STRAIGHT.



PLAN



SECTION A

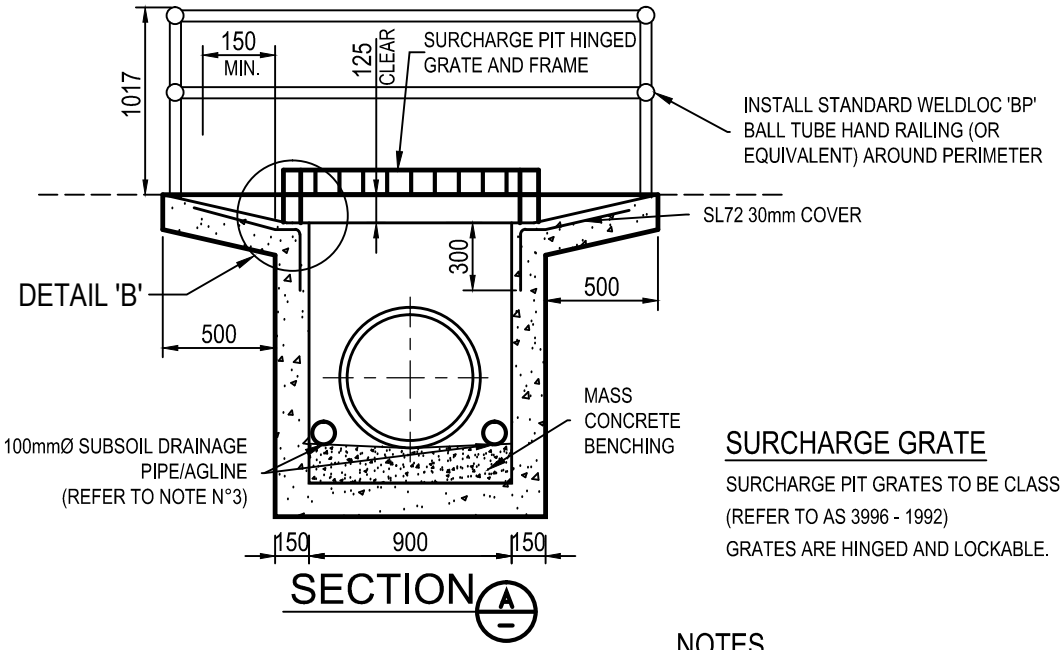
NOTES

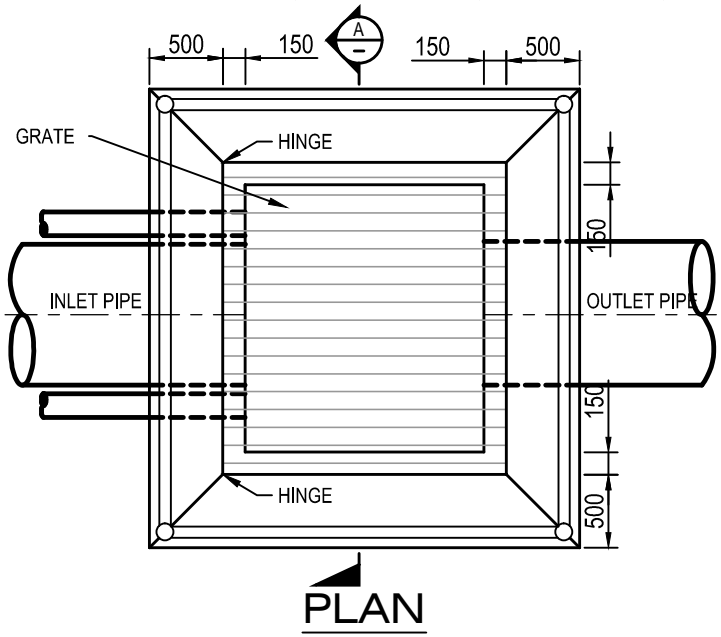
1. FOR HINGE CONNECTION DETAIL, REFER TO SWD 08 SHEET 2 OF 2.
2. IN CASE THE PIT IS USED AS A SURCHARGE PIT THE COVER HAS TO BE SECURELY CONNECTED TO THE WALLS
3. CATCH PIT ON INLET PITS SHALL ONLY BE PROVIDED AS DIRECTED BY THE SUPERINTENDENT.
4. ALL PIPES SHOULD BE LAID SO THAT THEIR CENTRELINES INTERSECT AT THE CENTRE OF THE PIT.
5. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
6. PROVIDE STEP IRONS WHERE PIT IS DEEPER THAN 1200mm AT 300mm INTERVALS PLACING THEM ON A WALL CLEAR OF FLOW WHERE POSSIBLE.
7. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm WALLS TO BE REINFORCED.
8. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
9. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS.
10. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.).

DISCLAIMER:

City of Ryde
Public Works - Project Development

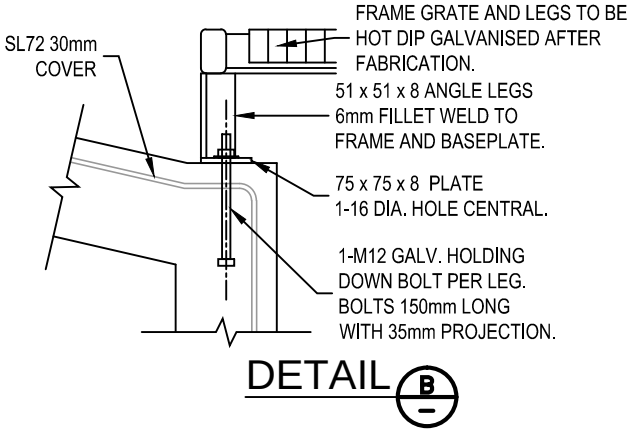
DRAWN: JSB/MC	APPROVED: IA	STANDARD DRAWING:	DRAWING NO: SWD 08-1
CHECKED: JSB/MC	DESIGN MANAGER	SURFACE INLET PIT	SCALE: NTS / SHEET: 1 of 2
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B





SURCHARGE GRATE

SURCHARGE PIT GRATES TO BE CLASS "C" (150kN)
(REFER TO AS 3996 - 1992)
GRATES ARE HINGED AND LOCKABLE.



NOTES

1. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
2. PROVIDE CONCRETE BENCHING ACROSS PIT TO SUIT INLET AND OUTLET PIPES AS DETAILED.
3. 100mm DIA. SUBSOIL DRAINAGE PIPE/AGLINE 3.0m LONG WRAPPED IN FABRIC SOCK TO BE PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100mm MINIMUM ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE PIPE/AGLINE WITH 10mm AGGREGATE.
4. PROVIDE STEP IRONS WHERE PIT IS DEEPER THAN 1200mm AT 300mm INTERVALS PLACING THEM ON A WALL CLEAR OF FLOW WHERE POSSIBLE.
5. SELECTED GRANULAR BACK FILL IS TO BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
6. PRE-CAST CONCRETE PITS MAY BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND TO THE DIRECTION OF THE SUPERINTENDENT.
7. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm WALLS TO BE REINFORCED IN ACCORDANCE WITH THE TABLE SHOWN ON SWD 01.
8. ALL PIPES TO BE LAID SO THAT THEIR CENTRELINES INTERSECT AT THE CENTRE OF THE PIT.
9. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O)

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Public Works - Project Development

DRAWN: JSB/MC	APPROVED: IA	STANDARD DRAWING:	DRAWING NO: SWD 08-2
CHECKED: JSB/MC	DESIGN MANAGER	STANDARD SURCHARGE PIT	SCALE: NTS / SHEET: 2 of 2
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B

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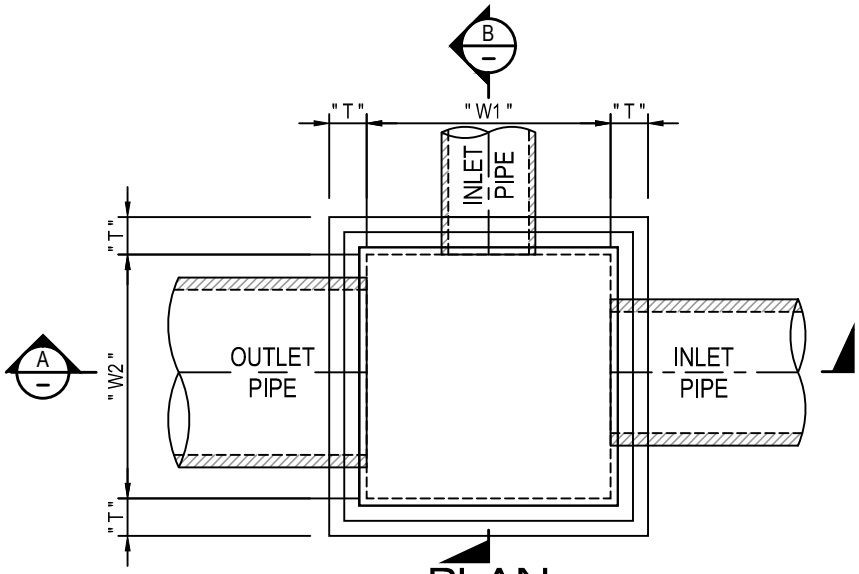
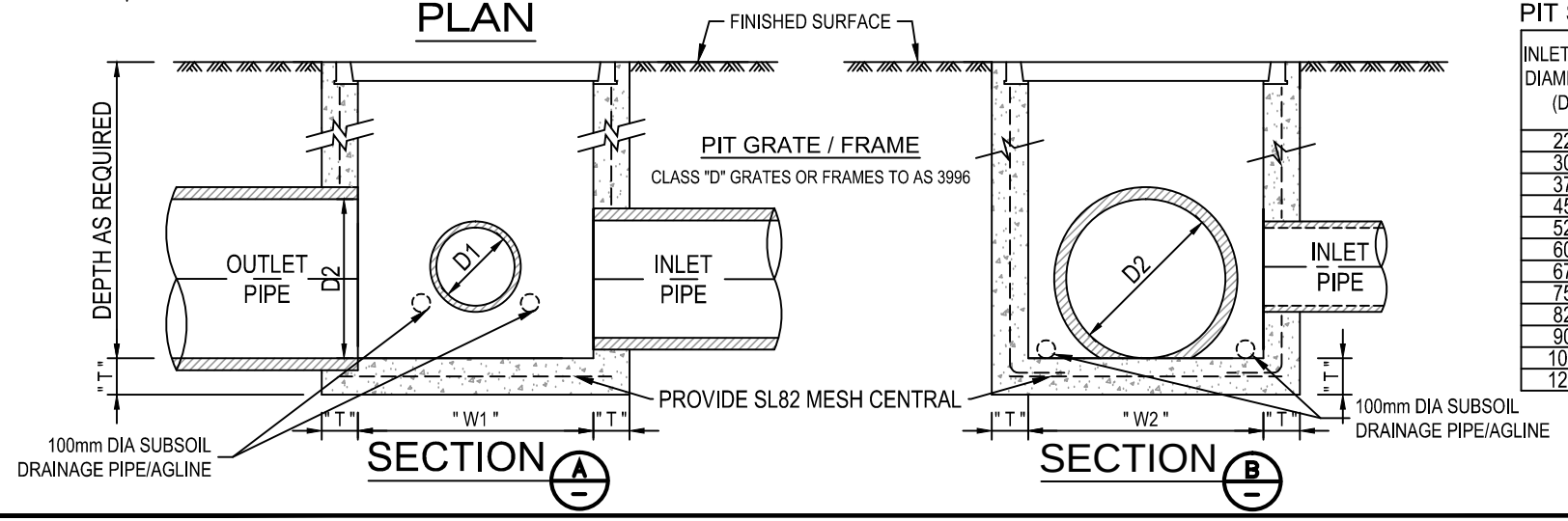


PLAN

NOTES

1. STEP IRONS TO BE PROVIDED AT 300mm CENTRES FOR PITS DEEPER THAN 1200mm AND PLACED ON A WALL CLEAR OF FLOW WHERE POSSIBLE . (REFER TO SWD-14)
2. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
3. 100mm DIAMETER SUBSOIL DRAINAGE PIPE/AGLINE 3.0m LONG WRAPPED IN FABRIC
4. SOCK TO BE PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100mm MINIMUM ABOVE THE PIT FLOOR. SURROUND SUBSOIL DRAINAGE PIPE/AGLINE WITH 10mm AGGREGATE
5. PROVIDE STEP IRONS WHERE PIT IS DEEPER THAN 1200mm DEEP AT 300mm INTERVALS PLACING THEM ON A WALL CLEAR OF FLOW WHERE POSSIBLE.
6. SELECTED GRANULAR MATERIAL BACK FILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
7. APPROVED PRE CAST CONCRETE PITS MAY BE USED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION AND TO THE DIRECTION OF THE SUPERINTENDENT.
8. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm WALLS TO BE REINFORCED IN ACCORDANCE WITH THE TABLE SHOWN.
9. THE INLET PIPE OBVERT IS TO BE NO HIGHER THAN THE OUTLET PIPE OBVERT.
10. ALL PIPES TO BE LAID SO THAT THEIR CENTERLINES INTERSECT AT THE CENTRE OF THE PIT
11. DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.



PIT SIZE

INLET PIPE DIAMETER (D1)	MINIMUM PIT WIDTH (W1)	OUTLET PIPE DIAMETER (D2)	MINIMUM PIT WIDTH (W2)
225	600	225	600
300	600	300	600
375	600	375	600
450	600	450	600
525	680	525	680
600	760	600	760
675	830	675	830
750	900	750	900
825	990	825	990
900	1050	900	1050
1050	1200	1050	1200
1200	1370	1200	1370

PIT DEPTH

0 - 2m	T = 150
2m - 2.5m	T = 200

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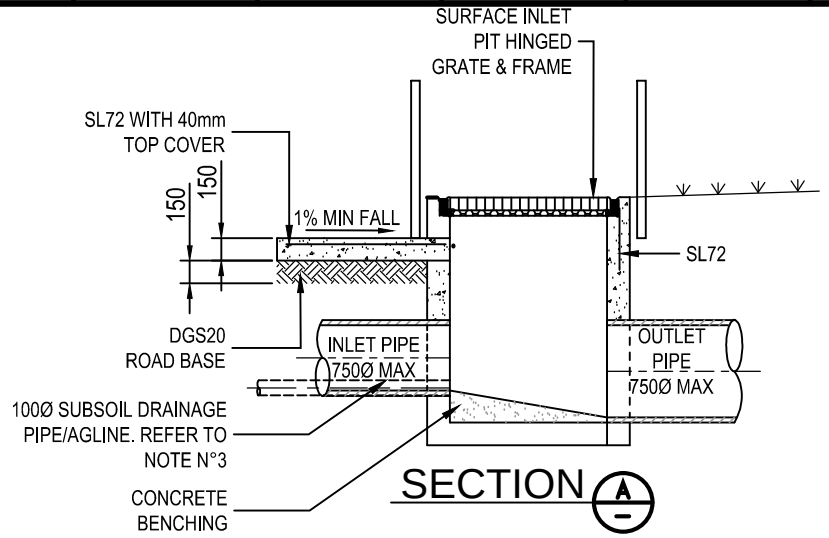
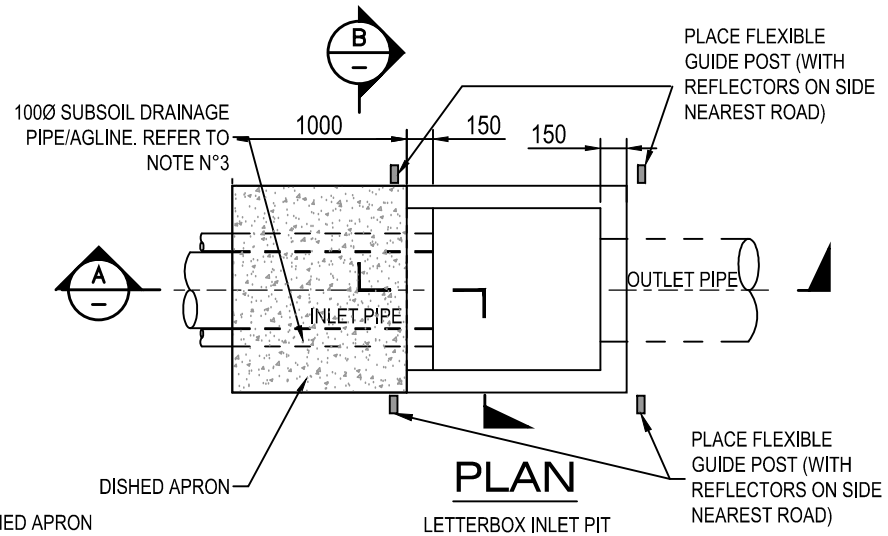
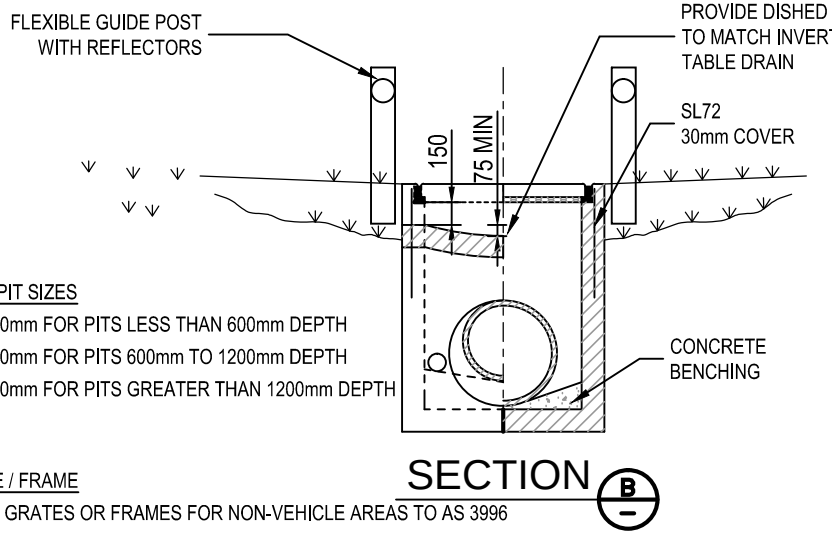
Public Works - Project Development

DRAWN: JSB/MC	APPROVED: IA	STANDARD DRAWING:	DRAWING NO: SWD 09
CHECKED: JSB/MC	DESIGN MANAGER	STANDARD JUNCTION PIT	SCALE: NTS / SHEET: 1 of 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B







MINIMUM PIT SIZES

600mmx600mm FOR PITS LESS THAN 600mm DEPTH

900mmx600mm FOR PITS 600mm TO 1200mm DEPTH

900mmx900mm FOR PITS GREATER THAN 1200mm DEPTH

PIT GRATE / FRAME

CLASS "C" GRATES OR FRAMES FOR NON-VEHICLE AREAS TO AS 3996

CLASS "D" GRATES OR FRAMES FOR VEHICLE LOADING AREAS TO AS 3996

NOTES

1. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
2. PROVIDE CONCRETE BENCHING ACROSS PIT TO SUIT INLET AND OUTLET PIPES AS DETAILED.
3. WHERE DIRECTED PROVIDE 100mm DIAMETER SUBSOIL DRAINAGE PIPE 3.0m LONG WRAPPED IN FABRIC SOCK TO BE PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100mm MINIMUM ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE PIPE/AGLINE WITH 10mm AGGREGATE.
4. PROVIDE STEP IRONS WHERE PIT IS DEEPER THAN 1200mm AT 300mm INTERVALS PLACING THEM ON A WALL CLEAR OF FLOW WHERE POSSIBLE.
5. SELECTED GRANULAR MATERIAL BACK FILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
6. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
7. APPROVED PRE CAST CONCRETE PITS MAY BE USED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION AND TO THE DIRECTION OF THE SUPERINTENDENT.
8. THE INLET PIPE OBVERT IS TO BE NO HIGHER THAN THE OUTLET PIPE OBVERT.
9. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm WALLS TO BE REINFORCED IN ACCORDANCE WITH THE TABLE ON SWD01
10. DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.)

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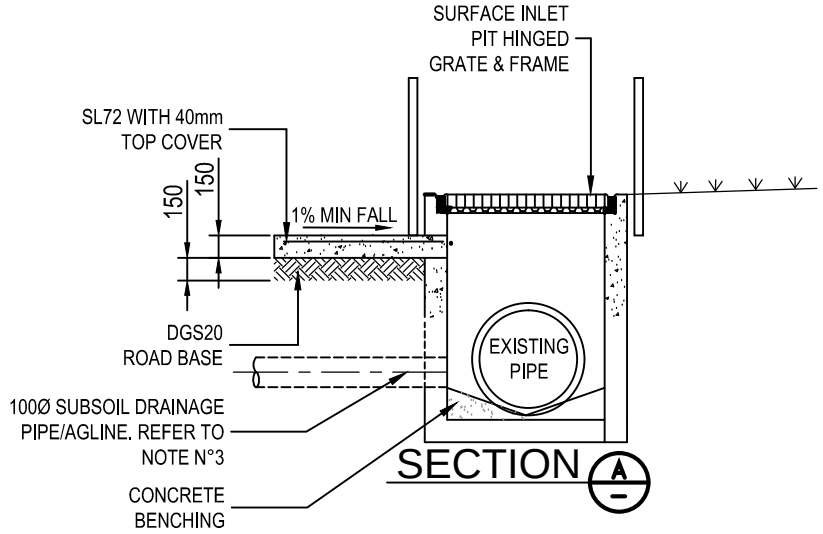
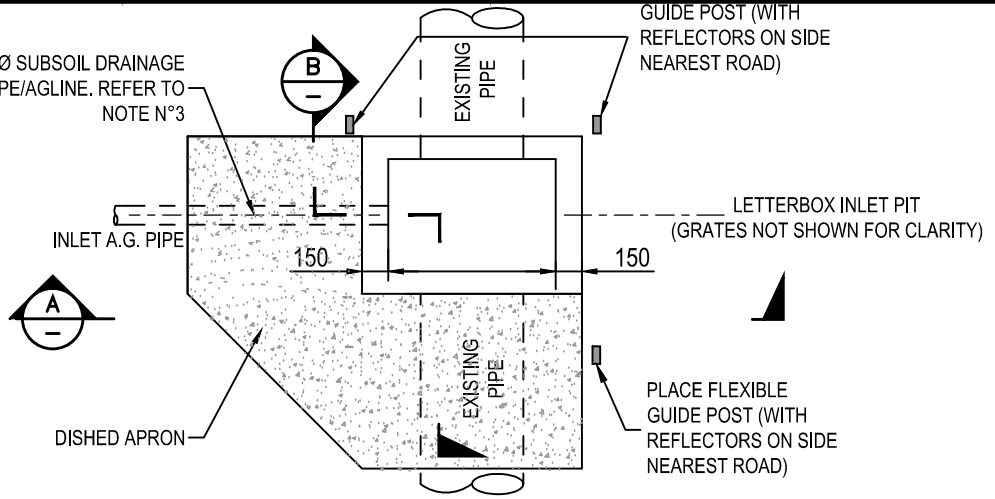
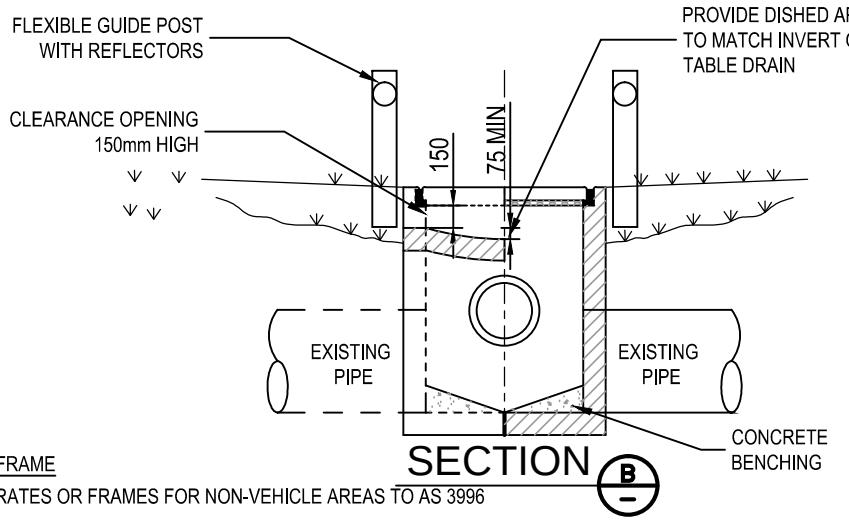
Public Works - Project Development

DRAWN: JSB/MC	APPROVED: IA	STANDARD DRAWING: STANDARD LETTERBOX INLET PIT	DRAWING NO: SWD 10-1
CHECKED: JSB/MC	DESIGN MANAGER		SCALE: NTS / SHEET: 1 of 2
VERIFIED: VP	...../...../.....		DATE: 30/05/2014 / REV: C





PLAN



PIT GRATE / FRAME

CLASS "C" GRATES OR FRAMES FOR NON-VEHICLE AREAS TO AS 3996

CLASS "D" GRATES OR FRAMES FOR VEHICLE LOADING AREAS TO AS 3996

NOTES

1. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
2. PROVIDE CONCRETE BENCHING ACROSS PIT TO SUIT INLET AND OUTLET PIPES AS DETAILED.
3. WHERE DIRECTED PROVIDE 100mm DIAMETER SUBSOIL DRAINAGE PIPE 3.0m LONG WRAPPED IN FABRIC SOCK TO BE PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100mm MINIMUM ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE PIPE/AGLINE WITH 10mm AGGREGATE.
4. PROVIDE STEP IRONS WHERE PIT IS DEEPER THAN 1200mm AT 300mm INTERVALS PLACING THEM ON A WALL CLEAR OF FLOW WHERE POSSIBLE.
5. SELECTED GRANULAR MATERIAL BACK FILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
6. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
7. APPROVED PRE CAST CONCRETE PITS MAY BE USED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION AND TO THE DIRECTION OF THE SUPERINTENDENT.
8. THE INLET PIPE OBVERT IS TO BE NO HIGHER THAN THE OUTLET PIPE OBVERT.
9. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm WALLS TO BE REINFORCED IN ACCORDANCE WITH THE TABLE ON SWD01
10. DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.)

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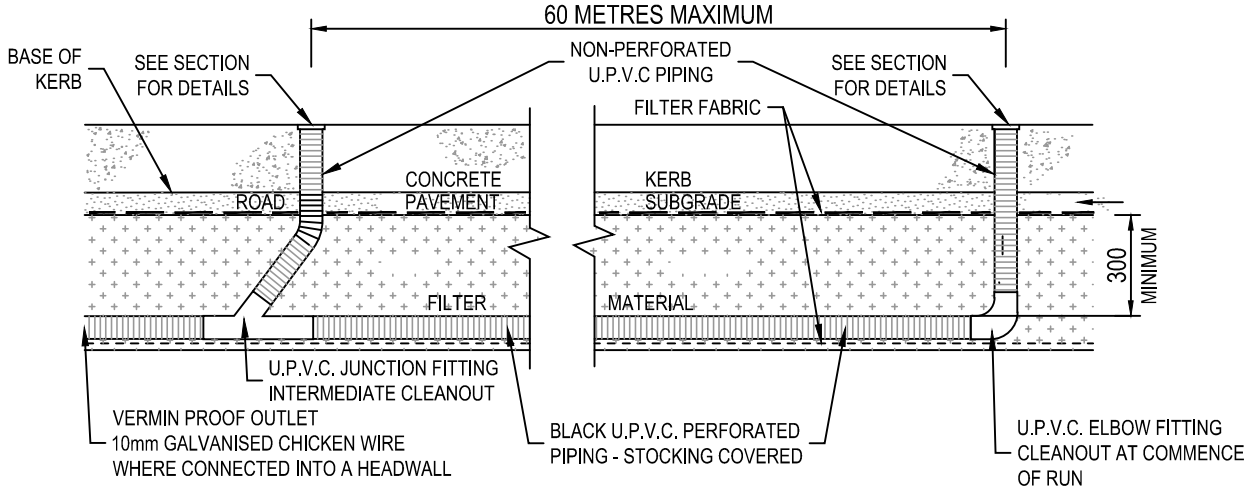
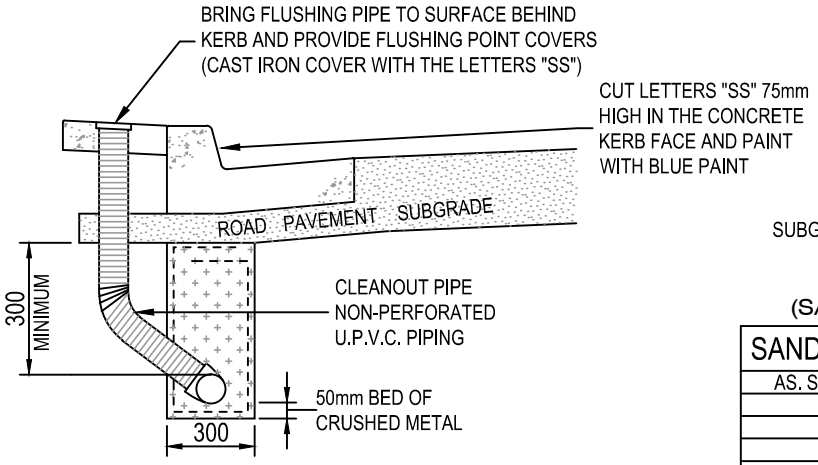
Public Works - Project Development

DRAWN: JSB/MC	APPROVED: IA	STANDARD DRAWING:	DRAWING NO: SWD 10-2
CHECKED: JSB/MC	DESIGN MANAGER	LETTERBOX INLET PIT	SCALE: NTS / SHEET: 2 of 2
VERIFIED: VP	...../...../.....		DATE: 30/05/2014 / REV: C

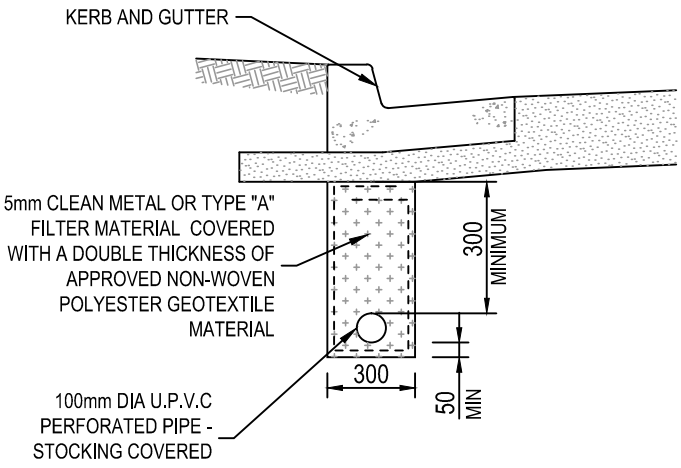
SPACING OF FLUSHING POINTS
60 METRES MAXIMUM



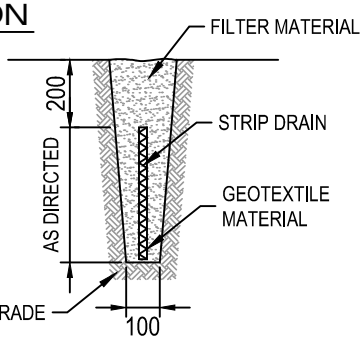
TYPICAL LONGITUDINAL SECTION



SECTION AT FLUSHING POINT



TYPICAL SECTION



STRIP DRAIN
(SAND AS FILTER MATERIAL)

SAND FILTER MATERIAL GRADING	
AS. SIEVE SIZE mm	% PASSING
4.750	100
2.360	95-100
0.425	20-80
0.300	0-30
0.150	0-2
0.075	0-0.1

NOTES

1. EXACT LOCATION WHETHER IN ROAD OR BEHIND KERB AND GUTTER TO BE DETERMINED ON SITE PENDING NUMBER OF CONCRETE DRIVEWAYS THAT NEED TO BE DISTURBED.
2. THE MINIMUM GRADE OF THE LINE TO BE 1 IN 200. THE GRADE SHALL FALL CONTINUOUSLY TO PREVENT SILTING UP AND BLOCKAGES.
3. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
4. A MAXIMUM FILTER AGGREGATE SIZE OF 10mm TO BE USED TO AVOID PUNCTURING THE PIPE.
5. ALL WORKS AND MATERIALS ACCORDING TO "AUSPEC" AND A.S. 3500.3-2003 SECTION 6
6. A MINIMUM OF 50mm LAYER OF FILTER MATERIAL TO BE FIRST PLACES IN THE TRENCH TO PROVIDE A DRAINAGE PATH UNDERNEATH THE PLASTIC PIPE.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. (U.N.O.)

