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## Schedule 6 Planning scheme policies

### SC6.1 Planning scheme policy index

Table SC6.1.1 (Planning scheme policy index) lists the planning scheme policies applicable to the planning scheme area.

Table SC6.1.1 Planning scheme policy index

|  |  |
|--|--|
| <b>Planning scheme policies</b>                                    |  |
| <b>Planning scheme policies relating to Part 8 (Overlay codes)</b> |  |
| (a)  | Planning scheme policy for the Heritage and neighbourhood character overlay code |
| <b>Planning scheme policies relating to Part 9 (Other codes)</b>   |  |
| (b)  | Planning scheme policy for development works                                     |
| <b>Other planning scheme policies</b>                              |  |
| (c)  | Planning scheme policy for information that the Council may require              |
| (d)  | Planning scheme policy for environmental and vegetation offsets                  |
| (e)  | Planning scheme policy for the Urangan Harbour Master Plan                       |

## SC6.2 Planning scheme policy for the Heritage and neighbourhood character overlay code

### SC6.2.1 Purpose

The purpose of this planning scheme policy is to:-

- (a) provide advice about achieving outcomes in the Heritage and neighbourhood character overlay code; and
- (b) identify information that may be required to support a development application where affecting a local heritage place, neighbourhood character area or demolition control area.

Note—nothing in this planning scheme policy limits Council’s ability to request other relevant information in accordance with the Act.

### SC6.2.2 Application

This planning scheme policy applies to assessable development which requires assessment against the Heritage and neighbourhood character overlay code.

Note—the Heritage and neighbourhood character overlay code and this planning scheme policy do not apply to:-

- (a) indigenous cultural heritage which is protected under the *Aboriginal Cultural Heritage Act 2003* and is subject to the cultural heritage duty of care; and
- (b) State heritage places or other areas which are protected under the *Queensland Heritage Act 1992*.

### SC6.2.3 Advice about outcomes for local heritage places and development adjoining a State or local heritage place

The following is advice for achieving outcomes in the Heritage and neighbourhood character overlay code relating to local heritage places and development adjoining a State or local heritage place:-

- (a) State and local heritage places have significant cultural significance and are important to the community as places that provide direct contact with evidence from the past.
- (b) State and local heritage places meet the criteria for cultural heritage significance based on the *Queensland Heritage Act 1992* (modified to reflect regional significance in the case of local heritage places).
- (c) The Queensland Heritage Register records and provides a statement of significance for State heritage places and other State protected areas.
- (d) The Fraser Coast local heritage register records and provides a statement of significance for local heritage places. These places are identified in the heritage and neighbourhood character overlay maps in **Schedule 2 (Mapping)**.
- (e) Compliance with performance outcomes PO1 to PO8 of **Table 8.2.9.3.1 (Criteria for assessable development on a local heritage place or adjoining a State or local heritage place)** of the Heritage and neighbourhood character overlay code may be demonstrated (in part) or aided by the submission of a heritage impact assessment report and conservation management plan prepared by a competent person in accordance with **section SC6.2.4 (Guidance for preparation of a heritage impact assessment report and conservation management plan)**.

Note—for the purposes of this planning scheme policy, a competent person is an appropriately qualified and experienced consultant with appropriate and proven technical expertise in cultural heritage matters and membership of, or fulfilling the criteria for membership of, ICOMOS Australia.

- (f) The competent person preparing a heritage impact assessment report and conservation management plan should take into account and respond to the relevant statement of significance for the heritage place as described in the Fraser Coast local heritage register.

#### **SC6.2.4 Guidance for preparation of a heritage impact assessment report and conservation management plan**

##### Heritage impact assessment report

- (1) In order to ensure that development is undertaken in a manner that conserves and manages the cultural heritage significance of a local heritage place, Council may request the submission of a heritage impact assessment report that:-
- (a) is prepared by a suitably qualified person and include details of the author/s, including qualifications and the date of the report;
  - (b) contains reference to and is guided by the *ICOMOS Charter for Places of Cultural Significance (Burra Charter)* and associated guidelines;
  - (c) includes a background section that describes the contextual history of the site and current site conditions, including an assessment of any buildings, components, contents, spaces and views;
  - (d) includes a review of the statement of significance, including a hierarchy of significant elements (i.e. high-low) based on the assessment undertaken in the background section and having regard to the criteria for entry in the Fraser Coast local heritage register;
  - (e) makes reference to any existing conservation management policies for the place (e.g. conservation management plan or archaeological management plan);
  - (f) outlines the nature of the proposed development;
  - (g) identifies the nature of any potential impacts of the development on the cultural heritage significance of the Local Heritage Place, including how the design seeks to conserve and/or minimise the impact on the cultural heritage significance of the place. If a proposed impact will be detrimental to the significance of the place, information must be provided to demonstrate why the change is required, what options were considered and what measures are provided to reduce the detrimental impact that may result from the change; and
  - (h) lists any references relied upon in the compilation of the report and any technical information or correspondence from any government departments.

##### Conservation management plan

- (2) A conservation management plan addresses the adverse impacts identified by a heritage impact assessment report and implements the conservation policy contained within a cultural heritage impact assessment report.
- (3) A conservation management plan is to be prepared in accordance with the Burra Charter (Australian ICOMOS Charter of Places for Cultural Heritage Significance) and associated guidelines.
- (4) A conservation management plan is to be prepared by a competent person and include the following:-
- (a) details of the author/s, including qualifications and the date of the management plan;



- (b) a description of the heritage place, its components, history and associations;
  - (c) a description of the defined heritage values and relative significance of each component of the place;
  - (d) an assessment of the condition of the place;
  - (e) a description of the conservation obligations and future needs, requirements, opportunities and constraints to protection of the place;
  - (f) specific management policies, specifying what needs to be done to maintain the significance of the place and respond to identified issues;
  - (g) an action plan identifying priorities, resources and timing; and
  - (h) an implementation plan and monitoring plan.
- (5) A conservation management plan should be subject to ongoing review over time.

### **SC6.2.5 Advice about outcomes for neighbourhood character areas**

The following is advice for achieving outcomes in the Heritage and neighbourhood character overlay code relating to neighbourhood character areas:-

- (a) A neighbourhood character area is an area in which the relationships between the various elements, including building type, era and spacing, the amount and type of vegetation and the street space, create a significant sense of place.
- (b) **Appendix SC6.2A (Character guidelines)** provides a description of the key character elements, a preferred character statement and design guidelines for the respective neighbourhood character areas identified in the heritage and neighbourhood character areas overlay maps in **Schedule 2 (Mapping)**.
- (c) Compliance with performance outcomes PO1 to PO11 of **Table 8.2.9.3.2 (Criteria for assessable development within a neighbourhood character area)** of the Heritage and neighbourhood character overlay code may be demonstrated (in part) or aided by the submission of a report that addresses the assessment criteria of the code and takes into account and responds to the key character elements, preferred character statement and design guidelines for the neighbourhood character area as described in **Appendix SC6.2A (Character guidelines)**.
- (d) The measures required for the protection of neighbourhood character areas may differ from those adopted for heritage places, depending on the reasons for significance and should be determined as part of the development application and assessment process rather than through a conservation management plan.

### **SC6.2.6 Advice about outcomes for demolition control areas**

The following is advice for achieving outcomes in the Heritage and neighbourhood character overlay code relating to demolition control areas:-

- (a) A demolition control area is an area where it is intended to regulate the demolition, relocation or removal of Victorian, Federation or interwar dwelling houses that are not otherwise a local heritage place or located in a neighbourhood character area as identified on the Heritage and neighbourhood character overlay maps in **Schedule 2 (Mapping)**.
- (b) Where a dwelling house within a demolition control area is proposed to be demolished, relocated or removed, in the first instance, it must be determined whether the dwelling house is from the Victorian, Federation or interwar eras.

- (c) To help determine whether a dwelling house is from the Victorian, Federation or interwar eras, **Appendix SC6.2A (Character guidelines)** of this policy has a section on demolition control areas which includes a brief summary of character style indicators from these respective eras.
- (d) If it is confirmed that the dwelling house is from the Victorian, Federation or interwar eras, proposed development involving demolition, relocation or removal of the dwelling will be subject to the assessment criteria in **Table 8.2.9.3.3 (Criteria for assessable development within a demolition control area)** of the Heritage and neighbourhood character overlay code.

### **SC6.2.7 Guidelines for achieving Heritage and neighbourhood character overlay code outcomes**

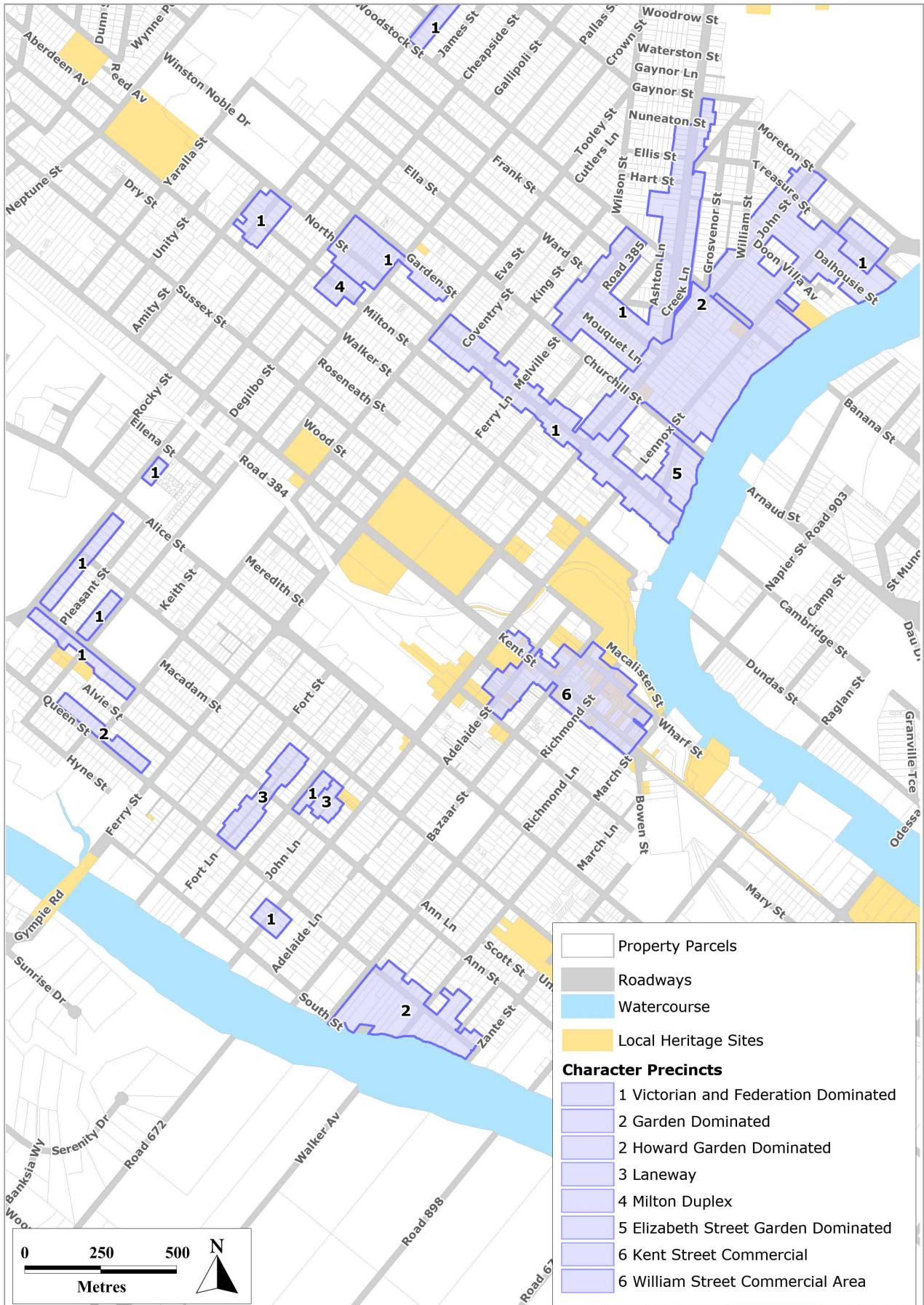
For the purposes of the performance outcomes and acceptable outcomes in the Heritage and neighbourhood character overlay code, the following are relevant guidelines:-

- (a) *The Australian ICOMOS charter for the conservation of places of cultural significance (the Burra charter)* (Australian ICOMOS, 1979);
- (b) *Guidelines to the Burra charter: Procedures for undertaking studies and reports* (Australian ICOMOS, 1998);
- (c) *Guidelines to the Burra charter: Conservation policy* (Australian ICOMOS, 1998);
- (d) *Guideline: Archival recording of heritage registered places* (Department of Environment and Resource Management, 2011); and
- (e) Character guidelines, located in **Appendix SC6.2A (Character guidelines)** of this policy.

**Appendix SC6.2A Character guidelines**

# APPENDIX CHARACTER GUIDELINES

## MARYBOROUGH CHARACTER PRECINCTS



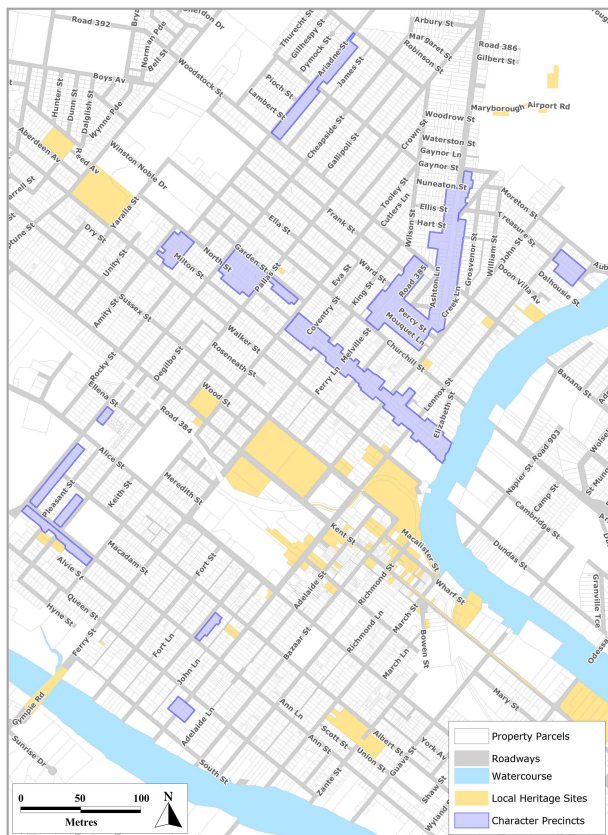
# HOWARD CHARACTER PRECINCTS





# VICTORIAN AND FEDERATION DOMINATED PRECINCTS

## PRECINCT MAP



## KEY CHARACTER ELEMENTS

| Key character elements          | Descriptions  |
|---------------------------------|---|
| <b>Architectural style</b>      | Victorian and Federation era buildings with occasional Interwar and contemporary infill   |
| <b>Building materials</b>       | Predominantly constructed of timber with steel or iron rooftops   |
| <b>Building form and layout</b> | High set buildings accessed by timber stairs from the front setback<br>Return verandahs with timber detailing<br>High stump construction with timber balustrades and sometimes timber battens to the ground floor section |
| <b>Roof style</b>               | Gabled, pyramidal or hipped roof styles with eaves, and constructed of lightweight materials (generally corrugated iron or steel)   |
| <b>Setbacks</b>                 | Generally moderate front setbacks from 4 to 6m.<br>Narrow to moderate side setbacks from 1 to 6m  |
| <b>Building height</b>          | 1 and a half storeys (typical of high-set Queenslander buildings) with some low set buildings   |

| Key character elements               | Descriptions   |
|--------------------------------------|--|
| <b>Orientation to the street</b>     | Parallel to the street   |
| <b>Car parking / vehicle storage</b> | Single crossover with informal driveways to the side of the property - unpaved                             |
| <b>Garden style</b>                  | Mix of native and exotic planting<br>Well established formal gardens with front lawn areas and garden beds |
| <b>Front boundary treatment</b>      | Low and permeable front fencing, constructed of steel and wire mesh or timber                              |

## PREFERRED CHARACTER STATEMENT

The open and spacious garden character of this precinct with views of buildings from the street will be enhanced. Buildings from the Victorian, Federation and Interwar eras will be complemented by newer development that is distinguishable from the older building stock, but respectful of their defining characteristics.

Buildings will generally not exceed two storeys in height, be oriented parallel with the street, and setback from the front boundary a distance similar to those on adjoining properties. Building front façade design will include recesses and articulation to complement the pattern of verandah and undercroft areas of traditional buildings in the area.

The use of timber or light colour finishes will maintain the lighter appearance of buildings in the streetscape. Front and side setbacks will allow space for landscaping, while low or permeable front fences will retain the openness of the streetscape.



# VICTORIAN AND FEDERATION DOMINATED PRECINCTS

## DESIGN GUIDELINES

| Character Elements   | Objective   | Design Response  | Avoid  |
|--|---|--|--|
| <b>Architectural styles</b>                                    | To encourage the retention of intact, older period buildings that contribute to the character of the area, and distinguish new development from the period buildings. | <p>Retain intact and good condition Victorian, Federation and Interwar buildings where possible.</p> <p>Distinguish new development, including additions to existing buildings, from the original building through the use of innovative and contemporary architecture.</p>  | <p>Removal or demolition of good condition and intact parts of Victorian, Federation and Interwar buildings that are visible from the street.</p> <p>Mock or historic reproduction style housing, and excessive use of reproduction or decorative detailing.</p> |
| <b>Building height and form</b>                                | To ensure that buildings and extensions respect the scale and forms of the area.  | <p>Respect the one and a half storey height and form in the street.</p> <p>Recess any building elements that exceed one and a half storeys from the front and side building facades.</p> <p>Articulate the front façades of buildings through the use of setbacks, recesses, balconies, window openings, simple timber detailing and materials.</p>  | <p>Buildings without articulated front façades.</p> <p>Buildings that exceed two storeys at the front façade.</p> <p>Visually bulky new developments and extensions.</p> <p>Front verandas enclosed in fixed, non-transparent materials.</p>                     |
| <b>Building materials and design detail</b>                    | To ensure new buildings and extensions use materials and finishes that reflect the predominant use of timber in the streetscape.                                      | <p>Use timber or other lightweight materials on exterior walls visible from the street.</p> <p>Use exterior finishes and colours that contribute to a lightness of appearance in the streetscape and emphasise design features such as balconies, recesses and window openings.</p>  | <p>Heavy masonry finishes.</p> <p>Excessive decoration and detailing.</p>  |
| <b>Roof styles</b>   | To ensure new dwellings incorporate roof styles that reflect the predominant styles of the area.  | Incorporate gabled, pyramidal or hipped roof forms, preferably at a pitch of between 20-30%, and constructed of lightweight materials (eg. corrugated steel or iron) with eaves.   | Dwellings with flat roof forms or small or no eaves.   |
| <b>Ground floor understorey areas (Queenslander dwellings)</b> | To ensure modifications to the ground level of high-set dwellings maintain the proportions and openness of the traditional styles.                                    | <p>Ensure that the height of the lower level is less than that of the upper level.</p> <p>Where additional height is required to accommodate flooding requirements, use articulation or recesses to minimise the visual prominence of the ground level.</p> <p>Recess any non-permeable walls under dwellings behind the frontage of the original structure to align with the upper floor wall.</p> <p>Provide design detailing on the lower level that reflects the style of the dwelling, including open lattice or timber batten screening, located between the stumps, to provide semi-permeable screening for non-permeable, enclosed living areas.</p> <p>Use colours and materials on all</p> | <p>New lower levels that appear disproportionate, visually compete with or dominate the original parts of the building.</p> <p>Understorey areas fully enclosed with solid walls that are not recessed behind the frontage of the original structure.</p>        |

## VICTORIAN AND FEDERATION DOMINATED PRECINCTS

|  |  |  |  |
|--|--|--|--|
|  |  | works to the ground level to complement the upper level and minimise its visual prominence.  |  |
| <b>Siting / setbacks</b>               | <p>To maintain and reinforce the predominant front boundary setback pattern in the street.</p> <p>To maintain the side boundary setback pattern and the existing spacing between buildings.</p> <p>To maintain the traditional appearance of a single building house from the streetscape when proposing more than one building on a site.</p> | <p>Buildings should be set back at a minimum, the average distance of the front setbacks of the buildings on the adjoining allotments.</p> <p>Buildings (other than car ports, garages or outbuildings) should be set back at least 1m from both side boundaries</p> <p>Car ports, garages and outbuildings may be located on one side boundary, where set back a minimum of 1 metre from the building façade.</p> <p>The front facade of building houses should be oriented parallel to the street.</p> <p>In the case of multiple building developments, the front building house should be designed to retain the siting and proportions of a typical single building house in the streetscape.</p> | <p>Buildings set further forward than the average setback of the two adjoining buildings.</p> <p>Loss of generous front and rear setbacks.</p> <p>Buildings, other than a single storey garage, car port or outbuilding, located on the boundary.</p> <p>Buildings set at an angle to the street.</p> <p>Attached buildings fronting the street.</p> |
| <b>Car Parking and Vehicle Storage</b> | To minimise the loss of front garden space and the dominance of car parking structures.  | <p>If possible, locate garages, car ports and outbuildings to the rear of the dwelling.</p> <p>Where location at the rear is impractical, locate garages, car ports and outbuildings to the side of the dwelling at least 1 metre behind the line of the front dwelling façade, or underneath.</p> <p>Use timber or slatted doors to understorey car parking or storage areas, and recess any doors behind the dwelling stumps.</p> <p>Minimise paving in front garden areas and use permeable or porous materials for driveways and car parking areas.</p> <p>Use simple flat or pitched roof forms to garages, car ports and outbuildings.</p>   | <p>Car parking structures within the front setback area.</p> <p>Solid garage doors in understorey areas.</p>   |
| <b>Garden style</b>                    | To maintain and strengthen the garden settings of buildings.   | Prepare and implement a landscape plan that includes native plants and trees, and open lawn areas in the front setback.  | Loss of established vegetation and space for planting along setbacks.  |
| <b>Front Boundary Treatment</b>        | To retain the spaciousness of the streetscape and views to buildings and gardens, and complement the building styles.  | <p>All fences forward of the building are to be low, open style (at least 30% transparent), and not more than 1.2m in height.</p> <p>Fences forward of the building are to be constructed of materials appropriate to the building style and era, including simple timber picket, and post and wire styles.</p>  | High and/or impermeable front fencing.   |









## GARDEN DOMINATED PRECINCTS

appearance of buildings in the streetscape. Provision of front and side setbacks to provide space for landscaping, and low or permeable front fences will visually contribute to the streetscape.



## GARDEN DOMINATED PRECINCTS

### DESIGN GUIDELINES

| Character Elements   | Objective   | Design Response  | Avoid  |
|--|---|--|--|
| <b>Architectural styles</b>                                    | To encourage the retention of intact, older period buildings that contribute to the character of the area, and distinguish new development from the period buildings. | <p>Retain intact and good condition Victorian, Federation and Interwar buildings where possible.</p> <p>Distinguish new development, including additions to existing buildings, from the original dwelling stock through the use of innovative and contemporary architecture.</p>  | <p>Removal or demolition of good condition and intact parts of Victorian, Federation and Interwar buildings that are visible from the street.</p> <p>Mock or historic reproduction style housing, and excessive use of reproduction or decorative detailing.</p> |
| <b>Building height and form</b>                                | To ensure that buildings and extensions respect the scale and forms of the area.  | <p>Respect the one to two storey building heights in the street.</p> <p>Recess any building elements that exceed two storeys from the front and side building facades.</p> <p>Articulate the front façades of buildings through the use of setbacks, recesses, balconies, window openings, simple timber detailing and materials.</p>  | <p>Buildings without articulated front façades.</p> <p>Buildings that exceed two storeys at the front façade.</p> <p>Visually bulky new developments and extensions.</p> <p>Front verandas enclosed in fixed, non-transparent materials.</p>                     |
| <b>Building materials and design detail</b>                    | To ensure new buildings use materials and finishes that reflect the predominant use of timber and weatherboard in the streetscape.                                    | <p>Use timber or other lightweight materials on exterior walls visible from the street.</p> <p>Use exterior finishes and colours that contribute to a lightness of appearance in the streetscape and emphasise design features such as balconies, recesses and window openings.</p>  | <p>Heavy masonry finishes.</p> <p>Excessive decoration and detailing.</p>  |
| <b>Roof styles</b>   | To ensure new dwellings incorporate roof styles that reflect the predominant styles of the area.  | Incorporate gable or hipped roof forms, preferably at a pitch of between 20-30%, and constructed of lightweight materials (eg. corrugated steel or iron) with eaves.   | Dwellings with flat roof forms or small or no eaves  |
| <b>Ground floor understorey areas (Queenslander dwellings)</b> | To ensure modifications to the ground level of high-set dwellings maintain the proportions and openness of the traditional styles.                                    | <p>Ensure that the height of the lower level is less than that of the upper level.</p> <p>Where additional height is required to accommodate flooding requirements, use articulation or recesses to minimise the visual prominence of the ground level.</p> <p>Recess any non-permeable walls under dwellings behind the frontage of the original structure to align with the upper floor wall.</p> <p>Provide design detailing on the lower level that reflects the style of the building, including open lattice or timber batten screening, located between the stumps, to provide semi-permeable screening for non-permeable, enclosed living areas.</p> <p>Use colours and materials on all</p> | <p>New lower levels that appear disproportionate, visually compete with or dominate the original parts of the building.</p> <p>Understorey areas fully enclosed with solid walls that are not recessed behind the frontage of the original structure.</p>        |

## GARDEN DOMINATED PRECINCTS

| Character Elements                     | Objective   | Design Response   | Avoid  |
|--|---|---|--|
|  |   | works to the ground level to complement the upper level and minimise its visual prominence.   |  |
| <b>Siting / setbacks</b>               | <p>To maintain and reinforce the predominant front boundary setback pattern in the street.</p> <p>To maintain the side boundary setback pattern and the existing spacing between buildings.</p> <p>To maintain the traditional appearance of a single house from the streetscape when proposing more than one building on a site.</p> | <p>Buildings should be set back at a minimum, the average distance of the front setbacks of the buildings on the adjoining allotments.</p> <p>Buildings should be set back at least 2m from both side boundaries.</p> <p>The front facade of buildings should be oriented parallel to the street.</p> <p>In the case of multiple building developments, the front building house should be designed to retain the siting and proportions of a typical single dwelling in the streetscape.</p>   | <p>Buildings set further forward than the average setback of the two adjoining buildings.</p> <p>Loss of generous front and rear setbacks.</p> <p>Buildings located on the side boundary.</p> <p>Buildings set at an angle to the street.</p> <p>Attached buildings fronting the street.</p> |
| <b>Car Parking and Vehicle Storage</b> | To minimise the loss of front garden space and the dominance of car parking structures.   | <p>If possible, locate garages, car ports and outbuildings to the rear of the dwelling.</p> <p>Where location at the rear is impractical, locate garages, car ports and outbuildings to the side of the dwelling at least 1 metre behind the line of the front dwelling façade, or underneath.</p> <p>Use timber or slatted doors to understorey car parking or storage areas, and recess any doors behind the dwelling stumps.</p> <p>Minimise paving in front garden areas and use permeable or porous materials for driveways, and car parking areas.</p> <p>Use simple flat or pitched roof forms to garages, car ports and outbuildings.</p> | <p>Car parking structures within the front setback area.</p> <p>Solid garage doors in understorey areas.</p>   |
| <b>Garden style</b>                    | To maintain and strengthen the garden settings of buildings.  | <p>Retain existing substantial trees and shrubs.</p> <p>Prepare and implement a landscape plan that includes substantial native plants and trees, and open lawn areas in the front setback.</p>   | Loss of established vegetation and space for planting along setbacks   |
| <b>Front Boundary Treatment</b>        | To retain the spaciousness of the streetscape and views to buildings and gardens, and complement the building styles.   | <p>All fences forward of the building are to be low, open style (at least 30% transparent), and not more than 1.2m in height.</p> <p>Fences forward of the building are to be constructed of materials appropriate to the building style and era, including simple timber picket, and post and wire styles.</p>   | High front fencing   |



# LANEWAY PRECINCTS

## PRECINCT MAP



## KEY CHARACTER ELEMENTS

| Key character elements          | Descriptions   |
|---------------------------------|--|
| <b>Architectural style</b>      | Victorian and Federation era timber buildings with Interwar and Post-war infill  |
| <b>Building materials</b>       | Predominantly constructed of timber or weatherboard, with steel or iron roofs  |
| <b>Building form and layout</b> | <p>Mix of low set timber cottages, bungalows and high set timber buildings</p> <p>Simple built form, with a mix of symmetrical or asymmetrical plan layouts (projecting front room with porch)</p> <p>Prominent return verandahs or porch entranceways with timber detailing in bracket posts</p> <p>High set buildings comprise front access via timber and steel stairs, with timber stump construction, balustrades and screens to the ground floor section</p> |
| <b>Roof style</b>               | Gabled, or hipped roof styles with eaves, and constructed of steel or iron   |
| <b>Setbacks</b>                 | <p>Small to moderate front setbacks from 1 to 6m</p> <p>Narrow to moderate side setbacks, from 0.5 to 5m</p>   |
| <b>Building height</b>          | One to two storey buildings, with some high set buildings at 1 and a   |

| Key character elements               | Descriptions   |
|--------------------------------------|--|
|                                      | half storeys   |
| <b>Orientation to the street</b>     | Parallel to the street   |
| <b>Car parking / vehicle storage</b> | <p>Non-existent or single crossovers with informal driveways.</p> <p>Vehicles stored in garages at the rear of the property, or in ground floor area underneath building</p> |
| <b>Garden style</b>                  | <p>Mix of native and exotic planting</p> <p>Well established garden settings with front lawn areas and mature trees</p>  |
| <b>Front boundary treatment</b>      | Non-existent or low and transparent front fencing, constructed of steel and wire mesh or timber  |

## PREFERRED CHARACTER STATEMENT

The preferred character of this precinct is established by the compact nature and traditional built form that is clearly visible from the street within garden settings. New development will reinforce the small front and side setbacks to enhance the existing rhythm of spacing along the streetscape. Buildings will be constructed of timber or weatherboard, with pitched roof styles, eaves and recesses in the form and layout to complement those of the existing Victorian, Federation and Interwar buildings.



## LANEWAY PRECINCTS

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## LANEWAY PRECINCTS

### DESIGN GUIDELINES

| Character Elements                            | Objective   | Design Response   | Avoid  |
|---|---|---|--|
| <b>Architectural styles</b>                   | To encourage the retention of intact, older period buildings that contribute to the character of the area, and distinguish new development from the period buildings.   | <p>Retain intact and good condition Victorian, Federation and Interwar buildings where possible.</p> <p>Distinguish new development, including additions to existing buildings, from the original building stock through the use of innovative and contemporary architecture.</p>   | <p>Removal or demolition of good condition and intact parts of Victorian, Federation and Interwar buildings that are visible from the street.</p> <p>Mock or historic reproduction style housing, and excessive use of reproduction or decorative detailing.</p> |
| <b>Building height and form</b>               | To ensure that buildings and extensions respect the scale and forms of the area.  | <p>Respect the one-two storey building heights in the street.</p> <p>Recess any new building elements above the ground floor from the front and side building facades.</p> <p>Articulate the front façades of buildings through the use of setbacks, recesses, balconies, window openings, simple timber detailing and materials.</p> | <p>Buildings without articulated front façades.</p> <p>Buildings that exceed two storeys.</p> <p>Visually bulky new developments and extensions.</p>   |
| <b>Building materials, design and details</b> | To ensure new buildings use materials and finishes that reflect the predominant use of weatherboard in the streetscape.   | <p>Utilise timber or other lightweight materials on exterior walls visible from the street..</p> <p>Use exterior finishes and colours that contribute to a lightness of appearance in the streetscape and emphasise design features such as balconies, recesses and window openings.</p>  | <p>Heavy masonry finishes.</p> <p>Excessive decoration and detailing.</p>  |
| <b>Roof styles</b>                            | To ensure new dwellings incorporate roof styles that reflect the predominant styles of the area.  | Ensure new dwellings provide a pitched roof style, constructed of lightweight materials (eg. corrugated steel or iron) with eaves.  | Dwellings with flat roof forms or small or no eaves  |
| <b>Siting / setbacks</b>                      | <p>To maintain and reinforce the predominant front boundary setback pattern in the street.</p> <p>To maintain the side boundary setback pattern and the existing spacing between buildings.</p> <p>To maintain the traditional appearance of a single house from the streetscape when proposing more than one building on a site.</p> | <p>Buildings should be set back at a minimum, the average distance of the front setbacks on the adjoining allotments.</p> <p>Buildings should be set back at least 1m from one side boundary.</p> <p>The front facade of buildings should be oriented parallel to the street.</p>   | <p>Buildings set further forward than the average setback of the two adjoining buildings.</p> <p>Loss of front setback area.</p> <p>Boundary to boundary development.</p> <p>Buildings set at an angle to the street.</p>  |
| <b>Car Parking and Vehicle Storage</b>        | To minimise the loss of front garden space and the dominance of car parking structures.   | <p>If possible, locate garages, car ports and outbuildings to the rear of the dwelling.</p> <p>Where location at the rear is impractical, locate garages, car ports and outbuildings to the side of the dwelling at least 1 metre behind the line of the front dwelling façade, or underneath.</p>                                    | Car parking structures within the front setback area   |

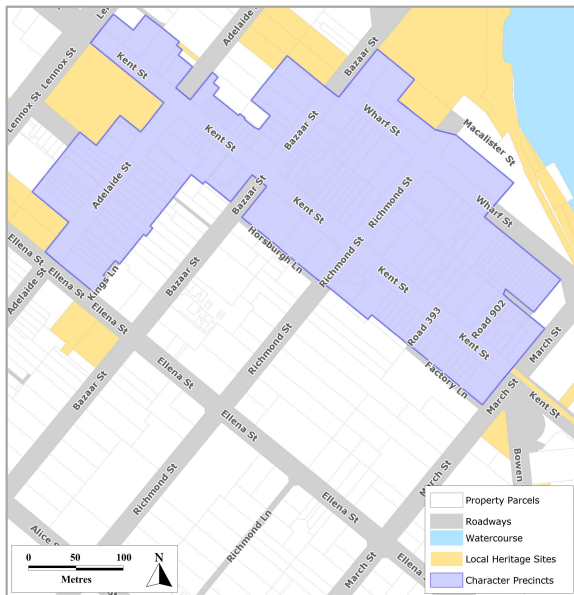


## LANEWAY PRECINCTS

| Character Elements              | Objective   | Design Response   | Avoid  |
|---------------------------------|---|---|--|
|                                 |   | <p>Use timber or slatted garage doors.</p> <p>Minimise paving in front garden areas and use permeable or porous materials for driveways, and car parking areas.</p> <p>Use simple flat or pitched roof forms to garages, car ports and outbuildings.</p>  |  |
| <b>Garden style</b>             | To maintain and strengthen the garden settings of buildings.  | Prepare and implement a landscape plan that includes native plants and trees, and open lawn areas in the front setback.   | Loss of established vegetation and space for planting along setbacks |
| <b>Front Boundary Treatment</b> | To retain the spaciousness of the streetscape and views to buildings and gardens, and complement the building styles. | <p>All fences forward of the building are to be low, open style (at least 30% transparent), and not more than 1.2m in height.</p> <p>Fences forward of the building are to be constructed of materials appropriate to the building style and era, including simple timber picket, and post and wire styles.</p> | High front fencing   |

# KENT STREET COMMERCIAL PRECINCT

## PRECINCT MAP



## KEY CHARACTER ELEMENTS

| Key character elements               | Descriptions  |
|--------------------------------------|---|
| <b>Architectural style</b>           | Victorian and Federation buildings within streetscape comprising a number of heritage protected buildings, with mixed infill                            |
| <b>Business signage</b>              | Modest and complements the design and architectural features of the building  |
| <b>Building materials</b>            | Rendered brick, masonry or concrete cladding  |
| <b>Building form and layout</b>      | Symmetrical building forms with parapet and verandahs   |
| <b>Roof style</b>                    | Pitched or skillion rooftops concealed behind parapets  |
| <b>Setbacks</b>                      | Zero front and side setbacks  |
| <b>Building height</b>               | Predominantly two storeys with parapet, and some three storey infill (approximately 9 to 11m)   |
| <b>Orientation to the street</b>     | Parallel to the street  |
| <b>Car parking / vehicle storage</b> | Few visible car parking spaces, crossovers or vehicle entrances from the street   |
| <b>Front boundary treatment</b>      | Detailed façades with predominantly transparent frontages on ground levels and upper level windows<br><br>Verandahs or awnings projected over footpaths |

## PREFERRED CHARACTER STATEMENT

This precinct is the commercial centre of Maryborough, and is defined by the significant Victorian and Federation buildings located throughout the streets, many of which have identified heritage significance.

New developments will contribute to the character of this area by respecting the predominantly two to three storey parapet heights at the front boundary, and recessing higher development. Ground level frontages will contain transparent windows and doorways which are sometimes recessed. Upper levels will also contain windows to provide articulation that reflects the older buildings, and provides opportunity for passive surveillance of the street.

Buildings are constructed to the front and side boundaries to emphasise the pattern of the built form and maintain pedestrian interest along the streetscape. Wide footpaths with minimal vehicle crossovers, and continuous weather protection through shop-front awnings or verandahs, further enhance the pedestrian-friendly nature of this precinct. Signage will be placed and designed so as not to dominate the façade or streetscape.



## KENT STREET COMMERCIAL PRECINCT

| Character Elements                              | Objective   | Design Response   | Avoid  |
|---|---|---|--|
| <b>Architectural styles</b>                     | To encourage the retention of intact, older period buildings that contribute to the character of the area, and distinguish new development from the period buildings. | <p>Retain intact and good condition Victorian, Federation and Interwar buildings where possible.</p> <p>Distinguish new development, including additions to existing buildings, from the original building stock through the use of innovative and contemporary architecture.</p>   | <p>Removal or demolition of good condition and intact parts of Victorian, Federation and Interwar buildings that are visible from the street.</p> <p>Mock or historic reproduction style buildings, and excessive use of reproduction or decorative detailing.</p> |
| <b>Development adjoining heritage buildings</b> | To ensure new buildings adjoining heritage buildings do not dominate or detract from the heritage qualities of the adjoining heritage building.                       | <p>New buildings should not exceed the height of the adjoining heritage building at the front boundary, and higher building elements should be substantially recessed from the front boundary.</p> <p>New buildings should not be set closer to the front boundary than the average of the setback of the adjoining heritage building and the adjoining building on the other side boundary.</p> <p>New buildings should utilise materials and finishes that complement those of the adjoining heritage building.</p> | New buildings that dominate or detract from the key heritage values of the adjoining heritage building.  |
| <b>Building height and form</b>                 | To ensure that new buildings and extensions respect the prevailing scale and form of the streetscape.   | <p>Respect the predominant two to three storey height and form in the street.</p> <p>Ensure buildings do not exceed two storeys along the front boundary by recessing upper levels (9m or above) behind a parapet.</p>  | <p>Buildings that exceed three storeys (contemporary height) at the front boundary.</p> <p>Visually bulky new developments and extensions.</p>   |
| <b>Façade treatment</b>                         | To ensure new buildings positively contribute to the pedestrian environment of the street.  | <p>Articulate the front façades of buildings through the use of verandahs/awnings, balconies and window openings at upper levels, and recessed entranceways.</p> <p>Provide at least 80 percent of the building façade at ground level as an entry and/or windows with clear glazing.</p>   | <p>Buildings without articulated walls or façades.</p> <p>Buildings with non-transparent frontages to the street, roller doors or solid shutters.</p> <p>Buildings without awnings or weather protection.</p>  |
| <b>Building materials and design detail</b>     | To ensure new buildings complement the predominant use of masonry materials in the street.  | <p>Encourage the use of rendered brick, masonry or concrete cladding to complement the predominant building materials.</p> <p>Use finishes and colours that contribute to the streetscape and emphasise design details.</p>   | Excessive decoration and detailing.  |
| <b>Roof styles</b>                              | To ensure new developments complement the predominant roof styles of the street.  | Ensure new developments provide a pitched or skillion roof with a parapet at the front façade.  | Flat roof forms with no parapets.  |
| <b>Siting / setbacks</b>                        | To maintain and reinforce the predominant front boundary setback pattern in the street.   | <p>Buildings should be constructed up to the front and side boundaries, with no setbacks where possible.</p> <p>Buildings should be oriented parallel to the street.</p>  | <p>Buildings set back from the front and side boundaries.</p> <p>Loss of a defined built form edge along the front boundaries of the street.</p>   |

## KENT STREET COMMERCIAL PRECINCT

| Character Elements                     | Objective   | Design Response   | Avoid   |
|--|---|---|---|
|  |   |   | Buildings set at an angle to the street.  |
| <b>Car Parking and Vehicle Storage</b> | <p>To ensure car parking structures do not dominate the front façade of the building.</p> <p>To minimise the interruptions to pedestrian thoroughfares by vehicle crossovers.</p> | <p>Locate car parking areas behind the building or underground, where possible.</p> <p>Design at or above ground car parking to be concealed by retail or active uses along building façades.</p> <p>Avoid vehicular crossovers along the street frontages.</p> | <p>Dominant car parking areas within the building frontage.</p> <p>Crossovers and driveways interrupting pedestrian thoroughfares.</p>  |
| <b>Signage</b>                         | To ensure that the location and design of signage does not dominate the façade of the building or detract from existing architectural features.                                   | Locate signage under the verandah/awning or on the verandah fascia for business identification purposes.  | <p>Visually dominant or cluttered signage.</p> <p>Third party signage, signage above the verandah and billboards, and any signage that extends beyond the building parapet.</p> |

## WILLIAM STREET COMMERCIAL AREA (HOWARD)

### PRECINCT MAP



### KEY CHARACTER ELEMENTS

| Key character elements               | Descriptions  |
|--------------------------------------|---|
| <b>Architectural style</b>           | Victorian and Federation buildings with mixed infill  |
| <b>Business signage</b>              | Modest and complements the design and architectural features of the building                                      |
| <b>Building materials</b>            | Timber with steel or iron rooftops  |
| <b>Building form and layout</b>      | Symmetrical building forms with parapet and verandahs<br>Articulated façades with transparent windows or doorways |
| <b>Roof style</b>                    | Hipped or gabled rooftops, some concealed behind parapets   |
| <b>Setbacks</b>                      | Zero front setbacks with occasional narrow side setbacks  |
| <b>Building height</b>               | 1 to 2 storeys (up to 9m)   |
| <b>Orientation to the street</b>     | Parallel to the street  |
| <b>Car parking / vehicle storage</b> | No visible car parking, crossovers or vehicle entrances from the street   |
| <b>Front boundary treatment</b>      | Verandahs or awnings projected over footpaths   |

### PREFERRED CHARACTER STATEMENT

This precinct contains the commercial area in Howard, and is defined by the timber Victorian and Federation buildings located throughout the area.

New developments will contribute to the heritage character of this area by complementing the predominant one to two storey building heights, the use of timber and be articulated through the use of transparent windows and doorways, and verandahs or awnings. Signage will be placed and designed so as not to dominate the façade or streetscape.

Buildings are constructed up to the front boundary and are sometimes separated by small side boundary setbacks. Consistent footpaths with minimal vehicle crossovers, and weather protection will further enhance the pedestrian-friendly nature of this precinct.





## WILLIAM STREET COMMERCIAL AREA (HOWARD)

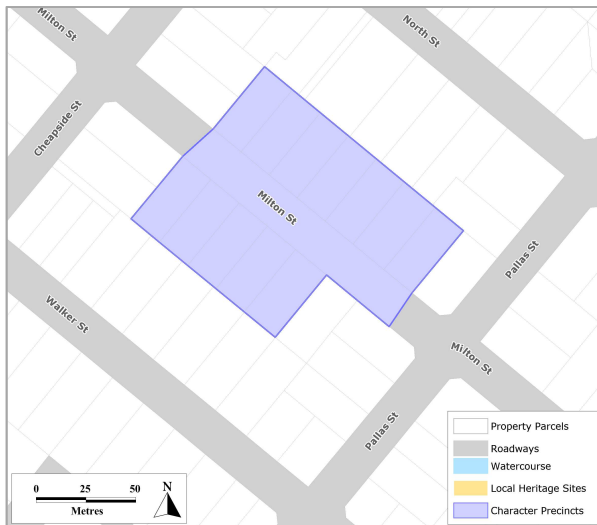
| Character Elements                              | Objective  | Design Response   | Avoid  |
|---|--|---|--|
| <b>Architectural styles</b>                     | To encourage the retention of intact, older period buildings that contribute to the character of the area, and distinguish new development from the period buildings.. | <p>Retain intact and good condition Victorian and Federation buildings where possible.</p> <p>Distinguish new development, including additions to existing buildings, from the original building stock through the use of innovative and contemporary architecture.</p>   | <p>Removal or demolition of good condition and intact parts of Victorian, Federation and Interwar buildings that are visible from the street.</p> <p>Mock or historic reproduction style housing, and excessive use of reproduction or decorative detailing.</p> |
| <b>Development adjoining heritage buildings</b> | To ensure new buildings adjoining heritage buildings do not dominate or detract from the heritage qualities of the adjoining heritage building.                        | <p>New buildings should not exceed the height of the heritage building at the front boundary, and higher building elements should be substantially recessed from the front boundary.</p> <p>New buildings should not be set closer to the front boundary than the average of the setback of the heritage building and the adjoining building on the other side boundary.</p> <p>New buildings should utilise materials and finishes that complement those of the adjoining heritage building.</p> | New buildings that dominate or detract from the key heritage values of the adjoining heritage building.  |
| <b>Building height and form</b>                 | To ensure that new buildings and extensions respect the prevailing scale and form of the streetscape.  | <p>Respect the predominant one to two storey height and form in the street.</p> <p>Ensure buildings do not exceed two storeys along the front boundary by recessing upper levels (7m or above) behind a parapet.</p>  | <p>Buildings that exceed three storeys overall, and two storeys at the front boundary.</p> <p>Visually bulky new developments and extensions.</p>  |
| <b>Façade treatment</b>                         | To ensure new buildings positively contribute to the pedestrian environment of the street.   | <p>Articulate the front façades of buildings through the use of verandahs/awnings, balconies and window openings at upper levels, and recessed entranceways.</p> <p>Provide at least 80 percent of the building façade at ground level to be maintained as an entry or window with clear glazing.</p>   | <p>Buildings without articulated walls or façades.</p> <p>Buildings with non-transparent frontages to the street , roller doors or solid shutters</p> <p>Buildings without awnings or weather protection.</p>  |
| <b>Building materials and design details</b>    | To ensure new buildings complement the predominant use of materials in the street.   | <p>Encourage the use of timber materials and weatherboard to complement the lighter building materials.</p> <p>Use finishes and colours that contribute to the streetscape and emphasises design details.</p>   | Excessive decoration and historic reproduction styles.   |
| <b>Roof styles</b>                              | To ensure new buildings complement the predominant roof styles of the street.  | Provide a pitched or skillion roof with a parapet at the front façade.  | Inconsistent or dominating roof styles.  |
| <b>Siting / setbacks</b>                        | <p>To maintain and reinforce the predominant front boundary setback pattern in the street.</p> <p>To emphasise the pattern of the built form along the street.</p>     | <p>Buildings should be constructed up to the front boundary, with no setbacks where possible.</p> <p>Buildings should be setback 0.8m from one side boundary.</p> <p>Buildings should be oriented parallel to the street.</p>   | <p>Buildings not built to the front boundary.</p> <p>Buildings set at an angle to the street.</p>  |

## WILLIAM STREET COMMERCIAL AREA (HOWARD)

| Character Elements                     | Objective   | Design Response   | Avoid   |
|--|---|---|---|
| <b>Car Parking and Vehicle Storage</b> | <p>To ensure car parking structures do not dominate the front façade of the building.</p> <p>To minimise the interruptions to pedestrian thoroughfares by vehicle crossovers.</p> | <p>Locate car parking areas behind the building or underground, where possible.</p> <p>Design at or above ground car parking to be concealed by retail or active uses from building façades.</p> <p>Minimise the extent and impact of crossovers on footpaths and streetscapes.</p> | <p>Dominant car parking areas within the building frontage.</p> <p>Crossovers and driveways interrupting pedestrian thoroughfares.</p>  |
| <b>Signage</b>                         | <p>To ensure that the location and design of signage does not dominate the façade of the building or detract from existing architectural features.</p>                            | <p>Locate signage under the verandah/awning or on the verandah fascia for business identification purposes.</p>   | <p>Visually dominant or cluttered signage.</p> <p>Third party signage, signage above the verandah and billboards, and any signage that extends beyond the building parapet.</p> |

# MILTON STREET DUPLEX

## PRECINCT MAP



## KEY CHARACTER ELEMENTS

| Key character elements               | Descriptions   |
|--------------------------------------|--|
| <b>Architectural style</b>           | Federation/Edwardian/Interwar transitional-style timber, high set duplexes   |
| <b>Building materials</b>            | Predominantly constructed of timber with iron rooftops   |
| <b>Building form and layout</b>      | Building accessed by split, parallel staircase leading onto porch area<br>Front porch areas with timber detailing<br>Symmetrical building form<br>High stump construction with timber balustrades and sometimes timber battens to the ground floor section |
| <b>Roof style</b>                    | Gable rooftops with eaves constructed of iron  |
| <b>Setbacks</b>                      | Consistent 6 to 6.5m front setbacks<br>Consistent 2m side setbacks   |
| <b>Building height</b>               | 1 and a half storeys (typical of Queenslander buildings)   |
| <b>Orientation to the street</b>     | Parallel to the street   |
| <b>Car parking / vehicle storage</b> | Informal driveways to the side of the property - unpaved   |
| <b>Garden style</b>                  | Very little vegetation, buildings surrounded by lawn and grass areas   |
| <b>Front boundary treatment</b>      | No or low and transparent fencing constructed of steel post and wire   |
| <b>Lot size / frontage</b>           | Consistent subdivision pattern, with regularly shaped lots at 730 to 810m <sup>2</sup> , with 18.2m frontage widths.   |

## PREFERRED CHARACTER STATEMENT

Milton Street is an intact area of high-set, timber duplexes situated in large, open garden areas. The street has a significant character due to the intactness of the original buildings and a strong consistency in key character elements. This includes the predominant one and half storey scale, the symmetrical façade design and form, pitched roof styles, consistent 6m front setbacks and the use of timber with iron rooftops.

The preferred character for Milton Street is defined by the continued presence of 1920s-1930s buildings, combined with new buildings that complement the key characteristics of the streetscape. New buildings will retain the one and half storey scale of the street, with gable rooftops and eaves. Front façades will be articulated through the use of recesses to reflect the pattern of verandah and undercroft areas.

The use of timber and light colour finishes will maintain the lighter appearance of buildings in the street. Consistent front and side setbacks, the use of transparent or no front fencing and low level vegetation will retain the preferred open garden character of the streetscape.





## MILTON STREET DUPLEX

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# MILTON STREET DUPLEX

## DESIGN GUIDELINES

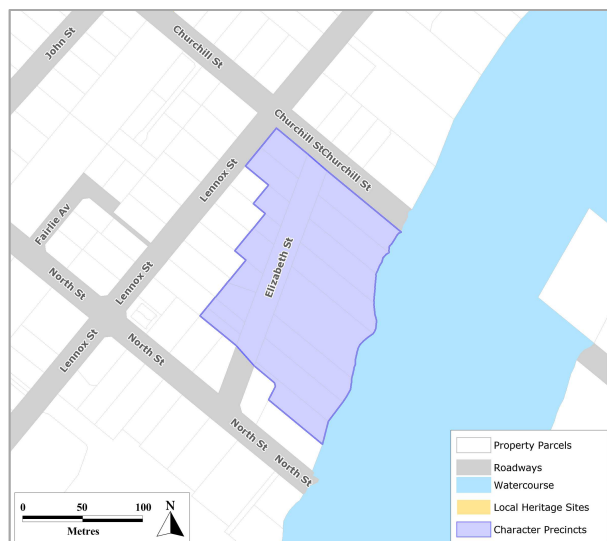
| Character Elements   | Objective   | Design Response   | Avoid   |
|--|---|---|---|
| <b>Architectural styles</b>                                    | To encourage the retention of intact, older period buildings that contributes to the character of the area, and distinguish new development from the period buildings.. | <p>Retain intact and good condition Federation, Edwardian, and Interwar buildings.</p> <p>New development should complement the height, building forms and siting of older, original buildings.</p> <p>Distinguish new development, including additions to existing buildings, from the original building stock through the use of innovative and contemporary architecture.</p>  | <p>Removal or demolition of good condition and intact parts of Victorian, Federation and Interwar buildings that are visible from the street.</p> <p>Mock or historic reproduction style housing, and excessive use of reproduction or decorative detailing.</p>        |
| <b>Building height, form and layout</b>                        | To ensure that buildings and extensions respect the scale and forms of the area.  | <p>Respect the one and a half storey height and form in the street.</p> <p>Recess any building elements that exceed one and a half storeys from the front and side building facades.</p> <p>Articulate the front façades of buildings through the use of setbacks, recesses, balconies, window openings, simple timber detailing and materials.</p>   | <p>Buildings without articulated front façades.</p> <p>Buildings that exceed two storeys.</p> <p>Visually bulky new developments and extensions.</p> <p>Front verandas enclosed in fixed, non-transparent materials.</p>  |
| <b>Building materials and design detail</b>                    | To ensure new buildings use materials and finishes that reflect the predominant use of weatherboard in the streetscape.   | <p>Use timber or other lightweight materials on exterior walls visible from the street.</p> <p>Use exterior finishes and colours that contribute to a lightness of appearance in the streetscape and emphasise design features such as balconies, recesses and window openings.</p>   | <p>Heavy masonry finishes.</p> <p>Excessive decoration and detailing.</p>   |
| <b>Roof styles</b>   | To ensure new buildings incorporate roof styles that reflect the predominant styles of the area.  | Incorporate gable and hipped roof forms to reflect those of adjoining buildings, at a pitch of between 20-30%, and constructed of lightweight materials (eg. corrugated steel or iron) with eaves.  | Dwellings with flat or steeply pitched roof forms without eaves.  |
| <b>Ground floor stumping sections (Queenslander buildings)</b> | To ensure modifications to the ground level of high-set buildings maintain the proportions and openness of the traditional styles.                                      | <p>Ensure that the height of the lower level is less than that of the upper level.</p> <p>Recess any non-permeable walls under dwellings behind the frontage of the original structure to align with the upper floor wall.</p> <p>Provide design detailing on the lower level that reflects the style of the building, including open lattice or timber batten screening, located between the stumps, to provide semi-permeable screening for non-permeable, enclosed living areas.</p> <p>Use colours and materials on all works to the ground level to complement the upper level and</p> | <p>New lower levels that appear disproportionate, visually compete with or dominate the original parts of the building.</p> <p>Understorey areas fully enclosed with solid, non-permeable walls that is not recessed behind the frontage of the original structure.</p> |

## MILTON STREET DUPLEX

| Character Elements                     | Objective  | Design Response  | Avoid   |
|--|--|--|---|
|  |  | minimise its visual prominence.  |   |
| <b>Siting / setbacks</b>               | <p>To maintain and reinforce the predominant front boundary setback pattern in the street.</p> <p>To maintain the side boundary setback pattern and the existing spacing between buildings.</p> <p>To maintain the traditional appearance of a single building from the streetscape when proposing more than one building on a site.</p> | <p>Buildings should be set back at a minimum, the average distance of the front setbacks of the buildings on the adjoining allotments.</p> <p>Buildings should be set back at least 2m from both side boundaries.</p> <p>The front facade of buildings should be oriented parallel to the street.</p>  | <p>Buildings set further forward than the average setback of the two adjoining buildings.</p> <p>Loss of generous front and rear setbacks.</p> <p>Buildings located on the side boundary.</p> <p>Buildings set at an angle to the street.</p> |
| <b>Car Parking and Vehicle Storage</b> | To minimise the loss of front garden space and the dominance of car parking structures.  | <p>If possible, locate garages, car ports and outbuildings to the rear of the building.</p> <p>Where location at the rear is impractical, locate garages, car ports and outbuildings to the side of the building at least 1 metre behind the line of the front building façade, or underneath.</p> <p>Use timber or slatted doors to understorey car parking or storage areas, and recess any doors behind the building stumps.</p> <p>Minimise paving in front garden areas and use permeable or porous materials for driveways and car parking areas.</p> <p>Use simple flat or pitched roof forms to garages, car ports and outbuildings.</p> | <p>Car parking structures within the front setback area.</p> <p>Solid garage doors in understorey areas.</p>  |
| <b>Garden style</b>                    | To maintain and strengthen the low garden settings of buildings.   | <p>Planting of significant vegetation and tall trees in gardens should be minimised.</p> <p>Incorporate lawns around buildings.</p>  | Loss of garden space around buildings.  |
| <b>Front and side fences</b>           | <p>To retain the spaciousness of the streetscape and views to buildings and gardens.</p> <p>To complement the predominant style of fences in the street.</p>   | <p>If required, ensure front fences are low and visually permeable, up to 1m in height, and constructed of wire or other visually permeable materials.</p> <p>Ensure side fences forward of the building do not exceed 1m in height and are visually permeable</p>   | High or solid front and side fencing.   |

## ELIZABETH STREET GARDEN DOMINATED

### PRECINCT MAP



### KEY CHARACTER ELEMENTS

| Key character elements           | Descriptions   |
|----------------------------------|--|
| <b>Architectural style</b>       | Victorian and Federation era timber buildings with Interwar and some contemporary infill   |
| <b>Building materials</b>        | Predominantly constructed of timber or weatherboard, with steel or iron roofs  |
| <b>Building form and layout</b>  | <p>Simple built form, with a mix of symmetrical and asymmetrical plan layouts (projecting front room with porch)</p> <p>Prominent return verandahs or porch entranceways with timber detailing in bracket posts</p> <p>High set buildings comprise front access through timber and steel stairs, with timber stump construction, balustrades and screens to the ground floor section</p> |
| <b>Roof style</b>                | Gabled, pyramidal or hipped roof styles with eaves   |
| <b>Setbacks</b>                  | <p>Consistent front setbacks of 3 to 5m.</p> <p>Side setbacks of at least 2m from one side boundary.</p>   |
| <b>Building height</b>           | One to two storey buildings, with some high set buildings at 1 and a half storeys  |
| <b>Orientation to the street</b> | Parallel to the street   |
| <b>Car parking /</b>             | Non-existent or single crossovers with   |

| Key character elements          | Descriptions  |
|---------------------------------|---|
| <b>vehicle storage</b>          | <p>informal driveways</p> <p>Vehicles stored in garages at the rear of the property, or in ground floor area underneath buildings</p> |
| <b>Garden style</b>             | <p>Mix of native and exotic planting</p> <p>Well established garden settings with front lawn areas and mature trees</p>               |
| <b>Front boundary treatment</b> | Non-existent or low and transparent front fencing, constructed of steel and wire mesh, hedging or timber                              |

### PREFERRED CHARACTER STATEMENT

Elizabeth Street has a significant character due to its high quality public realm features, consisting of formally planted street trees and leafy garden settings. Buildings are concealed behind vegetation and planting, and are generally consistent the use of timber or weatherboard materials.

The preferred character for this precinct is defined by the continued presence of period buildings, complemented with established gardens and new buildings that contribute to the key characteristics of the streetscape. Contemporary buildings will retain the two storey scale of the street, with pitched roof forms and eaves. Front façades will be articulated through the use of recesses to reflect the pattern of verandah and undercroft areas.

The use of timber or light colour finishes will maintain the lighter appearance of buildings. Consistent front and side setbacks, low front fences, and established garden settings will positively contribute to the character of the street.





## ELIZABETH STREET GARDEN DOMINATED

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## ELIZABETH STREET GARDEN DOMINATED

### DESIGN GUIDELINES

| Character Elements   | Objective   | Design Response   | Avoid   |
|--|---|---|---|
| <b>Architectural styles</b>                                    | To encourage the retention of intact, older period buildings that contribute to the character of the area, and distinguish new development from the period buildings. | <p>Retain intact and good condition Victorian, Federation and Interwar buildings.</p> <p>Distinguish new development, including additions to existing buildings, from the original dwelling stock through the use of innovative and contemporary architecture.</p>  | <p>Removal or demolition of good condition and intact parts of Victorian, Federation and Interwar buildings that are visible from the street.</p> <p>Mock or historic reproduction style housing, and excessive use of reproduction or decorative detailing.</p>        |
| <b>Building height and form</b>                                | To ensure that buildings and extensions respect the scale and forms of the area.  | <p>Respect the two storey height and form in the street.</p> <p>Recess any building elements that exceed two storeys from the front and side building facades.</p> <p>Articulate the front façades of buildings through the use of setbacks, recesses, balconies, window openings, simple timber detailing and materials</p>  | <p>Buildings without articulated front façades.</p> <p>Buildings that exceed two storeys at the front façade.</p> <p>Visually bulky new developments and extensions.</p> <p>Front verandahs enclosed in fixed, non-transparent materials.</p>                           |
| <b>Building materials and design detail</b>                    | To ensure new buildings use materials and finishes that reflect the predominant use of timber in the streetscape.   | <p>Utilise timber or other lightweight materials on exterior walls visible from the street.</p> <p>Use exterior finishes and colours that contribute to a lightness of appearance in the streetscape and emphasise design features such as balconies, recesses and window openings.</p>   | <p>Heavy masonry finishes.</p> <p>Excessive decoration and detailing.</p>   |
| <b>Roof styles</b>   | To ensure new dwellings incorporate roof styles that reflect the predominant styles of the area.  | Incorporate gable or hipped roof forms, preferably at a pitch of between 20-30%, and constructed of lightweight materials (eg. corrugated steel or iron) with eaves.  | Dwellings with flat roof forms or small or no eaves   |
| <b>Ground floor understorey areas (Queenslander dwellings)</b> | To ensure modifications to the ground level of high-set dwellings maintain the proportions and openness of the traditional styles.                                    | <p>Ensure that the height of the lower level is less than that of the upper level.</p> <p>Where additional height is required to accommodate flooding requirements, use articulation or recesses to minimise the visual prominence of the ground level.</p> <p>Recess any non-permeable walls under dwellings behind the frontage of the original structure to align with the upper floor wall.</p> <p>Provide design detailing on the lower level that reflects the style of the building, including open lattice or timber batten screening, located between the stumps, to provide semi-permeable screening for non-permeable, enclosed living areas.</p> <p>Use colours and materials on all works to the ground level to</p> | <p>New lower levels that appear disproportionate, visually compete with or dominate the original parts of the building.</p> <p>Understorey areas fully enclosed with solid, non-permeable walls that is not recessed behind the frontage of the original structure.</p> |

## ELIZABETH STREET GARDEN DOMINATED

| Character Elements                     | Objective   | Design Response   | Avoid  |
|--|---|---|--|
|  |   | complement the upper level and minimise its visual prominence.  |  |
| <b>Siting / setbacks</b>               | <p>To maintain and reinforce the predominant front boundary setback pattern in the street.</p> <p>To maintain the side boundary setback pattern and the existing spacing between buildings.</p> <p>To maintain the traditional appearance of a single house from the streetscape when proposing more than one building on a site.</p> | <p>Buildings should be set back at a minimum, the average distance of the front setbacks of the buildings on the adjoining allotments.</p> <p>Buildings should be set back at least 2m from both side boundaries.</p> <p>In the case of multiple building developments, the front building should be designed to retain the siting and proportions of a typical single building in the streetscape.</p>   | <p>Buildings set further forward than the average setback of the two adjoining buildings.</p> <p>Loss of generous front and rear setbacks.</p> <p>Buildings located on the side boundary.</p> <p>Attached buildings fronting the street.</p> |
| <b>Car Parking and Vehicle Storage</b> | To minimise the loss of front garden space and the dominance of car parking structures.   | <p>If possible, locate garages, car ports and outbuildings to the rear of the dwelling.</p> <p>Where location at the rear is impractical, locate garages, car ports and outbuildings to the side of the dwelling at least 1 metre behind the line of the front dwelling façade, or underneath.</p> <p>Use timber or slatted doors to understorey car parking or storage areas, and recess any doors behind the dwelling stumps.</p> <p>Minimise paving in front garden areas and use permeable or porous materials for driveways, and car parking areas.</p> <p>Use simple flat or pitched roof forms to garages, car ports and outbuildings.</p> | <p>Car parking structures within the front setback area.</p> <p>Solid garage doors in understorey areas.</p>   |
| <b>Garden style</b>                    | To maintain and strengthen the garden settings of buildings.  | <p>Retain existing substantial trees and shrubs.</p> <p>Prepare and implement a landscape plan that includes substantial native plants and trees, and open lawn areas in the front setback.</p>   | Loss of established vegetation and space for planting along setbacks.  |
| <b>Front and side fences</b>           | To retain the spaciousness of the streetscape and views to buildings and gardens, and complement the building styles.   | <p>All fences forward of the building are to be low, open style (at least 30% transparent), and not more than 1.2m in height.</p> <p>Fences forward of the building are to be constructed of materials appropriate to the building style and era, including simple timber picket, and post and wire styles.</p>   | High front fencing.  |







## DEMOLITION CONTROL PRECINCT

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The Demolition Control Area intends to maintain the Queenslander character that is predominant in the city and ensure that good examples of the character era style dwelling houses are preserved to maintained the character amenity of the Maryborough City and in particular the residential areas.

### WHAT IS A CHARCATER STYLE?

Architectural styles are defined by the combination of a number of building characteristics including:

- The relationship of the parts of the building to each other and to the building as a whole, and of the building to its physical context
- The shape of the building
- The space inside and around the building
- The scale of the building
- The building's structure
- The materials of which the building is made
- The detailing of the building
- The colours used externally and internally
- The textures visible externally and internally
- The use or non-use of elements related to a previous style
- Ornament or its absence

### THE 'QUEENSLANDER'

The unique Queenslander building style was a response to the sub-tropical climate and has come to be one of the defining elements of the character of Maryborough and Howard. Although Queenslander buildings are found throughout the state, the style varies slightly in different locations.

In Maryborough, the Queenslander style spans across different eras, including the Victorian, Federation, Interwar and post-war eras. Elements of the Queenslander style can also be found in more recently developed buildings, however it is in the Victorian, Edwardian/Federation and Interwar eras that the Queenslander style is most distinctive and recognisable. There are many different features that can be attributed to the Queenslander style, with the only feature common to all being the elevation of the building off the ground.

The following provides a brief summary of character era style indicators, with example photos.

## DEMOLITION CONTROL PRECINCT

### VICTORIAN STYLES

**Approximate years** 1840 to early 1900s.

#### Descriptions

Early Victorian houses built between 1840 and 1860 are generally simple. They commonly have one or two rooms across the front. Their appearance is formal but plain, with simple front verandahs and restrained ornamentation.

Mid-Victorian houses (1860-1875) retain a similar form to Early-Victorians, but this era is distinguished by a greater level of ornamentation. There is an increased use of stucco or decorative elements. Verandahs are common and usually constructed of timber, with some cast iron examples.

Late Victorian houses (1875-1901) still resemble earlier Victorian types in form, but assume a grander, more ornate appearance. During this period, the high stump feature became widespread in Queensland. These houses have symmetrical plans with four or six rooms served by a central passageway.

#### Elements

Symmetrical plan forms served by a central passageway.

In higher quality buildings, verandahs returned to all sides of the house, with the rear section frequently enclosed.

Windows are built with timber, usually in small section sizes. They are often double hung, but sometimes side opening casements and centrally placed.

Limited ornamentation in design details.

Shallow, hipped roofs with truncated pyramidal forms, using natural slate or shingles, galvanised metal and sometimes painted to match slates.

Fences made of simple pickets with at least 30% permeability.

Decorative brackets under eaves.

Gardens can have a great variety of fruit trees, with a limited range of ornamental plants

Cottages are traditionally low-set with the stump height being no more than one metre.

Some cottages have curved profile tin 'window hoods'.



# DEMOLITION CONTROL PRECINCT

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## DEMOLITION CONTROL PRECINCT

### EDWARDIAN / FEDERATION STYLES

**Approximate years** 1895-1920.

**Descriptions** Houses built at this time draw upon Victorian features. They remain high-set on tall stumps, with elaborated verandah, roof and plan forms. Timber decorations become more vertical, with enclosed elements and curved edges. Many design influences were from the Art Nouveau, Queen Anne and typical Australian Federation styles.

**Elements** Return verandahs, roofed with corrugated metal and generally embellished with timber details.

Hipped roof forms, with cross ventilation spaces and projecting gabled ends to the front of the building.

Asymmetrical building plans, with central entrance door. Often includes projecting front room, and off-centre or dog-legged hallways.

Windows often grouped.





## DEMOLITION CONTROL PRECINCT

### INTERWAR STYLES

**Approximate years** 1920s – 1930s.

**Descriptions** Houses built during this era were often the result of the provision of houses for returned soldiers and the First World War. Houses remained high-set and incorporated stylistic detailing from the earlier Edwardian/Federation period. These houses combine Arts and Crafts style concepts with the ideal of the simple house in a natural setting. More rustic than preceding styles, most have a simple plan centred on the hallway, and are set well back from the street.

**Elements** Simple plan forms, broad surfaces, deep front verandah, small windows (often bay) to the front room, prominent pylons to the front verandah.

Front projecting rooms with cladding, gable walls and bay windows are a strong design feature.

Broad roof planes with shallow pitches. Main ridgelines are either parallel or perpendicular to the street with large gable ends.

Covered verandahs serving as front entrance areas.

Front entrance balustrading in entrance areas, with the introduction of wider timber palings at regular intervals.



## DEMOLITION CONTROL PRECINCT

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## **SC6.3 Planning scheme policy for development works**

### **SC6.3.1 Introduction**

- (1) Although drafted as one acceptable solution, the Planning scheme policy for development works also provides flexibility through the application of the relevant standards, policy documents and industry standards. It does not prevent or discourage alternate solutions for individual development sites.**
- (2) The Planning scheme policy for development works has been prepared as acceptable solutions to the performance outcomes mentioned in the relevant planning scheme codes.
- (3) The Planning scheme policy for development works does not provide a solution for every proposal or for every situation encountered. Where the Planning scheme policy for development works does not provide a solution; does not provide an applicable solution; and/or where a different solution is proposed, the applicant or their Consultant must demonstrate that the proposed solution is in accordance with industry standards and is an acceptable solution for the performance outcomes.
- (4) Professional judgement should be exercised by the Consultant in the application of this policy and the applicable industry standards. Council encourages consultation with Council officers early in the concept or design stages to facilitate early identification and resolution of matters and issues that may cause delays.

## SC6.3.2 Environmental requirements

### 6.3.2.1 Nuisance

Construction must not cause nuisance to surrounding property owners or residents from water, dust, noise, vibration, odours, pollutants or any other material or action likely to cause nuisance or negative impact on surrounding properties.

### 6.3.2.2 Stormwater quality

- (1) Development must incorporate the principles of Water Sensitive Urban Design (WSUD) in accordance with 'Urban Stormwater—Queensland Best Practice Environmental Management Guidelines' and current industry standards (e.g. Environmental Protection Policy, Water Act, State Planning Policy Queensland Water Quality Guidelines).
- (2) Erosion and Sediment Control must be designed in accordance with the recommendations contained within the Environment Protection Agency's (EPA) 'Best Practice Urban Stormwater Management – Erosion and Sediment Control', International Erosion Control Association's (IECA) – 'Best Practice Erosion & Sediment Control' and 'Queensland Urban Drainage Manual' (QUDM).
- (3) Refer to Council's Water Sensitive Urban Design Guidelines for procedures and acceptable measures to achieve the water quality objectives.

### 6.3.2.3 Protection of vegetation

- (1) The identification and protection of trees on or in close proximity to a development site must be in accordance with 'AS4970 – Protection of trees on development sites'.
- (2) The development site must be cleared of all weeds listed in the following documents or as otherwise specified in a weed management plan for the site:-
  - (a) *Land Protection (Pest and Stock Route Management) Regulation 2003*;
  - (b) Council's Pest Management Plan; and
  - (c) *Naturalised Plants in South East Queensland (Baitinoff and Butler – Queensland Herbarium, 2002)*.
- (3) Trees requiring pruning are to be pruned in accordance with 'AS4373 - Pruning of amenity trees'.
- (4) Planting with species which will be of short or long term detriment to existing vegetation must be avoided.

### 6.3.2.4 Landscaping environmental design standards

- (1) Refer to **Appendix SC6.3B (Recommended plant list)** for the recommended plant lists for both introduced landscape treatments and land rehabilitation and bush regeneration projects.
- (2) The 'Land Management Manuals' published by the Department of Environment and Resource Management must be referenced by Consultants to assist in plant species selection, planning strategies, design and site management decisions with regard to local environment and soil types.

### 6.3.2.5 Construction and environmental management plan

- (1) The preparation of a Construction and Environmental Management Plan (CEMP) may be required where the proposed development may have significant environmental impacts during construction phase of the development.



- (2) A CEMP is to be prepared by a competent person in accordance with the following guidelines. Where vegetation and/or ecological areas are to be impacted on, a Fauna and Flora management Plan may also be required as part of the CEMP. As a minimum, the CEMP is to include the following:-
- (a) a description of environmental issues and potential impacts;
  - (b) the proposed construction vehicle transport route(s); measures to ensure the safe and orderly ingress and egress of vehicles to and from the site;
  - (c) proposed location/s of all areas on-site and/or off-site to be used for staff and contractor parking (including owner's permission where on other land), storage of materials and soil stockpile handling;
  - (d) measures to discourage staff and contractor parking in designated visitor parking spaces within adjoining properties;
  - (e) the means by which the direction of traffic flows to and from parking areas will be controlled both on-site and off-site to ensure no damage is caused to Council's road infrastructure in any adjoining streets including the pavement, kerb, channel, crossovers to adjoining properties and verges;
  - (f) measures to ensure the appearance of building works or materials do not detrimentally affect surrounding amenity;
  - (g) proposed location/s and dimensions of site sheds and facilities ( in the form of a scaled site plan);
  - (h) lawful source and disposal sites of any fill or excavated material;
  - (i) wheel wash-down and shake-down grids for construction vehicles at all access points to prevent the tracking of material onto roadways;
  - (j) measures to maintain the existing drainage pattern to avoid adverse impact on the downstream and upstream environments;
  - (k) measures to maintain water quality in accordance with the general environmental values and water quality objectives outlined in the in State Planning Policy;
  - (l) measures to minimise unacceptable risk to existing land uses from flooding and erosion;
  - (m) sediment retention measures to mitigate the transportation of sediment to the sensitive downstream aquatic environment;
  - (n) measures to control dust and other emissions such as fumes, sediments, light or odour to avoid nuisance;
  - (o) measures to manage and monitor groundwater levels and impacts of the development, including the management of impacts on groundwater levels affected by the creation of onsite detention systems and the mobilisation of acidic groundwater from dewatering;
  - (p) measures to minimise the leakage of existing dam/s and the prevention of the upward mobilisation of native saline groundwater which could lead to high salinity of the land and dam/s;
  - (q) acid sulfate soil management, in accordance with the results of an acid sulfate soils investigation under State Planning Policy;

- (r) measures to mitigate noise impact on neighbouring activities;
- (s) measures to minimise the spread of weeds to and from the site;
- (t) contingency plans for emergency procedures for environmental incidents;
- (u) measures for the periodic review of environmental performance and continual improvement including record keeping; and
- (v) if required as part of the CEMP, a Vegetation and Fauna Management Plan (VFMP) is to include:-
  - (i) a site plan (minimum A3 size) which covers the area to be developed and areas designated for open space, park and drainage;
  - (ii) identify the proposed location for site access, vehicle parking and waste stockpile areas during vegetation removal works and how they will be managed to avoid impacts on vegetation or habitat areas to be protected;
  - (iii) a tree survey plan and schedule to identify the number and species of trees to be removed from the site;
  - (iv) a habitat tree plan to identify the trees that are to be retained;
  - (v) a plan of any areas to be affected by cut and fill associated with Civil Works, and identification of trees in proximity to affected areas;
  - (vi) details of the use of a wildlife spotter catcher to provide wildlife preservation efforts for significant species and general biodiversity during the disturbance of habitats associated with vegetation clearing;
  - (vii) details of works to comply with *Australian Standard – AS4970 – 2009 Protection of trees on development sites* to ensure the long term survival of all vegetation to be protected, and *AS4373-1996 – Pruning of amenity trees*;
  - (viii) outline the method of tree removal and disposal to minimise soil disturbance;
  - (ix) a weed control program with specific measures to ensure that declared weeds are controlled during and after construction and that weed seed does not leave the site;
  - (x) provisions for monitoring and control;
  - (xi) identify how the existing wildlife values on the site will be protected during the clearing and construction operations;
  - (xii) identify the provision for and location of nesting boxes where required to offset the loss of habitat, including a suitable mix appropriate for a range of native wildlife; and
  - (xiii) outline a proposal to offset the loss of native vegetation where required in accordance with the **Planning scheme policy for environmental and vegetation offsets**.

## **SC6.3.3 Earthworks**

### **6.3.3.1 General**

- (1) All earthworks must be undertaken in accordance with 'AS3798 - Guidelines on earthworks for commercial and residential developments'.
- (2) The minimum fall on Residential allotments including development in the low density residential zone must be 1 in 200 towards the street or other legal point of discharge.
- (3) Rural Residential allotments <1ha must be free draining with a minimum grade of 1 in 400.
- (4) The minimum fall on Commercial or Industrial allotments must be 1 in 400 toward the street or other stormwater legal point of discharge.

### **6.3.3.2 Haul routes**

- (1) A designated haulage route will be required for the import and export of any significant quantities of earthworks or construction materials from the site including gravel and concrete for example, to minimise the impact on Council roads and nuisance to residents.
- (2) An assessment of the road pavement for the haul route must be made by a Registered Professional Engineer of Queensland (RPEQ) to determine the suitability of the pavement for the intended traffic movements. Mitigation measures will be required where existing pavements along the haul route are unable to support the vehicle loadings. Alternatively, restoration and/or rehabilitation may be required where haulage vehicle have damaged the pavement or other infrastructure.

### **6.3.3.3 Batter treatments for Council owned or controlled land**

- (1) Cut and fill batters must not exceed 1 in 4, unless specified elsewhere in this Policy.
- (2) The toe of any fill batter and the top of any cut batter must be a minimum 300mm clear of the boundary line of an adjoining property.
- (3) Where access to reserves maintained by Council a minimum 1m verge between the boundary and the top of batter must be provided.

### **6.3.3.4 Retaining walls and structures for reconfiguring a lot works**

- (1) All retaining walls and structures must be designed and constructed in accordance with 'AS4678 Earth-retaining structures'.
- (2) Retaining walls that are not works for reconfiguring a lot are defined as building works in the *Planning Act 2016*. They are not operational works and must be assessed under the provisions of the *Building Act 1975*.
- (3) In residential areas, where an acceptable outcome can be demonstrated with Performance outcome - PO1 of the Works, services and infrastructure code, retaining walls over 1.5 metres in height are to be stepped 1.0 metre (horizontally) for each 1.5 metres in height to a maximum height of 3.0 metres and landscaped appropriately.
- (4) All retaining walls and structures abutting existing or proposed road reserves, parkland or other public owned lands must be contained within the proposed allotments.
- (5) Retaining walls and structures 1 metre or higher, subject to surcharge loadings or within 1.5 metres of a building or other retaining wall must be certified by a RPEQ.

- (6) Where water, sewer, or stormwater infrastructure is located adjacent to proposed retaining walls, the retaining walls, including footings, shall be designed to ensure no load is imparted on the aforementioned infrastructure and that such horizontal clearance exists to allow excavation of the infrastructure to effect repair and/or maintenance without compromising the structural integrity of the retaining structure.



## SC6.3.4 Roads and pathways

### 6.3.4.1 Road and pathway design requirements

#### General

- (1) Roads, streets, car parking and pathways must be in accordance with the following documents except where otherwise specified in this document:-
  - (a) Institute of Public Works- Queensland Division (IPWEAQ) - Queensland Streets May 1993 (including amendments);
  - (b) Austroads Publications;
  - (c) Australian Roads Research Board – Sealed Local Roads Manual;
  - (d) Queensland Department of Transport and Main Roads – Road Planning and Design Manual;
  - (e) Queensland Department of Transport and Main Roads – Manual of Uniform Traffic Control Devices;
  - (f) Queensland Department of Transport and Main Roads ‘Pavement Design Manual’;
  - (g) Fraser Coast Road Hierarchy in **Appendix SC6.3A**; and
  - (h) Fraser Coast Regional Council Walk and Cycle Plan.

#### Street system

- (2) The layout, configuration and geometry of new local urban streets including Commercial and Industrial streets must be in accordance with Queensland Streets.
- (3) Higher order roads and consideration of existing roads within the Fraser Coast Regional Council area must be in accordance with the Fraser Coast Road Hierarchy.
- (4) The safety of all road, pathway and open space users including cyclists and pedestrians is a primary consideration. Development must incorporate ‘crime prevention through environmental design’ (CPTED) principles, the latest standards and best practice to ensure that a safe environment is created in finished products.
- (5) Development in greenfield areas must provide for suitable infrastructure for public transport to service the development.
- (6) The development layout must, where possible, avoid the creation of narrow reserves between allotments for pedestrian or drainage purposes.
- (7) Where a development has a lot yield or density lower than anticipated, new roads shall be sized to accommodate the highest lot yield or densities indicated in the planning scheme.
- (8) For staged developments, temporary cul-de-sac turning heads must be provided. The standard of construction must be equivalent to the road that it connects to. Council may consider alternatives in special circumstances.

**Table SC6.3.4.1a Road classifications and design criteria<sup>[1]</sup>**

| Development category <sup>[2]</sup> or zone | Road type                           | Max. no. of lots/dwellings         | Min. road reserve width (m) | Pavement width (m) (nom. kerb lines or pavement edge) | Edge treatment        | Min. verge width (m) | Design speed |
|---|-------------------------------------|------------------------------------|-----------------------------|---|-----------------------|----------------------|--------------|
| Rural/Rural residential lots ≥ 1ha          | Access street                       | Up to 75                           | 20.0                        | 5.5   | 1.0m sealed shoulders | 5.0                  | 45           |
|   | Minor collector                     | Up to 100                          | 20.0                        | 6.0   | 1.0m sealed shoulders | 5.0                  | 60           |
|   | Major collector                     | Traffic impact assessment required | 21.0                        | 7.0   | 1.0m sealed shoulders | 5.0                  | 80min        |
| Rural residential lots < 1ha                | Access place                        | Up to 15                           | 15.0                        | 5.5   | Mountable kerb        | 3.0                  | 45*          |
|   | Access street                       | Up to 75                           | 15.0                        | 7.5   | Mountable kerb        | 3.0                  | 45*          |
|   | Minor collector                     | Up to 240                          | 20.0                        | 7.5   | Mountable kerb        | 4.5                  | 60*          |
|   | Major collector                     | Up to 1,000                        | 21.0                        | 10.0 m or 11.0m (bus route)                           | Barrier kerb          | 4.5                  | 80min        |
| Urban residential                           | Access place                        | Up to 15                           | 15.0                        | 5.5   | Mountable kerb        | 3.0                  | 30*          |
|   | Access street                       | Up to 75                           | 15.0                        | 7.5   | Mountable kerb        | 3.0                  | 30*          |
|   | Minor collector                     | Up to 300                          | 17.0                        | 7.5   | Mountable kerb        | 3.5                  | 40*          |
|   | Major collector                     | Up to 1,000                        | 21.0                        | 10.0 m or 11.0m (bus route)                           | Barrier kerb          | 4.5                  | 80min        |
| Industrial and commercial                   | Access street                       | Traffic impact assessment required | 21.0                        | 12.0  | Barrier kerb          | 4.5                  | 60min        |
|   | Collector                           | Traffic impact assessment required | 23.0                        | 14.0  | Barrier kerb          | 4.5                  | 60min        |
| Rural                                       | Rural arterial road                 | Traffic impact assessment required | 24.0                        | 7.0   | 1.5 m sealed shoulder | 4.5                  | 80min        |
| Urban                                       | Controlled distributor              | Traffic impact assessment required | 22.0                        | 15.0  | Barrier kerb          | 3.5                  | 80min        |
|   | Traffic distributor type 2 (2 lane) | Traffic impact assessment required | 24.0                        | 2 x 5.5m  | Median + barrier kerb | 4.5                  | 80min        |
|   | Traffic distributor type 1 (4 lane) | Traffic impact assessment required | 40.0                        | 2x8.5   | Median + barrier kerb | 8.5                  | 80min        |

\* Indicates maximum design speed in accordance with Queensland Streets

Notes—

- [1] Design standards may vary to be consistent with the existing infrastructure in the surrounding area and must transition into existing infrastructure adjoining the development. The minimum road reserve may need to be widened to accommodate alternative treatments, such as swale drains.
- [2] The development categories used in this table are described in **Appendix SC6.3F (Glossary)**.
- [3] Please contact Council for typical cross-sections of other road types identified in the road hierarchy.
- [4] Minimum verge widths are subject to provision of services in accordance with the standard drawings.