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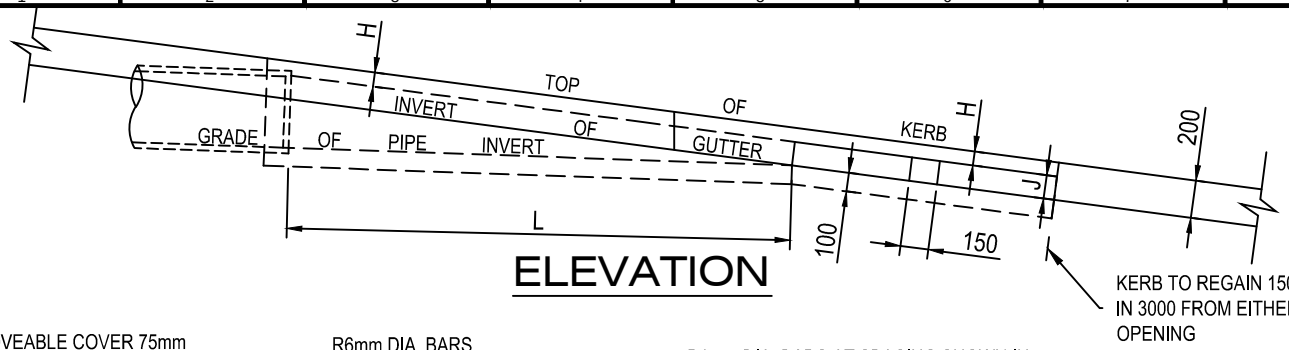
STANDARD DRAWING:

SUB-SOIL DRAINAGE DETAILS

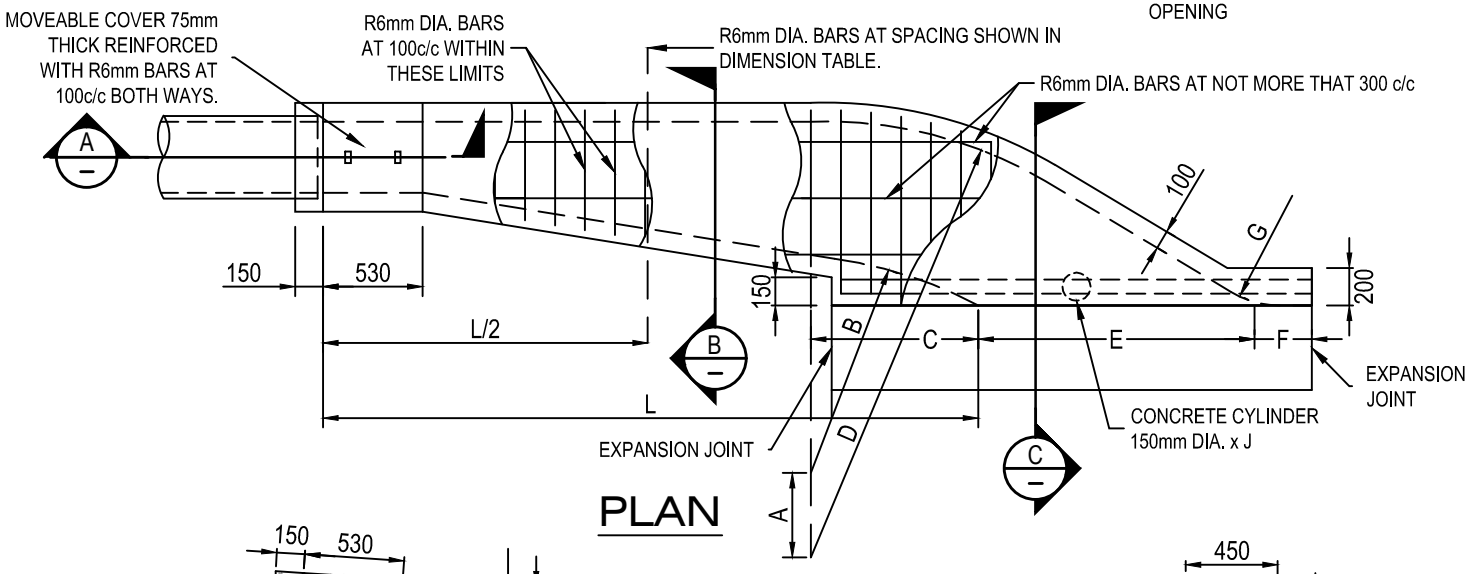
DRAWN: JSB/MC	APPROVED: IA
CHECKED: JSB/MC	BUSINESS MANAGER
VERIFIED: VP	...../...../.....

DRAWING N0: SWD 11

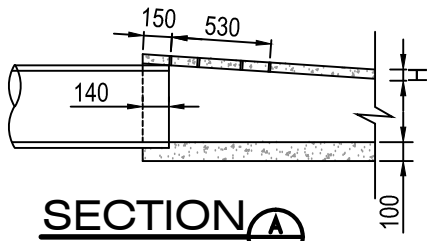
SCALE:	SHEET:
NTS	1 of 1
DATE: 02/05/2012	REV: B



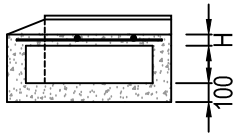
ELEVATION



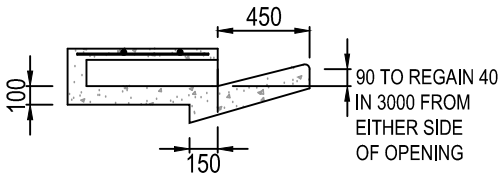
PLAN



SECTION A



SECTION B



SECTION C

DIMENSION TABLE

DIMENSION	300mm PIPE	375mm PIPE	450mm PIPE
A	450	500	830
B	1200	1200	1300
C	800	800	830
D	2200	2700	3600
E	1300	1800	2700
F	300	450	600
G	900	900	1200
H	75	75	90
J	125	125	115
STEEL in COVER SLAB	R 6 at 100	R 6 at 100	R 6 at 90
No. of CONCRETE CYLINDERS	-	1	1

NOTES

1. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS 75 MAXIMUM SLUMP.
2. APPLICABLE FOR INLET PIPES WITH A MAXIMUM DIAMETER OF 225mm.
3. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007)
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

DISCLAIMER:

City of Ryde
Public Works - Project Development

DRAWN: JSB/MC
CHECKED: JSB/MC
VERIFIED: VP

APPROVED: IA
DESIGN MANAGER
...../...../.....

STANDARD DRAWING:

CONCRETE CONVERTER

DRAWING NO: SWD 12-1
SCALE: 1:40 @ A4
SHEET: 1 of 2
DATE: 20/05/2014
REV: B

LENGTH "L"									
300mm dia PIPES									
KERB GRADE		3%	4%	5%	6%	7%	8%	9%	10%
PIPE GRADE	0.50%	7300	5100	3900	3300	2700	2400	2100	1800
	1%	8800	6000	4500	3600	3000	2400	2100	1800
	2%		8800	6000	4500	3600	3000	2400	2100
	3%			8800	6000	4500	3600	3000	2400
375mm dia PIPES									
KERB GRADE		3%	4%	5%	6%	7%	8%	9%	10%
PIPE GRADE	0.50%	10000	7300	5500	4500	3900	3300	3000	2700
	1%		6000	6400	3300	4200	3600	3000	2700
	2%			6700	6400	5100	4200	3600	3000
	3%				8500	6400	5100	4200	3600
450mm dia PIPES									
KERB GRADE		3%	4%	5%	6%	7%	8%	9%	10%
PIPE GRADE	0.50%		9700	7600	6000	5100	4500	3900	3600
	1%			8500	7000	5700	4800	4200	3900
	2%				8500	7000	5700	4800	4200
	3%					8500	7000	5700	4800

NOTE: CONVERTERS IF USED FOR THE GRADE BELOW THE HEAVY LINES IN THE TABLE WILL OVERLOAD THE STREET GUTTER DISCHARGED INTO.

TABLE FOR CONCRETE CONVERTER

DISCLAIMER:

City of Ryde
Public Works - Project Development

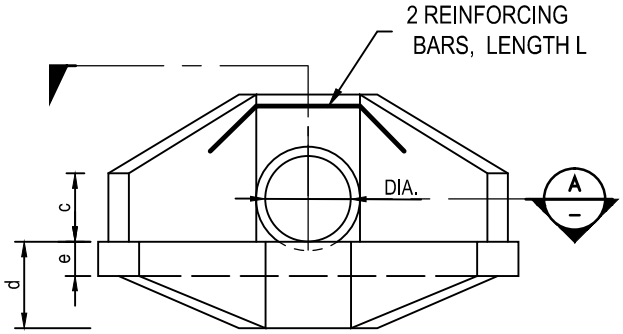
DRAWN: JSB/MC
CHECKED: JSB/MC
VERIFIED: VP

APPROVED: IA
DESIGN MANAGER
...../...../.....

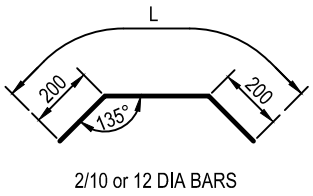
STANDARD DRAWING:
TABLE FOR CONCRETE CONVERTER

DRAWING NO: SWD 12-2
SCALE: 1:40 @ A4
SHEET: 2 of 2
DATE: 20/05/2014
REV: B

P:\PM2013\Public Domain Standard Details\CoR Revised Standard Drawings\2014\Drainage\SWD Standard Drawings Rev.dwg / Plotted on 20 May 2014

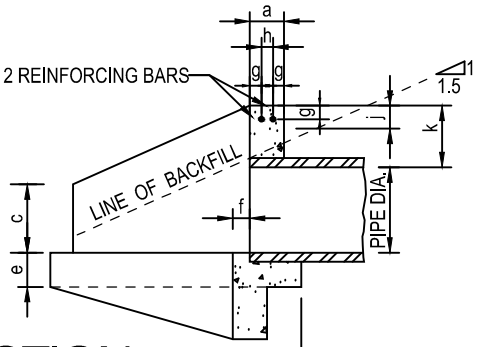


ELEVATION

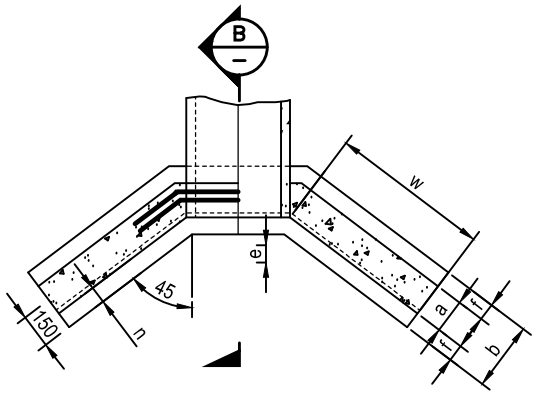


2/10 or 12 DIA BARS

REINFORCING BAR



SECTION B



SECTION A

PIPE DIAMETER: DIA	375	450	525	600	675	750	825	900
a	150	150	150	180	190	205	215	230
b	300	300	300	450	450	450	450	450
c	300	300	300	380	380	380	380	380
d	380	380	380	530	530	530	530	530
e	150	150	150	180	190	205	215	230
f	75	75	75	110	110	110	110	110
g	40	40	40	50	50	50	50	50
h	70	70	70	80	90	105	115	130
j	100	100	100	100	100	100	100	100
k	230	230	230	300	300	300	300	300
n	150	150	150	150	150	150	150	150
w	690	840	990	1120	1285	1450	1615	1780
L	840	915	950	1100	1200	1250	1350	1400
REINFORCEMENT DIA	10	10	10	12	12	12	12	12
REINFORCEMENT LENGTH	1680	1830	1845	2200	2400	2500	2700	2800
REINFORCEMENT Kg.MASS	1.100	1.200	1.300	2.000	2.300	2.600	2.775	2.950
VOLUME OF CONCRETE m^3	0.27	0.33	0.38	0.67	0.85	1.02	1.21	1.4

NOTES

1. CONCRETE APRON MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.
2. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
3. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
4. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO 3725-2007)
5. WHERE DIRECTED PROVIDE 100mmØ SUBSOIL DRAINAGE PIPE/AGLINE 3.0m LONG WRAPPED IN FABRIC SOCK PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100mm MINIMUM ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE/AGLINE WITH 10mm AGGREGATE.
6. REINFORCING BARS TO BE STRUCTURAL GRADE DEFORMED.
7. ALL EXPOSED CORNERS TO HAVE 12mm CHAMFER.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.)

DISCLAIMER:

City of Ryde
Public Works - Project Development

DRAWN: JSB/MC
CHECKED: JSB/MC
VERIFIED: VP

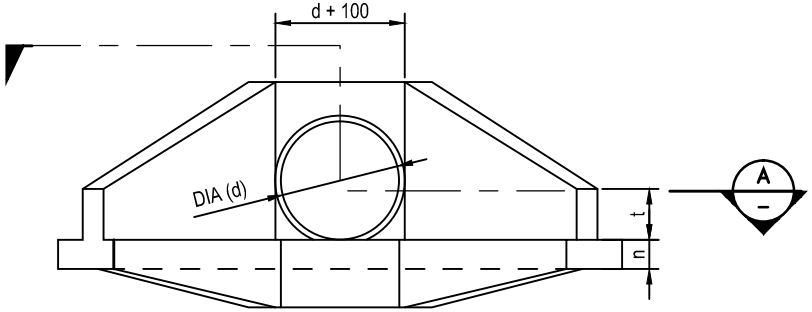
APPROVED: IA
DESIGN MANAGER
...../...../.....

STANDARD DRAWING:
STANDARD CONCRETE HEADWALL 375 TO 900MM DIA PIPES

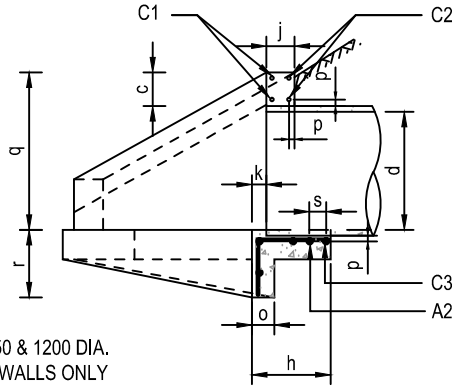
DRAWING NO: SWD 13-1
SCALE: NTS
SHEET: 1 of 4
DATE: 20/05/2014
REV: B

DETAILED DIMENSION

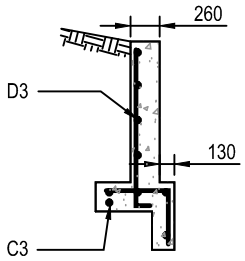
PIPE DIAMETER	1050	1200	1350
e	1930	2300	2490
f	300	300	300
g	100	300	220
h	700	700	700
j	260	260	260
k	130	130	130
m	50	50	50
n	260	260	260
o	200	200	200
p	50	50	50
q	1380	1550	1700
r	600	600	700
s	-	-	75
t	450	450	530



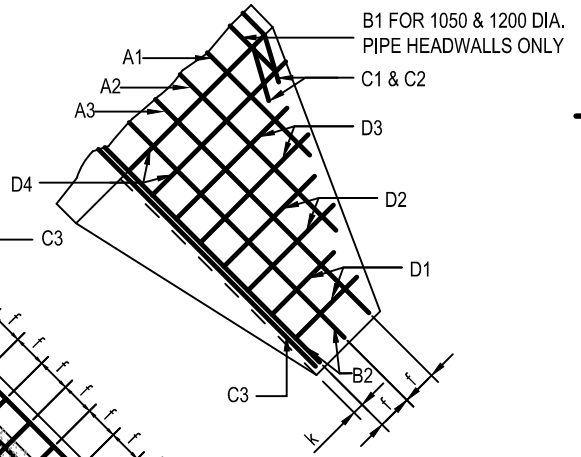
ELEVATION

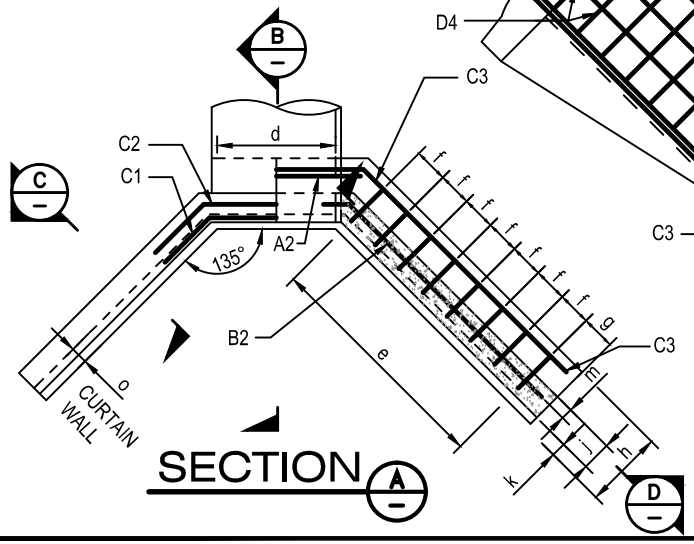


SECTION B



SECTION C





SECTION A

SECTION D

NOTES

1. 12mm BARS TO HAVE A MINIMUM LAP LENGTH OF 400mm.
2. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
3. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
4. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO 3725-2007)
5. WHERE DIRECTED PROVIDE 100mmØ SUBSOIL DRAINAGE PIPE/AGLINE 3.0m LONG WRAPPED IN FABRIC SOCK PLACED ADJACENT TO INLET PIPES ON BOTH SIDES AND 100mm MINIMUM ABOVE PIT FLOOR. SURROUND SUBSOIL DRAINAGE/AGLINE WITH 10mm AGGREGATE.
6. REINFORCING BARS TO BE STRUCTURAL GRADE DEFORMED.
7. ALL EXPOSED CORNERS TO HAVE 12mm CHAMFER.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.)

DISCLAIMER:

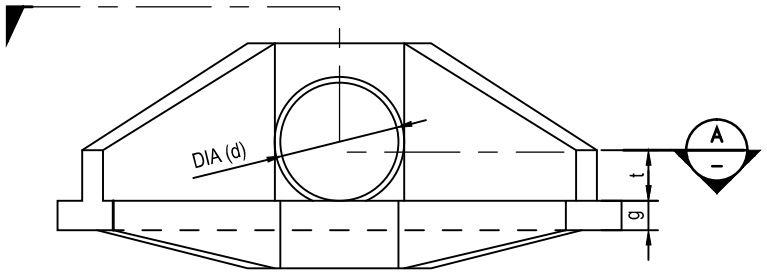
City of Ryde
Public Works - Project Development

DRAWN: JSB/MC
CHECKED: JSB/MC
VERIFIED: VP

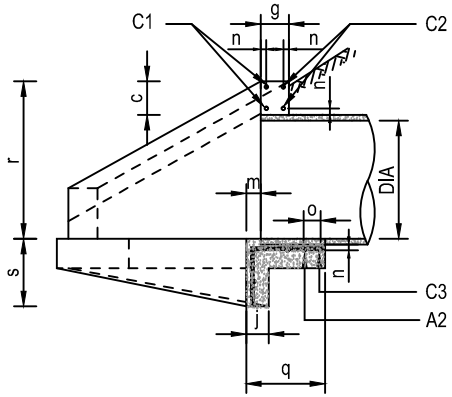
APPROVED: IA
DESIGN MANAGER
...../...../.....

STANDARD DRAWING:
STANDARD CONCRETE HEADWALL 1050, 1200 & 1350mm DIA PIPES

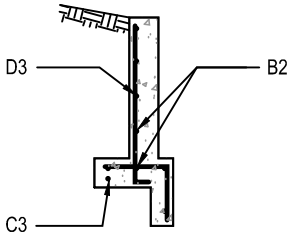
DRAWING NO: SWD 13-2
SCALE: NTS
SHEET: 2 of 4
DATE: 20/05/2014
REV: B



ELEVATION



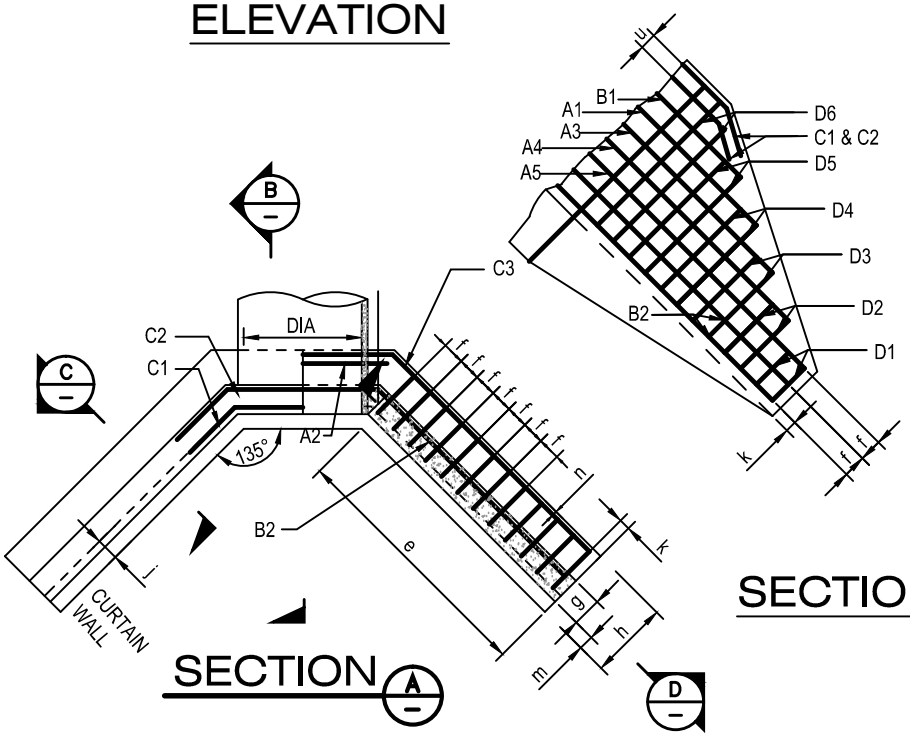
SECTION B



SECTION C

DETAILED DIMENSION

PIPE DIAMETER	1500	1650	1800
e	2850	3150	3450
f	300	300	300
g	260	260	260
h	900	900	900
j	200	200	200
k	150	150	150
m	130	130	130
n	50	50	50
o	75	75	75
p	150	150	150
q	700	800	900
r	700	725	750
s	1880	2050	2210
t	530	560	600
u	160	160	160



SECTION A

SECTION D

NOTES

1. 12mm BARS TO HAVE A MINIMUM LAP LENGTH OF 400mm.
2. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
3. THE COMPRESSIVE STRENGTH OF CONCRETE USED SHALL BE 25MPa AT 28 DAYS.
4. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO 3725-2007)
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6. REINFORCING BARS TO BE STRUCTURAL GRADE DEFORMED.
7. ALL EXPOSED CORNERS TO HAVE 12mm CHAMFER.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.)

DISCLAIMER:

City of Ryde
Public Works - Project Development

DRAWN: JSB/MC
CHECKED: JSB/MC
VERIFIED: VP

APPROVED: IA
DESIGN MANAGER
...../...../.....

STANDARD DRAWING:
STANDARD CONCRETE HEADWALL I500, I650 & I800MM DIA PIPES

DRAWING NO: SWD 13-3
SCALE: NTS
SHEET: 3 of 4
DATE: 20/05/2014
REV: B

REIFORCEMENT FOR HEADWALLS
(1050, 1200 & 1350mm DIA PIPES)

REINFORCEMENT FOR HEADWALL

1050 DIA PIPE							1200 DIA PIPE							1350 DIA PIPE						
MARK	DIA.	L1	L2	LGHT	No REQD	TOTAL LGHT	MARK	DIA.	L1	L2	LGHT	No REQD	TOTAL LGHT	MARK	DIA.	L1	L2	LGHT	No REQD	TOTAL LGHT
	mm	mm	mm	mm		m		mm	mm	mm	mm		m		mm	mm	mm	mm		m
A1	12	1150		1150	2	2.30	A1	12	1600		1600	2	3.20	A1	12	1250		1150	2	2.30
A2	12	1780		1780	2	3.56	A2	12	2250		2250	2	4.50	A2	12	1950		1950	3	5.85
A3							A3							A3	12	2550		2550	2	5.10
B1	12	350	250	600	2	1.20	B1	12	1000	250	1250	2	2.50	B1						
B2	12	1950	250	2200	4	8.80	B2	12	2350	250	2600	4	10.40	B2	12	2525	300	2825	4	11.30
C1	12	1200	750	2700	2	5.40	C1	12	1350	750	2850	2	5.70	C1	12	1575	750	3075	2	6.15
C2	12	1330	750	2830	2	5.66	C2	12	1470	750	2970	2	5.94	C2	12	1675	750	3175	2	6.35
C3	12	1500	2100	5800	1	5.80	C3	12	1750	2450	6650	1	6.65	C3	12	1950	2150	7250	1	7.25
D1	12	580	380	1360	2	2.72	D1	12	600	380	1380	4	5.52	D1	12	700	380	1450	4	5.80
D2	12	740	380	1520	4	6.08	D2	12	900	380	1650	4	6.60	D2	12	1000	380	1750	4	7.00
D3	12	1010	380	1790	4	7.16	D3	12	1200	380	1950	4	7.80	D3	12	1300	380	2050	4	8.20
D4	12	1320	380	2100	4	8.40	D4	12	1500	380	2250	4	9.00	D4	12	1575	380	2325	4	9.30
MASS	=	54.9	Kg			57.08	MASS	=	60.6	Kg			67.81	MASS	=	72	Kg			74.60
VOLUME OF CONCRETE = 2.15m^3							VOLUME OF CONCRETE = 2.80m^3							VOLUME OF CONCRETE =3.2m^3						

REIFORCEMENT FOR HEADWALLS
(1500, 1650 & 1800mm DIA PIPES)

REINFORCEMENT FOR HEADWALL

1500 DIA PIPE							1650 DIA PIPE							1800 DIA PIPE						
MARK	DIA.	L1	L2	LGHT	No REQ	TOTAL LGHT	MARK	DIA.	L1	L2	LGHT	No REQ	TOTAL LGHT	MARK	DIA.	L1	L2	LGHT	No REQ	TOTAL LGHT
	mm	mm	mm	mm		m		mm	mm	mm	mm		m		mm	mm	mm	mm		m
A1	12	1725		1725	2	3.45	A1	12	1400		1400	2	2.80	A1	12	1750		1750	2	3.50
A2	12	2300		2300	1	2.30	A2	12	2300		2300	1	2.30	A2	12	2300		2300	1	2.30
A3	12	2375		2375	2	4.75	A3	12	1950		1950	2	3.90	A3	12	2400		2400	2	4.80
A4	12	2875		2875	2	5.75	A4	12	2550		2550	2	5.10	A4	12	3050		3050	2	6.10
A5							A5	12	3050		3050	2	6.10	A5	12	3400		3400	2	6.80
B1	12	1000	400	1500	2	3.00	B1	12	800	375	1175	2	2.35	B1	12	1000	350	1350	2	2.70
B2	12	2850	400	3250	4	13.00	B2	12	3150	375	3525	4	14.10	B2	12	3450	350	3800	4	15.20
C1	12	1750	750	3250	2	6.50	C1	12	1925	750	3425	2	6.85	C1	12	2100	750	3600	2	7.20
C2	12	1800	750	3300	2	6.60	C2	12	1975	750	3475	2	6.95	C2	12	2150	750	3650	2	7.30
C3	12	2250	3000	8250	1	8.25	C3	12	2425	3325	9075	1	9.08	C3	12	2600	3650	9900	1	9.90
D1	12	650	620	1650	4	6.60	D1	12	650	620	1650	4	6.60	D1	12	650	620	1650	4	6.60
D2	12	950	620	1950	4	7.80	D2	12	975	620	1975	4	7.90	D2	12	1000	620	2000	4	8.00
D3	12	1200	620	2200	4	8.80	D3	12	1225	620	2225	4	8.90	D3	12	1250	620	2250	4	9.00
D4	12	1500	620	2500	4	10.00	D4	12	1825	620	2550	4	10.20	D4	12	1600	620	2600	4	10.40
D5	12	1800	620	2800	4	11.20	D5	12	2100	620	2720	4	10.88	D5	12	1850	620	2850	4	11.40
D6							D6	12	2100	620	3100	2	6.20	D6	12	2150	620	3150	4	12.60
MASS = 94.34Kg						98.00	MASS = 98.21Kg						110.21	MASS = 109.93Kg						123.80
VOLUME OF CONCRETE = 4.1m^3							VOLUME OF CONCRETE = 5.18m^3							VOLUME OF CONCRETE = 5.65m^3						

DISCLAIMER:

City of Ryde
Public Works - Project Development

DRAWN: JSB/MC
CHECKED: JSB/MC
VERIFIED: VP

APPROVED: IA
BUSINESS MANAGER
...../...../.....

STANDARD DRAWING:

REINFORCEMENTS FOR HEADWALL

DRAWING N0: SWD 13-4
SCALE: NTS
SHEET: 4 OF 4
DATE: 20/05/2014
REV: B

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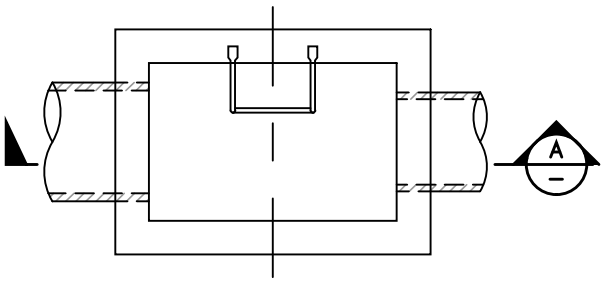

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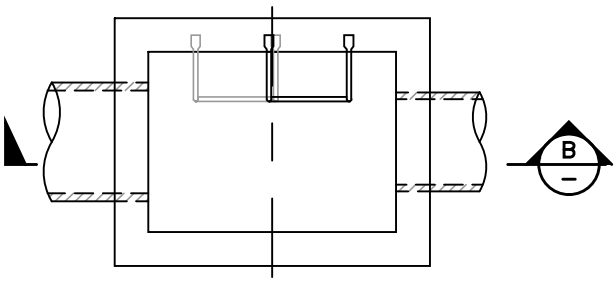

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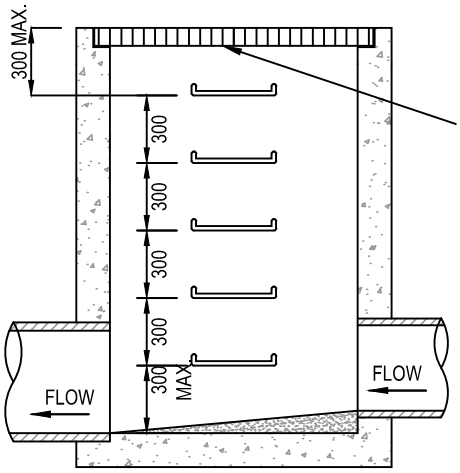
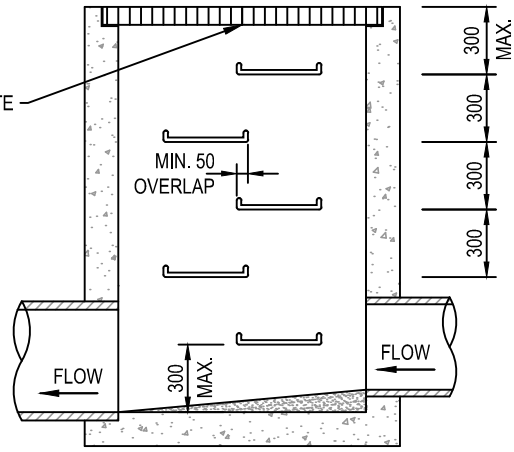
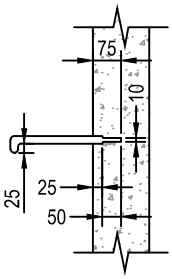


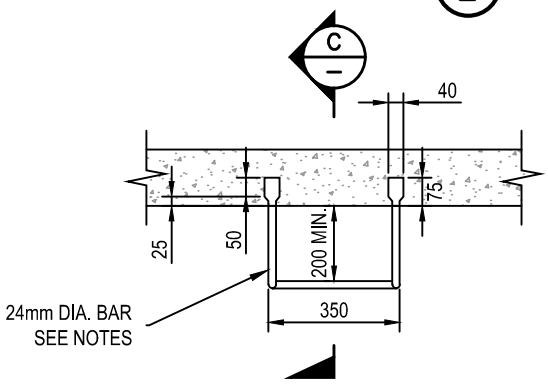
SECTION A



SECTION B



SECTION C



STEP-IRON DETAILS

NOTES:

1. PITS DEEPER THAN 1200mm TO BE FITTED WITH STEP IRONS.
2. STEP IRONS TO BE LOCATED:
   - DIRECTLY BELOW THE OPENING IN THE COVER.
   - DESIRABLY ON A WALL WITHOUT PIPE OPENINGS.
   - DESIRABLY ON ONE OF THE LONG SIDES OF THE PIT.
   STEP IRONS CHANGING PIT FACE ARE TO BE PROVIDED WITH 1.2m OVERLAP.
3. MATERIAL FOR STEP-IRONS TO BE STRUCTURAL GRADE 250 MADE TO AS1204. STEP IRONS TO HAVE SHARP EDGES ROUNDED AND BE HOT-DIPPED GALVANIZED.
4. PROPRIETARY STEPS SUCH AS THE GATIC PS2-PF POLYPROPYLENE STEPS (OR APPROVED EQUIVALENT) MAY BE USED AND INSTALLED ACCORDING TO THE MANUFACTURERS SPECIFICATIONS.
5. ALL PITS TO BE LOCATED A MINIMUM OF 1000mm CLEAR OF VEHICLE CROSSINGS
6. CONCRETE TO HAVE A MINIMUM STRENGTH OF 25MPa AT 28 DAYS.
7. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.

DISCLAIMER:

City of Ryde
Public Works - Project Development

DRAWN: JSB/MC
CHECKED: JSB/MC
VERIFIED: VP
APPROVED: IA
BUSINESS MANAGER
...../...../.....

STANDARD DRAWING:

STEP IRON DETAILS FOR DRAINAGE PITS DEEPER THAN 1200MM

DRAWING N0: SWD 14
SCALE: NTS
SHEET: 1 OF 1
DATE: 20/05/2014
REV: B

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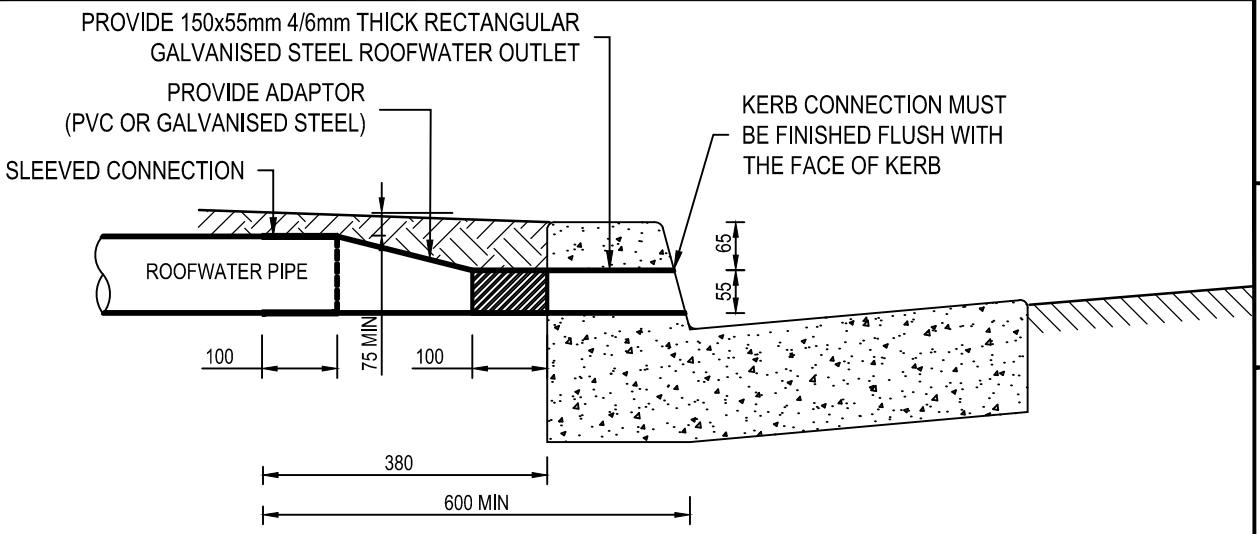
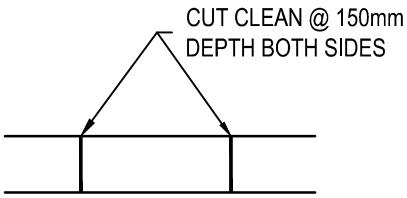
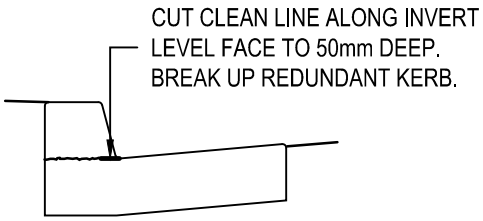


ROOFWATER OUTLET CONNECTION

SCALE 1:10

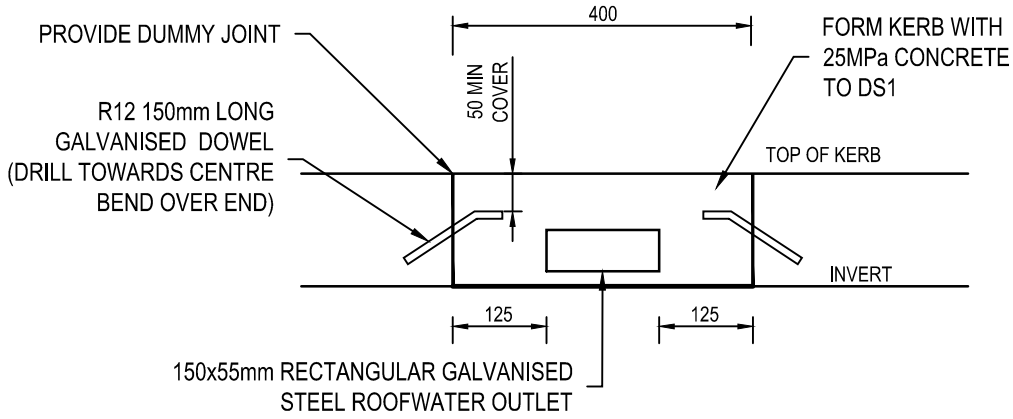


FRONT VIEW PLAN
N.T.S.



PROFILE SECTION
N.T.S.

KERB SAW CUTTING DETAILS



FRONT VIEW SECTION

N.T.S.

NOTES

1. ENSURE THAT ALL CONNECTIONS ARE WATER TIGHT.
2. FOR TRAFFICABLE AREAS SUCH AS DRIVEWAYS, USE RECTANGULAR GALVANISED STEEL ROOFWATER OUTLET FOR FULL LENGTH, EG. BOUNDARY TO KERB.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

DISCLAIMER:

City of Ryde
Public Works - Project Development

DRAWN: JSB/MC
CHECKED: JSB/MC
VERIFIED: VP

APPROVED: IA
BUSINESS MANAGER
...../...../.....

STANDARD DRAWING:

ROOFWATER OUTLET

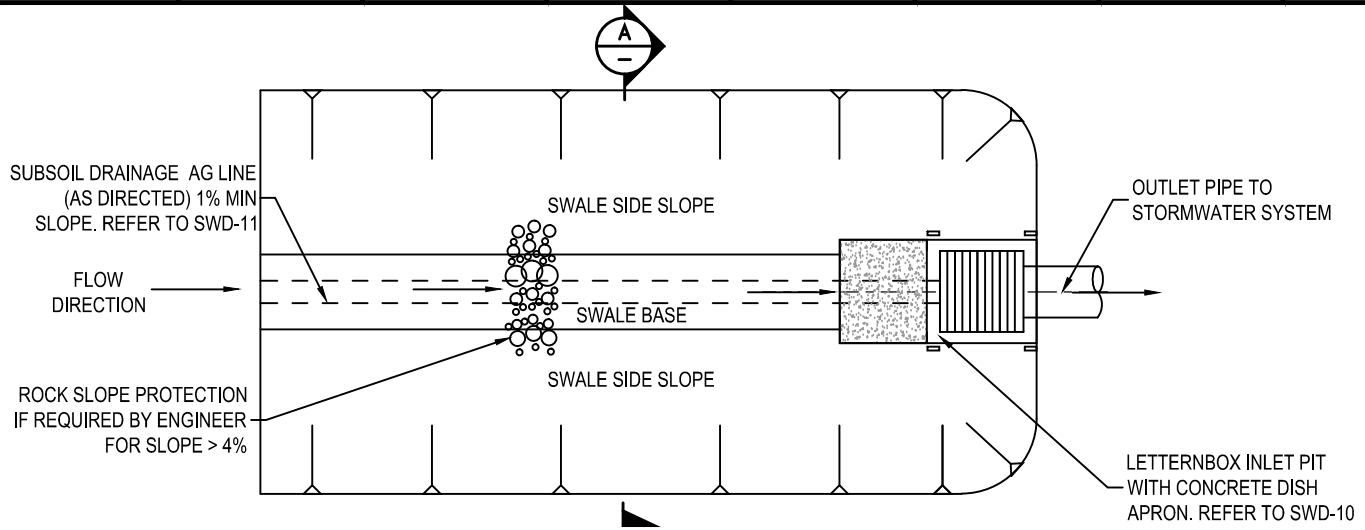
DRAWING N0: SWD 15

SCALE: NTS

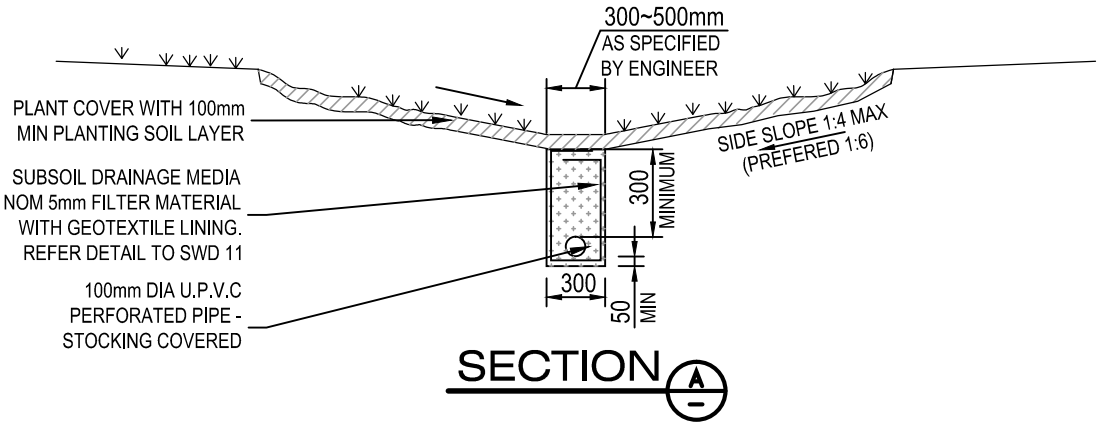
SHEET: 1 OF 1

DATE: 20/05/2014

REV: B



PLAN



SECTION A

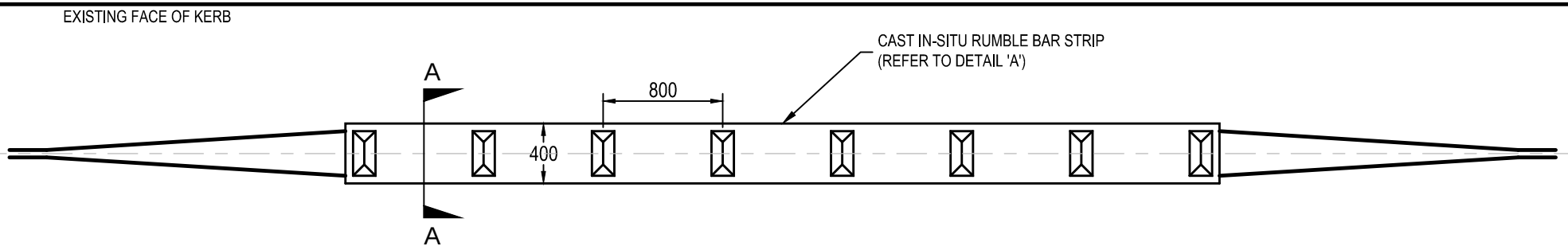
NOTES

1. LONGITUDINAL GRADE OF GRASS SWALES SHOULD NOT BE LESS THAN 1.0%. FOR GRADE > 4%, REFER TO ENGINEER FOR ROCK SLOPE PROTECTION
2. ALLOW FOR SUBSOIL DRAINAGE WHEN LONGITUDINAL GRADE IS <2% OR AS REQUIRED BY ENGINEER. FOR FLUSHING POINTS AND DETAILS, REFER TO CITY OF RYDE STANDARD DWG SWD-11
3. PLANTING COVER SHALL BE AS SPECIFIED AND APPROVED BY CITY OF RYDE SUPERVISOR.
4. SWALES SHALL BE BLENDED OR SMOOTHED TO THE NATURAL TOPOGRAPHY.
5. PITS AND PIPES SHALL BE IN ACCORDANCE WITH CITY OF RYDE STANDARD DRAWINGS FOR STORMWATER DRAINAGE
6. DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.)

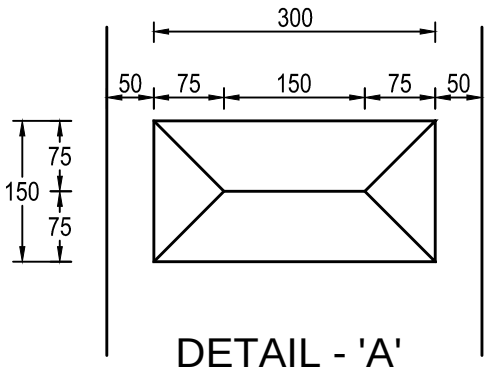
DISCLAIMER:

City of Ryde
Public Works - Project Development

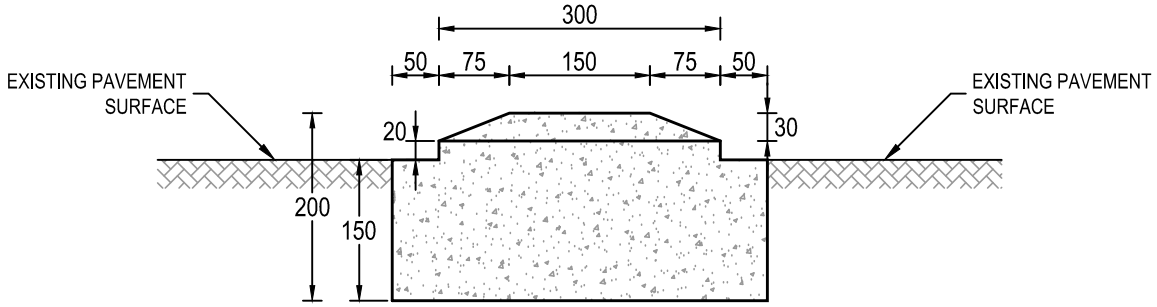
DRAWN: JSB	APPROVED: IA	STANDARD DRAWING: FLOW CONVEYANCE GRASS SWALE	DRAWING NO: SWD 16
CHECKED: JSB/MC	DESIGN MANAGER		SCALE: NTS / SHEET: 1 of 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B



PLAN
NOT TO SCALE



DETAIL - 'A'
NOT TO SCALE



SECTION A-A
NOT TO SCALE

NOTES:
1. CONCRETE TO BE 25MPa WITH POLYFIBRE ADDITIVE.
2. RUMBLE BAR STRIP TO BE PAINTED AND REFLECTORISED.
3. REFLECTIVE PAVEMENT MARKERS TO OUTLINE RUMBLE BAR STRIP AT 3m CENTRES.
4. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.

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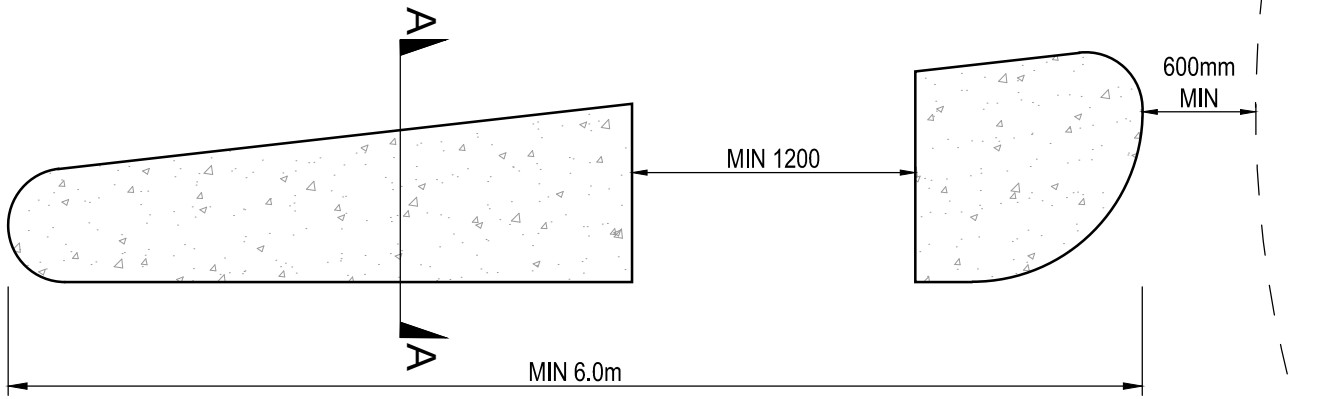
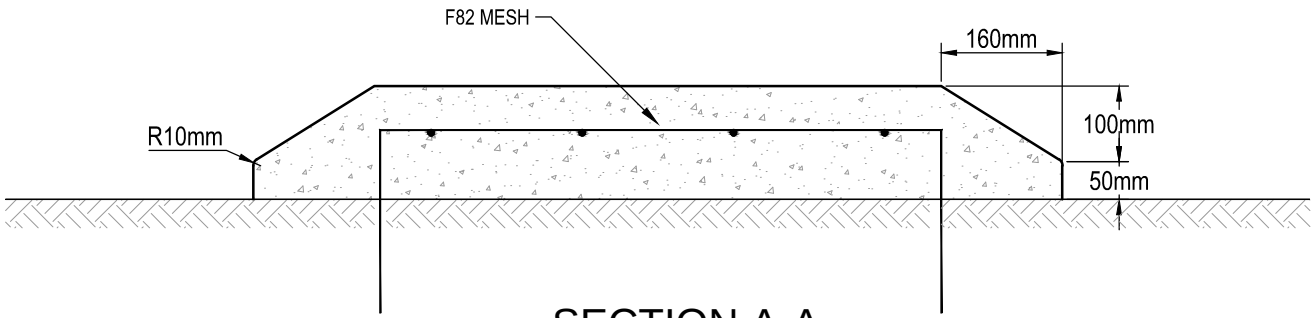
Public Works - Project Development

DRAWN: MC	APPROVED: IA	STANDARD DRAWING:	DRAWING N0: TM - 01
CHECKED:	DESIGN MANAGER	CAST IN-SITU CONCRETE RUMBLE BAR STRIP	SCALE: AS SHOWN / SHEET: 1 OF 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B

P:\PM2013\Public Domain Standard Details\CoR Revised Standard Drawings\2014\Traffic\TM Standard Drawings MC Rev-C.dwg / Plotted on 21 May 2014





SECTION A-A

NOTES:

1. ALL GIVEN DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL OTHER DIMENSIONS TO BE VERIFIED AS PER DETAILED DESIGN

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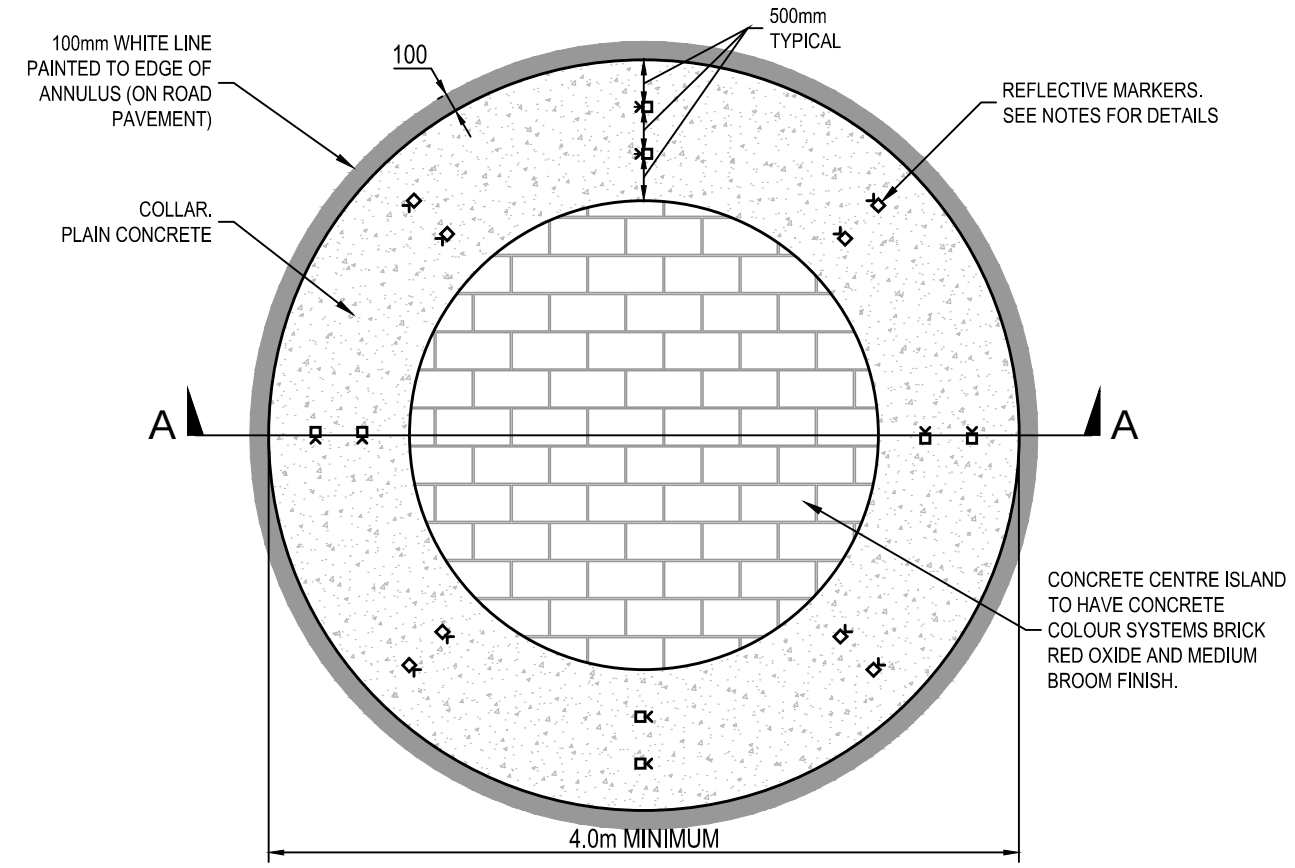
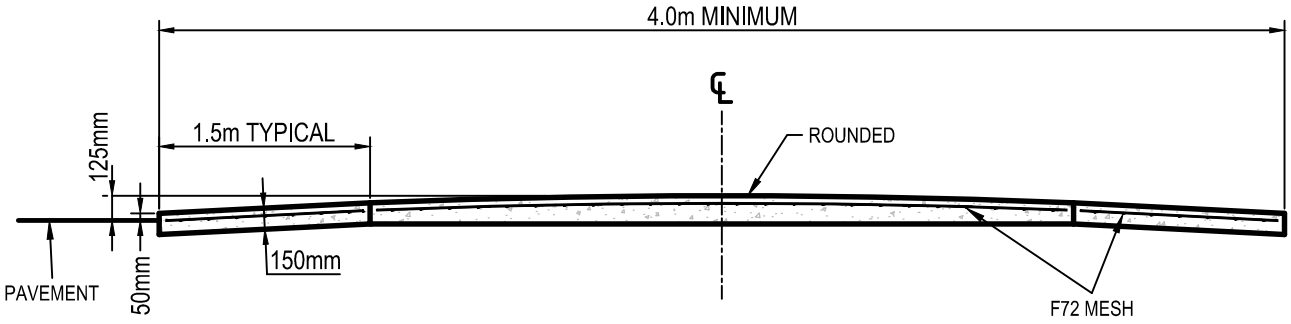
City of Ryde
Public Works - Project Development

DRAWN: MC	APPROVED: IA	STANDARD DRAWING:	DRAWING N0:	TM - 02
CHECKED:	DESIGN MANAGER	TYPICAL SPLITTER ISLAND	SCALE: NTS	SHEET: 1 OF 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014	REV: B



PLAN



SECTION A-A

NOTES:

1. REFLECTORS TO BE INSTALLED AS SHOWN ONTO ISLAND. UNI-DIRECTIONAL RAISED REFLECTIVE PVT MARKERS EPOXIED TO PLAIN CONCRETE SURFACE. REFLECTIVE SIDE TO FACE ONCOMING TRAFFIC.
2. MINIMUM CONCRETE STRENGTH OF 25MPa AFTER 28 DAYS.
3. COLLAR TO BE LOAD BEARING PLAIN CONCRETE.
4. INSTALL F72 REINFORCEMENT MESH WITH 50mm TOP AND SIDE COVER.
5. CONCRETE CENTRE ISLAND TO HAVE CONCRETE COLOUR SYSTEMS BRICK RED OXIDE THOROUGHLY MIXED THROUGH CONCRETE AT RATES SPECIFIED BY MANUFACTURER AND MEDIUM BROOM FINISH.
6. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.

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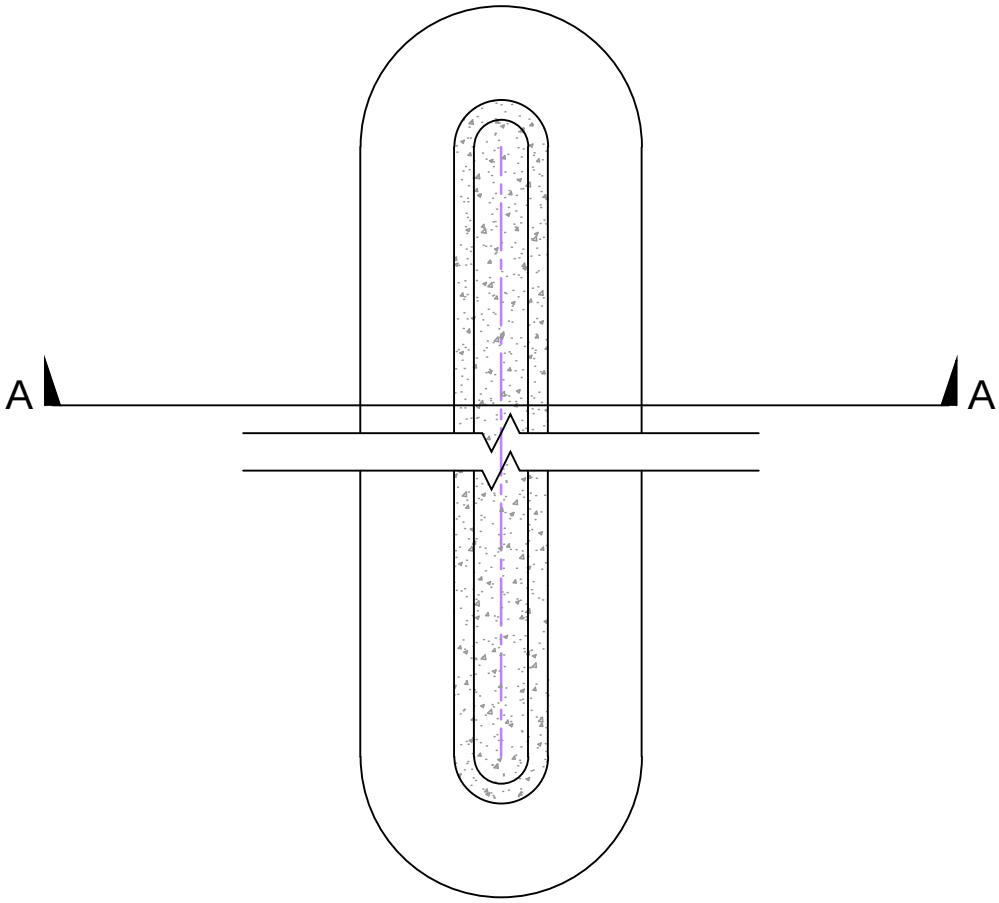
STANDARD DRAWING:

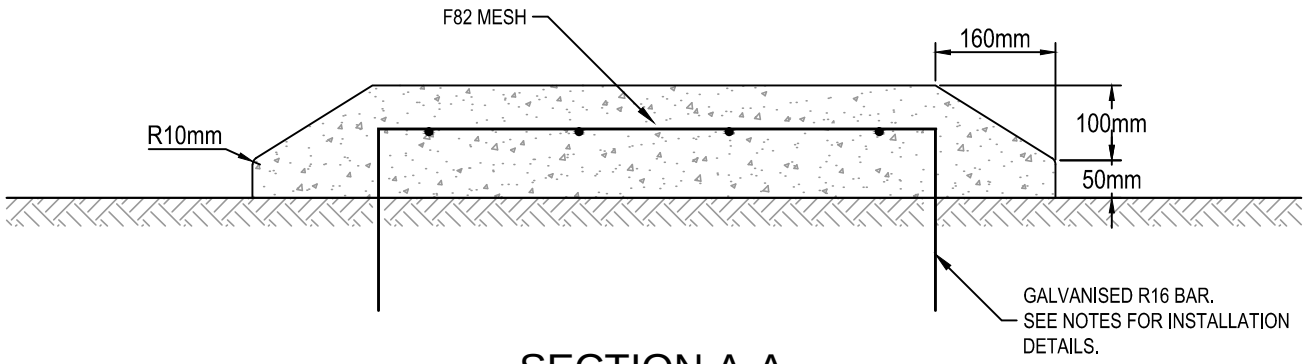
TYPICAL CENTRE ISLAND (ROUND-ABOUT)

DRAWN: MC/JSB	APPROVED:
CHECKED:	DESIGN MANAGER
VERIFIED: VP	...../...../.....