**Kerb and channel**

- (9) Kerb and channel grades must not be less than 0.5%, unless otherwise approved.

- (10) Where pavement edge restraints are to be used adjacent to open space areas or in conjunction with swale drains, Kerb Type M should be used to prevent water ponding within the road. Refer to Standard Drawing No. FC-220-01.
- (11) Where roads terminate at adjoining property boundaries the termination point must end with kerb and channel at the pavement limits.

**Pathways**

- (12) Footpaths must be 1.3 metres in width. The widths of pathways, including shared paths and bikeways, are subject to individual assessment.
- (13) Pathway surfaces should be non-slip. Clay pavers or other products that require regular surface treatment should be avoided.
- (14) Pathways between allotments should be avoided but where provided must have a minimum reserve width of 3m and be constructed for the full width of the reserve.
- (15) Infill development must provide a pathway fronting the development (or equivalent in an approved location), where identified in Council's local path network.
- (16) Infill development may also be required to construct pathways where they are identified in the Plans for Trunk Infrastructure or are in a Principal, District, Local or Neighbourhood centre zone, High density residential precinct (HDR1), Mixed use zone or Specialised centre zone.
- (17) Pathways in greenfield developments should generally be provided on new roads as shown in the following table:-

**Table SC6.3.4.1b Pathway requirements**

| Development category <sup>[1]</sup> | Road type                       | Footpath (FP)<br>Share bikepath (SP) |
|-------------------------------------|---------------------------------|--------------------------------------|
| Urban residential                   | Access place                    | Nil <sup>[2]</sup>                   |
|                                     | Access street                   | Nil <sup>[2]</sup>                   |
|                                     | Minor collector                 | FP one side                          |
|                                     | Major collector                 | SP one side <sup>[3]</sup>           |
| Industry                            | Access street                   | Nil <sup>[2]</sup>                   |
|                                     | Minor or major collector street | FP one side                          |
| Commercial                          | Access street                   | FP both sides <sup>[4]</sup>         |
|                                     | Minor or major collector street |                                      |

Notes—

- <sup>[1]</sup> The development categories used in this table are described in **Appendix SC6.3F (Glossary)**, if not elsewhere defined in the Fraser Coast Planning Scheme.
- <sup>[2]</sup> Except where a link is identified in Council's adopted Walk and Cycle Strategy or other plan adopted by Council for the provision of pedestrian or cycle facilities or to provide connectivity between pathways.
- <sup>[3]</sup> The road pavement for Major Collectors in some cases may provide for informal bikepaths subject to Council approval. Where the bikeway component is approved on road, a 1.5 metre wide footpath shall be constructed on one side.
- <sup>[4]</sup> A full width construction may be required in the Principal Activity Centre zone, Mixed use (Precinct MU1 – Urangan harbour) zone or High density residential (Precinct HDR1 – Hervey Bay Tourism Nodes).

- (18) Considering the above table, a local walk and cycle plan to the satisfaction of Council must be developed for greenfield developments demonstrating the internal travel routes and connections to trunk infrastructure. A local walk and cycle plan can be diagrammatic but must be fit for purpose and identify travel paths to internal and external destinations and links to external infrastructure. The approved walk and cycle plan will inform the pathway infrastructure to be constructed.

### **Access and internal driveways**

- (19) Driveway crossovers are to be in accordance with the standard drawings.
- (20) Driveway crossovers are to be provided from the kerb and channel or edge of pavement to property boundary for all commercial or industrial development prior to the commencement of the use.
- (21) Driveway crossovers are to be provided from edge of pavement to property boundary for all residential development prior to endorsement of the survey plan, where kerb and channel is not provided.
- (22) Driveway crossovers are to be provided from edge of pavement to property boundary for all residential development prior to occupation of the dwelling, where kerb and channel is provided.
- (23) In all Residential, Commercial and Industrial developments where access is through an easement or access handle, a driveway must be constructed for the full length of the access handle or easement, including the driveway verge crossover.
- (24) Internal driveways and access ways for Commercial, Industrial, Multi-unit or Group Title development must be in accordance with 'AS2890- Parking Facilities'. For private low density residential developments, the internal road system must be in accordance with Queensland Streets.
- (25) The standard of internal driveway and car park construction (including pavement surfacing) must provide for the proposed traffic vehicle loads and traffic movements. The pavement surfacing must, as a minimum, be equivalent to the road surface fronting the development, unless an alternate solution is approved by Council..

### **Truncations**

- (26) Truncations and road dedications to property boundaries must be provided as required to maintain minimum verge and roadway widths at any point, particularly at traffic calming devices, intersections, bends, cul-de-sac heads and roundabouts.

The minimum verge width around truncations must be 4.5m.

### **Public transport**

- (27) Development in greenfield development areas must provide suitable infrastructure to provide for a bus service to all parts of the development. The bus routes must consider existing and future development to maximise the efficiency of these routes. The bus route must consider the following:-
  - (a) an efficient bus route that also provides a maximum walking distance of 400 metres to the furthest dwelling;
  - (b) bus stops at regular intervals along the route; and
  - (c) bus stop shelters at locations where large numbers of travellers are likely to embark or disembark.

Note—the main purpose is to ensure that if or when a bus service is provided, the road system has been constructed to provide that service. The development must also design for bus stops and shelters but may not necessarily need to construct this infrastructure unless a bus service has been planned to service this development in the short term.

### **Roundabouts**



- (28) The central island of the roundabout is to be stencilled concrete or concrete with artificial turf (Enduroturf bliss or approved equivalent) glued to the concrete surface. The outer portion of the central island for oversized vehicle movements and splitter/median islands shall be stencil crete concrete, running bond brick pattern, coloured terracotta. Landscaping must not be used unless approved by Council.

### 6.3.4.2 Carpark requirements

- (1) Off street car parks must be in accordance with 'AS2890 - Parking Facilities' except as otherwise specified in this document.
- (2) The use of small car spaces will only be accepted where:-
- there is a localised design constraint that cannot be overcome; and
  - where there has not been a reduction in the number of car parks (as required by planning scheme policies and codes) as offset by a contribution, cross utilisation or other reason; and
  - the total number of small spaces does not exceed 7% of the total number of spaces.

### 6.3.4.3 Pavement design

#### Minimum pavement requirements

**Table SC6.3.4.3 Pavement and surfacing requirements**

| Development category <sup>[1]</sup> or zone                  | Road type   | Pavement design traffic 'equivalent standard axles' (ESA's)        | Min. sub base course CBR | Min. base course CBR | Min. pavement thickness (including surfacing) <sup>[1]</sup> | Pavement surfacing                 |
|--|---|--|--------------------------|----------------------|--|------------------------------------|
| Rural/Rural residential Lots > 1ha (where no edge restraint) | Access Street   | 1.0x10 <sup>5</sup>  | 60                       | 80                   | 225  | Prime & 2 Coat Seal <sup>[2]</sup> |
|  | Minor Collector Street  | 3.0x10 <sup>5</sup>  | 60                       | 80                   | 225  | Prime & 2 Coat Seal <sup>[2]</sup> |
|  | Major Collector   | 1.0x10 <sup>6</sup>  | 60                       | 80                   | 225  | Prime & 2 Coat Seal <sup>[2]</sup> |
| Rural residential lots < 1ha                                 | Access Street/Place   | 1.0x10 <sup>5</sup>  | 60                       | 80                   | 255  | 30mm AC                            |
|  | Minor Collector   | 3.0x10 <sup>5</sup>  | 60                       | 80                   | 255  | 30mm AC                            |
| Urban residential  | Access Street/Place   | 1.0x10 <sup>5</sup>  | 60                       | 80                   | 255  | 30mm AC                            |
|  | Minor Collector   | 4.5x10 <sup>5</sup>  | 60                       | 80                   | 255  | 30mm AC                            |
|  | Major Collector   | 1.0x10 <sup>6</sup>  | 60                       | 80                   | 275  | 45mm AC                            |
| Commercial & industrial                                      | Access street   | 2.5x10 <sup>6</sup>  | 60                       | 80                   | 275  | 45mm AC                            |
|  | Collector   | 7.5x10 <sup>6</sup>  | 60                       | 80                   | 275  | 45mm AC                            |
| Arterial and distributor roads                               | Sub-arterial<br>Main Street<br>Traffic Distributer<br>Controlled Distributer<br>Rural Arterial <sup>[3]</sup> | Traffic Loading Assess Required<br><br>Minimum 1.0x10 <sup>7</sup> | 60                       | 80                   | 275  | 45mm AC                            |

Notes—

- [1] The minimum pavement thickness does not include subgrade replacement materials. Testing and reporting on pavement construction shall be in accordance with Section SC6.3.12.
- [2] A minimum 30mm AC surfacing is required for intersections, cul-de-sacs and other areas with the potential for high turning loads.
- [3] Major Rural Roads may alternatively be constructed using a 2 coat seal subject to Council approval.

### **Subgrade replacement material**

- (1) Where subgrade replacement materials are proposed, a suitable material with a 'California Bearing Ratio' (CBR) value of not less than 15 must be used (subject to the requirements of 'Australian Roads Research Board' (ARRB) beneath the base and sub base courses to make up the total required pavement depth.

### **Surface treatments**

- (2) Bitumen seal:-
- (a) bitumen seal must consist of a prime coat and two seal coats and be applied in accordance with Austroads Publications.
- (3) Asphalt:-
- (a) asphalt surfacing must be in accordance with dense graded 10mm nominal (AC10 or HM10); and
  - (b) pavements must be primed as for bitumen seals and tack coated immediately prior to laying asphalt.

### **Pavement widening**

- (4) The pavement design for road widening must be in accordance with **Table SC6.3.4.3 (Pavement and surfacing requirements)**. However, where the design pavement depth is less the existing pavement, the existing pavement depth must be adopted to provide for pavement drainage.
- (5) Existing pavements must be cut back in minimum 150mm steps for each layer of the new pavement widening.

### **Subsoil drainage**

- (6) Subsoil Drainage must be provided in the following locations:-
- (a) under all kerb, kerb and channel or edge restraint;
  - (b) under all traffic islands containing landscaping;
  - (c) in all locations where the wet weather water table is above the subgrade or where natural springs may wet the pavement; and
  - (d) in any location where there is insufficient side drainage (table drains) or where the pavement materials are not free draining.
- (7) Subsoil drainage should only be used in rural areas where table drains will not adequately protect the pavement from wetting (i.e. springs).
- (8) Subsoil drainage must ensure free draining outlet conditions. This may require extending subsoil drainage outside the development limits.

### **Pavement Service Crossings**

- (9) Under road boring must be used to cross existing roads unless otherwise approved by Council.

## SC6.3.5 Stormwater

### 6.3.5.1 General

- (1) All stormwater drainage must be in accordance with the Queensland Urban Design Manual (QUDM) except where outlined in this document.
- (2) All structures and materials must be in accordance with Australian Standards, manufacturers' specifications and industry standards.  
The design of the stormwater system must accommodate the future developed peak flows from the development site and upstream catchments based on land uses and development potential indicated in the Planning Scheme.
- (3) The design must ensure that continuity with adjoining developments is taken into consideration.
- (4) Development in flood prone areas or in overland flow paths must demonstrate no adverse impacts external to the development site.
- (5) Development must demonstrate no loss of flood storage (except where specified in the planning scheme codes). Any cut earthworks to offset loss of storage must be in close proximity to the filling works.
- (6) Provision must be made for climate change in accordance with State Government Policies and/or current industry practices.

### 6.3.5.2 Flood studies

- (1) Flood studies, modelling and reporting must be in accordance with QUDM as modified by this section.
- (2) Hydrographs will be produced from the 'Intensity-Frequency-Duration' (IFD) diagram for Fraser Coast using the Laurensen Method (refer to "Australian Rainfall and Runoff"). Derivation of hydrographs using the rational method must not be used.
- (3) Parameters to be used in the model unless agreed otherwise are as follows:-

| Surface condition            | Rainfall losses            |
|------------------------------|----------------------------|
| Impervious surfaces          | I.L. 0mm<br>C.L. 0mm/hr    |
| Pervious surfaces (non-sand) | I.L. 15mm<br>C.L. 2.5mm/hr |
| Pervious surfaces (sand)     | I.L. 35mm<br>C.L. 2.5mm/hr |

- (4) An electronic copy of flood modelling used must be provided to Council with the submission of the reports.
- (5) The natural and existing surface formations used in hydraulic modelling must be derived from ground survey or from Light Detection and Ranging (LIDAR) mapping and verified for accuracy.

### 6.3.5.3 Catchment hydrology

#### Coefficients of runoff

**Table SC6.3.5.3 Percentage impervious by zone**

| Zone                                      |  | % Impervious                  |
|---|--|-------------------------------|
| Low density residential <sup>[1]</sup>    | Lots ≤ 450m <sup>2</sup>                       | 70%                           |
|   | Lots 450 - 1,000m <sup>2</sup>                 | 60%                           |
|   | Lots 1,000m <sup>2</sup> - 2,000m <sup>2</sup> | 40%                           |
| Medium density residential                |  | 80%                           |
| High density residential                  |  | 90%                           |
| Principal centre                          |  | 100%                          |
| District centre                           |  | 100%                          |
| Local centre                              |  | 100%                          |
| Neighbourhood centre                      |  | 100%                          |
| Low impact industry                       |  | 100%                          |
| Medium impact industry                    |  | 100%                          |
| High impact industry                      |  | 100%                          |
| Waterfront and marine industry            |  | 100%                          |
| Sport and recreation                      |  | 10%                           |
| Open space                                |  | 10%                           |
| Environmental management and conservation |  | 0%                            |
| Community facilities                      |  | 100%                          |
| Emerging community                        |  | Refer to equivalent use rates |
| Limited development (constrained land)    |  | Refer to equivalent use rates |
| Mixed use                                 |  | 100%                          |
| Rural                                     |  | 2%                            |
| Rural residential                         | ≥ 4,000m <sup>2</sup>                          | 20%                           |
|   | ≥ 1ha  | 15%                           |
|   | ≥ 2ha  | 10%                           |
| Specialised centre                        |  | 100%                          |
| All roads                                 |  | 90%                           |

Note—

<sup>[1]</sup> Where a development has a lot yield or density lower than anticipated, drainage infrastructure shall be sized to accommodate the highest lot yield or densities indicated in the planning scheme.

<sup>[2]</sup> All % impervious values exclude roads.

#### **Rainfall intensity – frequency – duration data (IFD)**

- (1) Site specific Intensity - Frequency - Duration (IFD) data is to be obtained from the Bureau of Meteorology on the following link:-

<http://www.bom.gov.au/hydro/has/cdirswebx/cdirswebx.shtml>

### 6.3.5.4 Drainage systems

#### Design criteria

- (1) The design criteria for average recurrence intervals for major and minor systems are outlined in the following table:-

**Table SC6.3.5.4a Design criteria for major and minor systems**

|   |                           |   |
|---|---------------------------|---|
| <b>(i) MAJOR SYSTEM DESIGN ARI (years)</b>  |                           | <b>100</b>  |
| <b>(ii) MINOR SYSTEM DESIGN ARI (years)</b> |                           |   |
| <b>Development Category or Zone</b>         |                           |   |
| Commercial                                  |                           | 10  |
| Industrial                                  |                           | 2   |
| Medium and High density residential zones   |                           | 10  |
| Low density residential zones               |                           | 2   |
| Rural residential                           |                           | 2   |
| Private open space                          |                           | 1   |
| Major road                                  | Kerb and channel flow     | 10 <sup>[1]</sup>   |
|   | Cross drainage (culverts) | 50 <sup>[2]</sup>   |
| Minor road                                  | Kerb and channel flow     | Refer to development category                               |
|   | Cross drainage (culverts) | 10 <sup>[2]</sup>   |
| Footpaths and shared bike paths             | All                       | 2   |
| Recreation parks                            | All                       | 1<br>Refer to section 6.3.7 for Flood Immunity Requirements |

Notes—

- [1] The design ARI for the minor drainage system in a major road shall be that indicated for the major road, not that for the Development Category of the adjacent area.
- [2] Culverts under roads should be designed to accept the full flow for the minor system ARI shown. In addition the designer must ensure adequate public safety controls (e.g. d\*V product) exist and that the nominated Major Storm flow does not cause unacceptable damage to adjacent properties, or adversely affect the use of the land. If upstream properties are at a relatively low elevation, it may be necessary to install culverts of capacity greater than that for the minor system ARI design storm to ensure unacceptable flooding of upstream properties does not occur. In addition, the downstream face of causeway embankments may need protection where overtopping is likely to occur.
- [3] The terms used in this table are described in the Glossary and Table 7.02.2 of the *Queensland Urban Drainage Manual*.

**Flood hazard**

**Table SC6.3.5.4b Degree of flood hazard by land use**

| Land use   | Appropriate degree of hazard |     |        |      |         |
|--|------------------------------|-----|--------|------|---------|
|  | Nil                          | Low | Medium | High | Extreme |
| Open Space/recreation  | ✓                            | ✓   | ✓      | ✓    | ✓       |
| Clubs/non-habitable buildings associated with enjoyment of public open space | ✓                            | ✓   | ✓      | ✓    |         |
| Commercial/industrial  | ✓                            | ✓   | ✓      |      |         |
| Residential  | ✓                            | ✓   | ✓      |      |         |
| Public Institutions  | ✓                            | ✓   | ✓      |      |         |



|                              |   |   |   |   |  |
|------------------------------|---|---|---|---|--|
| Car parking below buildings  | ✓ | ✓ | ✓ | ✓ |  |
| Caravan Parks                | ✓ | ✓ | ✓ |   |  |
| Council Offices              | ✓ | ✓ |   |   |  |
| Schools                      | ✓ | ✓ |   |   |  |
| Homes for the elderly        | ✓ | ✓ |   |   |  |
| Hospitals                    | ✓ | ✓ |   |   |  |
| Emergency services buildings | ✓ | ✓ |   |   |  |
| Police/fire stations         | ✓ | ✓ |   |   |  |
| Museums/libraries/archives   | ✓ |   |   |   |  |
| Telephone exchanges          | ✓ |   |   |   |  |

**Table SC6.3.5.4c Defined degree of flood hazard**

| Criteria  | Degree of flood hazard  |   |   |                                  |
|---|---|---|---|----------------------------------|
|   | Low   | Medium  | High  | Extreme                          |
| Wading ability  | Children and the elderly could wade (velocity x depth product <0.25)  | Fit adults can wade (velocity x depth product <0.4)                               | Fit adults would have difficult wading (velocity x depth product <0.6)      | Wading is not an option          |
| Evacuation distances  | <200m   | 200 - 400m  | 400 – 600m  | >600m                            |
| Maximum flood depths  | <0.3m   | <0.6m   | <1.2m   | >1.2m                            |
| Maximum flood velocity  | <0.4m/s   | <0.8m/s   | <1.5m/s   | >1.5m/s                          |
| Typical means of egress   | Sedan   | Sedan early, but 4WD or trucks later  | 4WD or trucks only in early stages, boats, helicopters                      | Large trucks, boats, helicopters |
| Timing (requires evacuation times to be established in Council's counter disaster plan) | Ample for flood forecasting. Warning and evacuation routes remain passable for twice as long as evacuation time | Evacuation routes remain trafficable for 1.5 times as long as the evacuation time | Evacuation routes remain trafficable for only up to minimum evacuation time | Insufficient evacuation time     |

**Allotments and building pads**

- (2) Flood levels for development in high and medium storm tide hazard areas as indicated in the coastal protection overlay must be in accordance with the current storm tide study adopted by Council. A Freeboard component is not required when filling to the storm tide level. Refer to Table **SC6.3.5.4e** for Lot and building pad immunity by use type.
- (3) Flood levels for development must be in accordance with the flood level adopted by Council. Localised flood studies to determine a flood level for a particular development may be approved if the study provides a more accurate assessment of the flood level than the level adopted by Council.
- (4) Council may require a localised flood study to demonstrate that a proposed development does not cause adverse impacts and that freeboard and flood free access requirements have been achieved.
- (5) Where storm tide and terrestrial flooding impact on a development site, the higher fill level must be adopted.
- (6) Vehicle and pedestrian access from the road to the building pad must be available in a 1 in 100 year ARI storm event. Depth of inundation of the evacuation route must not exceed 300mm.

- (7) The minimum lot and building pad immunity and freeboard requirements for development impacted by terrestrial flooding are outlined in **Table SC6.3.5.4d** below:-

**Table SC6.3.5.4d Terrestrial flooding - Lot and building pad immunity and freeboard by use type**

| Zone or use  |            | Designated flood event          | % of lot above the designated flood event  | Minimum surface level |
|--|------------|---------------------------------|--|-----------------------|
| Low density residential  |            | 1 in 100 year ARI               | For lots < 2,000m <sup>2</sup> , 100% of lot<br>For lots ≥ 2000m <sup>2</sup> , min 1,200m <sup>2</sup> of lot | DFE + 300mm           |
| Medium density residential,<br>High density residential  |            | 1 in 100 year ARI               | 100% of Lot  | DFE + 300mm           |
| Rural residential  | Lots < 1ha | 1 in 10 year ARI                | 100% of Lot  | DFE + 300mm           |
|  |            | 1 in 100 year ARI               | Min 1,200m <sup>2</sup>  |                       |
|  | Lots ≥ 1ha | 1 in 2 year ARI                 | 100% of Lot  |                       |
|  |            | 1 in 100 year ARI               | Min 1,200m <sup>2</sup>  |                       |
| Principal centre<br>District centre<br>Local centre<br>Neighbourhood centre  |            | 1 in 100 year ARI               | Area dependant on the use  | DFE + 300mm           |
| Low impact industry<br>Medium impact industry<br>High impact industry  |            | 1 in 100 year ARI               | Area dependant on the use  | DFE + 300mm           |
| Waterfront and marine industry   |            | 1 in 100 year ARI               | Area dependant on the use  | DFE + 300mm           |
| Sport and recreation   |            | 1 in 5 year ARI                 | Area dependant on the use  | DFE + 300mm           |
|  |            | 1 in 100 year ARI               | Area dependant on the use  |                       |
| Open space   |            | 1 in 5 year ARI                 | Area dependant on the use  | DFE + 300mm           |
|  |            | 1 in 100 year ARI               | Area dependant on the use  |                       |
| Environmental management and conservation zone   |            | N/A                             | N/A  | N/A                   |
| Emerging community   |            | 1 in 100 year ARI               | Area dependant on the use  | DFE + 300mm           |
| Limited development (constrained land)   |            | 1 in 100 year ARI               | Area dependant on the use  | DFE + 300mm           |
| Mixed use  |            | 1 in 100 year ARI               | Area dependant on the use  | DFE + 300mm           |
| Rural  |            | N/A<br>if no dwelling component | N/A<br>if no dwelling component.<br>1,200m <sup>2</sup> of lot if containing a dwelling component.             | DFE + 300mm           |
| Specialised centre   |            | 1 in 100 year ARI               | Area dependant on the use  | DFE + 300mm           |
| Community facilities   |            | 1 in 200 year ARI               | Area dependant on the use  | DFE + 300mm           |
| Retirement village, equipment and vehicle depot, warehouse, childcare centre, minor public utility, police/fire stations, places of refuge, hazardous chemical storage (e.g. fuel depot) |            | 1 in 200 year ARI               | Area dependant on the use  | DFE + 300mm           |
| Medical centre, hospital, disaster management facilities, power stations, major electrical infrastructure, water and sewerage treatment plants, major telecommunications infrastructure  |            | 1 in 500 year ARI               | Area dependant on the use  | DFE + 300mm           |

Notes—

- [1] Commercial or Industrial development subject to flooding from the Mary River or Storm Surge may be approved below the nominated flood level depending on the use and measures to mitigate flood impacts and damage.

- (8) The minimum lot and building pad immunity requirements for development impacted by storm tide flooding are outlined in **Table SC6.3.5.4e** below:-

**Table SC6.3.5.4e Storm tide flooding - Lot and building pad immunity by use type**

| Zone or use  |            | % of lot above the minimum surface design level  | Minimum surface level |
|--|------------|--|-----------------------|
| Low density residential  |            | For lots < 2,000m <sup>2</sup> , 100% of lot<br>For lots ≥ 2000m <sup>2</sup> , min 1,200m <sup>2</sup> of lot | DSTE                  |
| Medium density residential,<br>High density residential  |            | 100% of Lot  | DSTE                  |
| Rural residential  | Lots < 1ha | 100% of Lot<br>Min 1,200m <sup>2</sup>   | DSTE                  |
|  | Lots ≥ 1ha | 100% of Lot<br>Min 1,200m <sup>2</sup>   |                       |
| Principal centre<br>District centre<br>Local centre<br>Neighbourhood centre  |            | Area dependant on the use  | DSTE                  |
| Low impact industry<br>Medium impact industry<br>High impact industry  |            | Area dependant on the use  | DSTE                  |
| Waterfront and marine industry   |            | Area dependant on the use  | DSTE                  |
| Sport and recreation   |            | Area dependant on the use  | DSTE                  |
| Open space   |            | Area dependant on the use  | DSTE                  |
| Environmental management and conservation zone   |            | N/A  | N/A                   |
| Emerging community   |            | Area dependant on the use  | DSTE                  |
| Limited development (constrained land)   |            | Area dependant on the use  | DSTE                  |
| Mixed use  |            | Area dependant on the use  | DSTE                  |
| Rural  |            | N/A<br>if no dwelling component  | DSTE                  |
| Specialised centre   |            | Area dependant on the use  | DSTE                  |
| Community facilities   |            | Area dependant on the use  | DSTE                  |
| Retirement village, equipment and vehicle depot, warehouse, childcare centre, minor public utility, police/fire stations, places of refuge, hazardous chemical storage (e.g. fuel depot) |            | Area dependant on the use  | DSTE                  |
| Medical centre, hospital, disaster management facilities, power stations, major electrical infrastructure, water and sewerage treatment plants, major telecommunications infrastructure  |            | Area dependant on the use  | DSTE                  |

**Design tail water level**

- (9) The minimum design tail water level for pipe and channel outfalls to tidal waters for a minor storm event is Mean High Water Springs (MHWS).

- (10) The minimum design tail water level for pipe and channel outfalls to tidal waters for a major storm event is Highest Astronomical Tide (HAT).
- (11) The minimum design tail water level for connections to existing or future trunk infrastructure is to be based on Council's adopted drainage study reports where applicable.

**Outlet levels**

- (12) All stormwater pipe systems must be free draining.
- (13) For Tidal outlets (excluding controlled tidal lakes), the outlet invert level must not be less than Mean Sea Level (MSL).
- (14) For permanent water bodies, the outlet invert level must be at or above the permanent water level.

**Flow paths and pipework between allotments**

- (15) Flow paths and underground drainage between allotments should be avoided where possible. However, where they are provided, the reserve width must be not less than 4 metres and must be finished to minimise the maintenance burden on Council.

**Pipe grade and flow velocity**

- (16) Minimum and maximum pipe grades must be in accordance with QUDM Table 7.12.1 - *Acceptable pipe grades for pipes flowing full.*
- (17) Minimum and maximum flow velocities must be in accordance with QUDM Table 7.11.1 - *Acceptable flow velocities for pipes and box sections.*
- (18) Open channels with a bed width greater than 1.5 metres and with longitudinal grades less than 1% must be provided with a low flow system. Typical systems include concrete invert "v-drains" or low-flow pipe systems with surcharge pits.
- (19) Detention Basins and Bio-Retention Basins must be designed to include access ramps for cleaning and maintenance purposes. The access ramps must be designed to accommodate Council's maintenance equipment and service vehicles with appropriate driveway connections to the adjoining road reserve and or access easement.
- (20) Bio-retention Basins must be designed with free draining outlets to the legal point of discharge. The sublayer drainage material must be designed to be free of tidal inundation and/or salt water intrusion.
- (21) Detention Basins must have a minimum floor grade of 1% to achieve free draining conditions to the basin outlet structure.

**6.3.5.5 Structures and materials**

**Stormwater pipe and box culvert materials**

- (1) Saltwater resistant concrete pipes and culverts must be used where the invert level is below HAT, or in areas suspected of having a high salt content.
- (2) All pipes 300mm in diameter or greater must be a minimum of Class 3 Reinforced Concrete Pipes (RRJ) or an approved equivalent.
- (3) Where minimum cover cannot be achieved, a higher pipe class capable of supporting increased loads must be used in accordance with manufacturers specifications.

### **Stormwater pits**

- (4) Gully pit tops must be precast with heavy duty lintels.
- (5) Grates must not be used within road travel lanes or pathways.
- (6) All hinged grates must be bolted down.

### **Field inlet pits**

- (7) Field inlets in parks, road reserves and drainage reserves must be raised grate or dome top inlets.
- (8) In parks and areas subject to pedestrian traffic, raised grate inlet pits must be identified by an arch rail 1.2m high with reflectorised marking.
- (9) All field inlets must have a minimum 300mm wide concrete apron surrounding the pit.

### **6.3.5.6 Inter-allotment drainage**

- (1) Urban residential lots that cannot wholly drain to the street must be provided with a Level III allotment drainage system.
- (2) Commercial, industrial and multi-unit residential development with a land area exceeding 1,000m<sup>2</sup> must be provided with Level V drainage system.
- (3) All commercial and industrial allotments and high or medium density residential allotments in excess of 1,000m<sup>2</sup> must be provided with an inter-allotment drainage system suitable for a Level V drainage system.
- (4) Stormwater connections from commercial, industrial or multi-unit residential developments to Council's stormwater systems must be to an existing gully pit or field inlet to provide for surcharge flows. Where a relief structure is not available, a field inlet must be provided inside of the property at the closest point to the connection. Any surcharge from this pit must be directed towards the 1 in 100 year ARI flow paths.
- (5) Inter-allotment drainage pits for residential lots must be sized according to the following table:-

| <b>Maximum Depth to Invert (mm)</b> | <b>Boxes – Internal Dimensions (mm)</b>           |
|-------------------------------------|---|
| < 900                               | 600 x 600   |
| > 900 < 1,200                       | 600 x 900   |
| >1,200                              | Standard 1,050mm dia manhole with 600 x 600 grate |

Easements must be provided over all inter-allotment drainage systems within private property.

- (6) A drainage easement shall be wide enough to contain the pipeline and provide working space on each side of the pipeline for future maintenance activities.
- (7) Easements are to be provided in private property over pipe systems and overland flow paths. The minimum width of easement will generally be as follows:

| <b>Pipe Diameter</b>                               | <b>Easement Width</b> |
|--|-----------------------|
| Interallotment drainage (up to 300mm pipe maximum) | 1.5m                  |
| Pipes 375mm and 450mm                              | 2.0m                  |



- (8) Where level 3 inter-allotment drainage is unable to be provided for infill development, alternate solutions that address adverse impacts on downstream properties may be considered subject to approval by Council. For the purpose of this clause, “infill development” is development on land no more than 2000sq.m in size.

#### **6.3.5.7 Culverts**

- (1) Culverts must be extended clear of the standard road verge formations to maintain provision for services on standard alignments.
- (2) Where multiple culverts are proposed, the invert of one culvert must be 100mm lower than the remaining culverts to provide for low flows and fauna movements.

## SC6.3.6 Water supply and sewer

### 6.3.6.1 Preliminary

From a future planning perspective, where staged development is proposed, an overall concept plan and servicing strategy for the whole development must be provided before servicing of the first stage is considered. In this way, consideration can be given to future strategic planning/infrastructure requirements and possible adjoining developments. In addition, mains must be designed to provide for flows to/from contributing catchments and be extended to the boundaries of a proposed development to enable future extension.

A lot layout must be provided in a single AutoCAD layer (MGA zone 56) with a Development Application for Reconfiguring a Lot application.

### 6.3.6.2 Sewerage Code of Australia – Local requirements

- (1) Sewerage infrastructure must be designed in accordance with the Gravity Sewerage Code of Australia, WSA 02-2014, Version 3.1, published by the Water Services Association of Australia, with the following local requirements. These requirements are in addition to those of the Gravity Sewerage Code except that where there is an inconsistency; **Table SC6.3.6.2 (Local changes to WSA 02- 2014version 3.1)** must take precedence over the Gravity Sewerage Code.

#### Local design requirements

**Table SC6.3.6.2 Local changes to WSA 02-2014 version 3.1**

| Section            | Local changes   |
|--------------------|---|
| 0.1                | The sewer reticulation system is defined as sewers of DN 150mm and DN 225mm, used to collect and convey sewage from properties. Design requirements for sewers larger than DN 225mm must be confirmed prior to design.  |
|                    | Prior to proceeding with the design, the Consultant must obtain 'As Constructed' sewer information relevant to the proposed development and confirmation in writing of the approved point(s) for connection to existing sewerage infrastructure.  |
| 5.1<br>5.2.3       | Where land terrain permits to gravitate sewage flow, gravity sewer must be provided as the conforming form of sewer. When the provision of gravity sewer is impractical, alternative forms of sewer proposal including pressure sewer may be discussed with Council to ensure any special requirements are identified and understood by all parties. Approval of alternative sewers shall be at Council's discretion. |
| 3.3.2              | Design average dry weather flow (ADWF) must be 450 L/ED/day. Refer to Table SC6.3.6.5 Water and Sewerage Demand for Development to determine the demand to be applied to a particular development.  |
|                    | The peak instantaneous wet weather flow must be in accordance with the Queensland Department of Energy and Water supply "Planning Guidelines for Water Supply and Sewerage, April 2014" and in no case will be less than 5 x ADWF for catchments up to 1,000 ED. For larger catchments the peaking factor should be obtained from the Service Provider.   |
| 5.2.4.5<br>5.2.4.1 | An easement must be provided over all sewers on Commercial and Industrial properties in favour of Council.  |
| 5.2.8              | Where a sewer main is constructed in private property (other than Commercial and Industrial) on an alignment other than the alignment specified in Clause 5, an easement in favour of Council must be provided over the sewer.  |
|                    | The sewer easement must extend at least 2.0 metres each side of the sewer main or to the property boundary, whichever is the closer.  |
|                    | Where a sewer main invert level is more than 4 metres below finished surface level a registered easement extending 3 metres each side of the sewer must be provided.  |

| Section               | Local changes   |                       |   |       |     |       |     |       |       |
|-----------------------|---|-----------------------|---|-------|-----|-------|-----|-------|-------|
| 5.2.3 & 5.2.4.1       | A sewer may cross a road at an angle to reduce the number of manholes to be used, provided house connections are not located within the road pavement.  |                       |   |       |     |       |     |       |       |
| 5.2.4.1               | Sewerage reticulation mains within private property must be located on an alignment 1.0 (+/- 0.2) metres from side or rear boundaries or 1.5 (+/- 0.2) metres from the front boundary. Sewers must not be located closer than 1.0 (+/- 0.2) metres from the property boundary.  |                       |   |       |     |       |     |       |       |
| 5.2.4.4               | Where residential lots are 600m <sup>2</sup> or less sewers shall only be located within the front building setback.  |                       |   |       |     |       |     |       |       |
| 5.3.8                 | Horizontal curves are not permitted in gravity sewers. Any change of direction must occur at a manhole.   |                       |   |       |     |       |     |       |       |
| 5.4.4                 | Clearances between sewers and other underground services must be in accordance with the Gravity Sewerage Code of Australia WSA 02-2014.   |                       |   |       |     |       |     |       |       |
| 2.3.4                 | <p>The maximum allowable catchment that may be serviced by gravity reticulation sewers is:</p> <table border="1"> <thead> <tr> <th>Pipe nominal diameter</th> <th>Maximum allowable equivalent dwellings (ED)</th> </tr> </thead> <tbody> <tr> <td>DN150</td> <td>300</td> </tr> <tr> <td>DN225</td> <td>800</td> </tr> <tr> <td>DN300</td> <td>1,600</td> </tr> </tbody> </table> <p>Sewers must be designed to accommodate a fully developed upstream catchment. For reconfiguring of lot development, sewers must be extended to the boundary of the adjoining upstream allotment to facilitate future extensions. For Material Change of Use development applications requiring a sewer extension, the sewer must be extended to the upstream boundary where external works for that development would otherwise need to be reconstructed or extended inside of the property where no other reasonable options are available external to the development site.</p> <p>Note: The intention of this clause is to provide connectivity and ensure a logical and efficient roll out of sewer infrastructure without having to reconstruct the Service Provider's assets or be affected by property ownership and access issues. Additional Consideration of infill development will apply to accommodate existing constraints.</p> | Pipe nominal diameter | Maximum allowable equivalent dwellings (ED) | DN150 | 300 | DN225 | 800 | DN300 | 1,600 |
| Pipe nominal diameter | Maximum allowable equivalent dwellings (ED)   |                       |   |       |     |       |     |       |       |
| DN150                 | 300   |                       |   |       |     |       |     |       |       |
| DN225                 | 800   |                       |   |       |     |       |     |       |       |
| DN300                 | 1,600   |                       |   |       |     |       |     |       |       |
| 5.5.7.1               | <p>Note that the minimum grades specified in the Gravity Sewerage Code are the as-constructed grades. Design grades must allow for construction tolerances in accordance with the construction specification. The desirable minimum grade for a DN150 sewer is 0.67% (1:150).</p> <p>Note that the minimum grade of any sewer with a developed catchment of ≤ 10 ED is 1.0%, and the minimum grade of property connection sewers is 1.2% for a DN150 connection and 1.65% for a DN100 connection.</p>   |                       |   |       |     |       |     |       |       |
| 7.1                   | The only maintenance structures approved are Maintenance Holes (manholes, MHs), except at the upstream terminus of a DN150 sewer which is less than 35 metres from a manhole in which case a Terminal Maintenance Shaft or IO may be used provided there are no more than 2 properties connected to the sewer, and the minimum grade of the sewer is 1.2%.  |                       |   |       |     |       |     |       |       |
| 5.6.1                 | <p>Sewers and house connections must be constructed at the shallowest possible depth such that:-</p> <ul style="list-style-type: none"> <li>▪ All properties can be completely serviced;</li> <li>▪ The minimum depth to the invert of a sewer at a manhole must be 1.2m;</li> <li>▪ The minimum cover must be 600mm for all sewers located within private property unless specified otherwise by the manufacturer; and</li> <li>▪ There is specified clearance from all other services.</li> </ul> <p>The maximum depth of a sewer main from finished surface level to invert is 5.0 metres.</p>   |                       |   |       |     |       |     |       |       |
| 6.3.3                 | Sewers include the IO interface within the serviced property, extended to no more than 200mm below the finished ground surface. The buried IO must be clearly marked at the surface for asset data collection and location purposes, and marked below ground with a buried metallic disc or similar that can be located with a metal detector.  |                       |   |       |     |       |     |       |       |
| 5.7                   | Combined house drains are not permitted. Shared road crossing connections are   |                       |   |       |     |       |     |       |       |

| Section | Local changes  |
|---------|--|
|         | permitted as per WBW Standard Drawing.   |
| 6.3.2   | The maximum spacing between consecutive manholes is 90 metres.<br>Where maintenance holes are not located within a road reserve they must be finished 100mm to 150mm above the finished surface level. |
| 7.6.3   | All manholes greater than 3m from the surface level to the outlet invert shall be cast insitu.   |

#### **Other sewerage requirements**

- (2) A concept plan and servicing strategy for the whole development must be provided before servicing of the first stage will be considered. In this way, consideration can be given to future strategic planning/infrastructure requirements and possible adjoining developments.
- (3) Where a development has a lot yield or density lower than anticipated, sewerage infrastructure shall be sized to accommodate the highest lot yield or densities indicated in the planning scheme.

#### **6.3.6.3 Sewerage Pumping Station Code of Australia – Local requirements**

Sewerage infrastructure must be designed in accordance with the Sewerage Pumping Station Code of Australia, WSA 04-2005, Version 2.1, published by the Water Services Association of Australia, with the following local requirements. These requirements are in addition to those of the Sewerage Pumping Station Code except that where there is an inconsistency; **Table SC6.3.6.3 (Local changes to WSA 04-2005 version 2.1)** must take precedence over the Sewerage Pumping Station Code.

#### **Local design requirements**

**Table SC6.3.6.3 Local changes to WSA 04-2005 version 2.1**

| Section | Local changes  |
|---------|--|
| 3.7     | Sewer pumping stations must be situated on their own Lot with the ownership of the lot transferred to Council. The lot shall have minimum dimensions of 10m x 10m and have legal access. |
|         | Sewer pumping stations are to be constructed as per Wide Bay Water Standard Drawings   |

#### **Other sewerage pumping station requirements**

- (1) Sewerage pumping stations shall be designed to comply with conditions 1 and 2 of 'Code of Environmental Compliance for Certain Aspects of Sewerage Treatment Activities (ERA 63) Version 1.
- (2) Rising mains shall not be located within private property.

#### **6.3.6.4 Water Supply Code of Australia – Local requirements**

- (1) Water supply infrastructure must be designed in accordance with the Water Supply Code of Australia, WSA 03-2011, Version 3.1, published by the Water Services Association of Australia, with the following local requirements. These requirements are in addition to those of the Water Supply Code except that where there is an inconsistency these requirements take precedence over the Water Supply Code.

#### **Local design requirements**

**Table SC6.3.6.4 Local changes to WSA 03-2011 version 3.1**

| Section          | Local changes   |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
|------------------|---|--|---|-------------------------------------|--|--|--|--------------------|--|--------------------------|-------------------------------------|--|-------|----|----|----|---|---|-------|-----|-----|-----|----|---|-------|-----|-----|-----|----|----|-------|-----|-----|-----|----|
| 1.2.5.1          | The designer must provide the Service Provider with the details of the development so that acceptable connection points and the other design parameters listed in the Water Supply Code can be determined.  |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| 1.2.3            | A concept plan and servicing strategy for the whole development must be provided before servicing of the first stage will be considered. In this way, consideration can be given to future strategic planning/infrastructure requirements and possible adjoining developments.  |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| 2.3.1            | An average day demand of 590 litres per ED (Equivalent Dwelling) will be adopted for design purposes  |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
|                  | To calculate the demand for individual developments, refer to Table SC6.3.6.5– Water and Sewer Demand for Development.  |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| 2.4              | The area supplied by a single water main must not exceed 100 ED. Once the supply area exceeds 100 ED an alternative feed main must be provided to limit the number of consumers that will be without water in the event of a mains failure or repair.   |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| 3.1.6.1          | Designs for water mains DN300 or larger must be subject to specific criteria nominated by the Service Provider.   |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| 3.1.3            | Reticulation mains must be sized in accordance with the following table, which has been derived from Table 3.1 in the Water Supply Code:-   |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
|                  | <table border="1"> <thead> <tr> <th rowspan="2">Nominal diameter</th> <th colspan="5">Maximum capacity of main (single direction feed only)</th> </tr> <tr> <th>Residential (lots)</th> <th>Residential (lots) Identified areas <math>\geq 2,000\text{m}^2</math></th> <th>Rural Residential (lots)</th> <th>General Industrial, Commercial (ha)</th> <th>High usage Industrial, Commercial (ha)</th> </tr> </thead> <tbody> <tr> <td>DN100</td> <td>40</td> <td>30</td> <td>10</td> <td>-</td> <td>-</td> </tr> <tr> <td>DN150</td> <td>160</td> <td>140</td> <td>125</td> <td>23</td> <td>-</td> </tr> <tr> <td>DN200</td> <td>400</td> <td>350</td> <td>290</td> <td>52</td> <td>10</td> </tr> <tr> <td>DN250</td> <td>650</td> <td>570</td> <td>470</td> <td>84</td> <td>24</td> </tr> </tbody> </table> <p>Note that DN225 diameter pipe is not approved for water supply works.</p> | Nominal diameter   | Maximum capacity of main (single direction feed only) |                                     |  |  |  | Residential (lots) | Residential (lots) Identified areas $\geq 2,000\text{m}^2$ | Rural Residential (lots) | General Industrial, Commercial (ha) | High usage Industrial, Commercial (ha) | DN100 | 40 | 30 | 10 | - | - | DN150 | 160 | 140 | 125 | 23 | - | DN200 | 400 | 350 | 290 | 52 | 10 | DN250 | 650 | 570 | 470 | 84 |
| Nominal diameter | Maximum capacity of main (single direction feed only)   |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
|                  | Residential (lots)  | Residential (lots) Identified areas $\geq 2,000\text{m}^2$ | Rural Residential (lots)                              | General Industrial, Commercial (ha) | High usage Industrial, Commercial (ha) |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| DN100            | 40  | 30   | 10  | -                                   | -                                      |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| DN150            | 160   | 140  | 125   | 23                                  | -                                      |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| DN200            | 400   | 350  | 290   | 52                                  | 10                                     |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| DN250            | 650   | 570  | 470   | 84                                  | 24                                     |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| 3.1.5            | Allowance for fire flows must be in accordance with the Queensland Department of Energy and Water "Planning Guidelines for Water Supply and Sewerage, April 2014".  |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| 4.1              | Minimum pressure class for pipes and fittings must be Class 16.   |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
|                  | Ductile Iron Cement Lined (DICL), Mild Steel Cement Lined (MSCL) or Fibre Reinforced Plastic (FRP) pipes must be used for mains DN375 and above.  |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| 5.4.2<br>5.4.9   | All water main crossings of new and existing roads must be constructed with a minimum of 600mm clearance (or as otherwise specified by the manufacturer) between the crown of the pipe and the road subgrade. The use of DICL pipe for road crossings is not mandatory, but if used, must be bedded in accordance with the requirements for a flexible pipe.  |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
|                  | All water main crossings > DN200 must be DICL unless approved otherwise.  |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
|                  | Brass or stainless steel indicator discs inscribed 'W' for water service conduits and 'WM' for water mains must be placed in the face of the kerb above the main. Where no kerb is provided a 150mm long cup head bolt must be driven into the pavement after bitumen sealing is completed.   |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| 5.7              | A minimum of DN150 water main must be provided on both sides of the road for industrial/commercial developments.  |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |
| 5.10             | Where a dead end is unavoidable (including temporary arrangements), the water main must be laid across the entire frontage of the last property ending with a flanged valve strapped down to a thrust block followed by a flanged hydrant tee assembly and flanged end plate, so that scouring, chlorination and possible future extension without interruption to supply for existing customers can be undertaken.<br>For cul-de-sacs WBWC Standard Drawing (Drawing No. WM01) must be used.   |  |   |                                     |  |  |  |                    |  |                          |                                     |  |       |    |    |    |   |   |       |     |     |     |    |   |       |     |     |     |    |    |       |     |     |     |    |



| Section        | Local changes   |
|----------------|---|
| 5.11.1         | In low density residential or rural residential developments where a reticulation main is laid on only one side of the street, service conduits must be constructed across the street by the developer. The conduits must <ul style="list-style-type: none"> <li>▪ be at least DN100 Class 12 uPVC or equivalent approved by Council;</li> <li>▪ be located from the Real Property boundary to the opposite Real Property boundary;</li> <li>▪ extend 300mm behind the back of the kerb or beyond the concrete pathway where provided;</li> <li>▪ have a minimum cover of 500mm (or as specified by the Manufacturer) below the pavement subgrade and be aligned where possible with the crown of the water main; and</li> <li>▪ be located to avoid conflicts with electrical conduits and pillars. There must be a minimum horizontal clearance of 600mm between water and electricity conduits.</li> </ul> |
| 5.6            | No other service must share a trench with the water main without the horizontal and vertical minimum separation distances specified in the Water Supply Code.   |
| 4.8.7<br>7.5.1 | Polyethylene (PE) sleeving is required for all DICL and must be installed in accordance with the manufacturer's recommendations.  |
| 4.6.3          | Joint deflections must be designed to no greater than the manufacturer's recommendations, or DICL bends must be provided at every change of direction. Where practical, bends must be located opposite property boundaries.   |
| 8.11.2         | Hydrant posts are not required.   |
| 4.3.6          | Unless approved otherwise by Council, all water main tees DN200 and above must have a flanged branch with a flanged sluice valve attached.  |
| 8.8.8          | Hydrant spacing must be 80 metres maximum in all areas.   |
| 8.8.9          | Hydrants must be located in line with the boundaries between properties   |
| 5.2            | On request design long sections must be provided for all water mains, except DN63 HDPE Cul-de-sac loops, showing the design cover for the main and all service crossings/clearances. Consideration must be given to the vertical alignment of the main in the location of hydrants.   |
| 5.4.2<br>5.4.9 | Where crossings are made using Polyethylene (PE) pipe, the connection between the PE and PVC or DICL shall be made in accordance with WBWC standard Drawing No. WM02.   |

#### **Other water supply design criteria**

- (2) A concept plan and servicing strategy for the whole development must be provided before servicing of the first stage will be considered. In this way, consideration can be given to future strategic planning/infrastructure requirements and possible adjoining developments.
- (3) Water mains must not be located within private property.
- (4) Where a development has a lot yield or density lower than anticipated, Water Supply infrastructure shall be sized to accommodate the highest lot yield or densities indicated in the planning scheme.
- (5) Water mains must be designed to accommodate a fully developed upstream catchment. For reconfiguring of lot development, water mains must be extended to the boundary of the adjoining upstream allotment to facilitate future extensions. For MCU applications requiring a water main extension, the water main should be extended to the upstream boundary where external works for that development would otherwise need to be reconstructed.

Note—the intention of this clause is to provide connectivity and ensure a logical and efficient roll out of water main infrastructure without having to reconstruct assets. Additional consideration of infill development will apply to accommodate existing constraints.

- (6) Each property must have only one connection point. Any redevelopment of a property must amalgamate all connections and decommission any unused services.
- (7) A separate water service must be provided for each allotment. Community title and multi-unit development must be serviced from a single metered water service (parent meter) before connecting to the internal private reticulation mains. Sub meters must be provided to all units or separate occupations in accordance with the Queensland Plumbing and Wastewater Code.
- (8) Water meters and internal private mains must be located within the property being serviced. Where a property is not serviced by an existing main, a main must be extended to service the development and to provide a connection point "on and within the property".
- (9) All water meters used must be a product approved by the Service Provider.
- (10) Metered water services shall be sized less than the Service Providers infrastructure they are connecting to. Dedicated property Fire Services shall be sized no greater than the Service Providers infrastructure they are connecting to.

### 6.3.6.5 Water and sewer demand

**Table SC6.3.6.4 Water and sewer demand for development**

| Use                         | Unit                           | Sewerage demand (ED) | Water demand (ED) |
|-----------------------------|--------------------------------|----------------------|-------------------|
| Accommodation building      | Bed                            | 0.25                 | 0.25              |
| Agriculture                 | First principles assessment    |                      |                   |
| Animal husbandry            | First principles assessment    |                      |                   |
| Aquaculture                 | First principles assessment    |                      |                   |
| Bed and breakfast           | Accommodation room             | 0.25                 | 0.25              |
| Car park (if no amenities)  |                                | NIL                  | NIL               |
| Caravan park                | Tent                           | Site                 | 0.33              |
|                             | Van                            | Site                 | 0.50              |
| Caretaker's residence       | As per multiple residential    |                      |                   |
| Cemetery                    | First principles assessment    |                      |                   |
| Child care centre           | Staff & pupils                 | 0.15                 | 0.15              |
| Community care centre       | Bed                            | 0.25                 | 0.25              |
| Primary school              | Staff & pupils                 | 0.06                 | 0.05              |
| Secondary school            | Staff & pupils                 | 0.10                 | 0.08              |
| Tertiary institution        | Staff & pupils                 | 0.10                 | 0.08              |
| Hospital                    | Bed                            | 1.50                 | 1.25              |
| Place of worship            | 100m <sup>2</sup> (GFA)        | 0.25                 | 0.15              |
| Correctional facility       | Bed                            | 0.33                 | 0.33              |
| Display home                | As per house or unit           |                      |                   |
| Equipment and vehicle depot | 100m <sup>2</sup> (GFA)        | 0.25                 | 0.25              |
| Extractive industry         | First principles assessment    |                      |                   |
| Funeral parlour             | 100m <sup>2</sup> (GFA)        | 0.25                 | 0.15              |
| Home activity               | As per house                   | 1.00                 | 1.00              |
| Home business               | 100m <sup>2</sup> (GFA)        | 0.15                 | 0.15              |
| House                       | Detached dwelling or allotment | 1.00                 | 1.00              |
| Indoor recreation           | 100m <sup>2</sup> (GFA)        | 0.50                 | 0.33              |
| Salvage yard                | First principles assessment    |                      |                   |
| Industry                    | 100m <sup>2</sup> (GFA)        | 0.40                 | 0.25              |
| Intensive animal keeping    | First principles assessment    |                      |                   |
| Licensed premises           | 100m <sup>2</sup> (GFA)        | 0.70                 | 0.50              |
| Local shop                  | 100m <sup>2</sup> (GFA)        | 0.70                 | 0.40              |
| Mechanical repair workshop  | 100m <sup>2</sup> (GFA)        | 0.40                 | 0.25              |
| Medical centre              | 100m <sup>2</sup> (GFA)        | 1.00                 | 0.75              |

| Use                        | Unit                         | Sewerage demand (ED) | Water demand (ED) |
|----------------------------|------------------------------|----------------------|-------------------|
| Minor public utility       | First principles assessment  |                      |                   |
| Motel                      | Unit                         | 0.50                 | 0.50              |
| Multiple residential       | 1 bed                        | 0.50                 | 0.45              |
|                            | 2 bed                        | 0.70                 | 0.60              |
|                            | 3 bed                        | 0.80                 | 0.70              |
| Office                     | 100m <sup>2</sup> (GFA)      | 0.25                 | 0.15              |
| Outdoor recreation         | First principles assessment  |                      |                   |
| Landscaping supplies       | 100m <sup>2</sup> (GFA)      | 0.40                 | 0.25              |
| Retail plant nursery       | First principles assessment  |                      |                   |
| Vehicle sales premises     | 100m <sup>2</sup> (GFA)      | 0.15                 | 0.15              |
| Outdoor sales premises     | First principles assessment  |                      |                   |
| Park facility              | First principles assessment  |                      |                   |
| Passenger terminal         | First principles assessment  |                      |                   |
| Public utility             | First principles assessment  |                      |                   |
| Relocatable home park      | Site                         | 0.70                 | 0.70              |
| Fast food store            | 100m <sup>2</sup> (GFA)      | 3.30                 | 2.50              |
| Restaurant                 | 100m <sup>2</sup> (GFA)      | 1.70                 | 1.30              |
| Retirement village         | Self-contained dwelling unit | 0.53                 | 0.53              |
| Roadside stall             | First principles assessment  |                      |                   |
| Service station            | Site                         | 1.50                 | 1.33              |
| Industrial retail outlet   | 100m <sup>2</sup> (GFA)      | 0.20                 | 0.15              |
| Major shopping development | 100m <sup>2</sup> (GFA)      | 0.13                 | 0.10              |
| Retail showroom            | 100m <sup>2</sup> (GFA)      | 0.20                 | 0.15              |
| Liquid fuel depot          | 100m <sup>2</sup> (GFA)      | 0.40                 | 0.25              |
| Industry - Special use     | First principles assessment  |                      |                   |
| Telecommunication facility | First principles assessment  |                      |                   |
| Veterinary facility        | 100m <sup>2</sup> (GFA)      | 1.00                 | 0.75              |
| Warehouse                  | 100m <sup>2</sup> (GFA)      | 0.15                 | 0.08              |
| Other uses                 | First principles assessment  |                      |                   |

## SC6.3.7 Landscaping and embellishments

### 6.3.7.1 Preliminary

- (1) This section is only applicable for landscaping and embellishments that will be transferred to Council's ownership or control, unless otherwise referenced in the planning scheme or a condition of approval.
- (2) All design and documentation submitted to Council for approval is to be prepared by a suitably qualified or experienced person dependent on scale and intensity of the development.
- (3) Parks and recreational areas should be developed to allow for minimal maintenance inputs and with a view to long-term economic and environmental sustainability. To achieve this, the following principles should apply;
  - (a) Minimise turfed / grassed areas that require regular mowing / irrigation;
  - (b) Plantings should focus on locally reliable and acclimatised drought tolerant species;
  - (c) The use of bollards to prevent unauthorised vehicle or pedestrian access should be minimised. Traffic regulation should be achieved through the use of dense vegetation planting or other natural barriers (slope, creek lines, rock outcrops etc.);
  - (d) Playground / exercise equipment should consist of elements with minimal moving components in order to minimise maintenance requirements; and
  - (e) Garden beds and horticultural features should be constructed and planted with appropriate species to minimise the need for on-going horticultural maintenance requirements, i.e. no requirements for regular maintenance hedging / trimming / pruning of vegetation. Garden beds are to be heavily mulched with an approved mulching material to conserve water, minimise erosion and reduce weed growth.

### 6.3.7.2 General

- (1) The Consultant must investigate and research the following parameters when preparing a landscape design:-
  - (a) surrounding native flora and fauna;
  - (b) existing site vegetation;
  - (c) site soil types and characteristics;
  - (d) topography and slope stability;
  - (e) natural drainage patterns and catchments including overland flow paths;
  - (f) local climatic conditions;
  - (g) rainfall (annual precipitation and seasonal dominance or intensity);
  - (h) temperature (average);
  - (i) solar radiation (intensity and seasonal directional patterns);
  - (j) wind (prevailing direction and expected velocity);
  - (k) surrounding human influences and cultures;
  - (l) dominant local treatments and styles that have been developed or introduced;
  - (m) current Council and State Government requirements; and
  - (n) special or additional requirements of applicants and intended users of the site/landscape.
- (2) The Consultant must ensure the design performs the functions of the intended use and purpose of the landscape. Functional elements include:-
  - (a) traffic flows (pedestrian, cyclist and vehicular);
  - (b) focus on site features and visual outlooks;
  - (c) provision of shade and shelter;
  - (d) retardation of undesirable visual or acoustic elements;
  - (e) provision of reasonable access to services for maintenance purposes;

- (f) the creation of space and comfort;
  - (g) the provision of recreational facilities;
  - (h) the encouragement and nurture of environmental attributes;
  - (i) the promotion of aesthetic enhancement;
  - (j) short and long term maintenance requirements;
  - (k) incorporating CPTED principles; and
  - (l) disability access.
- (3) When assessing plant species the following plant characteristics must be researched, in particular:-
- (a) use of local native rather than exotic species;
  - (b) dimensions at maturity and potential conflicts with roads, pathways and community infrastructure;;
  - (c) rate of growth;
  - (d) form or pattern of growth;
  - (e) cultural and maintenance requirements;
  - (f) compatibility with aforementioned site, environmental and climatic elements;
  - (g) root growth and potential conflicts with adjacent roads, pathways, water, sewer mains and other underground infrastructure;
  - (h) potential to drop limbs, leaves, flowers, seed and fruit;
  - (i) shading effect of canopy on surrounding plants, grassed areas or buildings;
  - (j) ability to regenerate or spread;
  - (k) characteristics (size, shape and colour) of plants' aesthetic features: trunk, leaves, flowers, fragrance, etc;
  - (l) any restrictive characteristics - poisonous, noxious, allergenic, spiky or prickly, etc; and
  - (m) availability in local nurseries or from bush regeneration groups such as Landcare, Greening Australia, etc.
- (4) Where it is proposed to grass an area steeper than 1 in 6, or where access is difficult or restricted, it must be demonstrated that the area can be efficiently and safely maintained using standard Council plant and equipment. Otherwise, the area shall be stabilised and landscaped in accordance with an approved landscaping plan to eliminate ongoing mowing..

**Minimum planting requirements**

- (5) Planting material must comply with the following minimum pot sizes at the time of establishment:-

| <b>Plant type</b>  | <b>Minimum pot size</b> |
|--------------------|-------------------------|
| Feature trees      | 100L                    |
| Street trees       | 45L                     |
| Other trees        | 45L                     |
| Shrubs             | 200mm                   |
| Ground covers      | 140mm                   |
| Macrophytes        | Tube stock              |
| Revegetation works | Tube stock              |

- (6) Existing trees and shrubs over 4.0m from any building work or approved car parking area or access thereto must be retained, where possible (subject to species and condition), and included in a landscape plan. Appropriate action must be taken to minimise disturbance to this vegetation during on site building work.
- (7) All trees incorporated into landscaping at the time of planting must comply with NATSPEC Guide: Specifying Trees- a guide to assessment of tree quality (Clark R. 2003) or Fraser Coast Regional Council (FCRC) Generic Nursery Stock Standards for the Supply of Container Grown or Bare Rooted Urban and Amenity Trees.



- (8) Any required 'storm staking' of mature trees stock (45L and above) must be staked using a minimum of 2 appropriate wooden stakes per tree to provide support to the tree in very high winds. Tree straps / ties must be fitted to hang loose during normal conditions and not rub or cause damage to the tree.

**Preferred gradients**

**Table SC6.3.7.2 Preferred gradients by landscape type**

| Landscape item            | Absolute range %        | Preferred range %       | Minimum required crossfall |
|---------------------------|-------------------------|-------------------------|----------------------------|
| Pathways                  | 0.5 - 12                | 1 - 8                   |                            |
| Entrance works            | 0.5 - 8                 | 1 - 4                   |                            |
| Pedestrian ramps          | up to 12                | up to 8                 |                            |
| Stairs                    | 25 - 50                 | 33 - 50                 |                            |
| Ball play area            | 1 - 5                   | 1 - 3                   |                            |
| Playground pad            | 1 - 4                   | 1 - 3                   |                            |
| Paved gutters             | 0.25 - 100              | 1 - 50                  |                            |
| Grassed swales            | 1 - 15                  | 2 - 10                  |                            |
| Terrace and sitting areas | 0.5 - 3                 | 1 - 2                   |                            |
| Grassed banks             | up to 25 <sup>[1]</sup> | up to 16 <sup>[1]</sup> |                            |
| Planted banks             | up to 50 <sup>[2]</sup> | up to 33 <sup>[2]</sup> |                            |
| Stone mulched areas       |                         |                         | 1:100                      |
| Grassed areas             |                         |                         | 1:50                       |
| Garden areas              |                         |                         | 1:25                       |
| Paved areas               |                         |                         | 1:100                      |
| Drainage pipe/trench base |                         |                         | 1:100                      |

Notes—

[1] Maximum recommended mowable slope.

[2] Dependent on soil type and slope stability.

**Parks and landscaping project specification**

- (9) The Landscaping Project Specification must accompany the operational works submission for approval. The specification is required to reflect best practices and incorporate modifications as required by this policy and the conditions of approval, Council's Local laws, policies and codes and the relevant Australian Standard Codes of Practices and applicable authorities e.g. Australian Standards, DTMR Landscape Manual.

**Firebreaks and trails**

- (10) Development where possible should utilise public roads to separate development from bushfire risk areas. However, where firebreaks and fire trails are unavoidable they must be constructed and landscaped on the development site and in accordance with Council's Bushfire Management Strategy (Docs No. 1082577).

**6.3.7.3 Landscaping softworks**

**Topsoil and garden soil**

- (1) Landscape soils, including topsoils are to comply with NATSPEC Guide 0251 and 0251B Landscape-soils.

**Fertilisers**

- (2) An establishment and routine fertiliser regime must form an integral component of the construction and maintenance programs.
- (3) The fertiliser regime is to be as specified within Natspec guide- 0250 Landscape-gardening.

### **Mulches**

- (4) All garden beds and revegetation areas must be mulched.
- (5) All mulched areas are to be free of weeds prior to the application of mulch.
- (6) Loose particle mulches must comply with the following requirements:-
  - (a) complies with 'AS 4454-2003- Composts, soil conditioners and mulches';
  - (b) particle size range 5mm to 50mm;
  - (c) minimum depth of 100mm for garden beds and revegetation areas;
  - (d) final mulch grade 25mm below edge treatments;
  - (e) binding qualities to minimise dispersion by the elements or slope;
  - (f) durable - minimum 12 months effective longevity; and
  - (g) remains pervious.
- (7) Organic mulch matting will be required as a substitute for loose particle mulches on steep or unstable slopes.
- (8) Organic mulch matting must comply with the following requirements:-
  - (a) Natramat TM, 6mm coir fibre mat with latex bonding, or approved equivalent;
  - (b) biodegradable;
  - (c) durable - minimum 12 months effective longevity;
  - (d) installed to the manufacturer's instructions;
  - (e) holes cut to locate containerised plant stock; and
  - (f) accidental cuts repaired by staked patches.
- (9) Inorganic, nylon mesh or wire net binding mulch matting products must not be used.

### **Seeding**

- (10) Seeding is to be in accordance with Natspec Guide:0205 Landscape- Gardening.
- (11) Failed seeded areas must be covered or resown promptly to ensure that adequate germination levels are likely to be attained. For plant species seed selection refer to **Appendix SC6.3B (Recommended plant list)**.

### **Turfing**

- (12) Turfing is to be undertaken in accordance with Natspec Guide: 0250 Landscape-gardening.
- (13) Turfed areas will be specifically required in the following areas, as well as to frame or border the edge of treatments:-
  - (a) high traffic areas;
  - (b) passive recreation areas;
  - (c) slopes or overland flows; and
  - (d) cleared areas prone to erosion & siltation problems.

### **Planting**

- (14) In planting schemes, a minimum of 70% of total plant types and total plant numbers must be local native species.
- (15) Palms must not be planted, except for the locally occurring *Livistona decipiens* and *Archontophoenix cunninghamiana* which may be planted as emergents in planting schemes or in informal naturalistic groupings rather than in sentinel rows.

- (16) Planting shall be in accordance with Natspec guide -0250 Landscape- gardening.
- (17) Only approved planting species are to be used – refer to **Appendix SC6.3B (Recommended plant list)**.

#### **6.3.7.4 Landscaping hardworks**

##### **Edge treatments**

- (1) Edge treatments must comply with the following requirements:-
  - (a) edge treatments must be a minimum of 75mm wide and mountable, for ease of mowing and maintenance;
  - (b) turf or mulch must be 25mm below top grade of adjoining edge;
  - (c) minimum curvature radius at 3.0m;
  - (d) minimum access between edges and other treatments must be 3.0m;
  - (e) avoid restricting access into narrow corners; and
  - (f) Are required at the rear of a garden bed where it backs onto private property to prevent ingress of weeds and couch grass.
- (2) Materials acceptable for paver (clay or concrete) edge treatments are:-
  - (a) minimum 60mm depth;
  - (b) minimum 110mm width (230mm preferred);
  - (c) mortar base & exposed edges (20MPa); and
  - (d) no cracking.
- (3) Materials acceptable for timber edge treatments are:-
  - (a) minimum 150mm log (winged) or 200mm x 80mm sleeper (bevel edges);
  - (b) suitably treated for in ground use (H4 treated or Durability class 1 or 2 hardwood);
  - (c) finish end and joints neatly; and
  - (d) securely pin and fix.
- (4) Materials acceptable for continuous concrete:-
  - (a) minimum width 150mm;
  - (b) minimum depth 100mm;
  - (c) placed on 100mm compacted subgrade;
  - (d) minimum 20MPa;
  - (e) may be coloured or patterned;
  - (f) finish ends neatly and flush;
  - (g) bolster cut control joints where required; and
  - (h) no cracking.

##### **Paving and concreting**

- (5) Where a paved or plain or textured concrete surface finishing must be used, appropriate consideration must be given to its long term skid resistance.
- (6) Construction details must clearly specify, and reference, particulars of paving and concrete works including:-
  - (a) colours;
  - (b) patterns;
  - (c) paver material, where applicable;
  - (d) exposed aggregate (size, colour and surface texture);
  - (e) widths, thickness, strength and reinforcement; and
  - (f) base preparation.

### **Entry statements**

- (7) Entry statements to developments must be fully contained within private property and must not revert to Council ownership.

### **Fences and barriers**

- (8) Barrier fences, bollards and or landscaping will be required to prevent vehicular trespass into parklands and other public open spaces.
- (9) Construction Drawings must clearly reference and specify all fence treatments, including materials.
- (10) Acoustic Fencing is to be designed and constructed in accordance with Transport and Main Roads Technical Standards MRTS 15-Noise Fences.

### **Landscape furniture and playground equipment**

- (11) All landscape furniture, playground equipment and associated infrastructure must be in accordance with all relevant statutory requirements and Australian Standards including the following:-
- (a) AS 4685.1:2014- Playground equipment and surfacing- General safety requirements and test methods.
  - (b) AS4685.2:2014- Playground equipment and surfacing- Additional specific safety requirements and test methods for swings.
  - (c) AS4685.3:2014- Playground equipment and surfacing- Additional specific safety requirements and test methods for slides.
  - (d) AS4865.4: 2014- Playground equipment and surfacing- Additional specific safety requirements and test methods for cableways.
  - (e) AS4865.5:2014- Playground equipment and surfacing- Additional specific safety requirements and test methods for carousels.
  - (f) AS4865.6:2014- Playground equipment and surfacing- Additional specific safety requirements and test methods for rocking equipment.
  - (g) AS4865.11:2014- Playground equipment and surfacing- Additional specific safety requirements and test methods for spatial networks.
  - (h) DR AS4865.0.2015- Playground equipment and surfacing- Development, installation, inspection, maintenance and operation.
- (12) All fittings to timber work must be of stainless steel.
- (13) All furniture, playground equipment and surrounds must be durable, vandal resistant and low maintenance.
- (14) All furniture and playground equipment must be subjected to a successful safety inspection by Council officers prior to acceptance of any infrastructure as a Council asset.
- (15) Any special tools, equipment, keys, spare parts, parts manuals, warranties, instructions and maintenance requirements associated with any equipment must be provided to Council prior to acceptance of any infrastructure.

#### **6.3.7.5 Embellishment of open space and community land**

- (1) The provision of recreation park, sports park or land for community services must be in accordance with the Local Government Infrastructure Plan. Land affected by flooding, vegetation, environmental or other constraints that cannot be developed must be retained in private ownership or dedicated as reserve for the required purpose. No infrastructure charge offsets are available for any land dedications that are not identified in the Local Government Infrastructure Plan.

### **Local recreation parks**

- (2) Land to be dedicated for a local recreation park, complies with the following standards and specifications:-
- (a) minimum area 1ha;
  - (b) the park area must have a finished surface gradient of less than 1 in 6;
  - (c) park area must be flood free in a 1 in 5 year ARI storm event;
  - (d) at least 10% of the park area must be above the 1 in 100 year ARI flood level;
  - (e) infrastructure to be flood resistant or located above the 1 in 100 year ARI flood level;
  - (f) disability access must be in accordance with 'AS1428- Design for access and mobility'; and
  - (g) incorporate best practice CPTED principles.
- (3) Refer to **Table SC6.3.7.5b (Standard facilities/embellishment for parks)** for levels of embellishment.

### **District recreation parks**

- (4) Land to be dedicated for a district recreation park, complies with the following standards and specifications:-
- (a) minimum area 3ha;
  - (b) must have a finished surface gradient of less than 1 in 6;
  - (c) playing surfaces be graded in accordance with relevant specifications up to a maximum grade of 1 in 100 with allowances made for terracing batters at appropriate intervals;
  - (d) park area must be flood free in a 1 in 5 year ARI storm event;
  - (e) at least 10% of the park area must be above the 1 in 100 year ARI flood;
  - (f) infrastructure to be flood resistant or located above the 1 in 100 year ARI flood level;
  - (g) disability access must be in accordance with 'AS1428- Design for access and mobility'; and
  - (h) incorporate best practice CPTED principles.
- (5) Refer to **Table SC6.3.7.5b** for levels of embellishment.

### **Regional recreation parks**

- (6) Land to be dedicated for a regional recreation park, complies with the following standards and specifications:-
- (a) minimum area of 6ha;
  - (b) must have a finished surface gradient of less than 1 in 6;
  - (c) playing surfaces be graded in accordance with relevant specifications up to a maximum grade of 1 in 100 with allowances made for terracing batters at appropriate intervals;
  - (d) park area must be flood free in a 1 in 5 year ARI storm event;
  - (e) at least 10% of the park area must be above the 1 in 100 year ARI flood level;
  - (f) infrastructure to be flood resistant or located above the 1 in 100 year ARI flood level;
  - (g) disability access must be in accordance with 'AS1428- Design for access and mobility'; and
  - (h) incorporate best practice CPTED principles.
- (7) Refer to **Table SC6.3.7.5b** for levels of embellishment.

### **District sport parks**

- (8) Land to be dedicated for a district sports park, complies with the following standards and specifications:-
- (a) minimum area of 6ha;
  - (b) must have a finished surface gradient of less than 1 in 6;
  - (c) playing surfaces be graded in accordance with relevant specifications up to a maximum grade of 1 in 100 with allowances made for terracing batters at appropriate intervals;
  - (d) park area must be flood free in a 1 in 5 year ARI storm event;
  - (e) at least 10% of the park area must be above the 1 in 100 year ARI flood;
  - (f) infrastructure to be flood resistant or located above the 1 in 100 year ARI flood level;
  - (g) disability access must be in accordance with 'AS1428- Design for access and mobility'; and
  - (h) incorporate best practice CPTED principles.
- (9) Refer to **Table SC6.3.7.5b** for levels of embellishment.

### **Regional sport parks**

- (10) Land to be dedicated for a regional sport park, complies with the following standards and specifications:-
- (a) minimum area of 10ha;
  - (b) must have a finished surface gradient of less than 1 in 6;
  - (c) playing surfaces be graded in accordance with relevant specifications up to a maximum grade of 1 in 100 with allowances made for terracing batters at appropriate intervals;
  - (d) park area must be flood free in a 1 in 5 year ARI storm event;
  - (e) at least 10% of the park area must be above the 1 in 100 year ARI flood;
  - (f) infrastructure to be flood resistant or located above the 1 in 100 year ARI flood level;
  - (g) disability access must be in accordance with 'AS1428- Design for access and mobility'; and
  - (h) incorporate best practice CPTED principles.
- (11) Refer to **Table SC6.3.7.5b** for levels of embellishment.

### **Land for community facilities**

- (12) Land to be dedicated for community facilities, complies with the following standards and specifications:-
- (a) at least 90% of the land area must have a finished surface gradient of less than 1 in 30;
  - (b) land area must be above the 1 in 100 year ARI flood level; and
  - (c) incorporate best practice CPTED principles

### **Environmental reserves**

- (13) Land dedicated as reserve for environmental or drainage purposes may need to be rehabilitated or additional measures provided to minimise the maintenance burden on Council. The following table provides a guide to the level of works required.

**Table SC6.3.7.5a Rehabilitation and protective works for environmental reserves**

| Rehabilitation or protective works | Unit           | Quantity |
|------------------------------------|----------------|----------|
| 1.5m Deco/ gravel                  | m <sup>2</sup> | 200      |
| Signage - plank                    | each           | 1        |
| Restoration / revegetation         | m <sup>2</sup> | 3,200    |



|                                      |       |    |
|--------------------------------------|-------|----|
| Fencing / Bollarding (post and rail) | 3.6 m | 70 |
|--------------------------------------|-------|----|

**Levels of embellishment**

(14) **Table SC6.3.7.5b** shows the required level of embellishment for Recreation and Sport Parks:-

**Table SC6.3.7.5b Standard facilities/embellishment for parks<sup>[1]</sup>**

| Infrastructure type                                | Recreation parks |          |          | Sport parks |          |
|--|------------------|----------|----------|-------------|----------|
|  | Local            | District | Regional | District    | Regional |
| Internal roads                                     |                  |          |          | •           | •        |
| Off-street parking                                 |                  | •        | •        | •           | •        |
| Fencing/bollards                                   | •                | •        | •        | •           | •        |
| Lighting   |                  | •        | •        | •           | •        |
| Toilet   |                  | •        | •        | •           | •        |
| Pathways (access to facilities)                    |                  | •        | •        | •           | •        |
| Seating  | •                | •        | •        | •           | •        |
| Shade structures                                   |                  | •        | •        | •           | •        |
| Covered seating and table                          |                  | •        | •        | •           | •        |
| Tap/bubbler  | •                | •        | •        | •           | •        |
| BBQ  |                  | •        | •        | •           | •        |
| Bins   |                  | •        | •        | •           | •        |
| Landscaping (including earthworks, and vegetation) | •                | •        | •        | •           | •        |
| Turfing  | •                | •        | •        | •           | •        |
| Irrigation system                                  |                  | •        | •        | •           | •        |
| Signage  | •                | •        | •        | •           | •        |
| Activity areas <sup>[2]</sup>                      | •                | •        | •        | •           | •        |
| Shade trees  | •                | •        | •        | •           | •        |
| Playground   |                  | •        | •        | •           | •        |
| Shower   |                  |          |          | •           | •        |
| Path/park lighting                                 |                  | •        | •        | •           | •        |
| Bicycle parking                                    |                  | •        | •        | •           | •        |
| Bus parking  |                  |          | •        | •           | •        |
| Services (water, electricity, sewer, stormwater)   | •                | •        | •        | •           | •        |

Notes—

[1] '•' in the table means normally provided.

[2] Activity areas are small active recreational facilities (e.g. half basketball court).

**6.3.7.6 Road corridor treatments**

**General**

- (1) Refer to **Appendix SC6.3B (Recommended plant list)** for suitable species types for trees, shrubs and groundcovers.
- (2) The provision of landscaped areas within road reserves and traffic calming devices must be reduced to a minimum except in the commercial business areas. Where landscaping must be installed specific low maintenance designs are required to ensure Council's continuing maintenance liability is kept to a minimum.

**Design criteria**

- (3) Planting to be in scale with the streetscape.
- (4) Street trees must be located such that when mature, they do not impact on the street lighting, future driveway locations or other infrastructure.

- (5) Street trees and landscaping must not impact on vehicle sight distances in accordance with AS2890 or unduly restrict visibility to pedestrians and children in verge areas.
- (6) Plants are not to be placed at access points.
- (7) Plants do not obstruct access to services.
- (8) The street tree alignment is within the corridor shown on Council's Standard Drawing.
- (9) Earthworks are not to be carried out within close proximity of existing vegetation.
- (10) All street gardens, including roundabouts and medians, must be provided with an automatic irrigation system (refer to Irrigation Systems section of this policy).
- (11) Subsoil drainage must be provided between all street gardens and the road pavement.
- (12) Pedestrian access must be maintained around and, where applicable, through all street planting.
- (13) Visibility lines must be checked to ensure that the minimum stopping distance for vehicular traffic is maintained.

#### **Medians and roundabouts**

- (14) Landscaping in medians and roundabouts must provide for sight distances in accordance with Austroads 'Guide to Road Design' and the Department of Transport and Main Roads 'Road Planning and Design Manual'.
- (15) Unless the roundabout is on a major arterial road, no plantings are to occur and treatment is to be an approved hardstand treatment incorporating stamped concrete or artificial turf to minimise maintenance. Where the roundabout is on a major arterial road or functions as an entrance statement, then a detailed site specific landscape plan will be required as part of the overall landscape design. Medians with an area less than 5m<sup>2</sup> or less than 1m in width must be of concrete or other approved material.
- (16) Provide a 1m wide concrete surround or other approved surfacing between the traffic lanes and vegetation for maintenance purposes.

#### **6.3.7.7 Site based landscaping**

##### **General**

- (1) Refer to **Appendix SC6.3B (Recommended plant list)** for suitable species types for trees, shrubs and groundcovers.

##### **Car parks**

- (2) The landscape design for a car park must meet the following requirements:-
  - (a) minimum landscape area must be 10% of the car park area provided;
  - (b) car park areas include parking bays and access aisle, and exclude driveways that extend beyond the access aisles;
  - (c) landscape areas about a parking bay or access aisle and include landscaped buffer strips, and the minimum 2.25m<sup>2</sup> per shade tree to allow free circulation of air and water to the tree's root system and protection from pedestrian and vehicular traffic;
  - (d) a minimum of one medium size shade tree per 6 car parking spaces throughout the car park;
  - (e) shade trees are species that have a rounded or spreading form, medium to dense foliage and provide accessible shade for pedestrians and motorists. Local

- palms may be included in the planting scheme but are not acceptable as shade trees;
- (f) root guards must be used where tree roots will cause damage to surrounding hard surfaces; and
- (g) an automatic irrigation system must be provided to all car park planting areas.

#### **6.3.7.8 Power supply**

- (1) Power supply to Council managed land must be in accordance with 'AS3000- Electrical Installations'. All public access power must comply with Australian Standard 'AS/NZS3002- Electrical Installations- Shows and carnivals'.
- (2) All required RCD checks need to be completed and recorded as per AS3000.

#### **6.3.7.9 Irrigation systems**

##### **General**

- (1) Automatic irrigation systems must be provided to all garden beds constructed within road reserves, parks, sporting fields and open space as part of development works.
- (2) Recycled water for irrigation purposes must be utilised where available. Recycled water use must comply with 'Australian guidelines for water recycling: managing health and environmental risks 1996'.
- (3) The irrigation systems must comply with the requirements defined below and AS2698 and Urban Best Management Practise Guidelines.
- (4) The Developer will be responsible for the cost of all irrigation water used and irrigation system maintenance costs incurred to establish plants and to maintain the planting during the maintenance period.
- (5) Irrigation systems must be installed in accordance with the Manufacturers' Specifications.
- (6) All irrigation systems connected to the public water supply must be metered.
- (7) Irrigation plans identifying layout and components are to be submitted to Council for approval. All irrigation maintenance schedules associated with the irrigation system are to be presented to Council at time of handover.

##### **Layout**

- (8) All irrigation systems must be fully automatic pop-up spray, drip emitter or subsurface microporous flexible pipe.
- (9) Spray sprinklers must be located for head to head coverage and minimal over spray onto abutting hard finished surfaces.
- (10) Irrigation layout of parkland grassed areas must include road verges along the parkland frontage with spray emitters located at the back of kerb.
- (11) Appropriate filter screens must be placed within the system adjacent to the connection to the water main.
- (12) All irrigation emitters must deliver sufficient precipitation for maximum soil absorption and water uptake by plants with minimum runoff.
- (13) The design must prioritise deep, less frequent watering.

**Backflow prevention devices**

- (14) Backflow prevention devices must be installed and serviced in accordance with AS 2845.

**Controllers**

- (15) The controller must be installed in a metal cabinet that is lockable, dust proof and rust proof.
- (16) It must be constructed so as to minimise the effects of vandalism.
- (17) It must be easily accessible for maintenance and inspection.
- (18) The controller must be connected to 240V, a solar system or other approved power supply

## SC6.3.8 Rehabilitation and revegetation

### 6.3.8.1 Rehabilitation

- (1) Rehabilitation must be undertaken in accordance with an approved rehabilitation plan as per the SEQ Ecological Restoration Framework..
- (2) A rehabilitation plan must address the following:-
  - (a) Methodology – describe the process used to develop the plan. Include all field surveys, mapping data and literature used. Provide Background information and describe the complexity of the project.
  - (b) Environmental values – describe the key environmental values within and adjoining the rehabilitation area. Environmental values may include but not be limited to fauna or flora, vegetation communities, cultural heritage, geological, habitat, environmental corridors or biophysical values.
  - (c) Ecosystem threats – describe the current and future threats to ecosystem and environmental values. Threats may include but not be limited to weed infestation, illegal access, erosion, grazing, inappropriate fire or hydrological regimes, inappropriate access, sedimentation or salinity.
  - (d) Ecosystem condition – identify the condition of ecosystems within the rehabilitation area. The condition assessment will be used to determine management objectives and activities. The current condition should be accompanied by a series of photographs taken from established reference points.
  - (e) Rehabilitation targets – determine appropriate and realistic rehabilitation targets based on assessment of ecosystem threats and condition.
  - (f) Overall rehabilitation goals – provide an overarching statement of the desired outcome(s) for the rehabilitation plan.
  - (g) Rehabilitation objectives – develop objectives to meet rehabilitation goals. The objectives will form the basis of the rehabilitation plan. Objectives can be used to set milestones and determine rehabilitation progression.
  - (h) Rehabilitation activities – identify and describe all activities that are required to meet the objectives. It must be clear what activities will be undertaken during the project and how they will be implemented.
  - (i) Performance criteria – performance criteria must be measurable, specific and relate directly to rehabilitation goals, objectives and activities. The performance criteria may include but not be limited to floristic and structural vegetation parameters, weed abundance, erosion, natural revegetation, recruitment, vegetation condition and fauna populations an may be appropriate.
  - (j) Management zones – for clarity it is important to identify management zones based on rehabilitation activities. Define which parts of the rehabilitation area will be retained, regenerated and or revegetated. The management zones must be provided in a GIS spatial layer or a clearly annotated site map/aerial photograph.
  - (k) Implementation schedule – determine an appropriate implementation schedule stating what activities will be undertaken during development and what activities need to be continued once transferred to Council. To improve the handover process to Council it is necessary to identify at what stage Council will need to continue with rehabilitation activities.