DRAWING N0:	TM - 03
SCALE: NTS	SHEET: 1 OF 1
DATE: 20/05/2014	REV: B



PLAN



SECTION A-A

NOTES:

1. INSTALL F72 REINFORCEMENT MESH WITH 50mm TOP AND SIDE COVER.
2. GALVANSIED R16 BAR TO BE 250mm LONG, DRIVEN 150mm INTO EXISTING PAVEMENT AT 1000mm LONGITUDINAL SPACINGS
3. MINIMUM CONCRETE STRENGTH OF 25MPa AFTER 28 DAYS.
4. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.

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STANDARD DRAWING:

TYPICAL MEDIAN ISLAND

DRAWING N0: TM - 04

DRAWN: MC	APPROVED:
CHECKED:	DESIGN MANAGER
VERIFIED:	...../...../.....

SCALE: NTS	SHEET: 1 OF 1
DATE: 14/08/2012	REV: A

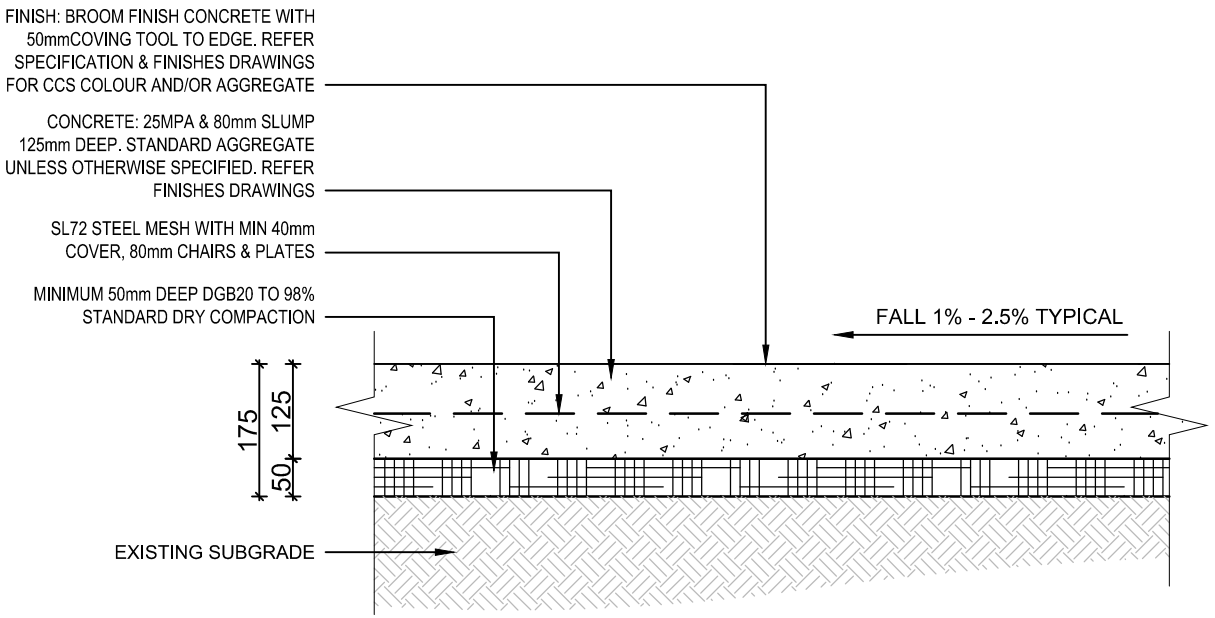
PAVEMENT TYPE: CONCRETE

CONCRETE SLAB:
PLACE 125mm THICK CONCRETE (25MPA) WITH SL72 MESH MINIMUM COVER 40mm.
PLACE CONCRETE BLINDING LAYER ON MINIMUM 50mm DEEP DGB20 TO 98% STANDARD DRY COMPACTION IN ACCORDANCE WITH AS1289.5.1.1. REFER TO DETAIL PV1.1 & PV1.2
ANY SOFT SPOTS IN SUB-GRADE TO BE REMOVED AND IDENTIFIED WITH CITY OF RYDE (CoR) PROJECT MANAGER.

SURFACE FINISH:
BROOM FINISH:
BROOM FINISHED STROKES TO BE IN ONE DIRECTION PERPENDICULAR TO LINE OF TRAVEL. ALL EDGES TO BE FINISHED WITH 20-40mm EDGING TOOL.
EXPOSED AGGREGATE:
AGGREGATE TO BE EXPOSED IN A UNIFORM MANNER TO PREVENT IRREGULAR OR SPLOTCHY FINISH. SURFACE RETARDANTS MAY BE USED TO INCREASE WORKABILITY. PREFERRED TECHNIQUE FOR EXPOSING IS ACID WASH OR ABRASIVE BLASTING.
PIGMENTED FINSIH (CCS):
COLOURED PIGMENT AT THE SPECIFIED RATES TO BE MIXED THROUGHOUT CONCRETE BATCH TO MATCH CCS COLOURS. REFER LANDSCAPE PLANS FOR CCS COLOUR
COVING FINSIH:
STROKES TO BE UNIFORM MANNER IN DIRECTION AS INDICATED BY LANDSCAPE PLANS.

SLAB JOINTS:
ISOLATION JOINTS:
10mm WIDE FULL DEPTH FLEXIBLE FOAM ISOLATION JOINT (CONNOLLY JOINT OR APPROVED EQUIVALENT) TO BE APPROVED BY CoR PROJECT MANAGER PRIOR TO CONSTRUCTION. PLACE BETWEEN CONCRETE SLAB AND BACK OF KERB; AND BUILDING LINE; AND EXISTING ITEMS IDENTIFIED IN JOINTING PLAN. ISOLATION JOINT FOAM TO FINISH 20mm BELOW FINISHED SURFACE TO ACCOMMODATE BACKING ROD AND APPROVED SEALANT. REFER TO DETAILS PV3.3, PV3.3a & PV3.6
EXPANSION JOINTS:
10mm WIDE FULL DEPTH FLEXIBLE FOAM EXPANSION JOINT (CONNOLLY JOINT OR APPROVED EQUIVALENT) TO BE APPROVED BY CoR PROJECT MANAGER PRIOR TO CONSTRUCTION. PLACE PERPENDICULAR TO KERB AND BUILDING LINE AT MAXIMUM 6.0mINTERVALS. WHERE WIDTH OF PAVEMENT (BETWEEN KERB AND BUILDING LINE) IS GREATER THAN 3m, PLACE EXPANSION JOINT CENTRALLY IN CONCRETE SLAB. REFER TO DETAILS PV3.1, PV3.1a & PV3.6
CONTROL JOINTS:
PLACE 3-5mm WIDE x 40mm DEEP SAW CUT CONTROL JOINT PERPENDICULAR TO KERB AND BUILDING LINE AS SHOWN ON JOINTING PLAN. ENSURE ALL CUTS ARE CONTINUOUS AND STRAIGHT. SAW CUT TO STOP 50mm SHORT OF ADJACENT JOINT OR OBJECT. REFER TO DETAIL PV3.4, PV3.4a & PV3.6
KEY JOINTS:
PLACE KEY JOINT PERPENDICULAR TO KERB AND BUILDING LINE AS REQUIRED IN ACCORDANCE WITH JOINTING SETOUT PLAN. REFER TO DETAILS PV3.2 & PV3.6

EDGING:
GENERAL EDGING TO CONCRETE SURFACE TO BE CARRIED OUT IN ACCORDANCE WITH SURFACE FINISH TREATMENT
BROOM FINISH - EDGING TOOL 20-40mm
EXPOSED AGGREGATE - EXPOSED FULLY TO EDGE
PIGMENT CCS - EDGING TOOL 20-40mm



PV 1.1 TOWN CENTRE PAVEMENT TYPE CONCRETE - TYPICAL
SCALE 1:10

City of Ryde
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Project Development

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STANDARD DETAILS
PAVEMENT TYPE CONCRETE TOWN CENTRE

APPROVED IA DESIGN MANAGER		DATE 20 / 05 / 14
DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV1.1	B

INSTALLATION OF GRANITE

CONCRETE BLINDING LAYER:
PLACE 125mm THICK CONCRETE (25MPA) WITH SL72 MESH MINIMUM COVER 40mm.
PLACE CONCRETE BLINDING LAYER ON MINIMUM 50mm DEEP DGB20 TO 98% STANDARD DRY COMPACTION IN ACCORDANCE WITH AS1289.5.1.1. REFER TO DETAIL PV1.1 & PV1.2
ANY SOFT SPOTS IN SUB-GRADE TO BE REMOVED AND IDENTIFIED WITH CITY OF RYDE (CoR) PROJECT MANAGER.

PAVER JOINTING:
BETWEEN INDIVIDUAL PAVERS - JOIN FLUSH TOGETHER LEAVING A 2mm GAP. FORM CONTINUOUS EVEN SURFACE TO AVOID TRIP HAZARDS. THE JOINTS BETWEEN PAVERS ARE TO BE FILLED WITH ULTRA FINE SILICA SAND CEMENT MIX AS SUPPLIED BY BENEDICTS SAND AND SOIL (PH.9986 3500) OR AN APPROVED EQUIVALENT.
AT ISOLATION AND EXPANSION JOINTS - FILL 5-10mm GAP WITH FOAM BACKING ROD AND APPROVED ONE COMPONENT, THIXOTROPIC, POLYURETHANE BASED JOINT SEALANT. SEALANT COLOUR TO BE BLACK UNLESS SPECIFIED OTHERWISE. REFER TO DETAILS PV3.1a - PV3.6

BLINDING SLAB JOINTS:
AS PER CONCRETE JOINTS WITH ADDITION OF ISOLATION JOINTS FOAM TO FINISH 20mm BELOW FINISHED PAVER LEVEL TO ACCOMMODATE BACKING ROD AND APPROVED JOINT SEALANT. REFER DETAILS PV3.1a - PV3.6

SETOUT - PAVERS:
PAVERS SHALL BE SETOUT AS PER DIMENSIONS AND LOCATIONS AS SHOWN IN TYPICAL DETAILS PV4.1 - PV4.9

LAYING - PAVERS:
LAYING OF PAVERS IS TO COMMENCE FROM PROPERTY BOUNDARY TOWARDS BACK OF KERB. REFER TO DETAIL PV4.1 - PV4.9 UNLESS OTHERWISE SPECIFIED.
ENSURE ALL PAVERS ARE FULLY BEDDED ON A 30mm THICK 8:1 SAND/CEMENT SCREED. SAND USED SHALL BE WHITE WELL GRADED WASHED SAND, PASSING A 4.75mm SIEVE. PAVERS ARE TO BE MANUALLY TAMPERED WITH A RUBBER MALLET INTO THE WET MORTAR. THE USE OF VIBRATING COMPACTION EQUIPMENT EG. WAKA PLATE, IS STRICTLY PROHIBITED. WHERE PAVERS ARE TO BE LAID IN A RADIAL OR CURVE ALIGNMENT, PAVERS TO BE CUT RADIAL TO CENTRE. REFER TO DETAILS PV4.1 - PV4.9
ALL PAVERS TO BE LAID LEVEL TO THOSE ADJACENT TO AVOID TRIP HAZARDS.
MINIMUM CUT PAVER WIDTH SHOULD BE NO LESS THAN 100mm UNLESS APPROVED BY CoR PROJECT MANAGER.

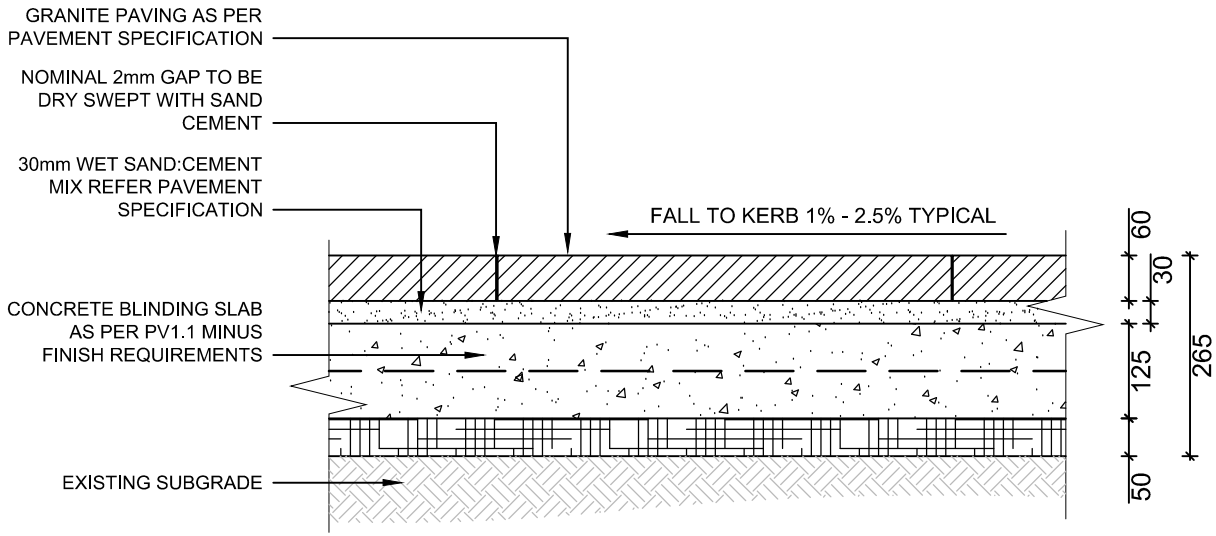
KERB RAMP:
GENERALLY KERB RAMPS ARE TO BE SETOUT AS SHOWN IN DETAILS PV4.6, PV4.7 & PV4.8
WHERE ANY CHANGES ARE REQUIRED, CONFIRM WITH CoR PROJECT MANAGER.
MINIMUM CUT PAVER WIDTH IS TO BE 100mm UNLESS APPROVED BY CoR PROJECT MANAGER.

GRADE >1:8:
ALL PAVERS LAID ON A GRADE STEEPER THAN 1:8 (12.5%) ARE REQUIRED TO BE A 'V' RATED PAVER WITH A BUSH HAMMERED FINISH.

ROOF OUTLETS:
WHERE ROOF OUTLET CONNECTIONS ARE TO BE PROVIDED USE 150mm x 90mm GALVANISED STEEL RECTANGULAR HOLLOW SECTION. WHERE MORTAR COVER CANNOT BE ACHIEVED PAVERS ARE TO BE GLUED TO STEEL SECTION AS REQUIRED WITH HIGH STRENGTH EPOXY ADHESIVE.

SERVICE LID TREATMENT:
REPLACE ALL EXISTING SERVICE LIDS WITH STAINLESS STEEL OR GALVANISED STEEL INFILL COVERS AND FRAMES.
NEW SERVICE LIDS ARE TO BE PRE APPROVED BY THE APPROPRIATE AUTHORITY.
ADJUST HEIGHT OF PIT FRAME/LID AS REQUIRED TO SUIT FINISH LEVEL OF NEW WORK.
PROVIDE 10mm WIDE SEALANT (COLOUR: BLACK) AROUND PERIMETER OF SERVICE PIT LID/FRAME.

CLEANING OF PAVERS:
ALL PAVERS LAID DURING THE COURSE OF ONE WORKING DAY MUST HAVE JOINTING SAND BROOMED IN AND BE CLEANED AT THE END OF THAT DAY BEFORE PROCEEDING WITH LAYING OF SUBSEQUENT PAVERS. THIS IS TO PREVENT RESIDUE BUILD UP ON PAVERS WHICH MAY BECOME DIFFICULT TO CLEAN IF LEFT OVERNIGHT OR FOR PROLONGED PERIODS.



PV 1.2 PAVEMENT TYPE GRANITE - TYPICAL
SCALE 1:10

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STANDARD DETAILS
PAVEMENT TYPE GRANITE

APPROVED IA DESIGN MANAGER		DATE 20 / 05 / 14
DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV1.2	B

GRANITE PAVER SPECIFICATION	
Type:	General Paver - Select flame exfoliated granite Grade >1:8 Paver - Select bush hammered granite
Description:	Natural stone which is of uniform quality, sound, free from defects (such as vents, cracks, fissures, seams, porous inclusions, foreign material, loose surface material striations, stains, and discolouration) liable to affect its strength, appearance, durability, or proper functioning under the intended conditions of use.
Matching:	Select stone for the optimum matching of visual properties such as colour and pattern.
Finish:	General Paver, W rated - Sawn edges with exfoliated surface to provide a finish in accordance with AS/NZS 4586:2004. Grade >1:8 Paver, V rated - Sawn edges with bush hammered surface to provide a finish in accordance with AS/NZS 4586:2004.
Colour:	Raven Black or colour code G684
	Header paving and banding as per landscape drawings.
	For Top Ryde CBD, Rosa (matching existing material laid in Blaxland Rd, Ryde)
Size:	Footpaths 600 x 300 x 60 (Infill pavers); 300 x 300 x 60 (Header pavers)
	Driveways 600 x 300 x 60 mm (Infill pavers); 300 x 300 x 60 mm (Header pavers)
	Commercial Driveways: Transition pavers 600 x 150 x 60 mm ; Infill pavers 300 x 150 x 60 mm ; Header course (kerb and property boundary) 300 x 300 x 60 mm
Breaking Load:	Minimum 5Kn
Tolerance:	Plan area +/-1mm
	Thickness: +/- 2mm
Water Absorption:	Maximum 0.3% Moisture Content And Total Water Absorption in accordance with ASTM C97
Chamfers & Edges:	Stone edge is not to be chamfered unless specified. Finish to exposed edges to match surface finish - no sawn edges to be exposed

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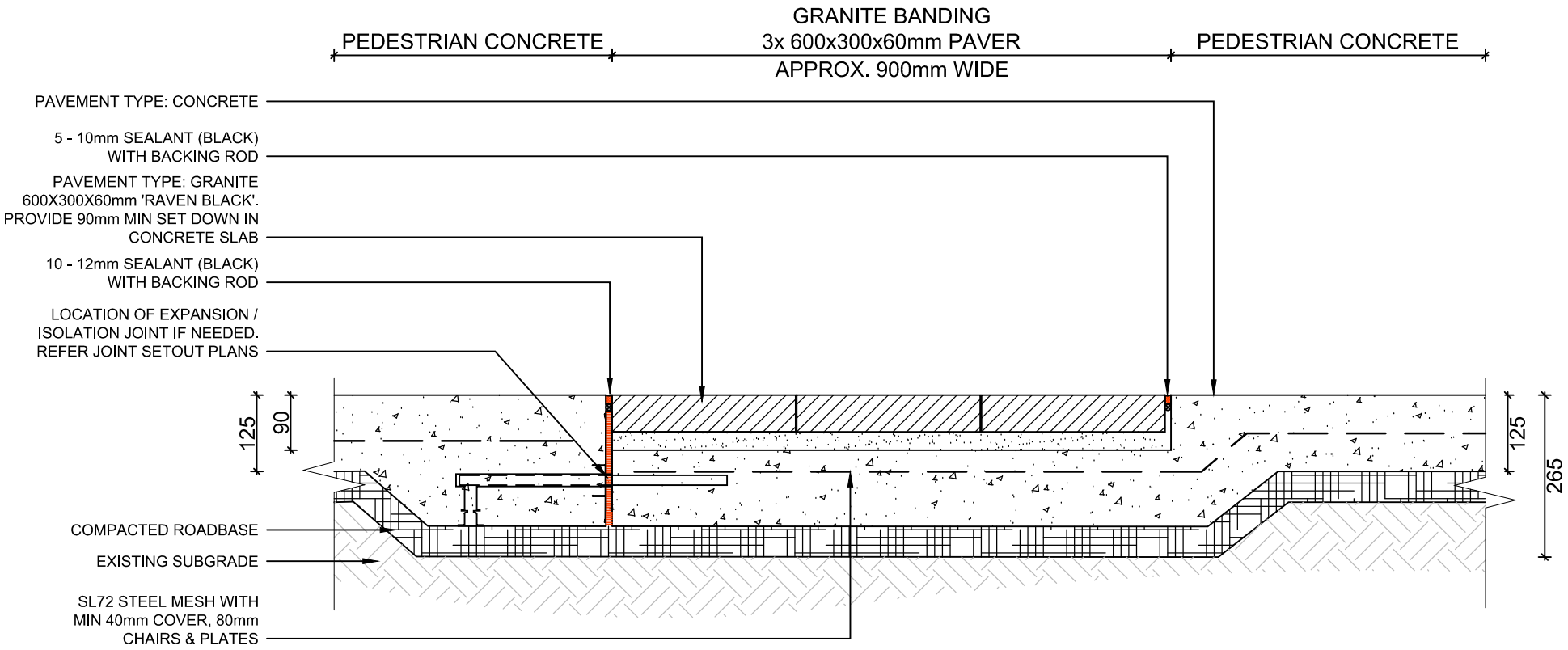
STANDARD DETAILS

PAVEMENT TYPE GRANITE
GRANITE SPECIFICATION

APPROVED
IA
DESIGN MANAGER

DATE
19 / 06 / 14

DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV.SPEC	B



PV 1.2a GRANITE BANDING IN CONCRETE PAVEMENT
SCALE 1:10

City of Ryde

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Project Development

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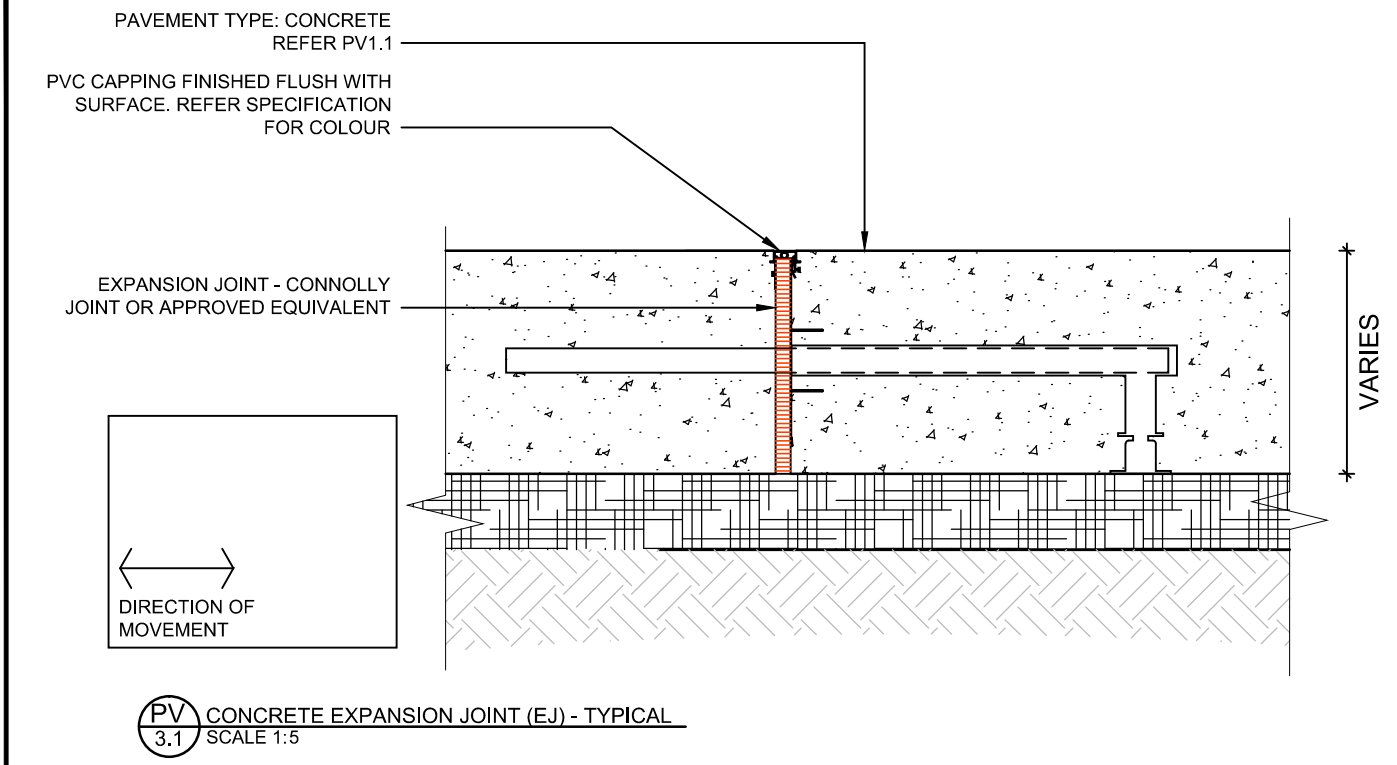
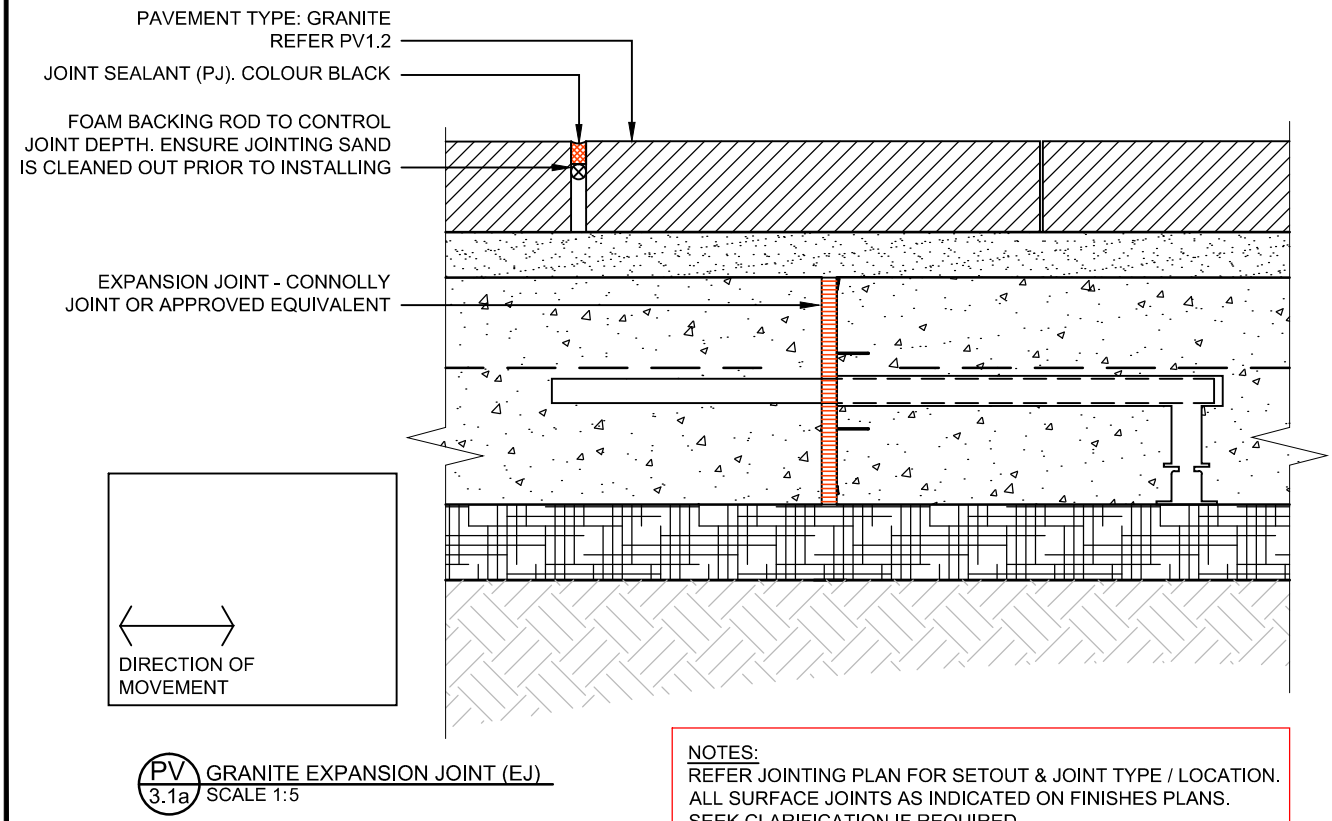
STANDARD DETAILS

PAVEMENT TYPE CONCRETE WITH GRANITE BANDING

APPROVED IA DESIGN MANAGER		DATE 19 / 06 / 14
DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV1.2a	B



PV 3.1 CONCRETE EXPANSION JOINT (EJ) - TYPICAL
SCALE 1:5



PV 3.1a GRANITE EXPANSION JOINT (EJ)
SCALE 1:5

NOTES:
REFER JOINTING PLAN FOR SETOUT & JOINT TYPE / LOCATION.
ALL SURFACE JOINTS AS INDICATED ON FINISHES PLANS.
SEEK CLARIFICATION IF REQUIRED

City of Ryde

PUBLIC WORKS
Project Development

STANDARD DETAILS
JOINT TYPES

APPROVED
IA
DESIGN MANAGER

DATE
20 / 05 / 14

DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV3.1 & PV3.1a	B

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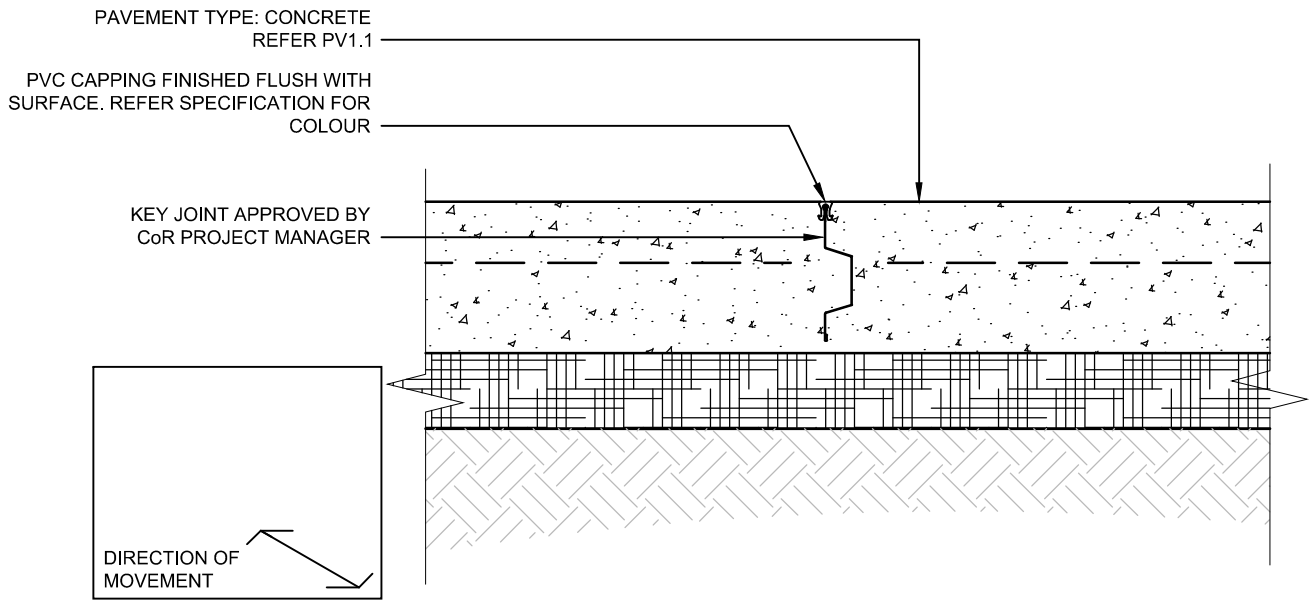
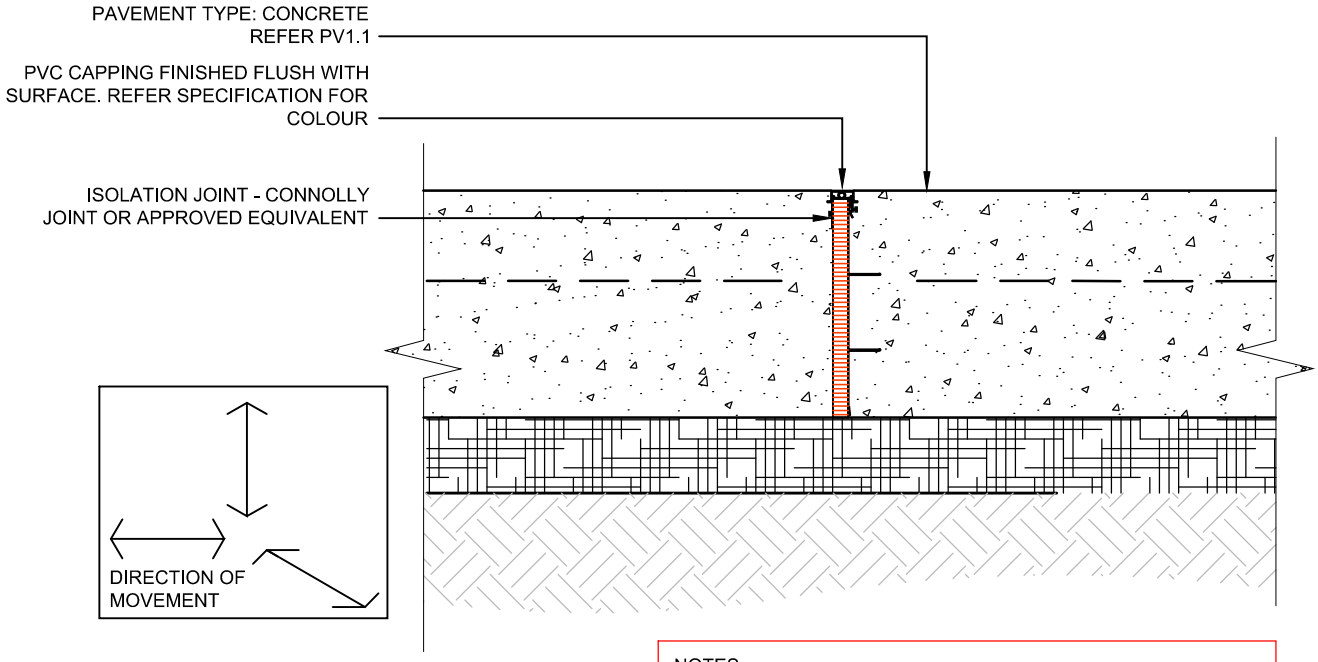