- (l) Monitoring and reporting – provide a monitoring and reporting schedule that will be implemented over the duration of the project. Work records of all activities including photos of the works must be submitted to Council quarterly for the duration of the project (includes the maintenance period).

### **6.3.8.2 Revegetation**

- (1) Species, density and relative abundance are consistent with an appropriate Regional Ecosystem and or Vegetation Association for the site. The following densities will be required: Forests-1.5-2.0m spacings, Heathlands- 2 plants per square metre, Sedgeland communities- as per the Water Sensitive Urban Design Technical Design Guidelines for South East Queensland. The revegetation planting is designed to achieve rapid canopy closure and 'site capture' to reduce short to medium term maintenance requirements.
- (2) Revegetation works consider appropriate limitations to successful revegetation works including but not limited to:-
  - (a) soil types;
  - (b) soil contamination and soil amelioration/management;
  - (c) appropriate mulching;
  - (d) pests and disease;
  - (e) hydrology, roughness coefficient and layout when planting within floodplains;
  - (f) weeds;
  - (g) past and present site and adjoining land uses;
  - (h) ecosystem processes;
  - (i) fire regimes; and
  - (j) management/maintenance requirements to ensure successful vegetation establishment.
- (3) Direct seeding for rehabilitation of native vegetation preservation areas may be approved where:-
  - (a) ground preparation is suitable;
  - (b) sound technical expertise is employed; and
  - (c) required plant species seed is available.



## SC6.3.9 Electrical, street lighting and telecommunications

### 6.3.9.1 Electrical reticulation

#### General

- (1) Electrical Reticulation must be in accordance with relevant service providers' requirements.
- (2) Above ground infrastructure including power poles, lights etc. must not be located in vulnerable areas where there is a significant risk of high speed vehicle impact. In cases where this cannot be avoided, the infrastructure must be frangible or placed underground.

#### Underground reticulation

- (3) Underground electrical reticulation must be provided in all new subdivisions and development within Urban Residential, Rural Residential (lots < 1ha), Commercial and Industrial areas.
- (4) Existing overhead power within or fronting a development must be relocated underground where there is a significant change in the land use. This may include large developments or the development of existing vacant land.
- (5) Conduit location and alignment:-
  - (a) joint trenching must not incorporate underground power with water supply;
  - (b) the service alignments must be as depicted on Council's standard drawings; and
  - (c) under road boring must be used to cross existing roads.
- (6) Pillar locations:-
  - (a) pillars must be located within the road reserve on the standard alignment; and
  - (b) pillars must be located on alternate boundaries to hydrants.

#### Overhead reticulation

- (7) The alignment and location of power poles must be in accordance with Council's Standard Drawings.

### 6.3.9.2 Street lighting

#### General

- (1) Street lighting and open space lighting must be in accordance with 'AS1158- Lighting for Roads and Public Spaces' except where modified by this policy.
- (2) All poles and luminaries must be standard service providers' equipment which will be supplied and maintained by the service provider at standard rate 2 tariff.
- (3) Crime Prevention through Environmental Design (CPTED) principles must be incorporated into development layouts and lighting designs.

**Table SC6.3.9.2 Street lighting requirements by development type**

| Development category <sup>1,1</sup><br>or zone     | Road type       | Street lighting |
|--|-----------------|-----------------|
| Rural/Rural residential<br>lots > 1ha <sup>2</sup> | Access street   | Flag lighting   |
|  | Minor collector | Flag lighting   |
|  | Major collector | Flag lighting   |
| Rural residential lots ≤<br>1ha                    | Access street   | Flag lighting   |
|  | Minor collector | Flag lighting   |

| Development category <sup>[1]</sup> or zone | Road type                            | Street lighting |
|---|--------------------------------------|-----------------|
| Urban residential <sup>[3]</sup>            | Access place                         | P5              |
|   | Access street                        | P5              |
| Commercial <sup>[4]</sup>                   | Access street                        | P4              |
| Industrial                                  | Access street                        | P5              |
| Urban roads                                 | Minor collector                      | P3              |
|   | Major collector < 5000 vpd           | P3              |
|   | Major collector and above > 5000 vpd | V5              |
|   | 4 lane sub-arterial roads            | V3              |

Notes—

- [1] The development categories used in this table are described in **Appendix SC6.3F (Glossary)**.
- [2] Major traffic routes in rural areas are only required to be lit to urban standards at intersections, pedestrian crossing points and hazardous locations.
- [3] Category P2 is required in urban residential streets where pedestrian and cyclist volumes are high.
- [4] Category P2 is required in Commercial areas where pedestrian and cyclist volumes are high.

### **Flag lighting**

- (4) Flag Lighting will include intersections, cul-de-sacs and low speed bends in the roadway.

### **Pathway lighting**

- (5) Pathways in Public Open Space Reserves or in separate pathway reserves must be provided with street lighting in accordance with the following table:-

| Pathway location             | Lighting category                |
|------------------------------|----------------------------------|
| Pathways between allotments  | P4                               |
| Pathways in open space areas | P4                               |
| Commuter links               | P3                               |
| Other locations              | Subject to individual assessment |

### **Alignment of street lighting**

- (6) Street lighting poles must be located opposite common allotment boundaries, to minimise potential interference with vehicle access and glare complaints from residents.
- (7) Light poles must not be located in front of hatchet shaped allotments due to a high potential for vehicle collision.

### **Aeroscreen lighting**

- (8) Aeroscreen lanterns are required in Rural and Rural Residential areas to minimise disturbance to fauna.
- (9) Aeroscreen lanterns may be required in urban areas where there is the potential for lighting to disturb existing residents.

## **6.3.9.3 Telecommunications**

### **General**

- (1) A telephone reticulation approved plan is to be obtained and submitted to Council prior to any subgrade inspection and evidence of the telephone Authority's agreement to provide services is to be given to Council prior to sealing of plans of survey.
- (2) Subject to relevant service providers' approval, joint use trenching will be adopted for telephone services.

## **SC6.3.10 Design requirements and supporting documents**

### **6.3.10.1 Preliminary**

- (1) Council encourages early communications and meetings between designers/engineers and Council's Development staff before any detailed designs are undertaken or before operational applications are submitted.
- (2) The aim of such meetings is to encourage communications, streamline the approval process and achieve better outcomes for both the developer and the community.
- (3) Early communications will assist in the following:-
  - (a) promoting discussion and providing advice on non-standard proposals;
  - (b) greater confidence for developers when turning concept proposals into detailed applications;
  - (c) design Solutions for Technical issues;
  - (d) better information for Designers and Engineers;
  - (e) early flagging of constraints and issues;
  - (f) faster processing of applications;
  - (g) fewer information request items; and
  - (h) early agreements on design parameters.

### **6.3.10.2 Drafting standards**

- (1) All design drawings must have a quality standard acceptable for photocopying and scanning and all drafting must be in accordance with the relevant Australian Standards and accepted engineering standards and practices.
- (2) The detail provided must be determined by the type, size and complexity of the works being detailed and in accordance with accepted engineering practices. Sufficient detail must be provided to adequately describe the works.
- (3) Scales used for all plans are preferably those recommended by the Standards Association and AUSTROADS.
- (4) Any reduced drawings submitted to Council must be clearly noted.
- (5) All levels used must be to Australian Height Datum (AHD).

### **6.3.10.3 Supporting documentation**

- (1) All engineering documents submitted for approval must be checked and authorised by the Consultant. Council does not provide a comprehensive checking service for checking drawings in detail and it is the Consultant's responsibility through its Quality Assurance procedures to ensure that drawings are in accordance with State Government and Council Standards, Acts, Regulations and Local Laws.
- (2) Engineering Designs must be fully documented and include appropriate calculations and support information to allow interpretation of the design decisions.
- (3) Each and every drawing submitted for approval must be prepared under the supervision of and certified by a Registered Professional Engineer of Queensland (RPEQ) of the appropriate engineering discipline. The RPEQ number of the certifying engineer must be included with the certification.
- (4) A design certificate must be completed and certified by a Registered Professional Engineer of Queensland (RPEQ) and included with the submission of any engineering designs for approval.

## **SC6.3.11 Construction**

### **6.3.11.1 General**

#### **Construction supervision**

- (1) All construction works other than soft landscaping works must be undertaken under the supervision of a suitably qualified Registered Professional Engineer of Queensland (RPEQ). Council must be notified of the engineer responsible for the supervision prior to commencement of any works. Works involving State-controlled Roads must be referred to the Department of Transport and Main Roads.

#### **Water for construction purposes**

- (2) Non-potable water or recycled water (Class A, B, or C to Qld Guidelines for Safe Use of Recycled Water) must be used for activities associated with road and pavement construction, compaction of fill and dust suppression.

#### **Sediment and erosion control**

- (3) Sediment and Erosion control measures (including dust control) must be provided and maintained during construction.
- (4) Turfing must be provided to the back of kerbs, edge strips and to the edges of pathways.
- (5) All open drains and swales must be stabilised to prevent scour and sediment transport. Turfing is suggested until the area has been embellished and stabilised; however, alternative sediment and erosion control may be used in accordance with section 6.3.2.2(2) of this policy.

#### **Provision for traffic**

- (6) Traffic devices must be installed and maintained in accordance with the 'Manual of Uniform Traffic Control Devices'.
- (7) Where works are occurring on or near a public road or in the vicinity of pedestrian or cyclist traffic, a traffic control plan must be submitted prior to commencement of works.
- (8) All works must be carried out in a manner so that existing accesses to private properties are maintained in a useable condition or alternative arrangements are made with the property owners concerned.

### **6.3.11.2 Earthworks**

#### **Clearing**

- (1) All vegetated areas to be retained must be protected in accordance with 'AS4970- Protection of Trees on Construction Sites' to prevent accidental or unauthorised clearing.
- (2) All felled trees and cleared vegetation must be mulched and used on site or removed to an approved off-site location.

#### **Site stabilisation**

- (3) All disturbed or filled areas must be topsoiled and stabilised with approved grassing to achieve the minimum coverage for erosion control of 40% area coverage as early as practical. Once the minimum erosion control coverage is achieved, the grassing must be maintained by the developer for a further minimum period of six months to achieve

the minimum acceptance coverage of 60% area coverage before acceptance 'Off-maintenance'.

**Compaction**

- (4) Compaction and test frequency for earthworks must be in accordance with Table 8.1 and Appendix B of 'AS3798- Guidelines and Earthworks for Commercial and Residential Developments'.
- (5) For small scale filling operations (refer Table 8.1 and Appendix B AS3798) the minimum standard of supervision must be to Level 2 and a testing frequency as defined in that table.
- (6) Where the depth of fill exceeds 600mm for an area of greater than 5000m<sup>2</sup> then these operations will be considered as a large scale operation and will require Level 1 supervision.

**6.3.11.3 Roadworks**

- (1) Road construction methods and practices must be in accordance with the following:-
  - (a) the Standard Drawings in **Appendix SC6.3D**;
  - (b) DTMR 'Standard Specification Roads';
  - (c) DTMR 'Pavement Design Manual'; and
  - (d) DTMR 'Urban Road Design Manuals'; or
  - (e) Relevant Austroads Manuals when practices are outside the construction methods stated above.

**6.3.11.4 Stormwater drainage**

- (1) Stormwater drainage materials, construction and testing must be in accordance with the relevant Australian Standards, Manufacturers specifications, Concrete Pipe Association publications and industry standards.
- (2) Cast in-situ structural elements including gully pits, manholes, headwalls etc must be designed and constructed under the supervision of a suitably qualified engineer (RPEQ).

**6.3.11.5 Sewer**

Sewerage infrastructure must be constructed and tested in accordance with the Gravity Sewerage Code of Australia, WSA 02-2014, Version 3.1, published by the Water Services Association of Australia, with the local requirements nominated in the following table. The requirements in this table must be in addition to those of the Gravity Sewerage Code except that where there is an inconsistency this table must take precedence over the Gravity Sewerage Code.

**Table SC6.3.11.5 Local changes to WSA 02-2014 version 3.1**

| Section | Local changes   |
|---------|---|
| 12.7    | Any alterations to existing services must be made by Council at the developer's expense.<br><br>In accordance with the <i>Water Act 2000</i> , a person must not, without the written consent of Council, build over, interfere with access to, increase or reduce the cover over, or change the surface of land in a way causing ponding of water over Council's infrastructure. |
| 2.4.1   | Sewers must be tested by the vacuum method unless otherwise approved by Council.  |
| 12.7    | All connections to existing sewers must be made by Council at the developer's expense.  |

### 6.3.11.6 Water supply

Water supply infrastructure must be constructed and tested in accordance with the Water Supply Code of Australia, WSA 03-2011, Version 3.1, published by the Water Services Association of Australia, with the local requirements nominated in the following table. The requirements in this table must be in addition to those of the Water Supply Code except that where there is an inconsistency this table must take precedence over the Water Supply Code.

**Table SC6.3.11.6 Local changes to WSA 03-2011 version 3.1**

| Section  | Local changes   |
|----------|---|
| 5.9      | <p>Any alterations to Council infrastructure must be made by Council at the developer's expense.</p> <p>Where as a result of the development, existing mains are located on non-standard alignments or have less than minimum cover, the developer must bear the cost of relocation, replacement or lowering, subject to the approval of Council. Pavement widening associated with some developments would place existing mains under the new pavement and relocation will be required. In cases where the existing main is a non-preferred material, and alterations are required, the developer must bear the cost of its replacement in a material approved by Council.</p>   |
| 11.2     | <p>Property services on live mains must only be connected by Council.</p> <p>Water service conduits must be minimum DN100, however larger diameters may be required for industrial and some commercial developments.</p> <p>Pipes used for water service conduits must conform to the latest revision of the following standard:-</p> <p>Rubber ring jointed or solvent welded uPVC Class 12 pipes complying with 'AS/NZ 1477- PVC pipes and fittings for pressure applications'.</p>   |
| 5.4.16.2 | <p>Metallic marker tape must be installed above all non-metallic water mains. The maximum depth for installation of the marker tape must be 600mm and the tape must not deviate from the line of the main by more than 200mm.</p>   |
| 8.10.13  | <p>Hydrant and valve covers to be rectangular. Surface surrounds to be coloured plastic (hydrant-blue; valve-yellow) shroud to be pipe or surface box (not bricks).</p>   |
| 8.11.13  | <p>A brass or stainless steel service identification disk must be installed in kerb and/or the channel.</p> <p>Only when there is no kerbing, posts with marker notice plates must be located adjacent to each valve, hydrant, air valve and scour valve. The posts must be located 0.3m from the property alignment unless approved otherwise. (Refer to WSA Drawing WAT1300).</p> <p>Marker plates must be marked V, H, AV and S indicating sluice valve, hydrant, air valve and scour valve and installed on the posts.</p> <p>Blue retro reflective pavement markers must be fixed to road surface opposite all hydrants in accordance with Clause 8.11.3 Pavement Markers.</p> <p>Provide a painted arrow opposite the pavement marker to indicate the direction of the hydrant.</p> |
| 8.9.1    | <p>Disinfection of all new water supply infrastructure to be connected must be carried out by Council at the developer's expense.</p>   |
| 5.9      | <p>All connections to live water mains must be done by Council at the developer's expense.</p>  |

### 6.3.11.7 Landscaping

#### General

- (1) Landscape works must be carried out by a suitably qualified and experienced landscaper. The landscaper must have a minimum AQF level 3 certificate of Horticulture (Landscaping) or equivalent.



**Maintenance program**

- (2) The Contractor must examine, and take routine or preventative maintenance where necessary for:-
  - (a) all plant stock, including grass;
  - (b) irrigation systems;
  - (c) weed, disease or pest infestation;
  - (d) hardscape treatments; and
  - (e) removal of temporary stakes and fixtures.

**Table SC6.3.11.7 Recommended minimum maintenance program**

| <b>Maintenance inspection program (minimum)</b> |                                 |                              |
|---|---------------------------------|------------------------------|
| <b>Weeks after on maintenance</b>               | <b>Frequency of inspections</b> | <b>Number of inspections</b> |
| 0 - 1   | 2 / week                        | 2                            |
| 1 - 8   | 1 / week                        | 7                            |
| 9 - 17  | 1 / 2 weeks                     | 4                            |
| 18 - 52   | 1 / 4 weeks                     | 8                            |
| Total Inspections                               |                                 | 21                           |

- (3) Street trees and landscaping must be watered as necessary during the maintenance period.

**Inspections and testing**

- (4) Council officers may undertake inspections or testing at any stage during construction to ensure compliance with conditions of approval.
- (5) Council officers will evaluate 'satisfactory plant stock establishment' on the following criteria:-
  - (a) turf and grass seeded - survival indicated by 60% showing of green leaf; and
  - (b) containerised plant stock - maximum 20% initial leaf drop & showing strong signs of new growth with good root development.

## **SC6.3.12 Procedures, testing and inspections**

### **6.3.12.1 Pre-start meeting**

- (1) Prior to construction work commencing, an on-site prestart meeting must be arranged with Council officers, the supervising engineer and the contractor.

#### **Prerequisites**

- (2) Notification by the Consultant of the following:-
  - (a) principal contractor's name and on-site and after hours telephone number;
  - (b) supervision engineer's office and after hours telephone number and name of representative;
  - (c) date of commencement of works;
  - (d) program of works showing major components; and
  - (e) confirmation of relevant approvals in accordance with conditions of the development.
- (3) An invitation to Council Officers to attend the pre-start meeting on a specified date. One (1) week minimum notice required.
- (4) Payment of any performance bonds required by the conditions of approval.
- (5) The consent of any property owners where works encroach on their land.

### **6.3.12.2 Inspections**

- (1) The construction of Council assets will require regular inspections from Council Officers to monitor progress and ensure the quality of the works. These inspections and hold points are detailed below.

#### **Subgrade inspection**

- (2) A subgrade inspection will be undertaken with Council Officers prior to the placement of any pavement materials or subgrade replacement materials.
- (3) This inspection will include:-
  - (a) checking service conduit locations against markers, if kerb and channel is in place;
  - (b) checking backfill of service trenches;
  - (c) checking location of mitre and subsoil drains;
  - (d) proof rolling the bottom of the box after compaction by load testing of pavement subgrade with a single axle loaded water truck or similar (minimum load on rear wheels must be 8 tonne). Deflections detected in the subgrade indicating weakness may require rectification and re-inspection;
  - (e) checking of subgrade level and crossfall. (Reduced levels must be taken at a minimum of four locations across the pavement at pegged intervals prior to the inspection);
  - (f) checking all related civil works;
  - (g) confirming the proposed limits of different pavement depths by visual inspections of subgrade material or identify the need for further testing;
  - (h) an approved pavement design must be available at the time of the inspection;
  - (i) checking that the location of the tests must be representative of the subgrade; and
  - (j) checking to ensure that all unsuitable material (including organic matter) has been removed.

- (4) If Council Officers consider that a unique case exists which requires further examination, they may require further testing to be performed.
- (5) Survey of the completed subgrade surface shall be undertaken to verify pavement layer levels are consistent with the approved pavement design. A copy of the survey and pavement depth verifications is to be submitted to and approved by Council prior to placing the next level of pavement.
- (6) All subgrade CBR and compaction test results must be submitted to and approved by Council Officers prior to placing any pavement materials. The test results will be made available to Council at or prior to the inspection.
- (7) Where Council Officers have identified significant defects or where the inspection is deemed to be premature, reinspection will be required once the works have been rectified or completed. A reinspection fee may apply.

**Subgrade replacement inspection**

- (8) A subgrade replacement inspection will be undertaken with Council Officers prior to the placement of any sub-base or base pavement materials.
- (9) This inspection will include:-
  - (a) proof rolling after compaction by load testing of pavement subgrade replacement with a single axle loaded water truck or similar (minimum load on rear wheels must be 8 tonne). Deflections detected in the subgrade replacement indicating weakness may require rectification and re-inspection;
  - (b) checking of level and crossfall. (Reduced levels must be taken at a minimum of four locations across the pavement at pegged intervals prior to the inspection);
  - (c) checking all related civil works; and
  - (d) an approved pavement design must be available at the time of the inspection.
- (10) If Council Officers consider that a unique case exists which requires further examination, they may require further testing to be performed.
- (11) Survey of the completed subgrade replacement surface shall be undertaken to verify pavement layer levels and depths are consistent with the approved pavement design. A copy of the survey and pavement depth verifications is to be submitted to and approved by Council prior to placing the next level of pavement.
- (12) All subgrade replacement CBR and compaction test results must be submitted to and approved by Council Officers prior to placing any sub-base materials. The test results will be made available to Council at or prior to the inspection.
- (13) Where Council Officers have identified significant defects or where the inspection is deemed to be premature, reinspection will be required once the works have been rectified or completed. A reinspection fee may apply.

**Underground drainage inspection**

- (14) An inspection of underground stormwater drainage will be undertaken with Council Officers prior to backfilling.
- (15) This inspection will include:-
  - (a) visual inspection of bedding materials; and
  - (b) visual inspection of the condition of precast components used; and
  - (c) visual inspection of formwork prior to pouring concrete; and
  - (d) visual inspection of the alignment and jointing of pipes and culverts; and
  - (e) visual inspection of joins to manholes, gully pits and outlet structures.

- (16) If Council Officers consider that a unique case exists which requires further examination, they may require testing or further inspections to be performed.
- (17) Where Council Officers have identified significant defects or where the inspection is deemed to be premature, reinspection will be required once the works have been rectified or completed. A reinspection fee may apply.

**Water and Sewer**

- (18) Inspection of first sewer manhole constructed.
- (19) Notification of pressure test schedule.

**Sub-base inspection (Prekerb)**

- (20) A sub-base inspection will be undertaken with Council Officers prior to the placement of any base pavement materials or prior to the placement of any kerb.
- (21) This inspection will include:-
  - (a) proof rolling after compaction by load testing of pavement sub-base with a single axle loaded water truck or similar (minimum load on rear wheels must be 8 tonne). Deflections detected in the sub-base indicating weakness may require rectification and re-inspection;
  - (b) checking of level and crossfall. (Reduced levels must be taken at a minimum of four locations across the pavement at pegged intervals prior to the inspection);
  - (c) checking all related civil works; and
  - (d) an approved pavement design must be available at the time of the inspection.
- (22) If Council Officers consider that a unique case exists which requires further examination, they may require further testing to be performed.
- (23) Survey of the completed sub-base surface shall be undertaken to verify pavement layer levels are consistent with the approved pavement design. A copy of the survey and pavement depth verifications is to be submitted to and approved by Council prior to placing the next level of pavement.
- (24) All sub-base CBR and compaction test results must be submitted to and approved by Council Officers prior to placing any base materials. The test results will be made available to Council at or prior to the inspection.
- (25) Where Council Officers have identified significant defects or where the inspection is deemed to be premature, reinspection will be required once the works have been rectified or completed. A reinspection fee may apply.

**Pre-seal inspection**

- (26) A pre-seal inspection will be undertaken with Council Officers prior to sealing.
- (27) This inspection will include:-
  - (a) checking base course gravel after compaction;
  - (b) compaction test results and gravel quality test results of the base, sub-base and select fill courses must be available for the inspection if required. Final approval is dependent upon satisfactory pavement test results being submitted to Council;
  - (c) if the engineer deems that the location of the tests are not representative of the pavement layer they may require further testing with payment being made as detailed above;

- (d) pre-prime inspection of the pavement surface to ensure the profile complies with the approved engineering drawings and has even and acceptable crossfalls with sufficient depth available for the required thickness of finished surface. (Finished surface levels must be taken at a minimum of four locations across the pavement prior to the inspection);
  - (e) pre-prime inspection to check that the surface is suitable for priming; and
  - (f) proof rolling the top of the base course with a single rear axle loaded water truck or similar (minimum load on rear wheels must be 8 tonne). Deflections detected will require rectification and subsequent reinspection.
- (28) Before priming the conduit markers are checked against the service conduits.
  - (29) Check pavement profile for rounding and minimum depths for AC surfacing.
  - (30) Before priming the proposed application rates of prime and binder and spread rates of pre-coated aggregate must have been approved prior to the inspection. Where there is no kerb and channel the edge of the pavement will be marked prior to priming.
  - (31) Before priming, the proposed application rates of prime and results of mix acceptance tests must have been approved prior to the inspections.
  - (32) All pipe and service crossings of the roads completed, and determined to be correctly located by the Consultant.
  - (33) Kerb and channel line and levels checked and determined to be within tolerances by Consultant.
  - (34) Check intersection contouring.
  - (35) Survey of the completed base course surface shall be undertaken to verify pavement layer levels and depths are consistent with the approved pavement design. A copy of the survey and pavement depth verifications is to be submitted to and approved by Council prior to placing any bitumen seal layers.
  - (36) All base CBR and compaction test results must be submitted to and approved by Council Officers prior to placing any bitumen seal layers. The test results will be made available to Council at or prior to the inspection.
  - (37) Where Council Officers have identified significant defects or where the inspection is deemed to be premature, reinspection will be required once the works have been rectified or completed. A reinspection fee may apply.

**On maintenance inspection**

- (38) The Consultant is responsible for ensuring that the approved works have been completed in accordance with the approved drawings and this policy prior to requesting an on maintenance inspection.
- (39) Where an on maintenance inspection reveals incomplete works or a significant number of defects, reinspection may be required once the works are complete. A reinspection fee may be applicable.
- (40) Following a satisfactory on maintenance inspection, the Consultant must submit a written request to Council for acceptance of the works on maintenance. The on maintenance documentation must accompany the request.
- (41) Following a request for bonding of incomplete works, an interim on maintenance inspection of any completed works must be made prior to acceptance of any bonding. Fees will be charged for any additional inspections required for incomplete works bonding.

- (42) All works must be complete (including any bonded works) and to a satisfactory standard and all documentation provided to Council before the works can be accepted on maintenance.

**Off maintenance inspection**

- (43) The Consultant is responsible for ensuring that the works are presented in accordance with the approved drawings and accepted engineering best practice prior to requesting an off maintenance inspection.
- (44) At the time of the off maintenance inspection, all aspects of the works must indicate that they are performing in accordance with the design intent.
- (45) Where an off maintenance inspection reveals a significant number of defects, reinspection may be required once the defects are rectified. A reinspection fee may be applicable.
- (46) Where an inspection raises concerns regarding the long term performance of any infrastructure, Council Officers may require an investigation into the infrastructure to demonstrate that it is in accordance with the Planning scheme policy for development works. If the investigation identifies any defects or long term maintenance issues, the report must recommend corrective measures. The investigation must be undertaken by a suitably qualified engineer (RPEQ) with expertise in the area in question and the results presented to Council prior to acceptance of the work off maintenance.
- (47) Where there is indication that the works are not performing or may be subject to a reduced design life, rectification works must be required to be carried out before the development is accepted off maintenance.
- (48) Following a satisfactory off maintenance inspection, the Consultant must submit a written request to Council for acceptance of the works off maintenance, and release of the maintenance security bond.
- (49) Once the works have been accepted and any outstanding items have been addressed, the works will be accepted off maintenance and any maintenance securities will be returned.

**Practical completion inspection (Private infrastructure works)**

- (50) Private infrastructure works that will not become a Council asset are not subject to the inspections indicated in the preceding paragraphs of section 6.3.12.2 or the requirements in sections 6.3.12.3 to 6.3.12.5 unless specifically conditioned in a development permit. However, appropriate testing and quality control measures should still be implemented to ensure a quality finished product.
- (51) Prior to the issue of a certificate of practical completion and prior to the return of any performance bonds for private infrastructure works, the completed works must be inspected by Council Officers for compliance with the conditions of the development approval.
- (52) Where an inspection reveals significant incomplete or non-compliant works, reinspection may be required to reassess the completed works. A reinspection fee may be applicable.
- (53) Additional information from the developer or Consultant may be required by Council to verify compliance with the conditions of approval.



- (54) Once the works have been inspected and deemed to be in accordance with the conditions of the development permit, the works will be accepted as complete and any maintenance securities will be returned.

### 6.3.12.3 Testing

- (1) Materials and product testing must be carried out by qualified operators within National Association of Testing Authorities, Australia (NATA) registered laboratories.
- (2) Appropriate 28 day load testing of kerb and structural concrete must be undertaken in accordance with the relevant standards.
- (3) All pavement quality testing must be carried out on samples from the compacted pavement materials.
- (4) The testing of concrete, soils, pavement materials, filling works etc. must be undertaken in accordance with relevant standards.
- (5) The supplier's Quality Assurance documentation must be submitted to Council as part of the on maintenance documentation.
- (6) The consulting engineer is required to certify that the constructed works comply with Council's Planning scheme policy for development works prior to acceptance of the works on maintenance.
- (7) It is the consulting engineer's responsibility to assure themselves that all materials used in the construction of the works comply with minimum requirements.
- (8) In certain cases where there is reason to doubt the quality of the materials being used for the works, the Consultant may also need to arrange independent testing of the materials to verify their quality.
- (9) Compaction testing of crushed rock and earth materials must be carried out at the minimum intervals detailed in the inspection check sheets which are in accordance with Australian Standards.
- (10) Prior to acceptance of any works on maintenance, all materials test results must be submitted to Council. Should any of the test results not meet the desired standard, Council must be notified as soon as is practical and details of proposed remedial action must be submitted for approval.
- (11) All sewer and stormwater pipes must be subject to a CCTV inspection and defect report from a suitably qualified person.
- (12) Ensure that all water main work is pressure-tested and complies with the Water Supply Code of Australia (WSA 03-2014). Testing must be undertaken by a NATA accredited organisation that holds current listing for the pressure testing of water mains. Test results must be forwarded to Council prior to acceptance of the works 'on maintenance'.  
  
Ensure that all sewer main work is vacuum-tested and complies with the Sewer Code of Australia (WSA 02-2014). Testing must be undertaken by a NATA accredited organisation that holds current listing for the vacuum testing of sewer mains. Test results must be forwarded to Council prior to acceptance of the works 'on maintenance'.
- (13) Source rock testing is required to be carried out on pavement materials to demonstrate compliance with MRTS05 Table 7.2.1. These tests shall be in addition to standard Quality Assurance tests for pavement materials, such as CBR, PSD and Atterberg limits. The proposed tests are shown in the table below.

**Table SC6.3.12.3 Source Rock Testing Regime**

| Test  | Frequency (Desired) | Frequency (Minimum) | Requirement*                           | Standard  |
|---|---------------------|---------------------|--|-----------|
| <i>Stage 1</i>  |                     |                     |  |           |
| Ten Percent Fines Value (Wet), kN   | 1 per 2500T         | 1 per 5000T         | >135 for Type 2.1<br>>115 for Type 2.2 | Q205B     |
| Wet/ Dry Strength Variation, %  | 1 per 2500T         | 1 per 5000T         | <30 for Type 2.1<br><30 for Type 2.3   | Q205C     |
| Degradation Factor  | 1 per 2500T         | 1 per 5000T         | >50 for Type 2.1<br>>50 for Type 2.2   | Q208B     |
| <i>Stage 2- to be undertaken if any of the stage 1 tests do not conform to requirements</i> |                     |                     |  |           |
| Secondary Minerals Content  | 1 per 2500T         | 1 per 5000T         | <25                                    | AS1141.26 |
| Accelerated Soundness Index   | 1 per 2500T         | 1 per 5000T         | >94                                    | AS1141.29 |

**\*Note- For requirements for other material types, refer to MRTS05 Table 7.2.1**

#### 6.3.12.4 On maintenance documentation

Prior to a development being accepted on maintenance, all works must be satisfactorily completed (including bonded works), all relevant conditions must be complied with and the following documentation must be provided:-

- (a) a formal request for on maintenance;
- (b) all relevant forms located in **Appendix SC6.3C (Forms and checklists)** of this policy, completed by an appropriate person;
- (c) technical manuals, maintenance schedules and product guarantee and warranty documentation for all sewer pumping stations, street furniture, structures, playground equipment, park furniture, irrigation systems, electrical works, bio retention swales, rain gardens, proprietary products and machinery;
- (d) copy of an agreement with a contractor for the maintenance of the works and open space areas during the maintenance period;
- (e) written advice indicating the consulting engineer (RPEQ) responsible to monitor the site during the maintenance period;
- (f) a copy of the plan of survey showing easements etc;
- (g) copy of the CCTV video and technical report of sewer and stormwater pipes;
- (h) certification from geotechnical testing company of any Level 1 supervision works;
- (i) certifications from the contractor, supervising engineer (RPEQ) and supervising landscaper as required;

- (j) written advice or approval documentation from other authorities that works within their jurisdiction has been completed satisfactorily;
- (k) completed asset data and Digital 'As Constructed' Information and Certifications in accordance with Council's document titled 'Submission of As Constructed Information';
- (l) Provide a plan of finished surface levels from a Licensed Surveyor and certification from a RPEQ that the development has been constructed to meet Q100 flood immunity in accordance with the approved design drainage strategy for the development.
- (m) a paper copy of the as constructed information with appropriate certification.
- (n) pressure test results for all water mains and sewer rising mains;
- (o) vacuum test results for all gravity sewer mains;
- (p) all materials test results including copies of any failed tests;
- (q) copies of final building inspection certificates for any shelters or structures; and
- (r) master keys and any copies for any locks.

### **6.3.12.5 Maintenance period**

#### **General**

- (1) All development works and works that will be transferred to Council control are subject to a minimum 12 month maintenance period during which time the developer must maintain the works, and any defects relating to materials, workmanship and design errors or omissions must be corrected at the developer's expense.
- (2) A maintenance period longer than 12 months may be specified for significant structures or where environmental areas or parks may be impacted on by future stages and future construction activities.
- (3) Maintenance will include all aspects of the development works including sediment and erosion controls, desilting of stormwater systems, maintenance of verges, repair of defects, subsidence of trenches damage or loss from builders, wayward vehicles, unknown persons etc.
- (4) The maintenance does not include the day to day operation of any sewer pumping station although defects or faults will be required to be rectified at the developers cost.
- (5) The maintenance period will be extended until all identified defects are rectified and the works deemed to be satisfactory.
- (6) The developer will be responsible for the maintenance of all works until the development works have been accepted off maintenance.
- (7) During the maintenance period, the supervising engineer must monitor the site for defects and construction activities associated with the development. The engineer must also ensure that the defects do not compromise the safety of persons in road reserves and public open space areas and ensure the development does not cause any environmental harm to sensitive areas. The consulting engineer must take immediate action where required to correct any safety or environmental matters that may arise.
- (8) At any time during the maintenance period Council Officers may undertake random inspections to determine the satisfactory maintenance of the works.
- (9) Where Council Officers advise the supervising engineer of any defects, appropriate rectification works must be completed within 30 days. Where these defects are likely to

be safety, environmental or health risks, immediate action must be undertaken to make the area safe.

- (10) Where public safety or health is at risk or there is the potential for environmental harm, Council Officers may undertake necessary remedial works to make the area safe. All costs will be the responsibility of the developer and may be recovered from any bonds held by Council.
- (11) Rehabilitation projects may be subject to extended maintenance periods and obligations as indicated in an approved rehabilitation plan. The maintenance periods on such projects are likely to be performance based and subject to periodic review on progress.
- (12) Where a developer is constructing a subdivision and dwellings as part of a package and those dwellings are intended to be complete prior to the subdivision works being accepted off maintenance, Council may approve minor works such as footpaths and landscaping that front the dwellings to be completed during the maintenance period. Any frontage works however must be completed prior to occupation of the dwelling and prior to off maintenance. Where Council approves such works, the estimated cost must be added to the value of the maintenance bond. Council may also require additional requirements during the maintenance period to facilitate these works.

#### **Construction and design defects and omissions**

- (13) The repair of construction defects or the rectification of design errors and omissions will be required to be undertaken as they are identified.
- (14) Where after approval of the design and the acceptance of the project 'On-maintenance', it is identified that an aspect of the works does not comply as a result of either an error or omission in the design or construction or as a result of below standard construction materials, that portion of the works will be required to be rectified.
- (15) The civil works are also required to perform in accordance with the design intent.
- (16) Where Council Officers raise concerns that a portion of the civil infrastructure provided as part of the works is not performing in accordance with the design intent, the Supervising Engineer must investigate the matter and submit a formal report identifying the causes for the failure to perform, and recommending any rectification works that may be needed.
- (17) These reports must be submitted within 30 days of any request.

#### **Maintenance requirements**

- (18) The following is a list of the maintenance works considered applicable to development work:-
  - (a) maintain grassed areas to achieve the minimum acceptance coverage of 60% before the works are due for acceptance 'Off-maintenance';
  - (b) water, fertilise and weed all landscaped areas provided as part of the development works;
  - (c) slash all private property remaining in control of the developer and drainage reserves to maintain a grass length of less than 300mm;
  - (d) mow road verges, pathways and park areas to maintain a grass length of less than 150mm;

- (e) sweep roads to maintain a surface free of loose stones and excessive dirt deposits;
- (f) remove silt and debris washed into kerb and channel, stormwater pipes and structures by stormwater runoff;
- (g) temporary and permanent stormwater quality control structures must be cleared of silt and debris when filled to 50% capacity;
- (h) repair scours; replace topsoil and grassing to areas eroded by stormwater;
- (i) severe scouring may indicate the need for the installation of permanent erosion control structures;
- (j) repair all trench subsidence to water, sewer, stormwater, and power and telephone trenches;
- (k) maintain all fire hydrants and valves free of silt and in an operable condition;
- (l) maintain traffic control devices and road line marking as necessary; and
- (m) specific works may however have special maintenance requirements that may also need to be carried out during the maintenance period.

## **SC6.3.13 Bonding requirements**

### **6.3.13.1 Preliminary**

Bonding is the submission of a financial security to Council by the developer, and is used in the following circumstances:-

- (a) to cover incomplete development obligations in order to obtain early approval of the plan of survey or to commence the use; or
- (b) to cover all development construction works during the maintenance period; or
- (c) as security to ensure compliance with environmental requirements and conditions of approval.

### **6.3.13.2 General**

- (1) The submission of a cash bond must be accompanied by details of the bond and the development project on Council's standard lodgement form. A copy of the receipt needs to be retained as proof of lodgement. Return of any unused portions of cash bonds will only be made to the person or company nominated on the receipt unless specifically directed in writing by the lodger of the bond to make alternate payment.
- (2) A Bank Guarantee may be lodged in lieu of a cash bond. Bank Guarantees must:-
  - (a) be irrevocable guarantees from a recognised trading bank (Guarantees from finance companies and merchant banks are not acceptable); and
  - (b) be open ended with no expiry date; and
  - (c) be the original document (photocopies or facsimiles are not acceptable); and
  - (d) identify the land, the developer, the development and the purpose.
- (3) Bank Guarantees are not transferrable for other purposes or projects.
- (4) Other forms of security, such as mortgages, holding Titles to land, shares, insurance bonds, etc. will not be accepted.
- (5) Marketing names and stage numbers should not be used as primary identification for bonding.

### **6.3.13.3 General performance bond**

- (1) Where a general performance bond is required, it must be paid to Council before any development works commence.
- (2) The bond must cover the cost of any remedial action undertaken by Council to:-
  - (a) ensure compliance with the conditions of the development permit;
  - (b) control dust, smoke or noise nuisance emanating from a development site;
  - (c) clean silt from downstream waterways or stormwater drains that has resulted from erosion attributed to the development works;
  - (d) repair upstream or downstream erosion attributed to the development works;
  - (e) rectify damage to adjacent private property or common fencing; and
  - (f) repair damage to Council infrastructure.
- (3) Council costs will include administration costs and overtime costs where urgent remedial works are required to be undertaken outside of normal work hours.
- (4) Remedial works may be undertaken at the direction of Council Officers.
- (5) The general performance bond will be required to be submitted for all developments that have the potential to have negative environmental impacts, cause nuisance to residents or works within road reserves or other open space areas.

- (6) The bond for earthworks must be calculated at \$5,000/ha with a minimum value of \$10,000 unless determined otherwise depending on the construction activities, environmental sensitivities or other considerations relevant to the site.
- (7) The value of the bond for other construction works and activities will be determined by Council Officers based on the individual circumstances and likely costs to Council to remedy non-compliance matters.
- (8) The release of performance bonds will not occur until the development works are complete, the site has been rehabilitated, all conditions have been satisfied and all compliance matters have been resolved.
- (9) Where a security bond is required to ensure the protection of vegetation during development works, the value of the bond must be commensurate with the estimated monetary value of the tree(s) to be protected as determined by industry standard valuation methods with a minimum of \$10,000 or a bond value. The bond will be released upon the submission of certification to Council from a suitably qualified arborist or ecologist demonstrating that suitable tree protection measures / program was implemented and maintained for the duration of the construction works and that the bonded trees are unlikely in their professional opinion to have been negatively impacted in any way to cause death, de-stabilisation or decline in health or visual amenity.

#### **6.3.13.4 Maintenance bond**

- (1) A maintenance bond will be required for all works that will become a Council asset and for any works within a road reserve or other open space area that Council is or will be responsible for.
- (2) The maintenance bond valued at 5% of the total value of works with a minimum of \$5,000 must be submitted to Council prior to acceptance for the works on maintenance. Council Officers may require another amount depending on the circumstances.
- (3) Where landscaping works are considered to be separate from the civil works, an Open Space Maintenance bond valued at 20% of the total value of landscape works with a minimum \$10,000 must be submitted to Council prior to acceptance of the works on maintenance.
- (4) The bond from the developer must be accompanied by details of the bond and the development project on Council's standard lodgement form.
- (5) Council Officers may agree to undertake the maintenance of soft landscaping works (mowing, weeding etc) during the maintenance period if all costs are paid by the developer. If Council Officers agree to undertake the maintenance responsibilities, a quotation for the work will be provided and must be paid prior to the works being accepted on maintenance and prior to the approval of the plan of survey.

#### **6.3.13.5 Incomplete works bonding**

- (1) Works should be completed prior to the approval of the plan of survey. However where exceptional circumstances exist, Council Officers may accept a bond to secure incomplete works associated with reconfiguring a lot and approve the plan of survey prior to the completion of the works.

#### **Prerequisites**

- (2) Prior to the approval of the plan of survey:-
  - (a) all water supply and sewerage works must be completed and connected to Council's network;

- (b) all stormwater drainage works must be completed;
- (c) as constructed information of the completed works must be submitted to and accepted by Council Officers;
- (d) all works within the proposed lots must be completed;
- (e) all relevant documentation must be submitted to Council;
- (f) all earthworks within the private property and open space areas must be completed and substantially revegetated in accordance with Part 6.2 of this policy;
- (g) an interim on maintenance inspection of the completed works has been successfully undertaken and all associated documentation for 'on maintenance' has been provided to Council; and
- (h) a works programme detailing all outstanding works and their programmed completion dates must be submitted and approved by Council Officers. All works are required to be completed within six (6) weeks of the date of approval of the plan of survey.

### **General**

- (3) If the developers default on the completion of outstanding works within the set time frames, the Security Deposit will be drawn on to complete the works.
- (4) Where the bonding of incomplete works is approved, the land owner must enter into a Bond Agreement with Council setting out the terms of the Agreement.

### **Bond value**

- (5) If the developers default on the completion of outstanding works within the set time frames, the Security Deposit will be drawn on to complete the works.
- (6) For works that have not been subject to a tender process and a contract has not been signed, security must be lodged to the value of 150% of the approved value of the works including supervision and management costs. The developer's consulting engineer must submit a certified schedule of quantities for the outstanding works together with the contract rates as verification of the value of the outstanding works.
- (7) For works that are subject to a signed fixed price contract, security must be lodged to the value of 125% of the value of the contract price plus supervision and management costs. A copy of the contract together with the schedule of quantities and rates must be provided to Council as verification of the value of the works.
- (8) For works that are subject to a signed fixed price contract and are partially complete, security must be lodged to the value of 125% of the outstanding works plus supervision and management costs. A copy of the contract together with the schedule of quantities and rates of the outstanding works must be provided to Council as verification of the value of the works.
- (9) The minimum value of the incomplete works bond in any case must be \$50,000.
- (10) Where the works involve Council assets, the maintenance bond must also be provided in addition to the incomplete works bond.

### **Reduction of bonds**

- (11) The full value of the incomplete works bond and maintenance bond will be held by Council until all works have been completed and accepted on maintenance. However, staged release of bonding for vegetation rehabilitation works may be approved where such works are staged and in accordance with an approved rehabilitation plan.
- (12) On completion and acceptance of the works on maintenance, the bond amount may be reduced to the value of the maintenance bond.



### **Realisation of bonds**

- (13) Works that remain incomplete after the agreed timeframes may be undertaken by Council or by a contractor under the direction of Council Officers.
- (14) All costs incurred by Council in undertaking the works, including supervision and management costs will be recovered from the security bond.
- (15) Where costs incurred by Council exceed the value of the security, Council will take all necessary legal action to recover the additional costs from the developer.

### **6.3.13.6 Release of bonds**

- (1) Unless otherwise notified by the applicant the maintenance bond will be refunded after acceptance of the works formally 'Off Maintenance'.
- (2) All bonds will be returned to the payer unless the payer has advised Council otherwise in writing.
- (3) The Principal Consultant must lodge a formal request for the return of any bonds outlining the reasons and including the following details:-
  - (a) description of development;
  - (b) Council file reference for development;
  - (c) bond amount originally lodged with Council;
  - (d) name of Trading Bank (Bank Guarantee Bond only);
  - (e) Council receipt number (Cash/Cheque Bonds only);
  - (f) date bond lodged with Council; and
  - (g) payer.

## Appendix SC6.3A Fraser Coast Road Hierarchy

### Road hierarchy element and their objectives

| Tier 1: Function  |   |   |   |   |   |   |   |  |  |
|---|---|---|---|---|---|---|---|--|--|
| Roads   |   |   |   |   | Streets   |   |   |  |  |
| <ul style="list-style-type: none"> <li>To carry through traffic</li> </ul>  |   |   |   |   | <ul style="list-style-type: none"> <li>To provide local property access</li> <li>To collect local traffic</li> </ul>  |   |   |  |  |
| Tier 2: Role  |   |   |   |   |   |   |   |  |  |
| Arterial Roads  |   | Sub Arterial Roads  |   |   | Collector Streets   |   |   | Local Streets  |  |
| <ul style="list-style-type: none"> <li>Through traffic movements between settled areas</li> <li>Longer distance traffic movements within settled areas</li> <li>Line haul public transport task</li> <li>Primary freight and dangerous goods routes</li> <li>Regional cycle movements (off road)</li> </ul> |   | <ul style="list-style-type: none"> <li>Connections between local areas and arterial roads</li> <li>Connections for through traffic between arterial roads</li> <li>Access to public transport</li> <li>Through movement of public transport</li> <li>Regional – local cycle movements (off road)</li> <li>Pedestrian movements</li> <li>Access to developments</li> </ul> |   |   | <ul style="list-style-type: none"> <li>Carry traffic having a trip end within the local area</li> <li>Direct access to properties</li> <li>Access to public transport</li> <li>Pedestrian movements</li> <li>Local cycle movements</li> </ul> |   |   | <ul style="list-style-type: none"> <li>Direct access to properties</li> <li>Pedestrian movements</li> <li>Local cycle movements</li> <li>Access to community based public transport</li> </ul> |  |
| Tier 3: Management  |   |   |   |   |   |   |   |  |  |
| Highway/Motorway  | Arterial Road   | Arterial Main Street  | Traffic Distributor   | Controlled Distributor  | Sub Arterial Main Street  | Major Collector   | Minor Collector   | Access Street  | Access Place   |
| <i>The aim of management policies for these categories will be to facilitate:-</i>  |   |   |   |   |   |   |   |  |  |
| <ul style="list-style-type: none"> <li>Longer distance traffic movements</li> <li>Regionally and nationally significant movements</li> </ul>  | <ul style="list-style-type: none"> <li>Longer distance traffic movements</li> </ul> | <ul style="list-style-type: none"> <li>Longer distance traffic movements</li> <li>Access to commercial properties</li> </ul>  | <ul style="list-style-type: none"> <li>Connection of local areas to arterial roads</li> <li>Access to major developments</li> </ul> | <ul style="list-style-type: none"> <li>Connection of local areas to arterial roads</li> <li>Access to properties (certain existing cases)</li> <li>Control of some aspects of traffic operations to ameliorate impacts</li> </ul> | <ul style="list-style-type: none"> <li>Connection of local areas to arterial roads</li> <li>Access to commercial properties</li> <li>Preservation of aspects of local amenity in balance with traffic operations</li> </ul>                   | <ul style="list-style-type: none"> <li>Connection of residential streets with traffic carrying roads</li> <li>Access to grouped properties</li> </ul> | <ul style="list-style-type: none"> <li>Connection of residential streets with traffic carrying roads</li> <li>Access to individual adjacent properties</li> </ul> | <ul style="list-style-type: none"> <li>Access to individual adjacent properties</li> <li>Access to local area</li> </ul>   | <ul style="list-style-type: none"> <li>Access to individual adjacent properties</li> </ul> |

### Road hierarchy desirable performance criteria – Urban areas

| Criterion                         | Roads   |                                       |                                     |                                     |                                     |                                     | Streets   |                                       |                                    |                                    |
|-----------------------------------|---|---------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---|---------------------------------------|------------------------------------|------------------------------------|
|                                   | Arterial Roads                                  |                                       |                                     | Sub Arterial Roads                  |                                     |                                     | Collector Streets                                       |                                       | Local Streets                      |                                    |
|                                   | Highway /Motorway                               | Urban Arterial                        | Arterial Main Street                | Traffic Distributor                 | Controlled Distributor              | Sub Arterial Main Street            | Major Collector   | Minor Collector                       | Access Street                      | Access Place                       |
| <b>Functional Characteristics</b> |   |                                       |                                     |                                     |                                     |                                     |   |                                       |                                    |                                    |
| Traffic carrying function         | Volumes not restricted                          | Volumes not restricted                | Volumes not restricted              | Volumes not restricted              | preferably <15,000vpd               | preferably <10,000vpd               | preferably <10,000vpd (up to 1000 lots)                 | preferably <3,000vpd (up to 300 lots) | preferably <750vpd (up to 75 lots) | preferably <150vpd (up to 15 lots) |
| Residential access function       | Nil   | Nil                                   | Nil                                 | Nil                                 | Nil desirable, no new access        | Preferably consolidated             | Consolidated unless >20m frontages                      | Individual                            | Individual                         | Individual                         |
| Commercial access function        | Nil   | Nil                                   | Site specific                       | Consolidated                        | Consolidated                        | Site specific                       | Direct possible for large sites                         | Individual                            | Individual                         | Individual                         |
| Industrial access function        | Nil   | Nil                                   | Nil                                 | Nil                                 | Nil                                 | Nil                                 | Direct possible for large sites                         | Individual                            | Individual                         | Individual                         |
| Traffic speed environment         | ≥100km/hr                                       | 70-80 km/h                            | 40-60km/h                           | 60-80km/h                           | May be controlled to 50-70km/h      | 25-20km/h                           | 60km/h  | 50km/h                                | ≤40km/h                            | ≤15km/h                            |
| Heavy Traffic movement            | Primary freight routes                          | Primary/secondary freight routes      | Should bypass except for access     | Secondary routes                    | Should bypass except for access     | Should bypass except for access     | Access only   | Access only                           | Access only                        | Access only                        |
| Dangerous goods movement          | Primary routes                                  | Selected routes only                  | Inappropriate except for access     | Selected routes only                | Selected routes only                | Inappropriate except for access     | Inappropriate except for access                         | Inappropriate except for access       | Inappropriate except for access    | Inappropriate except for access    |
| Public transport facilities       | Line haul, priority treatments                  | Line haul, priority treatments        | Bus route                           | Bus route                           | Bus route                           | Bus route                           | Bus route   | Bus route                             | Community bus access               | Community bus access               |
| Cycle facilities                  | Regional, off carriageway                       | Regional, generally, off carriageway  | Regional/local, cycle lanes on road | Regional/local, cycle lanes on road | Regional/local, cycle lanes on road | Regional/local, cycle lanes on road | Local, shared road space with cars                      | Local, shared road space with cars    | Local, shared road space with cars | Local, shared road space with cars |
| Pedestrian movement facilities    | Only where linkage required, separate from road | Only where linkage required, pathways | Pathways both sides                 | Pathways both sides                 | Pathways both sides                 | Pathways both sides                 | Refer to <b>Table SC6.3.4.1b (Pathway requirements)</b> |                                       |                                    |                                    |

| Criterion                         | Roads                           |                                   |                                 |                                 |                                     |                                   | Streets                        |                              |                           |                           |
|-----------------------------------|---------------------------------|-----------------------------------|---------------------------------|---------------------------------|-------------------------------------|-----------------------------------|--------------------------------|------------------------------|---------------------------|---------------------------|
|                                   | Arterial Roads                  |                                   |                                 | Sub Arterial Roads              |                                     |                                   | Collector Streets              |                              | Local Streets             |                           |
|                                   | Highway /Motorway               | Urban Arterial                    | Arterial Main Street            | Traffic Distributor             | Controlled Distributor              | Sub Arterial Main Street          | Major Collector                | Minor Collector              | Access Street             | Access Place              |
| <b>Frictional Characteristics</b> |                                 |                                   |                                 |                                 |                                     |                                   |                                |                              |                           |                           |
| Preferred access control          | No access                       | No access                         | Selective access control        | Combined sites only             | Selective access control            | Selective access control          | Combined site access preferred | Individual sites             | Individual sites          | Individual sites          |
| Parking provision                 | No parking on roadway           | No parking on roadway             | Keep clear of through lanes     | No parking on roadway           | Keep clear of through lanes         | Keep clear of through lanes       | Provide for kerbside parking   | Provide for kerbside parking | No specific provision     | No specific provision     |
| Bus stopping provision            | None on road                    | Indented bays where appropriate   | Indented bays where appropriate | Indented bays where appropriate | Indented bays where appropriate     | Indented bays where appropriate   | Kerbside                       | Kerbside                     | No provision              | No provision              |
| Pedestrian crossings              | Grade separated                 | Signalised                        | Controlled points               | Controlled points               | Controlled points                   | Controlled points                 | Some controlled points         | Some controlled points       | No specific provision     | No specific provision     |
| Typ. Intersection spacing         | 1-2km highway ≥2km motorway     | 500-1000m                         | 500m desirable, 150m minimum    | 300m                            | 300m                                | 150-300m                          | 80-100m                        | 40-60m                       | 10m                       | Nil                       |
| Intersection treatments           | Grade separated                 | Signal/roundabout                 | Signal/roundabout               | Signal/roundabout /priority T   | Signal/roundabout / priority T      | Roundabout/ priority T            | Roundabout/ priority           | Roundabout/ priority         | Priority                  | Priority                  |
| Cross Section                     | Volume driven, could be divided | Volume driven, could be divided   | 4 or 2 lanes, could be divided  | 4 or 2 lanes, could be divided  | 4 or 2 lanes, could be divided      | Generally 2 lanes                 | 2 lanes, could be divided      | 2 lanes                      | 2 lanes                   | 1 or 2 lanes              |
| <b>Impact Characteristics</b>     |                                 |                                   |                                 |                                 |                                     |                                   |                                |                              |                           |                           |
| Abutting land use types           | Non sensitive                   | Non sensitive, vehicle associated | Retail/ commercial              | Non sensitive to traffic        | Preferably non sensitive to traffic | Retail/ commercial/ tourism based | As specified under zoning      | As specified under zoning    | As specified under zoning | As specified under zoning |
| Land use impact amelioration      | Barriers/buffers/ setbacks      | Buffers/ streetscaping/ setbacks  | Streetscaping                   | Streetscaping/ setbacks         | Streetscaping                       | LATM/ streetscaping               | LATM/ street-scaping           | LATM/ street-scaping         | LATM/ street-scaping      | LATM/ street-scaping      |

### Road hierarchy desirable performance criteria – Rural areas

| Criterion                         | Roads   |                                       |                                       |                                       |                                     |                          | Streets                         |                                 |                                 |                                 |            |
|-----------------------------------|---|---------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------|--------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|------------|
|                                   | Arterial Roads                                  |                                       |                                       | Sub Arterial Roads                    |                                     |                          | Collector Streets               |                                 | Local Streets                   |                                 |            |
|                                   | Highway /Motorway                               | Rural Arterial                        | Arterial Main Street                  | Traffic Distributor                   | Controlled Distributor              | Sub Arterial Main Street | Major Collector                 | Minor Collector                 | Access Street                   | Access Place <sup>[1]</sup>     |            |
| <b>Functional Characteristics</b> |   |                                       |                                       |                                       |                                     |                          |                                 |                                 |                                 |                                 |            |
| Traffic carrying function         | Volumes not restricted                          | Volumes not restricted                | Not Applicable                        | Volumes not restricted                | <15,000vpd                          | Not Applicable           | <10,000vpd (up to 1000 lots)    | <2,400vpd (up to 240 lots)      | <750vpd (up to 75 lots)         | <150vpd (up to 15 lots)         |            |
| Residential access function       | Nil   | Nil                                   |                                       | May be individual                     | May be individual                   |                          | May be individual               | Individual                      | Individual                      | Individual                      | Individual |
| Commercial access function        | Nil   | Nil                                   |                                       | Consolidated                          | Consolidated                        |                          | Consolidated                    | Individual                      | Individual                      | Individual                      | Individual |
| Industrial access function        | Nil   | Nil                                   |                                       | May be individual                     | May be individual                   |                          | May be individual               | Individual                      | Individual                      | Individual                      | Individual |
| Traffic speed environment         | ≥100km/h  | 80-100km/h                            |                                       | 80-100km/h                            | May be controlled to 50-70km/h      |                          | 60-80km/h                       | 50-70km/h                       | 50-60km/h                       | ≤50km/h                         |            |
| Heavy traffic movement            | Primary freight routes                          | Primary/secondary freight routes      |                                       | Secondary routes                      | Should bypass except for access     |                          | Access only                     | Access only                     | Access only                     | Access only                     |            |
| Dangerous goods movement          | Primary routes                                  | Selected routes only                  |                                       | Selected routes only                  | Selected routes only                |                          | Inappropriate except for access | Inappropriate except for access | Inappropriate except for access | Inappropriate except for access |            |
| Public transport facilities       | Line haul, priority treatments                  | Line haul, priority treatments        |                                       | Bus route                             | Bus route                           |                          | Bus route                       | Bus route                       | Bus route                       | Community bus access            |            |
| Cycle facilities                  | Regional, off carriageway                       | Regional, generally, off carriageway  |                                       | Regional/local, cycle lanes on road   | Regional/local, cycle lanes on road |                          | No specific provision           | No specific provision           | No specific provision           | No specific provision           |            |
| Pedestrian movement facilities    | Only where linkage required, separate from road | Only where linkage required, pathways | Only where linkage required, pathways | Only where linkage required, pathways | No specific provision               | No specific provision    | No specific provision           | No specific provision           |                                 |                                 |            |

| Criterion                         | Roads                             |                                   |                      |                                 |                                     |                          | Streets                   |                           |                           |                             |          |
|-----------------------------------|-----------------------------------|-----------------------------------|----------------------|---------------------------------|-------------------------------------|--------------------------|---------------------------|---------------------------|---------------------------|-----------------------------|----------|
|                                   | Arterial Roads                    |                                   |                      | Sub Arterial Roads              |                                     |                          | Collector Streets         |                           | Local Streets             |                             |          |
|                                   | Highway /Motorway                 | Rural Arterial                    | Arterial Main Street | Traffic Distributor             | Controlled Distributor              | Sub Arterial Main Street | Major Collector           | Minor Collector           | Access Street             | Access Place <sup>(1)</sup> |          |
| <b>Frictional Characteristics</b> |                                   |                                   |                      |                                 |                                     |                          |                           |                           |                           |                             |          |
| Preferred access control          | No access                         | No access                         | Not Applicable       | Combined sites only             | Selective access control            | Not Applicable           | Combined site access      | Individual sites          | Individual sites          | Individual sites            |          |
| Parking provision                 | No parking on roadway             | No parking on roadway             |                      | No parking on roadway           | Keep clear of through lanes         |                          | No specific provision     | No specific provision     | No specific provision     | No specific provision       |          |
| Bus stopping provision            | None on road                      | Indented bays where appropriate   |                      | Indented bays where appropriate | Indented bays where appropriate     |                          | Kerbside                  | Kerbside                  | Kerbside                  | Nil                         |          |
| Pedestrian crossings              | Grade separated                   | Signalised                        |                      | Controlled points               | Controlled points                   |                          | Some controlled points    | Some controlled points    | No specific provision     | No specific provision       |          |
| Typ. Intersection spacing         | 4-8km (maximum 12km)              | >1000m                            |                      | >300m                           | >300m                               |                          | >100m                     | >100m                     | >100m                     | Nil                         |          |
| Intersection treatments           | Grade separated/ priority         | Roundabout/ priority              |                      | Roundabout/ priority            | Roundabout/ priority                |                          | Roundabout/ priority      | Roundabout/ priority      | Roundabout/ priority      | Priority                    | Priority |
| Cross Section                     | Volume driven, could be divided   | Volume driven, could be divided   |                      | 4 or 2 lanes, could be divided  | 4 or 2 lanes, could be divided      |                          | 2 lanes, could be divided | 2 lanes                   | 2 lanes                   | 2 lanes                     |          |
| <b>Impact Characteristics</b>     |                                   |                                   |                      |                                 |                                     |                          |                           |                           |                           |                             |          |
| Abutting land use types           | Non sensitive, vehicle associated | Non sensitive, vehicle associated | Not Applicable       | Non sensitive to traffic        | Preferably non sensitive to traffic | Not Applicable           | As specified under zoning | As specified under zoning | As specified under zoning | As specified under zoning   |          |
| Land use impact amelioration      | Setbacks                          | Setbacks                          |                      | Setbacks                        | Setbacks                            |                          | Setbacks                  | Setbacks                  | Setbacks                  | Setbacks                    |          |

## Appendix SC6.3B Recommended plant list

### General Notes

Plants have been categorised according to their most likely purpose, but some will be multi-purpose: e.g. most street trees can also be used in parks, and some of the smaller, compact street or park trees will also be useful screening plants.

### Plant List Legend

Origin (O) \* Australian native plant - native to Fraser Coast Region  
 + Australian native plant – mostly native to Queensland  
 E exotic plant

Size H estimated mature height (m)  
 W estimated mature canopy (m)

Note: size of plant in cultivation. Wild plants, or those grown by direct seeding or natural regeneration, may be larger.

Cultural M prefers moist soil conditions  
 D prefers light, well-drained soil conditions  
 S tolerates or prefers shaded or protected positions  
 C withstands salt spray, good for coastal planting

Note: Further research may be required for individual plant requirements.

Table SC6.3B1 - Verge / street trees plant list

| O | Botanical Name                   | Common Name                                 | H     | W     | M | D | S | C |
|---|----------------------------------|---|-------|-------|---|---|---|---|
| * | <i>Acacia bakeri</i>             | Marblewood                                  | 10-20 | 5-8   | x |   |   |   |
| * | <i>Acmena smithii</i>            | Lillypilly Satinash                         | 6-20  | 3-12  | x | x | x | x |
| * | <i>Acronychia imperforata</i>    | Coastal Aspen, Logan Apple                  | < 12  |       |   |   |   | x |
| * | <i>Alectryon coriaceus</i>       | Beach Alectryon / Birds Eye                 | 4-8   | 2-5   |   |   |   | x |
| * | <i>Alphitonia excelsa</i>        | Red Ash , Soap Tree                         | 6-12  | 4-6   |   | x |   | x |
| * | <i>Alstonia constricta</i>       | Bitterbark, Quinine Bush                    | 4-12  | 4     |   | x |   |   |
| * | <i>Arytera divaricata</i>        | Rose Tamarind, Coogera                      | 7-12  | 6     |   | x |   | x |
| * | <i>Auranticarpa rhombifolia</i>  | Queensland Laurel                           | 6-12  | 3-6   | x | x |   | x |
| + | <i>Backhousia citriodora</i>     | Lemon-scented Myrtle                        | 6-12  | 5-6   | x | x |   |   |
| + | <i>Barklya syringifolia</i>      | Golden Shower Tree                          | 6-12  | 3-5   |   | x |   |   |
| + | <i>Brachychiton acerifolius</i>  | Flame Tree                                  | 8-15  | 4-8   | x | x |   |   |
| + | <i>Brachychiton bidwilli</i>     | Little Kurrajong                            | 3-5   | 1.5-4 |   | x |   |   |
| * | <i>Brachychiton populneus</i>    | Kurrajong                                   | 7-12  | 4-10  |   | x |   |   |
| + | <i>Buckinghamia celsissima</i>   | Ivory Curl Flower                           | 4-10  | 2-6   |   | x |   |   |
| * | <i>Callistemon salignus</i>      | Willow or White Bottlebrush                 | 3-9   | 2-4   | x | x |   | x |
| * | <i>Callistemon viminalis</i>     | Weeping Bottlebrush                         | 4-8   | 3-5   | x | x |   | x |
| + | <i>Calophyllum inophyllum</i>    | Beauty Leaf, Ball Nut<br>Alexandrian Laurel | 9-15  | 9-15  | x | x |   | x |
| + | <i>Cassia brewsteri</i>          | Leichhardt Bean                             | 5-9   | 4-6   |   | x |   |   |
| * | <i>Celtis paniculata</i>         | Australian Celtis                           | 4-10  | 3-6   |   |   | x |   |
| * | <i>Clausena smyrelliana</i>      | Hervey Bay Clausena                         | 6     | 3     | x |   | x |   |
| * | <i>Commersonia bartramia</i>     | Brown Kurrajong                             | 5-10  | 3-4   | x | x | x |   |
| * | <i>Cupaniopsis anacardioides</i> | Tuckeroo                                    | 8-12  | 5-10  | x | x |   | x |
| * | <i>Diospyros fasciculosa</i>     | Grey Ebony                                  | 10-20 | 4-7   |   |   |   |   |
| * | <i>Diospyros pentamera</i>       | Black or Myrtle Ebony                       | 10-20 | 4-7   |   |   |   |   |
| * | <i>Drypetes deplanchei</i>       | Grey Boxwood, Yellow Tulip                  | 10-20 | 4     | x |   | x |   |
| * | <i>Elaeocarpus eumundi</i>       | Eumundi Quandong                            | 10-15 | 6-8   | x |   | x |   |
| * | <i>Elaeocarpus reticulatus</i>   | Blueberry Ash                               | 4-10  | 2-5   | x | x | x | x |
| * | <i>Endiandra sieberi</i>         | Hard Corkwood, Pink Walnut                  | 8-15  | 3-6   |   | x |   | x |
| + | <i>Eucalyptus curtsii</i>        | Plunkett Mallee                             | 4-8   | 3-7   |   | x |   | x |
| * | <i>Flindersia australis</i>      | Crows Ash, Aust. Teak                       | 10-20 | 4-8   | x |   | x |   |
| * | <i>Flindersia bennettiana</i>    | Bennetts Ash                                | 12-22 | 7-12  |   | x | x |   |
| * | <i>Flindersia schottiana</i>     | Bumpy Ash, Cudgerie                         | 20-40 | 10-20 |   |   | x |   |
| * | <i>Glochidion ferdinandi</i>     | Cheese tree                                 | 5-12  | 6     | x | x |   | x |
| * | <i>Guioa semiglauca</i>          | Guioa, Wild Quince                          | 6-12  | 4-5   | x |   |   |   |
| * | <i>Harpullia hillii</i>          | Blunt-leaved Tulip                          | 7-10  | 6     | x | x | x |   |
| * | <i>Harpullia pendula</i>         | Queensland Tulipwood                        | 6-15  | 4-10  | x | x |   | x |
| * | <i>Hibiscus tiliaceus</i>        | Coast Cotton Tree                           | 4-8   | 3-8   | x | x |   | x |
| * | <i>Hymenosporum flavum</i>       | Native Frangipani                           | 5-12  | 3-5   | x |   | x |   |
| * | <i>Jagera pseudorhus</i>         | Foambark                                    | 4-10  | 2-8   | x | x |   |   |
| * | <i>Lophostemon confertus</i>     | Brush Box                                   | 8-20  | 6-12  | x | x |   |   |

| O | Botanical Name            | Common Name                       | H     | W     | M | D | S | C |
|---|---------------------------|-----------------------------------|-------|-------|---|---|---|---|
| * | Lophostemon suaveolens    | Swamp Box / Turpentine            | 6-12  | 2-4   | x |   |   |   |
| * | Mallotus discolor         | Yellow Kamala                     | 6-15  | 4-8   |   | x |   |   |
| * | Mallotus philippensis     | Red Kamala                        | 8-18  | 4-8   |   | x |   |   |
| * | Melaleuca quinquenervia   | Broad-leaved Paperbark            | 9-20  | 3-9   | x | x |   | x |
| * | Melaleuca styphelioides   | Prickly-leaved Tea Tree           | 5-12  | 3-7   | x | x |   | x |
| * | Melicope elleryana        | Pink-flowered Euodia or Corkwood  | 8-20  | 6-15  | x | x | x |   |
| * | Mischarytera lautereriana | Corduroy Tamarind                 | 10-20 | 6-8   |   | x |   | x |
| + | Nauclea orientalis        | Leichhardt Tree                   | 8-20  | 6-15  | x | x |   |   |
| * | Pararchidendron pruinosum | Snow Wood, Monkeys Earrings       | 6-10  | 3-6   | x |   | x |   |
| + | Peltophorum pterocarpum   | Yellow Flame Tree                 | 8-18  | 10-15 | x | x |   | x |
| * | Pleigynium timorensis     | Burdekin Plum                     | 6-20  | > 10  | x | x |   | x |
| * | Polyalthia nitidissima    | Canary Beech                      | 10-18 |       |   |   |   |   |
| * | Pouteria pohlmiana        | Yellow Boxwood                    | 10-20 |       | x | x | x |   |
| * | Pouteria queenslandica    | Blush Coondoo                     | 15-30 |       |   |   |   |   |
| + | Rhodospaera rhodanthema   | Deep Yellow Wood, Tulip Satinwood | 10-15 |       | x | x | x |   |
| * | Stenocarpus sinuatus      | Firewheel Tree                    | 9-20  | 4-8   |   | x | x | x |
| * | Sterculia quadrifida      | Peanut Tree                       | 6-18  |       |   | x |   | x |
| * | Syzygium luehmannii       | Small-leaved Lilly Pilly          | 6-20  | 4-8   | x |   | x |   |
| * | Syzygium oleosum          | Blue Cherry, Blue Lilly Pilly     | 4-12  | 3-8   | x |   | x |   |
| E | Tabebuia rosea            | Pink Trumpet Tree                 | 5-8   |       |   | x |   |   |
| * | Tristanopsis laurina      | Water Gum, Kanooka                | 5-15  | 3-8   | x | x | x | x |
| + | Xanthostemon chrysanthus  | Golden Penda                      | 8-15  | 3-6   | x | x | x |   |

**Table SC6.3B2 - Large and/or park trees plant list**

| O | Botanical Name                     | Common Name                           | H     | W     | M | D | S | C |
|---|------------------------------------|---------------------------------------|-------|-------|---|---|---|---|
| * | Agathis robusta                    | Queensland Kauri Pine                 | 20-40 | 8-15  | x | x |   |   |
| + | Alloxyylon flammeum                | Scarlet Silky Oak, Tree Waratah       | 6-15  | 4-6   | x | x | x |   |
| * | Angophora leiocarpa                | Smooth-barked Apple                   | 10-20 | 8-12  |   | x |   |   |
| * | Araucaria cunninghamii             | Hoop Pine                             | 15-30 | 8-15  |   | x |   | x |
| * | Brachychiton discolor              | Lacebark Kurrajong                    | 6-15  | 4-8   |   | x |   |   |
| * | Castanospermum australe            | Blackbean                             | 10-20 | 6-15  | x | x | x |   |
| * | Casuarina cunninghamiana           | River She-oak                         | 10-25 | 8-12  | x | x |   | x |
| * | Casuarina glauca                   | Swamp She-oak                         | 5-15  | 3-8   | x | x |   | x |
| + | Corymbia citriodora ssp citriodora | Lemon-scented Gum                     | 10-30 | 8-15  |   | x |   |   |
| * | Corymbia citriodora ssp variegata  | Spotted Gum                           | 15-30 | 10-15 |   | x |   | x |
| * | Corymbia intermedia                | Pink Bloodwood                        | 10-25 | 8-15  | x | x |   | x |
| + | Corymbia ptychocarpa               | Swamp Bloodwood                       | 6-15  | 3-8   | x | x |   | x |
| * | Corymbia tessellaris               | Moreton Bay Ash, Carbeen              | 10-25 | 8-15  |   | x |   | x |
| * | Davidsonia pruriens                | Davidson's Plum                       | 3-10  | 1.5-5 | x |   | x |   |
| E | Delonix regia                      | Royal Poinciana                       | 10-12 | 10-20 |   | x |   | x |
| * | Diploglottis australis             | Native Tamarind                       | 8-20  | 3-8   | x |   | x |   |
| * | Dysoxylum rufum                    | Hairy or False Rosewood               | < 15  |       | x |   |   |   |
| * | Elaeocarpus grandis                | Blue Quandong                         | 10-20 | 6-12  | x | x | x |   |
| * | Elaeocarpus obovatus               | Hard Quandong                         | 6-25  | 6-15  | x |   | x | x |
| * | Eucalyptus crebra                  | Narrow-leaved Ironbark                | 15-30 | 8-15  |   | x |   | x |
| * | Eucalyptus exserta                 | Queensland Peppermint                 |       |       |   | x |   |   |
| * | Eucalyptus moluccana               | Grey or Gum-topped Box                | 15-25 | 10-15 | x | x |   |   |
| * | Eucalyptus robusta                 | Swamp Mahogany                        | 15-20 | 6-15  | x |   |   | x |
| * | Eucalyptus siderophloia            | Northern Grey Ironbark                | 30    |       |   | x |   |   |
| + | Eucalyptus sideroxylon             | Red Ironbark, Mugga                   | 10-25 | 8-15  |   | x |   | x |
| * | Eucalyptus tereticornis            | Queensland Blue Gum                   | 20-30 | 10-20 | x | x |   | x |
| * | Eucalyptus umbra                   | Broad-leaved White Mahogany           | 5-10  |       | x | x |   | x |
| E | Ficus benjamina                    | Benjamins Fig, Weeping Chinese Banyan | 10-20 | 8-15  | x | x |   |   |
| + | Ficus microcarpa var hillii        | Small-fruited Fig, Hills Fig          | 10-15 | 10-15 |   | x |   | x |
| * | Ficus macrophylla                  | Moreton Bay Fig                       | 15-30 | 15-25 | x | x |   | x |
| * | Ficus obliqua                      | Small-leaved Fig (strangler)          | 15-30 | 15-25 |   | x |   |   |
| * | Ficus rubiginosa                   | Port Jackson Fig, Rusty-leaf Fig      | 10-20 | 10-20 |   | x |   | x |
| * | Ficus virens                       | White or Grey Fig (banyan)            | 15-30 | 15-30 | x | x |   | x |
| * | Gmelina leichhardtii               | White Beech                           | 8-20  | 4-8   |   |   |   |   |
| * | Melaleuca dealbata                 | Blue-leaved Paperbark                 | 9-20  | 6-15  | x | x |   | x |
| + | Melaleuca leucadendron             | Cajeput / Weeping Paperbark           | 10-25 | 6-15  | x |   |   | x |
| * | Melaleuca linariifolia             | Flax-leaved Paperbark                 | 5-10  | 3-8   | x | x |   | x |
| * | Melaleuca quinquenervia            | Broad-leaved Paperbark                | 9-20  | 3-9   | x | x |   | x |
| * | Podocarpus elatus                  | Plum Pine / Brown Pine                | 8-20  | 4-12  |   | x | x |   |
| E | Schotia brachypetala               | Parrot Tree, Tree Fuchsia,            | 10-15 | 10-15 | x | x |   |   |



| O | Botanical Name                | Common Name                       | H     | W     | M | D | S | C |
|---|-------------------------------|-----------------------------------|-------|-------|---|---|---|---|
|   |                               | African Walnut                    |       |       |   |   |   |   |
| * | <i>Scolopia braunii</i>       | Flintwood, Brown Birch            | 15    | 10    |   |   |   |   |
| * | <i>Syncarpia hillii</i>       | Satinay, Fraser Island Turpentine | 20-30 | 8-15  |   | x |   |   |
| * | <i>Syzygium francisii</i>     | Giant Water Gum                   | 10-25 | 8-20  | x |   |   |   |
| + | <i>Syzygium moorei</i>        | Coolamon, Rose Apple              | 8-20  | 4-9   | x |   | x |   |
| + | <i>Terminalia catappa</i>     | Tropical Almond, Kotamba          | 8-15  | 10-20 |   | x |   | x |
| * | <i>Toona ciliata</i>          | Red Cedar                         | 10-30 | 6-15  | x | x | x |   |
| * | <i>Waterhousia floribunda</i> | Giant Weeping Lilly Pilly         | 8-30  | 4-12  | x |   | x |   |

**Table SC6.3B3 - Small trees, large screening shrubs and windbreaks plant list**

| O | Botanical Name                               | Common Name                            | H     | W     | M | D | S | C |
|---|--|--|-------|-------|---|---|---|---|
| * | <i>Acacia concurrens</i>                     | Curracabah                             | 4-7   | 3-4   |   | x |   |   |
| * | <i>Acacia fimbriata</i>                      | Brisbane Golden Wattle, Fringed Wattle | 7     | 3-6   |   | x |   | x |
| * | <i>Acacia flavescens</i>                     | Toothed Wattle                         | 6-10  | 4-5   | x | x |   | x |
| + | <i>Acacia longifolia</i> var <i>sophorae</i> | Sydney Golden Wattle                   | 1-4   | 3     |   | x |   | x |
| * | <i>Acmena hemilampura</i>                    | Broad-leaved Lilly Pilly               | 5-10  | 3-5   | x | x | x | x |
| * | <i>Allocasuarina littoralis</i>              | Black She-oak                          | 4-10  | 3-5   |   | x |   | x |
| * | <i>Allocasuarina torulosa</i>                | Forest She-oak                         | 8-15  | 4-6   |   | x |   | x |
| * | <i>Backhousia myrtifolia</i>                 | Grey Myrtle                            | 3-6   | 2-4   | x |   |   |   |
| * | <i>Baeckea frutescens</i>                    | Weeping Baeckea                        | 3     | 1     |   |   |   |   |
| * | <i>Baeckea virgata</i>                       | Twiggy Heath Myrtle                    | 2-4   | 1-3   | x | x |   | x |
| * | <i>Banksia aemula</i>                        | Wallum Banksia                         | 1-5   | 1-3   | x | x |   | x |
| * | <i>Banksia integrifolia</i>                  | Coast Banksia                          | 5-12  | 2-7   |   | x |   | x |
| + | <i>Banksia serrata</i>                       | Old Man Banksia                        | 4-12  | 4-8   |   | x |   | x |
| * | <i>Banksia spinulosa</i> var <i>collina</i>  | Hills or Hairpin Banksia               | 1-3   | 1-3   | x | x |   | x |
| * | <i>Callistemon formosus</i>                  | White Cliff Bottlebrush                | 3-5   | 2-4   | x | x |   |   |
| * | <i>Callistemon salignus</i>                  | White Bottlebrush                      | 3-9   | 2-4   | x | x |   | x |
| + | <i>Callistemon</i> spp (varieties)           | Bottlebrushes                          |       |       |   |   |   |   |
| * | <i>Callitris collumellaris</i>               | Coast Cypress                          | 10-20 | 5-7   |   | x |   | x |
| * | <i>Casuarina equisetifolia</i>               | Coast or Horsetail She-oak             | 6-18  | 3-8   |   | x |   | x |
| * | <i>Dodonaea triquetra</i>                    | Large-leaf Hop Bush                    | 2-3   | 1-2   |   | x |   |   |
| * | <i>Dodonaea viscosa</i>                      | Sticky Hop Bush                        | 2-4   | 1-3   |   | x |   | x |
| * | <i>Ficus coronata</i>                        | Creek Sandpaper Fig                    | 5-10  | 3-5   | x |   | x |   |
| + | <i>Grevillea baileyana</i>                   | Brown Silky Oak                        | 6-12  | 3-6   |   | x | x |   |
| * | <i>Grevillea banksii</i>                     | Banks Grevillea, Red Silky Oak         | 3-8   | 2-3   |   | x |   | x |
| + | <i>Grevillea</i> spp (varieties)             | Grevilleas, Spider Flowers             |       |       |   | x |   |   |
| * | <i>Hakea plurinervia</i>                     | Broad-leaved Hakea                     | 2-3   | 1.5-2 |   | x |   |   |
| + | <i>Hakea salicifolia</i>                     | Willow-leaf Hakea                      | 4-7   | 3     | x | x |   | x |
| * | <i>Hibiscus heterophyllus</i>                | Native Rosella                         | 3-8   |       | x |   |   |   |
| * | <i>Jacksonia scoparia</i>                    | Dogwood                                | 3-5   | 1-2.5 | x | x |   |   |
| * | <i>Leptospermum brachyandrum</i>             | Weeping Tea Tree                       | 2-6   | 2-4   | x | x | x | x |
| + | <i>Leptospermum petersonii</i>               | Lemon-scented Tea Tree                 | 2-7   | 1.5-4 | x | x |   | x |
| * | <i>Leptospermum polygalifolium</i>           | Yellow Tea Tree                        | 1-4   | 1-2.5 | x | x |   | x |
| * | <i>Leptospermum speciosum</i>                |  | 2     | 3     | x | x |   |   |
| * | <i>Leptospermum trinervium</i>               | Woolly Tea Tree                        | 2-6   | 1.5-3 | x |   |   |   |
| * | <i>Mallotus caoxyloides</i>                  | Green Kamala                           | 4-6   |       |   | x | x | x |
| * | <i>Melaleuca bracteata</i>                   | Black or River Tea Tree                | 4-8   | 2-5   | x | x |   | x |
| * | <i>Melaleuca cheelii</i>                     | Paperbark                              | 6     | 3     |   | x |   |   |
| * | <i>Melaleuca diosmatifolia</i>               | Pink or Mauve Honey Myrtle             | 1.5-3 | 2     | x |   |   |   |
| * | <i>Melaleuca nodosa</i>                      | Ball Honey Myrtle                      | 3-7   | 2-4   | x | x |   | x |
| * | <i>Melaleuca sieberi</i>                     | Sieber's Paperbark                     | 5-15  |       | x |   |   |   |
| * | <i>Melaleuca viridiflora</i> (red form)      | Red-flowering Paperbark                | 4-10  | 3-5   | x | x |   | x |
| E | <i>Metrosideros excelsus</i>                 | NZ Christmas Bush                      | 5-10  |       |   | x |   | x |
| E | <i>Michelia figo</i>                         | Port Wine Magnolia                     | 3-5   | 2-3   |   | x | x |   |
| * | <i>Myoporum acuminatum</i>                   | Mangrove Boobialla                     | 2-4   | 2-3   | x | x |   | x |
| * | <i>Pilidiostigma rhytisperma</i>             | Small-leaved Plum Myrtle               | 2-5   | 2-3   | x | x | x |   |
| * | <i>Pittosporum venulosum</i>                 | Mock Orange, Brown Pittosporum         | 6-10  | 2-4   | x | x |   | x |
| * | <i>Planchonia careya</i>                     | Cocky Apple                            | 5-10  |       |   | x |   |   |
| * | <i>Randia fitzalani</i>                      | Native Gardenia                        | 3-6   |       |   |   | x |   |
| * | <i>Rapanea variabilis</i>                    | Muttonwood                             | 2-8   |       |   |   |   |   |
| * | <i>Sophora tomentosa</i>                     | Silver Bush                            | 2-3   |       |   | x |   | x |
| + | <i>Syzygium paniculatum</i>                  | Magenta Lilly Pilly                    | 3-10  | 2-7   | x |   | x |   |
| E | <i>Viburnum odoratissimum</i>                | Sweet Viburnum                         | 4.5-6 | 2     |   | x |   |   |
| E | <i>Viburnum tinus</i>                        | Viburnum, Laurustinus                  | 3-5   | 2-5   |   | x | x | x |
| * | <i>Vitex trifolia</i>                        | Coastal Vitex                          | 2-3   | 2-3   |   | x |   | x |