PV 3.2 CONCRETE KEY JOINT (KJ)
SCALE 1:5



PV 3.3 CONCRETE ISOLATION JOINT (IJ)
SCALE 1:5

NOTES:
REFER JOINTING PLAN FOR SETOUT & JOINT TYPE / LOCATION.
ALL SURFACE JOINTS AS INDICATED ON FINISHES PLANS.
SEEK CLARIFICATION IF REQUIRED

City of Ryde

PUBLIC WORKS
Project Development

STANDARD DETAILS
JOINT TYPES

APPROVED
IA
DESIGN MANAGER

DATE
20 / 05 / 14

DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV3.2 & PV3.3	B

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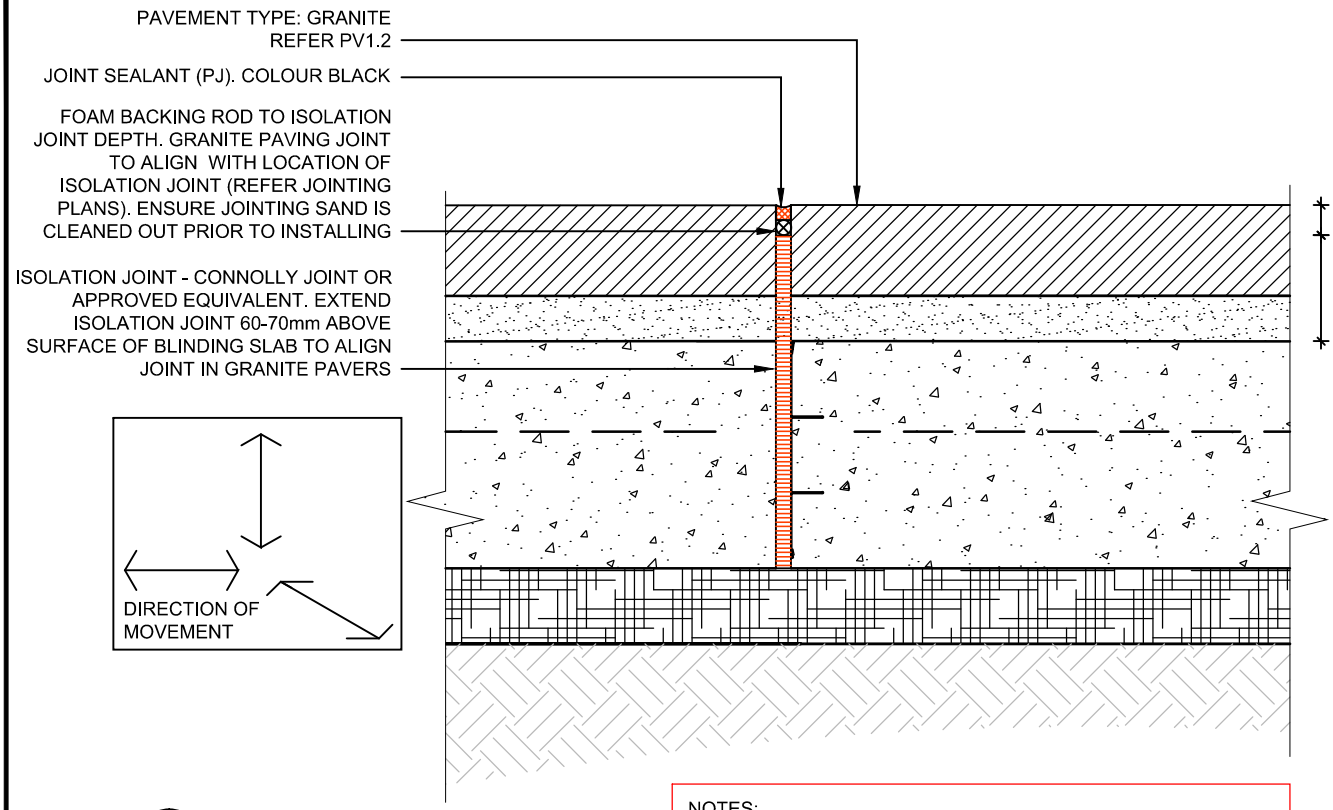
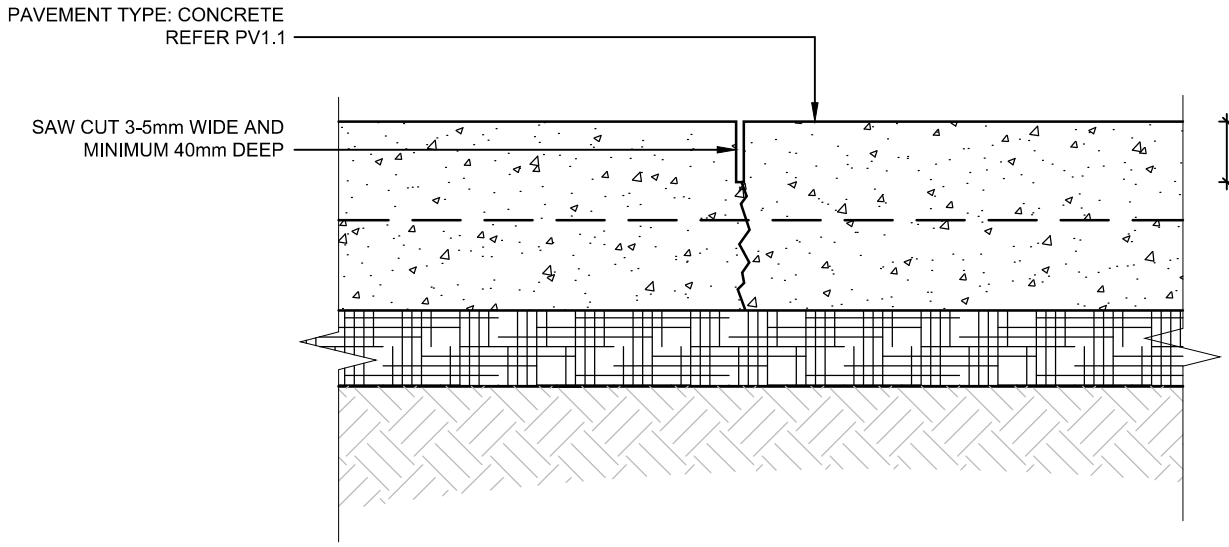


PV 3.3a GRANITE ISOLATION JOINT (IJ)
SCALE 1:5

NOTES:
REFER JOINTING PLAN FOR SETOUT & JOINT TYPE / LOCATION.
ALL SURFACE JOINTS AS INDICATED ON FINISHES PLANS. SEEK CLARIFICATION IF REQUIRED



PV 3.4 CONCRETE CONTROL JOINT (CJ)
SCALE 1:5

NOTES:
REFER JOINTING PLAN FOR SETOUT & JOINT TYPE / LOCATION.
SAW CUTS TO BE STRAIGHT AND CONTINUOUS

City of Ryde

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Project Development

STANDARD DETAILS
JOINT TYPES

APPROVED
IA
DESIGN MANAGER

DATE
20 / 05 / 14

DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV3.3a & PV3.4	B

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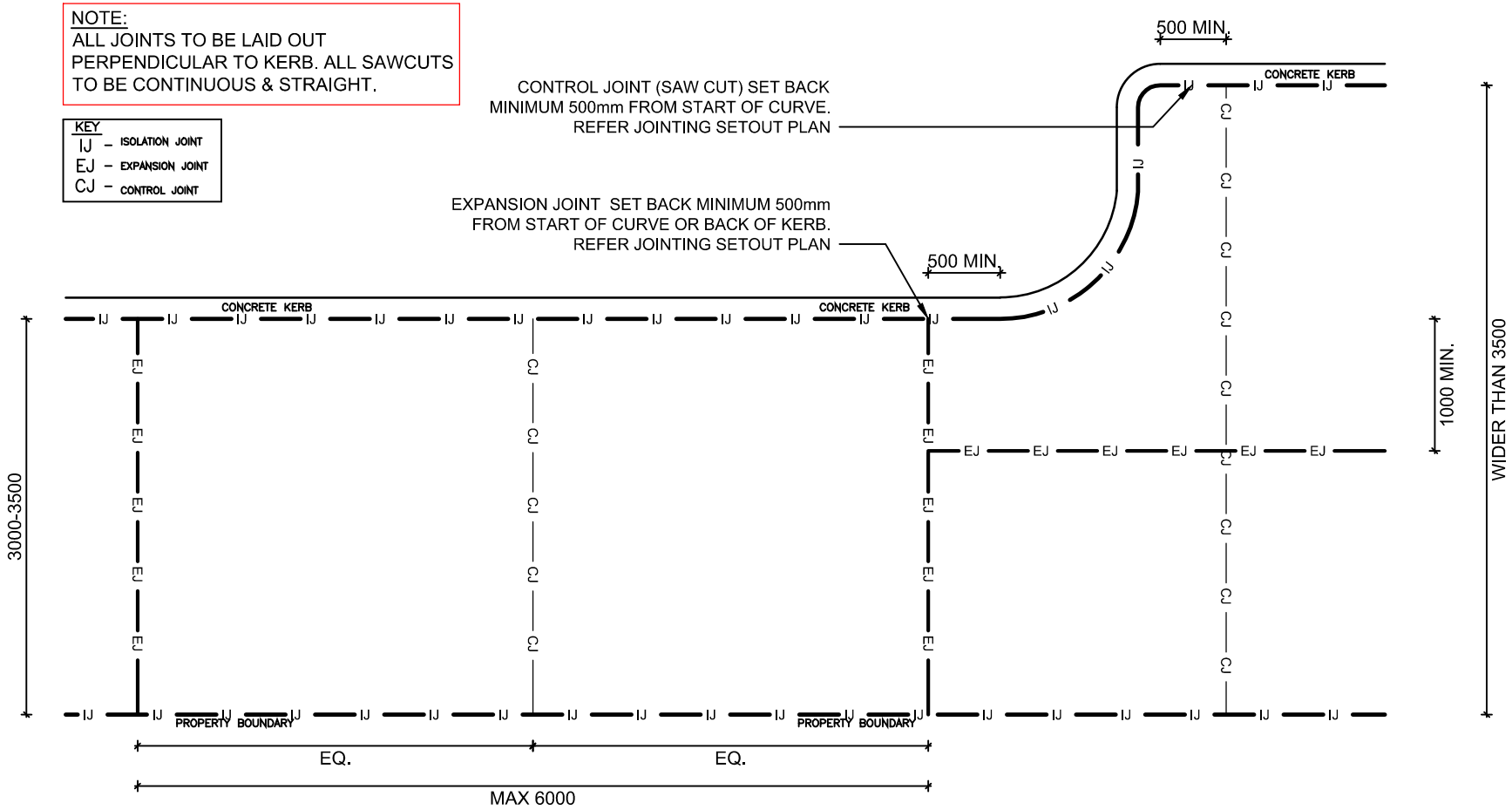
NOTE:
ALL JOINTS TO BE LAID OUT PERPENDICULAR TO KERB. ALL SAWCUTS TO BE CONTINUOUS & STRAIGHT.

KEY
IJ – ISOLATION JOINT
EJ – EXPANSION JOINT
CJ – CONTROL JOINT



PV 3.6 CONCRETE SLAB JOINT SETOUT - TYPICAL
SCALE 1:50

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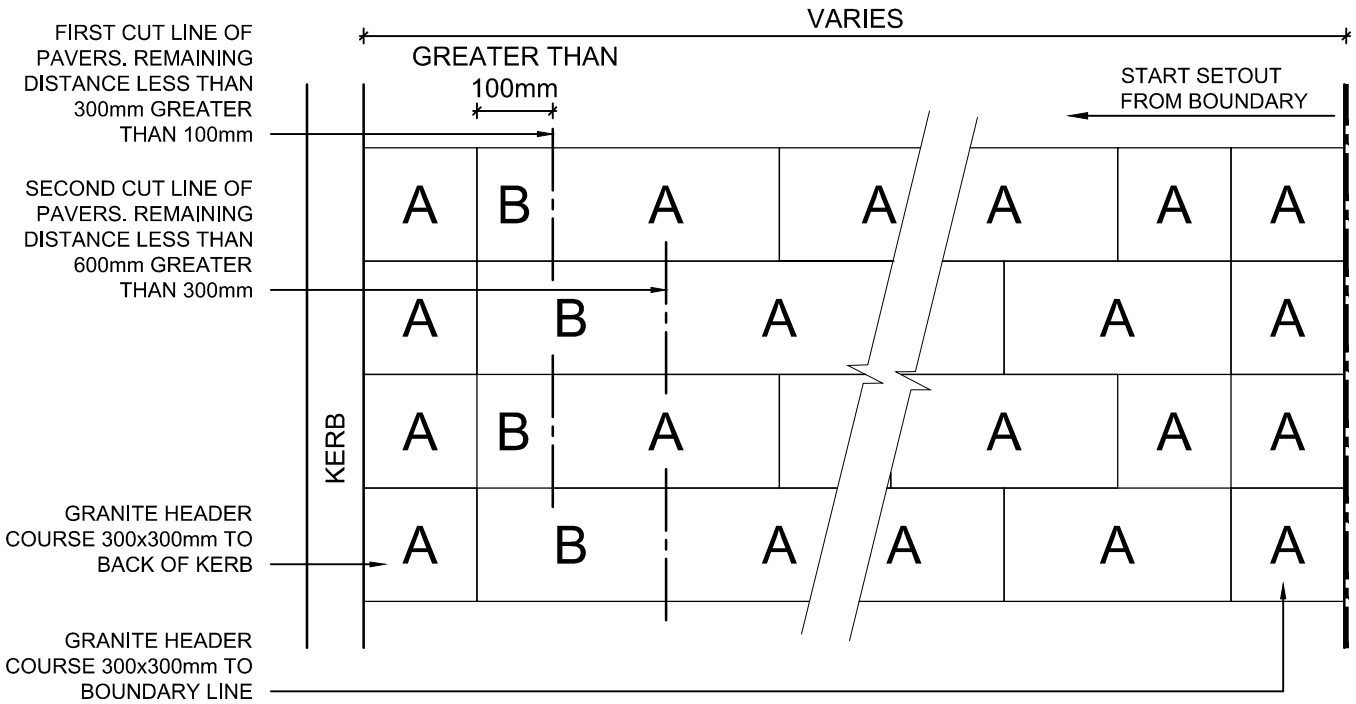
STANDARD DETAILS

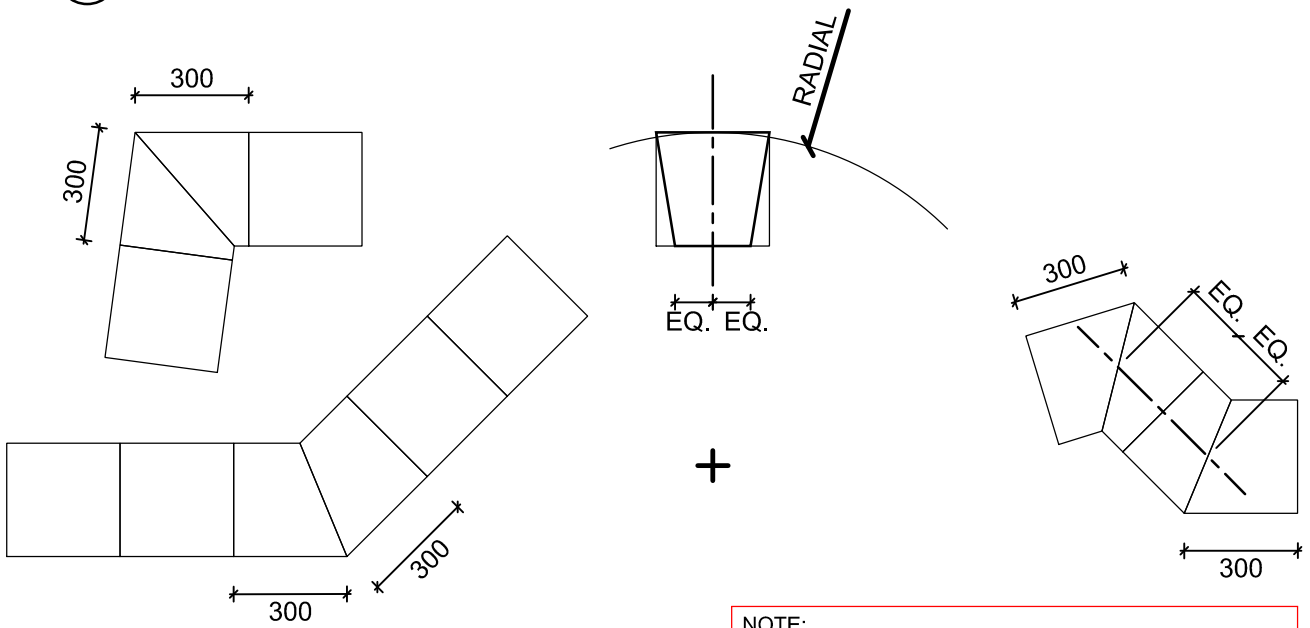
CONCRETE JOINT SETOUT

APPROVED IA DESIGN MANAGER		DATE 20 / 05 / 14
DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV3.6	B

A = FULL OR HALF SIZE PAVER AS PER GRANITE PAVING SPECIFICATION.
B = PAVER CUT TO FIT REMAINING DISTANCE
NOTE: IF REMAINING DISTANCE IS LESS THAN 100mm THEN SETOUT MOVES ACROSS TO THE NEAREST UNIT LARGER THAN 100mm. SECOND CUT LINE IS THEN SET OFF MID POINT AND THIRD CUT LINE IS REQUIRED. REFER PV4.1a



PV 4.1 PAVING SETOUT - CoR PREFERENCE
SCALE 1:20



PV 4.2 HEADER COURSE CUTTING EXAMPLES
SCALE 1:20

NOTE:
RETAIN LARGEST POSSIBLE PIECE OF PAVER AT CORNER/JUNCTION. ADD CUT PAVER ON MIDPOINT OF STRAIGHT TO ACCOMMODATE.

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STANDARD DETAILS
PAVING SETOUT AND CUTTING EXAMPLES

APPROVED
IA
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DATE
20 / 05 / 14

DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV4.1 & PV4.2	B

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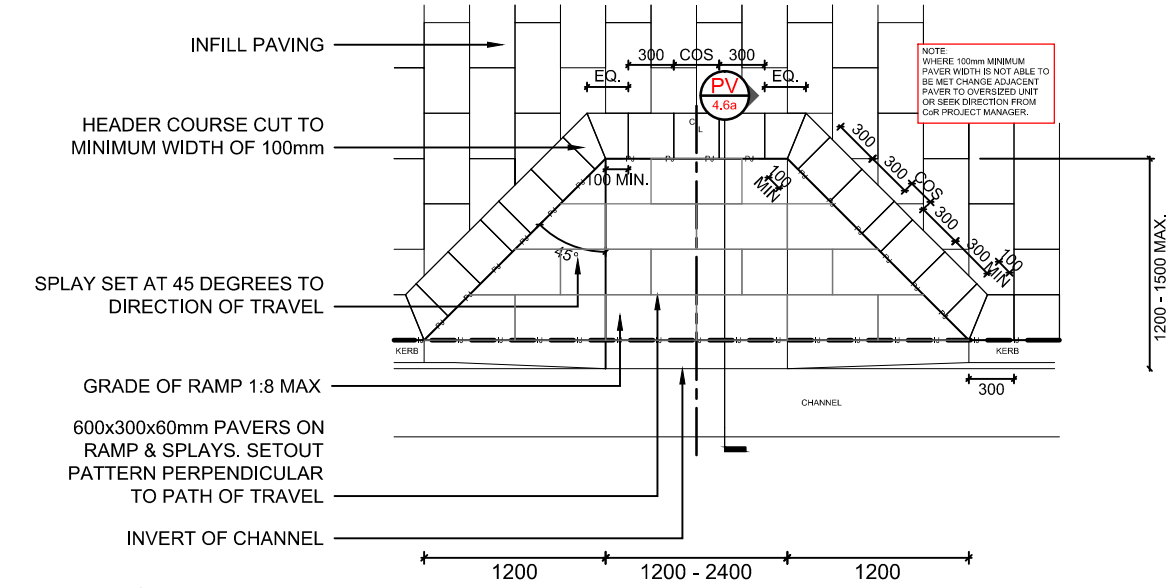
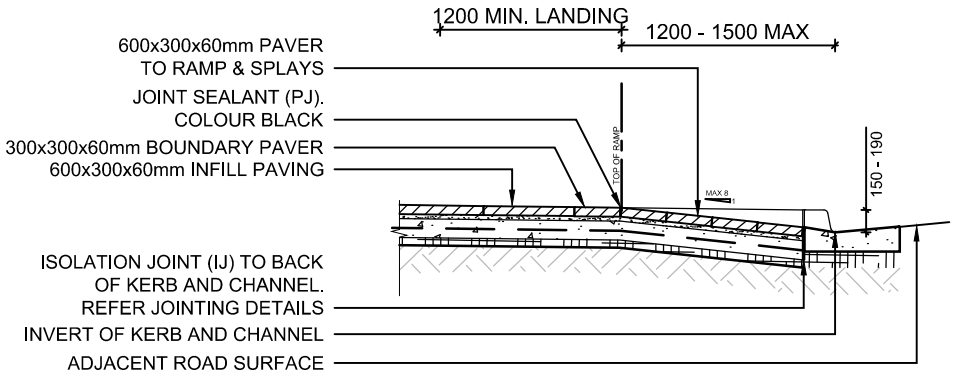
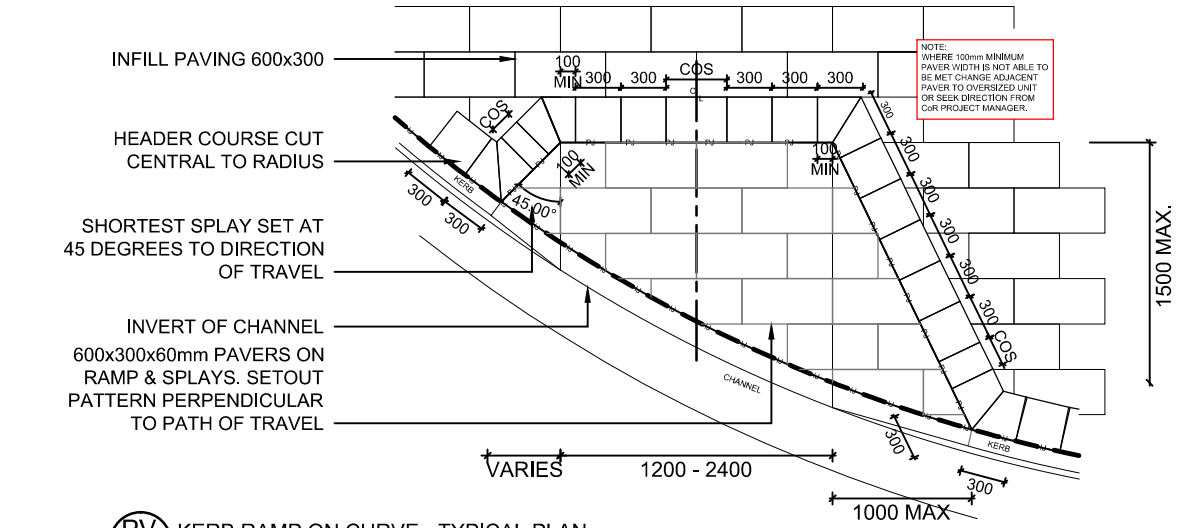


PV 4.6 KERB RAMP PLAN - TYPICAL
SCALE 1:50



PV 4.6a KERB RAMP - SECTION
SCALE 1:50



PV 4.7 KERB RAMP ON CURVE - TYPICAL PLAN
SCALE 1:50

City of Ryde

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STANDARD DETAILS
KERB RAMPS
600x300x60mm GRANITE PAVER

APPROVED
IA
DESIGN MANAGER

DATE
20 / 05 / 14

DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV4.6 & PV4.7	B

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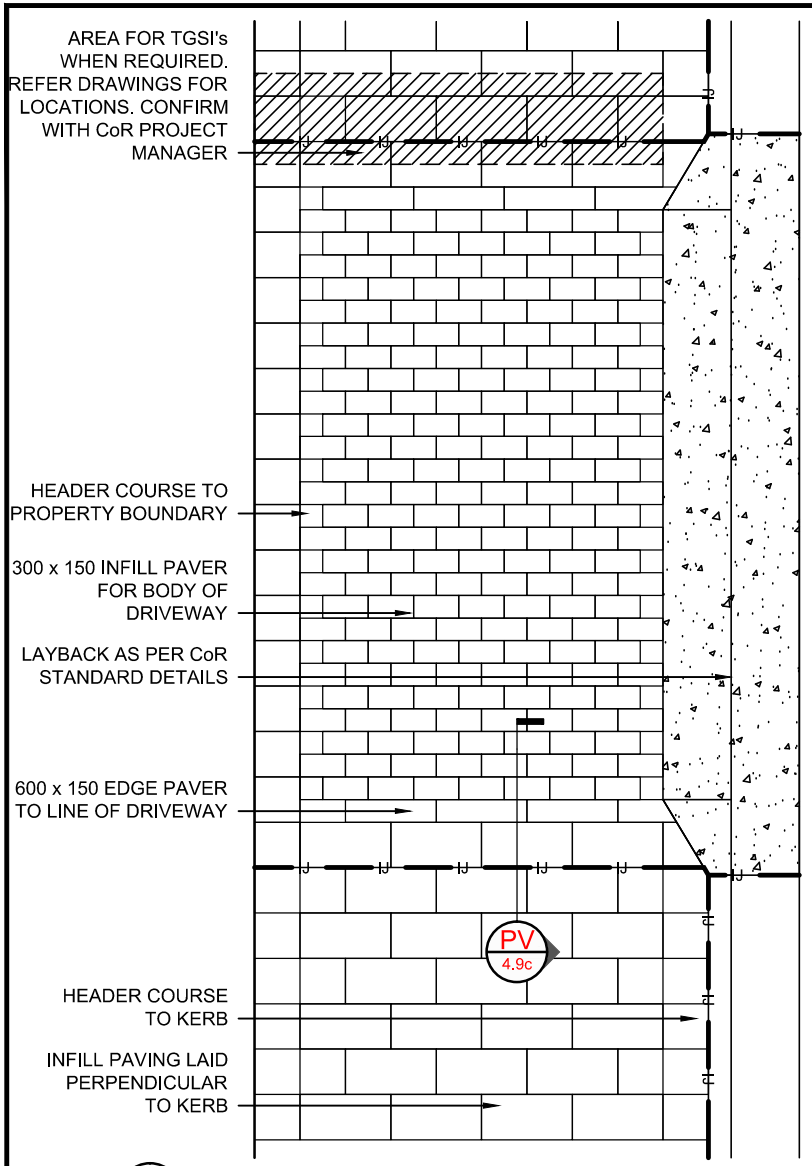
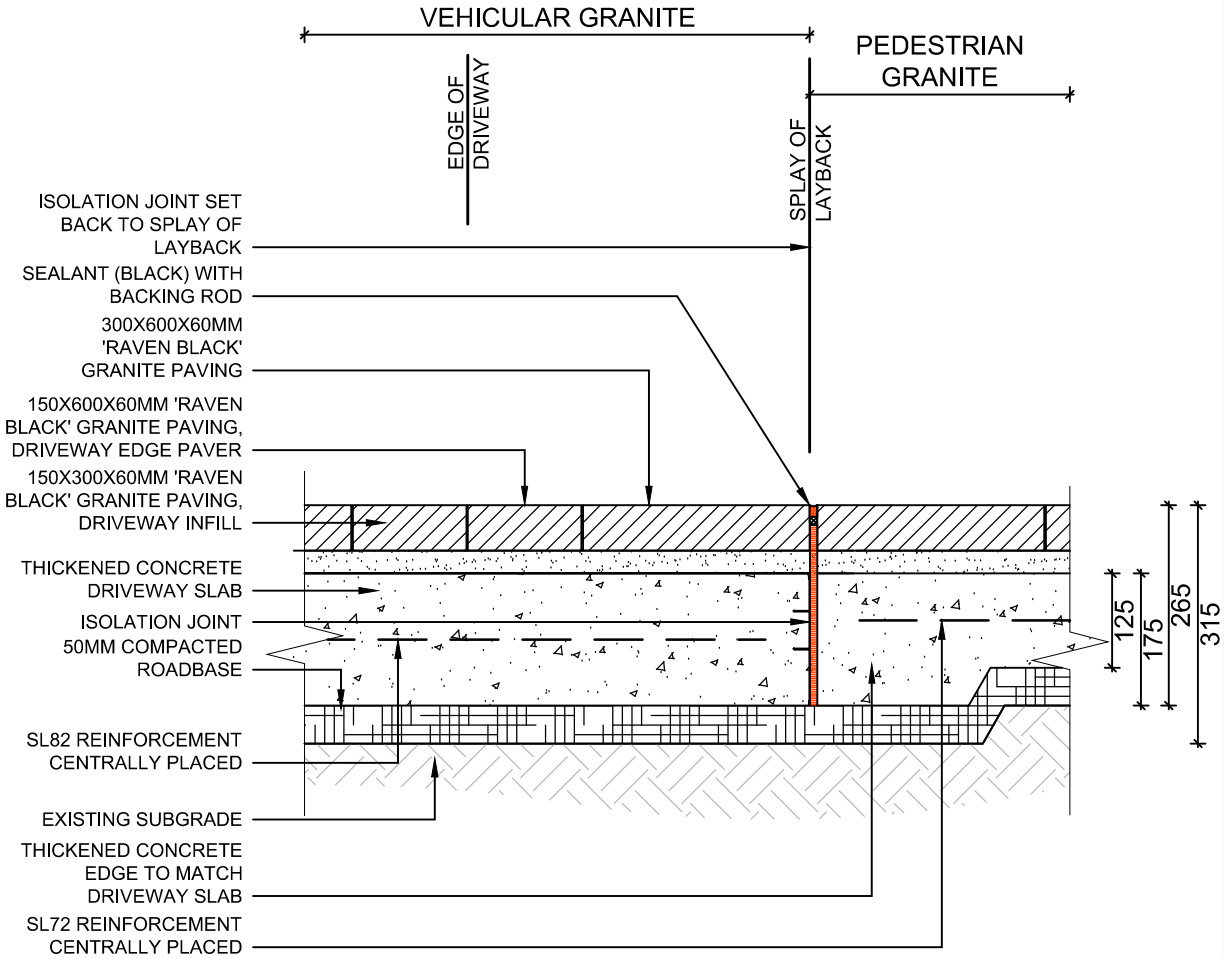