**Table SC6.3B4 - Small to medium shrubs plant list**

| O | Botanical Name  | Common Name                 | H                          | W       | M | D | S | C |
|---|---|-----------------------------|----------------------------|---------|---|---|---|---|
| * | <i>Acacia suaveolens</i>  | Sweet-scented Wattle        | 1.5                        | 1-1.5   |   | x |   | x |
| * | <i>Alpinia arundelliana</i>   | Dwarf Native Ginger         | 1.5                        | 1-2     | x |   | x |   |
| * | <i>Alpinia caerulea</i>   | Native Ginger               | 1-2.5                      | 1-2     | x |   | x |   |
| * | <i>Alyxia ruscifolia</i>  | Chain Fruit, Sea Box        | 1.5-3                      | 1-2     |   | x | x | x |
| * | <i>Atractocarpus chartaceus</i>   | Narrow-leaved Gardenia      | 6                          |         |   |   |   |   |
| + | <i>Austromyrtus inophloia</i><br>'Blushing Beauty'  | Austromyrtus                | 1-1.5                      | 1       |   |   |   |   |
| * | <i>Austromyrtus dulcis</i>  | Midgenberry, Midyim         | 0.3-1                      | 1-1.5   |   |   | x | x |
| * | <i>Backea virgata</i> (varieties)   | Twiggy Health Myrtle        | < 1                        | < 1     | x | x |   |   |
| * | <i>Banksia oblongifolia</i>   | Dwarf / Fern-leaved Banksia | 1-2                        | 1-2     |   | x |   | x |
| * | <i>Banksia robur</i>  | Swamp Banksia               | 0.5-2                      | 0.5-2   | x |   |   | x |
| * | <i>Breynia oblongifolia</i>   | Coffee Bush                 | 1.5-3                      | 1-2     |   | x | x |   |
| * | <i>Callistemon pachyphyllus</i>   | Wallum Bottlebrush          | 1-2                        | 0.5-1   | x | x |   | x |
| * | <i>Callistemon pachyphyllus viridis</i>   | Green Wallum Bottlebrush    | 1.5                        | 1.5     | x | x |   | x |
| + | <i>Callistemon subulatus</i>  |                             | 1-2                        | 1-2     | x | x | x |   |
| + | <i>Callistemon viminalis</i> var<br>'Little John' and 'Captain Cook'                                    | Dwarf Bottlebrushes         | 1-1.5                      | 1-1.5   | x | x |   |   |
| + | <i>Callistemon</i> spp (varieties)  | Bottlebrushes               |                            |         |   |   |   |   |
| * | <i>Cordyline rubra</i>  | Red-fruited Palm Lily       | 2-4                        | 1-2     | x |   | x |   |
| + | <i>Cordyline stricta</i>  | Slender Palm Lily           | 2-4                        | 1-2     | x |   | x |   |
| E | <i>Cordyline fruticosa</i>  | Palm Lily, Ti Plant         | 2-5                        | 1-2.5   |   |   |   |   |
| E | <i>Dracaena fragrans</i>  | Corn Plant                  | 1-5                        |         | x |   | x |   |
| E | <i>Dracaena marginata</i>   | Red-edge Dracaena           | 3-5                        |         |   | x | x |   |
| + | <i>Eriostemon myoporoides</i> and<br><i>Eriostemon verrucosus</i> hybrids                               | Wax Flowers                 | 1-2                        | 1-1.5   |   | x | x |   |
| E | <i>Gardenia augusta</i> 'Magnifica'   | Gardenia                    | 1-2                        | 1-1.5   |   | x | x |   |
| + | <i>Graptophyllum excelsum</i>   | Scarlet Fuchsia             | 1-3                        | 1.5-2   | x | x | x |   |
| + | <i>Grevillea</i> spp (varieties)  | Grevilleas, Spider Flowers  |                            |         |   | x |   |   |
| * | <i>Hovea acutifolia</i>   | Pointed-leaved Hovea        | 1-2.5                      | 0.6-1   |   | x | x | x |
| E | <i>Ixora</i> spp (varieties)  | Ixora, Jungle Flame         | 1-2.5                      | 1-1.5   |   | x |   |   |
| + | <i>Kunzea opposita</i>  | Honey Myrtle                | 1.5                        | 1.5     |   | x |   |   |
| * | <i>Leptospermum liversidgei</i>   | Olive Tea Tree              | 1-2                        | 0.6-1.5 | x |   |   | x |
| + | <i>Melaleuca linariifolia</i> (cultivars) eg<br>M 'Claret Tops', M 'Snowfire', M<br>'purpurea compacta' | Honey Myrtle                | 0.5-1.5<br>(usually<br>1m) | 0.5-1.5 | x | x |   |   |
| * | <i>Melaleuca thymifolia</i>   | Thyme/Feather Honey Myrtle  | 0.6-1.2                    | 0.3-0.8 | x | x |   | x |
| + | <i>Melastoma affine</i>   | Native Lassianandra         | 0.5-2.5                    | 1-2.5   | x |   | x |   |
| E | <i>Metrosideros</i> spp (varieties)   | New Zealand Xmas Bushes     |                            |         |   | x |   | x |
| * | <i>Pavetta australiensis</i>  | Butterfly Bush              | 2                          | 1.5     | x |   | x |   |
| E | <i>Philodendron</i> 'Xanadu'  | Dwarf Elephant Ears         | 0.6-1                      | 0.6-1   | x | x | x |   |
| * | <i>Pultenaea villosa</i>  | Hairy Bush Pea              | 1-2                        | 1-2     |   | x |   |   |
| * | <i>Ricinocarpus pinifolius</i>  | Wedding Bush                | 1-2                        | 1       |   | x |   |   |
| * | <i>Sauropus albiflorus</i>  | Snow Bush                   | 0.4                        | 0.4     |   |   | x |   |
| + | <i>Syzygium australe</i> / <i>paniculatum</i><br>(hybrids)  | Magenta Lilly Pilly         | 2-3                        |         | x |   | x |   |
| + | <i>Syzygium wilsonii</i>  | Powderpuff Lilly Pilly      | 2-3                        | 2       | x |   | x |   |
| * | <i>Tabernaemontana pandacaqui</i>   | Banana Bush                 | 2-4                        | 1.5-3   |   |   | x |   |
| * | <i>Westringia eremicola</i>   | Coast Rosemary              | 1.5                        | 1       |   | x |   |   |
| + | <i>Westringia fruticosa</i>   | Coast Rosemary              | 1-1.5                      | 1.5     |   | x |   | x |
| + | <i>Xanthostemon verticillatus</i>   | Little Penda                | 1.5 (<5)                   | 1-1.5   | x |   |   |   |
| * | <i>Zieria smithii</i>   | Sandfly Bush                | 1.5-2                      | 1.5     |   | x | x |   |

**Table SC6.3B5 - Groundcover, borders, and tufted or clumping plants plant list**

| O | Botanical Name                      | Common Name                | H      | W       | M | D | S | C |
|---|-------------------------------------|----------------------------|--------|---------|---|---|---|---|
| + | <i>Anigozanthus</i> spp (varieties) | Kangaroo Paws              | 0.3-2  | 0.3-1.5 | x | x |   |   |
| + | <i>Brachyscome</i> spp (varieties)  | Rock or Cut-leaf Daisy     | < 0.3  | 0.5-1   |   | x |   |   |
| * | <i>Carpobrotus glaucescens</i>      | Pigface                    | < 0.15 | 1.5-3   |   |   |   | x |
| E | <i>Convolvulus sabatius</i>         | Ground Morning Glory       | 0.15   | 2.0     |   | x |   | x |
| * | <i>Crinum pedunculatum</i>          | Swamp, Beach or River Lily | 1-1.5  | 1       | x |   | x | x |
| * | <i>Cymbopogon refractus</i>         | Native Lemon Grass         | 0.3-1  | 0.1-0.3 |   | x |   |   |
| + | <i>Dampiera diversifolia</i>        | Dampiera                   | < 0.15 | 0.5-1.5 |   | x |   |   |
| + | <i>Dampiera purpurea</i>            | Dampiera                   | 0.75-1 | 0.5-1   | x | x |   |   |
| * | <i>Dianella brevipedunculata</i>    | Clumping Flax Lily         | 0.5-1  | 0.6-1   | x | x | x | x |

| O | Botanical Name  | Common Name                 | H       | W       | M | D | S | C |
|---|---|-----------------------------|---------|---------|---|---|---|---|
| * | <i>Dianella caerulea</i>  | Paroo or Blue Flax Lily     | 0.5     | 0.5     | x |   | x |   |
| + | <i>Dianella caerulea</i> 'Breeze'   |                             | 0.7     | 0.6     | x | x | x |   |
| + | <i>Dianella caerulea</i> 'Little Jess'  |                             | 0.4     | 0.4     | x | x | x |   |
| * | <i>Dianella congesta</i>  | Coastal Flax Lily           | 0.8     | 0.5     | x | x | x |   |
| + | <i>Dianella tasmanica</i><br>'Tas Red'  |                             | 0.3     | 0.3     |   | x | x |   |
| E | <i>Dietes bicolor</i>   | Yellow Wild Iris            | 0.7     | 0.6     |   | x |   |   |
| E | <i>Dietes grandiflora</i>   | Wild Iris                   | 0.8     | 0.8     |   | x | x |   |
| E | <i>Evolvulus</i> spp (varieties)  | Blue Eyes                   | < 0.3   | 1       |   | x |   |   |
| E | <i>Gardenia radicans</i>  | Gardenia                    | < 0.3   | < 1     |   | x | x |   |
| E | <i>Gazania</i> (varieties)  | Gazania                     | < 0.25  | 0.5     |   | x |   | x |
| * | <i>Goodenia rotundifolia</i>  | Round-leaved Goodenia       | 0.1-0.4 | 1       |   | x |   |   |
| + | <i>Grevillea</i> spp (prostrate varieties) eg <i>G biternata</i> , <i>G 'Sunshine'</i> , <i>G 'Fanfare'</i> , <i>G 'Bronze Rambler'</i> | Grevillea, Spider Flowers   | < 0.3   | > 1     |   | x |   |   |
| * | <i>Hardenbergia violacea</i>  | Native Sarsparilla          | < 0.3   | 2       | x | x |   |   |
| + | <i>Helichrysum</i> spp (varieties)  | Paper Daisies               | varies  | varies  |   | x |   |   |
| * | <i>Hibbertia aspera</i>   | Rough Guinea Flower         | 0.3-0.5 | 0.5-1   |   | x |   |   |
| E | <i>Hypericum moserianum</i><br>'tricolor'   | Hypericum                   | 0.45    |         |   | x |   |   |
| E | <i>Juniperus conferta</i>   | Japanese Shore Juniper      | < 0.3   | 1-2.5   |   | x |   | x |
| E | <i>Liriope muscari</i> 'Evergreen Giant' and 'Majestic'   | Giant Liriope or Lily Turf  | 0.3-0.6 | 0.3-0.6 |   | x | x |   |
| * | <i>Lomandra confertifolia</i><br>ssp <i>confertifolia</i>   | Mat Rush                    | 0.2-0.6 |         |   | x |   |   |
| * | <i>Lomandra filiformis</i><br>ssp <i>coriacea</i>   | Wattle Mat Rush, Iron Grass | 0.3     |         |   | x |   |   |
| * | <i>Lomandra hystrix</i>   | Creek Mat Rush, River Reed  | <1.3    |         | x | x | x |   |
| * | <i>Lomandra longifolia</i>  | Spiny Mat Rush              | 0.5-1   | 0.6-1.2 |   | x | x | x |
| + | <i>Lomandra longifolia</i><br>'Tanika'  |                             | 0.5-0.7 |         | x | x | x | x |
| * | <i>Lomandra multiflora</i>  | Many-flowered Mat Rush      | 0.3-0.8 |         |   | x |   |   |
| + | <i>Myoporum parvifolium</i>   | Creeping Boobialla          | < 0.2   | 1.5     | x | x |   | x |
| E | <i>Ophiopogon</i> spp (varieties)   | Mondo Grass                 | < 0.2   | < 0.2   | x | x | x |   |
| * | <i>Oplismenus aemulus</i><br><i>O hirtellus</i>   | Creeping Shade Grass        | 0.1-0.4 |         | x |   | x |   |
| * | <i>Phebalium woombye</i>  | Wallum Phebalium            | 1-2     | 1-1.5   |   | x | x |   |
| + | <i>Poa labillardieri</i>  | Common Tussock Grass        | 0.5-1   | 0.6     | x | x |   | x |
| + | <i>Scaevola aemula</i><br>'Purple Fanfare'  | Purple Fan Flower           | < 0.3   | 1       |   | x |   | x |
| * | <i>Spinifex sericeus/ hirsutus</i>  | Beach Spinifex              | <0.3    |         |   | x |   | x |
| E | <i>Strelitzia reginae</i>   | Bird of Paradise            | 1.5     | 1.5     |   | x |   | x |
| * | <i>Themeda triandra</i>   | Kangaroo Grass              | 0.3-1   |         |   | x |   |   |
| * | <i>Viola hederacea</i>  | Native Violet               | < 0.15  | 0.5-1   | x |   | x |   |

Table SC6.3B6 - Palms, pandans, cycads and grass trees plant list

| O  | Botanical Name                        | Common Name                   | H     | W     | M | D | S | C |
|----|---------------------------------------|-------------------------------|-------|-------|---|---|---|---|
| +  | <i>Archontophoenix alexandrae</i>     | Alexandra Palm                | 6-15  | 3-7   | x |   | x |   |
| *  | <i>Archontophoenix cunninghamiana</i> | Bangalow or Picabeen Palm     | 6-15  | 3-7   | x |   | x |   |
| +  | <i>Carpentaria acuminata</i>          | Carpentaria Palm              | 8-15  | 4-6   | x | x | x |   |
| E  | <i>Caryota mitis</i>                  | Fishtail Palm (clustered)     | 9     | 3-5   | x |   |   |   |
| E  | <i>Caryota rumphiana</i>              | Fishtail Palm                 | 10-15 | 6     | x |   |   | x |
| +  | <i>Cycas media</i>                    | Zamia Palm, Nut Palm          | 2-6   | 1.5-3 |   | x | x |   |
| E  | <i>Cycas revoluta</i>                 | Japanese Sago Palm            | 1-3   |       |   | x | x |   |
| +  | <i>Freycinetta excelsa</i>            | Climbing Pandanus             |       |       | x |   | x |   |
| +  | <i>Laccospadix australasica</i>       | Atherton Palm                 | 3-7   |       |   |   | x |   |
| +  | <i>Lepidozamia peroffskyana</i>       | Pineapple Palm, Scaly Zamia   | 2-5   | 2-3.5 |   | x | x |   |
| +  | <i>Licuala ramsayi</i>                | Wedge-leaf Fan Palm           | 5-15  | 3.5   | x |   | x |   |
| +  | <i>Linospadix minor</i>               | Jakarungle                    | 1-4   |       | x | x | x |   |
| +  | <i>Linospadix monostachya</i>         | Walking Stick Palm            | 2-3   | 1-1.5 | x | x | x |   |
| +  | <i>Livistona australis</i>            | Cabbage Tree Palm             | 10-20 | 3-5   | x | x |   |   |
| *  | <i>Livistona decipiens</i>            | Small or Weeping Cabbage Palm | 5-12  | 2-4   | x |   |   | x |
| +  | <i>Livistona muelleri</i>             | Dwarf Fan Palm                | 6-10  |       |   | x |   |   |
| +  | <i>Macrozamia douglasii</i>           |                               | < 3   | < 3   | x | x | x |   |
| *? | <i>Macrozamia moorei</i>              | Zamia Palm, Giant Burrawang   | 2-6   | 3-5   |   | x | x |   |
| +  | <i>Normanbya normanbyi</i>            | Queensland Black Palm         | 9-15  | 3-5   | x |   |   |   |

| O | Botanical Name  | Common Name                  | H     | W       | M | D | S | C |
|---|---|------------------------------|-------|---------|---|---|---|---|
| + | <i>Pandanus spiralis</i>                              | Screw Palm                   | 10    |         |   |   |   | x |
| * | <i>Pandanus tectorius</i>                             | Beach or Hala Screw Pine     | 6-10  | 3-8     | x | x |   | x |
| + | <i>Ptychosperma elegans</i>                           | Solitaire Palm               | 6-12  | 3       | x |   |   | x |
| + | <i>Ptychosperma macarthurii</i>                       | Macarthur Palm               | 5-10  | 3       | x | x |   |   |
| + | <i>Wodyetia bifurcata</i>                             | Foxtail Palm                 | 6-12  | 3-5     | x | x |   |   |
| * | <i>Xanthorrhoea johnsonii</i>                         | Forest / Northern Grass Tree | 1.5-3 | 0.6-1.2 | x | x |   |   |
| * | <i>Xanthorrhoea latifolia</i><br>ssp <i>latifolia</i> |                              |       |         |   |   |   |   |
| + | <i>Xanthorrhoea resinosa</i>                          |                              | 2.5   |         | x |   |   |   |
| + | <i>Xanthorrhoea</i> spp (varieties)                   | Grass Trees                  |       |         |   |   |   |   |

Table SC6.3B7 – Fern plant list

| O | Botanical Name  | Common Name                | H       | W     | M | D | S | C |
|---|---|----------------------------|---------|-------|---|---|---|---|
| * | <i>Adiantum hispidulum</i>  | Rough Maidenhair Fern      | 0.3-0.4 | 0.4-1 | x | x | x |   |
| * | <i>Angiopteris evecta</i>   | Giant or King Fern         | 3-5     | 3-6   | x |   | x |   |
| * | <i>Asplenium australasicum</i>  | Birds Nest Fern            | 0.6-2   | 1-1.5 |   | x | x |   |
|   | <i>Blechnum camfieldii</i> , <i>B cartilagineum</i> , <i>B indicum</i> , <i>B nudum</i> , <i>B watsii</i> |                            |         |       |   |   |   |   |
| + | <i>Cyathea australis</i>  | Rough Tree Fern            | 4-9     | 3.5-5 | x | x | x |   |
| * | <i>Cyathea cooperi</i>  | Coopers or Scaly Tree Fern | 5-10    | 3.5-6 | x |   | x |   |
| * | <i>Cyathea leichhardtiana</i>   | Prickly Tree Fern          | 3-7     | 3     | x |   | x |   |
| + | <i>Cyathea woollsiana</i>   | Woolly Tree Fern           | 3-6     | 3     | x |   | x |   |
| + | <i>Dennstaedtia davallioides</i>  | Lacy Ground Fern           | 0.4-0.6 | 1.5-3 | x |   | x |   |
| * | <i>Doodia caudata</i>   | Small Rasp Fern            | 0.1-0.3 | 0.3   | x | x | x |   |
| * | <i>Microsorium scandens</i>   | Fragrant Climbing Fern     | <0.4    |       |   |   | x |   |
| * | <i>Platycterium bifurcatum</i>  | Elkhorn Fern               | 0.7-1   | 0.7-1 |   |   | x |   |
| * | <i>Platycterium superbum</i>  | Staghorn Fern              | 1.5-2.5 | 1-1.5 |   |   | x |   |
| * | <i>Pteris tremula</i>   | Tender Brake               | 2       |       | x |   | x |   |

Table SC6.3B8 - Climbers and creepers plant list

| O | Botanical Name                                    | Common Name                       | H    | W   | M | D | S | C |
|---|---|-----------------------------------|------|-----|---|---|---|---|
| * | <i>Cissus antarctica</i>                          | Native Grape, Water Vine          | 5-8  | 1-3 | x |   | x |   |
| * | <i>Clematis glycinoides</i>                       | Forest Clematis                   |      |     |   | x | x |   |
| * | <i>Geitonoplesium cymosum</i>                     | Scrambling Lily                   |      |     | x | x | x |   |
| * | <i>Hardenbergia violacea</i>                      | Native Sarsparilla                | 1-3  | 1-2 |   | x |   | x |
| * | <i>Hibbertia scandens</i>                         | Twining Guinea Flower             |      |     |   | x |   | x |
| * | <i>Ipomoea pes-caprae</i> ssp <i>brasiliensis</i> | Goats Foot, Coastal Morning Glory |      | 3   |   | x |   | x |
| * | <i>Kennedia rubicunda</i>                         | Dusky Coral Pea                   | 3    | 2-3 |   | x |   | x |
| * | <i>Morinda jasminoides</i>                        | Sweet Morinda                     |      |     | x |   | x |   |
| * | <i>Pandorea jasminoides</i>                       | Bower of Beauty                   | 3-8  | 3-6 | x |   | x |   |
| * | <i>Pandorea pandorana</i>                         | Wonga Vine                        | 3-10 | 3-6 | x | x | x | x |
| * | <i>Passiflora aurantia</i>                        | Red or Native Passionflower       | 3-5  | 1-3 |   |   |   | x |
| * | <i>Tecomnanthe hillii</i>                         | Fraser Island Creeper             |      |     | x | x | x | x |
| * | <i>Vigna marina</i>                               | Beach Pea, Dune Pea               |      |     |   | x |   | x |

Table SC6.3B9 – Grasses plant list

| O | Botanical Name                     | Common Name                       | H        | W   | M | D | S | C |
|---|------------------------------------|-----------------------------------|----------|-----|---|---|---|---|
| E | <i>Axonopus affinis</i>            | Carpet Grass                      |          |     |   |   |   |   |
|   | <i>Cynodon dactylon</i>            | Common Couch                      | < 0.2    |     | x | x |   | x |
|   | <i>C dactylon</i> 'Greenleaf Park' |                                   |          |     |   |   |   |   |
|   | <i>C dactylon</i> 'Plateau'        | Plateau Grass                     |          |     |   |   |   |   |
|   | <i>Dactyloctenium australe</i>     | Sweet Smother Grass, Durban Grass |          |     |   |   | x |   |
| E | <i>Digitaria didactyla</i>         | Queensland Blue Couch             |          |     |   |   |   | x |
| E | <i>Lolium multiflorum</i>          | Italian Rye Grass                 |          |     |   | x |   |   |
| E | <i>Lolium perenne</i>              | Perennial Rye Grass               | 0.45     | 0.3 |   | x | x |   |
| * | <i>Microlaena stipoides</i>        | Weeping or Meadow Rice Grass      | 0.15-0.7 |     | x |   | x |   |
| E | <i>Stenotaphrum secundatum</i>     | Buffalo                           | < 0.15   |     |   | x | x | x |
|   | <i>S. secundatum</i> 'Soft'        | Soft Leaf Buffalo                 |          |     |   |   |   |   |
|   | <i>S. secundatum</i> 'Sir Walter'  |                                   |          |     |   |   |   |   |
|   | <i>Zoysia</i> spp                  | No Mow Grass                      |          |     |   | x | x | x |

**Table SC6.3B10 - Sedges, reeds, rushes and other wetland plants plant list**

| O | Botanical Name   | Common Name                | H                   | W       | M | D | S | C |
|---|--|----------------------------|---------------------|---------|---|---|---|---|
| * | Baloskian (syn Restio) tetraphyllum ssp meiostrachyum  | Tassel Cord Rush           | 1-1.5               |         | x |   |   |   |
| * | Baumea articulata  | Jointed Twig Rush          | 1-2                 | 0.9     | x |   |   | x |
| * | Baumea juncea  | Bare Twig Rush             | 0.4-0.7             |         | x |   |   | x |
| * | Baumea rubiginosa  | Soft Twig Rush             | 1                   |         | x |   |   |   |
| * | Bolboschoenus fluviatilis  | Marsh Club Rush            | 0.5-1               |         | x |   |   | x |
| * | Carex appressa   | Tall or Tussock Sedge      | 0.5-1               | 0.6     | x |   | x |   |
| * | Carex fascicularis   | Tassel Sedge               | 0.5-1               | 0.6     | x |   |   |   |
| * | Carex gaudichaudiana   | Tufted Sedge               | 0.1-0.5             |         | x |   |   |   |
| * | Centella asiatica  | Pennywort                  | < 0.1               |         | x | x | x | x |
| * | Chorizandra sphaerocephala   | Round-headed Bristle Rush  | 0.5-0.8             |         | x |   |   |   |
| * | Cyperus difformis  | Rice Sedge                 | 0.3-0.5             |         | x |   |   |   |
| * | Cyperus exaltatus  | Tall Flat Sedge            | 1                   |         | x |   |   |   |
| * | Cyperus polystachyos   | Common or Bunchy Sedge     | 0.3-0.7             |         | x |   |   |   |
| * | Cyperus cyperoides, C haspan, C pedunculatus   | Flat Sedges                |                     |         |   |   |   |   |
| * | Eleocharis dulcis  | Spike Rush, Water Chestnut | 0.8-1.5             | 0.3-0.6 | x |   |   |   |
| * | Eleocharis sphacelata  | Tall Spike Rush            | 0.5-2               |         | x |   |   |   |
| * | Eleocharis cylindrostachys, E pallens  | Spike Rushes               | 0.3-0.5             |         | x |   |   |   |
| * | Eleocharis dietrichiana, E equisetina, geniculata, minuta, ochrostachys, plana, spiralis, tetraquetra              | Spike Rushes               |                     |         |   |   |   |   |
| * | Fimbristylis dichotoma   | Common Fringe Rush         | 0.2-0.5             |         | x | x |   |   |
| * | Fimbristylis ferruginea  | Fringe Rush                | 0.3-0.6             |         | x |   |   | x |
| * | Fimbristylis cinnamometorum F polytrichoides   | Fringe Rushes              |                     |         |   |   |   |   |
| * | Gahnia aspera  | Rough-leaved Saw Sedge     | 0.4-0.9             | 0.6-1.2 |   | x |   |   |
| * | Gahnia sieberiana  | Red-fruited Saw Sedge      | 1.5-3               | 1.5-3   | x | x | x | x |
| * | Hibiscus diversifolius   | Swamp Hibiscus             | 1.5-2               | 0.9-1.2 | x |   |   |   |
| * | Isolepis inundata  | Swamp Club Rush            | 0.1-0.3             |         | x |   | x |   |
| * | Isolepis nodosa  | Knobby Club Rush           | 0.4-0.9             | 0.3-0.6 | x | x |   | x |
| * | Juncus continuus   | Pithy Rush                 | 0.5-1.5             |         | x |   |   |   |
| * | Juncus kraussii  | Sea Rush                   | 0.6-2               |         | x |   |   | x |
| * | Juncus polyanthemus  | Common Tussock Rush        | 0.6-1.5 usually 0.8 |         | x | x |   |   |
| * | Juncus usitatus  | Common Rush                | 0.3-1.2             |         | x | x |   |   |
| * | Lepidosperma laterale  | Variable Saw Sedge         | 0.5-1               |         | x |   |   |   |
| * | Lepidosperma longitudinale   | Pithy Sword Sedge          | 1-2                 |         | x |   |   |   |
| * | Lepironia articulata   | Pin Rush                   | 0.5-3               |         | x |   |   |   |
| * | Ludwigia octovalvis  | Willow Primrose            |                     |         |   |   |   |   |
| * | Nymphoides indica  | Water Snowflake            | 0.15                | 0.9-2   | x |   |   |   |
| * | Philydrum lanuginosum  | Woolly Frogmouth           | 0.6-1.2             | <0.5    | x |   |   |   |
| * | Phragmites australis   | Common Reed                | 1.5-3               | 1-2     | x |   |   | x |
| * | Restio pallens   |                            | 0.3-1               | 1       | x |   |   |   |
| * | Schoenoplectus litoralis   |                            | 1                   |         | x |   |   |   |
| * | Schoenoplectus mucronatus  | Club Rush                  | 0.3-0.7             |         | x |   |   |   |
| * | Schoenoplectus validus   | River Club Rush            | 1-2                 |         | x |   |   |   |
| * | Schoenus apogon  | Fluke Bog Rush             | < 0.25              |         | x |   |   |   |
| * | Schoenus brevifolius   | Zig-zag Bog Rush           | < 0.7               |         | x |   |   |   |
| * | Schoenus calostachyus, S melanostachys, S. moorei, nitens, paludosus, sparteus, turbinatus, vaginatus, yarrabensis | Bog Rush                   |                     |         | x |   |   |   |
| * | Sporobolus virginicus  | Marine Couch               |                     |         | x |   |   | x |
| * | Typha domingensis  | Bull Rush, Cumbungi        | 1-2                 |         | x |   |   |   |

**Land rehabilitation and bush regeneration plant lists**

Refer Council document titled 'Fraser Coast Regional Ecosystems and lists of typical flora species' (Docs#907075) for suitable species for the rehabilitation of natural areas.

## Appendix SC6.3C Forms and checklists



### APPLICATION FOR APPROVAL OF ENGINEERING DRAWINGS DEVELOPMENT & PLANNING

|  |  |
|--|--|
| <b>Development Details</b>   |  |
| Development Name:  |  |
| Stage No:  |  |
| Council File Number:   |  |
| Related Approval Number:   |  |
| <b>Property Details</b>  |  |
| Real Property Description:   |  |
| Address:   |  |
| <b>Developer</b>   |  |
| Name:  |  |
| <b>Consultant</b>  |  |
| Company Name:  |  |
| Contact Name:  |  |
| Address:   |  |
| Phone Number:  |  |
| Email Address:   |  |
| Engineering Design?  | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Contract Administration?   | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Quality Assurance Accreditation ?  | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| <b>Required Information</b>  |  |
| This Application Form must be fully completed and accompanied by:  |  |
| (a) Two (2) complete sets of Engineering Drawings  |  |
| (b) One (1) set of the Job Specification   |  |
| (c) Any information requested in the Development Approval Conditions   |  |
| (d) Any relevant supporting documents; and   |  |
| (e) Details of a non-conforming design and reasons for its use (subject to approval).  |  |
| <b>Certification</b>   |  |
| I / We hereby certify that I / We have exercised reasonable skill, care and diligence in the design of the works in accordance with: |  |
| 1. Relevant Development Approvals  |  |
| 2. Council's Planning Scheme Policy for Development Works and Standard Drawings  |  |
| 3. Relevant Australian Standards and Codes of Practice   |  |
| Engineer Name:   | RPEQ No:   |
| Signature:   |  |
| Date:  |  |

PO Box 1943, Hervey Bay Q 4655  
 Hervey Bay 77 Tavistock Street, Torquay Q 4655 | Maryborough 431 – 433 Kent Street, Maryborough Q 4650  
 Telephone: 1300 79 49 29 | Facsimile: 07 4197 4455 | Website: www.frasercoast.qld.gov.au  
 Email: development@frasercoast.qld.gov.au

November2015 #2944586 v.2

Schedule 6

**SC6.3C2 Application for on maintenance**



**REQUEST FORM  
APPLICATION FOR ON MAINTENANCE  
DEVELOPMENT & PLANNING**

|                            |
|----------------------------|
| <b>Development Details</b> |
| Development Name:          |
| Stage No:                  |
| Council File Number:       |
| Related Approval Number:   |
| <b>Property Details</b>    |
| Real Property Description: |
| Address:                   |
| <b>Developer</b>           |
| Name:                      |
| <b>Consultant</b>          |
| Company Name:              |
| Address:                   |
| Phone Number:              |
| Email Address:             |

This form must be fully completed and accompanied by:

| Requirement   | Comments | Provided  |
|---|----------|---|
| Compliance Statement                                    |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| Supervision Certificate – Engineering, Landscaping      |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| Structural Certificates – Filling, retaining walls, etc |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| Copy of survey plan showing easements etc               |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| Product Documents – Manuals, Warranties etc             |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| Landscaping Product Documentation                       |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| As Constructed Data and Certification                   |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| State Government Advice (associated works/approvals)    |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| Contractors Maintenance Agreement                       |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| Landscaping Maintenance Agreement                       |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| CCTV Sewerage   |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| CCTV Stormwater   |          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |

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 Email development@frasercoast.qld.gov.au

November 2015#2944600 v2

**Schedule 6**

**SC6.3C3 Application for off maintenance**



**REQUEST FORM  
APPLICATION FOR OFF MAINTENANCE  
DEVELOPMENT & PLANNING**

|                            |
|----------------------------|
| <b>Development Details</b> |
| Development Name:          |
| Stage No:                  |
| Council File Number:       |
| Related Approval Number:   |
| <b>Property Details</b>    |
| Real Property Description: |
| Address:                   |
| <b>Developer</b>           |
| Name:                      |
| <b>Consultant</b>          |
| Company Name:              |
| Address:                   |
| Phone Number:              |
| Email Address:             |

This form must be fully completed and accompanied by:

| Requirement   | Comments | Provided   |
|---|----------|--|
| 1. Off Maintenance Inspection successfully completed including Council's Off Maintenance inspection checklist <u>fully</u> completed and inspection report sheet. |          | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| 2. Request for Acceptance of Works "Off Maintenance"  |          | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| 3. Payment of re-inspection fees  |          | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |
| 4. Request for release of maintenance security bond   |          | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><input type="checkbox"/> Not Applicable |

I hereby certify that the information contained within this application (including the information contained in the attachments) is complete and correct in all particulars.

|                        |                            |
|------------------------|----------------------------|
| Consultant Name:       |                            |
| Checking Officer Name: | Checking Officer Position: |
| Signature:             | Date:                      |

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 Email [development@frasercoast.qld.gov.au](mailto:development@frasercoast.qld.gov.au)

November 2015 #2944604 v2



**SC6.3C4 Engineering supervision certificate**



**ENGINEERING SUPERVISION CERTIFICATE  
DEVELOPMENT & PLANNING**

|                            |
|----------------------------|
| <b>Development Details</b> |
| Development Name:          |
| Stage No. & Estate Name:   |
| Council File Number:       |
| Related Approval Number:   |
| <b>Property Details</b>    |
| Real Property Description: |
| Address:                   |
| <b>Developer</b>           |
| Name:                      |
| <b>Consultant</b>          |
| Company Name:              |
| Address:                   |
| Phone Number:              |
| Email Address:             |

|   |  |
|---|--|
| I, _____  | Being a Registered Professional Engineer |
| Registered under the Provision of the Professional Engineers Act 2002 (as amended) and having been commission to carry out the supervision of the works comprising of:  |  |
|   |  |
|   |  |
|   |  |
| Do hereby certify that:   |  |
| the inspections, testing and reports to be completed in accordance with Council's requirements have been completed and insofar as such inspections, and tests have revealed the works have been completed, in accordance with the design drawings as approved for construction by Council and our project specification and any other reuquirements as required by the conditions of approval, Council's Local laws, policies and codes, the relevant legislation and Australian Standard Codes of Practices and the results of these inspection, tests and reports have been found to be satisfactory. I / We acknowledge that acceptance of the works will be issued in reliance upon this certificate. |  |
| In addition we have verified that all manufactured materials have been stamped as being in compliance with the relevant specification and all inspection and testing reports and results for the project have been provided to Council.   |  |
| All documentation as defined in Council's Planning Scheme policy for development works for the completed works have been submitted.   |  |

|  |          |
|--|----------|
| Consultant Name:                                 |          |
| Registered Professional Engineer (Name in Full): | RPEQ No: |
| Position:  |          |
| Signature:                                       | Date:    |

PO Box 1943, Torquay Q 4655  
**Hervey Bay** 77 Tavistock Street, Torquay Q 4655 | **Maryborough** 431 – 433 Kent Street, Maryborough Q 4650  
 Telephone: 1300 79 49 29 | Facsimile: 07 4197 4455 | Website: www.frasercoast.qld.gov.au  
 Email: development@frasercoast.qld.gov.au

November 2015 #2944608 v2

**Schedule 6**

**SC6.3C5 Landscaping supervision certificate**



**LANDSCAPING SUPERVISION CERTIFICATE  
DEVELOPMENT & PLANNING**

|                            |  |
|----------------------------|--|
| <b>Development Details</b> |  |
| Development Name:          |  |
| Stage No & Estate Name:    |  |
| Council File Number:       |  |
| Related Approval Number:   |  |
| <b>Property Details</b>    |  |
| Real Property Description: |  |
| Address:                   |  |
| <b>Developer</b>           |  |
| Name:                      |  |
| <b>Consultant</b>          |  |
| Company Name:              |  |
| Address:                   |  |
| Phone Number:              |  |
| Email Address:             |  |

I do hereby certify that:

The landscaping works have been completed in accordance with Council's Planning Scheme policy for development works and in accordance with the approved landscaping and specifications and any other requirements as required by the conditions of approval, Council's Local laws, policies and codes, the relevant legislation and Australian Standard Codes of Practices. I / We acknowledge that acceptance of the works will be issued in reliance upon this certificate.

In addition we have verified that all manufactured materials have been stamped as being in compliance with the relevant specification and all inspection and testing reports and results for the project have been provided to Council.

All documentation as defined in Council's Planning Scheme policy for development works for the completed works have been submitted.

|                           |                 |
|---------------------------|-----------------|
| Company:                  |                 |
| Landscape (Name in Full): |                 |
| Position:                 | Qualifications: |
| Signature:                | Date:           |

PO Box 1943, Torquay Q. 4655  
**Hervey Bay** 77 Tavistock Street, Torquay Q.4655 | **Maryborough** 431 – 433 Kent Street, Maryborough Q.4650  
 Telephone: 1300 79 49 29 | Facsimile: 07 4197 4455 | Website: [www.frasercoast.qld.gov.au](http://www.frasercoast.qld.gov.au)  
 Email: [development@frasercoast.qld.gov.au](mailto:development@frasercoast.qld.gov.au)

November 2015 #2944673 v2

**SC6.3C6 Deed of agreement for bonding incomplete works**

This Deed is made on \_\_\_\_\_20\_\_\_\_\_

**BETWEEN:**

(Hereinafter “the Principal”)

**AND:**

**FRASER COAST REGIONAL COUNCIL**

A Local Government duly constituted under the Local Government Act 1993 of 75 Tavistock Street, Torquay in the State of Queensland (hereinafter “Council”)

**RECITALS:**

- A. The Principal under Schedule 19 of the Sustainable Planning Regulation 2009 (“SPA”) has requested the Council accept a bond/bank guarantee to secure compliance with conditions of the development permit for reconfiguration of land described as Lot \_\_\_\_\_ situated at \_\_\_\_\_ (“the land”) and in relation to the Operational Works Approval dated \_\_\_\_\_ on Council’s File Number \_\_\_\_\_.
- B. In consideration of receipt of an unconditional bond/bank guarantee by Council from the Principal and the terms herein Council acknowledges that it shall endorse its approval on the plan of reconfiguration submitted on behalf of the Principal for the land described herein notwithstanding works prescribed under the development permit remain incomplete.
- C. The Principal hereby irrevocably appoints Council to perform any works prescribed under the development permit should the Principal not complete same within fourteen (14) days from demand by Council hereunder and Council is irrevocably authorised by the Principal to draw down upon the security deposit with respect to the payment of any such works undertaken.
- D. Upon notification that the land is “on maintenance” the Principal authorises the retention of a component of the security deposit determined at the sole discretion of Council to be held to secure performance of any maintenance works which need to be undertaken on the land for a minimum period of twelve (12) months from acceptance of the land “on maintenance”.

**NOW THIS AGREEMENT WITNESSES:-**

- 1. The Principal hereby lodges cash/bank guarantee or bond (“security deposit”) in the sum of \$\_\_\_\_\_ for incomplete works and maintenance works under the development permit for reconfiguration of the land (“the incomplete works”).
- 2. The Principal covenants and agrees to perform the incomplete works:
  - (a) within six (6) weeks of lodgement of the security deposit; or
  - (b) if the works are delayed as a result of inclement weather or industrial conditions beyond the control of the Principal, the date which is six (6) weeks after lodgement of the security deposit, extended by a number of days which the Principal can establish to the reasonable satisfaction of the Council were lost as a result of those causes.

**Schedule 6**

3. If the Principal fails to perform the incomplete works by the date determined under clause 2, Council may issue a notice requiring performance of the incomplete works within fourteen (14) days.
4. Council shall be entitled to forthwith draw down upon the security deposit and perform any incomplete works by Council or an independent contractor upon expiration of the notice period prescribed under Clause 3 herein.
5. The Principal irrevocably authorises Council or its duly appointed contractors or agents to enter onto the land and perform any incomplete works and acknowledges such works shall be charged against the security deposit.
6. The Principal acknowledges and agrees that Council is entitled to utilise the security deposit in payment of costs of and incidental to performance of the incomplete works or maintenance works prescribed herein.
7. The Principal hereby indemnifies Council from any loss or damage which may be suffered or incurred as a result of performance of the incomplete works by Council or its independent contractors or agents other than loss or damage arising from the wilful or negligent act or omission of the Council or its independent contractors or agents.
8. Any interest which accrues on the security deposit shall be retained and paid to the Council.

#### **MAINTENANCE BOND**

9. Upon performance of all incomplete works and Council accepting the land "on maintenance" Council shall reduce the security deposit to the approved maintenance security amount ("the maintenance bond") being \$\_\_\_\_\_.
10. Council shall provide a partial release of the security deposit whereby part of the cash/bank guarantee or bond shall be released and a sum equivalent to the maintenance bond shall be retained by Council.
11. If Council (by its delegated officer) in its sole discretion determines that any maintenance works are required during a period of twelve (12) months or such longer period determined by Council from acceptance of the land on maintenance ("the maintenance period") Council may direct the Principal in writing to perform the specified maintenance works.
12. If the Principal fails to perform the maintenance works directed within fourteen (14) days Council may proceed to perform the maintenance works identified by Council without further notice.
13. Council shall be entitled to forthwith draw down upon the maintenance bond and perform any maintenance works upon expiration of the notice period prescribed under Clause 12 herein.
14. Should no direction with respect to performance of maintenance works be issued by Council to the Principal during the maintenance period the Principal shall request and the Council shall undertake a final inspection of the works and, provided that the works are to the reasonable satisfaction of the Council, the Council must notify the Principal that the land is "off maintenance" and contemporaneously release the maintenance bond or any balance of the security deposit retained by Council.
15. The notice referred to in Clause 3 and 11 shall be deemed to be given if the Council sends a letter by ordinary post to the Principal at the address mentioned in this deed or to an alternative address where so nominated in writing by the Principal.

*(If being signed by company)*

**Executed** as a Deed.

SIGNED, SEALED AND DELIVERED by )  
 )  
 [INSERT COMPANY NAME] ) Director  
 [INSERT COMPANY NAME] )  
 )  
 ACN/ABN [INSERT NUMBER] ) Full name of director  
 Pursuant to the *Corporations Act 2001* (Cth) )  
 )  
 ) Director/ Secretary  
 )  
 )  
 ) Full name of director/secretary

In the presence of:

.....  
Justice of the Peace/ Solicitor/ Comm. Dec

.....  
Full name of Witness

SIGNED, SEALED AND DELIVERED by )  
 FRASER COAST REGIONAL COUNCIL )  
 )  
 )

In the presence of:

.....  
Justice of the Peace/ Solicitor/ Comm. Dec

.....  
Full name of Witness

*(If being signed by an individual)*

**Executed** as a Deed.

SIGNED, SEALED AND DELIVERED by ).....  
 )  
\_\_\_\_\_)  
\_\_\_\_\_)  
\_\_\_\_\_)

In the presence of:

.....  
Justice of the Peace/ Solicitor/ Comm. Dec

.....  
Full name of Witness

SIGNED, SEALED AND DELIVERED by )  
FRASER COAST REGIONAL COUNCIL )  
 )  
 )

In the presence of:

.....  
Justice of the Peace/ Solicitor/ Comm. Dec

.....  
Full name of Witness

## Appendix SC6.3D Standard drawings

### Index – Standard drawings

#### Road cross sections

| Drawing No. | Rev No. | Title  |
|-------------|---------|--|
| FC-200-01   | C       | URBAN RESIDENTIAL & RURAL RESIDENTIAL (Lots <1ha)<br>ACCESS PLACE/STREET   |
| FC-200-02   | D       | URBAN RESIDENTIAL & RURAL RESIDENTIAL (Lots <1ha)<br>MINOR/MAJOR COLLECTOR |
| FC-200-03   | C       | RURAL RESIDENTIAL (Lots ≥ 1ha)<br>ACCESS STREET AND MINOR/MAJOR COLLECTOR  |
| FC-200-04   | D       | INDUSTRIAL/COMMERCIAL ACCESS STREET & COLLECTOR                            |
| FC-200-05   | C       | RURAL ARTERIAL   |
| FC-200-06   | D       | CONTROLLED DISTRIBUTOR - URBAN   |
| FC-200-07   | D       | TRAFFIC DISTRIBUTOR - URBAN  |

#### Road Construction Details

| Drawing No. | Rev No. | Title  |
|-------------|---------|--|
| FC-210-01   | C       | PUBLIC UTILITIES IN SUBDIVISIONS – ROAD CROSS SECTIONS               |
| FC-220-01   | B       | KERB AND CHANNEL - PROFILES AND DIMENSIONS                           |
| FC-220-02   | B       | KERB AND CHANNEL - DRAINAGE CONNECTIONS                              |
| FC-220-04   | B       | KERB RAMP  |
| FC-220-05   | B       | TACTILE INDICATORS FOR KERB RAMPS (sheet 1)                          |
| FC-220-06   | B       | TACTILE INDICATORS FOR KERB RAMPS (sheet 2)                          |
| FC-220-08   | B       | SUBSURFACE DRAINAGE  |
| FC-230-01   | B       | RESIDENTIAL DRIVEWAY SLAB AND TRACKS                                 |
| FC-230-02   | B       | COMMERCIAL DRIVEWAY SLAB   |
| FC-230-03   | B       | RURAL ACCESS PIPE/BOX CULVERT AND INVERT CROSSING                    |
| FC-230-04   | B       | WATER SENSITIVE URBAN DESIGN VEHICLE CROSSING FOR<br>SINGLE DWELLING |

#### Pathway Details

| Drawing No. | Rev No. | Title  |
|-------------|---------|--|
| FC-240-01   | B       | CONCRETE, PAVED & ASPHALT FOOTPATHS                            |
| FC-240-02   | B       | CONCRETE FOOTPATHS COMMERCIAL SITES – FULL WIDTH               |
| FC-240-03   | B       | CONCRETE PAVEMENT JOINTS FOR FOOTPATHS AND SHARED<br>BIKEPATHS |
| FC-240-04   | A       | PAVED & ASPHALT FOOTPATHS TYPICAL<br>CONSTRUCTION DETAILS      |

#### Signage Details

| Drawing No. | Rev No. | Title  |
|-------------|---------|--|
| FC-260-01   | B       | STREET NAME SIGN AND LOCATION (FINGER BOARD) |
| FC-260-02   | B       | TRAFFIC SIGN INSTALLATION DETAILS            |

## Drainage Details

| Drawing No. | Rev No. | Title   |
|-------------|---------|---|
| FC-310-01   | B       | KERB IN LINE GULLY UNIT<br>MODEL R24P-400 PROTRUDED TYPE ON GRADE                   |
| FC-310-02   | B       | CHANNEL LIP IN LINE GULLY UNIT<br>MODEL C24P-400 RECESSED TYPE SAG AND ANTI_PONDING |
| FC-310-03   | B       | GULLY – ROADWAY GENERAL ARRANGEMENT<br>KERB IN LINE – TYPE B KEYSIN INLET UNIT      |
| FC-310-07   | B       | DOMESTIC AND SHED ROOF WATER ONSITE DISPERSAL PIT                                   |

## Sewer Details

| Drawing No.                       | Rev No. | Title  |
|-----------------------------------|---------|--|
| <b>SEWER SERVICE CONNECTIONS</b>  |         |  |
| SHC 01                            |         | STANDARD DRAWINGS<br>SEWER SERVICE CONNECTIONS<br>CONNECTION ACROSS ROAD                                 |
| <b>PUMP STATIONS – CIVIL</b>      |         |  |
| PS 01                             |         | 1800 mm DIAMETER SEWAGE PUMP STATION<br>LAYOUT PLAN  |
| PS 02                             |         | 1800 mm DIAMETER SEWAGE PUMP STATION<br>LAYOUT PLAN  |
| PS 03                             |         | 1800 mm DIAMETER SEWAGE PUMP STATION<br>OVERFLOW TYPICAL DETAILS   |
| PS 04                             |         | 1800 mm DIAMETER SEWAGE PUMP STATION<br>FLOWMETER PIT DETAILS  |
| PS 05                             |         | 1800 mm DIAMETER SEWAGE PUMP STATION<br>ACCESS CONTROL LAYOUT PLAN                                       |
| PS 06                             |         | 1800 mm DIAMETER SEWAGE PUMP STATION<br>MISCELLANEOUS DETAILS  |
| PS 07                             |         | 1800 mm DIAMETER SEWAGE PUMP STATION<br>VALVE PIT & ROOF SLAB  |
| PS 08                             |         | 1800 mm DIAMETER SEWAGE PUMP STATION<br>REINFORCEMENT – SECTION A  |
| PS 09                             |         | 1800 mm DIAMETER SEWAGE PUMP STATION<br>ROOF SLAB TOP STEEL  |
| PS 10                             |         | 1800 mm DIAMETER SEWAGE PUMP STATION<br>ROOF SLAB BOTTOM STEEL   |
| PS 11                             |         | PUMPING STATION – 7.2M VENT POLE<br>TERRAIN CAT 2 AND 3 (NON – CYCLONIC)                                 |
| PS12                              |         | STANDARD DRAWING<br>SAFETY BARRIER SYSTEM  |
| <b>PUMP STATIONS – ELECTRICAL</b> |         |  |
| DOL-001                           | A       | STANDARD SEWAGE PUMP STATION (DOL < 3.5 KW)<br>THREE LINE 415V POWER DISTRIBUTION - SCHEMATIC<br>DIAGRAM |



|         |   |   |
|---------|---|---|
| DOL-002 | A | STANDARD SEWAGE PUMP STATION (DOL < 3.5 KW)<br>PUMP CONTROLS – SCHEMATIC DIAGRAM                        |
| DOL-003 | A | STANDARD SEWAGE PUMP STATION (DOL < 3.5 KW)<br>TELEMETRY WIRING – SCHEMATIC DIAGRAM                     |
| DOL-004 | A | STANDARD SEWAGE PUMP STATION (DOL < 3.5 KW)<br>GENERAL LAYOUT   |
| DOL-005 | A | STANDARD SEWAGE PUMP STATION (DOL < 3.5 KW)<br>CONSTRUCTION NOTES                                       |
| DOL-006 | A | STANDARD SEWAGE PUMP STATION (DOL < 3.5 KW)<br>EQUIPMENT LIST   |
| SS-001  | A | STANDARD SEWAGE PUMP STATION (SS > 3.5 KW)<br>THREE LINE 415V POWER DISTRIBUTION - SCHEMATIC<br>DIAGRAM |
| SS-002  | A | STANDARD SEWAGE PUMP STATION (SS > 3.5 KW)<br>PUMP CONTROLS - SCHEMATIC DIAGRAM                         |
| SS-003  | A | STANDARD SEWAGE PUMP STATION (SS > 3.5 KW)<br>TELEMETRY WIRING – SCHEMATIC DIAGRAM                      |
| SS-004  | A | STANDARD SEWAGE PUMP STATION (SS > 3.5 KW)<br>GENERAL LAYOUT  |
| SS-005  | A | STANDARD SEWAGE PUMP STATION (SS > 3.5 KW)<br>CONSTRUCTION NOTES  |
| SS-006  | A | STANDARD SEWAGE PUMP STATION (SS > 3.5 KW)<br>EQUIPMENT LIST  |

#### Water Details

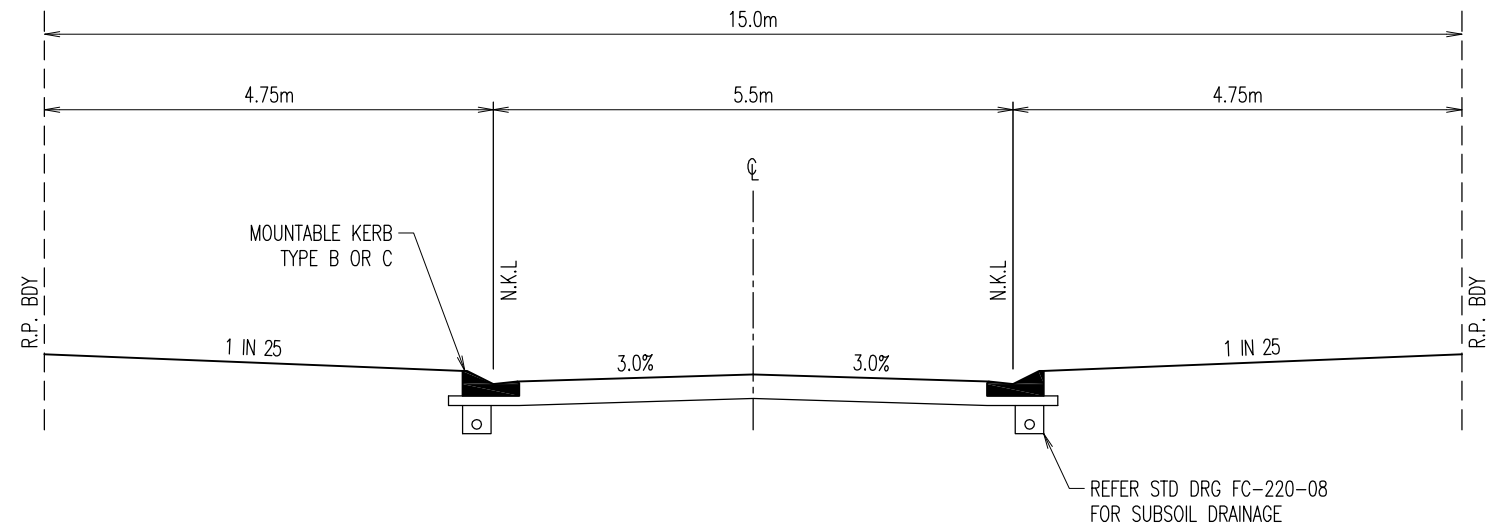
| Drawing No. | Rev No. | Title  |
|-------------|---------|--|
| WS 01       |         | STANDARD DRAWING<br>25-32mm SMART WATER METER    |
| WM 01       |         | STANDARD DRAWINGS<br>CUL-DE-SAC DETAIL           |
| WM 02       |         | STANDARD DRAWINGS<br>PE to PVC CONNECTION DETAIL |

**NOTES:**

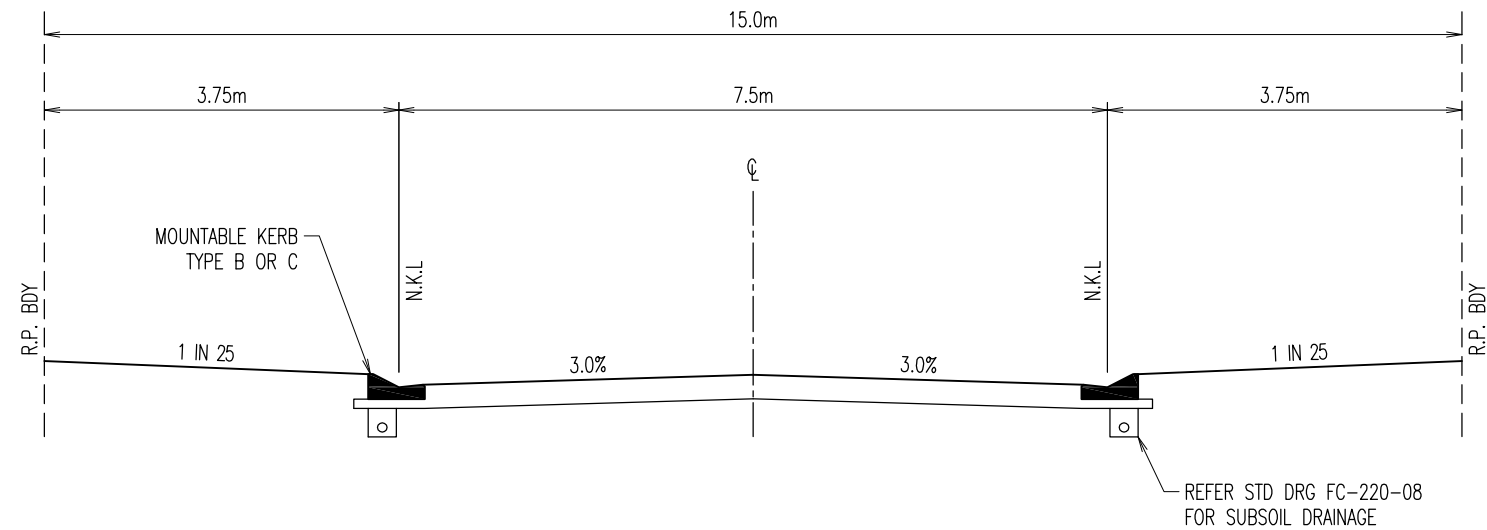
- FOR STREET CLASSIFICATIONS AND DESIGN PRINCIPLES REFER TO FCRC PLANNING SCHEME SCHEDULE 6 - SC6.3.4 - ROADS AND PATHWAYS.
- FOR DETAILS OF VERGE AND ALLOCATION OF PUBLIC UTILITIES REFER TO FCRC STD DRG FC-210-01.
- THESE TYPICAL SECTIONS ARE COUNCIL'S MINIMUM REQUIREMENT ONLY AND MAY VARY WITH PEDESTRIAN/BIKEWAY/PARKING AND GENERAL NETWORK PLANNING.
- STREET LIGHTING IN ACCORDANCE WITH FCRC PLANNING SCHEME SCHEDULE 6 - SC6.3.9 - ELECTRICAL, STREET LIGHTING AND TELECOMMUNICATIONS.
- NARROWER STREET WIDTHS WHICH MAY INCLUDE INDENTED PARKING AND ONE WAY CROSSFALLS MAY BE PERMITTED SUBJECT TO DEMONSTRATION THAT THE REQUIREMENTS OF 'COMPLETE STREETS' AND THE 'QUEENSLAND URBAN DRAINAGE MANUAL' ARE SATISFIED.
- DESIGN STANDARDS MAY VARY TO BE CONSISTENT WITH THE EXISTING INFRASTRUCTURE IN THE SURROUNDING AREA AND MUST TRANSITION INTO EXISTING INFRASTRUCTURE ADJOINING THE DEVELOPMENT. THE MINIMUM ROAD RESERVE MAY NEED TO BE WIDENED TO ACCOMMODATE ALTERNATIVE TREATMENTS, SUCH AS SWALE DRAINS.

**LEGEND**

- ⊕ --- ROAD CENTRELINE
- R.P. BDY --- REAL PROPERTY BOUNDARY
- N.K.L --- NOMINAL KERB LINE (KERB INVERT)
- MIN --- NOT LESS THAN
- MAX --- NOT MORE THAN



**ACCESS PLACE**  
SERVICING UP TO 15 LOTS



**ACCESS STREET**  
SERVICING UP TO 75 LOTS

|     |                                   |          |       |
|-----|-----------------------------------|----------|-------|
| F   |                                   |          |       |
| E   |                                   |          |       |
| D   |                                   |          |       |
| C   | NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| B   | DEVELOPMENT MANUAL REVISION       |          | 11/12 |
| A   | ORIGINAL ISSUE                    |          | 04/12 |
| REV | DETAILS OF AMENDMENTS             | APPROVED | DATE  |



URBAN RESIDENTIAL & RURAL RESIDENTIAL (Lots < 1ha)  
ACCESS PLACE/STREET

|   |               |         |       |  |      |       |
|---|---------------|---------|-------|--|------|-------|
| DRAWN                                       | DESIGN OFFICE | CHECKED | CWB * | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE | 08/16 |
|   |               |         |       | Dareendra Naidu *                            |      |       |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |               |         |       |  |      |       |

**STANDARD DRAWING**

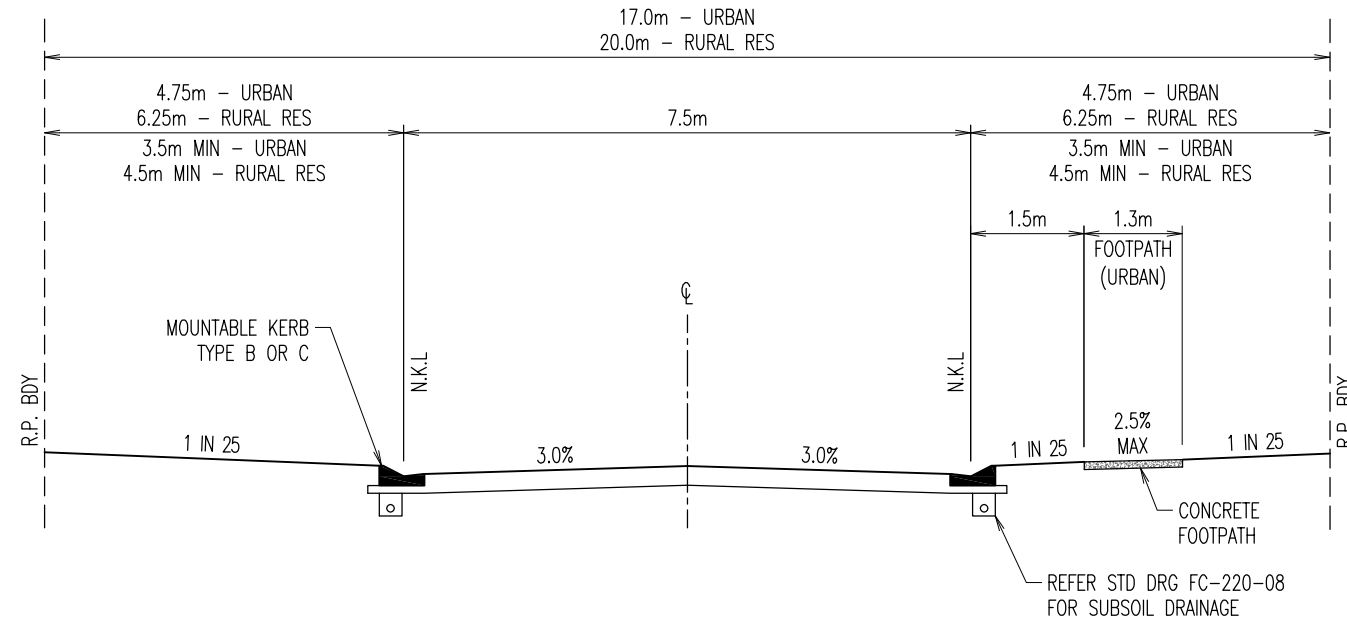
|                      |           |    |   |
|----------------------|-----------|----|---|
| SHEET                | 1         | OF | 1 |
| STANDARD DRAWING No: |           |    |   |
| A3                   | FC-200-01 |    |   |
| A                    | B         | C  |   |

**NOTES:**

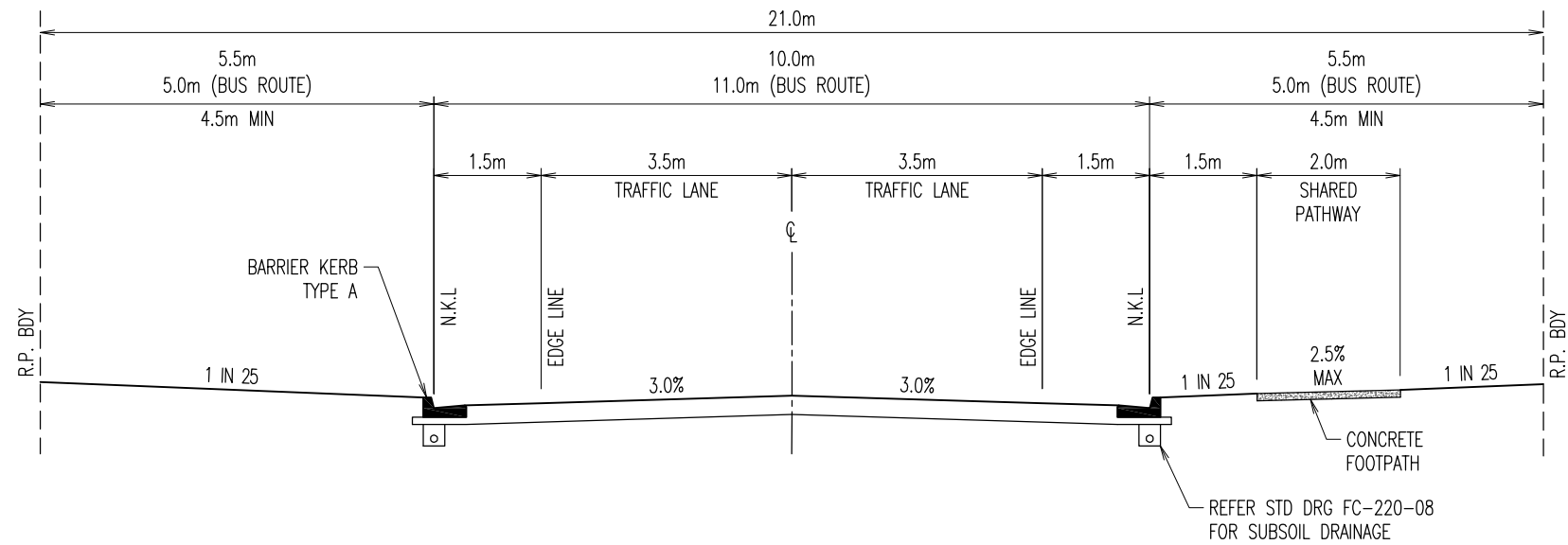
- FOR STREET CLASSIFICATIONS AND DESIGN PRINCIPLES REFER TO FCRC PLANNING SCHEME SCHEDULE 6 – SC6.3.4 – ROADS AND PATHWAYS.
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**LEGEND**

- ⊕ ——— ROAD CENTRELINE
- R.P. BDY ——— REAL PROPERTY BOUNDARY
- N.K.L ——— NOMINAL KERB LINE (KERB INVERT)
- MIN ——— NOT LESS THAN
- MAX ——— NOT MORE THAN



**MINOR COLLECTOR**  
SERVICING UP TO 300 LOTS – URBAN  
SERVICING UP TO 240 LOTS – RURAL RES



**MAJOR COLLECTOR**  
SERVICING UP TO 1,000 LOTS

|     |                                   |          |       |
|-----|-----------------------------------|----------|-------|
| F   |                                   |          |       |
| E   |                                   |          |       |
| D   | NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| C   | FOOTPATH WIDTH ALTERED            |          | 07/13 |
| B   | DEVELOPMENT MANUAL REVISION       |          | 11/12 |
| A   | ORIGINAL ISSUE                    |          | 04/12 |
| REV | DETAILS OF AMENDMENTS             | APPROVED | DATE  |



URBAN RESIDENTIAL & RURAL RESIDENTIAL (Lots < 1ha)  
MINOR/MAJOR COLLECTOR

|   |               |         |       |  |      |       |
|---|---------------|---------|-------|--|------|-------|
| DRAWN                                       | DESIGN OFFICE | CHECKED | CWB * | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE | 08/16 |
|   |               |         |       | Darendra Naidu *                             |      |       |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |               |         |       |  |      |       |

**STANDARD DRAWING**

SHEET 1 OF 1

STANDARD DRAWING No: A3 FC-200-02

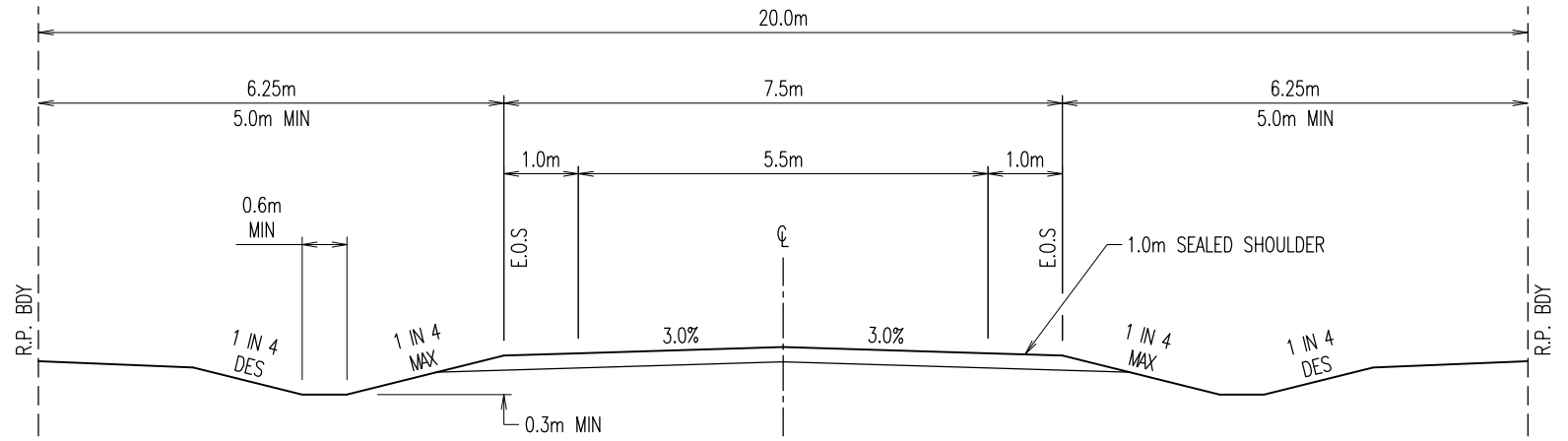
|   |   |   |   |
|---|---|---|---|
| A | B | C | D |
|---|---|---|---|

**NOTES:**

1. FOR STREET CLASSIFICATIONS AND DESIGN PRINCIPLES REFER TO FCRC PLANNING SCHEME SCHEDULE 6 - SC6.3.4 - ROADS AND PATHWAYS.
2. FOR DETAILS OF VERGE AND ALLOCATION OF PUBLIC UTILITIES REFER TO FCRC STD DRG FC-210-01.
3. DESIGN STANDARDS MAY VARY TO BE CONSISTENT WITH THE EXISTING INFRASTRUCTURE IN THE SURROUNDING AREA AND MUST TRANSITION INTO EXISTING INFRASTRUCTURE ADJOINING THE DEVELOPMENT. THE MINIMUM ROAD RESERVE MAY NEED TO BE WIDENED TO ACCOMMODATE ALTERNATIVE TREATMENTS, SUCH AS SWALE DRAINS.

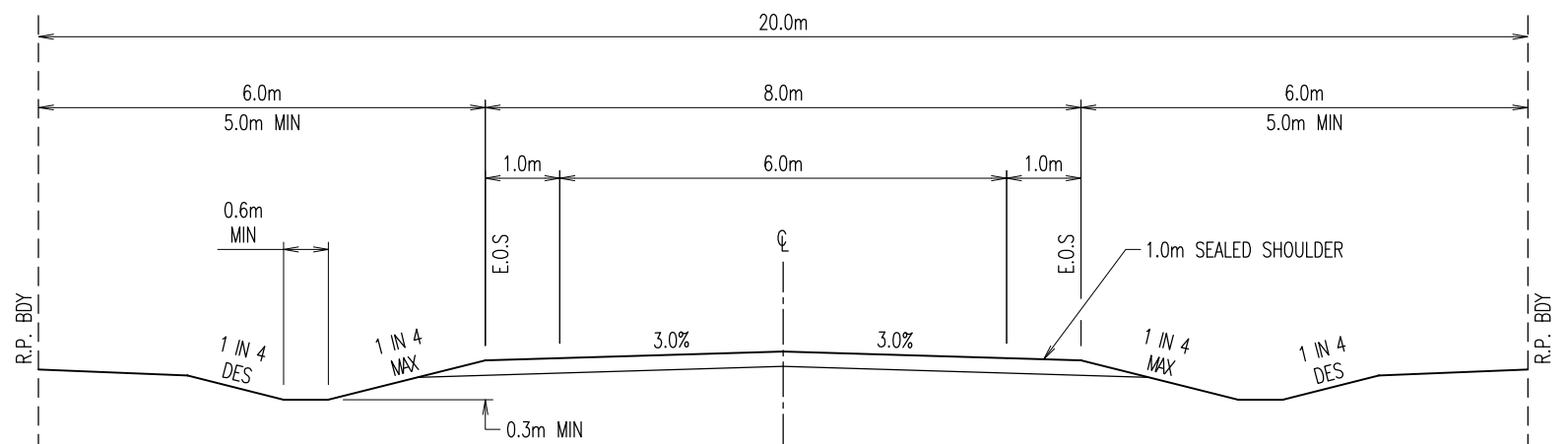
**LEGEND**

- ⊘ --- ROAD CENTRELINE
- R.P. BDY --- REAL PROPERTY BOUNDARY
- E.O.S --- EDGE OF SEAL
- DES --- DESIRABLE
- MIN --- NOT LESS THAN
- MAX --- NOT MORE THAN



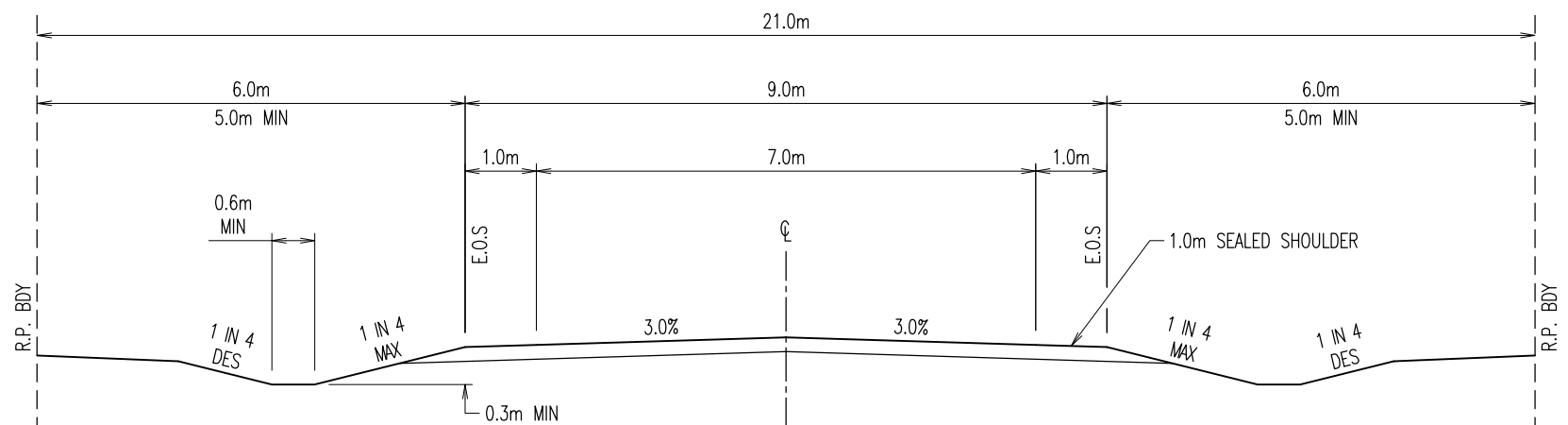
**ACCESS STREET - RURAL**

SERVICING UP TO 75 LOTS



**MINOR COLLECTOR - RURAL**

SERVICING UP TO 100 LOTS



**MAJOR COLLECTOR - RURAL**

TRAFFIC IMPACT ASSESSMENT REQUIRED

|     |  |          |       |
|-----|--|----------|-------|
| F   |  |          |       |
| E   |  |          |       |
| D   |  |          |       |
| C   | MIN VERGE WIDTH ADDED, NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| B   | DEVELOPMENT MANUAL REVISION                              |          | 11/12 |
| A   | ORIGINAL ISSUE   |          | 04/12 |
| REV | DETAILS OF AMENDMENTS                                    | APPROVED | DATE  |



RURAL RESIDENTIAL (Lots => 1ha)  
ACCESS STREET AND MINOR/MAJOR COLLECTOR

|   |                  |  |               |
|---|------------------|--|---------------|
| DRAWN<br>DESIGN OFFICE                      | CHECKED<br>CWB * | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES<br>Darendra Naidu * | DATE<br>08/16 |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |                  |  |               |

**STANDARD DRAWING**

SHEET 1 OF 1

STANDARD DRAWING No:  
**A3 FC-200-03**

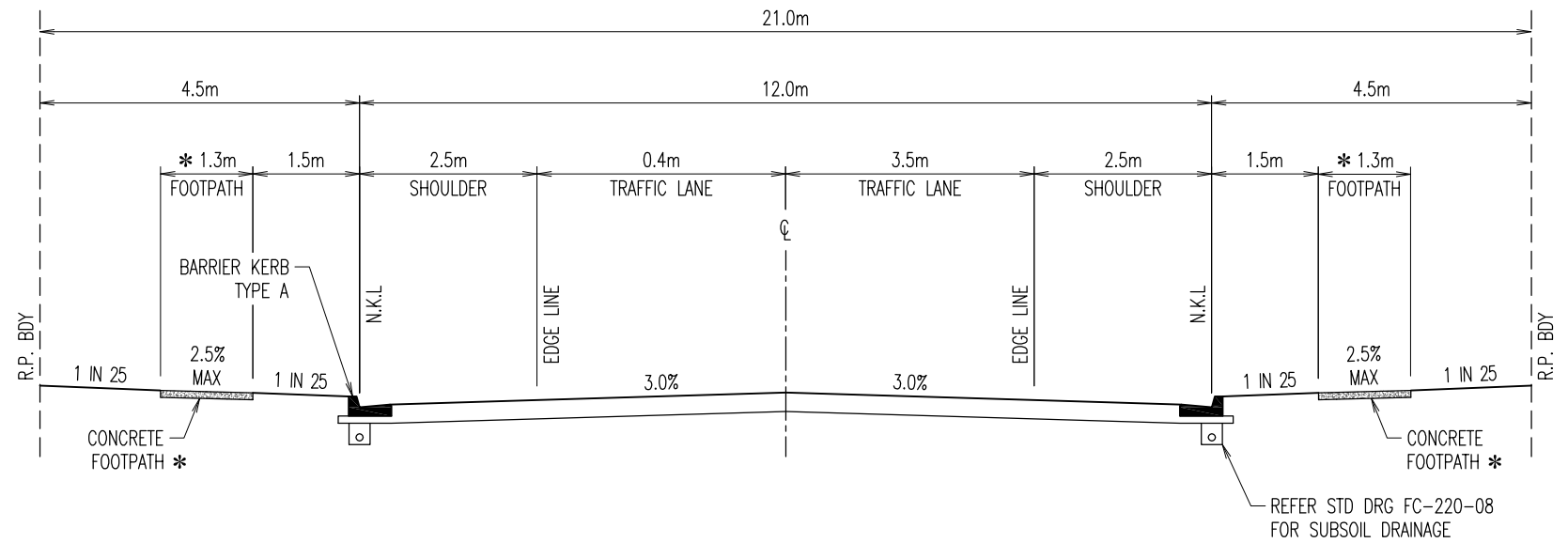
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|---|---|---|--|--|--|
| A | B | C |  |  |  |
|---|---|---|--|--|--|

**NOTES:**

- FOR STREET CLASSIFICATIONS AND DESIGN PRINCIPLES REFER TO FCRC PLANNING SCHEME SCHEDULE 6 – SC6.3.4 – ROADS AND PATHWAYS.
- FOR DETAILS OF VERGE AND ALLOCATION OF PUBLIC UTILITIES REFER TO FCRC STD DRG FC-210-01.
- THESE TYPICAL SECTIONS ARE COUNCIL'S MINIMUM REQUIREMENT ONLY AND MAY VARY WITH PEDESTRIAN/BIKEWAY/PARKING AND GENERAL NETWORK PLANNING.
- STREET LIGHTING IN ACCORDANCE WITH FCRC PLANNING SCHEME SCHEDULE 6 – SC6.3.9 – ELECTRICAL, STREET LIGHTING AND TELECOMMUNICATIONS.
- DESIGN STANDARDS MAY VARY TO BE CONSISTENT WITH THE EXISTING INFRASTRUCTURE IN THE SURROUNDING AREA AND MUST TRANSITION INTO EXISTING INFRASTRUCTURE ADJOINING THE DEVELOPMENT. THE MINIMUM ROAD RESERVE MAY NEED TO BE WIDENED TO ACCOMMODATE ALTERNATIVE TREATMENTS, SUCH AS SWALE DRAINS.