PV 4.9 COMMERCIAL VEHICLE CROSSING SETOUT
SCALE 1:50



PV 4.9c COMMERCIAL VEHICULAR GRANITE TO PEDESTRIAN GRANITE
SCALE 1:10

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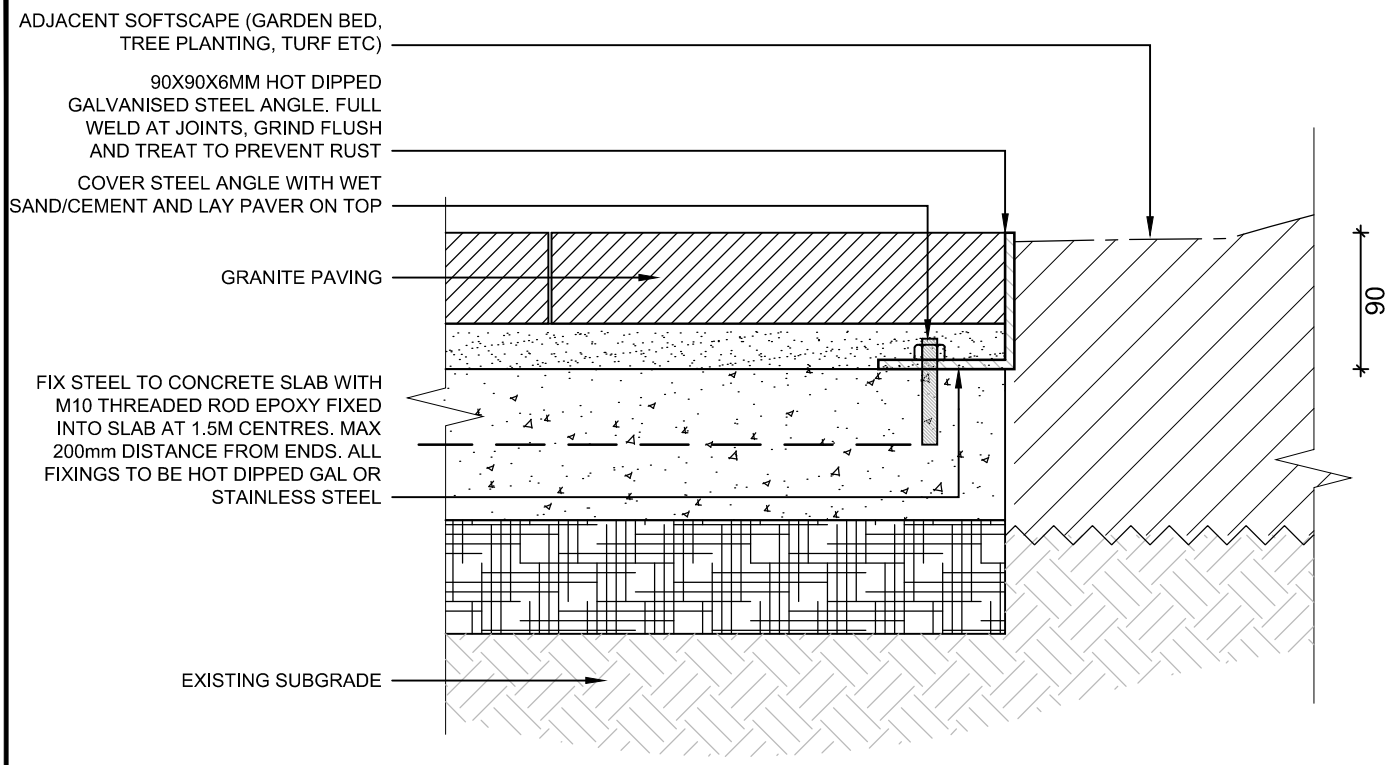
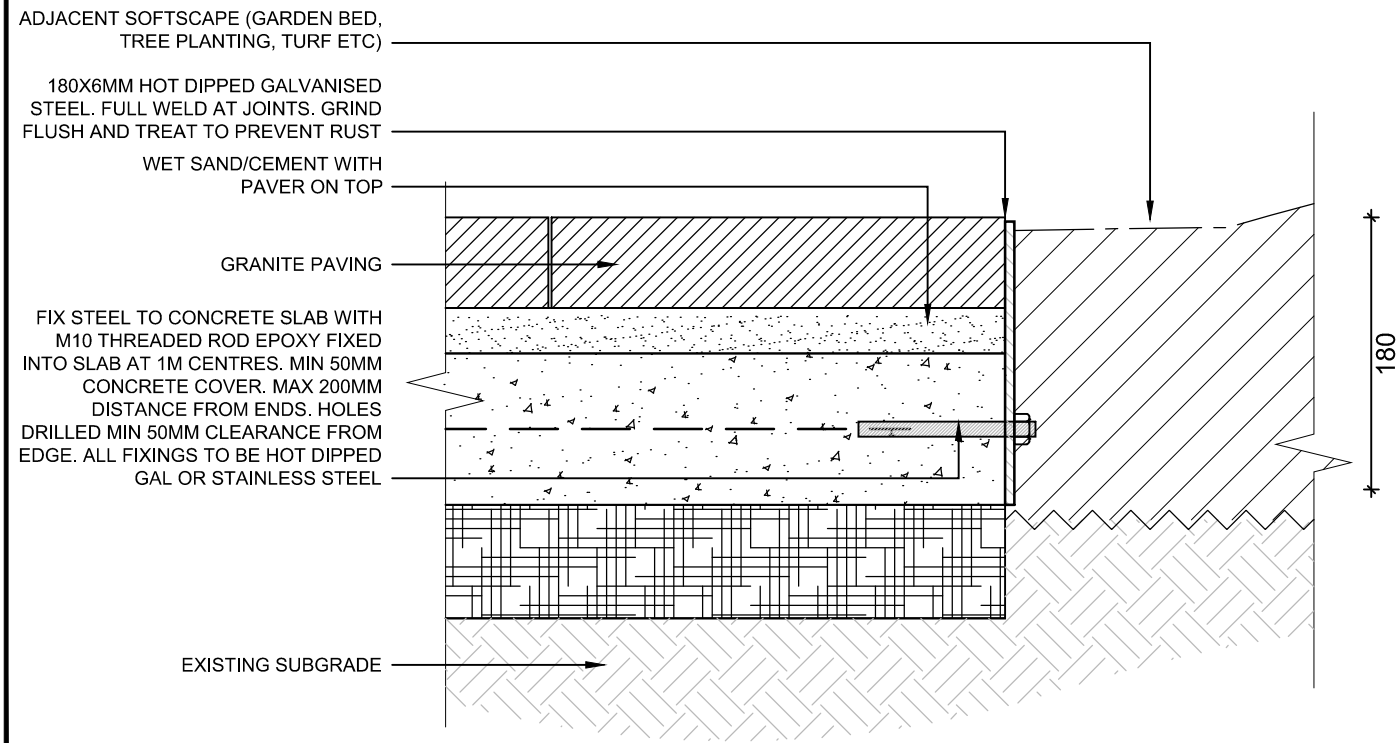
STANDARD DETAILS

COMMERCIAL VEHICLE CROSSING

APPROVED IA DESIGN MANAGER		DATE 20 / 05 / 14
DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV4.9 & PV4.9c	B



PV 6.1 STEEL ANGLE TO STRAIGHT GARDEN BED EDGE - TYPICAL
SCALE 1:5



PV 6.2 STEEL FLAT TO CURVED GARDEN BED EDGE - TYPICAL
SCALE 1:5

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Project Development

STANDARD DETAILS
STEEL EDGE TYPES

APPROVED
IA
DESIGN MANAGER

DATE
20 / 05 / 14

DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PV6.1 & PV6.2	B

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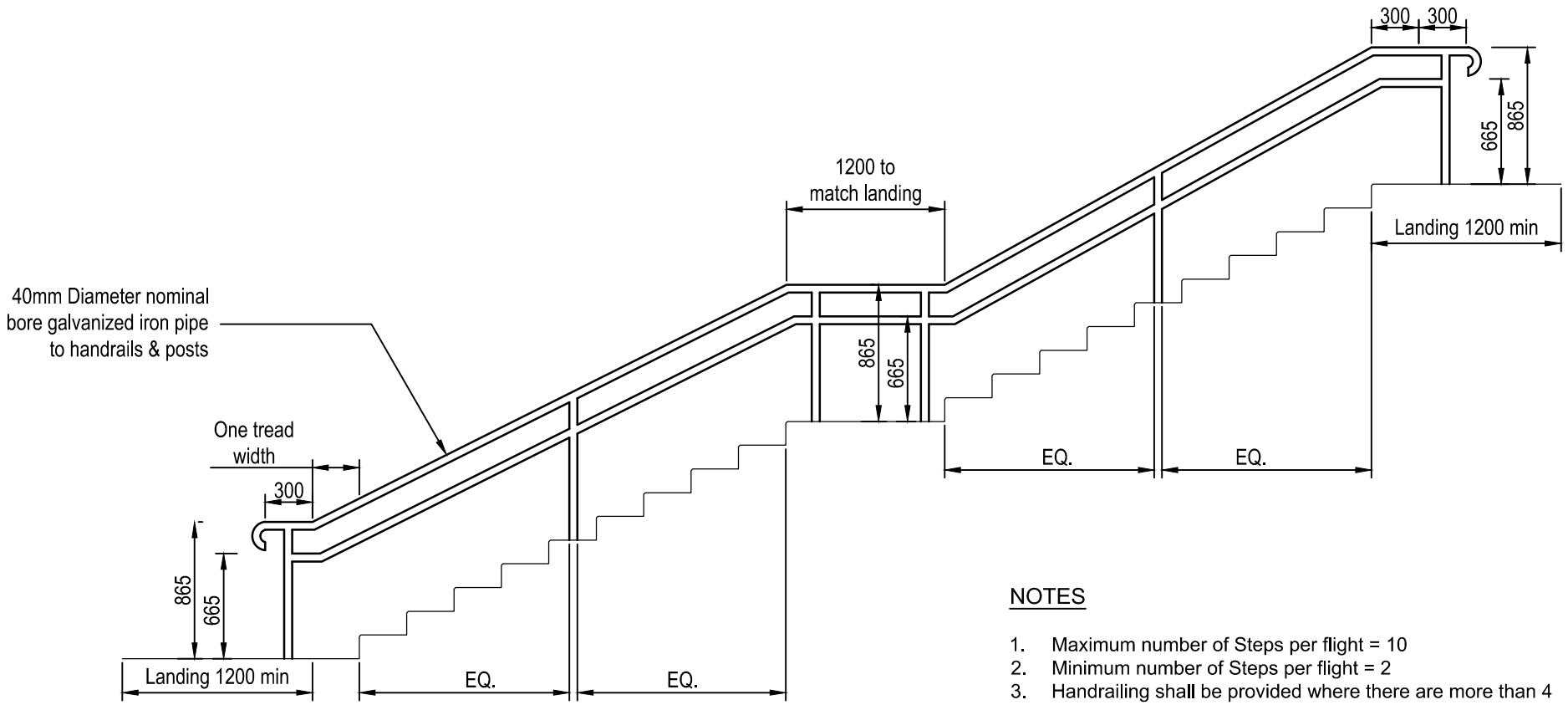

NOTES

1. Maximum number of Steps per flight = 10
2. Minimum number of Steps per flight = 2
3. Handrailing shall be provided where there are more than 4 risers in one flight. Provide on one side only.
4. Handrailing will be hot dipped galvanized after fabrication in accordance with current Australian Standards 1650-1989.
5. All dimensions in mm unless noted otherwise (U.N.O)
6. Handrails, Stairs, Tactiles and landing to AS 1428.

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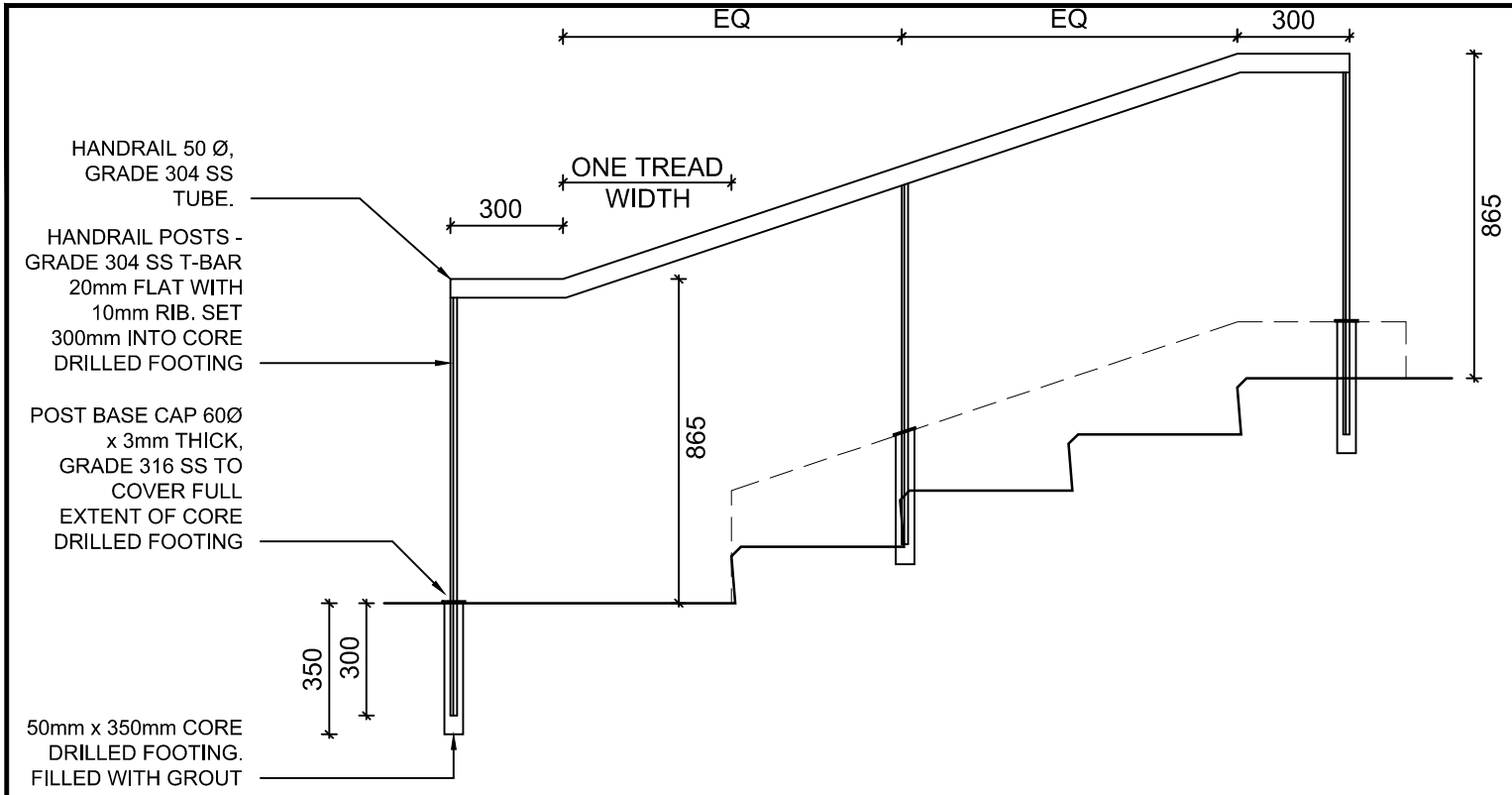
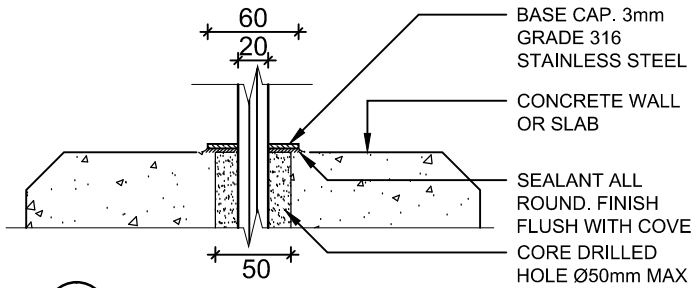
Public Works - Project Development

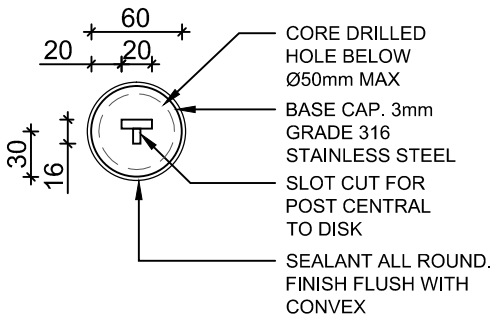
DRAWN: JSB	APPROVED: IA	STANDARD DRAWING:	DRAWING NO: HR 1.0	
CHECKED:	DESIGN MANAGER	PATHWAY STEPS HANDRAIL	SCALE: 1:40 @ A4	SHEET: 1 OF 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014	REV: B

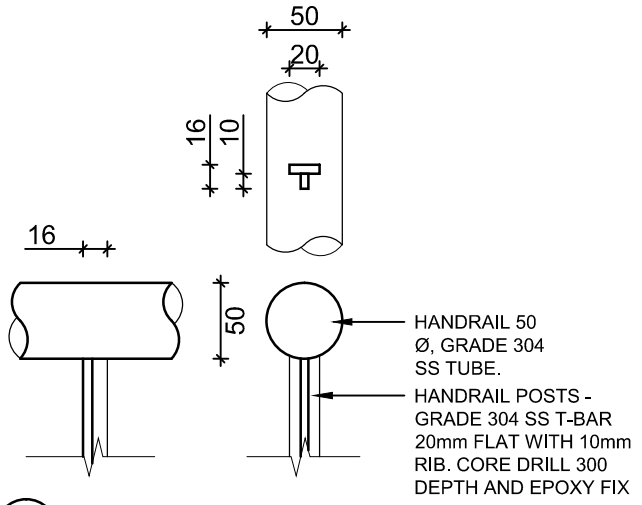


HR 1.1 TOWN CENTRE HAND RAIL - TYPICAL
SCALE 1:20



HR 1.2 POST BASE CAP - PLAN & SECTION
SCALE 1:5





HR 1.3 POST TO HANDRAIL - PLAN & SECTION
SCALE 1:5

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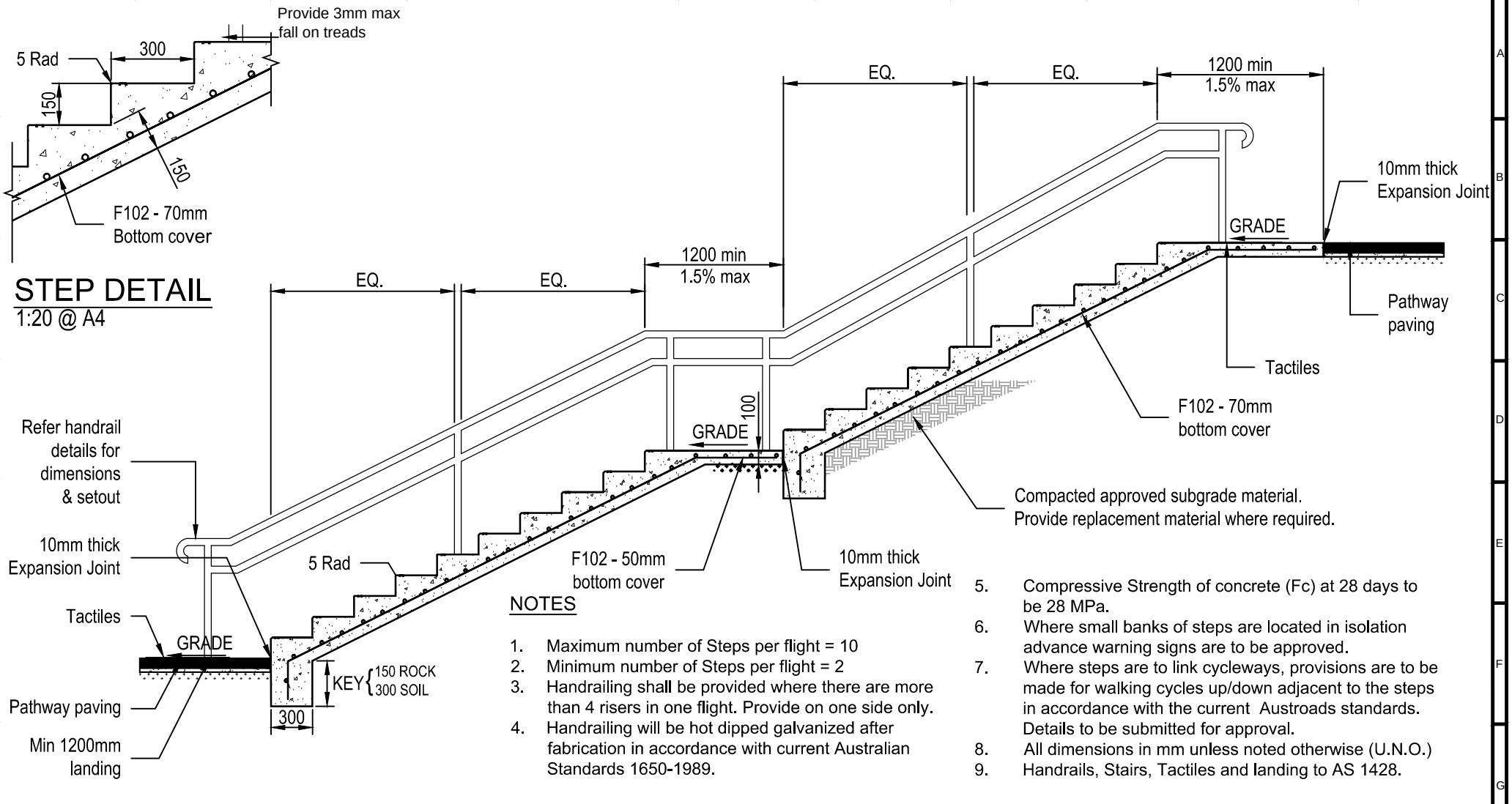
STANDARD DETAILS
HANDRAIL
TOWN CENTRE

APPROVED
IA
DESIGN MANAGER

DATE
20 / 05 / 14

DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	HR1.1 - HR1.3	B



NOTES

1. Maximum number of Steps per flight = 10
2. Minimum number of Steps per flight = 2
3. Handrailing shall be provided where there are more than 4 risers in one flight. Provide on one side only.
4. Handrailing will be hot dipped galvanized after fabrication in accordance with current Australian Standards 1650-1989.
5. Compressive Strength of concrete (Fc) at 28 days to be 28 MPa.
6. Where small banks of steps are located in isolation advance warning signs are to be approved.
7. Where steps are to link cycleways, provisions are to be made for walking cycles up/down adjacent to the steps in accordance with the current Austroads standards. Details to be submitted for approval.
8. All dimensions in mm unless noted otherwise (U.N.O.)
9. Handrails, Stairs, Tactiles and landing to AS 1428.

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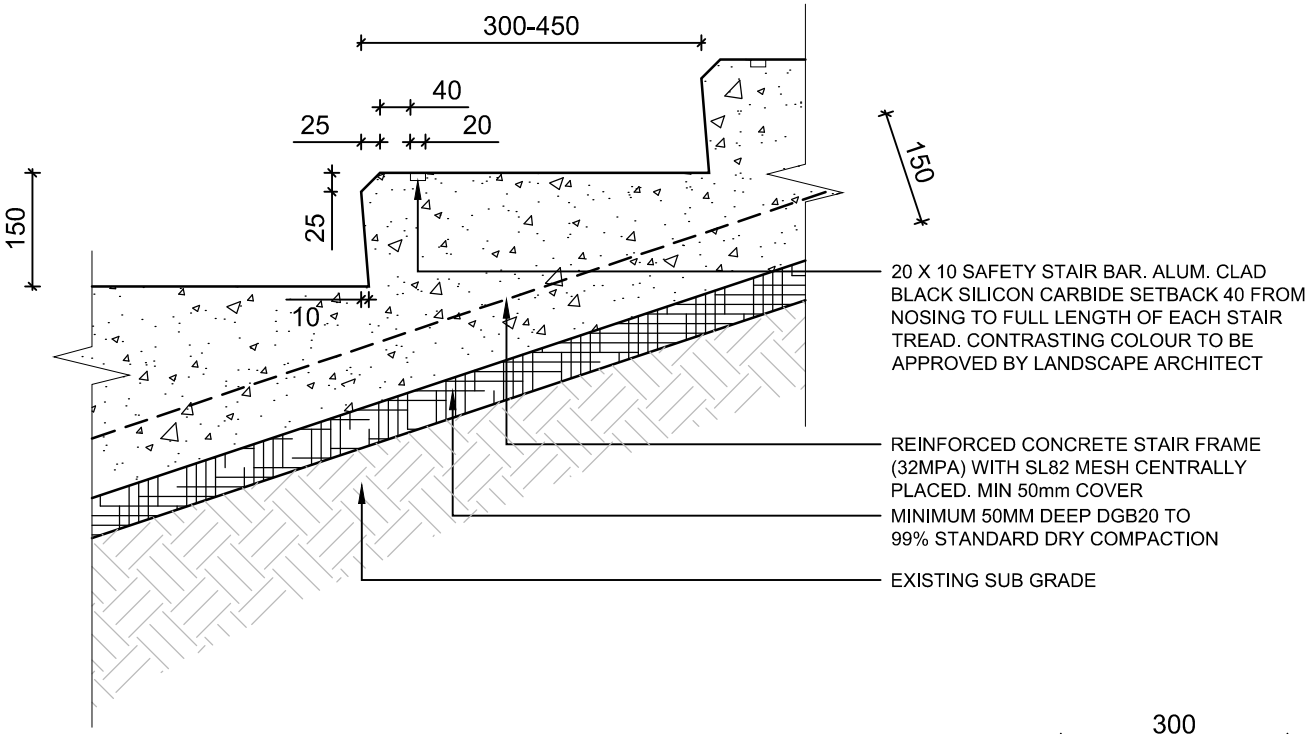
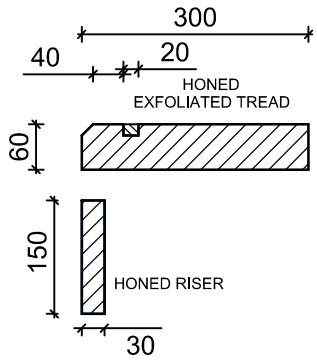
DRAWN: JSB	APPROVED: IA	STANDARD DRAWING:	DRAWING NO: STR 1.0	
CHECKED:	DESIGN MANAGER	PATHWAY STEPS	SCALE: 1:40 @ A4	SHEET: 1 OF 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014	REV: B



STR 1.1 STAIR TREAD - TYPICAL
SCALE 1:10



STR 2.1 GRANITE STAIR - TYPICAL
SCALE 1:10

City of Ryde

PUBLIC WORKS
Project Development

STANDARD DETAILS
STAIR TYPES
TOWN CENTRES

APPROVED
IA
DESIGN MANAGER

DATE
20 / 05 / 14

DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	STR1.1 & STR2.1	B

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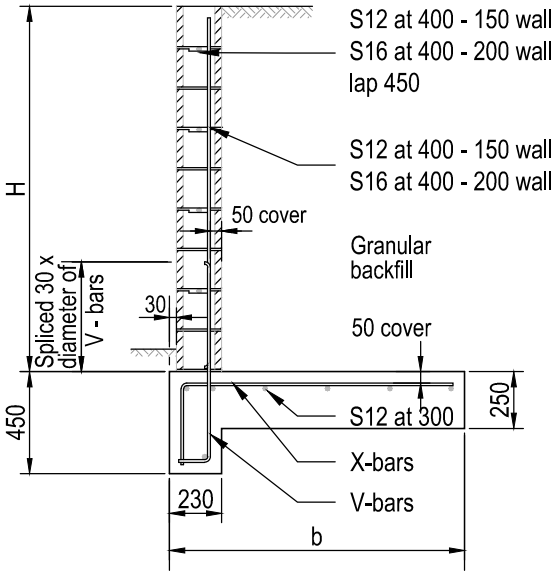
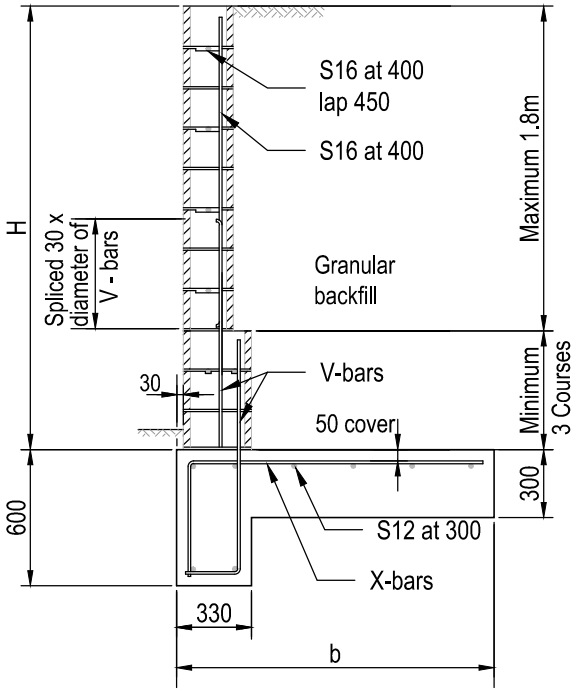


150 & 200 WALLS
Not to Scale



200 & 300 WALLS
Not to Scale

CONCRETE BLOCK RETAINING WALLS

BACKFILL TYPE	HEIGHT "H"m	WALL TYPE	WITHOUT SURCHARGE			WITH 5.0 kPa SURCHARGE		
			"b"mm	V-BARS	X-BARS	"b"mm	V-BARS	X-BARS
1	1.0	150	900	S12 @ 400	S12 @ 400	1000	S12 @ 400	S12 @ 400
	1.4 1.8	200	1050 1300	S16 @ 400 S16 @ 400	S16 @ 400 S16 @ 400	1150 1400	S16 @ 400 S20 @ 400	S16 @ 400 S16 @ 400
	2.2 2.6 3.0 3.2	200 AND 300	1450 1750 2050 2200	S16 @ 400 S20 @ 400 S24 @ 400 S20 @ 200	S16 @ 400 S20 @ 400 S20 @ 400 S24 @ 400	1600 1850 2300	S20@ 400 S20 @ 400 S24 @ 400	S16 @ 400 S20 @ 400 S24 @ 400
3	1.0	150	1050	S12 @ 400	S12 @ 400	1150	S12 @ 400	S12 @ 400
	1.4 1.8	200	1200 1450	S16 @ 400 S20 @ 400	S16 @ 400 S16 @ 400	1450 1750	S16 @ 400 S24 @ 400	S16 @ 400 S20 @ 400
	2.2 2.6 3.0	200 AND 300	1700 1900 2450	S20 @ 400 S24 @ 400 S20 @ 400	S16 @ 400 S20 @ 400 S24 @ 400	2050	S20 @ 400	S20 @ 400
4	1.0	200	1400	S16 @ 400	S16 @ 400	1550	S16 @ 400	S16 @ 400
	1.4 1.8	200 AND 300	1750 2150	S20 @ 400 S20 @ 400	S20 @ 400 S20 @ 400	2000 2600	S20 @ 400 S24 @ 400	S20 @ 400 S24 @ 400

NOTES

1. A 400mm nominal wall may be used In lieu of 300mm wall using the reinforcement shown above.
2. Lightweight blocks may be used provided they have the minimum characteristic compressive strength specified.
3. Foundation to be approved for maximum allowable bearing pressure 125 kPa.
4. All dimensions in mm unless noted otherwise (U.N.O.)
5. Subject to review and certification by structural engineer.