**LEGEND**

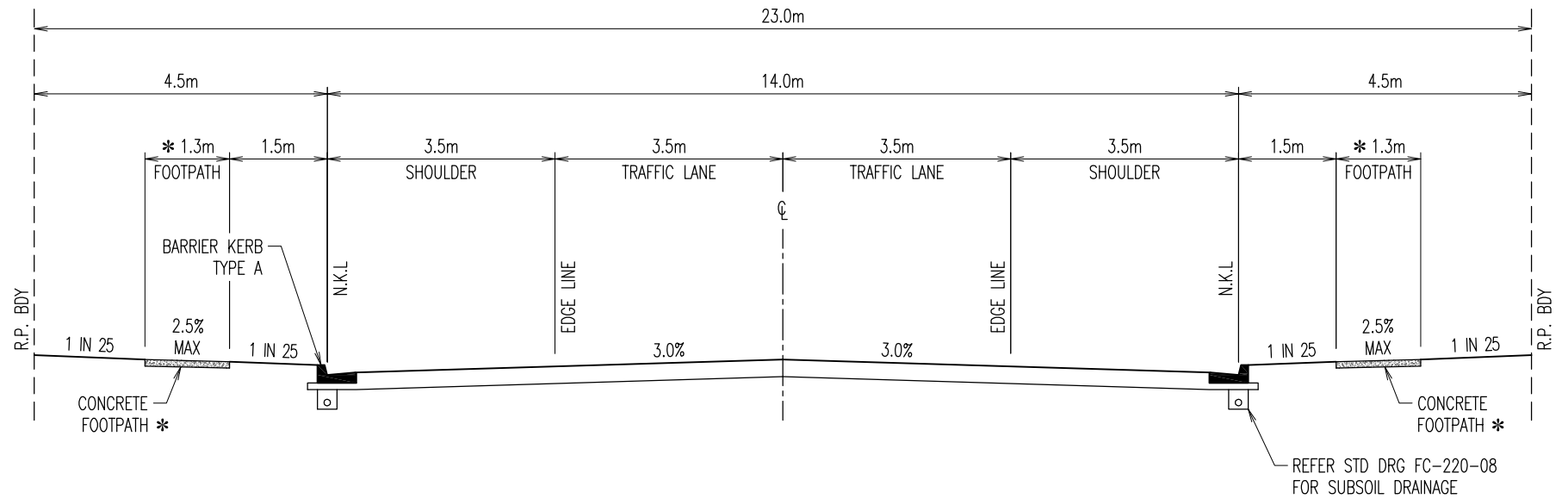
- ⊕ ——— ROAD CENTRELINE
- R.P. BDY ——— REAL PROPERTY BOUNDARY
- N.K.L ——— NOMINAL KERB LINE (KERB INVERT)
- MIN ——— NOT LESS THAN
- MAX ——— NOT MORE THAN



**ACCESS STREET – INDUSTRIAL/COMMERCIAL**

TRAFFIC IMPACT ASSESSMENT REQUIRED

\* FOOTPATHS NOT REQUIRED FOR INDUSTRIAL AREAS



**COLLECTOR – INDUSTRIAL/COMMERCIAL**

TRAFFIC IMPACT ASSESSMENT REQUIRED

\* FOOTPATH REQUIRED ON ONE SIDE FOR INDUSTRIAL AREAS

|     |                                   |          |       |
|-----|-----------------------------------|----------|-------|
| F   |                                   |          |       |
| E   |                                   |          |       |
| D   | NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| C   | FOOTPATH WIDTH ALTERED            |          | 07/13 |
| B   | DEVELOPMENT MANUAL REVISION       |          | 11/12 |
| A   | ORIGINAL ISSUE                    |          | 04/12 |
| REV | DETAILS OF AMENDMENTS             | APPROVED | DATE  |



|  |         |  |       |
|--|---------|--|-------|
| INDUSTRIAL/COMMERCIAL<br>ACCESS STREET AND COLLECTOR |         |  |       |
| DRAWN  | CHECKED | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE  |
| DESIGN OFFICE  | CWB *   | Davendra Naidu *                             | 08/16 |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE          |         |  |       |

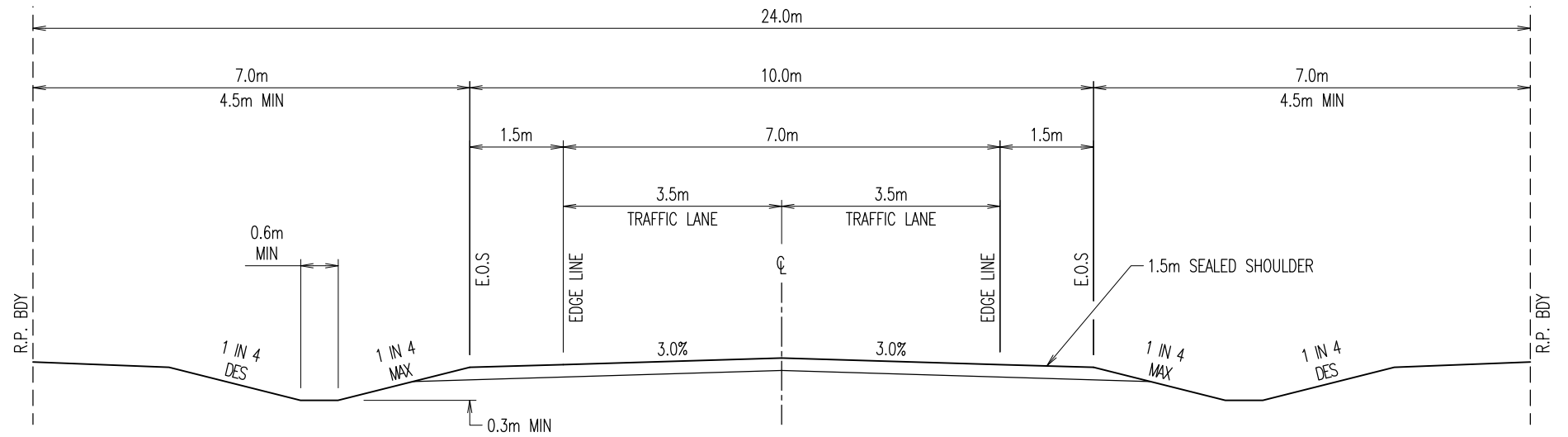
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|-------------------------|-----------|----|---|
| <b>STANDARD DRAWING</b> |           |    |   |
| SHEET                   | 1         | OF | 1 |
| STANDARD DRAWING No:    |           |    |   |
| A3                      | FC-200-04 |    |   |
| A                       | B         | C  | D |

**NOTES:**

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- FOR DETAILS OF VERGE AND ALLOCATION OF PUBLIC UTILITIES REFER TO FCRC STD DRG FC-210-01.
- THESE TYPICAL SECTIONS ARE COUNCIL'S MINIMUM REQUIREMENT ONLY AND MAY VARY WITH PEDESTRIAN/BIKEWAY/PARKING AND GENERAL NETWORK PLANNING.
- STREET LIGHTING IN ACCORDANCE WITH FCRC PLANNING SCHEME SCHEDULE 6 – SC6.3.9 – ELECTRICAL, STREET LIGHTING AND TELECOMMUNICATIONS.
- THE MAXIMUM CROSSFALL FOR GRASSED/PLANTED MEDIANS SHALL BE 1 IN 6. STEEPER CROSSFALLS MAY BE ALLOWED SUBJECT TO SATISFACTORY DESIGN/CONSTRUCTION DETAILS.
- FOR MEDIAN WIDTHS LESS THAN 2.0m PROVIDE STENCILED CONCRETE INFILL OR APPROVED EQUIVALENT. PROPOSALS INVOLVING THE USE OF STAMPED CONCRETE MUST PROVIDE DETAILS OF METHODS OF ENSURING THE LONG TERM APPEARANCE AND SLIP RESISTANCE CAN BE MAINTAINED AND PONDING OF WATER DOES NOT OCCUR.
- GUARDRAIL IS TO BE INSTALLED IN ACCORDANCE WITH QUEENSLAND DEPARTMENT OF TRANSPORT AND MAIN ROADS REQUIREMENTS.
- WHERE REQUIRED, STABILISATION OF TABLE DRAIN TO BE APPROVED BY COUNCIL.
- DESIGN STANDARDS MAY VARY TO BE CONSISTENT WITH THE EXISTING INFRASTRUCTURE IN THE SURROUNDING AREA AND MUST TRANSITION INTO EXISTING INFRASTRUCTURE ADJOINING THE DEVELOPMENT. THE MINIMUM ROAD RESERVE MAY NEED TO BE WIDENED TO ACCOMMODATE ALTERNATIVE TREATMENTS, SUCH AS SWALE DRAINS.

**LEGEND**

- ⊕ --- ROAD CENTRELINE
- R.P. BDY --- REAL PROPERTY BOUNDARY
- E.O.S --- EDGE OF SEAL
- DES --- DESIRABLE
- MIN --- NOT LESS THAN
- MAX --- NOT MORE THAN



**RURAL ARTERIAL**  
TRAFFIC IMPACT ASSESSMENT REQUIRED

|     |                                   |          |       |
|-----|-----------------------------------|----------|-------|
| F   |                                   |          |       |
| E   |                                   |          |       |
| D   |                                   |          |       |
| C   | NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| B   | DEVELOPMENT MANUAL REVISION       |          | 11/12 |
| A   | ORIGINAL ISSUE                    |          | 04/12 |
| REV | DETAILS OF AMENDMENTS             | APPROVED | DATE  |



|  |               |         |       |
|--|---------------|---------|-------|
| RURAL ARTERIAL                               |               |         |       |
| DRAWN  | DESIGN OFFICE | CHECKED | CWB * |
| APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES |               | DATE    |       |
| Darendra Naidu *                             |               | 08/16   |       |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE  |               |         |       |

|                         |           |    |   |
|-------------------------|-----------|----|---|
| <b>STANDARD DRAWING</b> |           |    |   |
| SHEET                   | 1         | OF | 1 |
| STANDARD DRAWING No:    |           |    |   |
| A3                      | FC-200-05 |    |   |
| A                       | B         | C  |   |

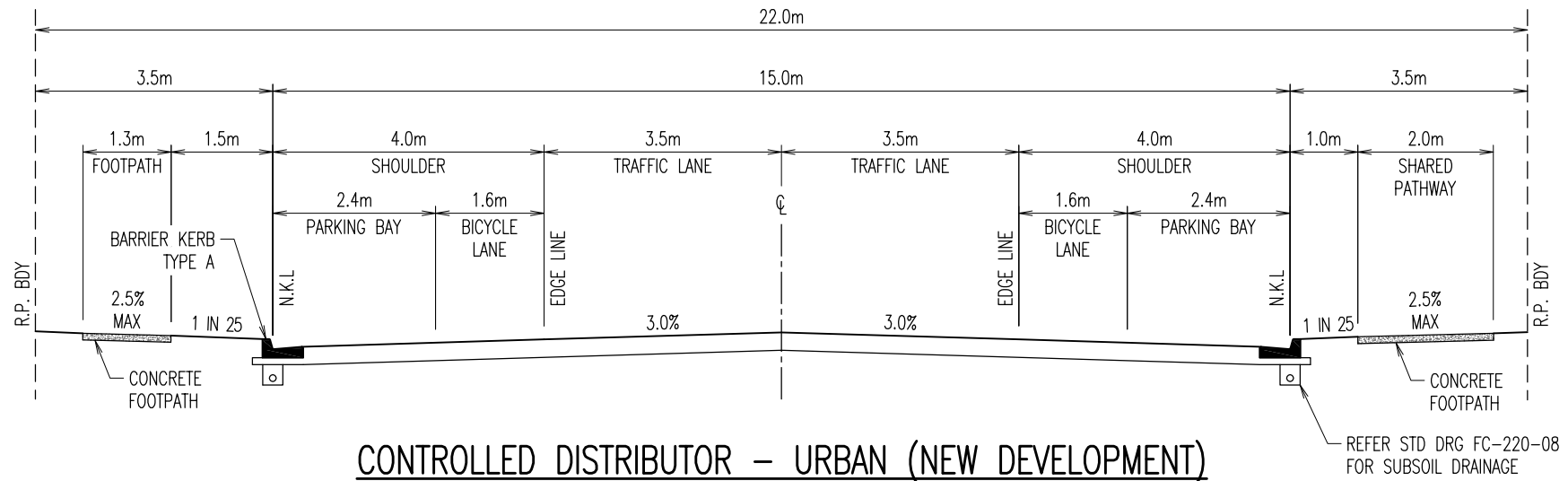


**NOTES:**

- FOR STREET CLASSIFICATIONS AND DESIGN PRINCIPLES REFER TO FCRC PLANNING SCHEME SCHEDULE 6 - SC6.3.4 - ROADS AND PATHWAYS.
- FOR DETAILS OF VERGE AND ALLOCATION OF PUBLIC UTILITIES REFER TO FCRC STD DRG FC-210-01.
- THESE TYPICAL SECTIONS ARE COUNCIL'S MINIMUM REQUIREMENT ONLY AND MAY VARY WITH PEDESTRIAN/BIKEWAY/PARKING AND GENERAL NETWORK PLANNING.
- STREET LIGHTING IN ACCORDANCE WITH FCRC PLANNING SCHEME SCHEDULE 6 - SC6.3.9 - ELECTRICAL, STREET LIGHTING AND TELECOMMUNICATIONS.
- THE MAXIMUM CROSSFALL FOR GRASSED/PLANTED MEDIANS SHALL BE 1 IN 6. STEEPER CROSSFALLS MAY BE ALLOWED SUBJECT TO SATISFACTORY DESIGN/CONSTRUCTION DETAILS.
- FOR MEDIAN WIDTHS LESS THAN 2.0m PROVIDE STENCILED CONCRETE INFILL OR APPROVED EQUIVALENT. PROPOSALS INVOLVING THE USE OF STAMPED CONCRETE MUST PROVIDE DETAILS OF METHODS OF ENSURING THE LONG TERM APPEARANCE AND SLIP RESISTANCE CAN BE MAINTAINED AND PONDING OF WATER DOES NOT OCCUR.
- GUARDRAIL IS TO BE INSTALLED IN ACCORDANCE WITH QUEENSLAND DEPARTMENT OF TRANSPORT AND MAIN ROADS REQUIREMENTS.
- WHERE REQUIRED, STABILISATION OF TABLE DRAIN TO BE APPROVED BY COUNCIL.
- DESIGN STANDARDS MAY VARY TO BE CONSISTENT WITH THE EXISTING INFRASTRUCTURE IN THE SURROUNDING AREA AND MUST TRANSITION INTO EXISTING INFRASTRUCTURE ADJOINING THE DEVELOPMENT. THE MINIMUM ROAD RESERVE MAY NEED TO BE WIDENED TO ACCOMMODATE ALTERNATIVE TREATMENTS, SUCH AS SWALE DRAINS.

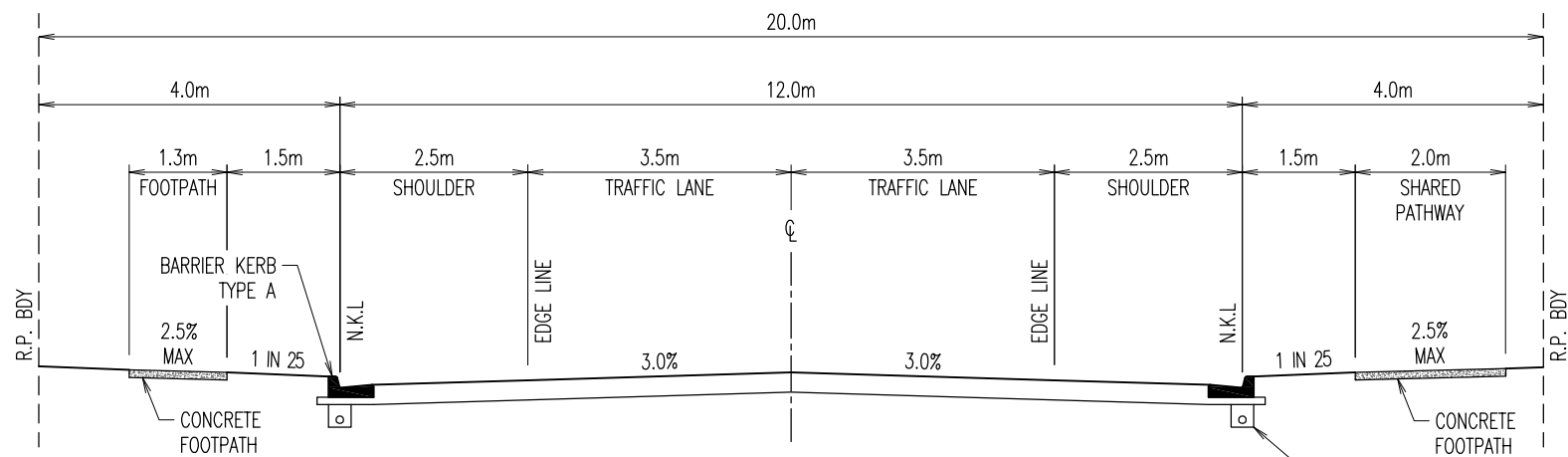
**LEGEND**

- ⊘ --- ROAD CENTRELINE
- R.P. BDY --- REAL PROPERTY BOUNDARY
- N.K.L --- NOMINAL KERB LINE (KERB INVERT)
- MIN --- NOT LESS THAN
- MAX --- NOT MORE THAN



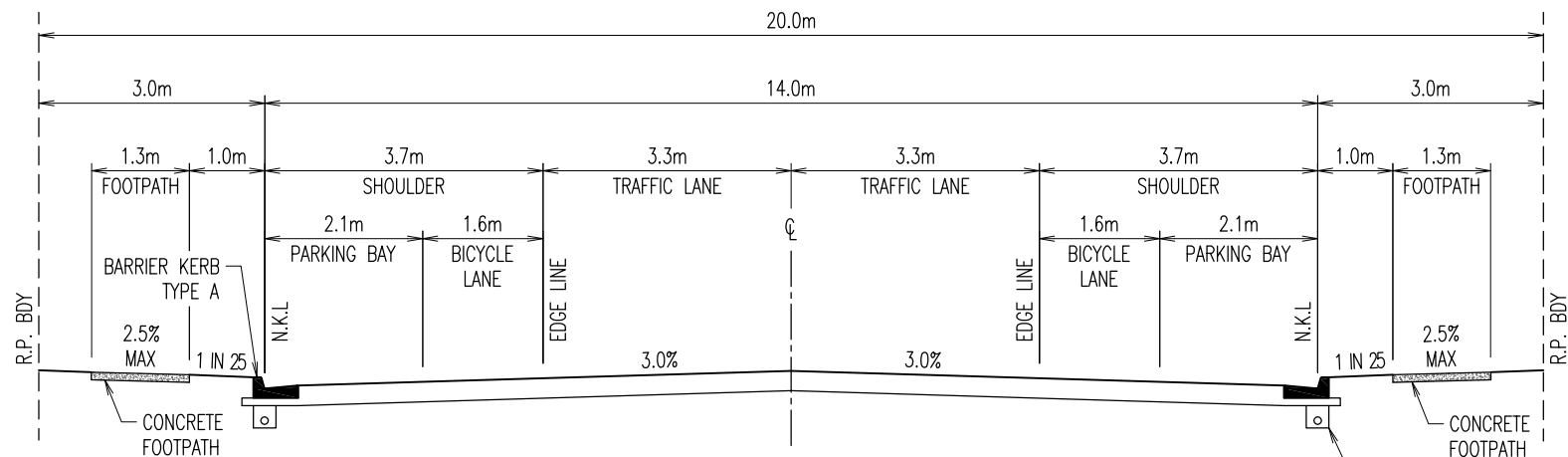
**CONTROLLED DISTRIBUTOR - URBAN (NEW DEVELOPMENT)**

TRAFFIC VOLUME: < 15,000 VPD



**CONTROLLED DISTRIBUTOR - URBAN (EXISTING) - TYPE 1**

TRAFFIC VOLUME: < 15,000 VPD



**CONTROLLED DISTRIBUTOR - URBAN (EXISTING) - TYPE 2**

TRAFFIC VOLUME: < 15,000 VPD

| REV | DETAILS OF AMENDMENTS                        | APPROVED | DATE  |
|-----|--|----------|-------|
| F   |  |          |       |
| E   |  |          |       |
| D   | SECTIONS & NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| C   | FOOTPATH WIDTH ALTERED                       |          | 07/13 |
| B   | DEVELOPMENT MANUAL REVISION                  |          | 11/12 |
| A   | ORIGINAL ISSUE                               |          | 04/12 |



**CONTROLLED DISTRIBUTOR - URBAN**

|                        |                  |  |               |
|------------------------|------------------|--|---------------|
| DRAWN<br>DESIGN OFFICE | CHECKED<br>CWB * | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES<br>Darendra Naidu * | DATE<br>08/16 |
|------------------------|------------------|--|---------------|

\* SIGNED ORIGINAL HELD IN THE DESIGN OFFICE

**STANDARD DRAWING**

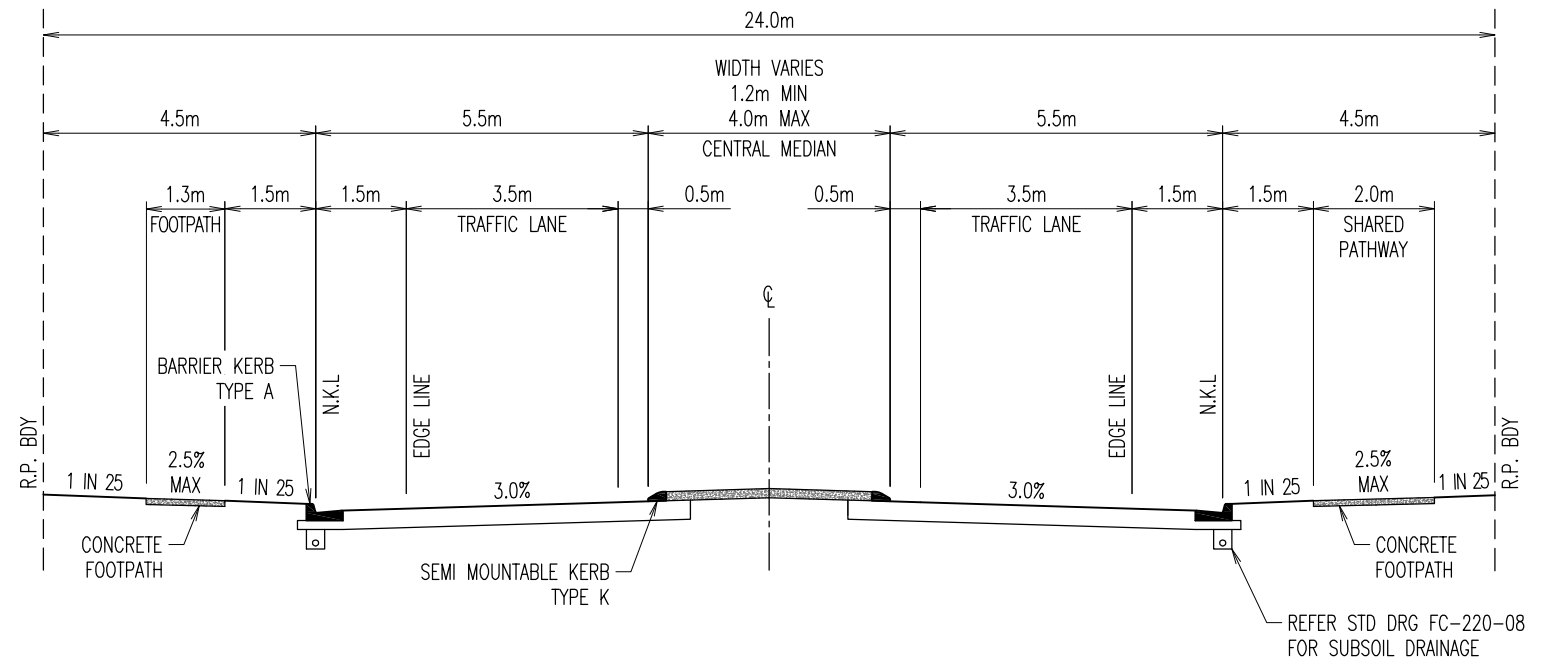
SHEET 1 OF 1

STANDARD DRAWING No:  
**A3 FC-200-06**

|   |   |   |   |
|---|---|---|---|
| A | B | C | D |
|---|---|---|---|

**NOTES:**

- FOR STREET CLASSIFICATIONS AND DESIGN PRINCIPLES REFER TO FCRC PLANNING SCHEME SCHEDULE 6 – SC6.3.4 – ROADS AND PATHWAYS.
- FOR DETAILS OF VERGE AND ALLOCATION OF PUBLIC UTILITIES REFER TO FCRC STD DRG FC-210-01.
- THESE TYPICAL SECTIONS ARE COUNCIL'S MINIMUM REQUIREMENT ONLY AND MAY VARY WITH PEDESTRIAN/BIKEWAY/PARKING AND GENERAL NETWORK PLANNING.
- STREET LIGHTING IN ACCORDANCE WITH FCRC PLANNING SCHEME SCHEDULE 6 – SC6.3.9 – ELECTRICAL, STREET LIGHTING AND TELECOMMUNICATIONS.
- THE MAXIMUM CROSSFALL FOR GRASSED/PLANTED MEDIANS SHALL BE 1 IN 6. STEEPER CROSSFALLS MAY BE ALLOWED SUBJECT TO SATISFACTORY DESIGN/CONSTRUCTION DETAILS.
- FOR MEDIAN WIDTHS LESS THAN 2.0m PROVIDE STENCILED CONCRETE INFILL OR APPROVED EQUIVALENT. PROPOSALS INVOLVING THE USE OF STAMPED CONCRETE MUST PROVIDE DETAILS OF METHODS OF ENSURING THE LONG TERM APPEARANCE AND SLIP RESISTANCE CAN BE MAINTAINED AND PONDING OF WATER DOES NOT OCCUR.
- GUARDRAIL IS TO BE INSTALLED IN ACCORDANCE WITH QUEENSLAND DEPARTMENT OF TRANSPORT AND MAIN ROADS REQUIREMENTS.
- WHERE REQUIRED, STABILISATION OF TABLE DRAIN TO BE APPROVED BY COUNCIL.
- DESIGN STANDARDS MAY VARY TO BE CONSISTENT WITH THE EXISTING INFRASTRUCTURE IN THE SURROUNDING AREA AND MUST TRANSITION INTO EXISTING INFRASTRUCTURE ADJOINING THE DEVELOPMENT. THE MINIMUM ROAD RESERVE MAY NEED TO BE WIDENED TO ACCOMMODATE ALTERNATIVE TREATMENTS, SUCH AS SWALE DRAINS.



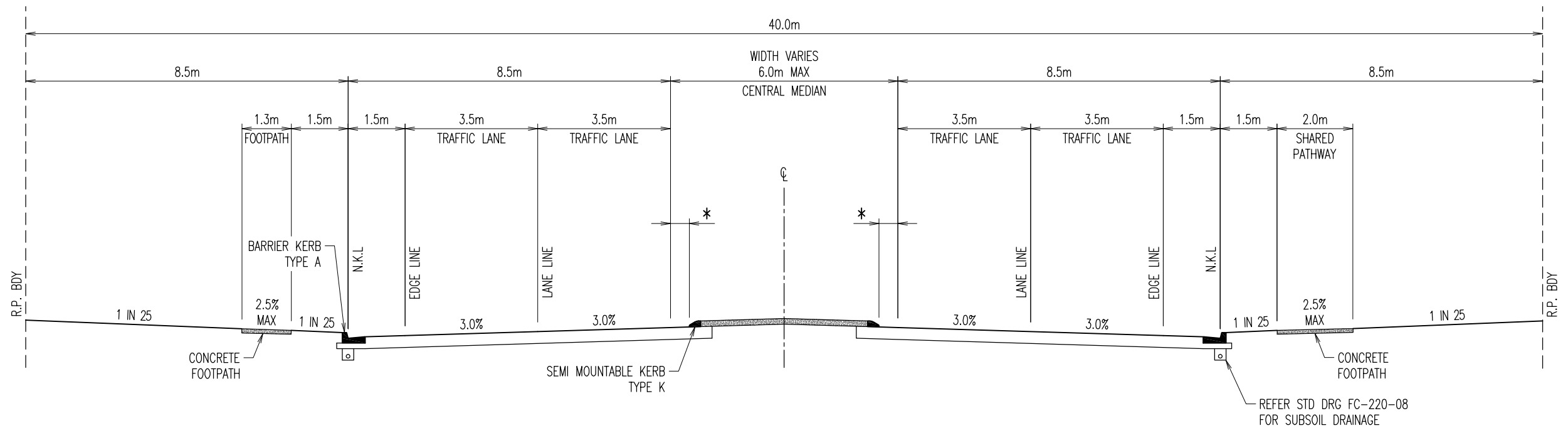
**TRAFFIC DISTRIBUTOR – URBAN (TYPE 2)**

TRAFFIC IMPACT ASSESSMENT REQUIRED

**LEGEND**

- ⊘ ——— ROAD CENTRELINE
- R.P. ——— BDY REAL PROPERTY BOUNDARY
- N.K.L NOMINAL KERB LINE (KERB INVERT)
- E.O.S EDGE OF SEAL
- DES DESIRABLE
- MIN NOT LESS THAN
- MAX NOT MORE THAN

\* 0.0m FOR 60 km/h  
0.3m FOR 80 km/h  
0.5m FOR 100 km/h



**TRAFFIC DISTRIBUTOR – URBAN (TYPE 1)**

TRAFFIC IMPACT ASSESSMENT REQUIRED

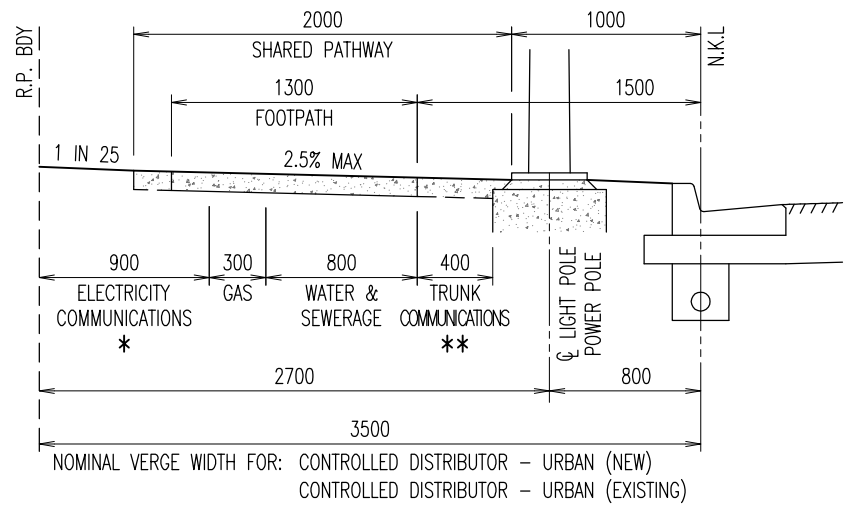
|     |                                   |          |       |
|-----|-----------------------------------|----------|-------|
| F   |                                   |          |       |
| E   |                                   |          |       |
| D   | NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| C   | FOOTPATH WIDTH ALTERED            |          | 07/13 |
| B   | DEVELOPMENT MANUAL REVISION       |          | 11/12 |
| A   | ORIGINAL ISSUE                    |          | 04/12 |
| REV | DETAILS OF AMENDMENTS             | APPROVED | DATE  |



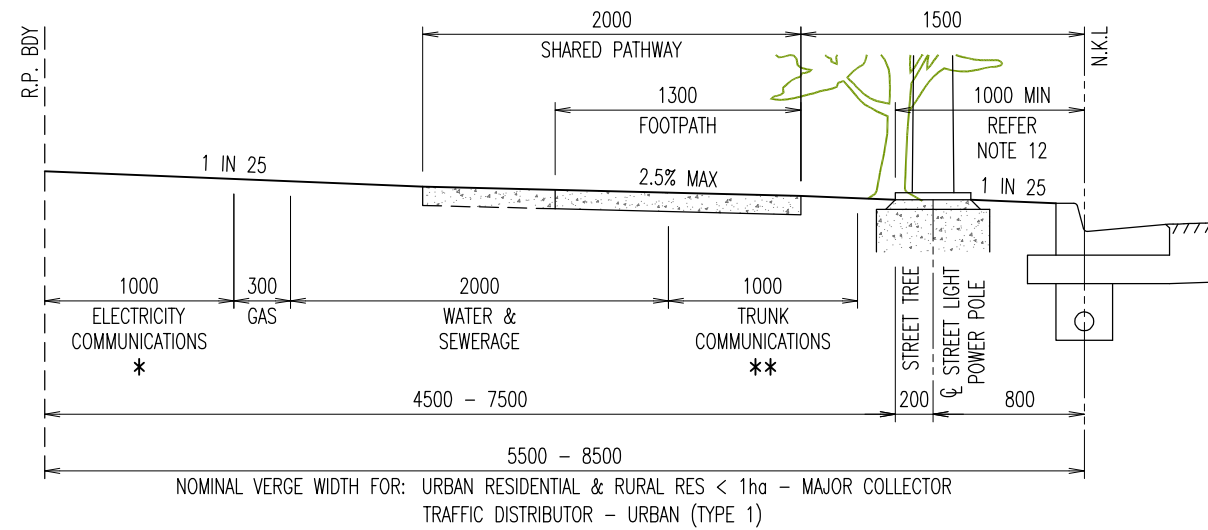
|  |               |         |       |
|--|---------------|---------|-------|
| <b>TRAFFIC DISTRIBUTOR – URBAN</b>           |               |         |       |
| DRAWN  | DESIGN OFFICE | CHECKED | CWB * |
| APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES |               | DATE    |       |
| Darendra Naidu *                             |               | 08/16   |       |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE  |               |         |       |

|                         |   |           |   |
|-------------------------|---|-----------|---|
| <b>STANDARD DRAWING</b> |   |           |   |
| SHEET                   | 1 | OF        | 1 |
| STANDARD DRAWING No:    |   |           |   |
| A3                      |   | FC-200-07 |   |
| A                       | B | C         | D |

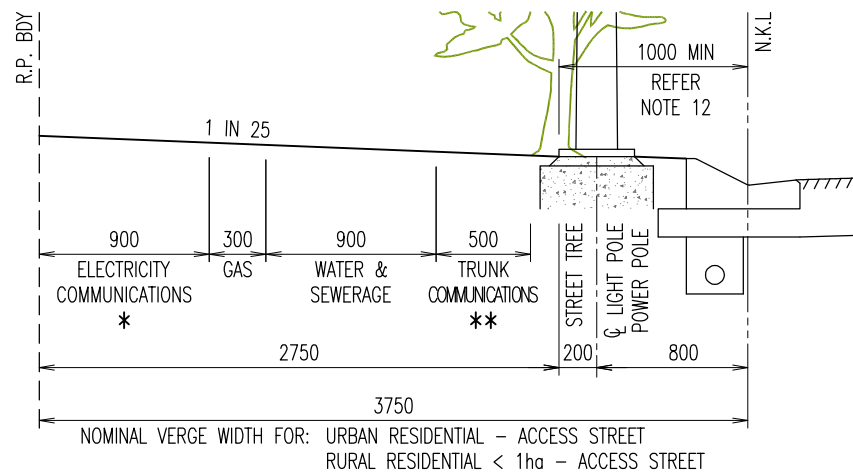




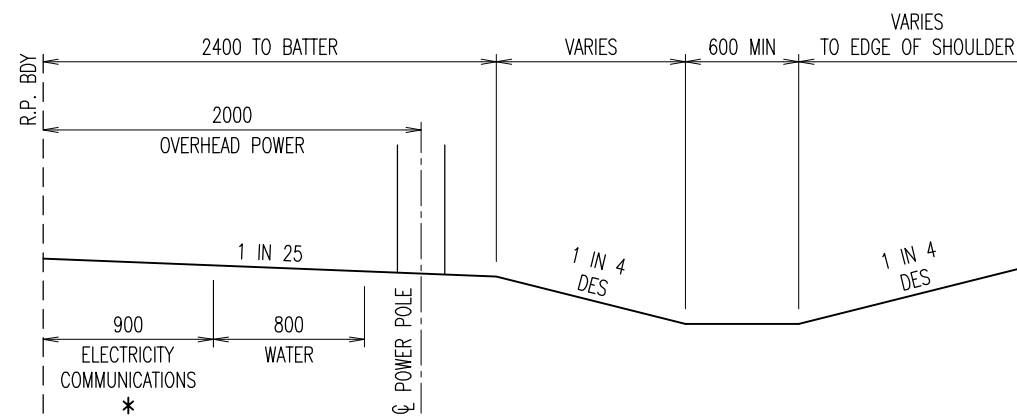
**3.5m OR LESS VERGE**



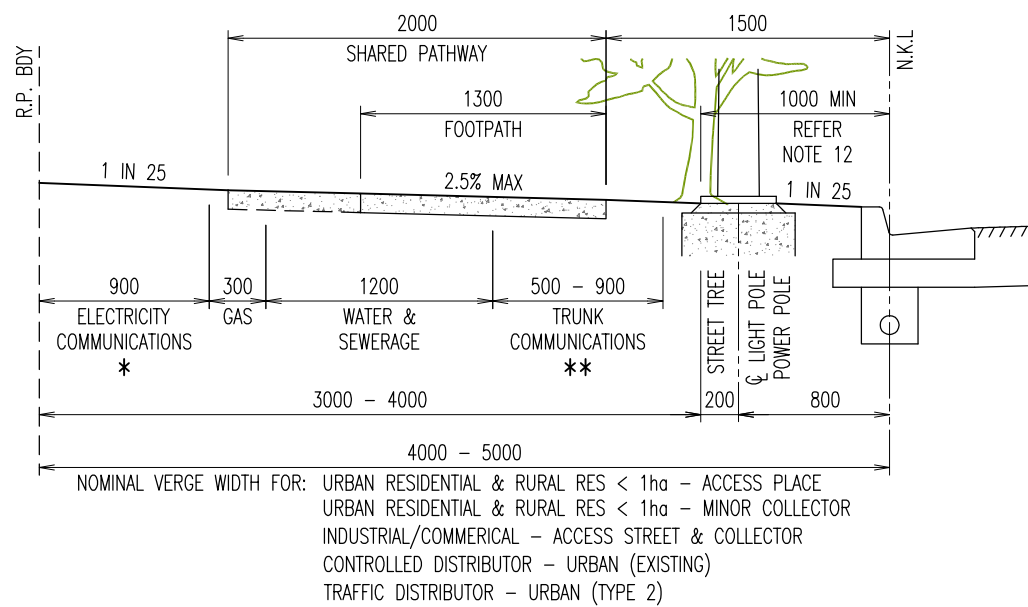
**GREATER THAN 5.0m VERGE**



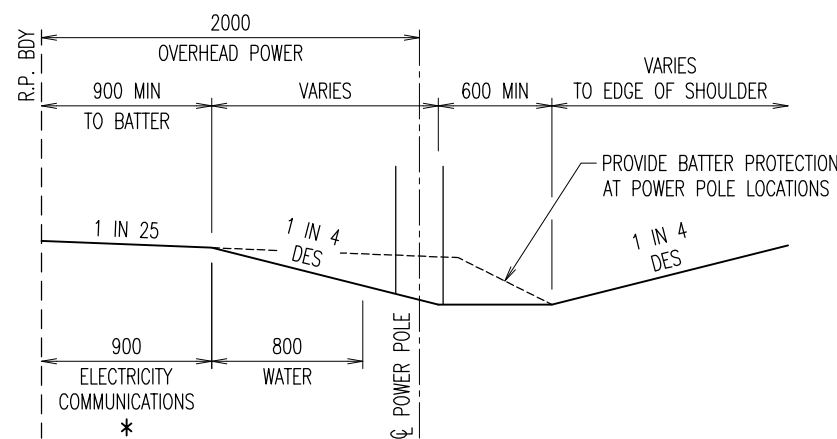
**3.75m VERGE**



**RURAL VERGE - DESIRABLE**



**4.0m - 5.0m VERGE**



**RURAL VERGE - CONSTRAINED**

**NOTES:**

- PUBLIC UTILITIES ALLOCATIONS ARE MEASURED FROM THE REAL PROPERTY BOUNDARY EXCEPT FOR POWER/STREET LIGHT POLES.
- POWER/STREET LIGHT POLES AND TREE ALLOCATIONS ARE MEASURED FROM THE NOMINAL KERB LINE. (EXCEPT RURAL WHICH IS MEASURED FROM THE REAL PROPERTY BOUNDARY)
- BRASS OR STAINLESS STEEL INDICATOR DISCS TO BE PLACED IN KERB OVER ALL CONDUITS.
- THESE TYPICAL SECTIONS ARE COUNCIL'S MINIMUM REQUIREMENT ONLY AND MAY VARY WITH PEDESTRIAN/BIKEWAY/PARKING AND GENERAL NETWORK PLANNING.
- THE ALIGNMENT AND DEPTH OF EXISTING SERVICES SHALL BE CONFIRMED ON SITE IN CONSULTATION WITH RELEVANT SERVICE AUTHORITIES PRIOR TO ANY EXCAVATION AND SHALL NOT BE INFERRED FROM THE SERVICE ALLOCATION DRAWING.
- DEVELOPERS SHALL NEGOTIATE WITH ALL RELEVANT COMMUNICATIONS COMPANIES FOR THE PROVISION OF CONDUITS AT THE DESIGN PHASE OF DEVELOPMENT. VARIOUS JOINT USE ARRANGEMENTS EXIST AMONGST ELECTRICITY AND COMMUNICATIONS PROVIDERS.
- VARIOUS CONFIGURATIONS OF TRENCH WIDTH AND CONDUIT NUMBERS/DIAMETERS EXIST FOR COMMON TRENCH ARRANGEMENTS BETWEEN SERVICE PROVIDERS OF ELECTRICITY, COMMUNICATIONS AND GAS. REFER ELECTRICITY, TELECOMMUNICATIONS AND GAS AUTHORITIES STANDARD DRAWINGS.
- TUNNEL BORING TECHNIQUES ARE TO BE UTILISED FOR ROAD CROSSING SERVICES CONDUITS IN EXISTING ROADWAY.
- FOR LANDSCAPING CONSIDERATIONS THE INTENT IS TO GENERALLY PROVIDE A MAIN SERVICES CORRIDOR ON ONE SIDE OF THE STREET ONLY. THE UTILISATION OF VERGES IS DEPENDENT ON SERVICE AUTHORITY INFRASTRUCTURE DEMANDS, WHICH MAY REQUIRE THAT BOTH VERGES FOR SERVICES SHOULD BE AVOIDED WHERE POSSIBLE.
- LANDSCAPING DESIGNS SHALL GIVE DUE CONSIDERATION TO THE PROVISION OF DRIVEWAY ACCESSES AND CLEARANCES TO SERVICE PITS, PILLARS AND POLES FOR MAINTENANCE ACCESS.
- PLANTS SPECIES SHALL BE SELECTED WHICH MINIMISE THE POTENTIAL FOR ROOT DAMAGE TO UNDERGROUND SERVICES, PATHWAYS AND KERB AND CHANNEL.
- THE MATURE HEIGHT AND SPREAD OF PLANTS SHALL BE CONSIDERED WHEN ASSESSING VISIBILITY SIGHT LINES FOR SAFE VEHICULAR AND PEDESTRIAN FUNCTIONS AND STREET LIGHTING REQUIREMENTS APPLICABLE TO THE ROAD CLASSIFICATION.
- STREET TREE OFFSET FROM THE NOMINAL KERB LINE IS SHOWN AS A MINIMUM. WHERE AVAILABLE SPACE EXISTS STREET TREES SHALL BE POSITIONED CLOSER TO THE PROPERTY BOUNDARY PROVIDING IT DOES NOT CONFLICT WITH SERVICES AND PATHWAYS.
- STREET TREES ARE NOT TO IMPEDE THE LIGHT OUTPUT OF STREET LIGHTS.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

**LEGEND**

- ⊕ --- CENTRELINE
- R.P. BDY --- REAL PROPERTY BOUNDARY
- N.K.L --- NOMINAL KERB LINE (KERB INVERT)
- DES --- DESIRABLE
- MIN --- NOT LESS THAN
- MAX --- NOT MORE THAN
- \* --- FOR DOMESTIC CONNECTION TO INDIVIDUAL LOTS
- \*\* --- FOR FEEDER CONNECTION - NOT DOMESTIC CONNECTION TO INDIVIDUAL LOTS

|     |   |          |       |
|-----|---|----------|-------|
| F   |   |          |       |
| E   |   |          |       |
| D   |   |          |       |
| C   | 3.5m & RURAL VERGE ADDED, VERGE WIDTH & CORRIDORS ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| B   | FOOTPATH WIDTHS ALTERED   |          | 07/13 |
| A   | ORIGINAL ISSUE  |          | 04/11 |
| REV | DETAILS OF AMENDMENTS   | APPROVED | DATE  |



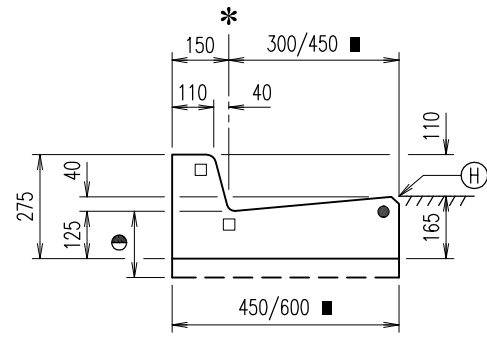
**PUBLIC UTILITIES  
TYPICAL SERVICE CORRIDORS AND ALIGNMENTS**

|   |               |         |                  |  |      |       |
|---|---------------|---------|------------------|--|------|-------|
| DRAWN                                       | DESIGN OFFICE | CHECKED | CWB *            | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE | 08/16 |
|   |               |         | Darendra Naidu * |  |      |       |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |               |         |                  |  |      |       |

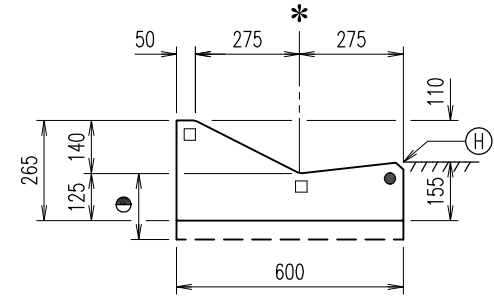
**STANDARD DRAWING**

SHEET 1 OF 1

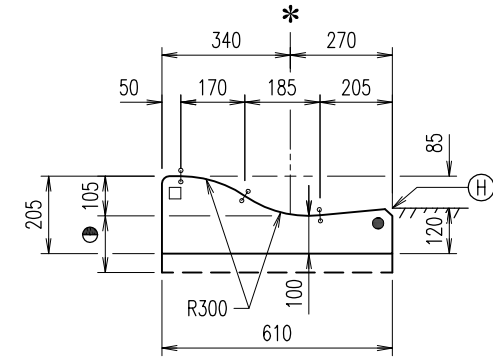
STANDARD DRAWING No: A3 FC-210-01



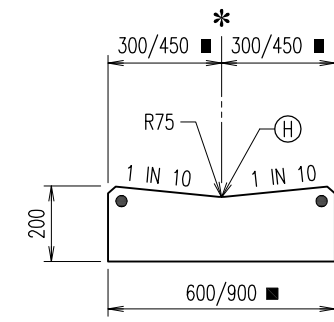
**TYPE A**  
BARRIER KERB  
(IPWEA PROFILE B1)  
(TMR PROFILE TYPE 7)



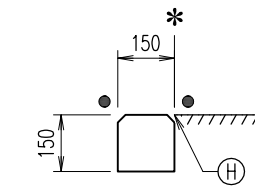
**TYPE B**  
MOUNTABLE KERB  
(IPWEA PROFILE M1)



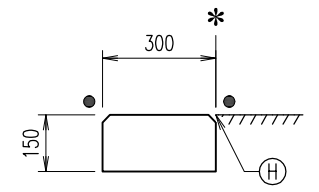
**TYPE C**  
MOUNTABLE KERB  
(IPWEA PROFILE M3)



**TYPE D**  
INVERT  
(IPWEA PROFILE INVERT)  
(TMR PROFILE TYPE 22)



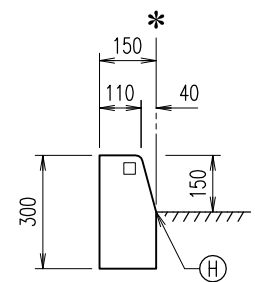
**TYPE N**  
NO VEHICLE LOADING  
(IPWEA PROFILE ER1)  
USED AS RESTRAINT BETWEEN  
PAVEMENT AND/OR GRASS



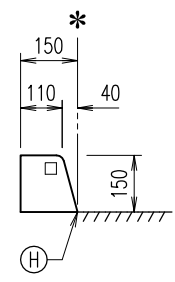
**TYPE P**  
NO VEHICLE LOADING  
(IPWEA PROFILE ER4)  
USED AS RESTRAINT BETWEEN  
PAVEMENT AND/OR GRASS

**KERB AND CHANNEL**

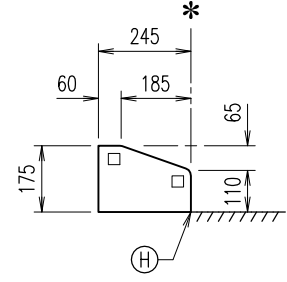
**INVERT**



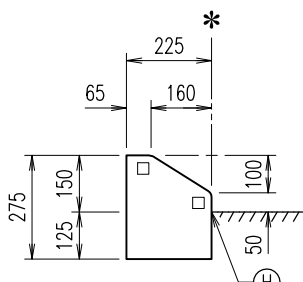
**TYPE E**  
(IPWEA PROFILE B2)



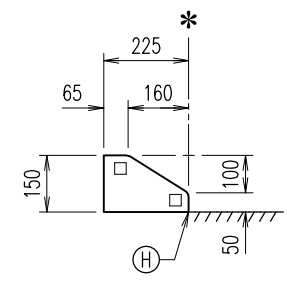
**TYPE F**  
(IPWEA PROFILE B4)



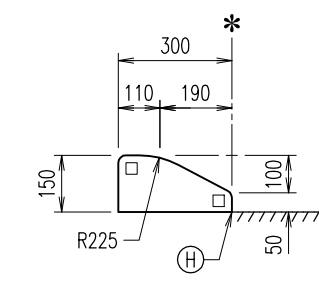
**TYPE G**  
(IPWEA PROFILE B5)



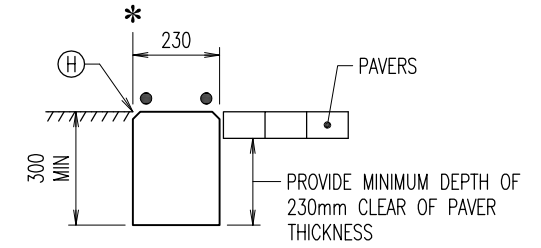
**TYPE H**  
(IPWEA PROFILE SM3)



**TYPE J**  
(IPWEA PROFILE SM4)



**TYPE K**  
(TMR PROFILE TYPE 9)

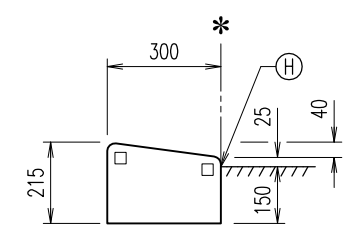


**TYPE Q**  
WITH VEHICLE LOADING  
(IPWEA PROFILE ER2)  
USED FOR RESTRAINING PAVERS  
FROM PAVEMENT OR GRASS

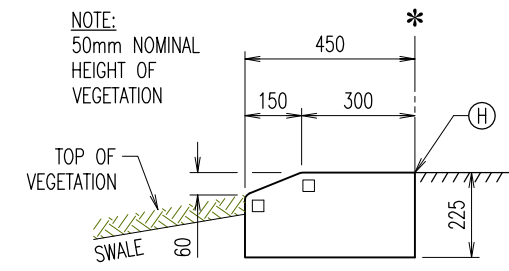
**EDGE RESTRAINT**

**KERB**  
(BARRIER TYPE)

**KERB**  
(SEMI MOUNTABLE TYPE)



**TYPE L**  
(IPWEA PROFILE M6)



**TYPE M**

**KERB**  
(MOUNTABLE TYPE)

NOTE:  
50mm NOMINAL  
HEIGHT OF  
VEGETATION

**REFERENCE POSITIONS**

- \* NOMINAL KERB LINE
- (H) SETOUT/HEIGHT REFERENCE

**LEGEND**

- CHANNEL INVERT WIDTH, REFER PROJECT DRAWINGS
- 20 ARRIS
- R20 RADIUS
- 175 WHERE SPECIFIED FOR COMMERCIAL AND INDUSTRIAL APPLICATIONS, REFER PROJECT DRAWINGS

**NOTES:**

1. ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH AS 2876 EXCEPT WHERE SPECIFIED ON THIS DRAWING.
2. MACHINE PLACED (SLIP FORMED OR EXTRUDED) CONCRETE TO BE GRADE N32/10 IN ACCORDANCE WITH AS 1379 AND AS 3600.
3. PRECAST OR HAND PLACED (IN SITU) CONCRETE TO BE GRADE N32/20 IN ACCORDANCE WITH AS 1379 AND AS 3600.
4. TRANSITIONING BETWEEN KERB TYPES TO BE CARRIED OUT OVER 3m.
5. ALL KERB SECTIONS TO BE BEDDED ON TOP OF THE SUB-BASE PAVEMENT LAYER OR A 100mm (MIN) COMPACTED CLASS 2 (MIN) GRAVEL UNLESS DIRECTED OTHERWISE BY COUNCIL.
6. PROVIDE CONTRACTION OR SHRINKAGE CONTROL JOINTS AT REGULAR INTERVALS NOT EXCEEDING 3m, BY FORMING GROOVES 40mm DEEP BY 6mm WIDE.
7. PROVIDE EXPANSION JOINTS WHERE THE KERB AND CHANNEL ABUTS SUBSTANTIAL EXISTING STRUCTURES SUCH AS BRIDGES, OR WHERE DIRECTED. WHERE RELEVANT, LOCATE JOINTS TO LINE UP WITH THE EXPANSION JOINTS IN ADJACENT STRUCTURES SUCH AS RIGID PAVEMENTS AND CONCRETE SLABS. CONSTRUCT EXPANSION JOINTS BY INSTALLING 10mm THICK BITUMINOUS FIBREBOARD OR APPROVED EQUIVALENT BY COUNCIL FOR THE FULL WIDTH AND DEPTH OF THE KERB AND CHANNEL.
8. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

|     |   |          |       |
|-----|---|----------|-------|
| F   |   |          |       |
| E   |   |          |       |
| D   |   |          |       |
| C   |   |          |       |
| B   | SETOUT REFERENCE, EDGE RESTRAINT, NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE  |          | 04/11 |
| REV | DETAILS OF AMENDMENTS   | APPROVED | DATE  |



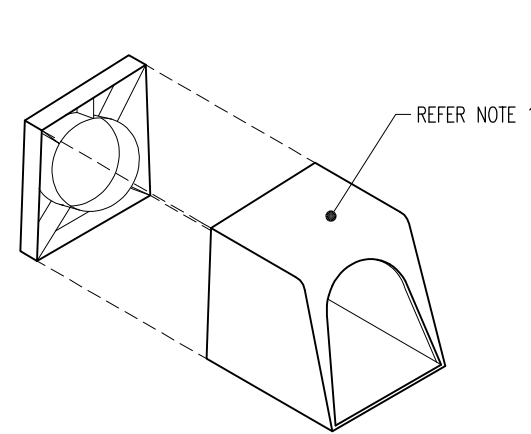
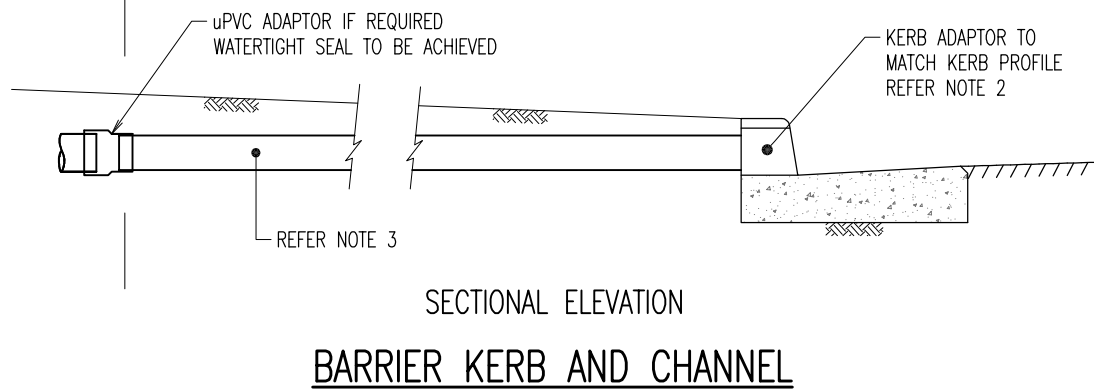
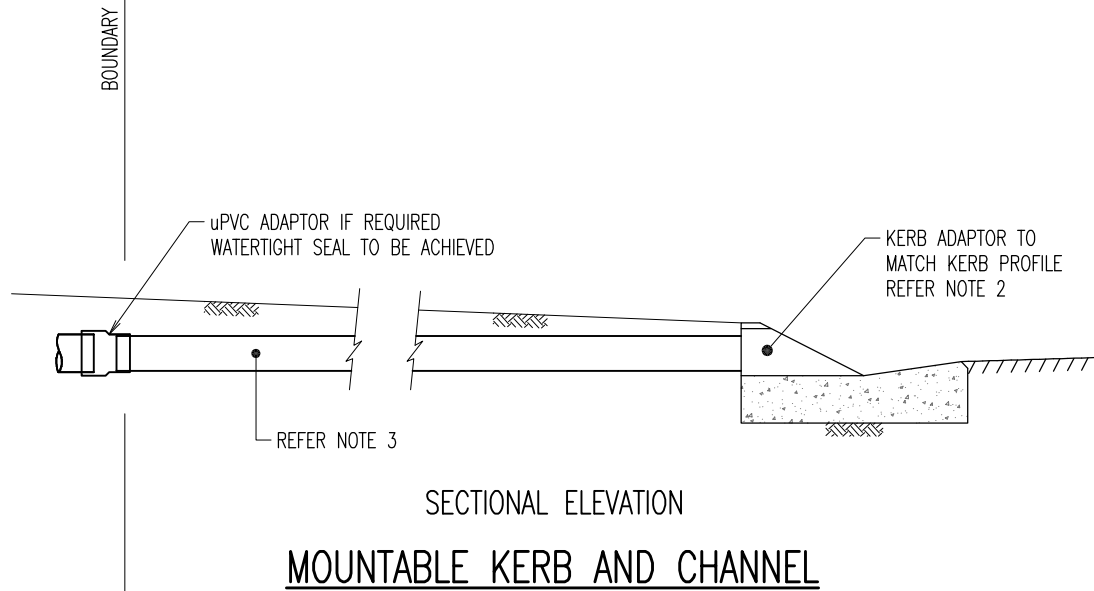
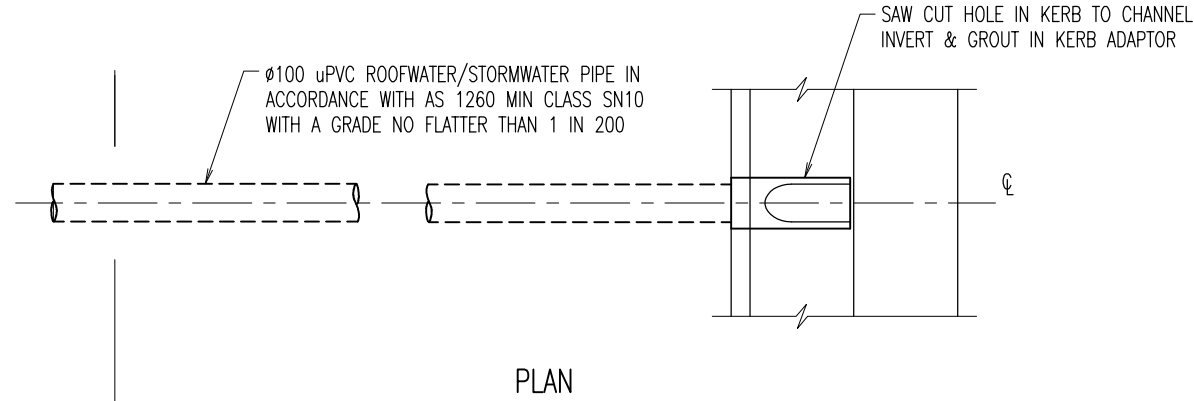
**KERB AND CHANNEL  
PROFILES AND DIMENSIONS**

|   |               |         |                  |  |      |       |
|---|---------------|---------|------------------|--|------|-------|
| DRAWN                                       | DESIGN OFFICE | CHECKED | CWB *            | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE | 08/16 |
|   |               |         | Darendra Naidu * |  |      |       |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |               |         |                  |  |      |       |

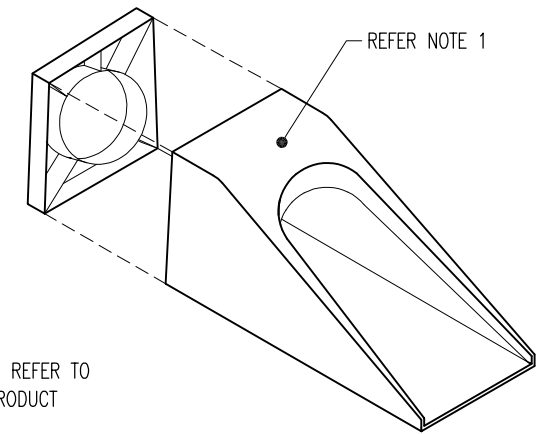
**STANDARD DRAWING**

SHEET 1 OF 1

STANDARD DRAWING No:  
**A3 FC-220-01**



**BARRIER KERB ADAPTOR**

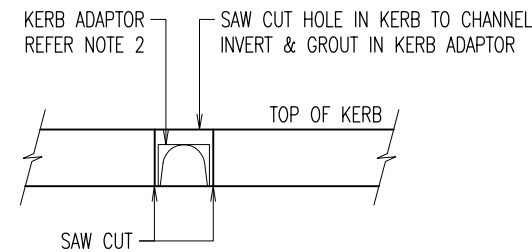


**MOUNTABLE KERB ADAPTOR**

NOTE:  
FOR SPECIFICATIONS REFER TO  
MANUFACTURER'S PRODUCT  
INFORMATION

**NOTES:**

1. STANDARD ROOFWATER OUTLET TO SUIT KERB AND CHANNEL PROFILE.
2. KERB ADAPTORS AND OTHER ANCILLARY COMPONENTS WITHIN THE VERGE ARE TO CONFORM TO AS/NZS 2179.1. KERB ADAPTORS ARE TO BE CAST IN MARINE GRADE ALUMINIUM.
3. ROOFWATER PIPE ACROSS VERGE TO BE LAID WITH THE MAXIMUM AVAILABLE COVER AND WITH A MINIMUM GRADE OF 1 IN 200 (5mm IN 1m).
4. PROVIDE SINGLE PIECE/MULTIPLE OUTLET ADAPTOR OR MIN 500mm CLEARANCE BETWEEN SINGLE OUTLETS WITH A MIN 300mm CLEARANCE FROM ALL OUTLETS TO DRIVEWAY TAPERS.
5. AT EXISTING KERB AND CHANNEL SAW CUT KERB AS NECESSARY. REINSTATE WITH GRADE N32 CONCRETE IN ACCORDANCE WITH AS 1379 AND AS 3600 TO CLEAN CONCRETE FACES.
6. AT NEW DEVELOPMENTS SEAL INLET TO ADAPTOR.
7. FOR COMMERCIAL AND INDUSTRIAL APPLICATIONS, PROVIDE SINGLE OR MULTIPLE HOT DIPPED GALVANISED RECTANGULAR HOLLOW SECTION (RHS) ACROSS FULL WIDTH OF VERGE. GENERALLY 125/150/200 x 75 x 4 RHS ARE SUITABLE AND SHALL BE LAID AT A GRADE NO FLATTER THAN 1 IN 200 AND CUT TO FINISH FLUSH WITH THE KERB PROFILE. ALL CUT ENDS ARE TO BE TREATED WITH A COLD GALVANISED TREATMENT AND THE KERB REINSTATED.
8. REINSTATE ANY CONSTRUCTED FOOTPATH TO MATCH ORIGINAL FINISH.
9. COUNCIL APPROVAL IS REQUIRED TO CONNECT TO STORMWATER INFRASTRUCTURE SUCH AS MANHOLES, GULLY PITS AND THE LIKE.
10. COUNCIL'S POLICY IS THAT PROVISION AND MAINTENANCE OF PRIVATE ROOFWATER/STORMWATER DRAINS ARE THE RESPONSIBILITY OF THE PROPERTY OWNER. THE PROPERTY OWNER IS ALSO RESPONSIBLE FOR VERGE RESTORATION TO ORIGINAL CONDITIONS AFTER CONSTRUCTION.
11. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.



**ELEVATION**

**EXISTING KERB AND CHANNEL**

|     |                                   |          |       |
|-----|-----------------------------------|----------|-------|
| F   |                                   |          |       |
| E   |                                   |          |       |
| D   |                                   |          |       |
| C   |                                   |          |       |
| B   | NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE                    |          | 04/11 |
| REV | DETAILS OF AMENDMENTS             | APPROVED | DATE  |

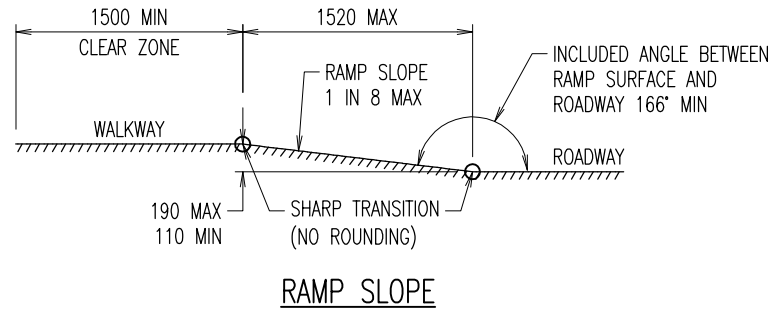


|  |         |  |       |
|--|---------|--|-------|
| <b>KERB AND CHANNEL<br/>DRAINAGE CONNECTIONS</b> |         |  |       |
| DRAWN  | CHECKED | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE  |
| DESIGN OFFICE                                    | CWB *   | Davendra Naidu *                             | 08/16 |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE      |         |  |       |

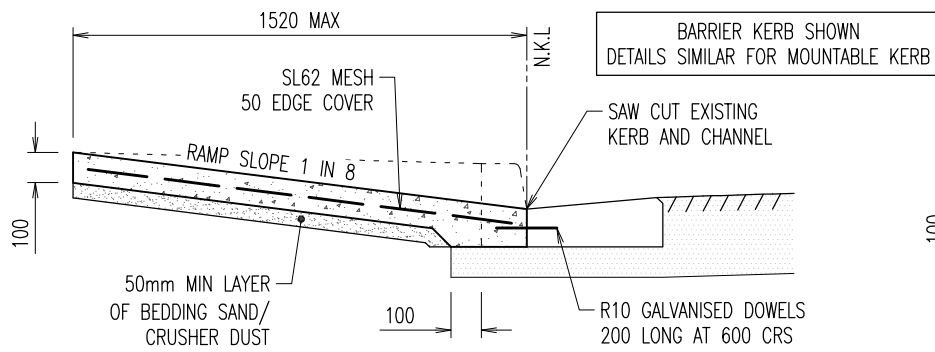
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| <b>STANDARD DRAWING</b> |           |    |   |
| SHEET                   | 1         | OF | 1 |
| STANDARD DRAWING No:    |           |    |   |
| A3                      | FC-220-02 |    |   |
| A                       | B         |    |   |



REFER FC-220-05 AND FC-220-06 FOR DETAILS ON TGSi APPLICATION AND GUIDELINES ON THEIR USE AND PLACEMENT

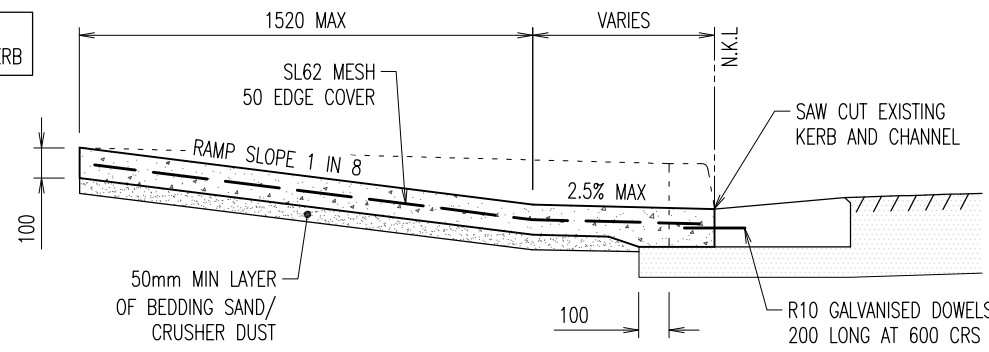


RAMP SLOPE



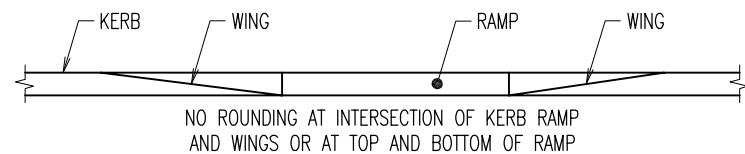
SECTION - KERB RAMP (ON STRAIGHT)

BARRIER TYPE KERB AND CHANNEL

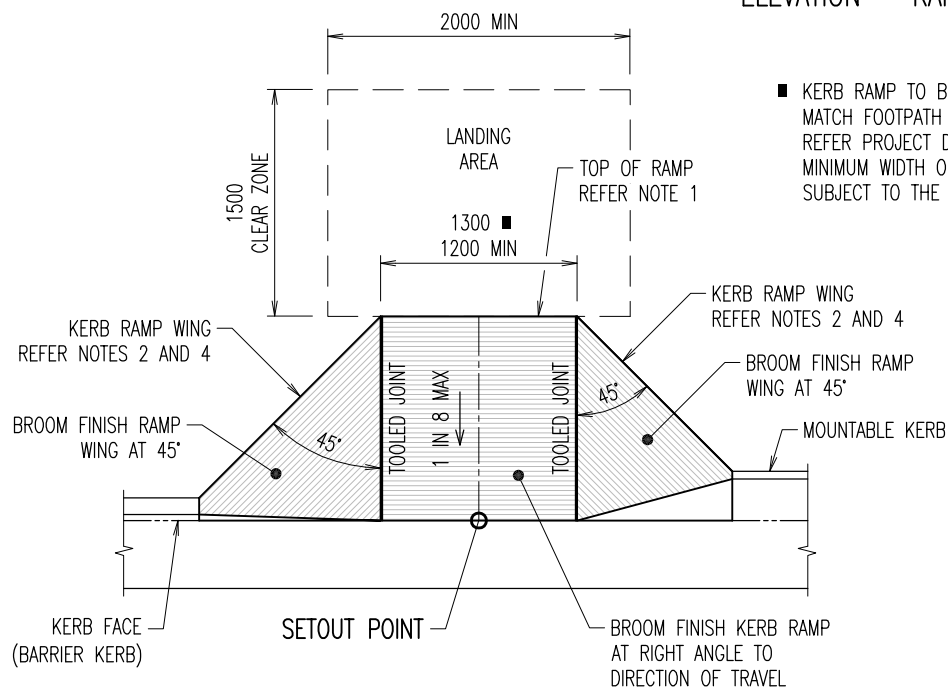


SECTION - KERB RAMP (ON CURVE)

BARRIER TYPE KERB AND CHANNEL

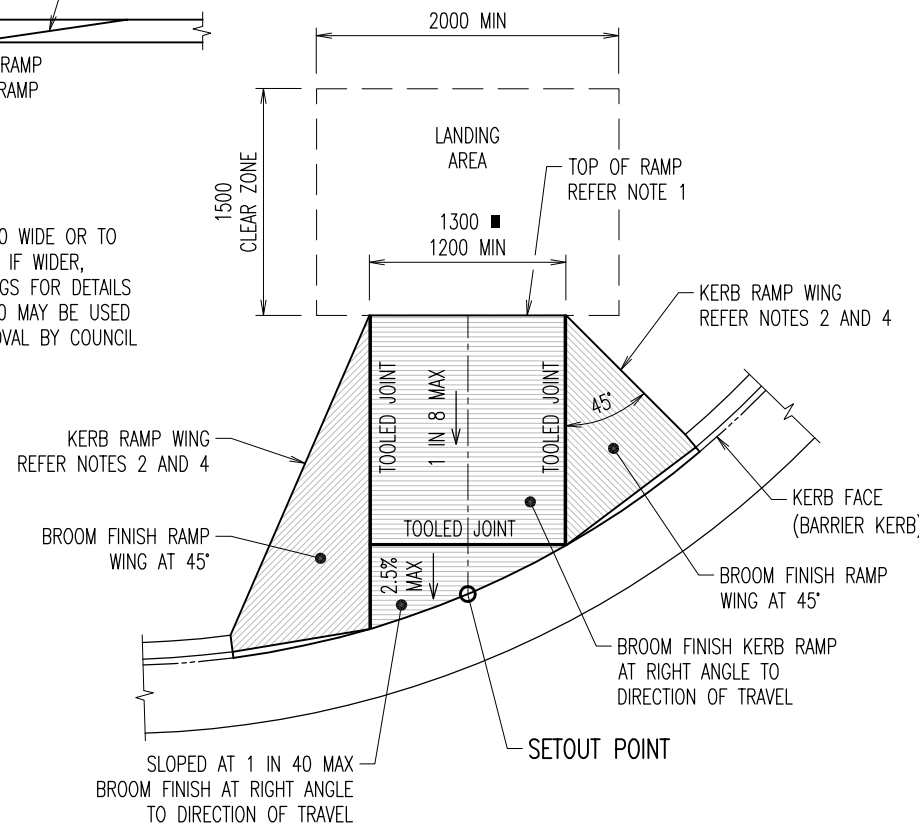


ELEVATION - RAMP



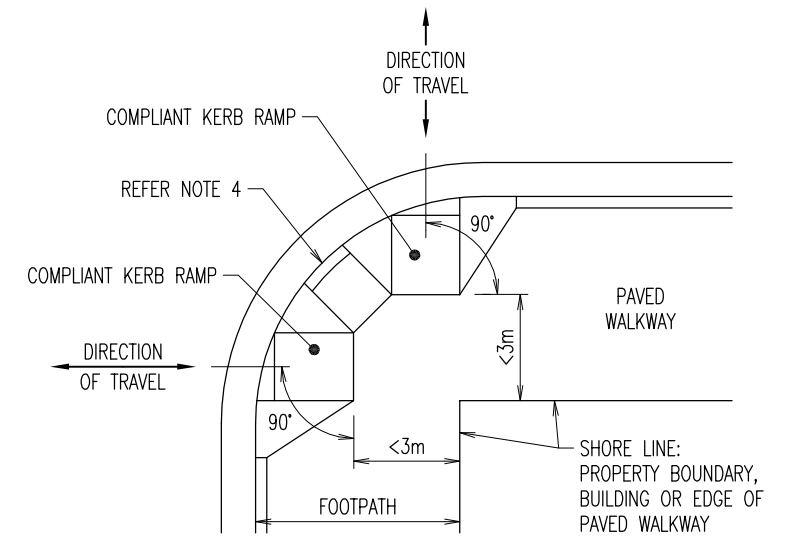
PLAN VIEW (ON STRAIGHT)

■ KERB RAMP TO BE 1300 WIDE OR TO MATCH FOOTPATH WIDTH IF WIDER, REFER PROJECT DRAWINGS FOR DETAILS MINIMUM WIDTH OF 1200 MAY BE USED SUBJECT TO THE APPROVAL BY COUNCIL



PLAN VIEW (ON CURVE)

COMPLIANT KERB RAMP



KERB RAMP LAYOUT TGSi NOT REQUIRED

NOTES:

A COMPLIANT KERB RAMP EXISTS WHERE ALL THE FOLLOWING ARE SATISFIED:

- TOP OF RAMP:** THERE SHALL BE A MINIMUM OBSTRUCTION FREE WHEELCHAIR TURNAROUND DISTANCE OF 1500 BEYOND THE TOP OF THE RAMP. THE SHARP TRANSITION AT THE TOP AND BOTTOM OF THE RAMP SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL.
- RAMP:** MAXIMUM RAMP SLOPE FOR WHEELCHAIR ACCESS SHALL BE 1 IN 8. A SHARP TRANSITION (NO ROUNDING) IS TO BE MAINTAINED AT THE INTERSECTION OF GRADED PLANE SURFACES (TOP AND BOTTOM OF RAMP AND INTERSECTION OF RAMP AND WINGS). THE INTERSECTION OF THE RAMP AND WINGS SHOULD BE A TOOLED JOINT.
- RAMP ALIGNMENT:** RAMPS SHALL BE ALIGNED PARALLEL TO THE PEDESTRIAN DIRECTION OF TRAVEL. RAMPS ON BOTH SIDES OF THE CARRIAGEWAY SHALL BE ALIGNED WITH ONE ANOTHER AND THE DIRECTION OF TRAVEL.
- KERB RAMP WINGS:** THE REQUIRED WING ANGLE IS 45°. SUBJECT TO THE APPROVAL BY COUNCIL, WINGS MAY BE ANGLED AT LESS THAN 45° IF THE WING IS REQUIRED TO BE CLEAR OF TRAFFIC SIGNALS HARDWARE, OTHER WINGS OR UTILITY PITS/MANHOLES. WING ANGLE MAY ALSO BE REDUCED AT OBTUSE ANGLED INTERSECTIONS. WING WIDTHS SHALL BE BETWEEN 600mm AND 1500mm MAX. A SLOPE NO STEEPER THAN 1 IN 4 IS TO BE MAINTAINED ON THE WINGS. AT LEAST A 1 METRE KERB UPSTAND IS DESIRABLE BETWEEN ADJACENT KERB RAMP WINGS ON AN INTERSECTION CORNER.
- SURFACE OF RAMP AND SLOPING SIDES SHALL BE SLIP RESISTANT AS SPECIFIED IN AS 1428.1.

TACTILE GROUND SURFACE INDICATORS (TGSi):

TGSi (TACTILE GROUND SURFACE INDICATORS) ARE NOT REQUIRED AT A CROSSING POINT IF:

- A COMPLIANT KERB RAMP IS INSTALLED; AND
- THE TOP OF THE RAMP IS WITHIN 3 METRES OF THE END OF THE SHORE LINE (PROPERTY BOUNDARY, BUILDING LINE OR EDGE OF PAVED WALKWAY); AND
- THE RAMP IS IN DIRECT CONTINUOUS ACCESSIBLE PATH OF TRAVEL FROM THE SHORE LINE (PROPERTY BOUNDARY, BUILDING LINE OR EDGE OF PAVED WALKWAY) ORIENTATED IN TERMS OF NORMALLY AVAILABLE CUES.

IN THESE SITUATIONS, A COLOUR TREATMENT OF THE FULL WIDTH AND LENGTH OF THE FACE OF THE KERB RAMP MAY ASSIST PEDESTRIANS WITH A VISION IMPAIRMENT.

- WARNING TGSi SHALL BE INSTALLED ON OR ADJACENT TO DESIGNATED CROSSING POINTS TO WARN PEDESTRIANS WITH A VISION IMPAIRMENT OF THE IMPENDING HAZARD (TRAFFIC) AND DIRECTIONAL TGSi SHALL BE INSTALLED TO PROVIDE DIRECTIONAL GUIDANCE IN THE ABSENCE OF DETECTABLE CUES.
- REFER FCRC STD DRG'S FC-220-05 AND FC-220-06 FOR FULL DETAILS OF TGSi REQUIREMENTS.

GENERAL:

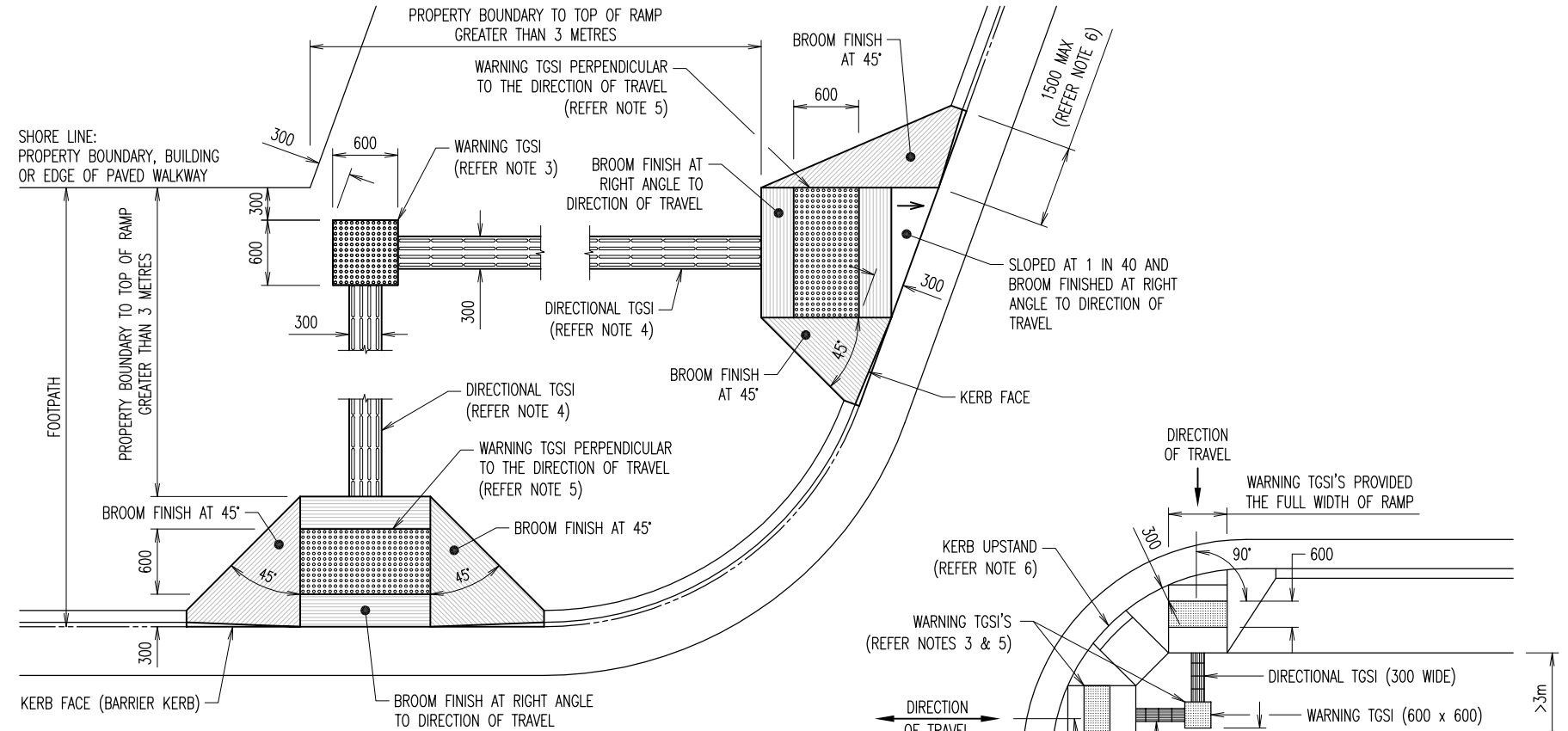
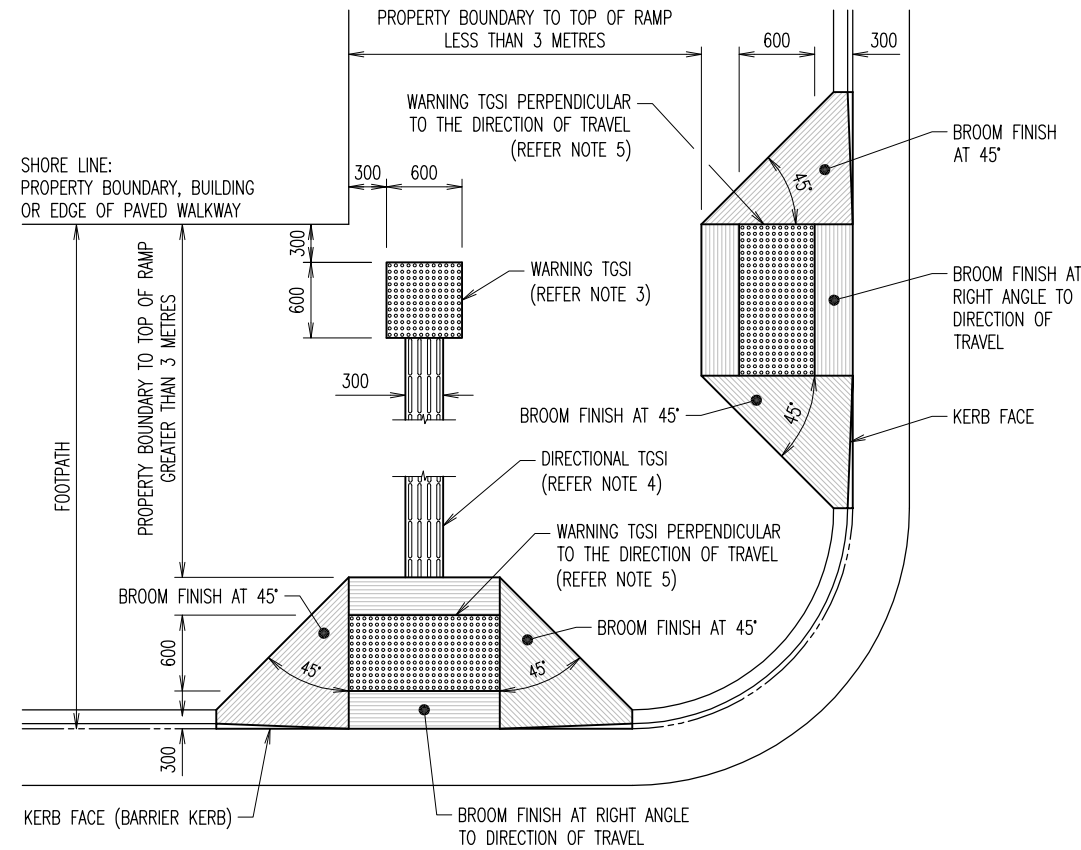
- CONCRETE TO BE GRADE N32/10 IN ACCORDANCE WITH AS 1379 AND AS 3600.
- CONCRETE TO BE BROOM FINISHED FOR SLIP RESISTANCE TO AS 4586.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

|     |  |          |       |
|-----|--|----------|-------|
| F   |  |          |       |
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| C   |  |          |       |
| B   | LANDING AREA ADDED, KERB RAMP WIDTH, NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE   |          | 04/11 |
| REV | DETAILS OF AMENDMENTS  | APPROVED | DATE  |



|  |               |   |       |
|--|---------------|---|-------|
| KERB RAMP<br>RAMPED PEDESTRIAN CROSSINGS     |               |   |       |
| DRAWN  | DESIGN OFFICE | CHECKED                                     | CWB * |
| APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE          |   | 08/16 |
| Davendra Naidu *                             |               | * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |       |

|                      |           |    |   |
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| STANDARD DRAWING     |           |    |   |
| SHEET                | 1         | OF | 1 |
| STANDARD DRAWING No: |           |    |   |
| A3                   | FC-220-04 |    |   |
| A                    | B         |    |   |



PLAN VIEW

**COMPLIANT KERB RAMPS AND TGSI'S APPLICATION EXAMPLES**

**GUIDELINES:**

GUIDELINES FOR THE INSTALLATION OF TACTILE GROUND SURFACE INDICATORS (TGSi) FOR PEDESTRIANS WITH A VISION IMPAIRMENT AT RAMPED KERB CROSSINGS (KERB RAMPS):

- A. WARNING AND DIRECTIONAL TGSi SHALL CONFORM WITH AS/NZS 1428.4.1 DESIGN FOR ACCESS AND MOBILITY - PART 4: TACTILE INDICATORS.
- B. TACTILE INDICATORS SHALL HAVE 30% MIN LUMINANCE CONTRAST TO THE SURROUNDING SURFACES, AND BE OF CONTRASTING COLOUR, PREFERABLY BLACK OR SAFETY YELLOW (GOLDEN YELLOW Y14 OR SUNFLOWER Y15 - AS 2700). LUMINANCE CONTRAST SHALL BE ACHIEVED IN ALL CONDITIONS (I.E. WET/DRY, DAY/NIGHT). TACTILE INDICATORS AND THEIR BASE SHALL BE SLIP RESISTANT. REFER AS/NZS 1428.4.1 FOR LUMINANCE CONTRAST AND SLIP RESISTANCE REQUIREMENTS.
- C. WARNING TGSi SHALL BE INSTALLED (DIMENSIONS IN BRACKETS ARE WARNING TGSi DIMENSIONS):
  - (a) TO WARN PEDESTRIANS WITH A VISION IMPAIRMENT OF HAZARDS.
  - (b) 300 FROM ANY HAZARD E.G. ROADWAY (600 DEEP x FULL WIDTH OF KERB RAMP, PATH OF TRAVEL OR CUT THROUGH MEDIAN/ISLAND).
  - (c) PERPENDICULAR TO THE DIRECTION OF TRAVEL.
  - (d) AT THE INTERSECTION OF 2 (OR MORE) DIRECTIONAL INDICATOR STRIPS TO INDICATE A CHANGE OF DIRECTION (600 x 600).
  - (e) WHEN KERB RAMP GRADIENT IS SHALLOWER THAN 1 IN 8
- D. DIRECTIONAL TGSi SHALL BE INSTALLED (DIMENSIONS IN BRACKETS ARE DIRECTIONAL TGSi DIMENSIONS):
  - (a) TO GIVE DIRECTIONAL GUIDANCE TO PEDESTRIANS WITH A VISION IMPAIRMENT IN THE ABSENCE OF NORMALLY AVAILABLE CUES.
  - (b) ALONG THE CENTERLINE OF THE DIRECTION OF TRAVEL.
  - (c) AT MID-BLOCK KERB RAMPS OR STREET CROSSINGS TO DIRECT PEDESTRIANS WITH A VISION IMPAIRMENT TO THE CROSSING POINT (600 x PROPERTY BOUNDARY TO TOP OF KERB RAMP).
  - (d) BETWEEN A WARNING TGSi INDICATING A CHANGE/CHOICE OF DIRECTION AND THE TOP OF KERB RAMPS WHERE 2 PEDESTRIAN CROSSINGS EXIST ON A CORNER OF AN INTERSECTION.

- E. THE INSTALLATION OF TGSi SHOULD BE PRIORITISED AS FOLLOWS:
  - (a) NO TGSi REQUIRED WHEN ALL CRITERIA SPECIFIED BY NOTE G ARE SATISFIED;
  - (b) MULTIPLE ENTRY KERB RAMP TREATMENT INSTALLED (DUAL ENTRY OR DUAL SEPARATE). MULTIPLE ENTRY KERB RAMPS MUST ONLY BE INSTALLED WHEN THERE IS SUFFICIENT SPACE ON BOTH SIDES OF THE CROSSING, REFER AS/NZS 1428.4.1 FOR DETAILS OF MULTIPLE ENTRY TREATMENTS;
  - (c) WARNING TGSi ON THE FACE OF A COMPLIANT KERB RAMP.
- F. IF A WARNING TGSi TREATMENT IS INSTALLED, A WARNING TGSi TREATMENT MUST BE INSTALLED ON THE OTHER SIDE OF THE CROSSING.
- G. TGSi ARE NOT REQUIRED AT A CROSSING POINT IF:
  - (a) A COMPLIANT KERB RAMP IS INSTALLED (REFER FCRC STD DRG FC-220-04); AND
  - (b) THE TOP OF RAMP IS WITHIN 3 METRES OF THE END OF THE SHORE LINE (PROPERTY BOUNDARY, BUILDING LINE OR EDGE OF PAVED WALKWAY); AND
  - (c) THE RAMP IS IN DIRECT CONTINUOUS ACCESSIBLE PATH OF TRAVEL FROM THE SHORE LINE (PROPERTY LINE, BUILDING LINE OR PAVED WALKWAY) ORIENTATED IN TERMS OF NORMALLY AVAILABLE CUES.
- IF TGSi'S ARE NOT REQUIRED, A COLOUR TREATMENT OF THE FULL WIDTH AND LENGTH OF THE FACE OF THE RAMP MAY ASSIST PEDESTRIANS WITH A VISION IMPAIRMENT.
- H. EXAMPLES OF NORMALLY AVAILABLE CUES THAT AID PEOPLE WITH A VISION IMPAIRMENT ARE:
  - (a) SHARP TRANSITIONS AT CHANGE OF GRADE I.E. TOP AND BOTTOM OF A 1 IN 8 KERB RAMP; CHANGE IN GRADE BETWEEN RAMP AND RAMP WINGS.
  - (b) AUDIO TACTILE PUSH BUTTONS, REFER MUTCD PART 10 AND 14 FOR LOCATION AND ORIENTATION OF PEDESTRIAN PUSH BUTTONS. NOTE, AN AUDIO TACTILE PUSH BUTTON ALONE IS AN INSUFFICIENT CUE FOR A PEDESTRIAN WITH A VISION IMPAIRMENT TO FIND THE CROSSING POINT.
  - (c) A DETECTABLE EDGE OF A PAVED WALKWAY OR CUT THROUGH ISLAND.
- I. REFER FCRC STD DRG FC-220-04 FOR DETAILS OF COMPLIANT RAMPS.

**COMPLIANT KERB RAMP ALIGNMENT - INCLUDING TGSi'S**

**NOTES:**

TACTILE GROUND SURFACE INDICATORS (TGSi) - APPLICATION EXAMPLES:

1. FOR DETAILS OF COMPLIANT KERB RAMPS REFER TO FCRC STD DRG FC-220-04.
2. FOR DETAILS OF WARNING AND DIRECTIONAL TGSi, REFER AS/NZS 1428.4.1.
3. WARNING INDICATORS REQUIRED ADJACENT TO THE SHORE LINE (PROPERTY BOUNDARY) TO INDICATE CHANGE/CHOICE OF DIRECTION.
4. DIRECTIONAL INDICATORS ARE REQUIRED FROM THE WARNING INDICATOR PAD TO THE TOP OF THE KERB RAMPS.
5. WARNING INDICATORS ARE REQUIRED ON THE KERB RAMP TO WARN OF THE HAZARD (THE ROAD/TRAFFIC). CAN BE OMITTED IF THE KERB RAMP IS IN ACCORDANCE WITH AS 1428.1 & < 3 METRES FROM THE BUILDING LINE.
6. THE REQUIRED KERB RAMP WING ANGLE IS 45°. SUBJECT TO THE APPROVAL BY COUNCIL, WINGS MAY BE ANGLED AT LESS THAN 45° IF THE WING IS REQUIRED TO BE CLEAR OF TRAFFIC SIGNALS HARDWARE, OTHER KERB RAMPS OR UTILITY PITS/MANHOLES. WING ANGLE MAY ALSO BE REDUCED AT OBTUSE ANGLED INTERSECTIONS. WING WIDTHS SHALL BE BETWEEN 600mm AND 1500mm MAX. A SLOPE NO STEEPER THAN 1 IN 4 IS TO BE MAINTAINED ON THE WINGS. A 1 METRE KERB UPSTAND IS DESIRABLE BETWEEN ADJACENT KERB RAMP WINGS ON AN INTERSECTION CORNER.
7. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

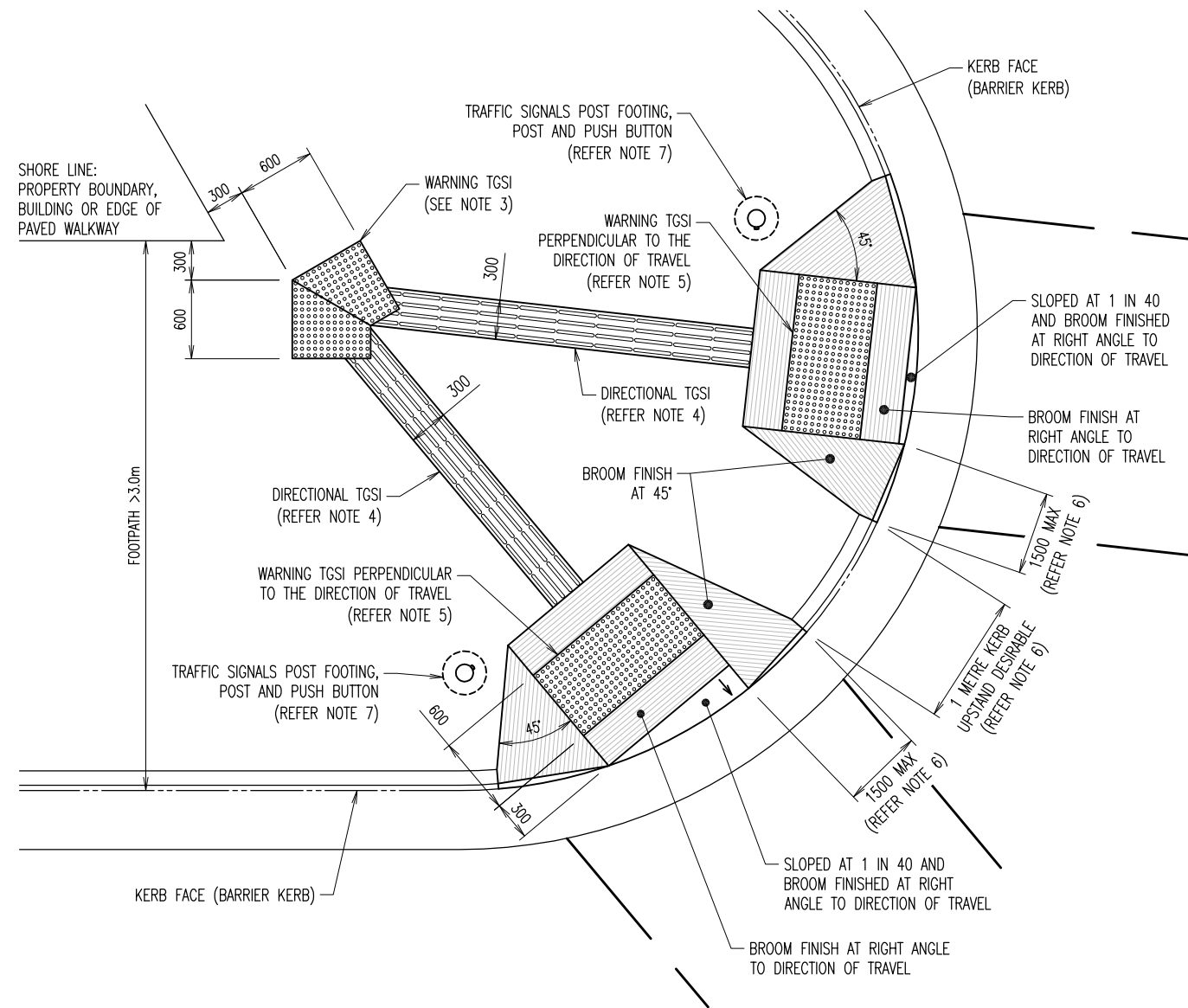
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| F   |   |          |       |
| E   |   |          |       |
| D   |   |          |       |
| C   |   |          |       |
| B   | COMPLIANT KERB RAMP DETAIL ADDED, NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE  |          | 01/11 |
| REV | DETAILS OF AMENDMENTS   | APPROVED | DATE  |



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|---|---------|--|-------|
| INSTALLATION OF TGSi'S ON RAMPED KERB CROSSINGS |         |  |       |
| DRAWN   | CHECKED | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE  |
| DESIGN OFFICE                                   | CWB *   | Davendra Naidu *                             | 08/16 |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE     |         |  |       |

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| STANDARD DRAWING     |           |    |   |
| SHEET                | 1         | OF | 1 |
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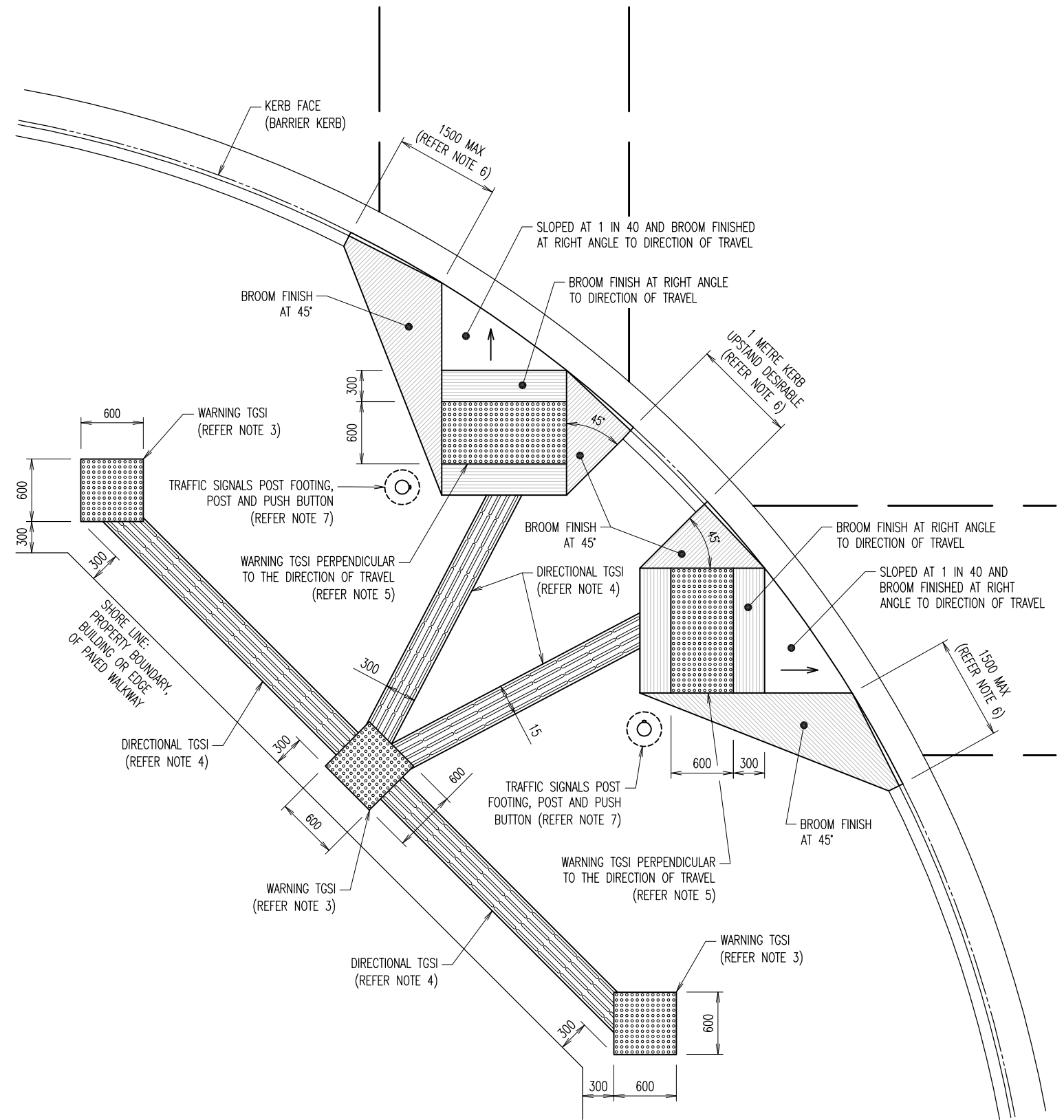
PLAN VIEW

**COMPLIANT KERB RAMPS AND TGSi APPLICATION EXAMPLE**

**NOTES:**

TACTILE GROUND SURFACE INDICATORS (TGSi) – APPLICATION EXAMPLES:

- FOR DETAILS OF COMPLIANT KERB RAMPS REFER TO FCRC STD DRG FC-220-04.
- FOR DETAILS OF WARNING AND DIRECTIONAL TGSi, REFER AS/NZS 1428.4.1.
- WARNING INDICATORS REQUIRED ADJACENT TO THE SHORE LINE (PROPERTY BOUNDARY) TO INDICATE CHANGE/CHOICE OF DIRECTION.
- DIRECTIONAL INDICATORS ARE REQUIRED FROM THE WARNING INDICATOR PAD TO THE TOP OF THE KERB RAMPS.
- WARNING INDICATORS ARE REQUIRED ON THE KERB RAMP TO WARN OF THE HAZARD (THE ROAD/TRAFFIC). CAN BE OMITTED IF THE KERB RAMP IS IN ACCORDANCE WITH AS 1428.1 & < 3 METRES FROM THE BUILDING LINE.
- THE REQUIRED KERB RAMP WING ANGLE IS 45°. SUBJECT TO THE APPROVAL BY COUNCIL, WINGS MAY BE ANGLED AT LESS THAN 45° IF THE WING IS REQUIRED TO BE CLEAR OF TRAFFIC SIGNALS HARDWARE, OTHER KERB RAMPS OR UTILITY PITS/MANHOLES. WING ANGLE MAY ALSO BE REDUCED AT OBTUSE ANGLED INTERSECTIONS. WING WIDTHS SHALL BE BETWEEN 600mm AND 1500mm MAX. A SLOPE NO STEEPER THAN 1 IN 4 IS TO BE MAINTAINED ON THE WINGS. A 1 METRE KERB UPSTAND IS DESIRABLE BETWEEN ADJACENT KERB RAMP WINGS ON AN INTERSECTION CORNER.
- FOR LOCATION OF TRAFFIC SIGNALS POSTS, AND LOCATION AND ORIENTATION OF PEDESTRIAN PUSH BUTTON ASSEMBLIES, REFER TO MUTCD PART 14. THE PUSH BUTTON POST SHOULD BE LOCATED ON A LEVEL SURFACE AND THE PUSH BUTTON ASSEMBLY LOCATED WITHIN A ZONE OF COMMON REACH (REFER AS 1428.2 I.E. NO MORE THAN 400mm OUTSIDE THE EDGE OF A PATHWAY OR KERB RAMP).
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.



PLAN VIEW

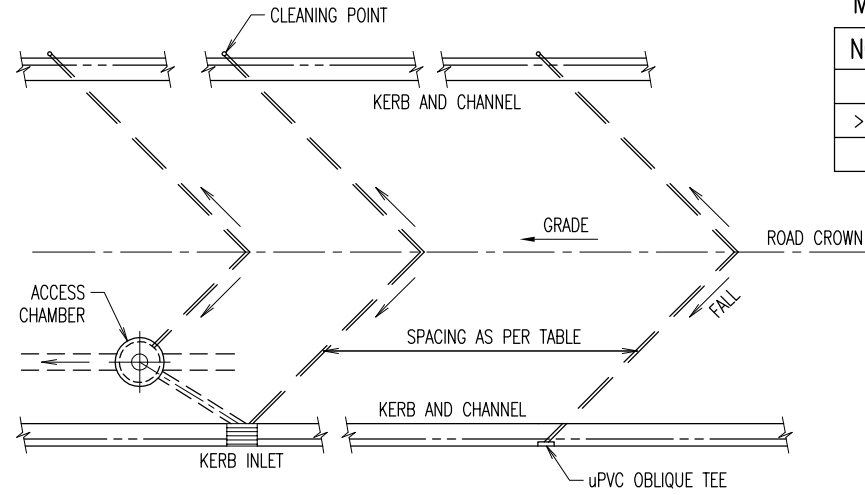
**COMPLIANT KERB RAMPS AND TGSi APPLICATION EXAMPLE**

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| D   |                                   |          |       |
| C   |                                   |          |       |
| B   | NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE                    |          | 01/11 |
| REV | DETAILS OF AMENDMENTS             | APPROVED | DATE  |



|  |         |  |       |
|--|---------|--|-------|
| INSTALLATION OF TGSi'S ON RAMPED KERB CROSSINGS APPLICATION EXAMPLES |         |  |       |
| DRAWN  | CHECKED | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE  |
| DESIGN OFFICE  | CWB *   | Davendra Naidu *                             | 08/16 |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE                          |         |  |       |

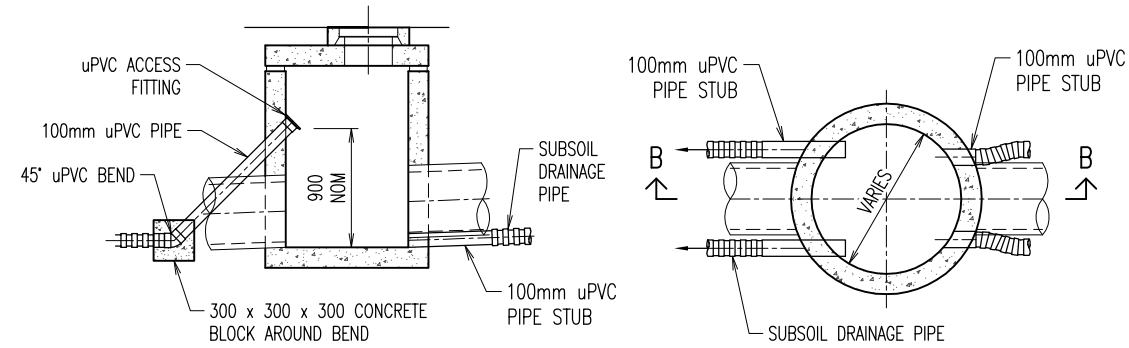
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| A3                   | FC-220-06 |    |   |
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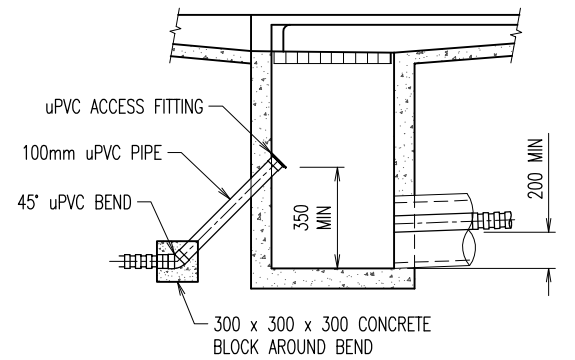
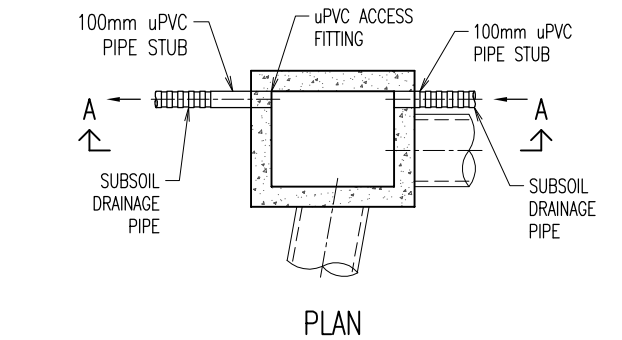
**TYPICAL MITRE DRAIN LOCATIONS**

**MITRE DRAIN SPACING**

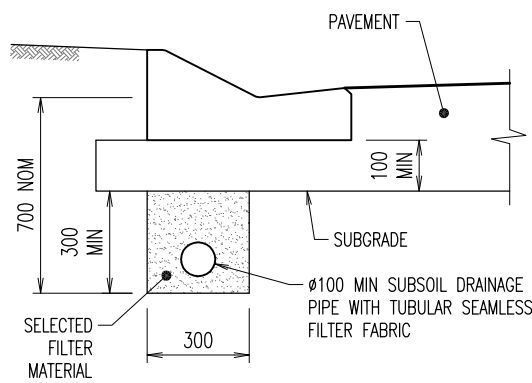
| NOM GRADE    | SPACING     |
|--------------|-------------|
| < 7.5%       | 40m CENTRES |
| > 7.5% < 10% | 30m CENTRES |
| > 10%        | 20m CENTRES |



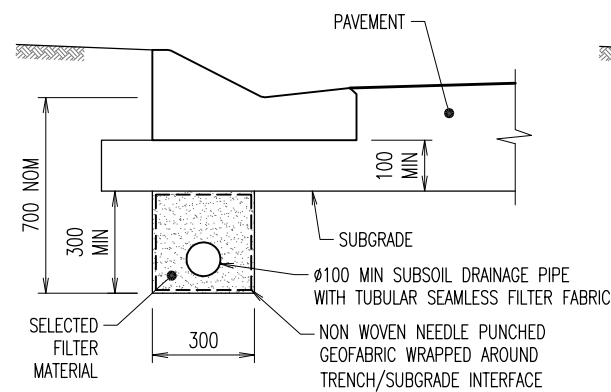
**SECTION B-B**  
**CONNECTION DETAIL - ACCESS CHAMBER**



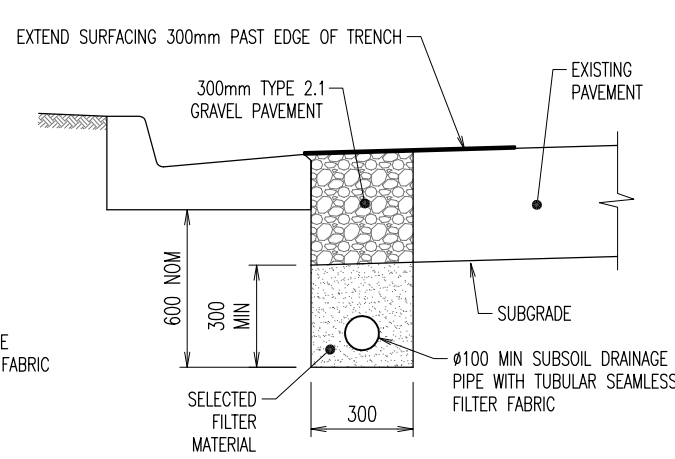
**SECTION A-A**  
**CONNECTION DETAIL - KERB INLET**



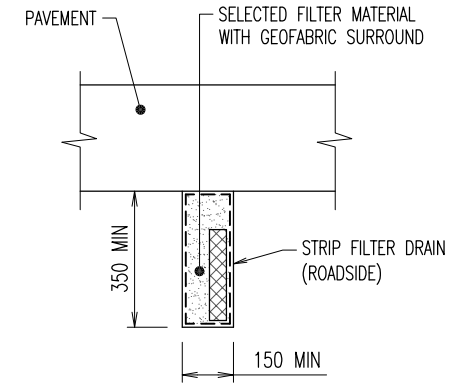
**SUBSOIL DRAIN DETAIL**  
**TYPE 1**



**SUBSOIL DRAIN DETAIL**  
**TYPE 2**



**SUBSOIL DRAIN DETAIL**  
**TYPE 3**

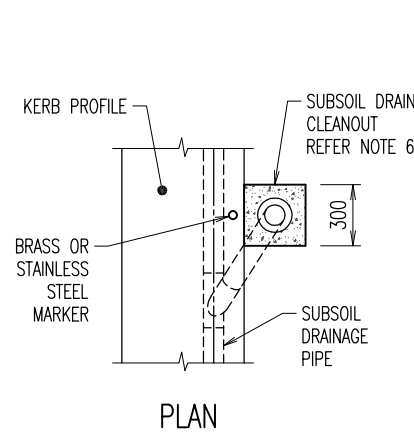


**SUBSOIL DRAIN ALTERNATIVE**  
**STRIP FILTER DRAIN**  
MAY BE SUBSTITUTED FOR Ø100 SUBSOIL DRAINAGE PIPE IN TYPES 1, 2 AND 3

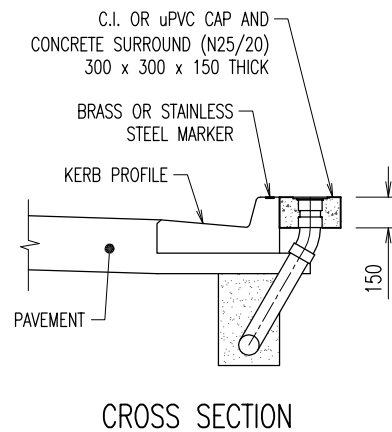
**FILTER ON SLOTTED PIPE**

| AS SIEVE SIZE | % BY WT. PASSING |
|---------------|------------------|
| 13.20 mm      | 100              |
| 9.50 mm       | 85 - 100         |
| 6.70 mm       | -                |
| 4.75 mm       | 0 - 20           |
| 2.36 mm       | 0 - 5            |
| 75 µm         | 0 - 2            |

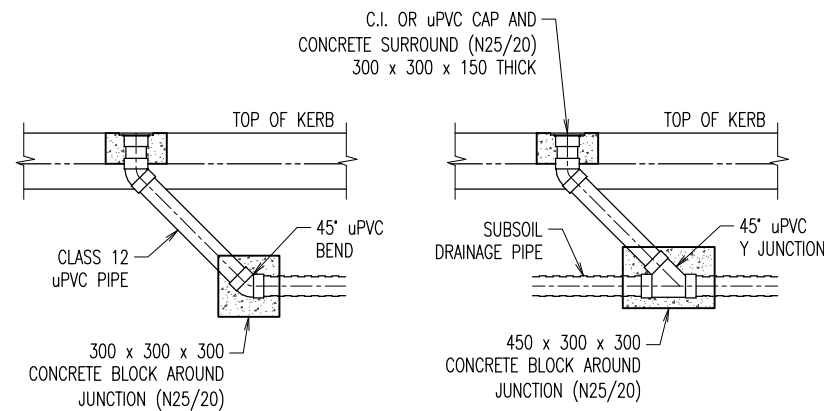
**FILTER MATERIAL GRADING**  
UNLESS OTHERWISE SPECIFIED



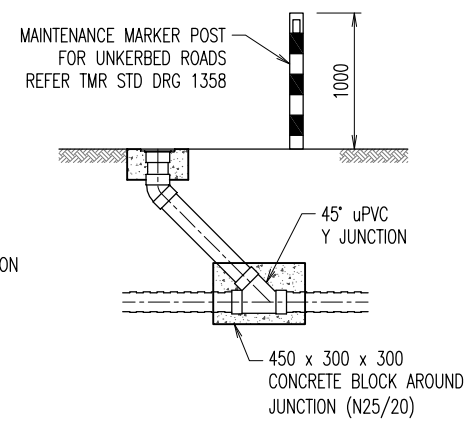
**PLAN**



**CROSS SECTION**



**ELEVATION - KERBED ROADS**



**ELEVATION - UNKERBED ROADS**

**SUBSOIL DRAIN AND CLEANOUT**

FOR CLEANOUT & OUTLET DETAILS TO CULVERTS AND RURAL ROADS REFER TMR STD DRG 1116

**NOTES:**

- ALL SUBSOIL DRAINS TO BE CLASS 1000 POLYETHYLENE CORRUGATED SLOTTED PIPE TO AS 2439.1.
- ALL OTHER PIPES AND FITTINGS TO BE CLASS 12 uPVC TO AS 1254.
- MINIMUM GRADE OF SUBSOIL DRAIN IS TO BE 0.5%.
- SELECTED FILTER MATERIAL TO BE CLEAN AGGREGATE GRADED 10 TO 20.
- FILTER MATERIALS NOT COMPLYING WITH THE SPECIFIED GRADING REQUIREMENTS MAY BE USED WHEN APPROVED BY COUNCIL. A GEOFABRIC MAY BE USED TO LINE TRENCHES WHERE APPROVED BY COUNCIL.
- SUBSOIL DRAIN CLEANOUTS TO BE CONSTRUCTED AT HEAD OF SUBSOIL DRAIN WITH CLEANING JUNCTIONS AT MAXIMUM SPACINGS OF 60m FOR PIPE TYPE DRAINS AND 50m FOR STRIP FILTER TYPE DRAINS. CLEANOUTS SHALL BE SUITABLY MARKED FOR EASY IDENTIFICATION BY MAINTENANCE PERSONNEL.
- WHERE SUBSOIL DRAINS ARE DISCHARGED INTO A GULLY PIT, THE OUTLET OF THE SUBSOIL DRAIN SHALL BE LOCATED A MIN 200mm ABOVE THE INVERT LEVEL OF THE GULLY PIT UNLESS OTHERWISE APPROVED BY COUNCIL. THE SUBSOIL DRAIN OUTLETS SHALL BE PROVIDED WITH PEST-PROOF FLAPS.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

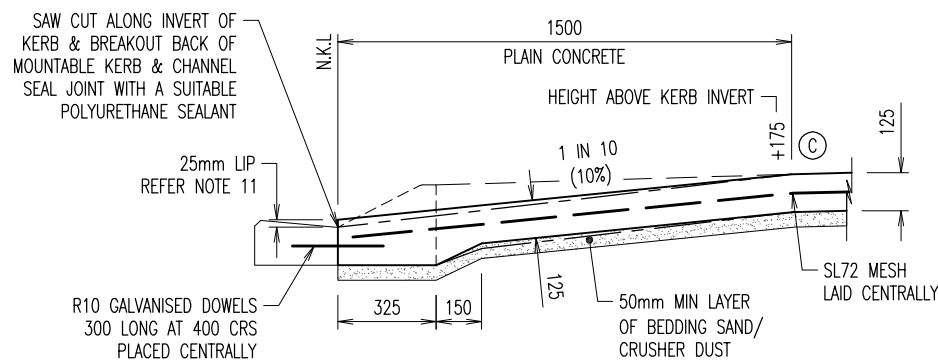
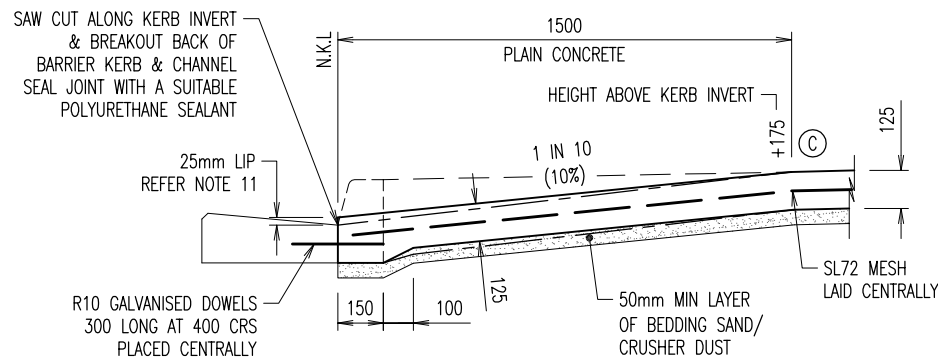
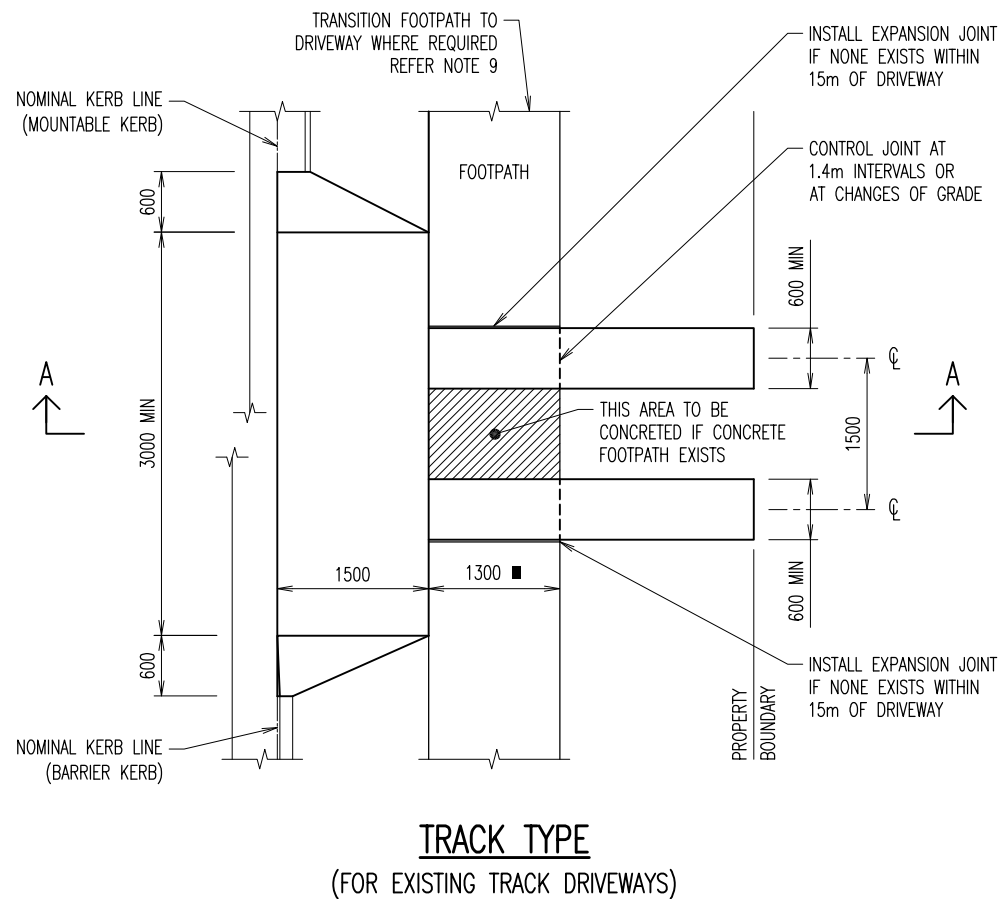
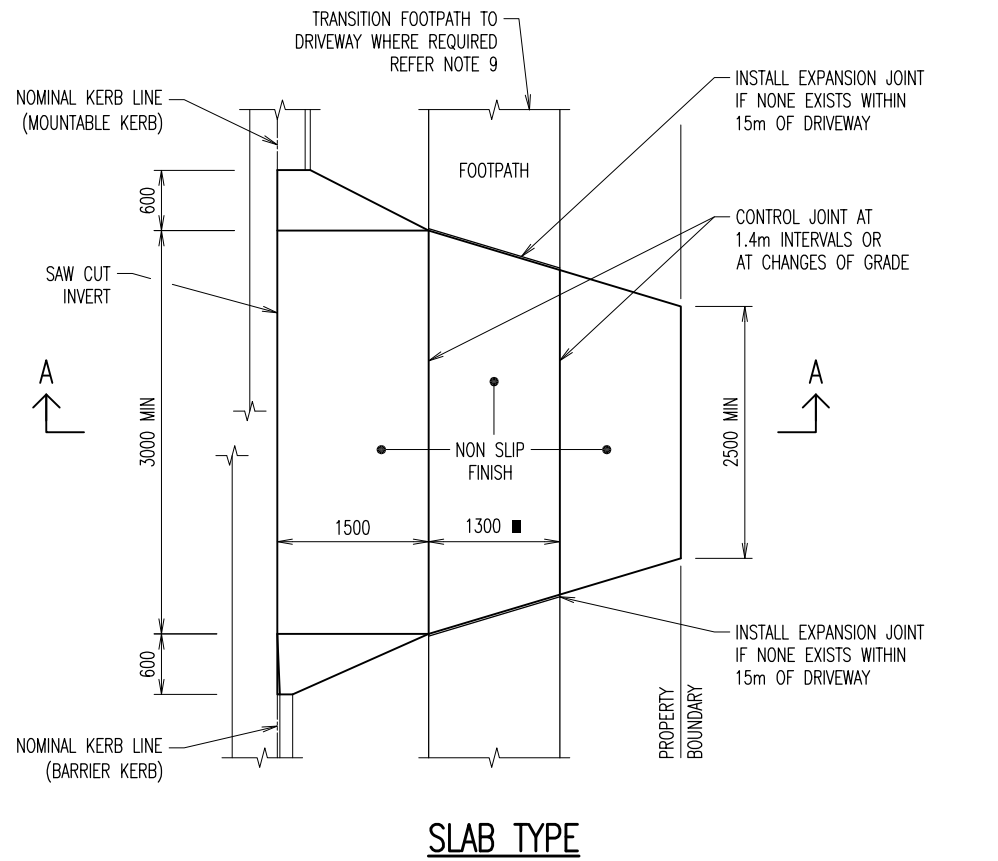
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| F   |   |          |       |
| E   |   |          |       |
| D   |   |          |       |
| C   |   |          |       |
| B   | STRIP DRAIN ADDED, MITRE DRAIN, CONNECTIONS, CLEANOUTS, NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE  |          | 04/11 |



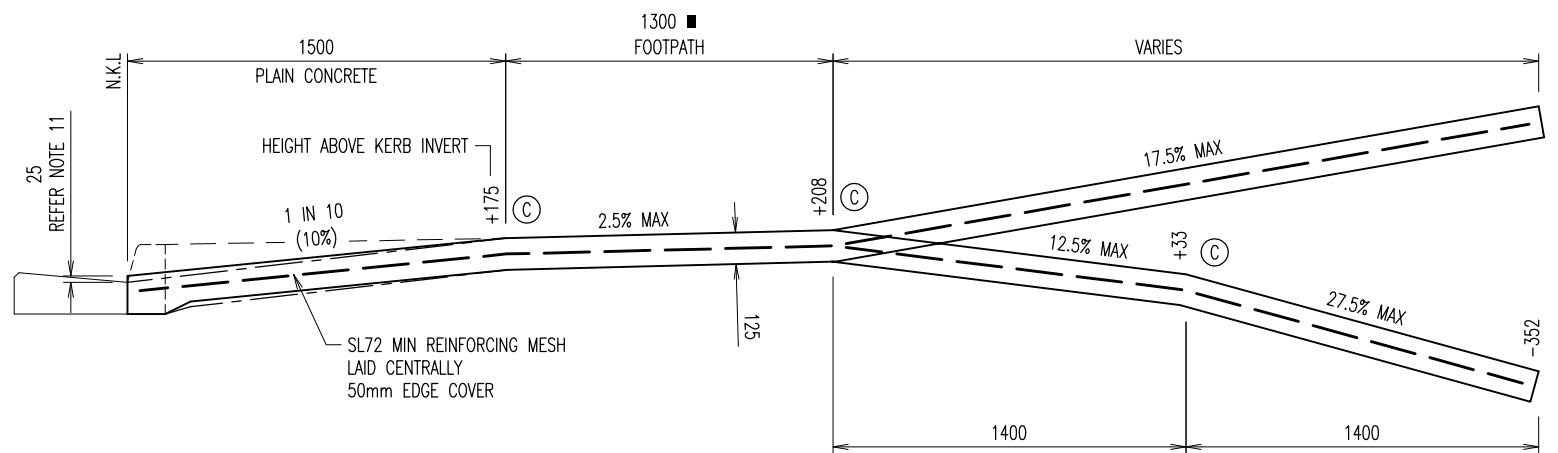
| SUBSOIL DRAINAGE                             |               |         |       |
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| APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES |               | DATE    |       |
| Darendra Naidu *                             |               | 08/16   |       |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE  |               |         |       |

| STANDARD DRAWING     |           |
|----------------------|-----------|
| SHEET                | 1 OF 1    |
| STANDARD DRAWING No: |           |
| A3                   | FC-220-08 |





**SECTION A-A**



**SECTION A-A**

**NOTES:**

1. THIS CROSSING IS NOT DESIGNED FOR COMMERCIAL VEHICLES. FOR COMMERCIAL/ INDUSTRIAL CROSSINGS REFER FCRC STD DRG FC-230-02.
2. DRIVEWAY CONFIGURATION AND DIMENSIONS ARE CONSISTENT WITH STANDARD ROAD CROSSFALLS OF 3%. IF ROAD CROSSFALL EXCEEDS 3%, DRIVEWAY PROFILE MAY NEED TO BE REDESIGNED TO ENSURE SATISFACTORY CLEARANCE FOR VEHICLES. DRIVEWAY PROFILE MAY BE VARIED TO SUIT DIFFICULT OR EXISTING CONDITIONS WITH APPROVAL BY COUNCIL.
3. APPROVED MATERIALS FOR CONSTRUCTION :- CONCRETE, PAVING BLOCKS ON MINIMUM 150mm COMPACTED ROAD BASE OR ASPHALT ON MINIMUM 200mm COMPACTED ROAD BASE, REFER PROJECT DRAWINGS.
4. CONCRETE TO BE GRADE N32 IN ACCORDANCE WITH AS 1379 AND AS 3600.
5. REINFORCING MESH TO AS/NZS 4671, LAID CENTRALLY WITH 50mm EDGE COVER, LAP FABRIC 250mm.
6. CONCRETE TO BE BROOM FINISHED FOR SLIP RESISTANCE TO AS 4586.
7. FINISHES OTHER THAN BROOM FINISHED CONCRETE TO BE APPROVED BY COUNCIL, WITH REGARDS TO LONG TERM SLIP RESISTANCE AND DURABILITY. THE THICKNESS OF DECORATIVE SURFACING IS ADDITIONAL TO THE CONCRETE THICKNESS SHOWN.
8. ADJOINING CONCRETE FOOTPATHS AND VERGE MAY REQUIRE RE-PROFILING TO MATCH DRIVEWAY. VERGE EARTHWORKS MUST BE WELL COMPACTED, TOP DRESSED AND TURFED. EARTHWORKS CUT AND FILL BATTERS TO BE A MAXIMUM GRADE OF 1 IN 6.
9. WHERE EXISTING FOOTPATH TO BE TRANSITIONED TO NEW DRIVEWAY CROSSING, TRANSITION FOOTPATH AT A MAXIMUM GRADE OF 1 IN 14.
10. EXPANSION JOINTS TO BE FULL DEPTH 10mm THICK CLOSED CELL CROSS LINKED POLYETHYLENE FOAM (85-150 kg/m<sup>3</sup>) OR FULL DEPTH 10mm THICK COMPRESSED GRANULATED CORKBOARD. SEAL SURFACE OF JOINT WITH A SUITABLE POLYURETHANE SEALANT.
11. 25mm LIP AT CHANNEL INVERT MAY BE PROVIDED ON BOTH TYPE 'A' AND TYPE 'B' KERB AND CHANNEL TYPES TO PREVENT WATER FLOW INGRESS ON FLAT OR NEGATIVE VERGE CROSSFALLS AND STEEP LONGITUDINAL GRADES ON KERB. WHERE MOBILITY ACCESS IS REQUIRED AT DRIVEWAY CROSSING, REMOVE LIP FROM DRIVEWAY PROFILE. GRADE ON DRIVEWAY CROSSING NOT TO EXCEED 1 IN 8.
12. ALL APPROPRIATE PERMITS MUST BE OBTAINED FROM COUNCIL, INCLUDING APPROVAL OF LOCATION AND LEVELS PRIOR TO EXCAVATION.
13. THE MAINTENANCE OF ALL ACCESSES FROM THE THROUGH ROAD PAVEMENT TO THE PROPERTY BOUNDARY IS THE RESPONSIBILITY OF THE PROPERTY OWNER.
14. MAXIMUM ALLOWABLE GRADE CHANGE TO BE 15%.
15. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

**LEGEND**

- FOOTPATH WIDTH, REFER PROJECT DRAWINGS
- N.K.L NOMINAL KERB LINE (KERB INVERT)
- ⊙ CONTROL JOINT

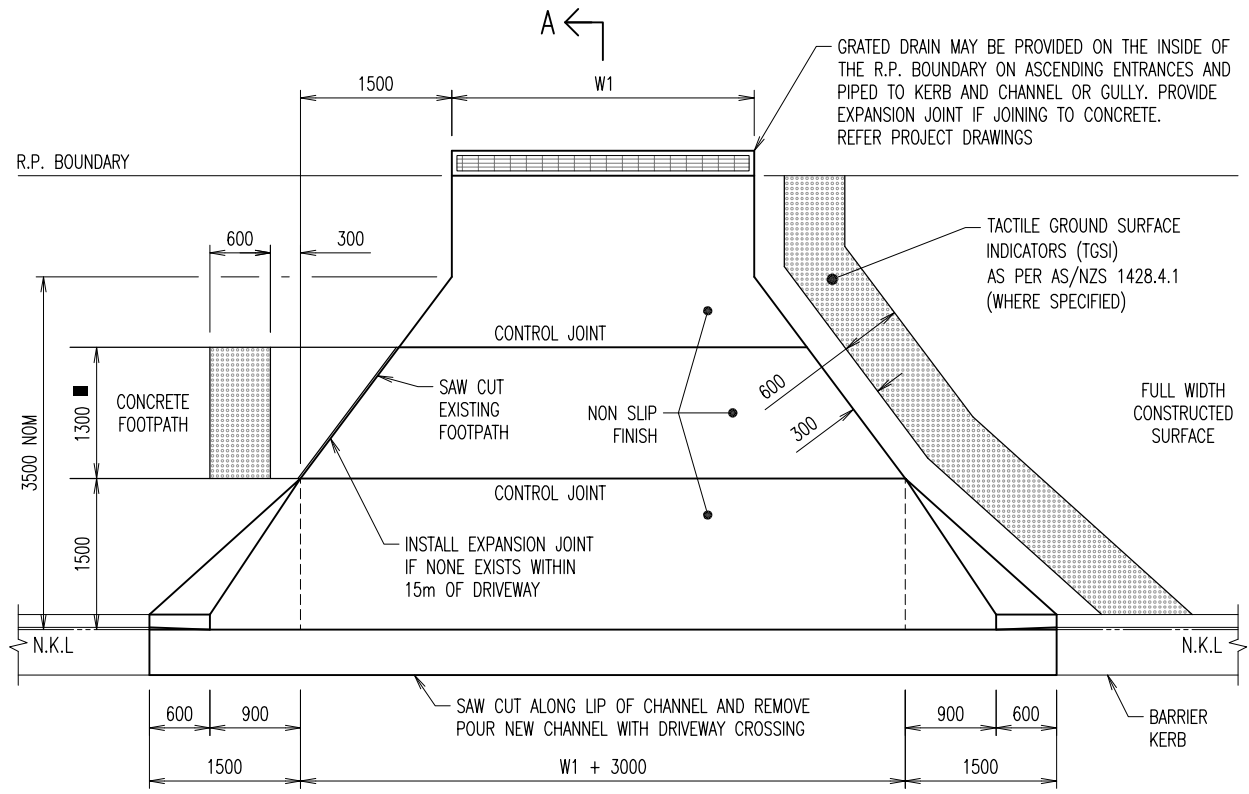
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| F   |   |          |       |
| E   |   |          |       |
| D   |   |          |       |
| C   |   |          |       |
| B   | FOOTPATH WIDTH, NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE                                    |          | 01/11 |
| REV | DETAILS OF AMENDMENTS                             | APPROVED | DATE  |



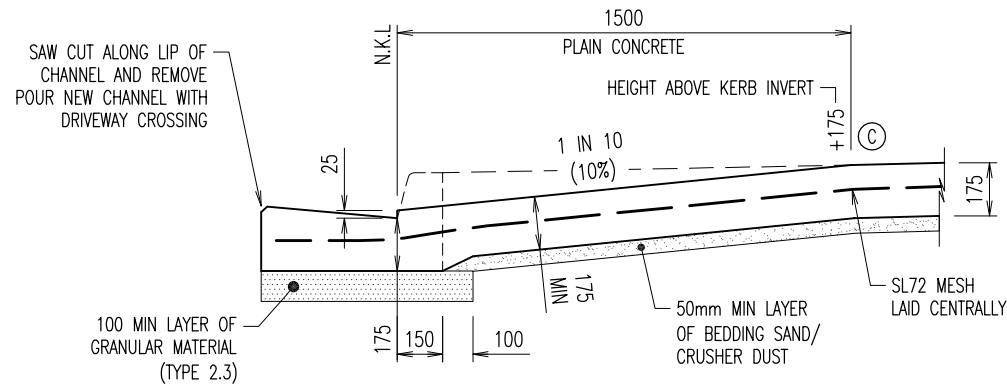
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|--|---------------|---------|-------|
| RESIDENTIAL DRIVEWAY CROSSING<br>SLAB AND TRACKS |               |         |       |
| DRAWN  | DESIGN OFFICE | CHECKED | CWB * |
| APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES     |               | DATE    |       |
| Darendra Naidu *                                 |               | 08/16   |       |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE      |               |         |       |

|                  |   |                      |  |
|------------------|---|----------------------|--|
| STANDARD DRAWING |   |                      |  |
| SHEET 1 OF 1     |   | STANDARD DRAWING No: |  |
| A3               |   | FC-230-01            |  |
| A                | B |                      |  |





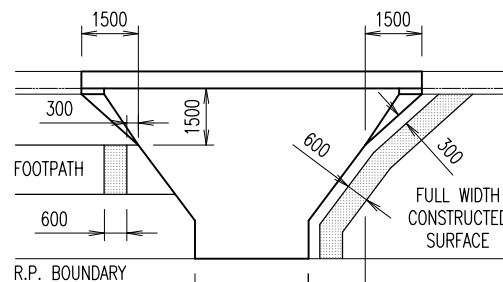
**PLAN**



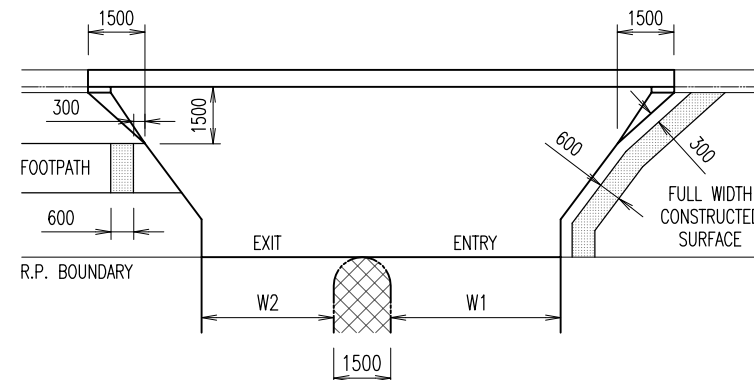
**BARRIER KERB & CHANNEL - BREAKOUT**

**COMMERCIAL/INDUSTRIAL VEHICLE CROSSING DETAILS**

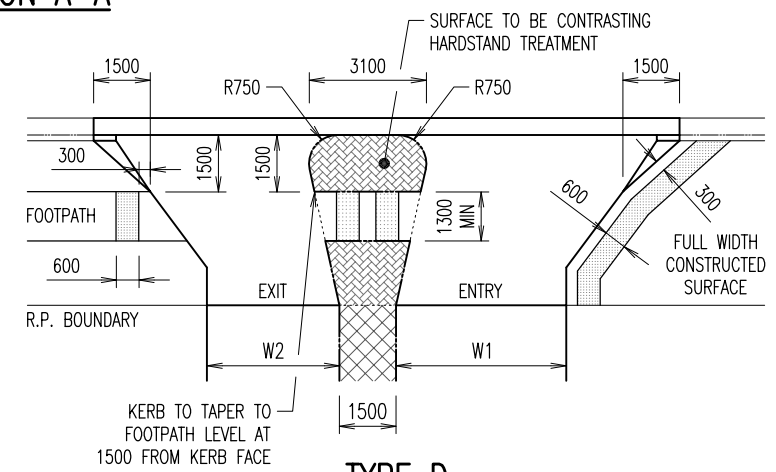
| TYPE    | W1        | W2  |
|---------|-----------|-----|
| B       | 6.0 - 9.0 | -   |
| C1 / D1 | 4.5       | 3.5 |
| C2 / D2 | 5.5       | 5.0 |
| C3 / D3 | 7.5       | 6.0 |
| C4 / D4 | 9.0       | 7.5 |



**TYPE B**



**TYPE C  
TYPE 1 CENTRE ISLAND**



**TYPE D  
TYPE 2 CENTRE ISLAND  
(LEFT IN / LEFT OUT ONLY)**

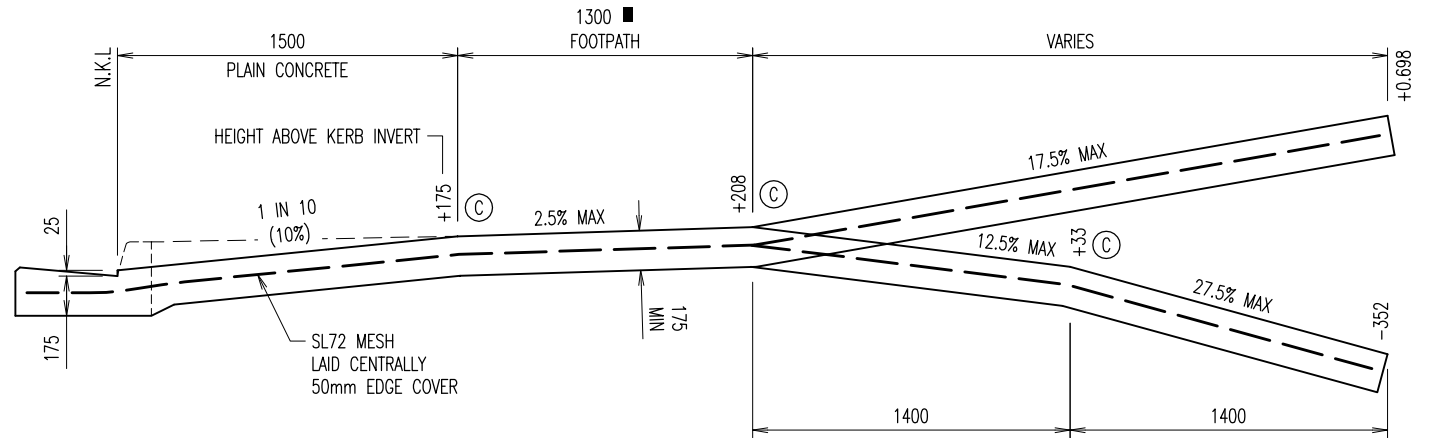
**NOTES:**

1. CONCRETE TO BE GRADE N32/20 IN ACCORDANCE WITH AS 1379 AND AS 3600.
2. REINFORCING MESH TO AS/NZS 4671. MESH TO BE LAID CENTRALLY WITH 50mm EDGE COVER, LAP FABRIC 250mm.
3. CONCRETE TO BE BROOM FINISHED FOR SLIP RESISTANCE TO AS 4586.
4. FINISHES OTHER THAN BROOM FINISHED CONCRETE TO BE APPROVED BY COUNCIL, WITH REGARDS TO LONG TERM SLIP RESISTANCE AND DURABILITY. THE THICKNESS OF DECORATIVE SURFACING IS ADDITIONAL TO THE CONCRETE THICKNESS SPECIFIED.
5. DEPTHS OF CONCRETE AND REINFORCING STEEL SHOWN ARE THE MINIMUM REQUIREMENTS FOR GOOD SUBGRADE CONDITIONS AND AVERAGE TRAFFIC LOADING. WHERE THIS DOES NOT APPLY, DEPTHS OF CONCRETE AND REINFORCING SHALL BE INCREASED TO SUIT SPECIFIC CONDITIONS.
6. WHERE THE SUBGRADE IS LESS THAN CBR 5, EXCAVATE AND PROVIDED IMPORTED GRANULAR MATERIAL TO SATISFACTION OF COUNCIL.
7. DIMENSION W1 & W2, REFER PROJECT DRAWINGS.
8. ALL EXISTING ASPHALT OR CONCRETE PAVEMENTS TO BE SAW CUT PRIOR TO ALLOW FOR NEAT REMOVAL AND REINSTATEMENT.
9. FULL CROSS SECTION OF KERB AND CHANNEL TO BE REMOVED AND REINFORCING MESH TO EXTEND TO WITHIN 50mm OF CHANNEL LIP. ROAD PAVEMENT TO BE CEMENT TREATED IF DISTURBED DURING REMOVAL OF KERB AND CHANNEL AND RESURFACED WITH BITUMEN OR ASPHALT TO MATCH ROAD SURFACE.
10. ADJOINING CONCRETE FOOTPATHS AND VERGE MAY REQUIRE RE-PROFILING TO MATCH DRIVEWAY. VERGE EARTHWORKS MUST BE WELL COMPACTED, TOP DRESSED AND TURFED. EARTHWORKS CUT AND FILL BATTERS TO BE A MAXIMUM GRADE OF 1 IN 6.

11. EXISTING FOOTPATH PROFILE TO BE MAINTAINED WHERE POSSIBLE. VARIATIONS TO THE DESIGN PROFILES SHOWN ARE SUBJECT TO APPROVAL BY COUNCIL.
12. WHERE DIRECTED BY COUNCIL TACTILE GROUND SURFACE INDICATORS (TGSIS) ARE TO BE PROVIDED ADJACENT TO THE DRIVEWAY IN ACCORDANCE WITH AS/NZS 1428.4.1.
13. EXPANSION JOINTS TO BE FULL DEPTH 10mm THICK CLOSED CELL CROSS LINKED POLYETHYLENE FOAM (85-150 kg/m<sup>3</sup>) OR FULL DEPTH 10mm THICK COMPRESSED GRANULATED CORKBOARD. SEAL SURFACE OF JOINT WITH A SUITABLE POLYURETHANE SEALANT.
14. ALL APPROPRIATE PERMITS MUST BE OBTAINED FROM COUNCIL, INCLUDING APPROVAL OF LOCATION AND LEVELS PRIOR TO EXCAVATION.
15. THE MAINTENANCE OF ALL ACCESSES FROM THE THROUGH ROAD PAVEMENT TO THE PROPERTY BOUNDARY IS THE RESPONSIBILITY OF THE PROPERTY OWNER.
16. MAXIMUM ALLOWABLE GRADE CHANGE TO BE 15%.
17. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

**LEGEND**

- FOOTPATH WIDTH, REFER PROJECT DRAWINGS
- N.K.L. NOMINAL KERB LINE (KERB INVERT)
- ⓐ CONTROL JOINT



**SECTION A-A**

|     |   |          |      |
|-----|---|----------|------|
| F   |   |          |      |
| E   |   |          |      |
| D   |   |          |      |
| C   |   |          |      |
| B   | DRIVEWAY TYPES ADDED, FOOTPATH WIDTH, NOTES ALTERED & TITLEBLOCK CHANGE | 08/16    |      |
| A   | ORIGINAL ISSUE  | 01/11    |      |
| REV | DETAILS OF AMENDMENTS   | APPROVED | DATE |

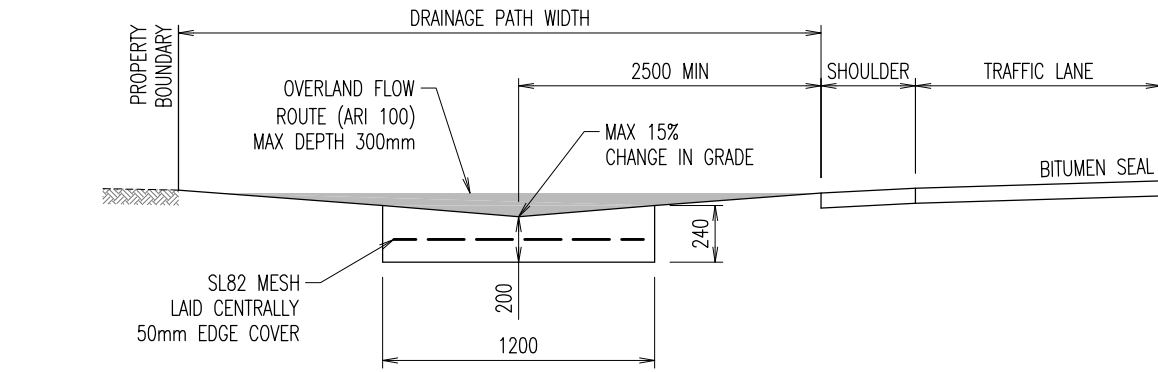
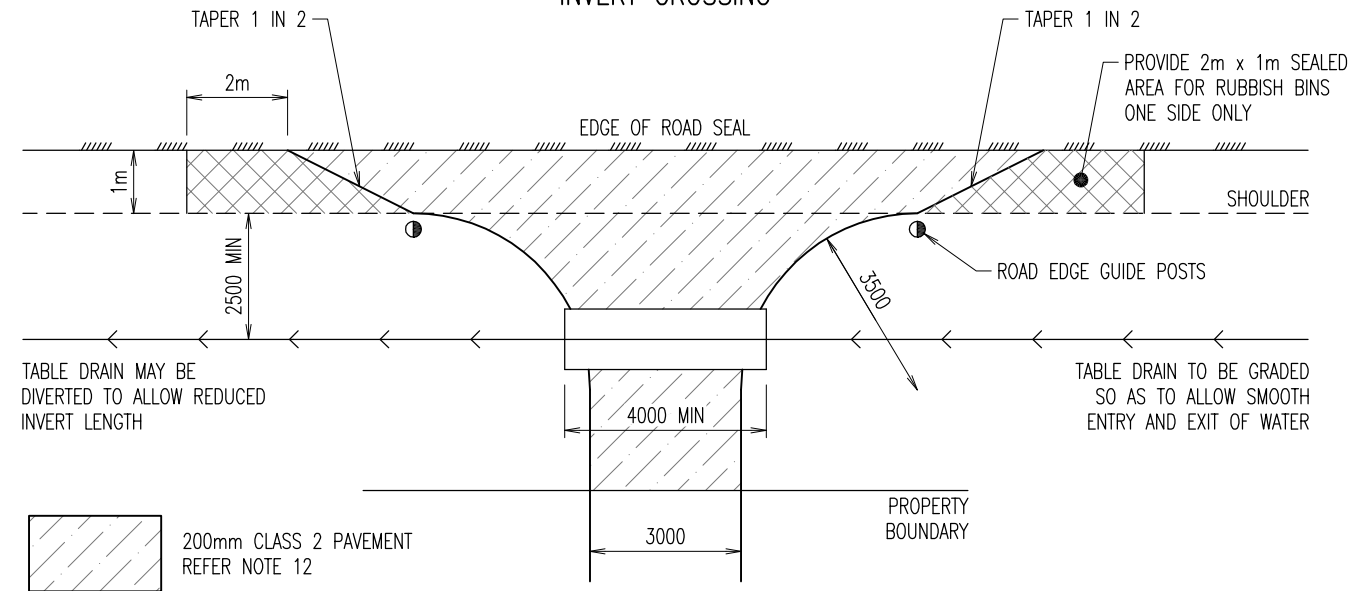


**COMMERCIAL/INDUSTRIAL DRIVEWAY CROSSING  
HEAVY DUTY SLAB**

|               |       |  |               |
|---------------|-------|--|---------------|
| DESIGN OFFICE | CWB * | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES<br><i>Davendra Naidu*</i> | DATE<br>08/16 |
|---------------|-------|--|---------------|

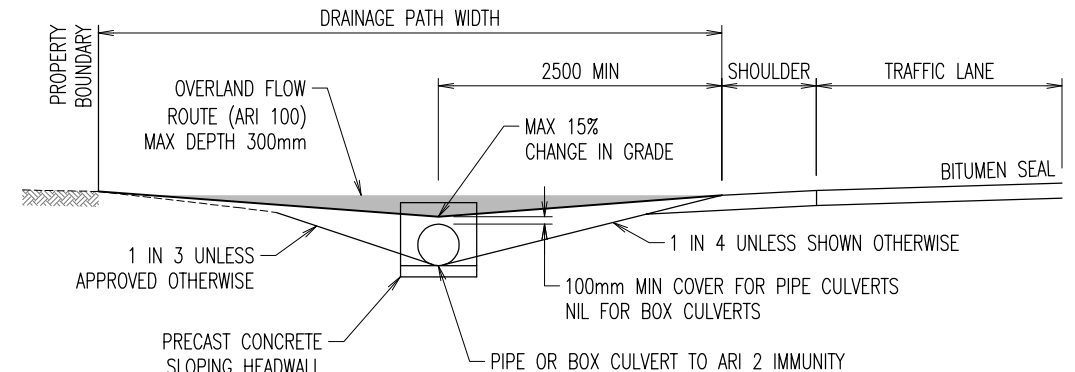
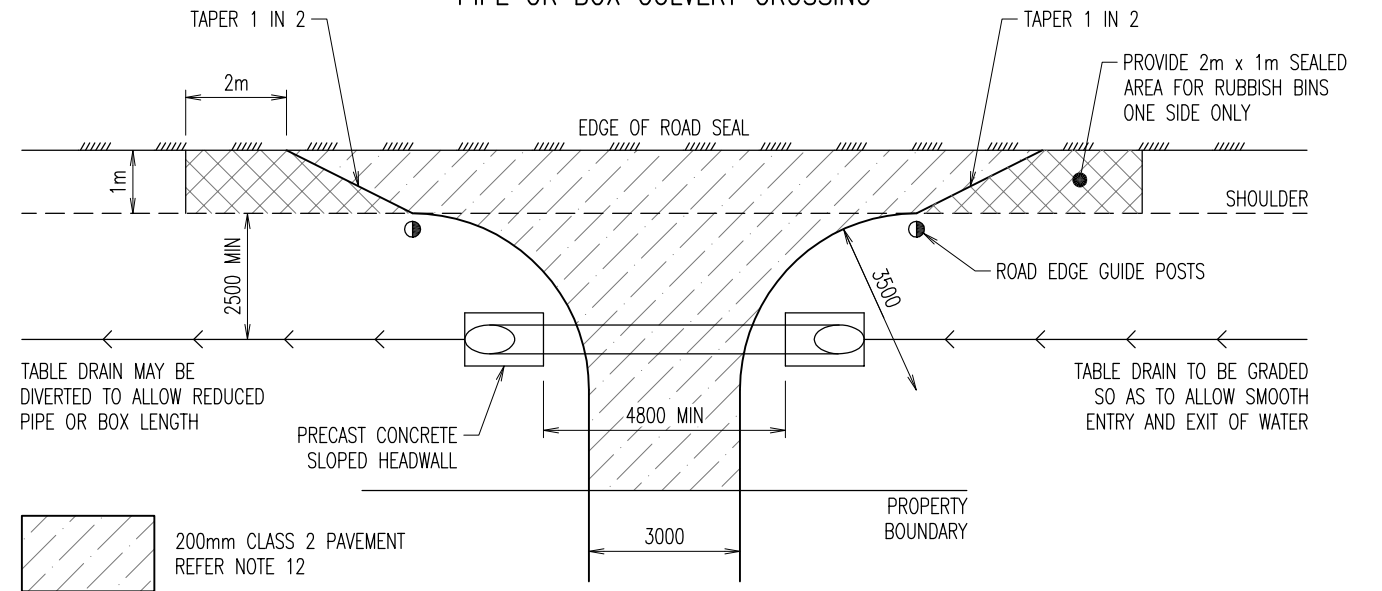
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| <b>STANDARD DRAWING</b>           |  |
| SHEET 1 OF 1                      |  |
| STANDARD DRAWING No: A3 FC-230-02 |  |

### TYPE 'A' INVERT CROSSING



TYPE 'A' CROSS SECTION

### TYPE 'B' PIPE OR BOX CULVERT CROSSING



TYPE 'B' CROSS SECTION

**NOTES:**

- PIPE OR BOX CULVERT CROSSINGS ARE NOT TO BE INSTALLED ON ROADS THAT FALL TO THE SUBJECT PROPERTY OR WHERE STORMWATER CANNOT BE DIRECTED TO A NATURAL WATER COURSE OR DRAINAGE EASEMENT/SYSTEM OR WHEN THERE IS NO UPSTREAM STORMWATER CATCHMENT OR TABLE DRAIN.
- ACCESS DRIVEWAYS WITH GRADES GREATER THAN 10% (1 IN 10) WITHIN PROPERTY BOUNDARIES SHALL BE CONSTRUCTED WITH NON-ERODIBLE MATERIAL (I.E. BITUMEN, ASPHALT, CONCRETE, PAVERS).
- TABLE DRAINS AND OUTLETS PRONE TO SCOURING SHALL BE LINED WITH ROCK, CONCRETE OR STABILISED TURF FOR PROTECTION.
- ALL DRAINAGE FROM WITHIN THE PROPERTY AND ON THE DRIVEWAY SURFACES SHALL BE COLLECTED AT OR INSIDE THE PROPERTY BOUNDARY AND DISCHARGED BY WAY OF A SEALED PIPE OR OTHER APPROVED MEANS TO COUNCIL'S DRAINAGE SYSTEM.
- THE ACCESS SHALL BE POSITIONED SO AS THE APPROACH SIGHT DISTANCE, ENTERING SIGHT DISTANCE AND SAFE INTERSECTION SIGHT DISTANCE MEETS THE CRITERIA AS STIPULATED IN SECTION 5 OF AUSTRROADS PUBLICATION "INTERSECTIONS AT GRADE". EARTHWORKS REQUIRED WITHIN THE ROAD RESERVE TO ACHIEVE THE CRITERIA SHALL BE APPROVED BY COUNCIL.
- CALCULATIONS FOR THE SIZING OF PIPE OR BOX CULVERTS SHALL BE CARRIED OUT BY A REGISTERED PROFESSIONAL ENGINEER AND APPROVED BY COUNCIL. PIPE OR BOX CULVERT DESIGN SHALL PROVIDE A MINIMUM ARI 2 IMMUNITY.
- MINIMUM PIPE DIAMETER TO BE 300mm AND MINIMUM BOX HEIGHT TO BE 225mm UNLESS OTHERWISE APPROVED BY COUNCIL.
- WHERE PIPE IS USED FOR A RURAL ACCESS, PIPE TO BE MINIMUM CLASS 3 REINFORCED CONCRETE PIPE (FIBRE OR STEEL REINFORCED).
- MINIMUM PIPE OR BOX GRADE TO BE 0.5%.
- LOW POINT OF ACCESS TO BE A MIN OF 100mm BELOW SHOULDER HINGE POINT.
- ALL CULVERT, INVERT AND DRIVEWAY CONSTRUCTION SHALL BE CARRIED OUT IN THE SECTION OF ROAD RESERVE CONTAINED WITHIN THE EXTENDED PROPERTY BOUNDARY LINES.
- WHERE AN ACCESS CROSSING IS REQUIRED TO BE PROVIDED AS A CONDITION OF A DEVELOPMENT PERMIT, A 200mm GRAVEL PAVEMENT WITH A 2 COAT BITUMEN SEAL SHALL BE PROVIDED. COUNCIL FEE FOR THE INSTALLATION OF A CROSSING DOES NOT INCLUDE PAVEMENT OR BITUMEN SURFACING WORK.
- RURAL ACCESS CULVERT LENGTH MIN 4.8m, MAX 7.0m BETWEEN HEADWALLS. SHOULD A CULVERT LONGER THAN 7.0m BE REQUIRED THE OWNER/DEVELOPER SHALL SEEK WRITTEN APPROVAL FROM COUNCIL FOR THE PROPOSAL AND HAVE THE WATER FLOW CAPACITY SIZED IN ACCORDANCE WITH THE DEVELOPMENT MANUAL.
- WHERE ACCESS CANNOT BE CONSTRUCTED IN ACCORDANCE WITH THIS STANDARD, A SKETCH OF THE PROPOSAL SHALL BE SUBMITTED TO COUNCIL FOR APPROVAL.
- ALL UNDERGROUND SERVICES ARE TO BE LOCATED ON SITE PRIOR TO ANY EXCAVATION WORKS.
- ALL APPROPRIATE PERMITS MUST BE OBTAINED FROM COUNCIL, INCLUDING APPROVAL OF LOCATION AND LEVELS PRIOR TO EXCAVATION.
- THE MAINTENANCE OF ALL ACCESSES FROM THE THROUGH ROAD PAVEMENT TO THE PROPERTY BOUNDARY IS THE RESPONSIBILITY OF THE PROPERTY OWNER.
- MAXIMUM ALLOWABLE GRADE CHANGE TO BE 15%.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

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| F   |   |          |       |
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| C   |   |          |       |
| B   | REGP ADDED, NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE                                |          | 01/11 |
| REV | DETAILS OF AMENDMENTS                         | APPROVED | DATE  |



**RURAL ACCESS  
PIPE OR BOX CULVERT AND INVERT CROSSINGS**

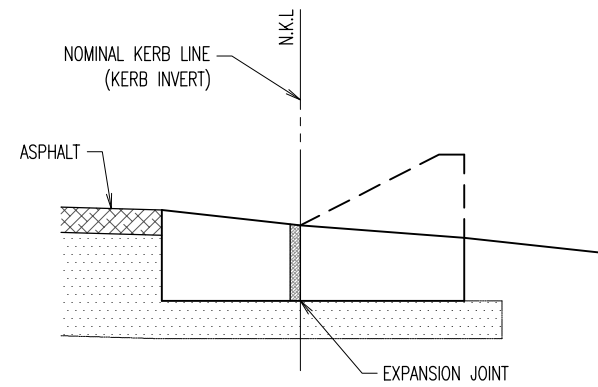
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| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |                  |  |               |

**STANDARD DRAWING**

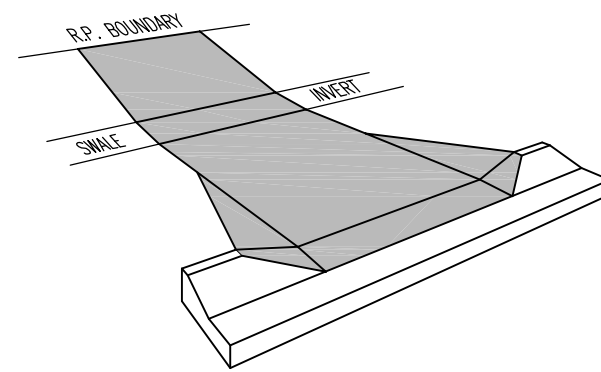
SHEET 1 OF 1

STANDARD DRAWING No:  
**A3 FC-230-03**

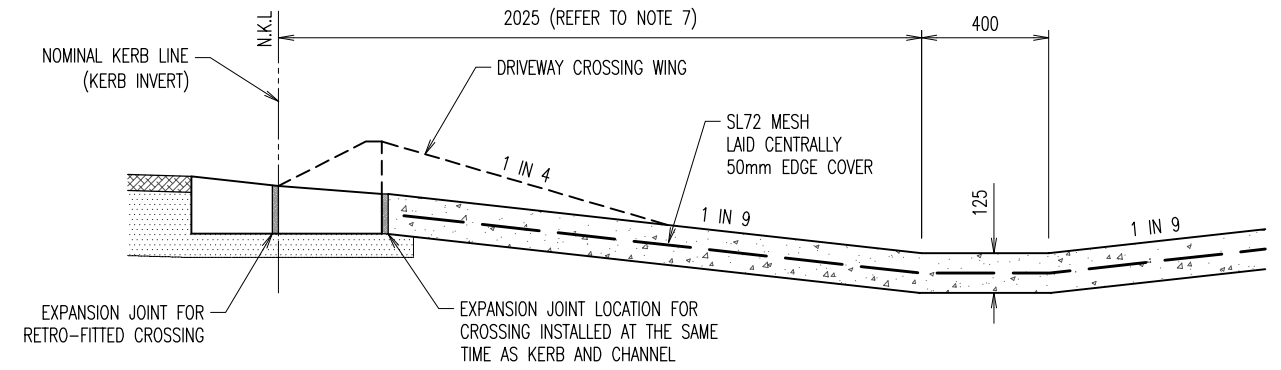
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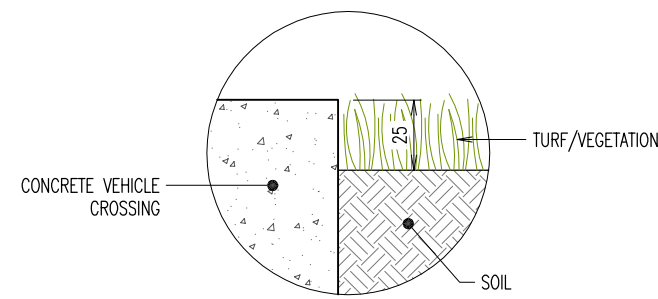
**SECTION A-A**  
FOR TYPE 'B' MOUNTABLE KERB



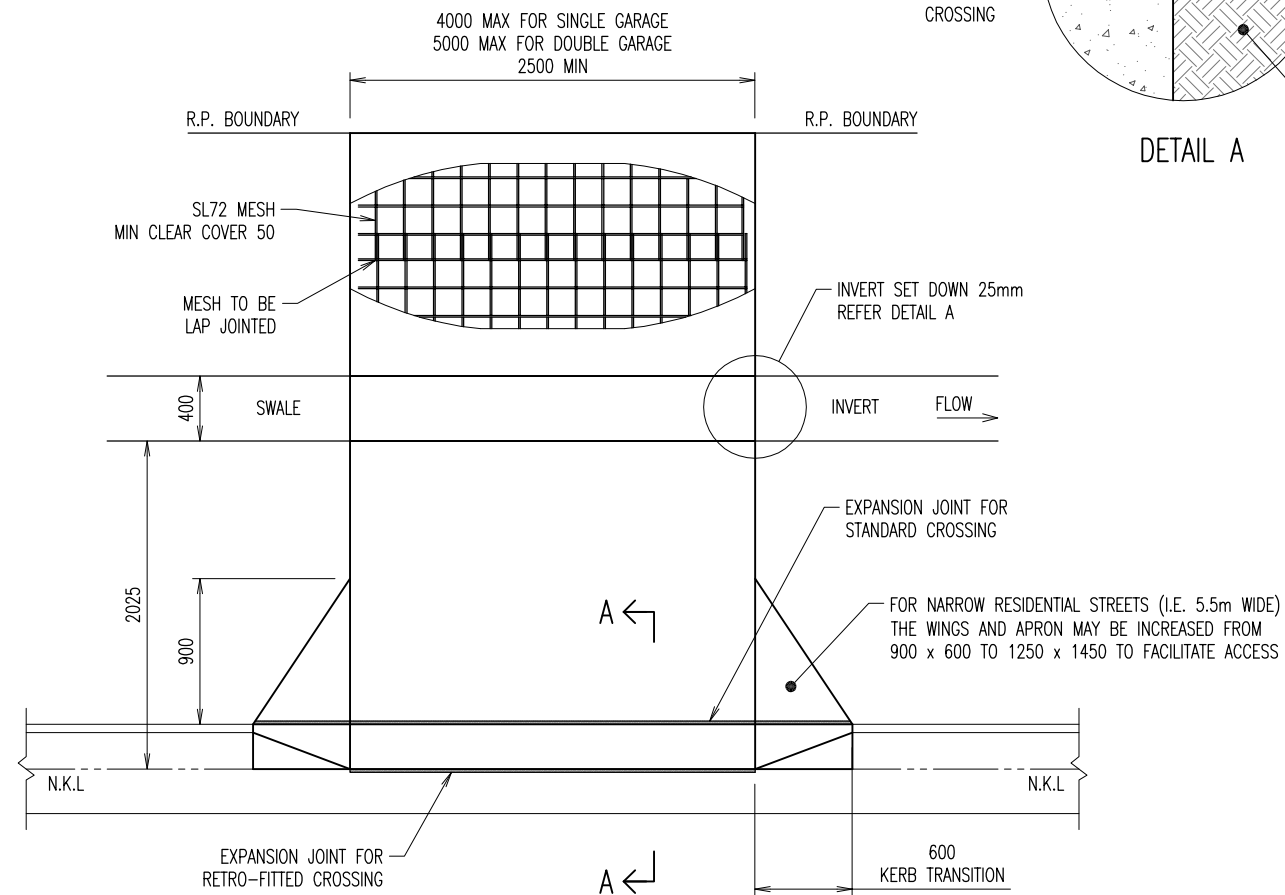
**PERSPECTIVE VIEW**



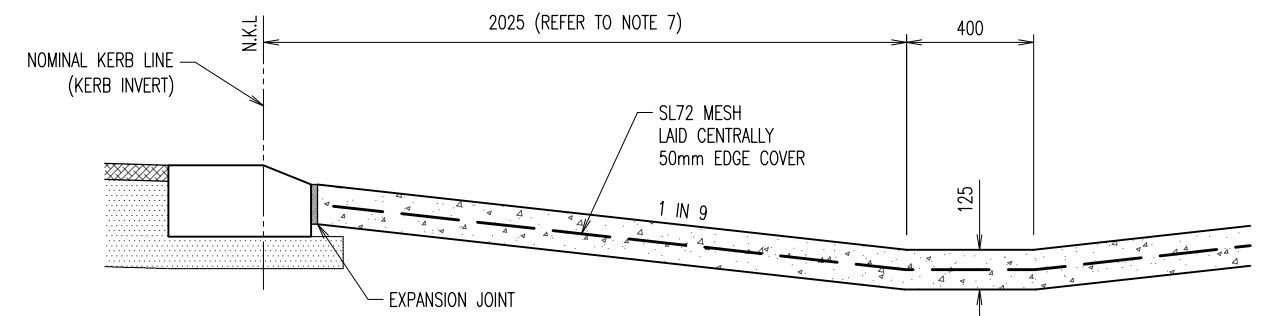
**SECTION**  
(WITH TYPE 'B' MOUNTABLE KERB)