DISCLAIMER:

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Public Works - Project Development

DRAWN: MC/ JSB
APPROVED: IA
CHECKED:
DESIGN MANAGER
VERIFIED: VP
...../...../.....

STANDARD DRAWING:

CONCRETE BLOCK RETAINING WALL

DRAWING N0: WT 1.0
SCALE: NTS
SHEET: 1 OF 1
DATE: 20/05/2014
REV: B

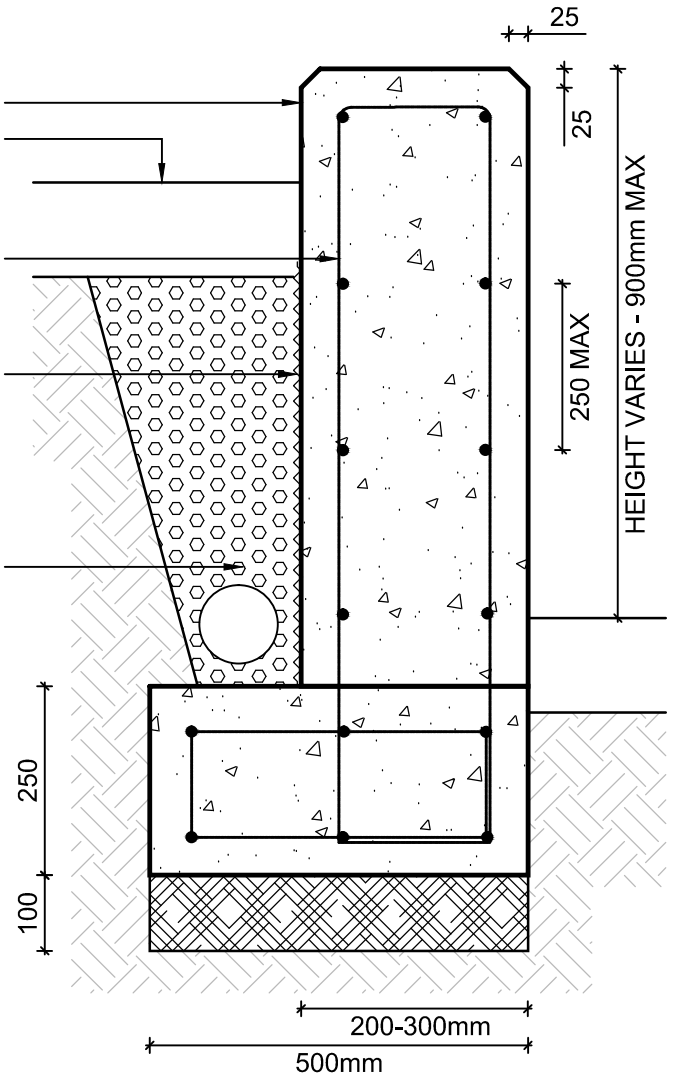
CONCRETE RETAINING WALL MAX. 900MM HIGH TO AREAS SHOWN ON PLAN. 25mm CHAMFER TO TOP EDGE ALL ROUND. AERATE/VIBRATE CONCRETE FORMWORK TO REMOVE AIR BUBBLES AND PREVENT HONEY COMBING.

ADJACENT SURFACE VARIES

R10 STIRRUPS AT 300MM CENTRES WITH 50MM COVER. 3-4x N12 BARS SPACED EVENLY TO EACH FACE. LAP BARS MIN 420mm AT SPLICES

WATERPROOF MEMBRANE AND PROTECTIVE SHEETING TO BACK OF RETAINING WALL

10-20mm BLUE METAL BACK FILL. 100MM SLOTTED PVC AGRICULTURAL LINE. MINIMUM FALL OF 1:100 TO NEAREST DRAINAGE CONNECTION. REFER DRAINAGE PLANS



WT 1.1 WALL TYPE 1 900mm MAX - TYPICAL
SCALE 1:10

NOTES:

CONCRETE FINISH TO BE CLASS 2 AS3610
WHERE TIE RODS ARE USED AND SURFACE FINISH IMPACTED - SPACING MUST BE UNIFORM.
VERTICAL EXPANSION JOINTS TO BE INSTALLED MINIMUM EVERY 6M. CONFIRM EXPANSION JOINT TYPE WITH COR PROJECT MANAGER. NOTIFY PROJECT MANAGER OF SETOUT INTENTION FOR APPROVAL.

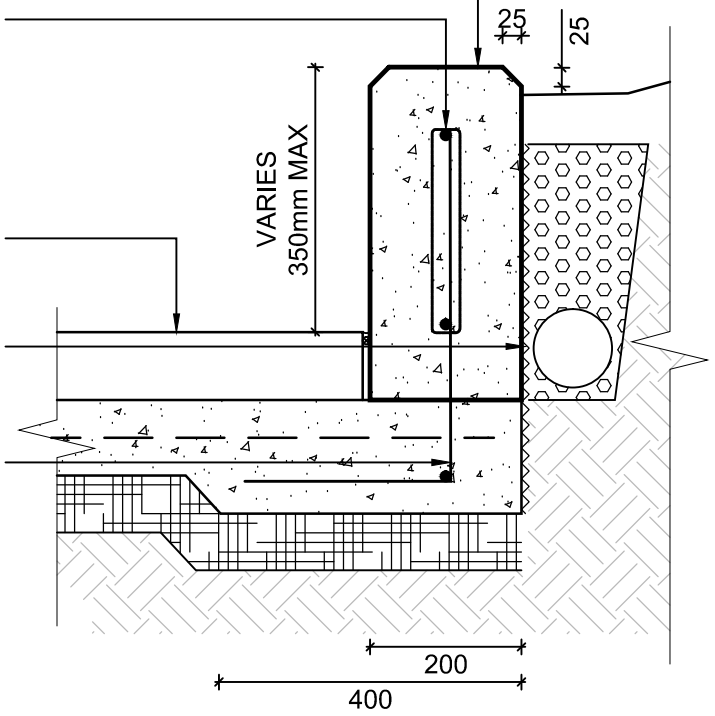
CONCRETE UPSTAND MAX. 350MM HIGH TO AREAS SHOWN ON PLAN. 25mm CHAMFER TO TOP EDGE ALL ROUND. AERATE/VIBRATE CONCRETE FORMWORK TO REMOVE AIR BUBBLES AND PREVENT HONEY COMBING. WATERPROOFING TO GARDEN BED SIDE OF WALL

R10 STIRRUPS AT 300MM CENTRES WITH 50MM COVER. 2x N12 BARS SPACED EVENLY TO EACH FACE. LAP BARS MIN 420mm AT SPLICES

ADJACENT SURFACE FINISH 150 BELOW TOP OF WALL. REFER FINISHES DRAWINGS FOR FINISH TYPE

WATERPROOF MEMBRANE AND PROTECTIVE SHEETING TO BACK OF WALL AND EDGE OF SLAB TO FULL DEPTH.

STARTER BARS AT 300MM CENTRES PROVIDED AS PART OF SLAB WORKS



WT 2.1 WALL TYPE 2 ON SLAB UP TO 350mm - TYPICAL
SCALE 1:10

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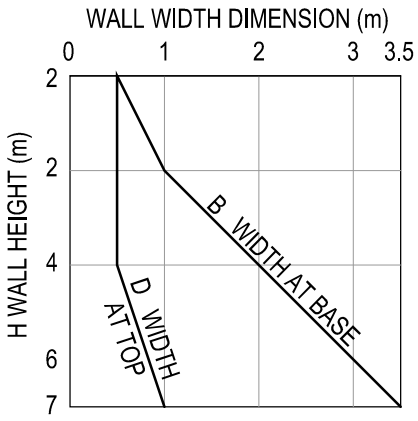
STANDARD DETAILS

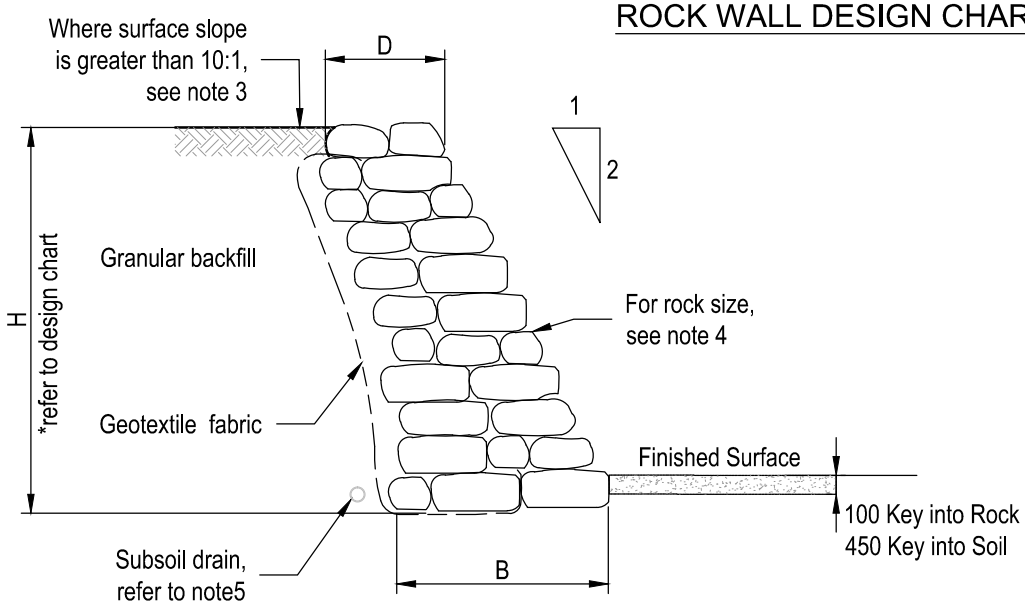
IN-SITU CONCRETE WALL

APPROVED IA DESIGN MANAGER		DATE 20 / 05 / 14
DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	WT1.1 & WT2.1	B

P:\PM2013\Public Domain Standard Details\CoR Revised Standard Drawings\2013\Landscape Architecture\LS_Details_MW_series_A4.dwg / Plotted on 2014-05-23



ROCK WALL DESIGN CHART



TYPICAL ROCK WALL GEOMETRY

Not to Scale

NOTES

1. Back fill to be granular, free draining and compacted.
2. Foundation to be approved for a safe bearing capacity of 200 KPa prior to construction.
3. Where the surface slope of retained material is between 10:1 and 4:1, the wall base dimension is to be increased by 0.5m.
4. Rock is to be sound durable sandstone or other approved material and at least 0.5 square meters plan area.
5. A continuous 100mm diameter subsoil drain is to be installed at the rear of the wall where the wall height exceeds 3.0m or where the wall foundation consists of materials other than rock.
6. Rocks shall be placed in such a manner that they are stable and interlocking and laid roughly coursed and bedded on their broadest base.
7. Subject to review by Structural Engineer.

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City of Ryde

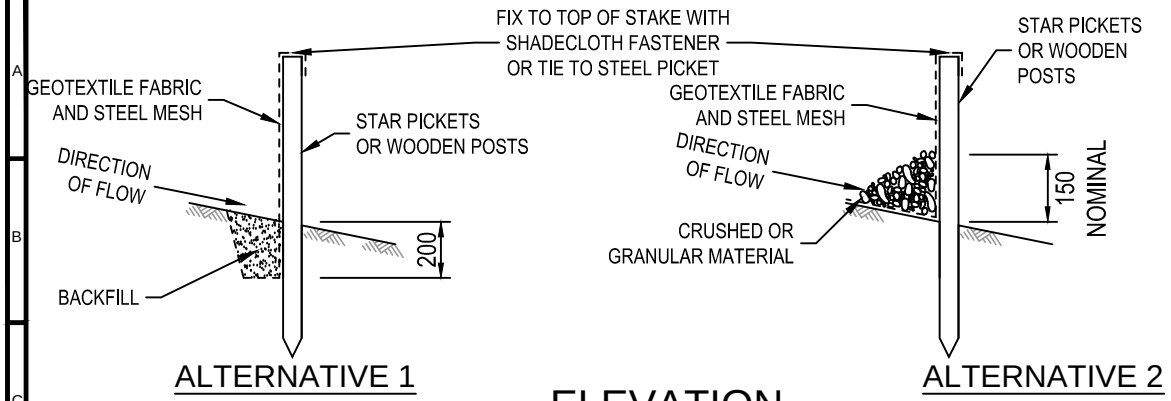
Public Works - Project Development

DRAWN: JSB	APPROVED: IA
CHECKED:	DESIGN MANAGER
VERIFIED: VP	...../...../.....

STANDARD DRAWING:

ROCK RETAINING WALL

DRAWING N0: WT3.1	
SCALE: NTS	SHEET: 1 OF 1
DATE: 20/05/2014	REV: B



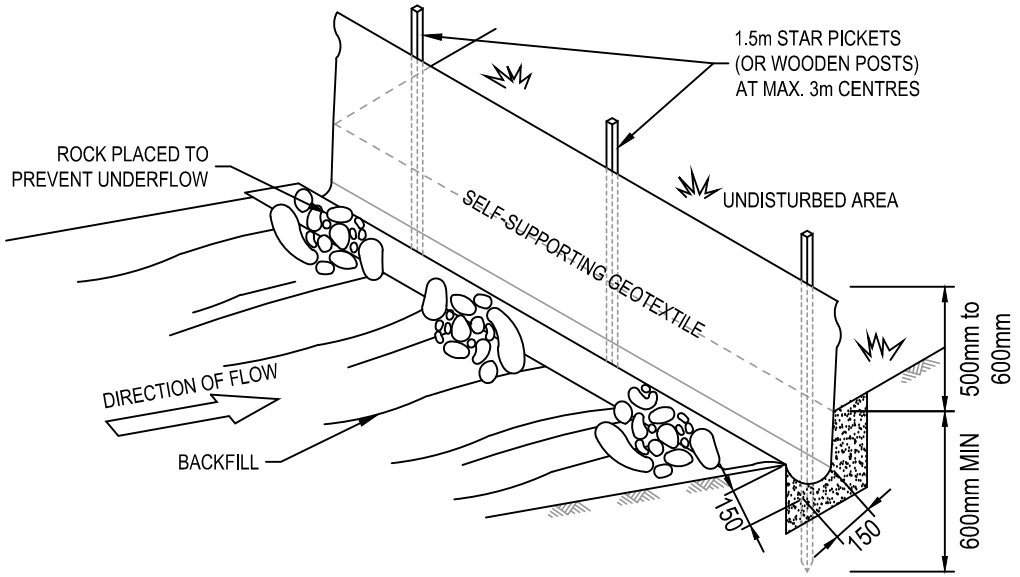
ALTERNATIVE 1

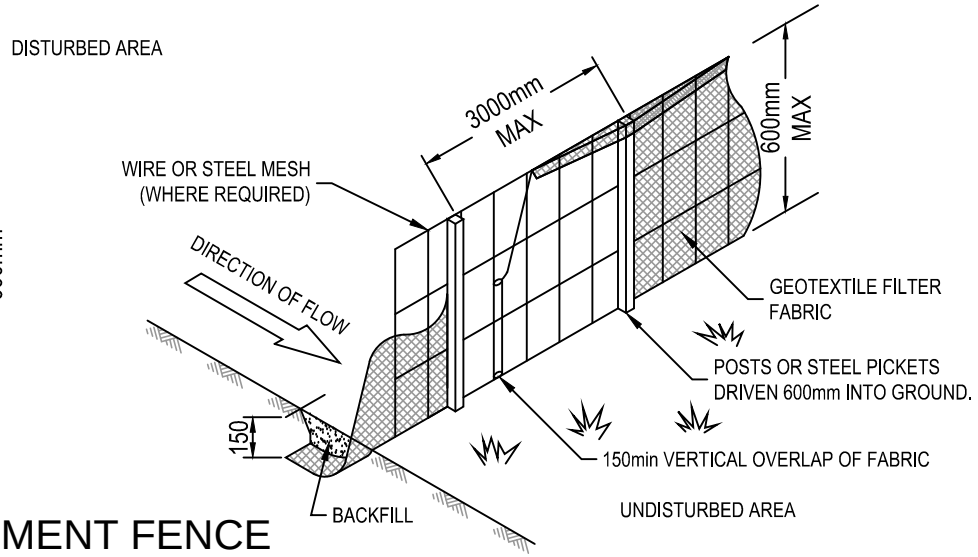
ALTERNATIVE 2

ELEVATION

NOTES:

1. CONSTRUCT SEDIMENT CONTROL FENCE AS CLOSE AS POSSIBLE TO PARALLEL THE CONTOURS OF THE SITE WITH A MAXIMUM CATCHMENT AREA OF 0.6ha PER 100m LENGTH OF FENCE.
2. DRIVE 1.5m LONG STAR PICKETS OR WOODEN POSTS A MINIMUM OF 600mm INTO GROUND AT 3m INTERVALS.
3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE FABRIC TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
7. GEOTEXTILE MATERIAL USED IS TO BE APPROPRIATE FOR SILT FENCE APPLICATIONS AND TO BE INSTALLED AS PER MANUFACTURER SPECIFICATIONS.
8. MAXIMUM SLOPE GRADIENT TO BE 1:2.
9. MAXIMUM SLOPE LENGTH TO BE 60m.
10. FIT STAR PICKETS WITH YELLOW SAFETY CAPS AFTER INSTALLATION.
11. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O).





DETAIL OF SEDIMENT FENCE

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Public Works - Project Development

DRAWN: MC	APPROVED: IA	STANDARD DRAWING: SEDIMENT FENCE AND SEDIMENT TRAP	DRAWING NO: ESC - 01
CHECKED:	DESIGN MANAGER		SCALE: NTS / SHEET: 1 OF 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B

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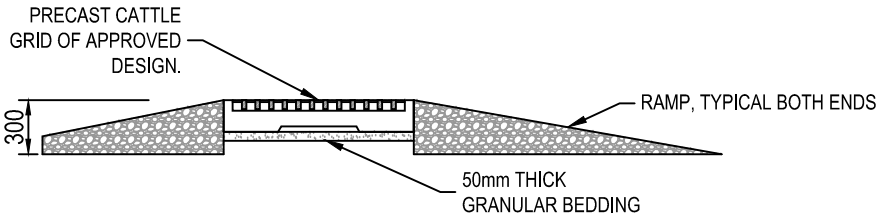

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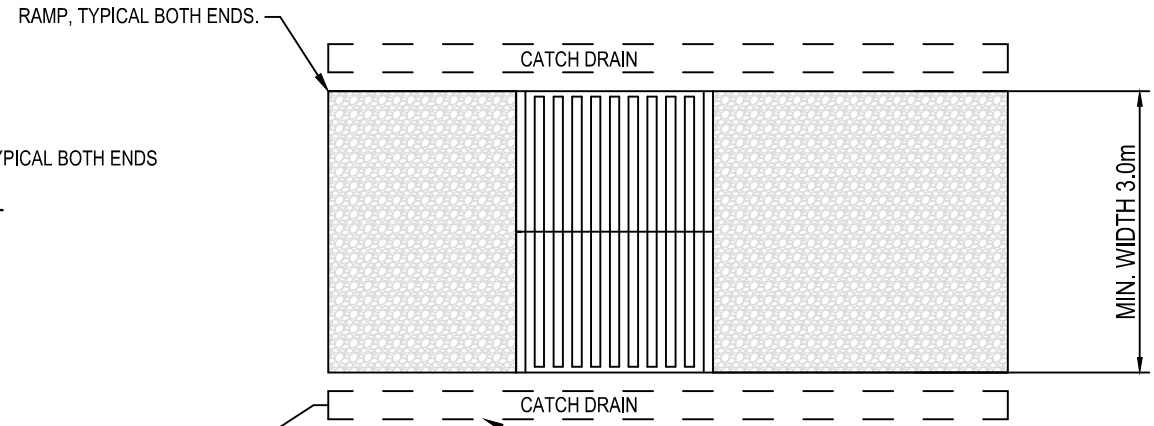
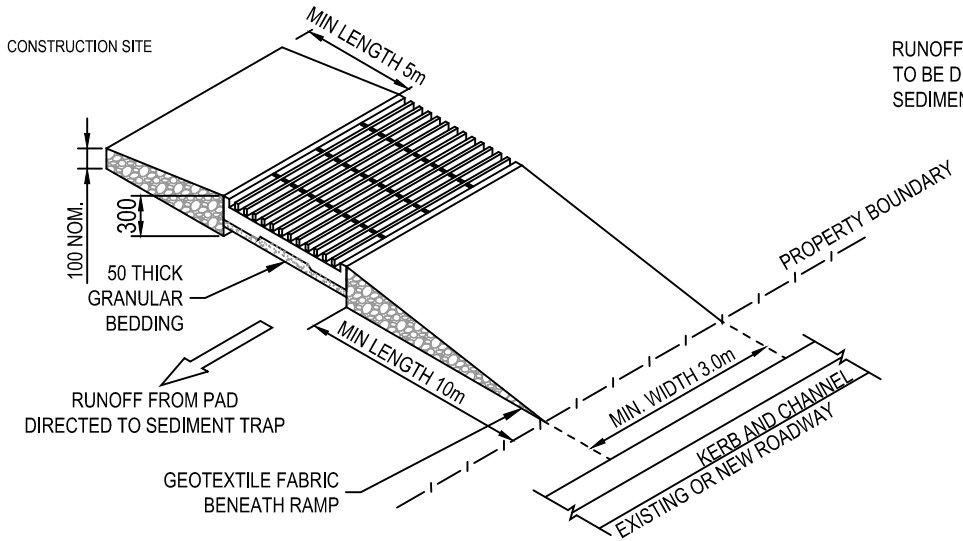


PLAN



CATTLE GRID

NOTES:

1. EXCAVATE AREA APPROX. 3.3m WIDE BY 2.2m LENGTH. THE FLOOR OF THE EXCAVATION MUST BE FLAT, WITHOUT HIGH POINTS. AN EXCAVATED DEPTH OF 100mm ACCOMMODATES A BEDDING LAYER 50mm THICK AND GRID SET DOWN OF 50mm.
2. BEDDING MATERIAL SHALL BE SAND OR OTHER SUITABLE APPROVED MATERIAL. BEDDING MATERIAL SHALL BE EVENLY RAKED OVER FLOOR OF EXCAVATION TO A DEPTH SLIGHTLY MORE THAN 50mm. ENSURE BEDDING IS LEVEL IN BOTH DIRECTIONS.
3. LOWER CATTLE GRID ONTO THE PREPARED BASE. ENSURE THAT NO PART OF THE UNIT IS SITTING ON ANY HIGH POINTS.
4. BACKFILL AND COMPACT AROUND GRID. GRADE EXCAVATED MATERIAL UP TO GRID ON EACH SIDE TO FORM A RAMP. IF DEPRESSIONS OCCUR ON THESE RAMPS WITH USE, ADD ADDITIONAL MATERIAL.
5. MAINTAIN SHAKER GRIDS IN CLEAN AND SERVICEABLE CONDITION DURING TOTAL TIME OF USAGE. WHEEL - WASH OR SPRAY UNIT MAY BE REQUIRED DURING WET WEATHER.
6. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O)

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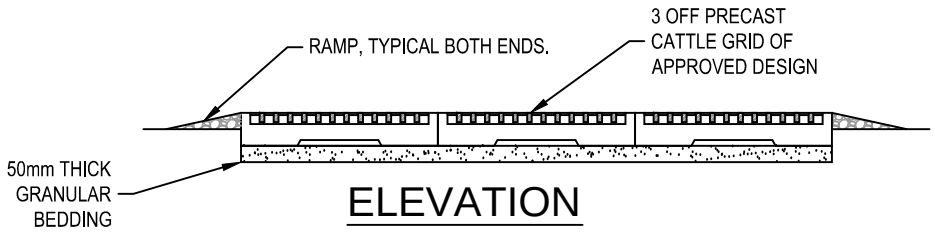
DRAWN: MC	APPROVED: IA	STANDARD DRAWING: TEMPORARY CONSTRUCTION ENTRY/EXIT CATTLE GRID	DRAWING NO: ESC-02-1
CHECKED:	DESIGN MANAGER		SCALE: NTS / SHEET: 1 OF 3
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B



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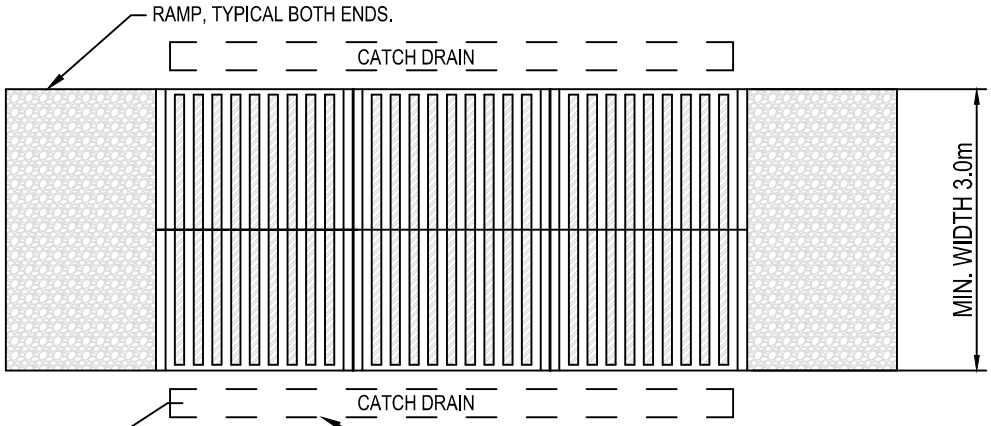

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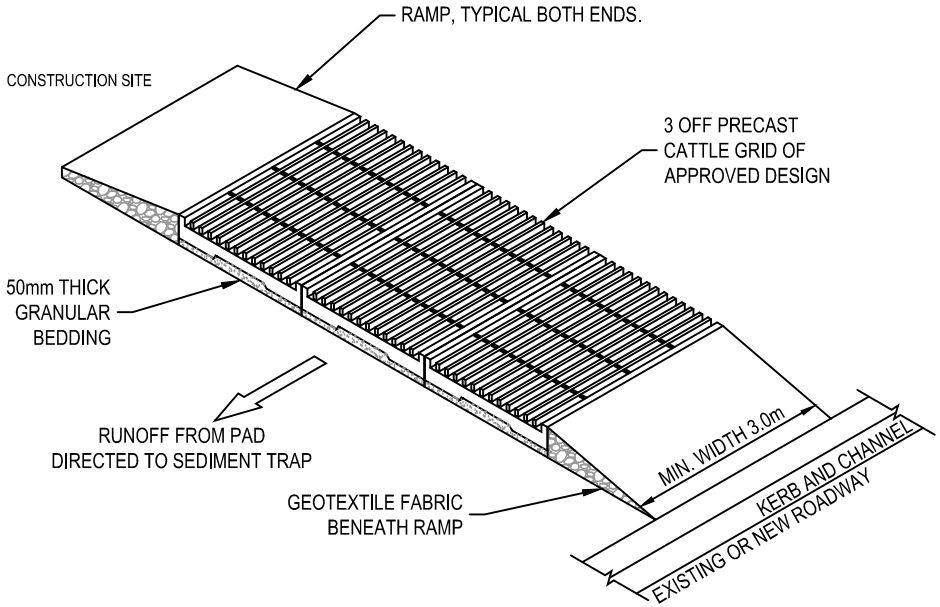

EXTENDED CATTLE GRID

NOTES:

1. EXCAVATE AREA APPROX. 3.3m WIDE BY 6.6m LENGTH. THE FLOOR OF THE EXCAVATION MUST BE FLAT, WITHOUT HIGH POINTS. AN EXCAVATED DEPTH OF 100mm ACCOMMODATES A BEDDING LAYER 50MM THICK AND GRID SET DOWN OF 50mm.
2. BEDDING MATERIAL SHALL BE SAND OR OTHER SUITABLE APPROVED MATERIAL. BEDDING MATERIAL SHALL BE EVENLY RAKED OVER FLOOR OF EXCAVATION TO A DEPTH SLIGHTLY MORE THAN 50mm. ENSURE BEDDING IS LEVEL IN BOTH DIRECTIONS.
3. LOWER CATTLE GRID ONTO THE PREPARED BASE. ENSURE THAT NO PART OF THE UNIT IS SITTING ON ANY HIGH POINTS.
4. BACKFILL AND COMPACT AROUND GRID. GRADE EXCAVATED MATERIAL UP TO GRID ON EACH SIDE TO FORM A RAMP. IF DEPRESSIONS OCCUR ON THESE RAMPS WITH USE, ADD ADDITIONAL MATERIAL.
5. MAINTAIN SHAKER GRIDS IN CLEAN AND SERVICEABLE CONDITION DURING TOTAL TIME OF USAGE. WHEEL - WASH OR SPRAY UNIT MAY BE REQUIRED DURING WET WEATHER.
6. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O)

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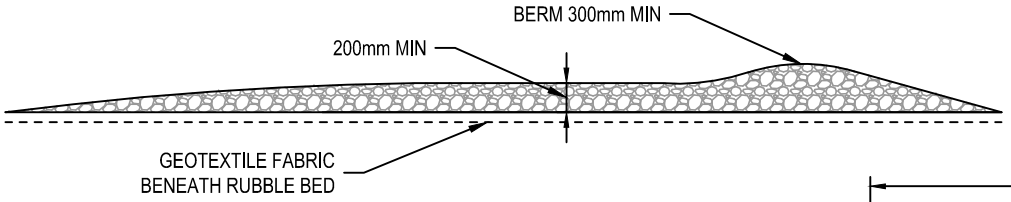
CHECKED:	DESIGN MANAGER		SCALE: NTS / SHEET: 2 OF 3
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B



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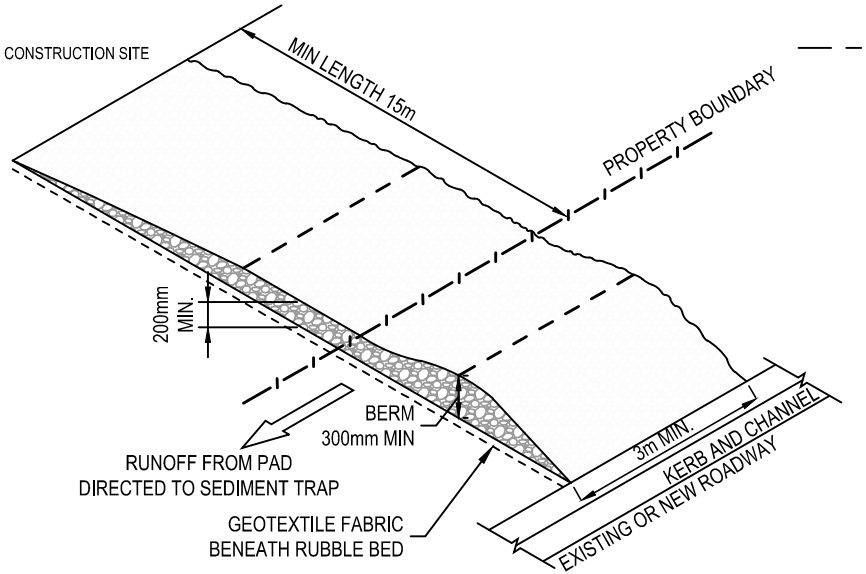