**DETAIL A**



**PLAN**



**SECTION**  
(WITH TYPE 'M' MOUNTABLE KERB)

**NOTES:**

1. THIS CROSSING IS NOT DESIGNED FOR COMMERCIAL VEHICLES.
2. CONCRETE TO BE GRADE N32 IN ACCORDANCE WITH AS 1379 AND AS 3600.
3. REINFORCING MESH TO AS/NZS 4671, LAID CENTRALLY WITH 50mm EDGE COVER, LAP FABRIC 250mm.
4. CONCRETE TO BE BROOM FINISHED FOR SLIP RESISTANCE TO AS 4586. FINISHES OTHER THAN BROOM FINISHED CONCRETE TO BE APPROVED BY COUNCIL, WITH REGARDS TO LONG TERM SLIP RESISTANCE AND DURABILITY.
5. THE THICKNESS OF DECORATIVE SURFACING WHERE APPROVED IS ADDITIONAL TO THE CONCRETE THICKNESS SPECIFIED.
6. EXPANSION JOINTS TO BE FULL DEPTH 10mm THICK CLOSED CELL CROSS LINKED POLYETHYLENE FOAM (85-150 kg/m<sup>3</sup>) OR FULL DEPTH 10mm THICK COMPRESSED GRANULATED CORKBOARD. SEAL SURFACE OF JOINT WITH A SUITABLE POLYURETHANE SEALANT.
7. DISTANCE FROM NOMINAL FACE OF KERB MAY VARY WITH SWALE WIDTH. GRADES ARE RECOMMENDED MAXIMUMS FOR VEHICLE ACCESS.
8. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

**LEGEND**

N.K.L. NOMINAL KERB LINE (KERB INVERT)

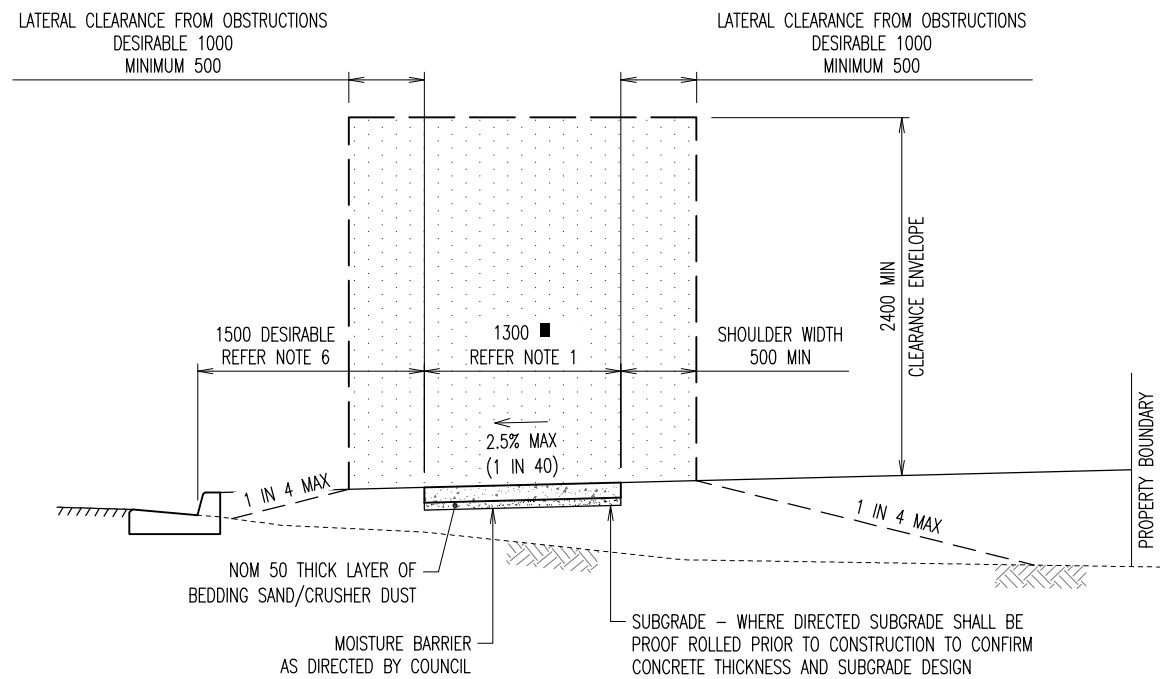
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| C   |                                   |          |       |
| B   | NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE                    |          | 01/11 |
| REV | DETAILS OF AMENDMENTS             | APPROVED | DATE  |



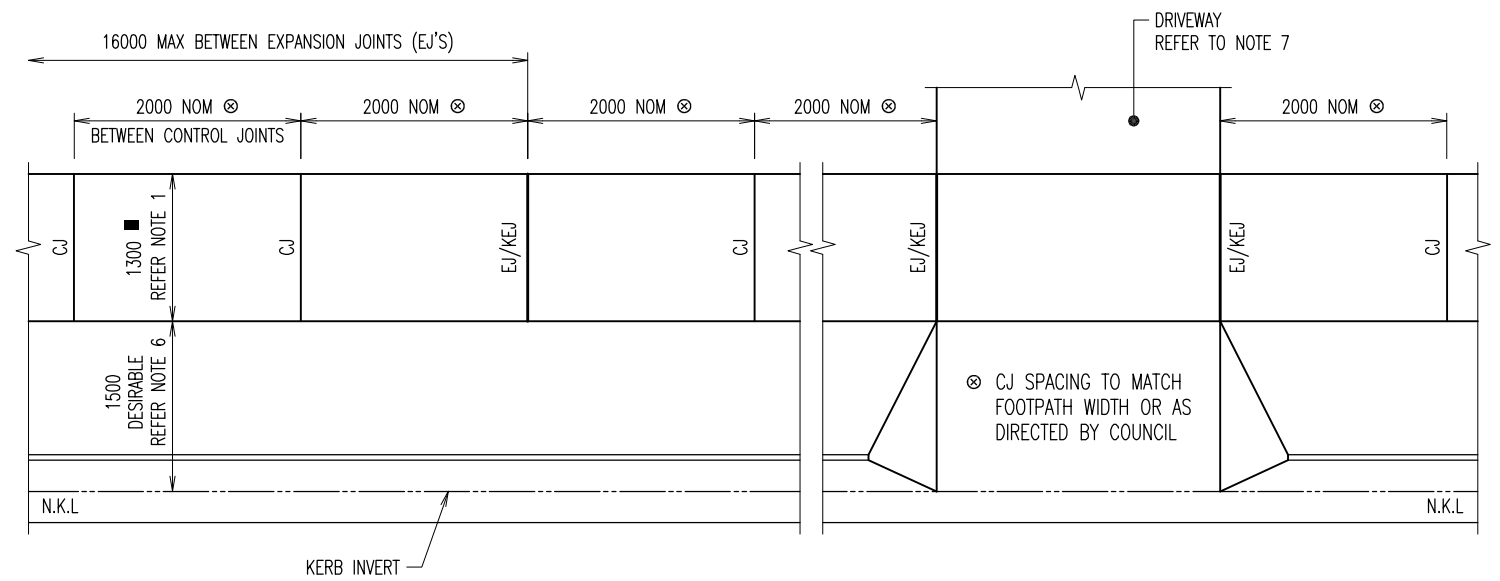
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| <b>RESIDENTIAL VEHICLE CROSSING SWALE PROFILE</b> |       |  |               |
| DESIGN OFFICE                                     | CWB * | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES<br>Darendra Naidu * | DATE<br>08/16 |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE       |       |  |               |

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| <b>STANDARD DRAWING</b> |           |    |   |
| SHEET                   | 1         | OF | 1 |
| STANDARD DRAWING No:    |           |    |   |
| A3                      | FC-230-04 |    |   |
| A                       | B         |    |   |

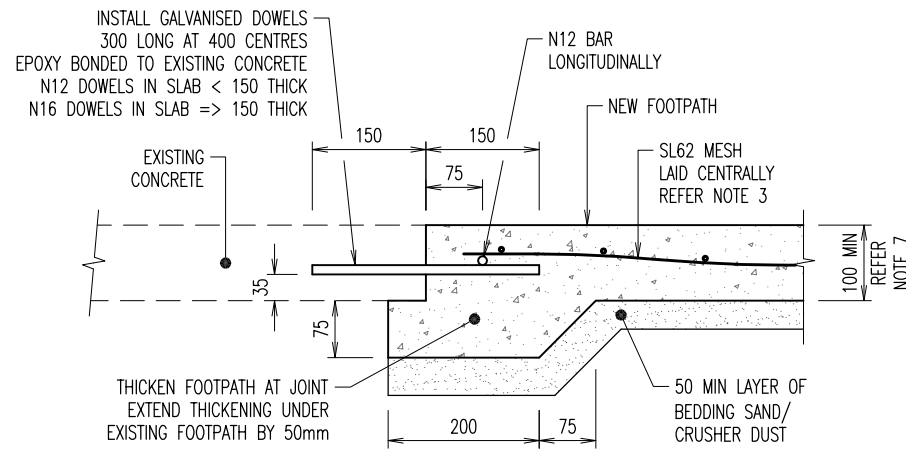




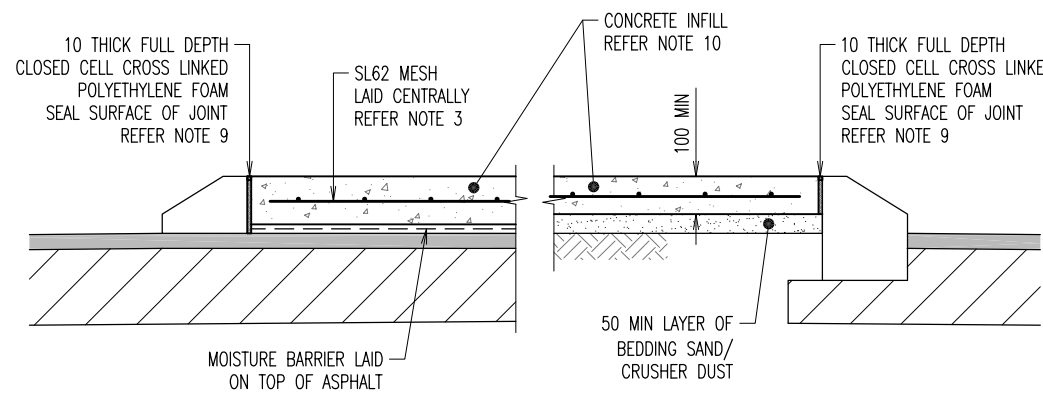
**TYPICAL SECTION**



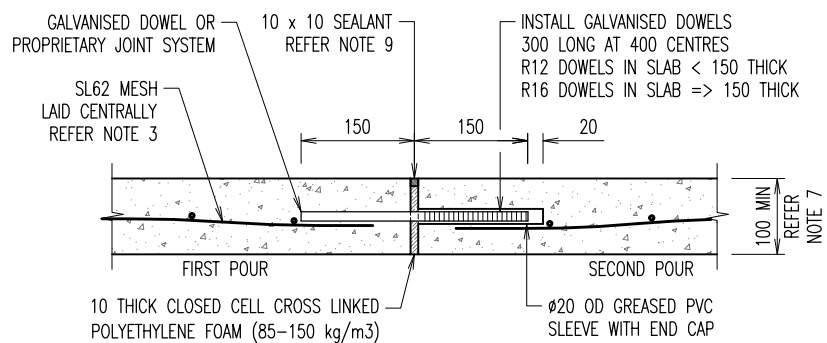
**PLAN - CONCRETE FOOTPATHS**



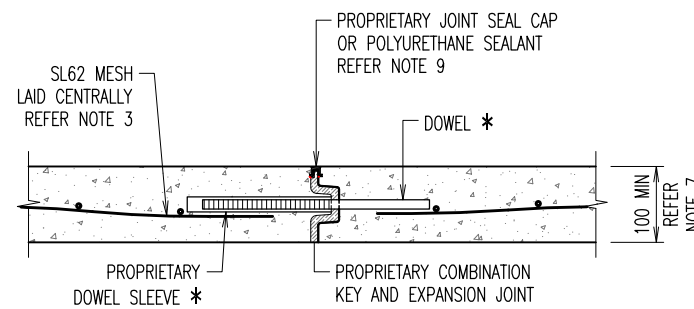
**SLAB WIDENING/JOINING TO EXISTING**  
MINIMUM WIDENING 800mm



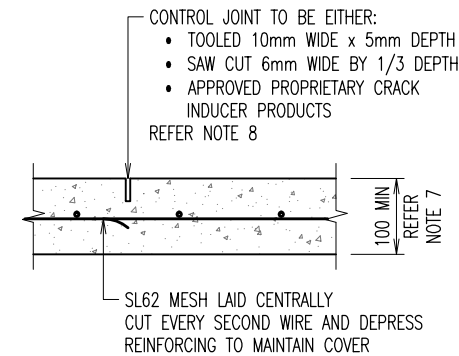
**MEDIAN ISLAND INFILL**



**EXPANSION JOINT - DOWELED (EJ)**  
SPACING 16m  
(REFER DETAIL A FOR ALTERNATIVE PREFORMED JOINT DETAIL)



**DETAIL A - (KEJ)**  
PREFORMED KEY JOINT WITH DOWEL  
\* DOWEL MAYBE ELIMINATED FOR MASS CONCRETE FOOTPATHS



**CONTROL JOINT (Cj)**  
SPACING 2m NOM  
MATCH FOOTPATH WIDTH IF WIDTH > 2m

**NOTES:**

- REFER TO PROJECT DRAWINGS FOR FOOTPATH WIDTH, DIMENSIONS AND SURFACE TREATMENT.
- CONCRETE TO BE GRADE N32 IN ACCORDANCE WITH AS 1379 AND AS 3600.
- REINFORCING MESH TO AS/NZS 4671, LAID CENTRALLY WITH 50mm EDGE COVER, LAP FABRIC 250mm.
- FIBRE REINFORCEMENT - WHEN APPROVED FOR USE BY COUNCIL, THE CONCRETE SHALL BE GRADE N32 REINFORCED WITH CLASS 2 MACRO STRUCTURAL SYNTHETIC POLYMER FIBRES IN ACCORDANCE WITH THE MANUFACTURES SPECIFICATION FOR THE SPECIFIED DESIGN LOAD. BATCHING OF THE FIBRES SHALL BE BY READY MIX SUPPLIER IN ACCORDANCE MANUFACTURER'S TECHNICAL SPECIFICATION.
- CONCRETE TO BE BROOM FINISHED FOR SLIP RESISTANCE TO AS 4586.
- THE DIMENSION BETWEEN KERB INVERT AND EDGE OF FOOTPATH MAY BE VARIED SUBJECT TO COUNCIL'S APPROVAL. MINIMUM FOOTPATH OFFSET SHOULD NOT BE LESS THAN 500mm IN ANY SITUATION.
- WHERE A FOOTPATH CROSSES A DRIVEWAY OR IS SUBJECTED TO TRAFFIC LOADS THE FOOTPATH THICKNESS SHALL BE AS PER THE RELEVANT RESIDENTIAL OR COMMERCIAL DRIVEWAY FCRC STANDARD DRAWING FC-230-01 OR FC-230-02.
- SAW CUT JOINTS ARE TO BE UNDERTAKEN BETWEEN 4 TO 12 HOURS AFTER LAYING DEPENDING ON CONDITIONS. JOINT SEALANT IS REQUIRED IN SANDY AREAS. PROPRIETY CRACK INDUCER PRODUCTS MAY BE USED IN PLACE OF SAW CUTTING ON CONTROL JOINTS.
- EXPANSION JOINTS TO BE SEALED WITH A LOW MODULUS SELF PRIMING SEALANT TO THE MANUFACTURES SPECIFICATIONS. THE COLOUR OF THE SEALANT IS TO MATCH THE ADJOINING SURFACE FINISH.
- CONCRETE SPLITTER/MEDIAN ISLANDS INFILL SURFACE FINISH TO BE EITHER 'STENCIL CRETE' (RUNNING BOND BRICK PATTERN COLOURED TERRACOTTA) OR ARTIFICIAL TURF 'ENDUROTURF BLISS' (OR APPROVED EQUIVALENT) UNLESS NOTED OTHERWISE. PATTERN LINES TO FOLLOW ADJOINING KERB AND FINISHED WITH AN APPROVED GROOVING TOOL. ALL CONTROL & EXPANSION JOINTS TO MATCH ADJOINING KERB JOINTS.
- ALL APPROPRIATE PERMITS MUST BE OBTAINED FROM COUNCIL, INCLUDING APPROVAL OF LOCATION AND LEVELS PRIOR TO EXCAVATION.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

**LEGEND**

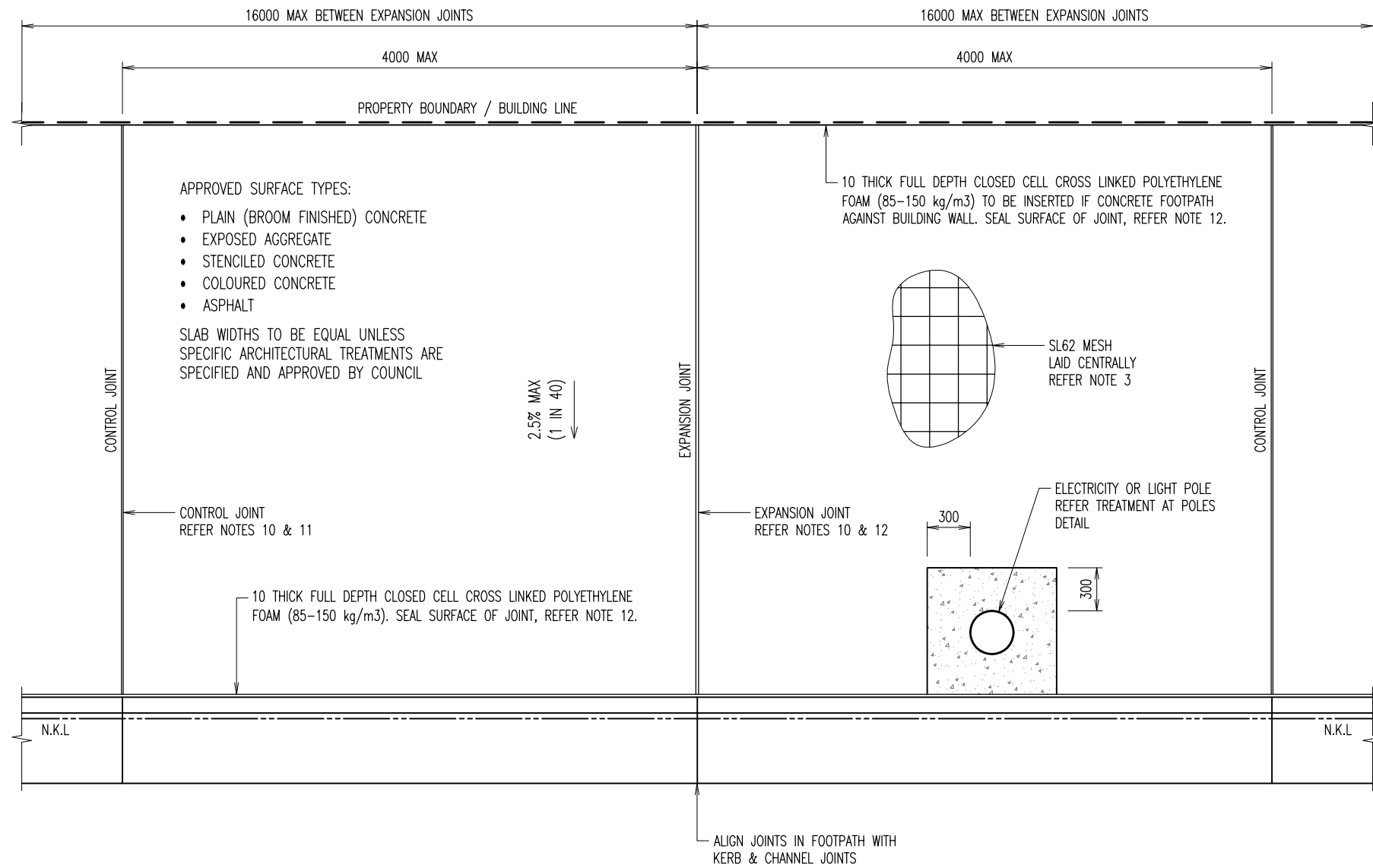
- FOOTPATH WIDTH, REFER PROJECT DRAWINGS
- N.K.L. NOMINAL KERB LINE (KERB INVERT)

|     |   |          |       |
|-----|---|----------|-------|
| F   |   |          |       |
| E   |   |          |       |
| D   |   |          |       |
| C   |   |          |       |
| B   | JOINTS & MEDIAN ISLAND ADDED, PLAN, SECTION & NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE  |          | 01/11 |
| REV | DETAILS OF AMENDMENTS   | APPROVED | DATE  |

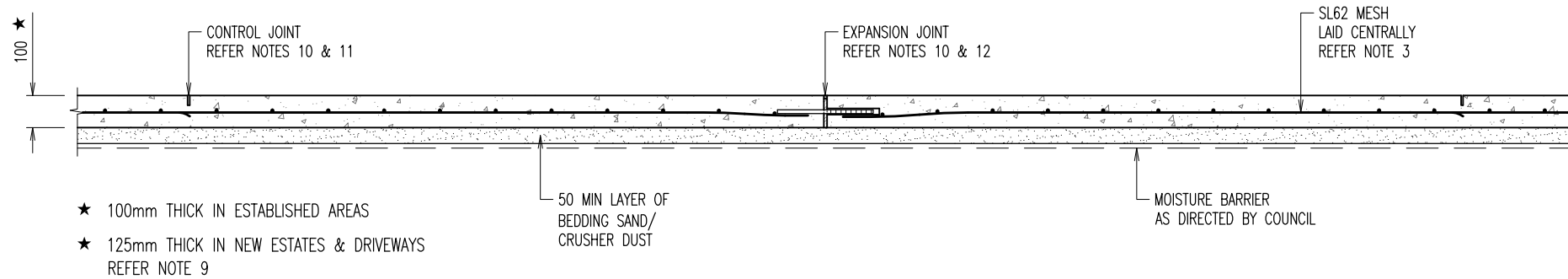


|   |         |  |       |
|---|---------|--|-------|
| <b>CONCRETE FOOTPATHS</b><br>TYPICAL CONSTRUCTION DETAILS |         |  |       |
| DRAWN   | CHECKED | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE  |
| DESIGN OFFICE   | CWB *   | Davendra Naidu *                             | 08/16 |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE               |         |  |       |

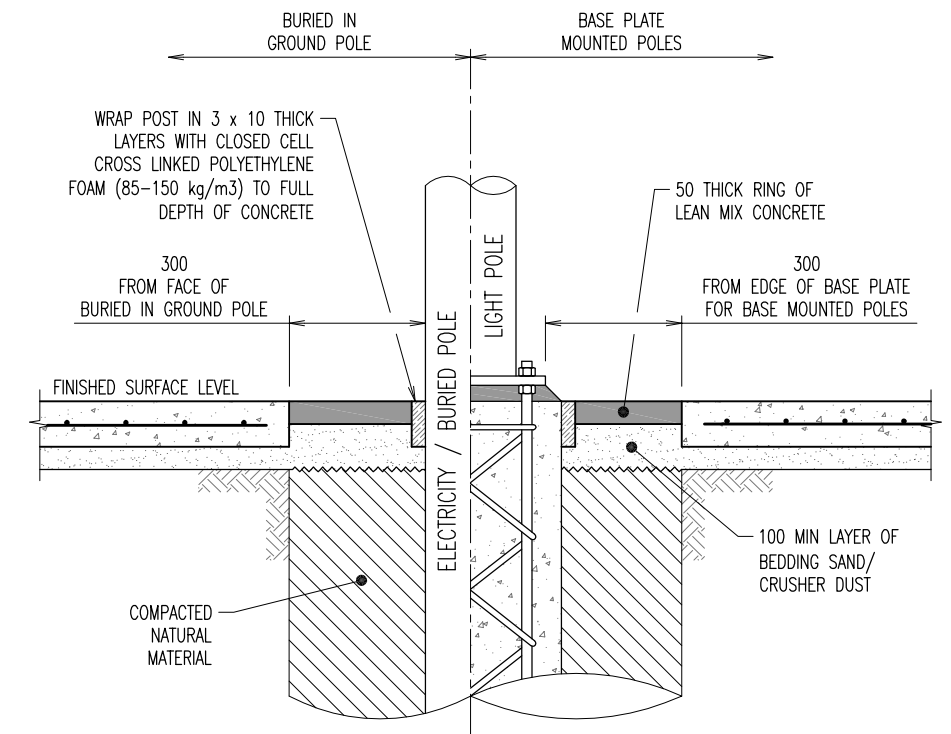
|                         |           |
|-------------------------|-----------|
| <b>STANDARD DRAWING</b> |           |
| SHEET                   | 1 OF 1    |
| STANDARD DRAWING No:    |           |
| A3                      | FC-240-01 |
| A                       | B         |



PLAN



SECTION A-A



TREATMENT AT POLES

NOTES:

1. REFER TO PROJECT DRAWINGS FOR FOOTPATH WIDTH, DIMENSIONS AND SURFACE TREATMENT.
2. CONCRETE TO BE GRADE N32 IN ACCORDANCE WITH AS 1379 AND AS 3600.
3. REINFORCING MESH TO AS/NZS 4671, LAID CENTRALLY WITH 50mm EDGE COVER, LAP FABRIC 250mm.
4. FIBRE REINFORCEMENT - WHEN APPROVED FOR USE BY COUNCIL, THE CONCRETE SHALL BE GRADE N32 REINFORCED WITH CLASS 2 MACRO STRUCTURAL SYNTHETIC POLYMER FIBRES IN ACCORDANCE WITH THE MANUFACTURES SPECIFICATION FOR THE SPECIFIED DESIGN LOAD. BATCHING OF THE FIBRES SHALL BE BY READY MIX SUPPLIER IN ACCORDANCE MANUFACTURER'S TECHNICAL SPECIFICATION.
5. CONCRETE TO BE BROOM FINISHED FOR SLIP RESISTANCE TO AS 4586.
6. CONCRETE SHALL BE PLACED IN ALTERNATE PANELS.
7. FOOTPATH TO COMPLY WITH AUSTRALIAN STANDARDS AND COUNCIL REQUIREMENTS FOR ACCESS AND MOBILITY, PARTICULARLY AS 1428.
8. CROSSFALL TO BE MAX 2.5% (1 IN 40) DOWN TOWARDS KERB (NOMINAL).
9. WHERE A FOOTPATH CROSSES A DRIVEWAY OR IS SUBJECTED TO TRAFFIC LOADS THE FOOTPATH THICKNESS SHALL BE AS PER THE RELEVANT RESIDENTIAL OR COMMERCIAL DRIVEWAY FCRC STANDARD DRAWING FC-230-01 OR FC-230-02.
10. FOR JOINT DETAILS REFER TO FCRC STANDARD DRAWING FC-240-03.
11. SAW CUT JOINTS ARE TO BE UNDERTAKEN BETWEEN 4 TO 12 HOURS AFTER LAYING DEPENDING ON CONDITIONS. JOINT SEALANT IS REQUIRED IN SANDY AREAS. PROPRIETY CRACK INDUCER PRODUCTS MAY BE USED IN PLACE OF SAW CUTTING ON CONTROL JOINTS.
12. EXPANSION JOINTS TO BE SEALED WITH A LOW MODULUS SELF PRIMING SEALANT TO THE MANUFACTURES SPECIFICATIONS. THE COLOUR OF THE SEALANT IS TO MATCH THE ADJOINING SURFACE FINISH.
13. ALL APPROPRIATE PERMITS MUST BE OBTAINED FROM COUNCIL, INCLUDING APPROVAL OF LOCATION AND LEVELS PRIOR TO EXCAVATION.
14. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

LEGEND

N.K.L. NOMINAL KERB LINE (KERB INVERT)

|     |   |          |       |
|-----|---|----------|-------|
| F   |   |          |       |
| E   |   |          |       |
| D   |   |          |       |
| C   |   |          |       |
| B   | PLAN, SECTION, TREATMENT AT POLES & NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE  |          | 01/11 |
| REV | DETAILS OF AMENDMENTS   | APPROVED | DATE  |



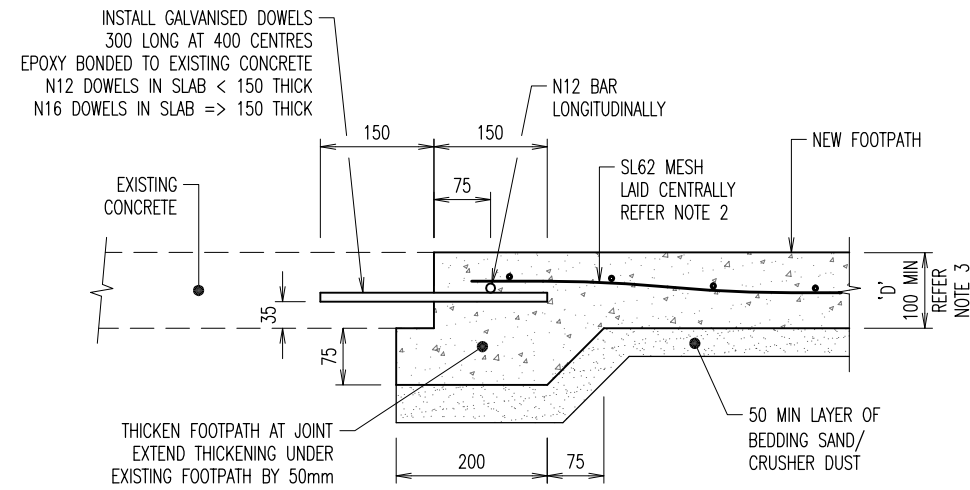
CONCRETE FOOTPATHS - FULL WIDTH  
TYPICAL CONSTRUCTION DETAILS

|   |               |         |                  |  |      |       |
|---|---------------|---------|------------------|--|------|-------|
| DRAWN                                       | DESIGN OFFICE | CHECKED | CWB *            | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE | 08/16 |
|   |               |         | Darendra Naidu * |  |      |       |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |               |         |                  |  |      |       |

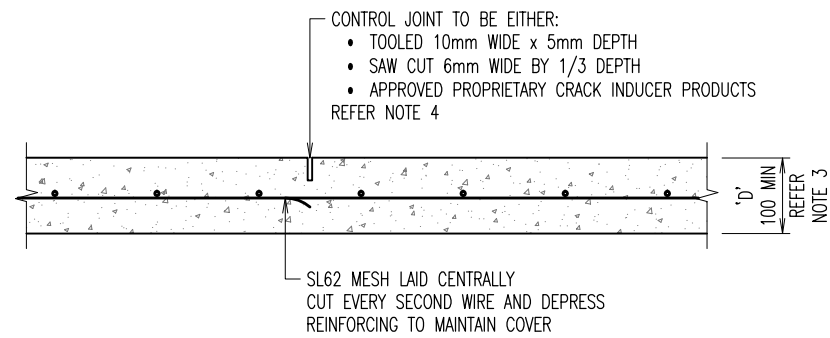
STANDARD DRAWING

SHEET 1 OF 1

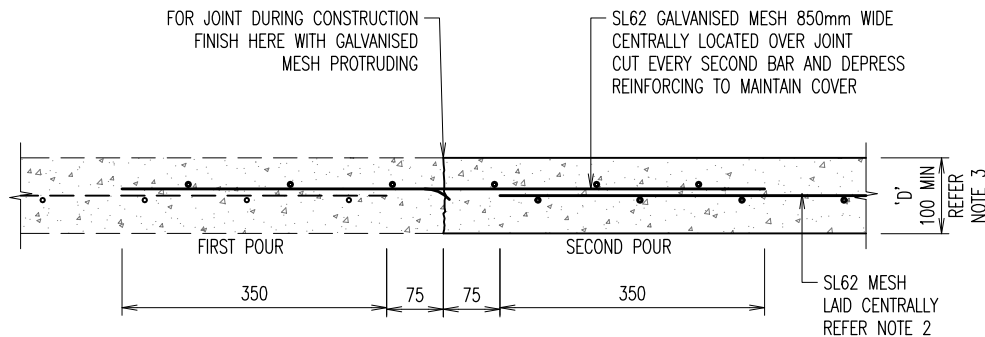
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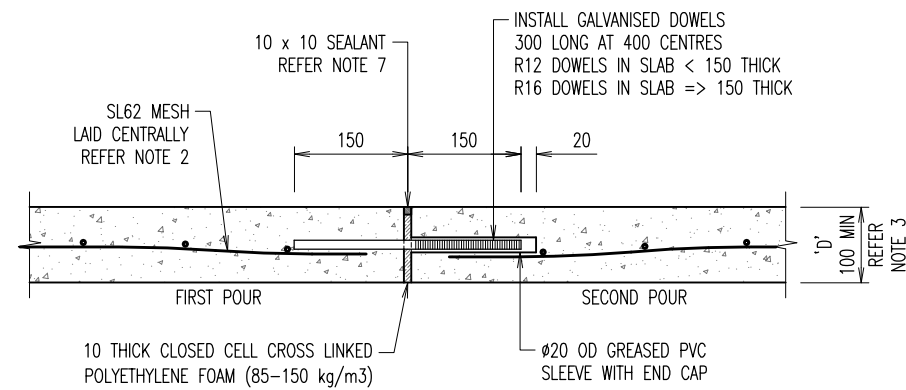
**SLAB WIDENING/JOINING TO EXISTING**  
MINIMUM WIDENING 800mm



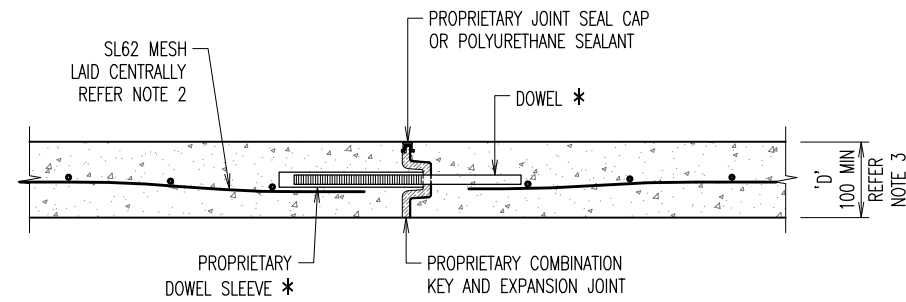
**CONTROL JOINT (Cj)**  
SPACING 2m NOM  
MATCH FOOTPATH WIDTH IF WIDTH > 2m



**CONSTRUCTION JOINT**  
PLACEMENT AS REQUIRED

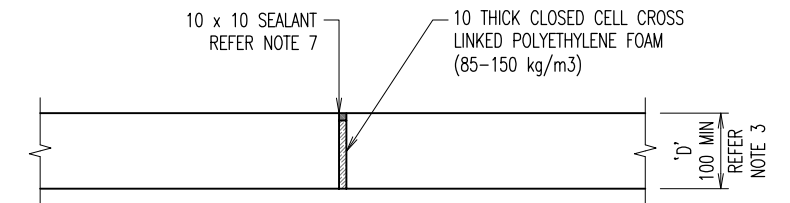


**EXPANSION JOINT - DOWELED (EJ)**  
SPACING 16m  
(REFER DETAIL A FOR ALTERNATIVE PREFORMED JOINT DETAIL)

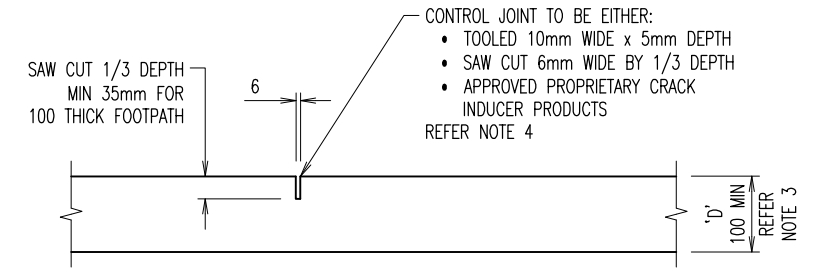


**DETAIL A - (KEJ)**  
PREFORMED KEY JOINT WITH DOWEL

\* DOWEL MAYBE ELIMINATED FOR MASS CONCRETE FOOTPATHS



**EXPANSION JOINT**  
SPACING 16m  
FOR FIBRE REINFORCED PATHS REFER DETAIL A FOR PREFORMED KEY JOINT/EXPANSION JOINT REQUIREMENTS



**CONTROL JOINT**  
SPACING 2m  
**MASS CONCRETE AND FIBRE REINFORCED JOINTS**

**NOTES:**

1. CONCRETE TO BE GRADE N32 IN ACCORDANCE WITH AS 1379 AND AS 3600.
2. REINFORCING MESH TO AS/NZS 4671, LAID CENTRALLY WITH 50mm EDGE COVER, LAP FABRIC 250mm.
3. 'D' VARIES DEPENDING ON PROPOSED USE OF FOOTPATH. WHERE A FOOTPATH CROSSES A DRIVEWAY OR IS SUBJECTED TO TRAFFIC LOADS THE FOOTPATH THICKNESS SHALL BE AS PER THE RELEVANT RESIDENTIAL OR COMMERCIAL DRIVEWAY FCRC STANDARD DRG FC-230-01 OR FC-230-02.
4. SAW CUT JOINTS ARE TO BE UNDERTAKEN BETWEEN 4 TO 12 HOURS AFTER LAYING DEPENDING ON CONDITIONS. JOINT SEALANT IS REQUIRED IN SANDY AREAS. PROPRIETY CRACK INDUCER PRODUCTS MAY BE USED IN PLACE OF SAW CUTTING ON CONTROL JOINTS.
5. PROPRIETY COMBINATION DOWELED KEY JOINT WITH EXPANSION MATERIAL MAY BE USED IN PLACE OF STANDARD DOWELED EXPANSION JOINT. REFER DETAIL A FOR TYPICAL DETAILS.
6. ALL DOWELS TO BE PERPENDICULAR TO JOINT AND PARALLEL TO EACH OTHER. DOWELS TO BE HOT DIPPED GALVANISED.
7. EXPANSION JOINTS TO BE SEALED WITH A LOW MODULUS SELF PRIMING SEALANT TO THE MANUFACTURES SPECIFICATIONS. THE COLOUR OF THE SEALANT IS TO MATCH THE ADJOINING SURFACE FINISH.
8. FIBRE REINFORCEMENT - WHEN APPROVED FOR USE BY COUNCIL, THE CONCRETE SHALL BE GRADE N32 REINFORCED WITH CLASS 2 MACRO STRUCTURAL SYNTHETIC POLYMER FIBRES IN ACCORDANCE WITH THE MANUFACTURES SPECIFICATION FOR THE SPECIFIED DESIGN LOAD. BATCHING OF THE FIBRES SHALL BE BY READY MIX SUPPLIER IN ACCORDANCE MANUFACTURER'S TECHNICAL SPECIFICATION.
9. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

**STEEL REINFORCED JOINTS**

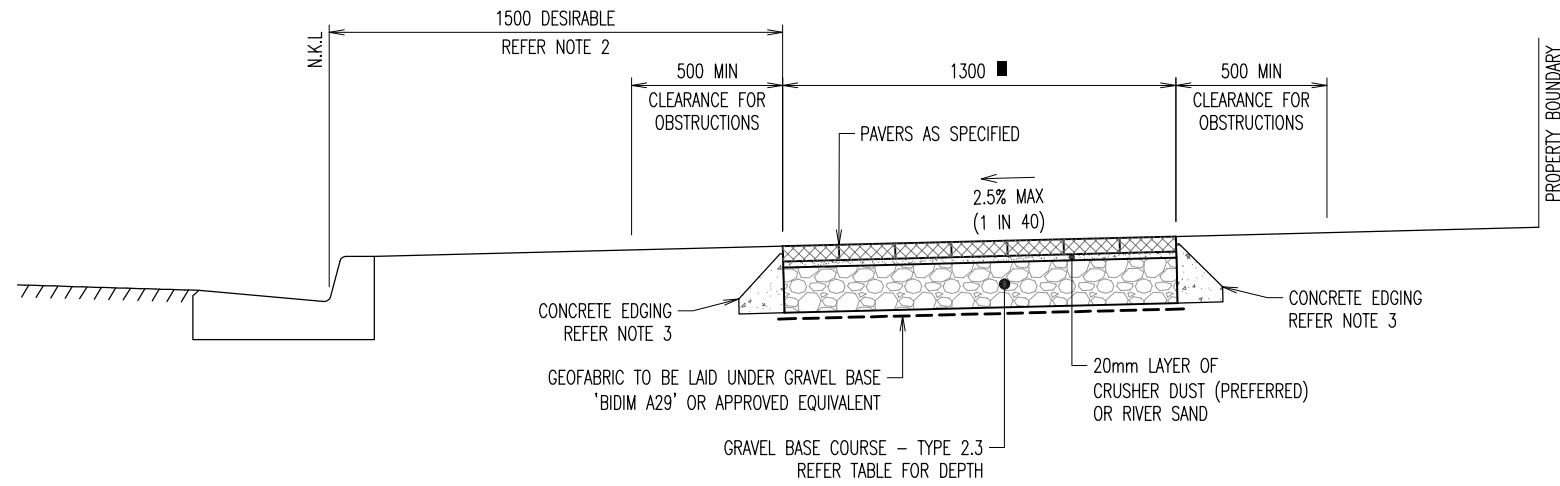
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| F   |  |          |       |
| E   |  |          |       |
| D   |  |          |       |
| C   |  |          |       |
| B   | EXISTING JOINT ADDED, JOINT SPACING, NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE   |          | 01/11 |
| REV | DETAILS OF AMENDMENTS  | APPROVED | DATE  |



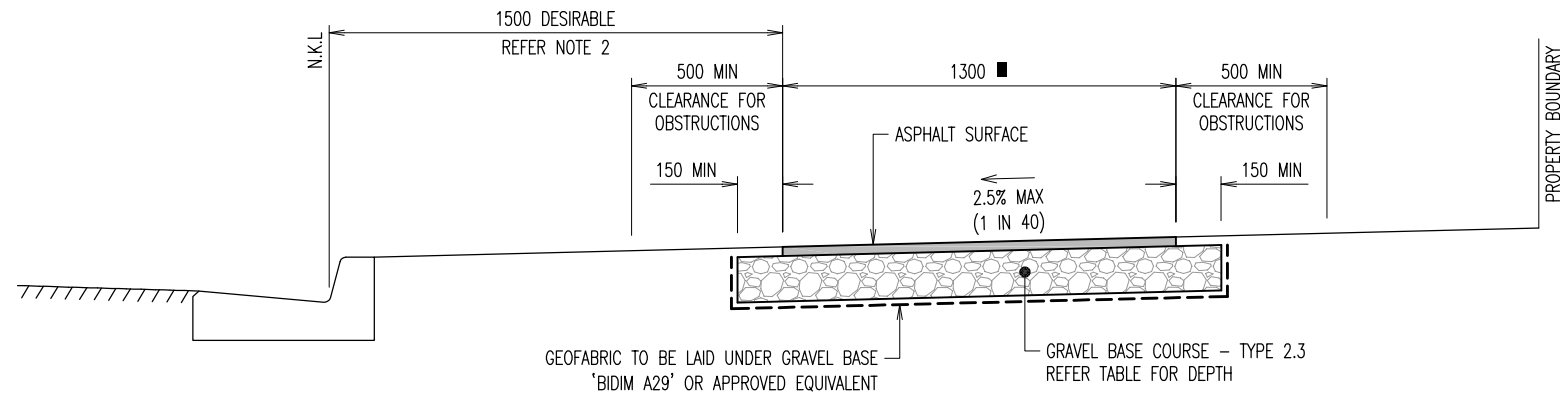
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| <b>CONCRETE JOINTS</b><br>TYPICAL CONSTRUCTION DETAILS |         |  |       |
| DRAWN  | CHECKED | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE  |
| DESIGN OFFICE  | CWB *   | Davendra Naidu *                             | 08/16 |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE            |         |  |       |

|                         |           |    |   |
|-------------------------|-----------|----|---|
| <b>STANDARD DRAWING</b> |           |    |   |
| SHEET                   | 1         | OF | 1 |
| STANDARD DRAWING No.:   |           |    |   |
| A3                      | FC-240-03 |    |   |
| A                       | B         |    |   |

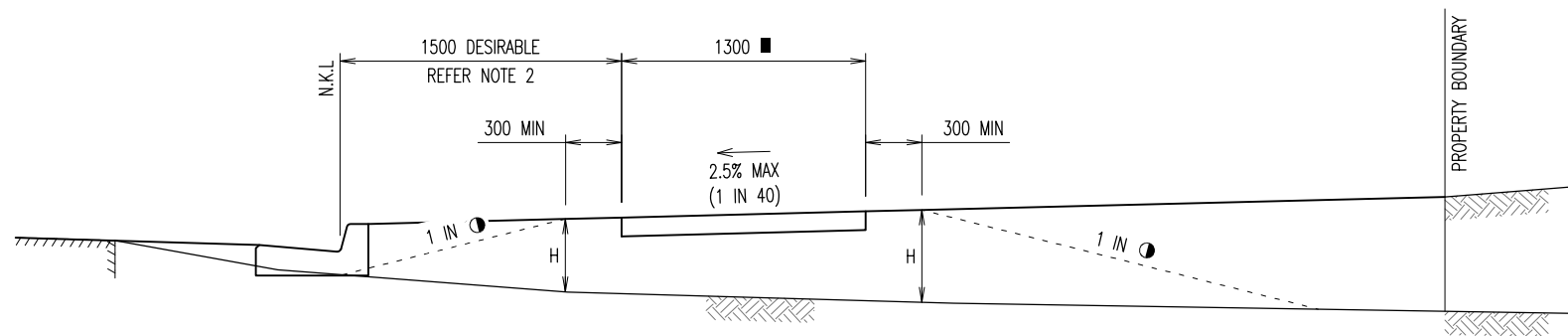




**PAVED FOOTPATH**



**ASPHALT FOOTPATH**



**TYPICAL SECTION**

**PAVED FOOTPATH NOTES:**

1. PAVERS OTHER THAN CONCRETE PAVERS ARRANGED IN A STRETCHER BOND PATTERN TO BE APPROVED BY COUNCIL.
2. THE COLOUR AND TYPE OF PAVERS TO BE USED SHALL BE APPROVED BY COUNCIL WITH REGARD TO CONTINUITY WITH SURROUNDING PATTERNS & COLOUR AND WITH REGARDS FOR LONG TERM SKID RESISTANCE AND DURABILITY.
3. CONCRETE EDGING DEPTH TO EQUAL DEPTH OF PAVEMENT WITH A MINIMUM DEPTH OF 200mm. EDGING TO BE TAPERED TO AVOID VISIBILITY.
4. PAVEMENT LAYER TO BE COMPACTED ROAD BASE TYPE 2.3 WITH A MINIMUM DEPTH OF 125mm. REFER TABLE FOR DEPTH.

| CBR SUBGRADE   | DEPTH OF BASE COURSE |
|----------------|----------------------|
| LESS THAN 3    | 200                  |
| 3 - 5          | 150                  |
| GREATER THAN 5 | 125                  |

**ASPHALT FOOTPATH NOTES:**

1. FOOTPATH SURFACE TO BE CONSTRUCTED FROM ASPHALT TYPE DG10 WITH A MINIMUM THICKNESS OF 30mm.
2. PAVEMENT LAYER TO BE COMPACTED ROAD BASE TYPE 2.3 WITH A MINIMUM DEPTH OF 125mm. REFER TABLE FOR DEPTH.

**GENERAL NOTES:**

1. FINISHED SURFACE OF FOOTPATH TO BE NON SLIP AND COMPLY WITH THE REQUIREMENTS OF AS 4586.
2. THE DIMENSION BETWEEN KERB INVERT AND EDGE OF FOOTPATH MAY BE VARIED SUBJECT TO COUNCIL'S APPROVAL. MINIMUM FOOTPATH OFFSET SHOULD NOT BE LESS THAN 500mm IN ANY SITUATION.
3. PROFILE OF FOOTPATH ADJOINING EXISTING DRIVEWAYS IS TO BE TRANSITIONED OVER A MINIMUM LENGTH OF 3.0m.
4. FOR APPROPRIATE TREATMENT OF LONGITUDINAL GRADES GREATER THAN 1 IN 8 (12.5%), REFER TO AS 1428 - DESIGN FOR ACCESS & MOBILITY.
5. PROVIDE MIN 1 IN 10 TRANSITION BETWEEN DIFFERENT FOOTPATH WIDTHS.
6. ALL APPROPRIATE PERMITS MUST BE OBTAINED FROM COUNCIL, INCLUDING APPROVAL OF LOCATION AND LEVELS PRIOR TO EXCAVATION.
7. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

**LEGEND**

- N.K.L. NOMINAL KERB LINE (KERB INVERT)
- FOOTPATH WIDTH, REFER PROJECT DRAWINGS
- BATTER SLOPE - 1 IN 6 FOR H < 0.5m  
- 1 IN 4 FOR H => 0.5m

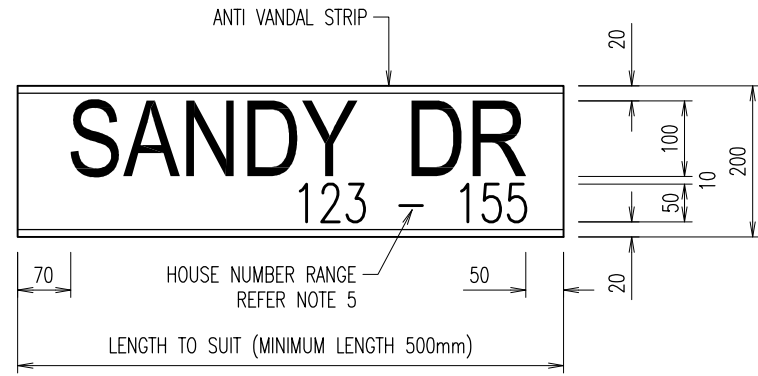
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| F   |                       |          |      |
| E   |                       |          |      |
| D   |                       |          |      |
| C   |                       |          |      |
| B   |                       |          |      |
| A   | ORIGINAL ISSUE        | 08/16    |      |
| REV | DETAILS OF AMENDMENTS | APPROVED | DATE |



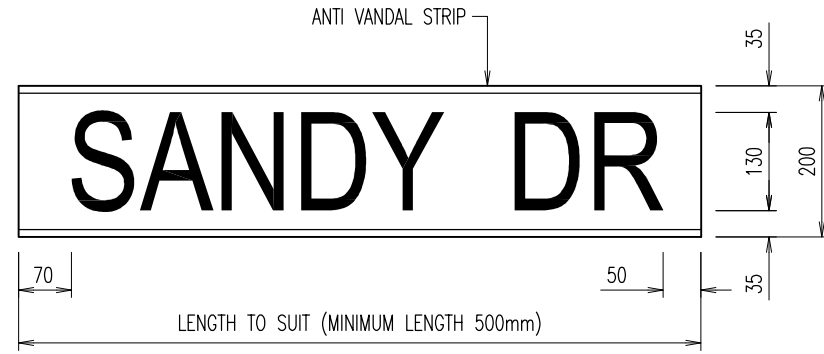
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| PAVED & ASPHALT FOOTPATHS<br>TYPICAL CONSTRUCTION DETAILS |         |                                     |       |
| DRAWN   | CHECKED | APPROVED BY INFRASTRUCTURE SERVICES | DATE  |
| DESIGN OFFICE   | CWB *   | Davendra Naidu *                    | 08/16 |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE               |         |                                     |       |

|                      |           |    |   |
|----------------------|-----------|----|---|
| STANDARD DRAWING     |           |    |   |
| SHEET                | 1         | OF | 1 |
| STANDARD DRAWING No: |           |    |   |
| A3                   | FC-240-04 |    |   |
| A                    |           |    |   |

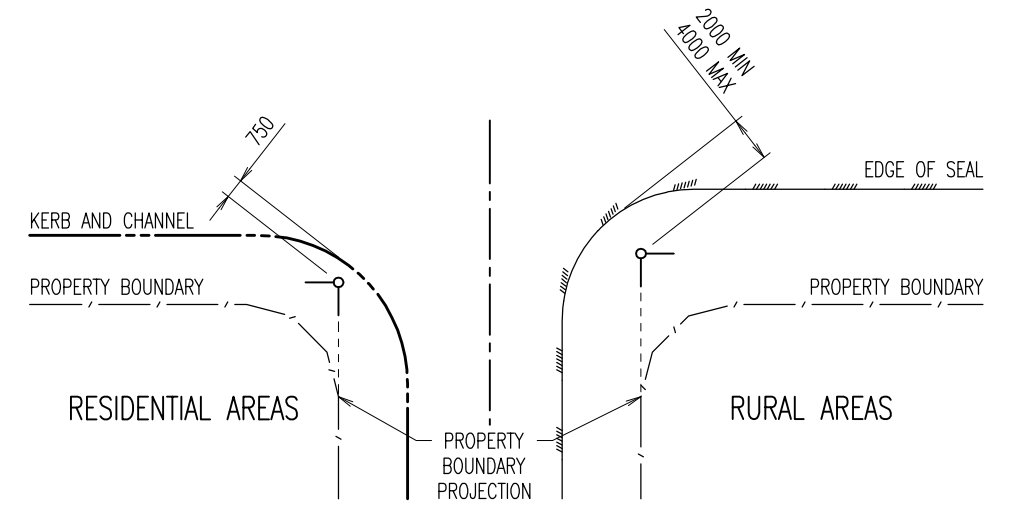




**NAME PLATE – NUMBERED**



**NAME PLATE – REGULAR**



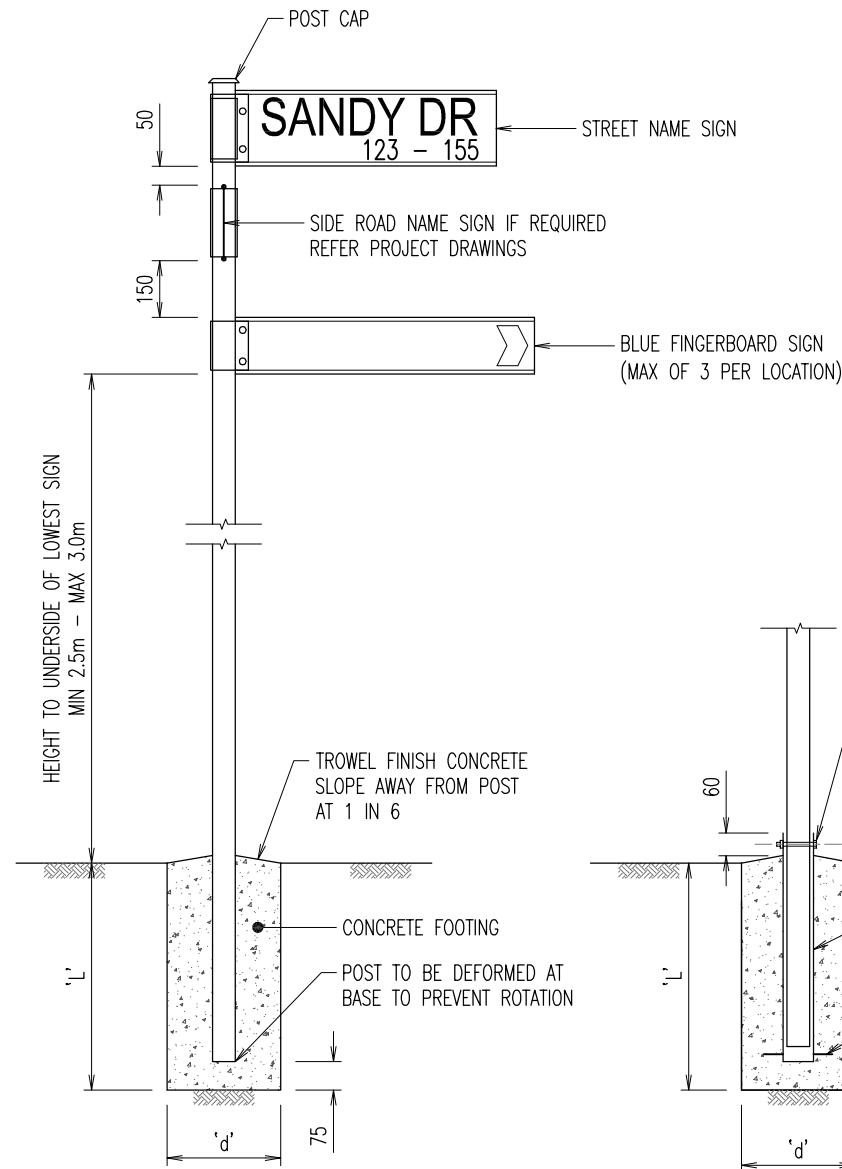
**STREET NAME SIGN LOCATIONS**

**NOTES:**

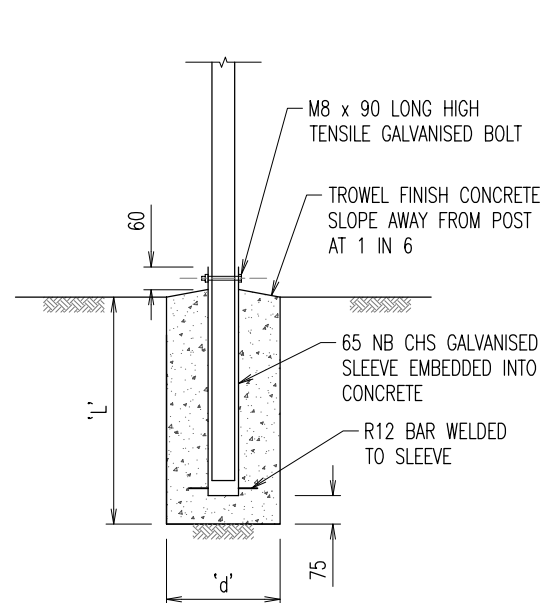
- STREET NAMES AND NUMBERING MUST BE APPROVED BY COUNCIL.
- CIRCULAR HOLLOW SECTION (CHS) SHALL BE TO AS/NZS 1163 AND HOT DIPPED GALVANISED TO AS/NZS 4680.
- NAME PLATES: 200mm WIDE AND 3mm THICK EXTRUDED ALUMINIUM DUMBELL SECTION.
- BRACKET: STANDARD 200mm WIDE AND 3mm THICK EXTRUDED ALUMINIUM BRACKET (INCLUDING 2 x M10 x 25mm CADMIUM OR STAINLESS STEEL BOLTS, NUTS AND WASHERS).
- LETTERS & NUMBERS: BLACK LEGEND ON CLASS 1 RETROREFLECTIVE WHITE BACKGROUND (BOTH SIDES) TO AS/NZS 1906.1.  
LETTERS: 100mm HIGH (NUMBERED NAME PLATE) OR 130mm HIGH (REGULAR NAME PLATE), SERIES B, MEDIUM SPACING (SPACING MAY BE VARIED TO SUIT LENGTH OF STREET NAME WHEN APPROVED BY COUNCIL).  
NUMBERS: 50mm HIGH, SERIES C, NARROW SPACING.  
ALL TEXT TO AS 1744.
- HOUSE NUMBER RANGE: IF SIGN ON ODD SIDE OF ROAD – ODD NUMBERS ONLY  
IF SIGN ON EVEN SIDE OF ROAD – EVEN NUMBERS ONLY
- ALL SIGNS ARE TO BE APPROVED BY COUNCIL PRIOR TO ERECTION.
- SIGNS TO BE POSITIONED ON THE SIDE OF STREET/ROAD THAT PROVIDES BEST VISIBILITY.
- WHERE SIDE AND MAIN ROAD NAMES ARE MOUNTED ON THE ONE POST THE SIDE ROAD NAME SHALL BE MOUNTED BELOW THE MAIN ROAD NAME.
- SPECIAL SIGNS MAY BE REQUIRED FOR CIRCUITS ETC.
- ALL ALTERNATIVE STREET SIGNAGE E.G. THEME OR COLOUR, IS TO BE SPECIFICALLY APPROVED BY THE COUNCIL FOR THE PARTICULAR APPLICATION.
- CONCRETE TO BE GRADE N32 IN ACCORDANCE WITH AS 1379 AND AS 3600.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN.

| TABLE OF ABBREVIATIONS |     |
|------------------------|-----|
| AVENUE                 | AV  |
| BOULEVARD              | BVD |
| CIRCUIT                | CCT |
| CLOSE                  | CL  |
| COURT                  | CT  |
| CRESCENT               | CR  |
| DRIVE                  | DR  |
| ESPLANADE              | ESP |
| LANE                   | LA  |
| PARADE                 | PDE |
| PLACE                  | PL  |
| ROAD                   | RD  |
| STREET                 | ST  |
| TERRACE                | TCE |
| WAY                    | WAY |

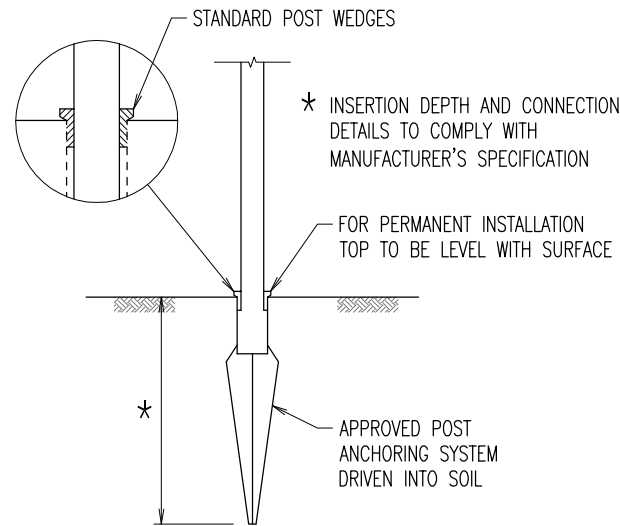
OTHER ABBREVIATIONS TO BE APPROVED BY COUNCIL



**POST DETAIL – CONCRETE**



**POST DETAIL – SLEEVE**



**POST DETAIL – ANCHOR**

|     | POST SPECIFICATION |                |        | FOOTINGS            |            |                 |       |                         |      |     |     |
|-----|--------------------|----------------|--------|---------------------|------------|-----------------|-------|-------------------------|------|-----|-----|
|     | POST DIMENSIONS    | WALL THICKNESS | GRADE  | COHESIVE CLAY SOILS |            |                 |       | COHESIONLESS SAND SOILS |      |     |     |
|     |                    |                |        | FIRM TO STIFF       | VERY STIFF | LOOSE TO MEDIUM | DENSE |                         |      |     |     |
| CHS | 60.3 OD (50NB)     | 3.2            | C350L0 | 'd'                 | 'L'        | 'd'             | 'L'   | 'd'                     | 'L'  | 'd' | 'L' |
|     | 76.1 OD (65NB)     | 3.2            | C350L0 | 300                 | 450        | 300             | 450   | 300                     | 750  | 300 | 750 |
|     |                    |                |        | 300                 | 700        | 300             | 500   | 300                     | 1000 | 300 | 800 |

| REV | DETAILS OF AMENDMENTS  | APPROVED | DATE  |
|-----|--|----------|-------|
| F   |  |          |       |
| E   |  |          |       |
| D   |  |          |       |
| C   |  |          |       |
| B   | NAME PLATE, FOOTING DETAILS, NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE   |          | 01/11 |



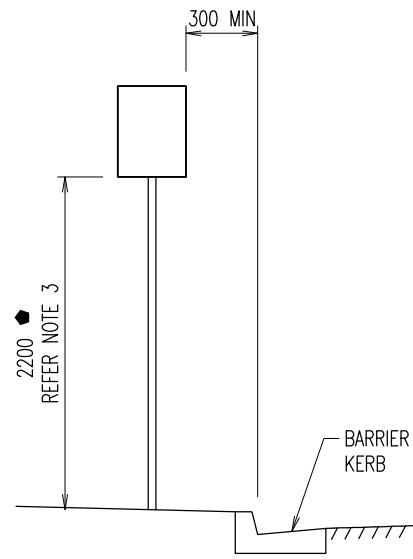
**STREET NAME SIGN AND LOCATION (FINGER BOARD)**

|   |               |         |       |  |      |       |
|---|---------------|---------|-------|--|------|-------|
| DRAWN                                       | DESIGN OFFICE | CHECKED | CWB * | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE | 08/16 |
|   |               |         |       | Darendra Naidu *                             |      |       |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |               |         |       |  |      |       |

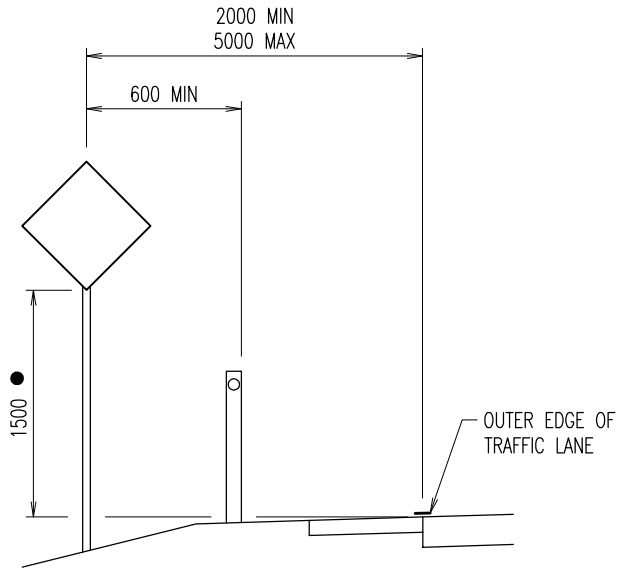
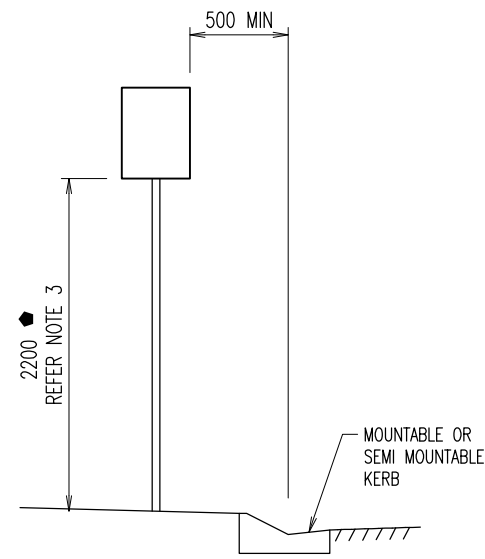
**STANDARD DRAWING**

SHEET 1 OF 1

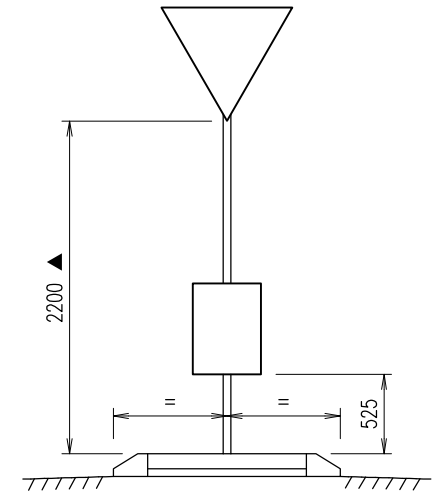
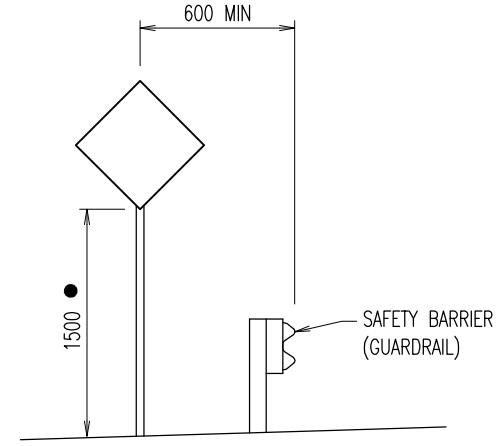
STANDARD DRAWING No: A3 FC-260-01



URBAN ROADS (KERBED)



RURAL ROADS (UNKERBED)

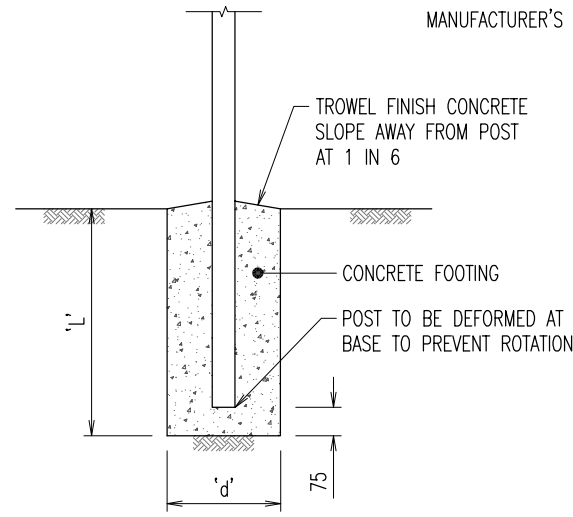


MEDIANS

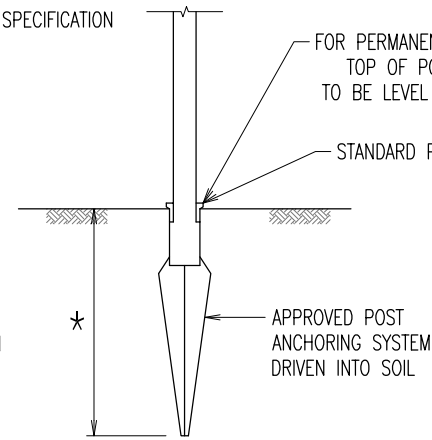
LOCATION OF SIGNS

| POST SPECIFICATION |                 |                |        | FOOTINGS            |     |            |     |                         |      |       |     |
|--------------------|-----------------|----------------|--------|---------------------|-----|------------|-----|-------------------------|------|-------|-----|
|                    | POST DIMENSIONS | WALL THICKNESS | GRADE  | COHESIVE CLAY SOILS |     |            |     | COHESIONLESS SAND SOILS |      |       |     |
|                    |                 |                |        | FIRM TO STIFF       |     | VERY STIFF |     | LOOSE TO MEDIUM         |      | DENSE |     |
|                    |                 |                |        | 'd'                 | 'L' | 'd'        | 'L' | 'd'                     | 'L'  | 'd'   | 'L' |
| CHS                | 60.3 OD (50NB)  | 3.2            | C350LO | 300                 | 450 | 300        | 450 | 300                     | 750  | 300   | 750 |
|                    | 76.1 OD (65NB)  | 3.2            | C350LO | 300                 | 700 | 300        | 500 | 300                     | 1000 | 300   | 800 |

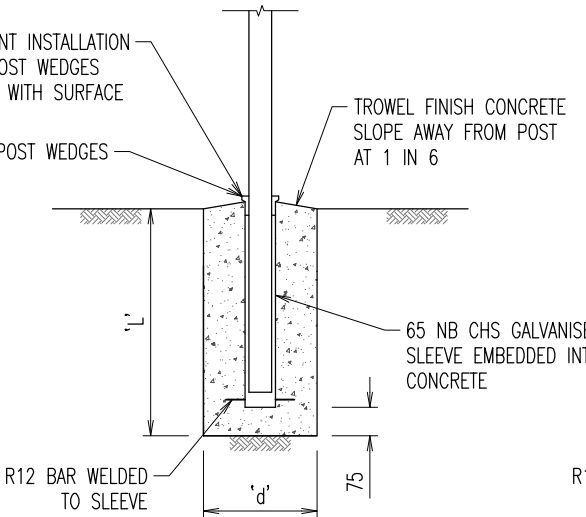
\* INSERTION DEPTH AND CONNECTION DETAILS TO COMPLY WITH MANUFACTURER'S SPECIFICATION



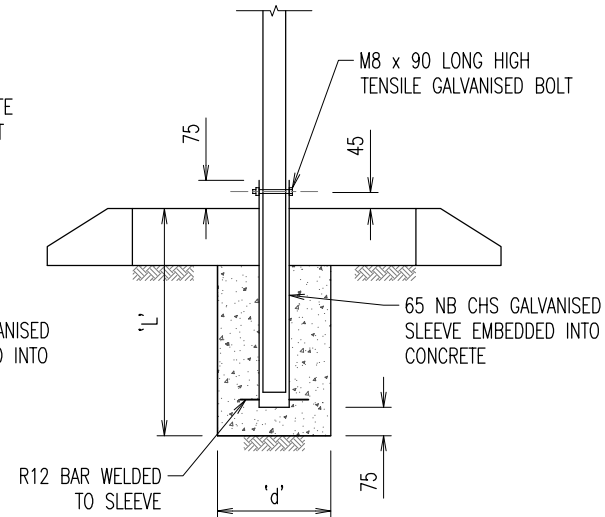
POST DETAIL - CONCRETE



POST DETAIL - ANCHOR



POST DETAIL - SLEEVE TYPE 1 MEDIAN



POST DETAIL - SLEEVE TYPE 2 MEDIAN

NOTES:

- ALL SIGNS ARE TO BE APPROVED BY COUNCIL PRIOR TO ERECTION.
- THE LATERAL AND VERTICAL PLACEMENT OF SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- SIGNS THAT OVERHANG A FOOTWAY OR CYCLE WAY SHALL HAVE A HEIGHT OF 2.5m MIN ABOVE THE LEVEL OF THE FOOTWAY OR CYCLE PATH.
- SIGN CONFIGURATION TYPE 1 FOR MEDIANS IS FOR GENERAL USE. SIGN CONFIGURATION TYPE 2 IS TO BE USED IN HIGH DAMAGE RISK AREAS.
- CIRCULAR HOLLOW SECTIONS (CHS) SHALL BE TO AS/NZS 1163 AND HOT DIPPED GALVANISED TO AS/NZS 4680.
- CONCRETE GRADE TO BE N32/20 IN ACCORDANCE WITH AS 1379 AND AS 3600.
- DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

LEGEND

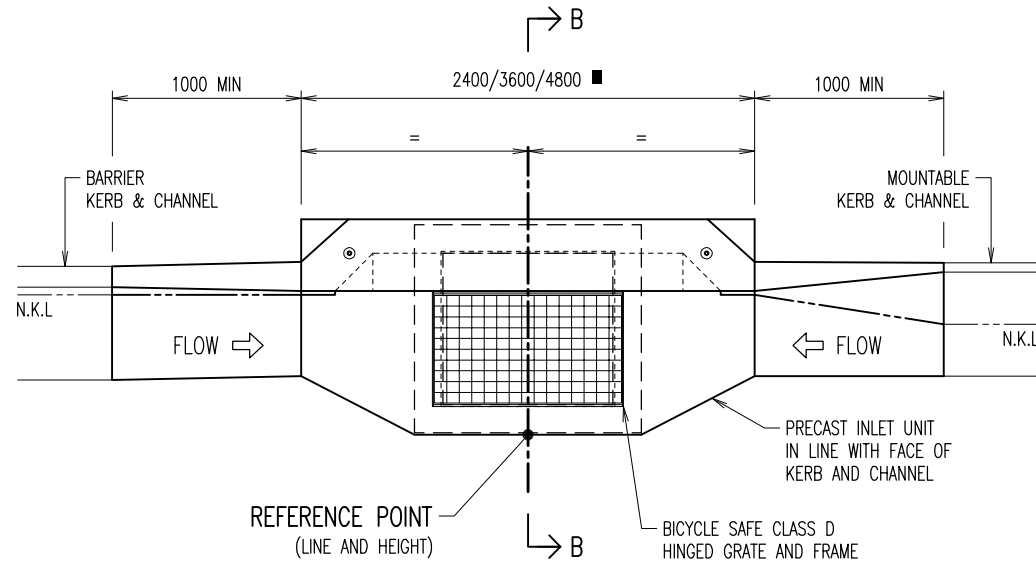
- WHEN SIGN OVERHANGS A FOOTPATH OR CYCLE PATH, DIMENSION TO BE 2500 MIN
- PARKING AND GUIDE SIGNS TO BE 2200 ABOVE ROAD SURFACE
- SOME SIGNS (KEEP LEFT, NO-U TURN, D4 HAZARD SERIES, ETC) TO BE MOUNTED AT 525 ABOVE MEDIAN SURFACE. HEIGHT CAN BE ADJUSTED IF THERE IS A VISIBILITY PROBLEM

|     |  |          |       |
|-----|--|----------|-------|
| F   |  |          |       |
| E   |  |          |       |
| D   |  |          |       |
| C   |  |          |       |
| B   | FOOTING DETAILS, NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE                                     |          | 01/11 |
| REV | DETAILS OF AMENDMENTS                              | APPROVED | DATE  |

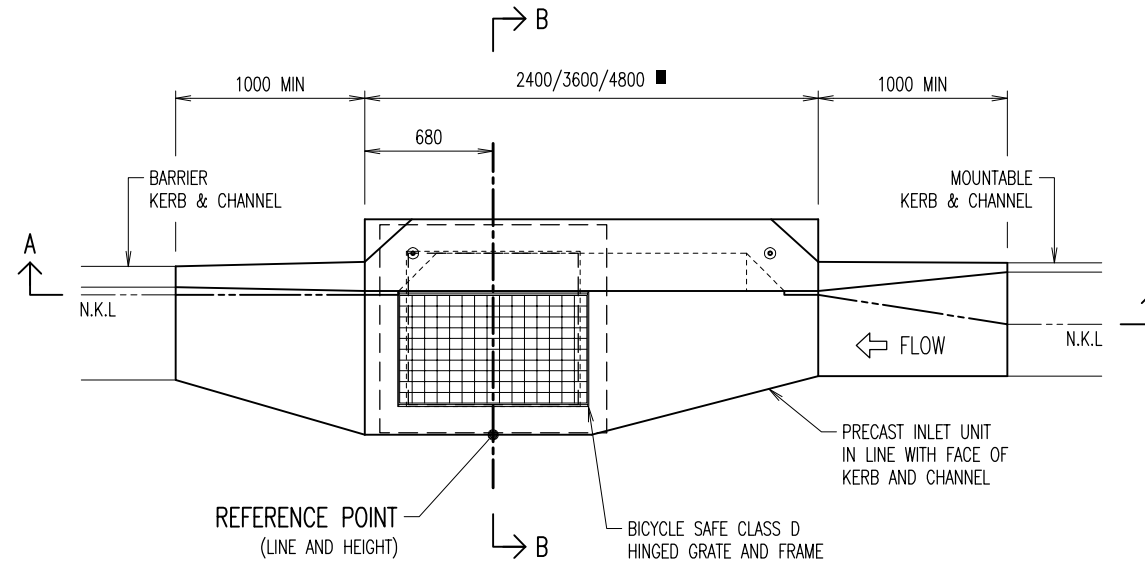


|  |               |         |       |
|--|---------------|---------|-------|
| TRAFFIC SIGN INSTALLATION DETAILS            |               |         |       |
| DRAWN  | DESIGN OFFICE | CHECKED | CWB * |
| APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES |               | DATE    |       |
| Davendra Naidu *                             |               | 08/16   |       |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE  |               |         |       |

|                      |           |    |   |
|----------------------|-----------|----|---|
| STANDARD DRAWING     |           |    |   |
| SHEET                | 1         | OF | 1 |
| STANDARD DRAWING No: |           |    |   |
| A3                   | FC-260-02 |    |   |
| A                    | B         |    |   |



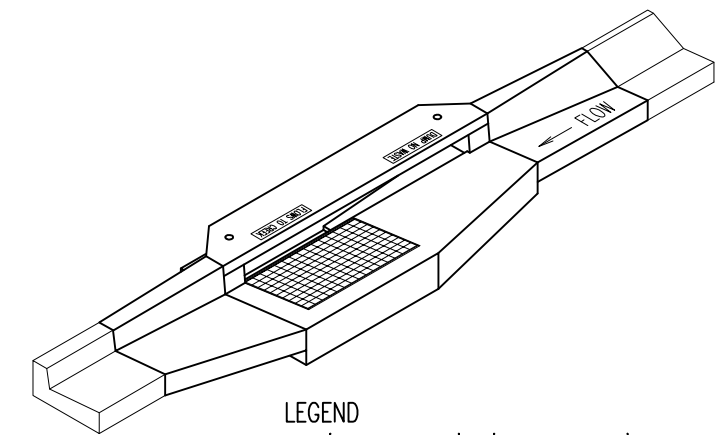
**PLAN VIEW**  
KERB IN LINE - SAG



**PLAN VIEW**  
KERB IN LINE - ON GRADE

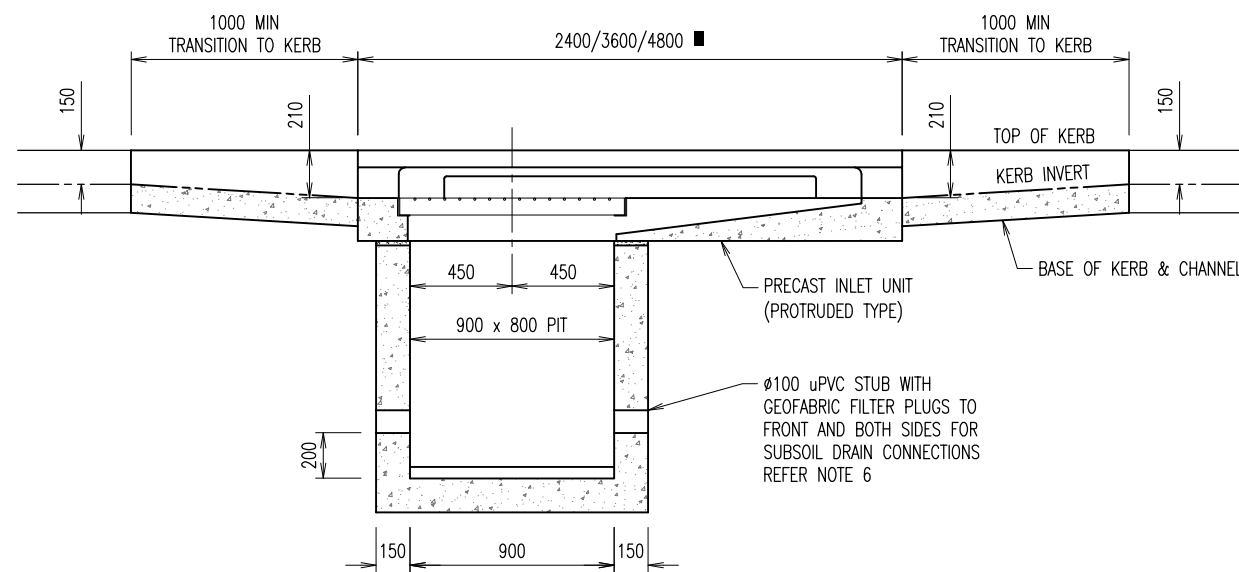
**INLET UNIT CONFIGURATION**

| UNIT CODE                               | DESCRIPTION               |
|---|---------------------------|
| L24P                                    | 2400 UNIT - LEFT TROUGH   |
| C24P                                    | 2400 UNIT - CENTRE TROUGH |
| R24P                                    | 2400 UNIT - RIGHT TROUGH  |
| L36P                                    | 3600 UNIT - LEFT TROUGH   |
| C36P                                    | 3600 UNIT - CENTRE TROUGH |
| R36P                                    | 3600 UNIT - RIGHT TROUGH  |
| L48P                                    | 4800 UNIT - LEFT TROUGH   |
| C48P                                    | 4800 UNIT - CENTRE TROUGH |
| R48P                                    | 4800 UNIT - RIGHT TROUGH  |
| P - PROTRUDED INLET UNIT (KERB IN LINE) |                           |