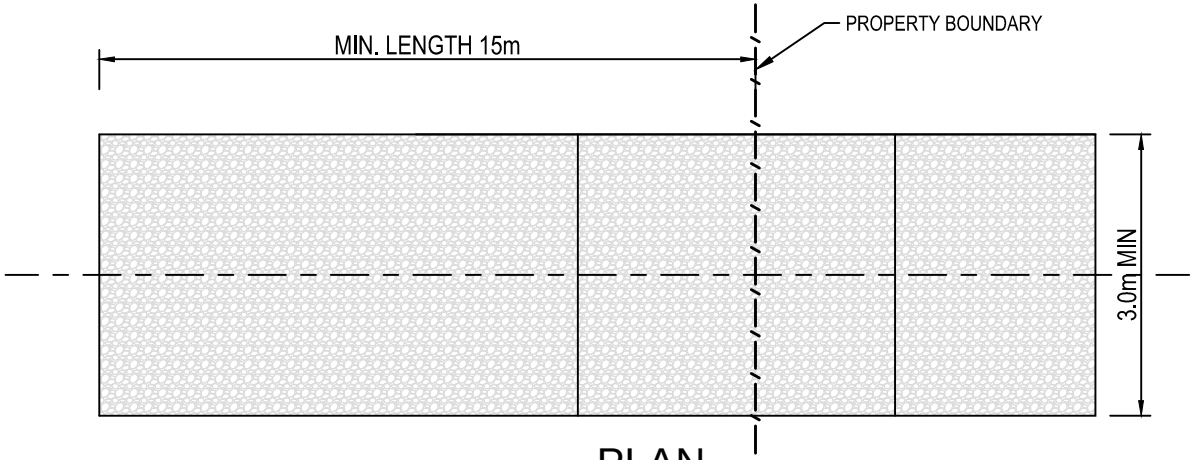

PLAN

RUBBLE PAD ALTERNATIVE

NOTES:

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING A ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15m LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3m WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABLISIED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO SEDIMENT FENCE.
6. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O)

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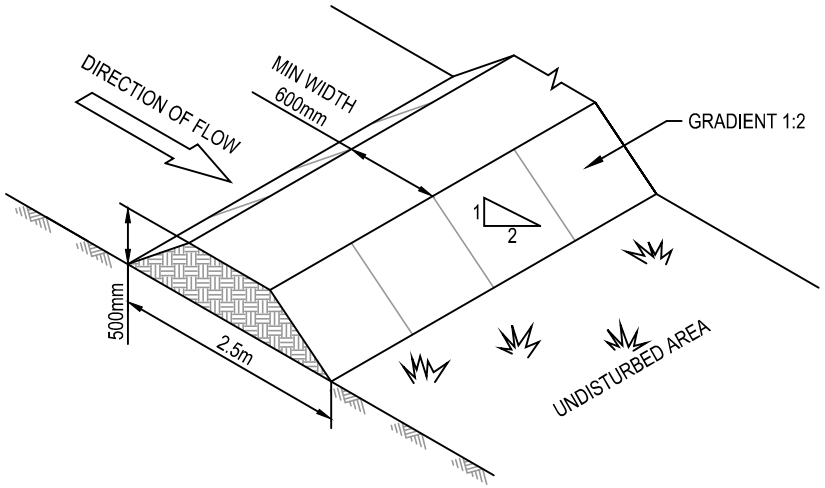
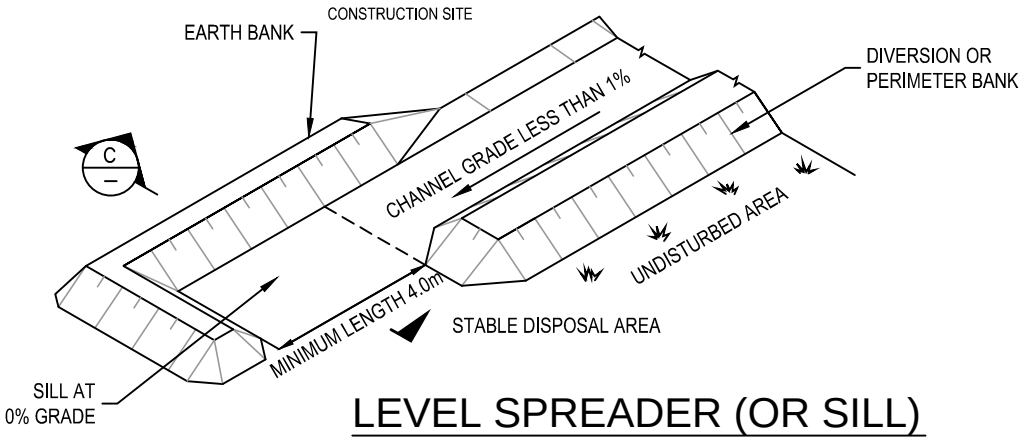
DRAWN: MC	APPROVED: IA	STANDARD DRAWING: TEMPORARY CONSTRUCTION ENTRY/EXIT RUBBLE PAD	DRAWING NO: ESC-02-3
CHECKED:	DESIGN MANAGER		SCALE: NTS / SHEET: 3 OF 3
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B

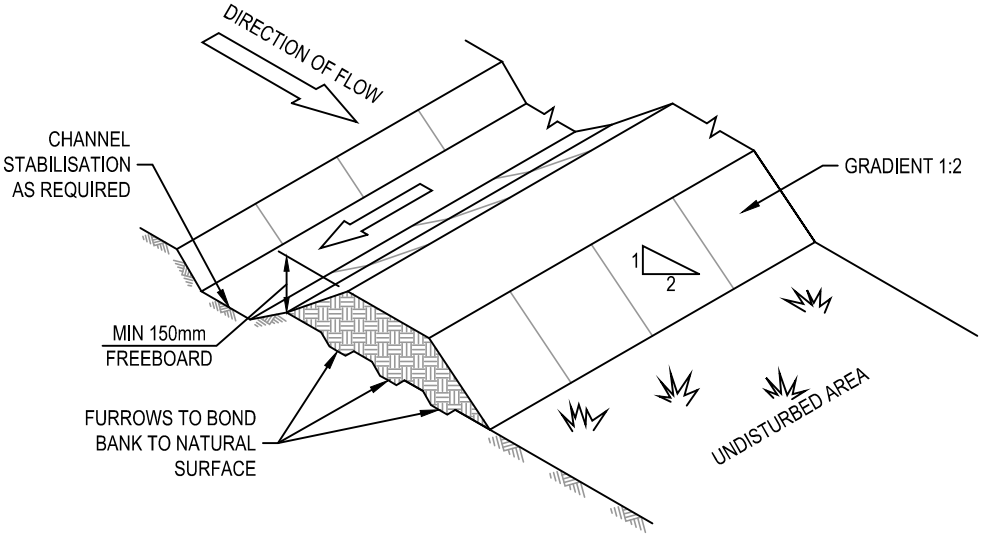


PERIMETER BANK (WITHOUT CHANNEL)

FOR 2ha CATCHMENT AREA OR LESS



LEVEL SPREADER (OR SILL)



DIVERSION BANK AND CHANNEL

FOR CATCHMENT AREA GREATER THAN 2ha

NOTES:

1. CONSTRUCT ALONG GRADIENT AS SPECIFIED.
2. AVOID REMOVAL OF TREES AND SHRUBS.
3. DRAINS TO BE OF PARABOLIC OR TRAPEZOIDAL CROSS SECTION AS OPPOSED TO V-SHAPED.
4. EARTH BANKS TO BE ADEQUATELY COMPACTED IN ORDER TO PREVENT FAILURE.
5. PERMANENT OR TEMPORARY STABILISATION OF THE EARTH BANK TO BE COMPLETED WITHIN 10 DAYS OF CONSTRUCTION.
6. ALL OUTLETS FROM DISTURBED LANDS ARE TO FEED INTO A SEDIMENT BASIN OR SIMILAR.
7. DISCHARGE RUNOFF COLLECTED FROM UNDISTURBED LANDS ONTO EITHER A STABILISED OR AN UNDISTURBED DISPOSAL SITE WITHIN THE SAME SUB-CATCHMENT AREA FROM WHICH THE WATER ORIGINATED.
8. COMPACT WITH A SUITABLE IMPLEMENT IN SITUATIONS WHERE THEY ARE REQUIRED TO FUNCTION FOR MORE THAN FIVE DAYS.
9. EARTH BANKS TO BE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.

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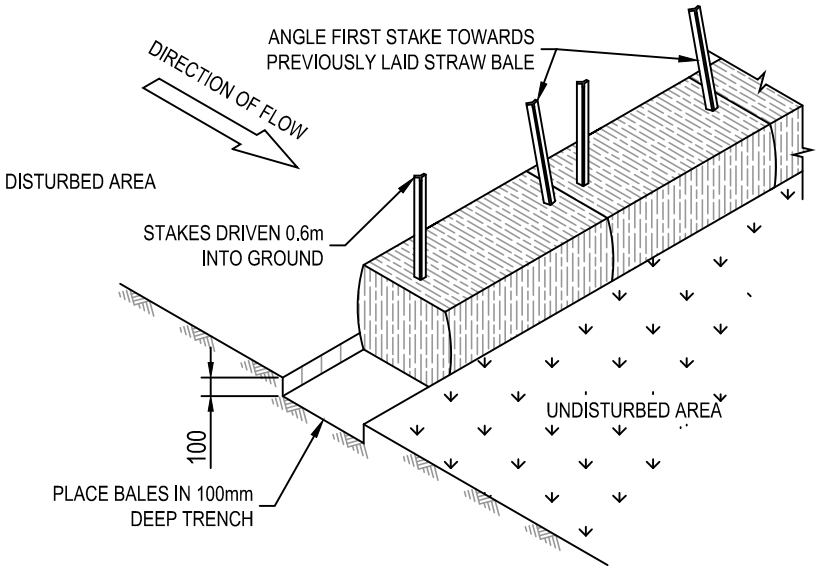
DRAWN: MC	APPROVED: IA	STANDARD DRAWING: DIVERSION BANKS AND CHANNELS	DRAWING NO: ESC-03
CHECKED:	DESIGN MANAGER		SCALE: NTS / SHEET: 1 OF 1
VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B



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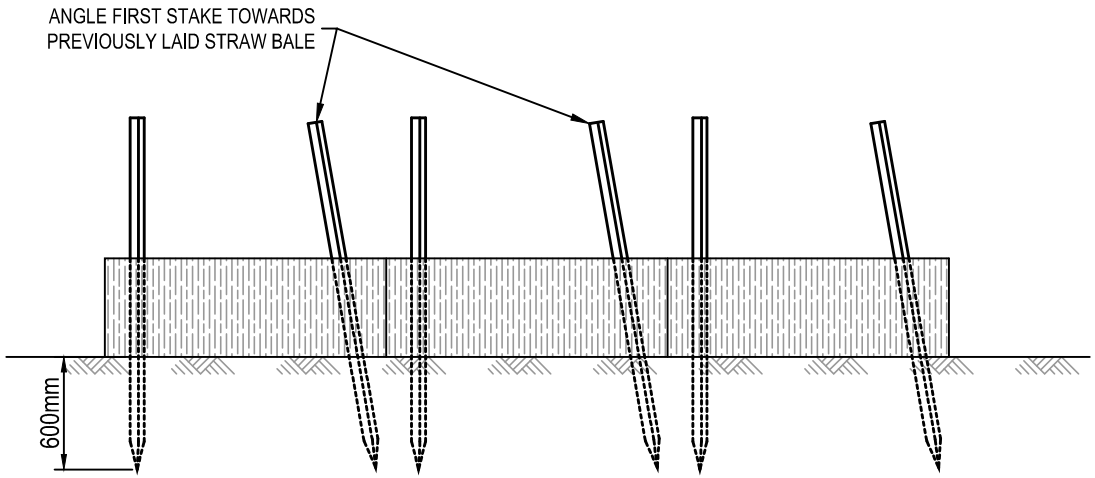
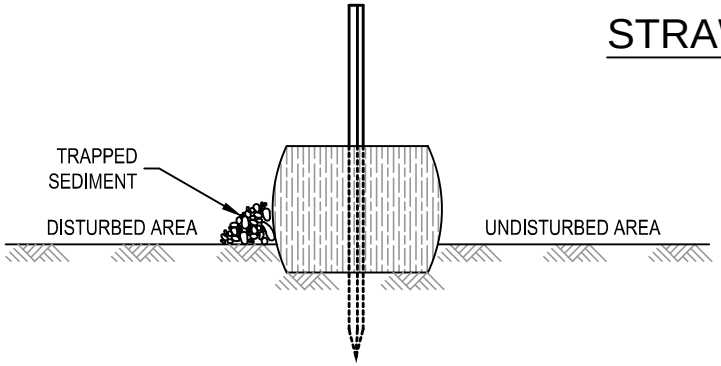


ELEVATION

STRAW BALE SEDIMENT FILTER



PROFILE

NOTES:

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJOINING BALE.
2. STAKES TO BE DRIVEN 600mm INTO GROUND.
3. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 100MM ON THE DOWN STREAM SIDE AND PLACED SO THE BINDINGS ARE HORIZONTAL.
4. BALES SHALL BE SECURELY ANCHORED IN PLACE WITH EITHER TWO STAKES OR STEEL PICKETS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER.
5. INSPECTIONS SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED. REPLACE AT LEAST EVERY 3 MONTHS.
6. FIT STAR PICKETS WITH YELLOW SAFETY CAPS AFTER INSTALLATION.
7. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O)

City of Ryde
Public Works - Project Development

DRAWN: MC	APPROVED: IA	STANDARD DRAWING: STRAW BALE SEDIMENT CONTROL	DRAWING NO: ESC-04-1
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VERIFIED: VP	...../...../.....		DATE: 20/05/2014 / REV: B

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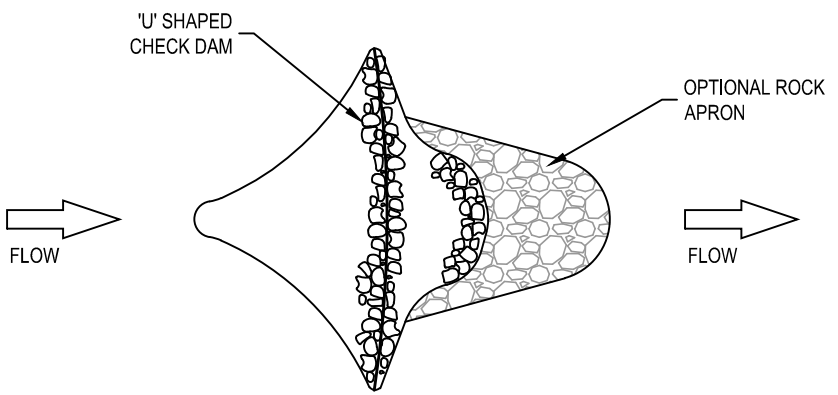
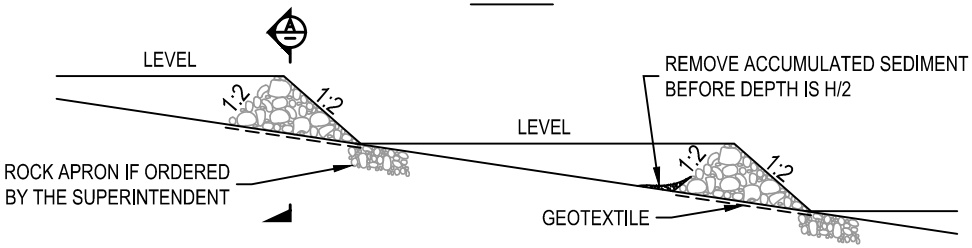


PLAN



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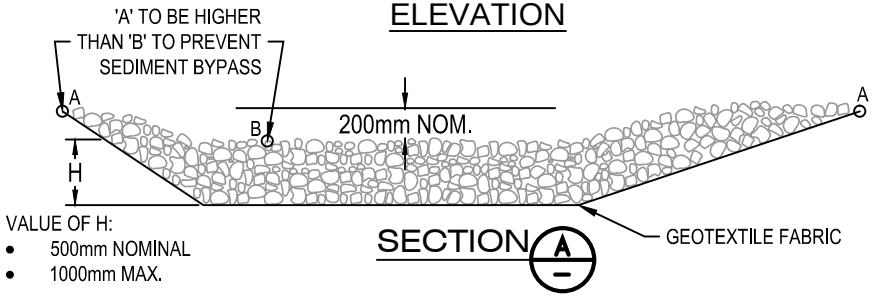

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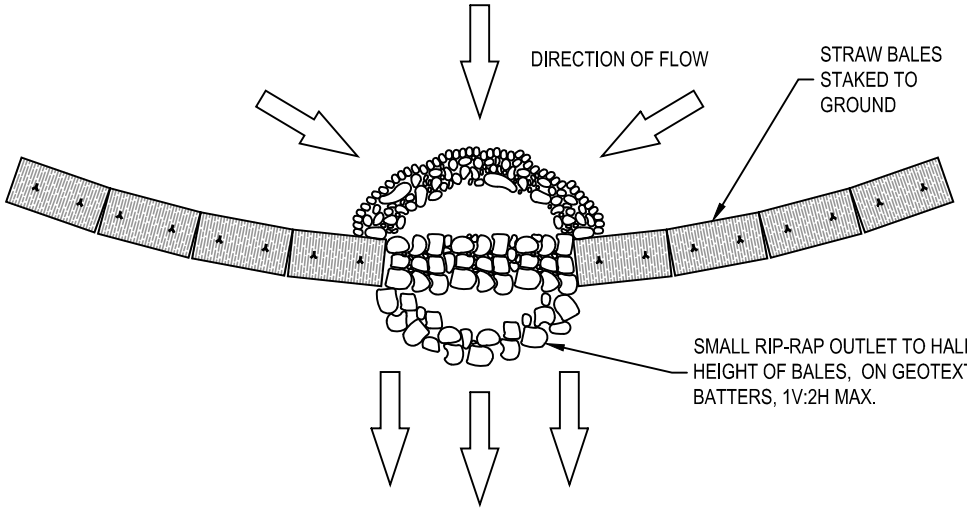

STRAW BALE AND STONE TRAP SEDIMENT CONTROL

NOTES:

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJOINING BALE.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 100MM ON THE DOWN STREAM SIDE AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE WITH EITHER TWO STAKES OR STEEL PICKETS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER.
4. INSPECTIONS SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED. REPLACE AT LEAST EVERY 3 MONTHS.
5. FIT STAR PICKETS WITH YELLOW SAFETY CAPS AFTER INSTALLATION.
6. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O)

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DRAWN: MC	APPROVED: IA	STANDARD DRAWING: STRAW BALE SEDIMENT CONTROL	DRAWING NO: ESC-04-2
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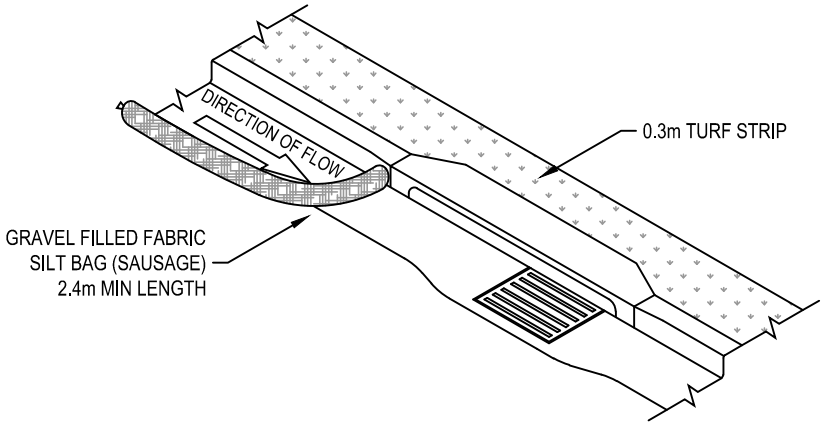
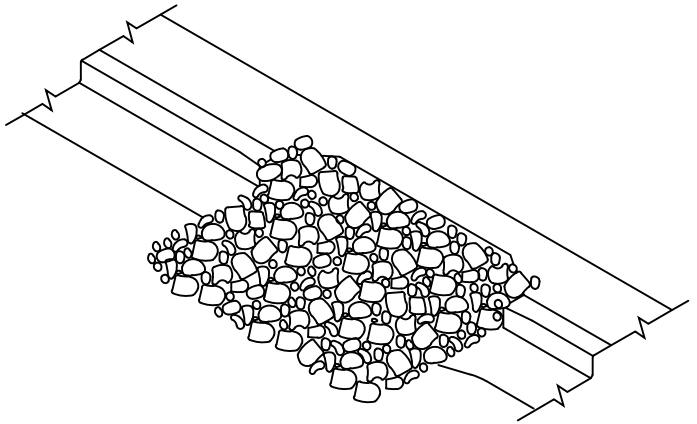


KERB INLET SEDIMENT TRAP



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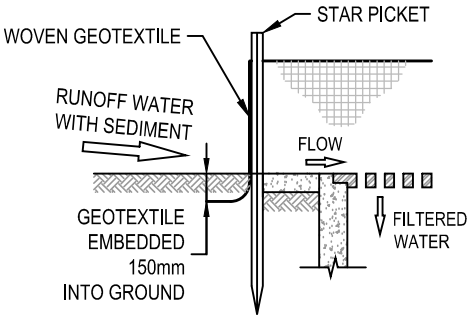

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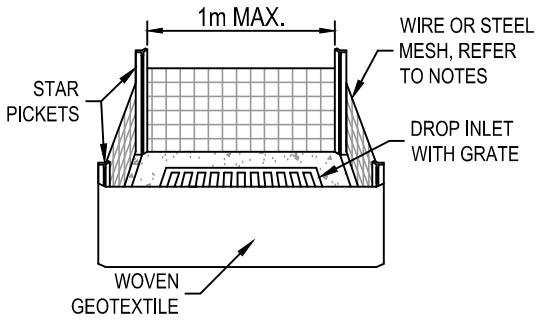
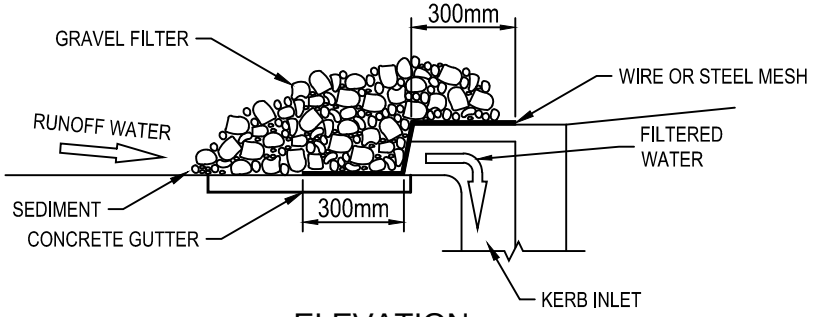


VIEW

GEOTEXTILE INLET FILTER



ELEVATION

GRAVEL KERB INLET SEDIMENT TRAP

NOTES:

1. WHERE GEOTEXTILE IS NOT SELF-SUPPORTING, PROVIDE WIRE OR STEEL MESH (14 GAUGE X 150mm OPENINGS) TIED TO POSTS AT 1m CENTRES.
2. DO NOT COVER INLETS WITH GEOTEXTILE FABRIC.
3. FIT STAR PICKETS WITH YELLOW SAFETY CAPS AFTER INSTALLATION.
4. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O)

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DRAWN: MC	APPROVED: IA	STANDARD DRAWING: KERB INLET SEDIMENT TRAPS	DRAWING NO: ESC-05
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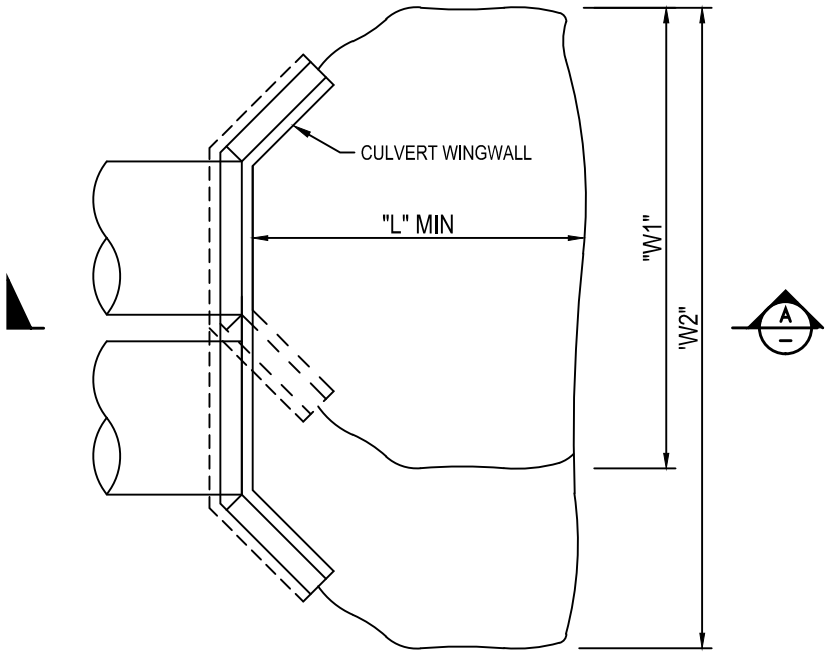

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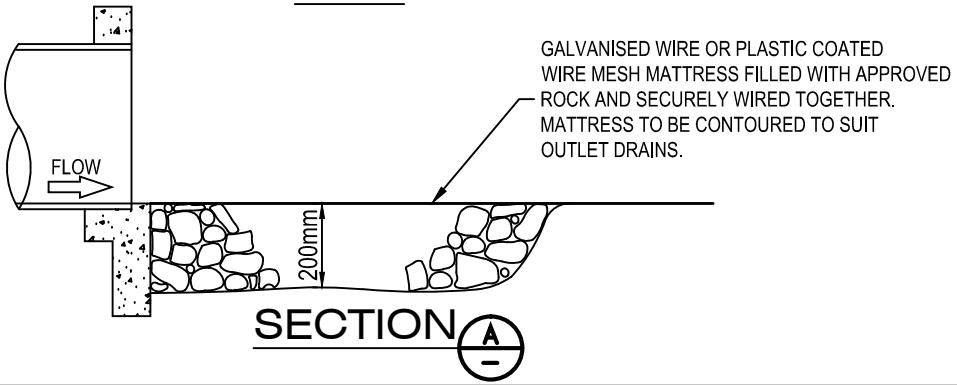

SECTION

PIPE DIAMETER	"W1"	"W2"	"L" MIN.
300	1450	2320	1200
375	1800	2750	1600
450	2100	3130	2400
525	2400	3520	3100
600	2750	4050	3600
750	3350	4810	4300
900	4000	5630	4800
1050	4600	6890	5500
1200	5200	7660	6100
1350	5650	8270	6700
1500	6100	8880	7300
1650	6700	9640	7900
1800	7300	10410	8500

NOTES:

1. "W1" MATTRESS WIDTH FOR SINGLE PIPE CULVERTS.
2. "W2" MATTRESS WIDTH FOR DOUBLE PIPE CULVERTS.
3. PROTECT FULL LENGTH OF EXCAVATED CHANNEL AS DIRECTED.
4. USE ROCK SIZES 80mm MINIMUM, 150mm MAXIUMUM.
5. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O.)

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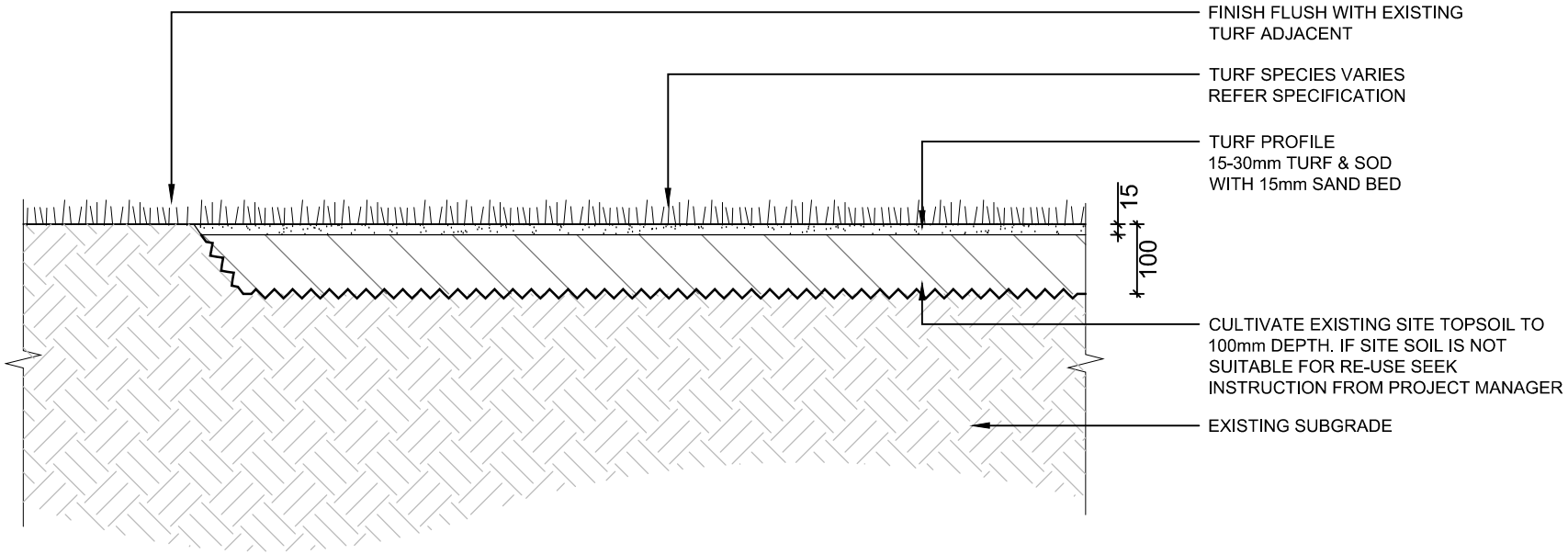
APPROVED: IA
DESIGN MANAGER
...../...../.....

STANDARD DRAWING:
ROCK MATTRESS OUTLET PROTECTION FOR PIPE CULVERTS

DRAWING NO: ESC-06
SCALE: NTS
SHEET: 1 OF 1
DATE: 20/05/2014
REV: B



PL 7.1 STANDARD TURF PROFILE - TYPICAL
SCALE 1:10

City of Ryde

PUBLIC WORKS
Project Development

ABN: 81 621 292 610

Civic Centre, 1 Devlin Street Ryde NSW 2112
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NORTH RYDE NSW 1670

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Web: www.ryde.nsw.gov.au

Tel: (02) 9952 8222
Fax: (02) 9952 8070

STANDARD DETAILS
TURF

APPROVED IA DESIGN MANAGER		DATE 20 / 05 / 14
DRAWN DS	DRAWING NUMBER	REVISION
SCALE AS SHOWN @ A4	PL7.1	B

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