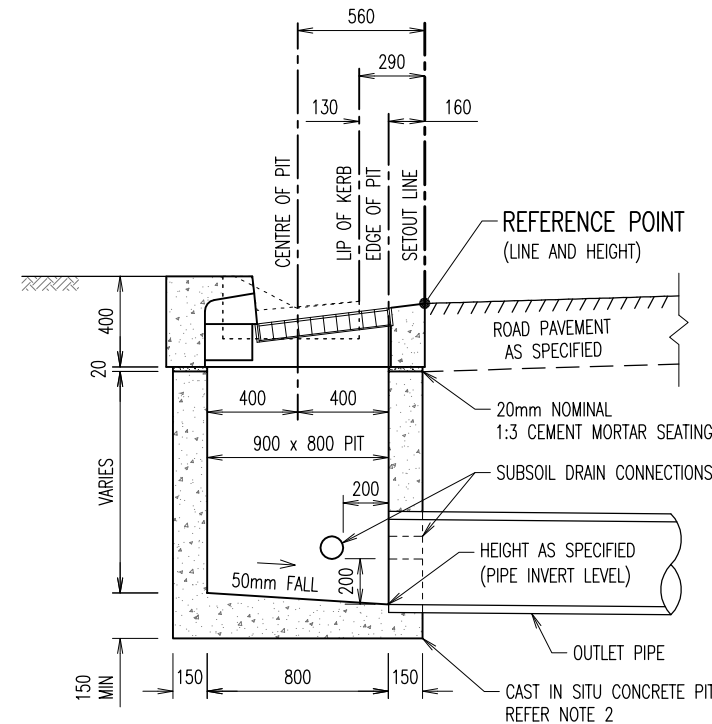


**LEGEND**  
TEXT 'DUMP NO WASTE' & 'FLOWS TO CREEK'  
(40mm HIGH LETTERS IMPRINTED 5mm INTO CONCRETE)

**PERSPECTIVE VIEW**



**SECTION A-A**



**SECTION B-B**

**KERB IN LINE - PRECAST INLET UNIT**  
(PROTRUDED TYPE)

**NOTES:**

- CONCRETE TO BE GRADE N32 IN ACCORDANCE WITH AS 1379 AND AS 3600.
- CONCRETE IN SITU PITS UP TO A DEPTH OF 2.2 METRES DO NOT REQUIRE STEEL REINFORCEMENT. ONE LAYER OF SL81 REINFORCING MESH IS TO BE PLACED CENTRALLY IN THE WALLS FOR PIT DEPTHS 2.2 TO 3.0 METRES. REINFORCING MESH TO AS/NZS 4671.
- PROVIDE 20mm MORTAR (1 CEMENT : 3 FINE SAND) JOINT BETWEEN GULLY PIT AND PRECAST INLET UNIT.
- GRATE AND FRAME SHALL COMPLY WITH THE REQUIREMENTS OF AS 3996 CLASS D DESIGN LOAD.
- GRATE AND FRAME SHALL BE BICYCLE SAFE TO AS 3996. HINGED GRATES ARE TO BE PROVIDED WITH A POSITIVE MECHANICAL RETAINER TO SECURE THE GRATE FIRMLY IN PLACE WHEN IN AN OPEN POSITION. GRATE AND FRAME SHALL BE HOT DIPPED GALVANISED TO AS/NZS 4680.
- WHERE SUBSOIL DRAINS ARE DISCHARGED INTO A GULLY PIT, THE OUTLET OF THE SUBSOIL DRAIN SHALL BE LOCATED A MIN 200mm ABOVE THE INVERT LEVEL OF THE GULLY PIT UNLESS OTHERWISE APPROVED BY COUNCIL. THE SUBSOIL DRAIN OUTLETS SHALL BE PROVIDED WITH PEST-PROOF FLAPS.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

**LEGEND**

- REFER PROJECT DRAWINGS FOR PRECAST UNIT LENGTH & TYPE
- N.K.L. NOMINAL KERB LINE (KERB INVERT)

|     |  |          |       |
|-----|--|----------|-------|
| F   |  |          |       |
| E   |  |          |       |
| D   |  |          |       |
| C   |  |          |       |
| B   | SECTION, PLAN & SUBSOIL ADDED, REFERENCE POINT & NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE   |          | 04/11 |
| REV | DETAILS OF AMENDMENTS  | APPROVED | DATE  |



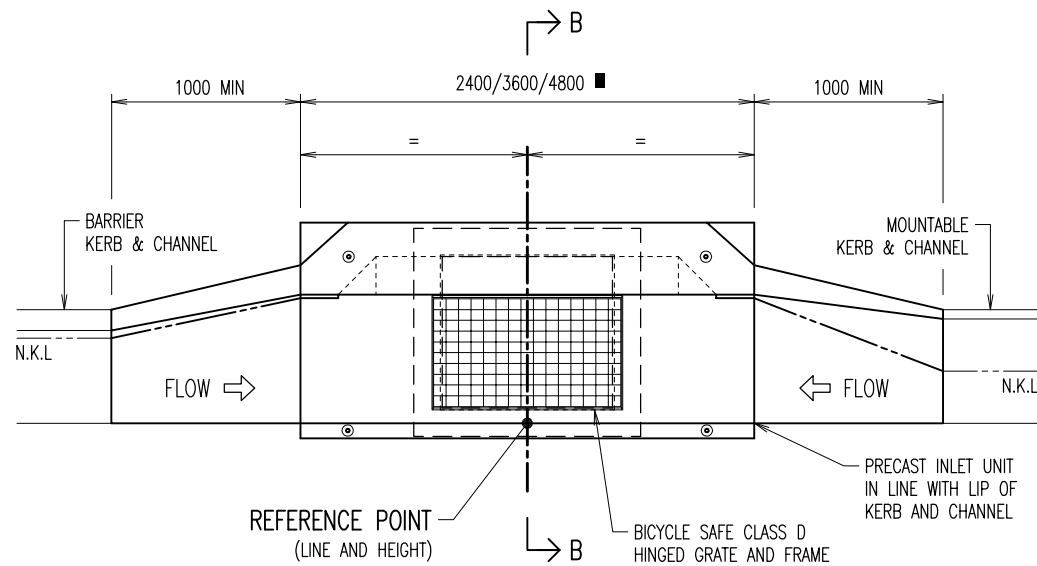
**ROAD GULLY UNIT - KERB IN LINE (PROTRUDED) PRECAST INLET UNIT**

|   |       |   |               |
|---|-------|---|---------------|
| DESIGN OFFICE                               | CWB * | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES<br>Dareendra Naidu * | DATE<br>08/16 |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |       |   |               |

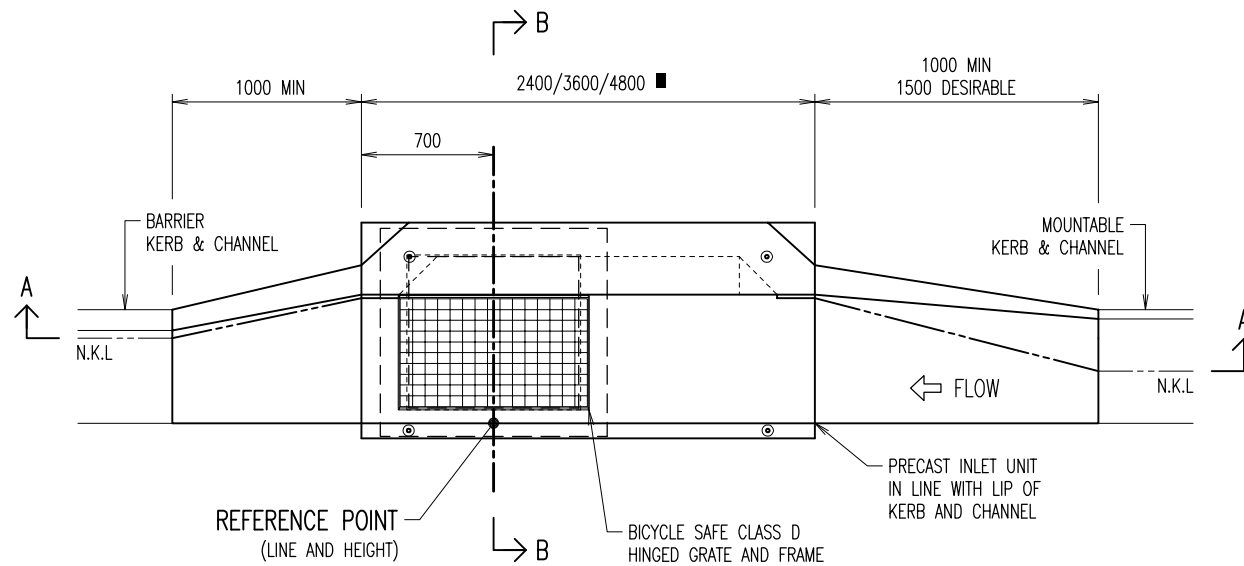
**STANDARD DRAWING**

SHEET 1 OF 1

STANDARD DRAWING No:  
**A3 FC-310-01**



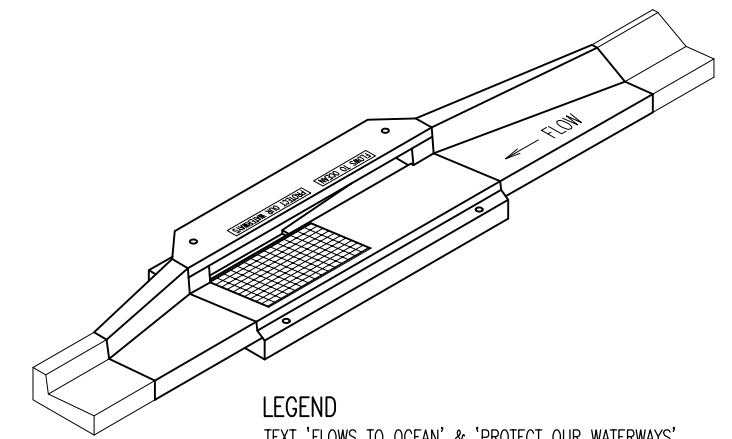
PLAN VIEW  
LIP IN LINE - SAG



PLAN VIEW  
LIP IN LINE - ON GRADE

INLET UNIT CONFIGURATION

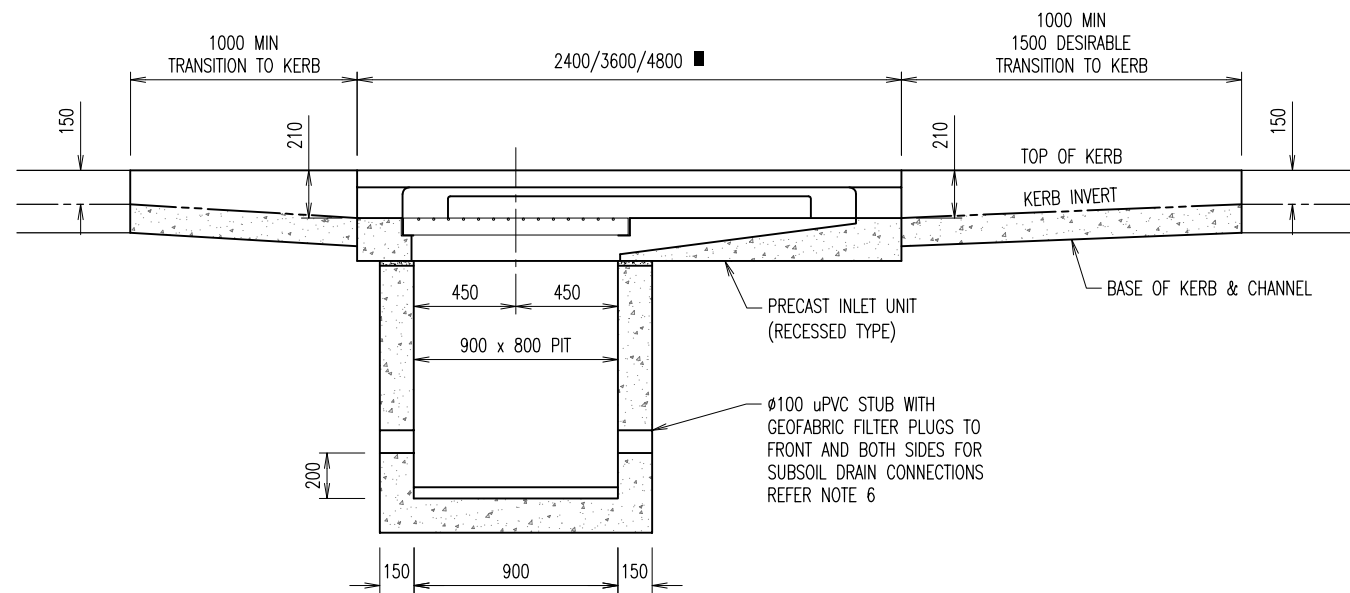
| UNIT CODE                             | DESCRIPTION               |
|---------------------------------------|---------------------------|
| L24R                                  | 2400 UNIT - LEFT TROUGH   |
| C24R                                  | 2400 UNIT - CENTRE TROUGH |
| R24R                                  | 2400 UNIT - RIGHT TROUGH  |
| L36R                                  | 3600 UNIT - LEFT TROUGH   |
| C36R                                  | 3600 UNIT - CENTRE TROUGH |
| R36R                                  | 3600 UNIT - RIGHT TROUGH  |
| L48R                                  | 4800 UNIT - LEFT TROUGH   |
| C48R                                  | 4800 UNIT - CENTRE TROUGH |
| R48R                                  | 4800 UNIT - RIGHT TROUGH  |
| R - RECESSED INLET UNIT (LIP IN LINE) |                           |



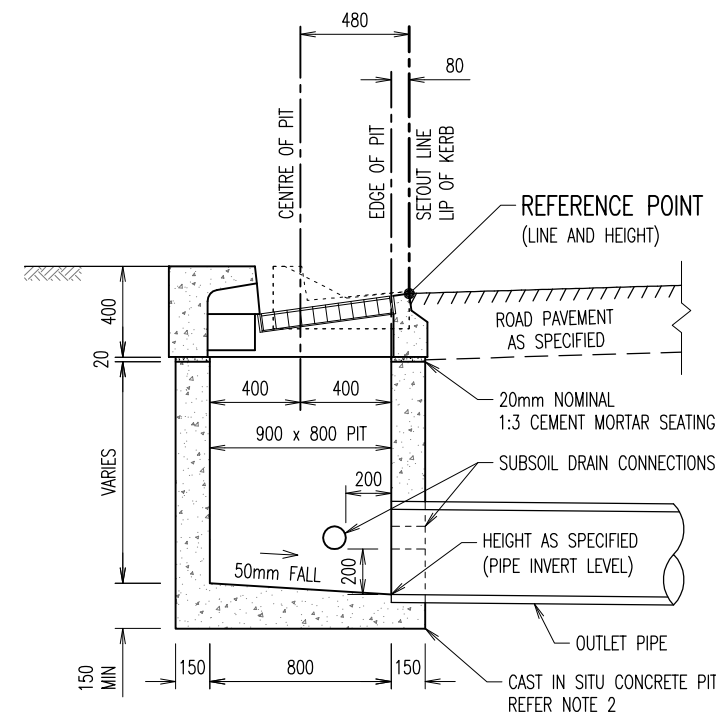
LEGEND

TEXT 'FLOWS TO OCEAN' & 'PROTECT OUR WATERWAYS'  
(40mm HIGH LETTERS IMPRINTED 5mm INTO CONCRETE)

PERSPECTIVE VIEW



SECTION A-A



SECTION B-B

NOTES:

- CONCRETE TO BE GRADE N32 IN ACCORDANCE WITH AS 1379 AND AS 3600.
- CONCRETE IN SITU PITS UP TO A DEPTH OF 2.2 METRES DO NOT REQUIRE STEEL REINFORCEMENT. ONE LAYER OF SL81 REINFORCING MESH IS TO BE PLACED CENTRALLY IN THE WALLS FOR PIT DEPTHS 2.2 TO 3.0 METRES. REINFORCING MESH TO AS/NZS 4671.
- PROVIDE 20mm MORTAR (1 CEMENT : 3 FINE SAND) JOINT BETWEEN GULLY PIT AND PRECAST INLET UNIT.
- GRATE AND FRAME SHALL COMPLY WITH THE REQUIREMENTS OF AS 3996 CLASS D DESIGN LOAD.
- GRATE AND FRAME SHALL BE BICYCLE SAFE TO AS 3996. HINGED GRATES ARE TO BE PROVIDED WITH A POSITIVE MECHANICAL RETAINER TO SECURE THE GRATE FIRMLY IN PLACE WHEN IN AN OPEN POSITION. GRATE AND FRAME SHALL BE HOT DIPPED GALVANISED TO AS/NZS 4680.
- WHERE SUBSOIL DRAINS ARE DISCHARGED INTO A GULLY PIT, THE OUTLET OF THE SUBSOIL DRAIN SHALL BE LOCATED A MIN 200mm ABOVE THE INVERT LEVEL OF THE GULLY PIT UNLESS OTHERWISE APPROVED BY COUNCIL. THE SUBSOIL DRAIN OUTLETS SHALL BE PROVIDED WITH PEST-PROOF FLAPS.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

LEGEND

- REFER PROJECT DRAWINGS FOR PRECAST UNIT LENGTH & TYPE
- N.K.L. NOMINAL KERB LINE (KERB INVERT)

LIP IN LINE - PRECAST INLET UNIT  
(RECESSED TYPE)



ROAD GULLY UNIT - LIP IN LINE (RECESSED)  
PRECAST INLET UNIT

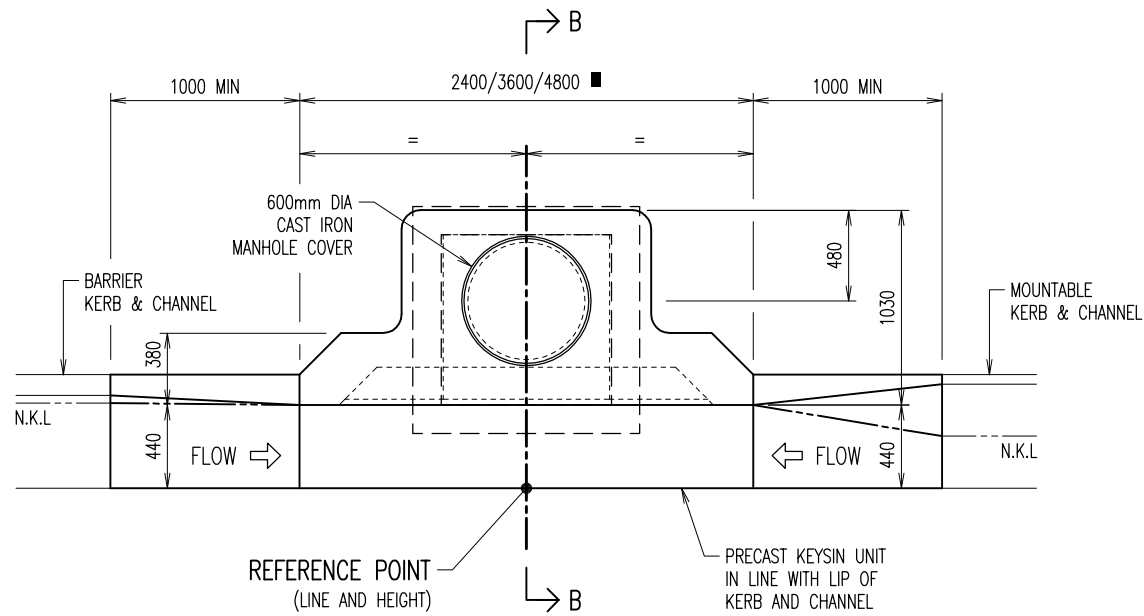
|   |       |  |               |
|---|-------|--|---------------|
| DESIGN OFFICE                               | CWB * | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES<br>Darendra Naidu * | DATE<br>08/16 |
| * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |       |  |               |

STANDARD DRAWING

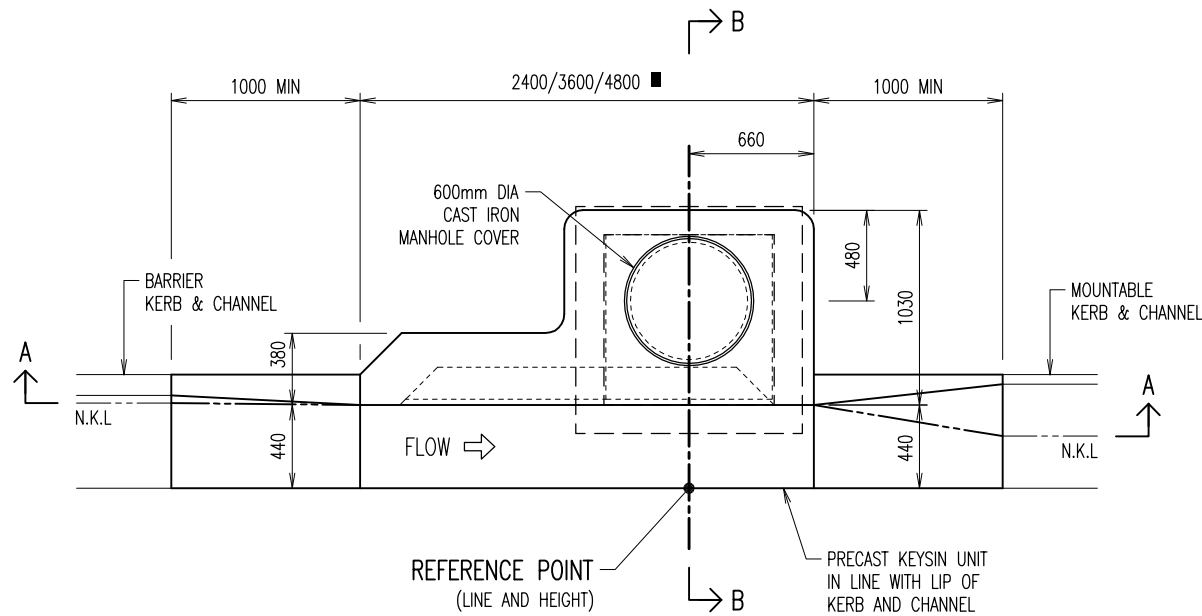
|                      |           |    |   |
|----------------------|-----------|----|---|
| SHEET                | 1         | OF | 1 |
| STANDARD DRAWING No: |           |    |   |
| A3                   | FC-310-02 |    |   |
| A                    | B         |    |   |

|     |  |          |       |
|-----|--|----------|-------|
| F   |  |          |       |
| E   |  |          |       |
| D   |  |          |       |
| C   |  |          |       |
| B   | SECTION, PLAN & SUBSOIL ADDED, REFERENCE POINT & NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE   |          | 04/11 |
| REV | DETAILS OF AMENDMENTS  | APPROVED | DATE  |

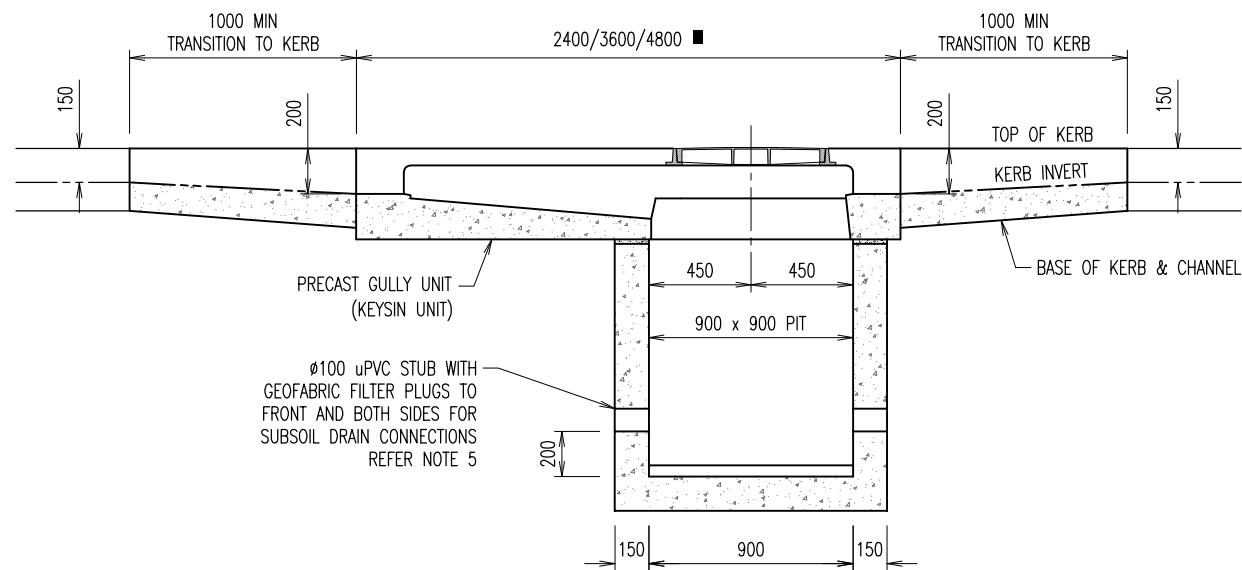




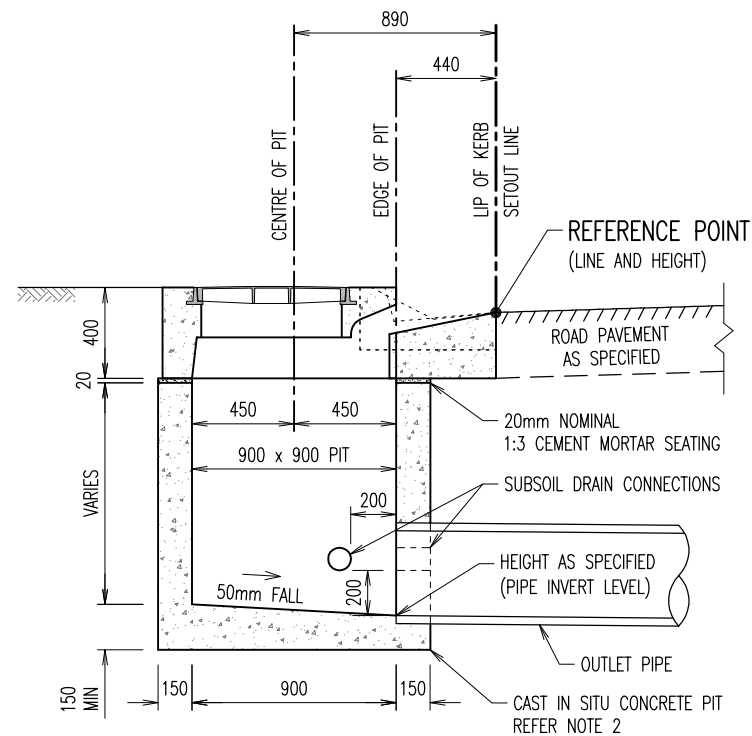
PLAN VIEW  
LIP IN LINE - SAG



PLAN VIEW  
LIP IN LINE - ON GRADE



SECTION A-A



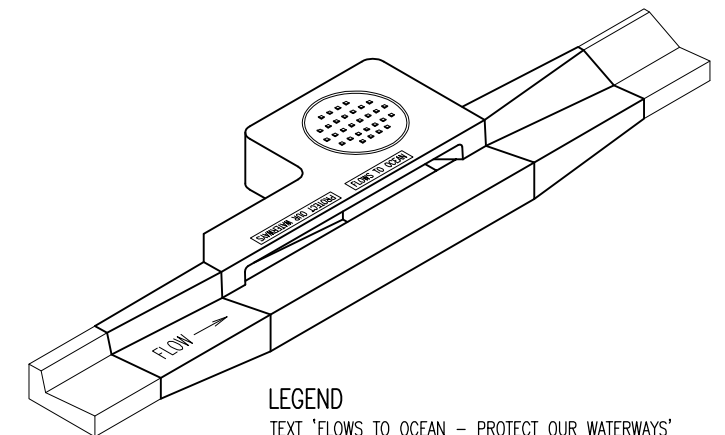
SECTION B-B

LIP IN LINE - KEYSIN UNIT

KEYSIN UNIT CONFIGURATION

| UNIT CODE | DESCRIPTION               |
|-----------|---------------------------|
| L24K      | 2400 UNIT - LEFT TROUGH   |
| C24K      | 2400 UNIT - CENTRE TROUGH |
| R24K      | 2400 UNIT - RIGHT TROUGH  |
| L36K      | 3600 UNIT - LEFT TROUGH   |
| C36K      | 3600 UNIT - CENTRE TROUGH |
| R36K      | 3600 UNIT - RIGHT TROUGH  |
| L48K      | 4800 UNIT - LEFT TROUGH   |
| C48K      | 4800 UNIT - CENTRE TROUGH |
| R48K      | 4800 UNIT - RIGHT TROUGH  |

K - KEYSIN UNIT (LIP IN LINE)



LEGEND  
TEXT 'FLOWS TO OCEAN - PROTECT OUR WATERWAYS'  
(40mm HIGH LETTERS IMPRINTED 5mm INTO CONCRETE)

PERSPECTIVE VIEW

NOTES:

- CONCRETE TO BE GRADE N32 IN ACCORDANCE WITH AS 1379 AND AS 3600.
- CONCRETE IN SITU PITS UP TO A DEPTH OF 2.2 METRES DO NOT REQUIRE STEEL REINFORCEMENT. ONE LAYER OF SL81 REINFORCING MESH IS TO BE PLACED CENTRALLY IN THE WALLS FOR PIT DEPTHS 2.2 TO 3.0 METRES. REINFORCING MESH TO AS/NZS 4671.
- PROVIDE 20mm MORTAR (1 CEMENT : 3 FINE SAND) JOINT BETWEEN GULLY PIT AND KEYSIN UNIT.
- COVER AND FRAME SHALL COMPLY WITH THE REQUIREMENTS OF AS 3996 CLASS D DESIGN LOAD.
- WHERE SUBSOIL DRAINS ARE DISCHARGED INTO A GULLY PIT, THE OUTLET OF THE SUBSOIL DRAIN SHALL BE LOCATED A MIN 200mm ABOVE THE INVERT LEVEL OF THE GULLY PIT UNLESS OTHERWISE APPROVED BY COUNCIL. THE SUBSOIL DRAIN OUTLETS SHALL BE PROVIDED WITH PEST-PROOF FLAPS.
- DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

LEGEND

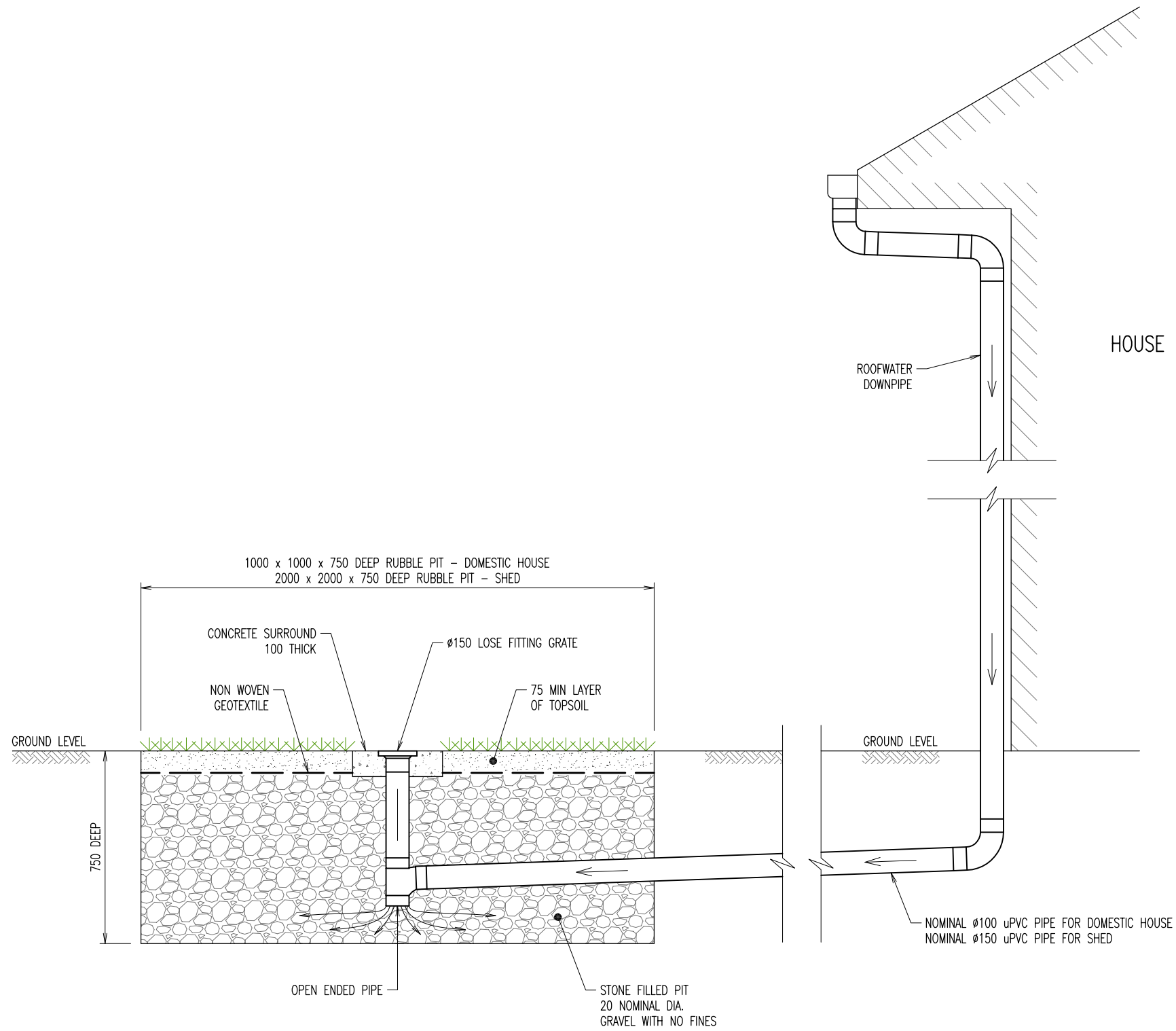
- REFER PROJECT DRAWINGS FOR KEYSIN UNIT LENGTH & TYPE
- N.K.L. NOMINAL KERB LINE (KERB INVERT)

|     |  |          |       |
|-----|--|----------|-------|
| F   |  |          |       |
| E   |  |          |       |
| D   |  |          |       |
| C   |  |          |       |
| B   | SECTION, PLAN & SUBSOIL ADDED, REFERENCE POINT & NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE   |          | 04/11 |
| REV | DETAILS OF AMENDMENTS  | APPROVED | DATE  |



|  |               |   |       |
|--|---------------|---|-------|
| ROAD GULLY UNIT - LIP IN LINE KEYSIN UNIT    |               |   |       |
| DRAWN  | DESIGN OFFICE | CHECKED                                     | CWB * |
| APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES |               | DATE  | 08/16 |
| Dareendra Naidu *                            |               | * SIGNED ORIGINAL HELD IN THE DESIGN OFFICE |       |

|                      |           |
|----------------------|-----------|
| STANDARD DRAWING     |           |
| SHEET                | 1 OF 1    |
| STANDARD DRAWING No: |           |
| A3                   | FC-310-03 |
| A                    | B         |



**NOTES:**

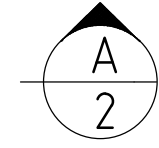
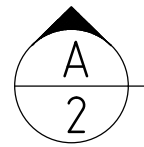
1. THE SOAKAGE PIT SHOULD BE POSITIONED WELL CLEAR OF ALL PROPERTY BOUNDARIES AND STRUCTURES ON SITE.
2. ONLY TO BE USED WITH COUNCIL'S APPROVAL & WHERE IT IS IMPRACTICAL TO DISCHARGE ROOFWATER TO KERB AND CHANNEL.
3. SUITABLE FOR RURAL RESIDENTIAL AREAS.
4. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

|     |   |          |       |
|-----|---|----------|-------|
| F   |   |          |       |
| E   |   |          |       |
| D   |   |          |       |
| C   |   |          |       |
| B   | DETAIL, NOTES ALTERED & TITLEBLOCK CHANGE |          | 08/16 |
| A   | ORIGINAL ISSUE                            |          | 01/11 |
| REV | DETAILS OF AMENDMENTS                     | APPROVED | DATE  |



|  |         |  |       |
|--|---------|--|-------|
| DOMESTIC AND SHED ROOFWATER<br>ONSITE SOAKAGE PIT          |         |  |       |
| DRAWN  | CHECKED | APPROVED BY DIRECTOR INFRASTRUCTURE SERVICES | DATE  |
| DESIGN OFFICE  | CWB *   | <i>Davendra Naidu</i> *                      | 08/16 |
| <small>* SIGNED ORIGINAL HELD IN THE DESIGN OFFICE</small> |         |  |       |

|                                     |           |    |   |
|-------------------------------------|-----------|----|---|
| <b>STANDARD DRAWING</b>             |           |    |   |
| SHEET                               | 1         | OF | 1 |
| <small>STANDARD DRAWING No:</small> |           |    |   |
| A3                                  | FC-310-07 |    |   |
| A                                   | B         |    |   |



**SPECIAL NOTE:**  
 INTERNAL FACE OF PUMP WELL TO BE COATED TO A 5mm THICKNESS WITH KL11 OR A SIMILAR PRODUCT APPROVED BY WBW.

REFER TO PS013 FOR TYPICAL SITE LAYOUT PLAN.



**WIDE BAY WATER**  
 29-31 ELLENGOWAN ST  
 P.O BOX 5499  
 HERVEY BAY, QLD, 4655

## 1800mm DIAMETER SEWAGE PUMP STATION

|        |          |          |
|--------|----------|----------|
| SCALE  | DESIGN   | DATE     |
| SCALE  | CEB      | 23/07/99 |
| DRAWN  | CHECKED  | DATE     |
| WJF    |          | 09/04/03 |
| SURVEY | APPROVED | DATE     |
| DATUM  | S.KHAN   | 18/12/15 |
| DATUM  | APPROVED | DATE     |

### LAYOUT PLAN

|    |                       |        |          |
|----|-----------------------|--------|----------|
| 3  | UPDATED WBW LOGO      | R.C.   | 29.8.16  |
| 2  | DRAWING UPDATED       | Cardno | 18.11.04 |
| 1  | DRAWING UPDATED       | PG     | 12.07.04 |
| MK | DETAILS OF AMENDMENTS | APPR   | DATE     |

|                    |       |    |
|--------------------|-------|----|
| FILE               | SHEET | OF |
| A3                 | PS01  |    |
| PLAN REFERENCE No: |       |    |
| a                  | b     | c  |
| d                  | e     | f  |
| g                  | h     | i  |

WATER TAP TO BE FIXED TO HWD. POLE. INCLUDE 20mm Dia. HOSE COCK WITH REDUCED PRESSURE ZONE BACKFLOW PREVENTION DEVICE INSTALLED IN ACCORDANCE WITH AS3500.

VENT POLE 7.2m HIGH AS PER DETAIL WBW S-0051-1

2/32φmm UPVC CONDUIT

80φ PVC VENT PIPE

90φmm UPVC CONDUIT

LINE OF PUMP WELL UNITS.

2/32φmm UPVC CONDUIT

SWITCHBOARD

40φmm UPVC CONDUIT  
SEWER MAIN

ACCESS COVER  
1350mm x 750mm CLEAR OPENING.

FLOW  
RISING MAIN

LINE OF BASE SLAB AS DETAILED DWG No. 08.

OVERFLOW DIAMETER & GRADE TO ACCOMMODATE INCOMING SEWER PIPE CAPACITY. POSITION TO SUIT SITE PLAN

TABLE OF FITTINGS

| No | DESCRIPTION   | No REQ'D |
|----|---|----------|
| 1  | 100φ DICL Pipe (fl-fl)                              | 2        |
| 2  | 100φ DICL 90° Bend (fl-fl)                          | 3        |
| 3  | 100φ DICL Pipe (fl-pl)                              | 2        |
| 4  | 100φ Gibault Joint                                  | 3        |
| 5  | 100φ DICL Connector (fl-pl)                         | 2        |
| 6  | 100φ Reflux Valve (fl-fl) (Rubber Flap Swing Check) | 2        |
| 7  | 100φ Sluice Valve (fl-fl) (AS3578)                  | 3        |
| 8  | 100x100 DICL Tee (fl-fl-fl)                         | 2        |
| 9  | 100φ "Puddle" flange                                | 3        |
| 10 | 100φ DICL Pipe (fl-fl)                              | 1        |

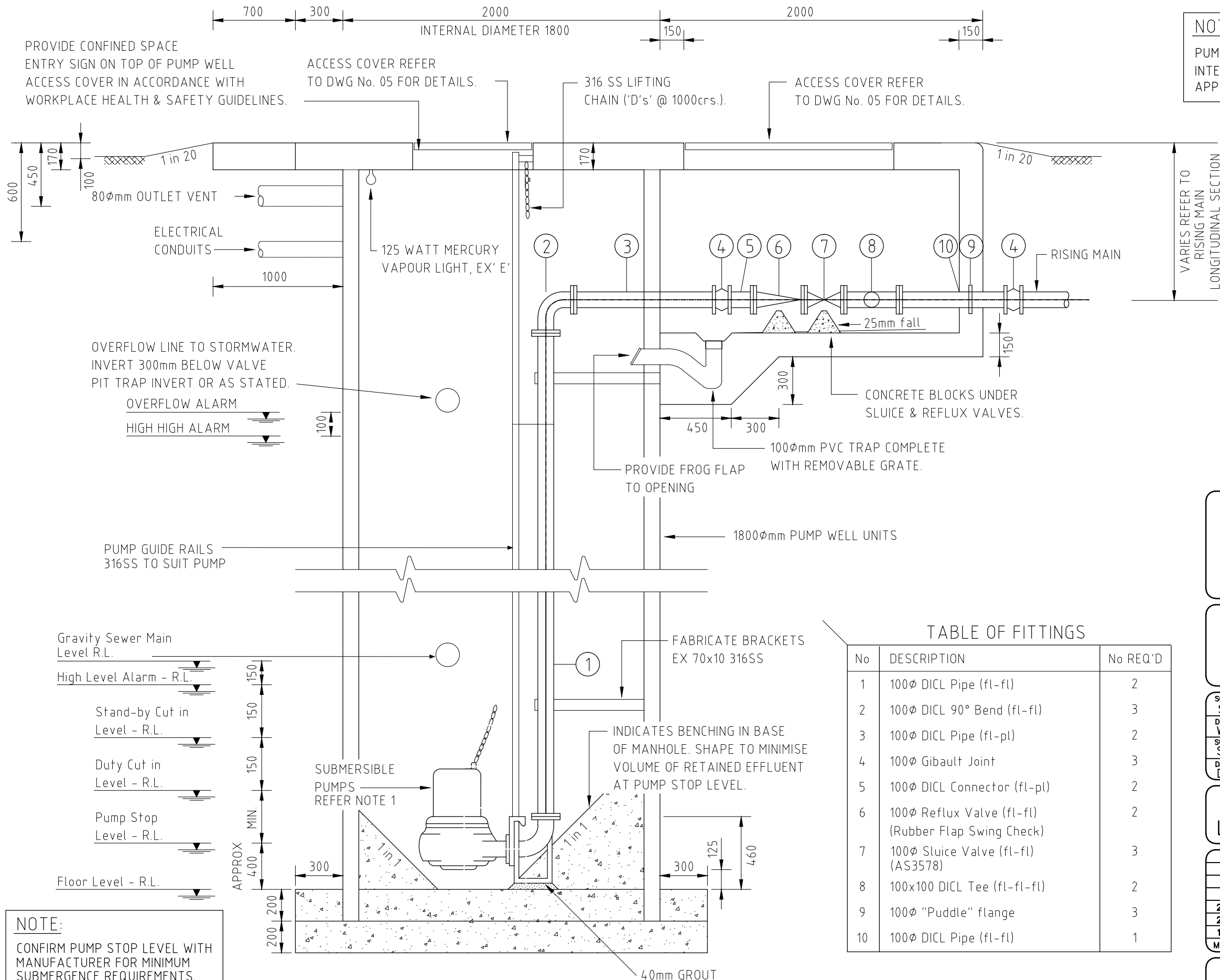
**NOTE:**  
 1. STANDARD DETAILS SHOWN FOR RISING MAINS SMALLER THAN OR EQUAL TO 150mm Dia. ALTERNATIVE DESIGN TO BE SUBMITTED FOR LARGER RISING MAINS  
 2. ALL CONDUITS FROM PUMP WELL TO BE FILLED WITH AN APPROVED VOID FILLER FOLLOWING INSTALLATION OF CABLES.

**NOTE:**  
 ALL UPVC CONDUITS & PIPEWORK LOCATION TO BE SUBJECT TO ENGINEERS PRIOR APPROVAL.

**NOTE:** ALL PIPES & FITTINGS WITHIN PUMP WELL TO BE F.B.E. COATED

# PUMP STATION LAYOUT PLAN





**NOTE:**  
PUMPS TO BE IN ACCORDANCE WITH WSA101  
INTERNAL WETTED PARTS COATED WITH AN  
APPROVED CERAMIC / EPOXY COATING.



WIDE BAY WATER  
29-31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

### 1800mm DIAMETER SEWAGE PUMP STATION

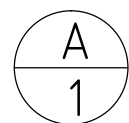
| No | DESCRIPTION  | No REQ'D |
|----|--|----------|
| 1  | 100 $\phi$ DICL Pipe (fl-fl)                                 | 2        |
| 2  | 100 $\phi$ DICL 90° Bend (fl-fl)                             | 3        |
| 3  | 100 $\phi$ DICL Pipe (fl-pl)                                 | 2        |
| 4  | 100 $\phi$ Gibault Joint                                     | 3        |
| 5  | 100 $\phi$ DICL Connector (fl-pl)                            | 2        |
| 6  | 100 $\phi$ Reflux Valve (fl-fl)<br>(Rubber Flap Swing Check) | 2        |
| 7  | 100 $\phi$ Sluice Valve (fl-fl)<br>(AS3578)                  | 3        |
| 8  | 100x100 DICL Tee (fl-fl-fl)                                  | 2        |
| 9  | 100 $\phi$ "Puddle" flange                                   | 3        |
| 10 | 100 $\phi$ DICL Pipe (fl-fl)                                 | 1        |

### LAYOUT PLAN

| SCALE  | DESIGN   | DATE     |
|--------|----------|----------|
| SCALE  | CEB      | 23/07/99 |
| DRAWN  | CHECKED  | DATE     |
| WJF    | 09/04/03 |          |
| SURVEY | APPROVED | DATE     |
| DATUM  | S.KHAN   | 18/12/15 |
|        | APPROVED | DATE     |

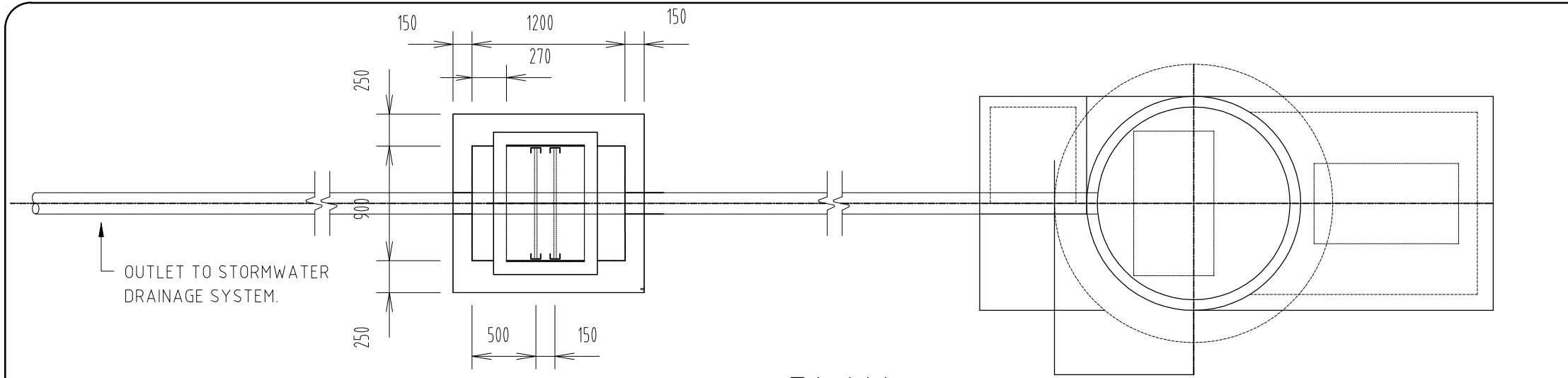
**NOTE:**  
CONFIRM PUMP STOP LEVEL WITH  
MANUFACTURER FOR MINIMUM  
SUBMERGENCE REQUIREMENTS.

# PUMP STATION – SECTION

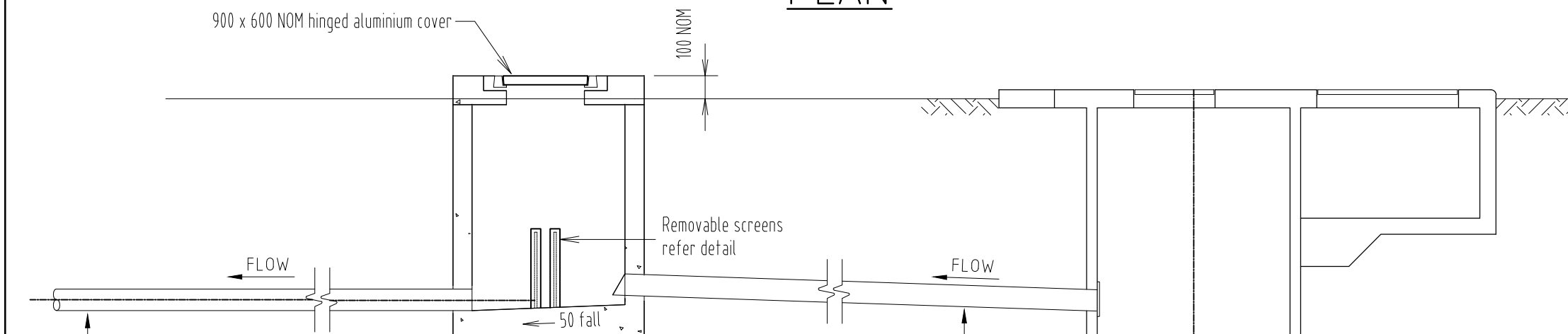


**NOTE:** ALL PIPES & FITTINGS WITHIN PUMP  
WELL TO BE F.B.E. COATED

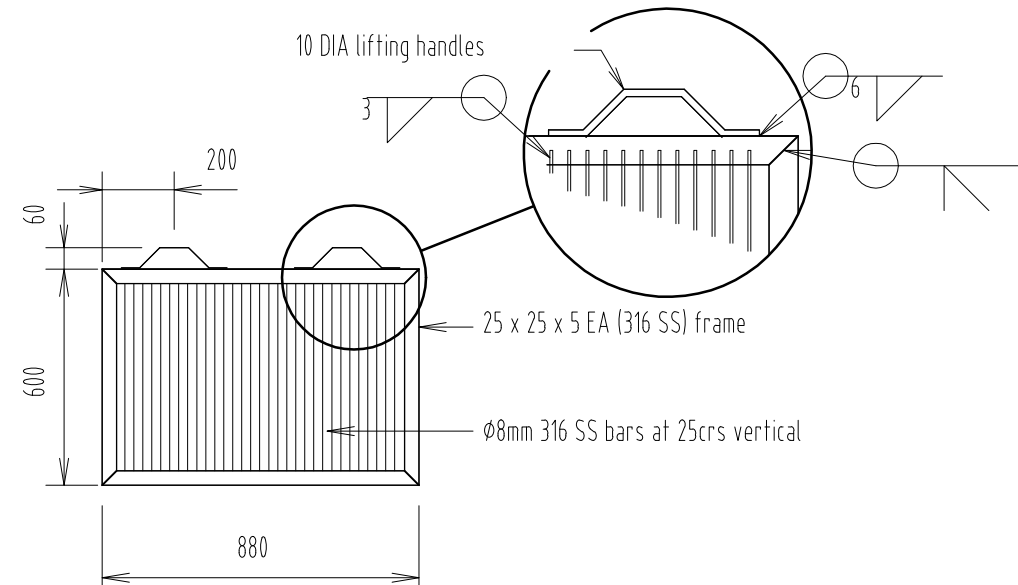
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|------|-------|----|
| A3   | PS02  |    |
| a    | b     | c  |
| d    | e     | f  |
| g    | h     | i  |



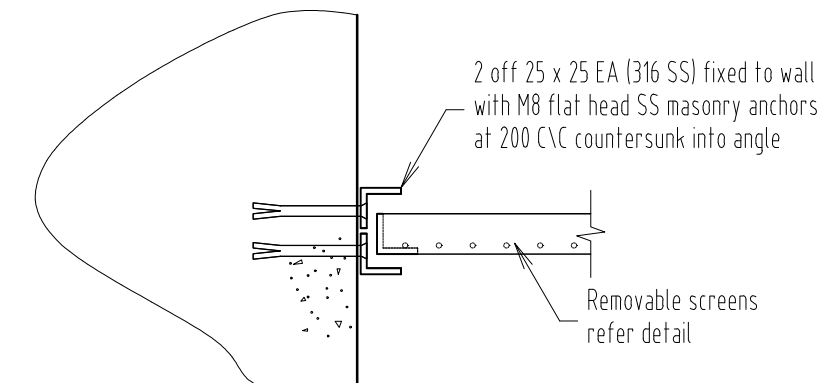
**PLAN**



**ELEVATION**



**SCREEN DETAIL**



**SCREEN GUIDE RAIL**

**OVERFLOW TYPICAL DETAILS**

**NOTES**

1. Pipes shown are diagrammatic only, refer project drawings for layout and levels.
2. Concrete N32 in accordance with AS 1379 and AS 3600.
3. All steelwork hot dip galvanised to AS 1650 after fabrication.
4. All bars and angles Grade 250 to AS 3679.
5. All bolts, nuts and washers shall be Grade AS 2837/316 stainless steel with approved anti-galling compound.
6. All welds to AS 1554. All welding symbols comply with AS 1101.3.
7. The covers shall be gastight similar to those produced by Halco Engineering. All components of access covers and frames shall be fabricated from aluminium alloy 6061-T6, to AS 2848. All embedded surfaces shall be painted with two coats of alkali resistant bitumous paint. The covers shall be designed as a platform in accordance with AS 1657. Fabrication details shall be submitted to the Superintendent for approval prior to manufacture.
8. If covers are subject to vehicular loading, use appropriately rated C.I. covers.
9. All dimensions in millimetres.

**SPECIAL NOTE:**

1. OVERFLOW SYSTEM PIPE SIZES TO BE DESIGNED FOR EACH PROJECT PRIOR TO CONSTRUCTION.
2. REFER TO PUMP STATION DETAIL, SHEET 2 FOR INVERT LEVEL OF OVERFLOW PIPE.



**WIDE BAY WATER**  
 29-31 ELLENGOWAN ST  
 P.O BOX 5499  
 HERVEY BAY, QLD, 4655

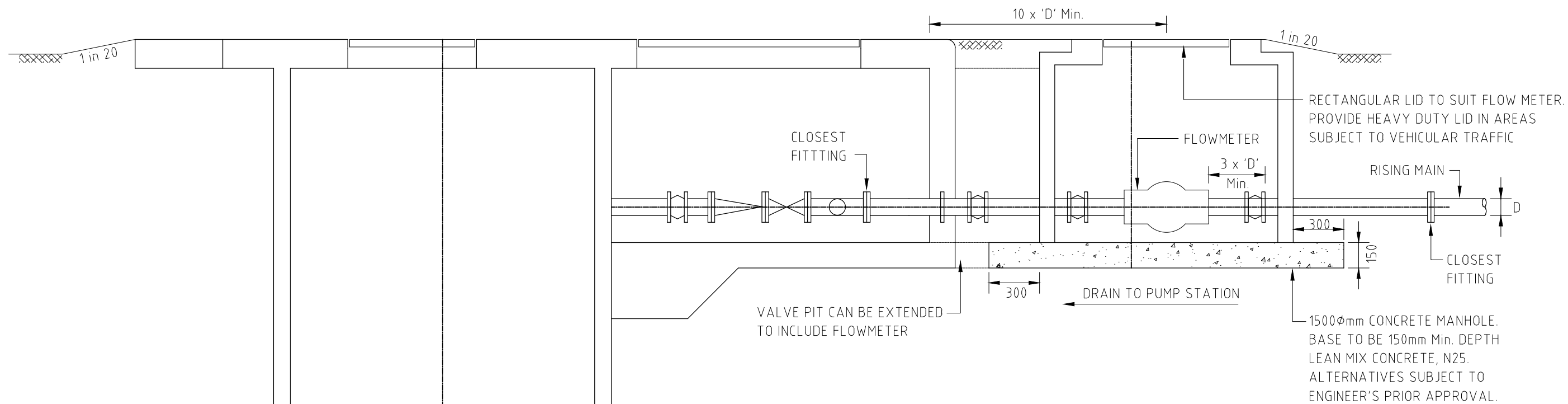
**1800mm DIAMETER SEWAGE PUMP STATION**

|          |          |          |
|----------|----------|----------|
| SCALE    | DESIGN   | DATE     |
| SCALE    | CEB      | 23/07/99 |
| DRAWN    | CHECKED  | DATE     |
| WJF      |          |          |
| DATE     |          |          |
| 09/04/03 |          |          |
| SURVEY   | APPROVED | DATE     |
| SURVEY   | S.KHAN   | 18/12/15 |
| DATUM    | APPROVED | DATE     |
| DATUM    |          |          |

**OVERFLOW TYPICAL DETAILS**

|    |                       |        |          |
|----|-----------------------|--------|----------|
| 3  | UPDATED WBW LOGO      | R.C.   | 29.8.16  |
| 2  | DRAWING UPDATED       | Cardno | 23.11.04 |
| 1  | DRAWING UPDATED       | PG     | 12.07.04 |
| MK | DETAILS OF AMENDMENTS | APPR'  | DATE     |

|                    |       |    |
|--------------------|-------|----|
| FILE               | SHEET | OF |
| A3                 | PS03  |    |
| PLAN REFERENCE No: |       |    |
| a                  | b     | c  |
| d                  | e     | f  |
| g                  | h     | i  |



FLOWMETER PIT  
(WHERE REQUIRED)

**NOTE:**

1. PIPE THROUGH FLOWMETER PIT TO BE D.I.C.L.
2. FLOWMETER PIT LOCATION TO BE DETERMINED FOR EACH PROJECT PRIOR TO CONSTRUCTION.
3. FLOWMETER PIT REQUIRED ONLY WHEN SPECIFIED
4. IF BEND LOCATED OUTSIDE VALVE PIT THIS THEN BECOMES CLOSEST FITTING TO DETERMINE LOCATION OF FLOWMETER.
5. THE FLOWMETER REQUIRES STRAIGHT PIPING AND NO CHANGE OF HYRAULIC STATUS BY FITTINGS (eg. BENDS, VALVES, TAPERS, etc.) OF A MINIMUM DISTANCE EQUAL TO TEN TIMES (10x) THE PIPE DIAMETER ON UPSTREAM SIDE OF FLOWMETER AND (5X) ON DOWNSTREAM SIDE.

PUMP STATION

# FLOWMETER PIT DETAIL



WIDE BAY WATER  
29-31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

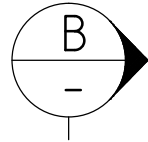
## 1800mm DIAMETER SEWAGE PUMP STATION

|        |       |          |          |          |          |
|--------|-------|----------|----------|----------|----------|
| SCALE  | SCALE | DESIGN   | CEB      | DATE     | 23/07/99 |
| DRAWN  | WJF   | CHECKED  |          | DATE     |          |
| SURVEY |       | DATE     | 09/04/03 | APPROVED | S.KHAN   |
| DATUM  | DATUM | APPROVED |          | DATE     | 18/12/15 |

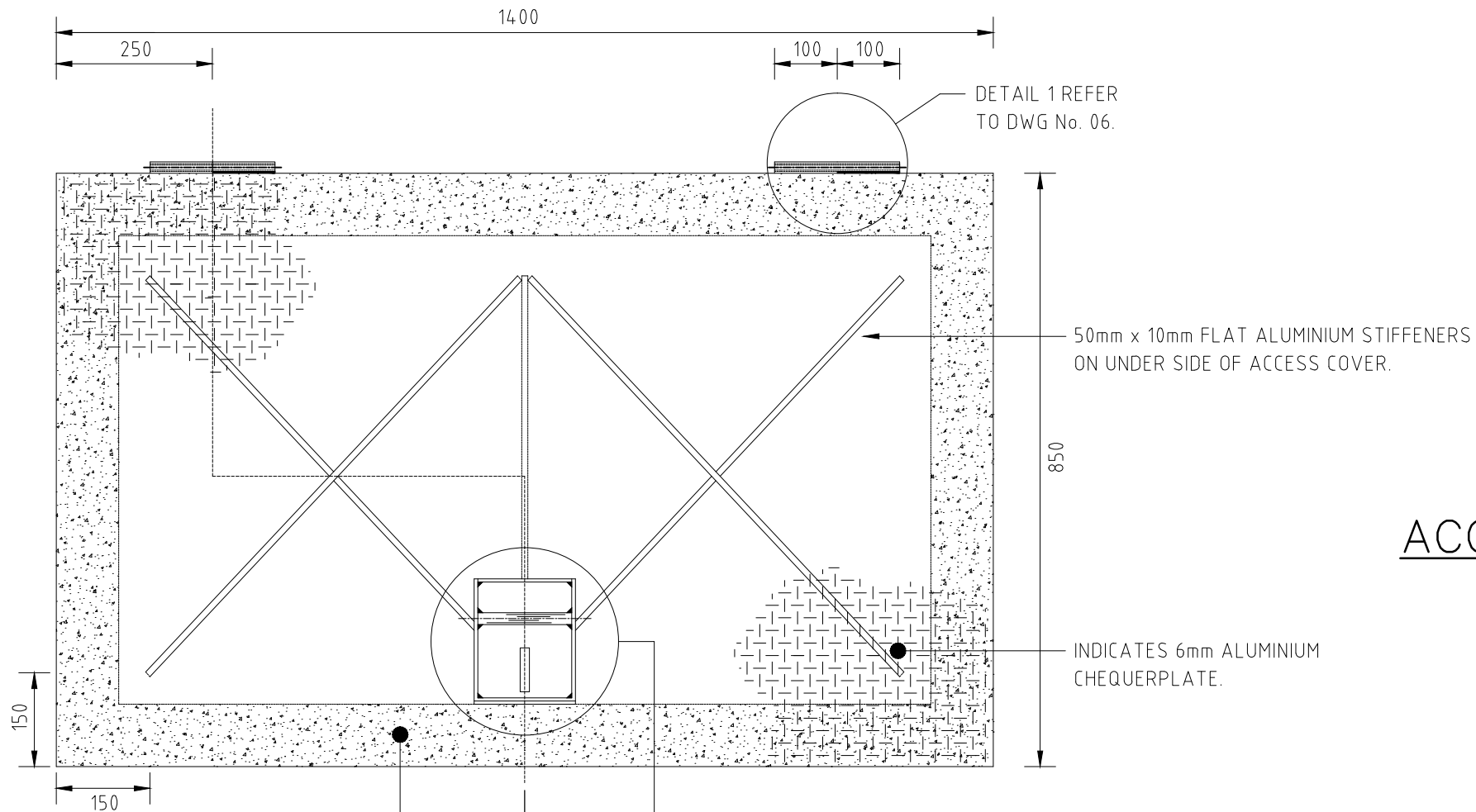
### FLOWMETER PIT DETAIL

| NO | DESCRIPTION           | DATE    | BY         |
|----|-----------------------|---------|------------|
| 2  | UPDATED WBW LOGO      | 29.8.16 | R.C.       |
| 1  | DRAWING UPDATED       | 12.7.4  | PG         |
| MK | DETAILS OF AMENDMENTS |         | APPR' DATE |

|                    |    |       |      |    |   |
|--------------------|----|-------|------|----|---|
| FILE               | A3 | SHEET | PS04 | OF |   |
| PLAN REFERENCE No: |    |       |      |    |   |
| a                  | b  | c     | d    | e  | f |
| g                  | h  | i     |      |    |   |

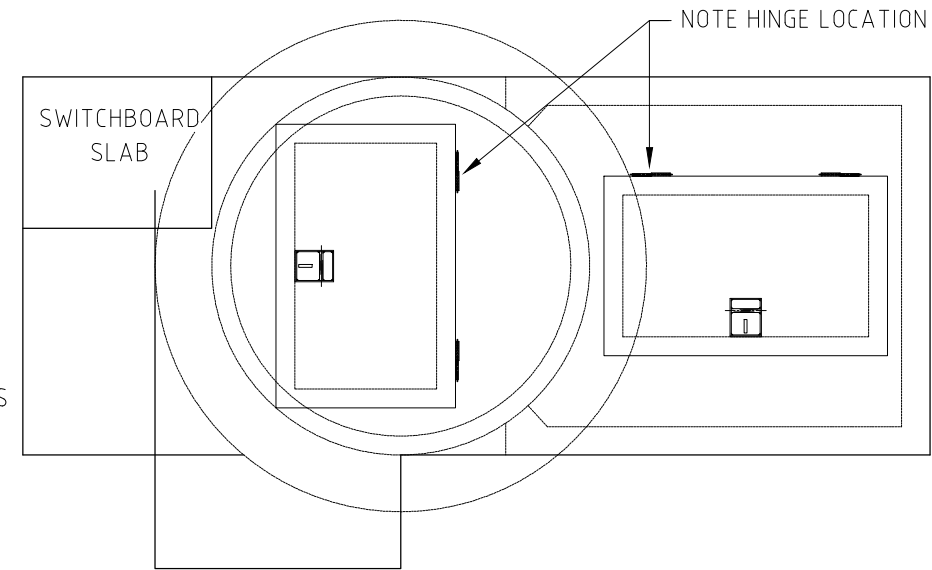


NOTE: ALL WELDS ARE 6mm CFW (U.N.O.)

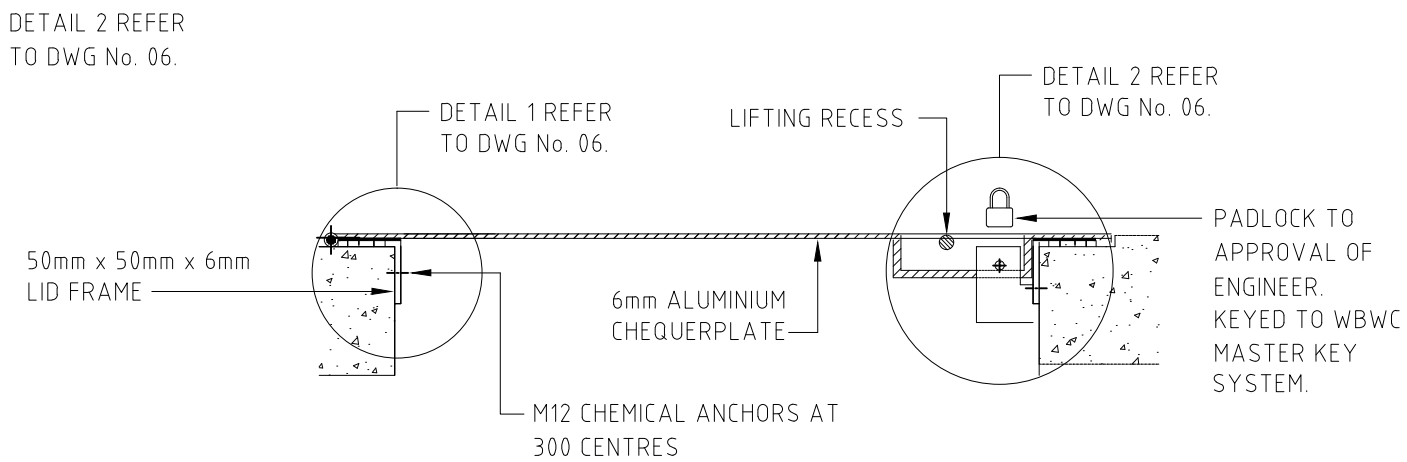


SHADING INDICATES EXTENTS OF 50mm WIDE x 3mm RUBBER SEAL ON UNDER SIDE OF ACCESS COVER.

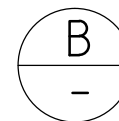
**PLAN**



**ACCESS COVER LOCATION PLAN** N.T.S.



**SECTION**



**ACCESS COVER LAYOUT PLAN**



WIDE BAY WATER  
29-31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

**1800mm DIAMETER  
SEWAGE PUMP STATION**

|        |        |          |          |         |          |
|--------|--------|----------|----------|---------|----------|
| SCALE  | SCALE  | DESIGN   | CEB      | DATE    | 23/07/99 |
| DRAWN  | WJF    | DATE     | 09/04/03 | CHECKED | DATE     |
| SURVEY | SURVEY | APPROVED | S.KHAN   | DATE    | 18/12/15 |
| DATUM  | DATUM  | APPROVED |          | DATE    |          |

**ACCESS COVER LAYOUT PLAN**

|    |                       |       |         |
|----|-----------------------|-------|---------|
| 2  | UPDATED WBW LOGO      | R.C.  | 29.8.16 |
| 1  | DRAWING UPDATED       | PG    | 12.7.4  |
| MK | DETAILS OF AMENDMENTS | APPR' | DATE    |

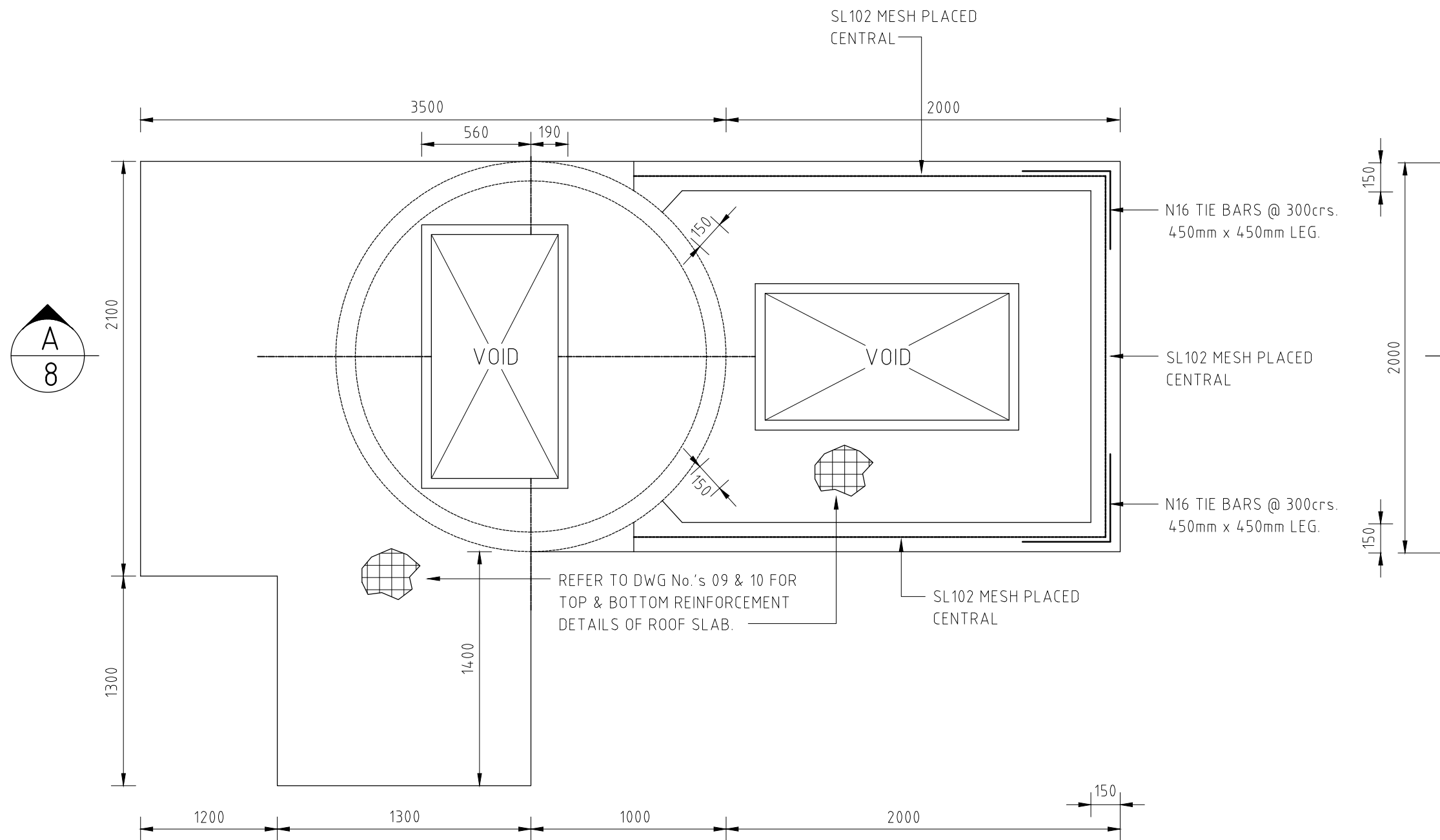
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| FILE               | A3 | SHEET | PS05 | OF |         |
| PLAN REFERENCE No; |    |       |      |    |         |
| a                  | b  | c     | d    | e  | f g h i |



**SPECIAL NOTE:**  
 INTERNAL FACE OF PUMP WELL TO BE  
 COATED TO A 5mm THICKNESS WITH KL11  
 OR SIMILAR PRODUCT APPROVED BY WBW.

**CONC. GRADE = N32**

PROVIDE 225mm MIN. LAP  
 TO ALL REINFORCING  
 FABRIC AS REQUIRED



WIDE BAY WATER  
 29-31 ELLENGOWAN ST  
 P.O BOX 5499  
 HERVEY BAY, QLD, 4655

**1800mm DIAMETER  
 SEWAGE PUMP STATION**

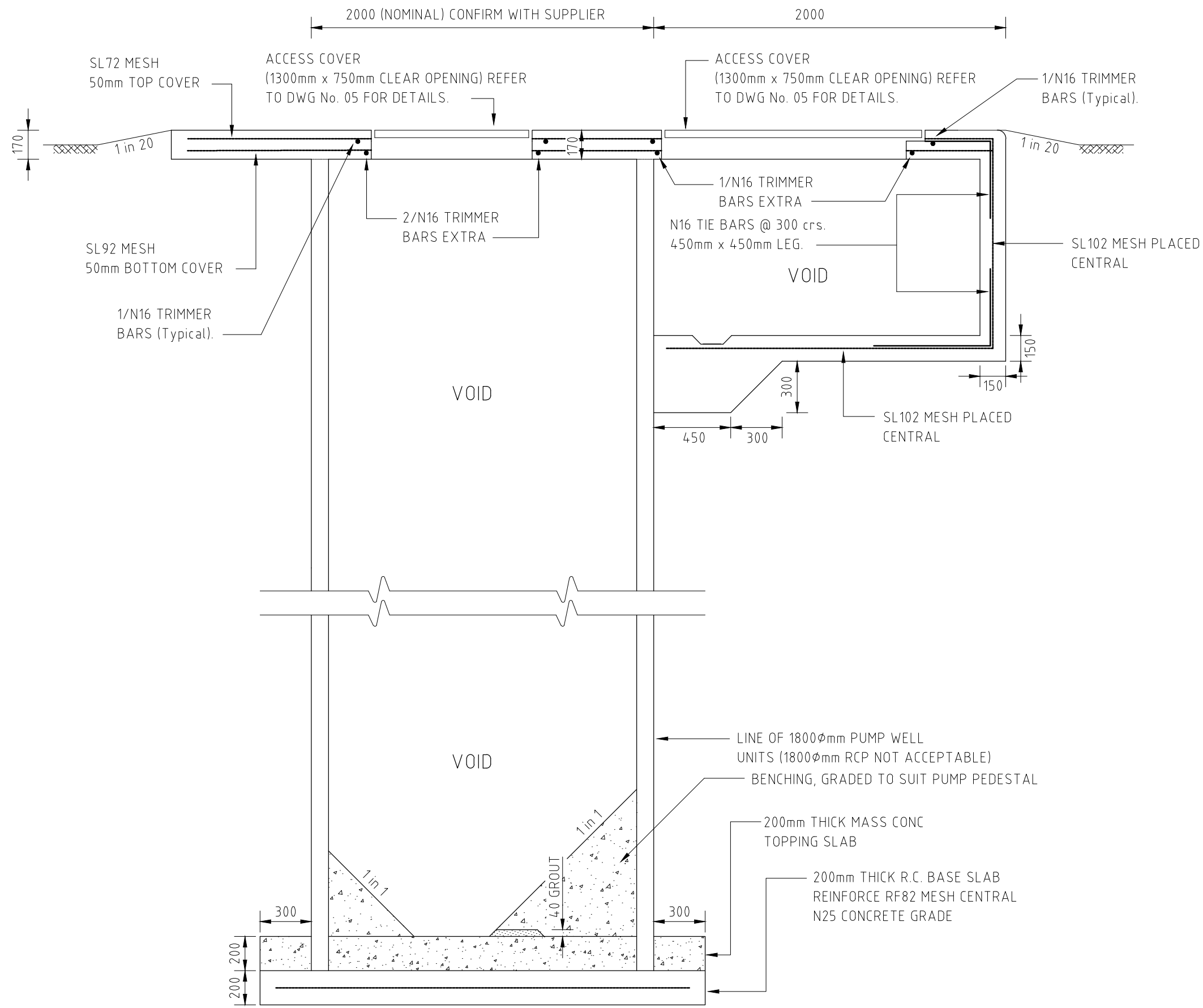
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| SCALE  | DESIGN   | DATE     |
| SCALE  | CEB      | 23/07/99 |
| DRAWN  | CHECKED  | DATE     |
| WJF    |          | 10/04/03 |
| SURVEY | APPROVED | DATE     |
| SURVEY | S.KHAN   | 18/12/15 |
| DATUM  | APPROVED | DATE     |
| DATUM  |          |          |

**VALVE PIT & ROOF SLAB**

|    |                       |       |         |
|----|-----------------------|-------|---------|
|    |                       |       |         |
|    |                       |       |         |
|    |                       |       |         |
| 2  | UPDATED WBW LOGO      | R.C.  | 29.8.16 |
| 1  | DRAWING UPDATED       | PG    | 12.7.4  |
| MK | DETAILS OF AMENDMENTS | APPR' | DATE    |

|      |       |    |
|------|-------|----|
| FILE | SHEET | OF |
| A3   | PS07  |    |
| a    | b     | c  |
| d    | e     | f  |
| g    | h     | i  |

**VALVE PIT & ROOF SLAB**



**SPECIAL NOTE:**  
 INTERNAL FACE OF PUMP WELL TO BE COATED TO A 5mm THICKNESS WITH KL11 OR SIMILAR PRODUCT APPROVED BY WBW.

**CONC. GRADE = N32**

PROVIDE 225mm MIN. LAP TO ALL REINFORCING FABRIC AS REQUIRED



WIDE BAY WATER  
 29-31 ELLENGOWAN ST  
 P.O BOX 5499  
 HERVEY BAY, QLD, 4655

**1800mm DIAMETER SEWAGE PUMP STATION**

|        |          |          |
|--------|----------|----------|
| SCALE  | DESIGN   | DATE     |
| SCALE  | CEB      | 23/07/99 |
| DRAWN  | CHECKED  | DATE     |
| WJF    |          | 09/04/03 |
| SURVEY | APPROVED | DATE     |
| DATUM  | S.KHAN   | 18/12/15 |
|        | APPROVED | DATE     |

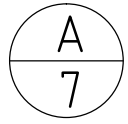
**REINFORCEMENT - SECTION A**

|    |                       |       |         |
|----|-----------------------|-------|---------|
| 2  | UPDATED WBW LOGO      | R.C.  | 29.8.16 |
| 1  | DRAWING UPDATED       | PG    | 12.7.4  |
| MK | DETAILS OF AMENDMENTS | APPR' | DATE    |

|      |       |    |   |   |   |   |   |   |
|------|-------|----|---|---|---|---|---|---|
| FILE | SHEET | OF |   |   |   |   |   |   |
| A3   | PS08  |    |   |   |   |   |   |   |
| a    | b     | c  | d | e | f | g | h | i |

N.B. CHECK FOR BUOYANCY

**REINFORCEMENT - SECTION A**



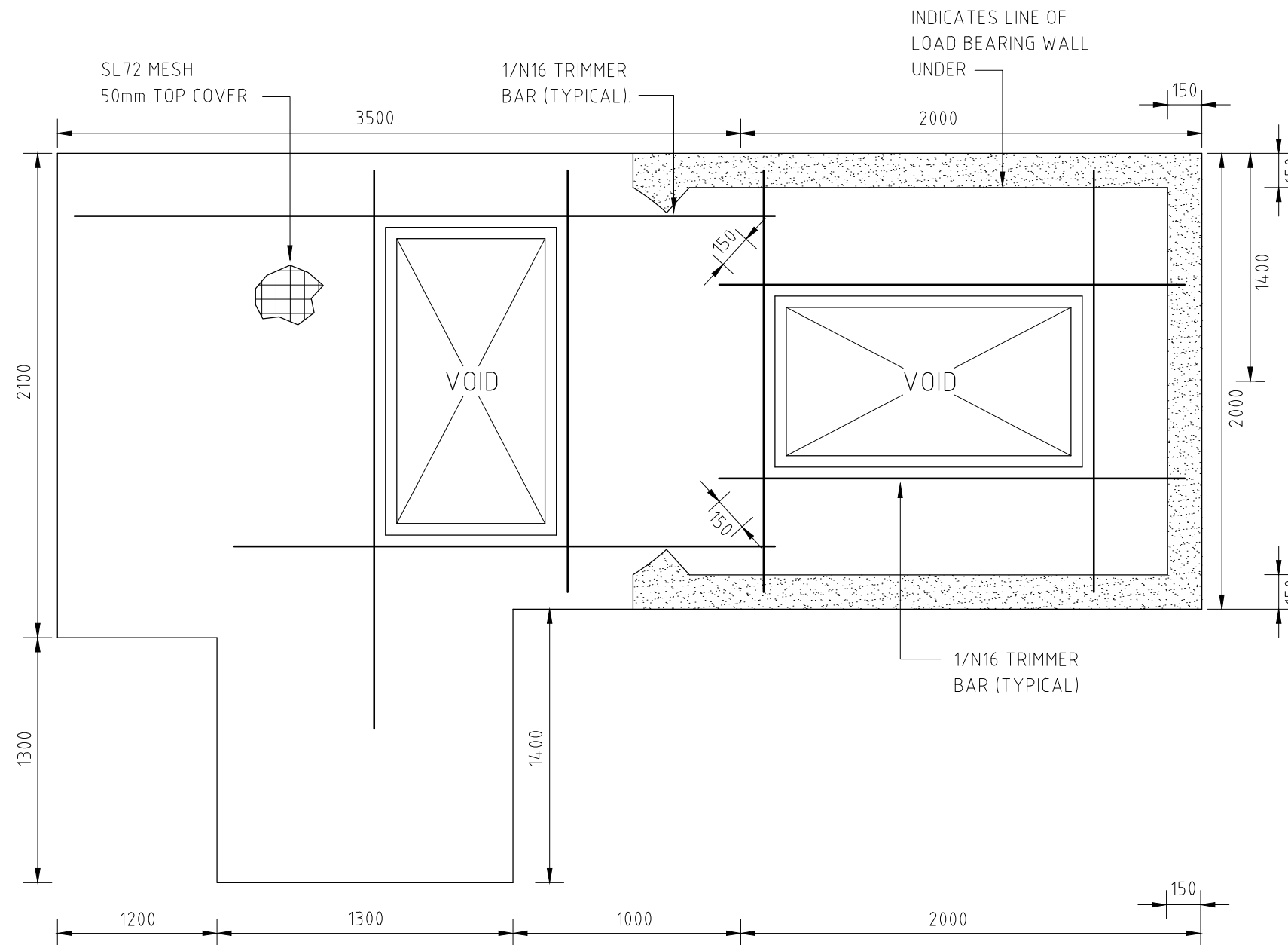


170 THICK R.C. SLAB  
N32 CONC. GRADE

PROVIDE 225mm MIN. LAP  
TO ALL REINFORCEMENT

SPECIAL NOTE:

INTERNAL FACE OF PUMP WELL TO BE  
COATED TO A 5mm THICKNESS WITH KL11  
OR SIMILAR PRODUCT APPROVED BY WBW.



WIDE BAY WATER  
29-31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

1800mm DIAMETER  
SEWAGE PUMP STATION

|        |          |          |          |
|--------|----------|----------|----------|
| SCALE  | SCALE    | DESIGN   | DATE     |
| WJF    | 10/04/03 | CEB      | 23/07/99 |
| SURVEY |          | CHECKED  | DATE     |
| DATUM  |          | APPROVED | DATE     |
|        |          | S.KHAN   | 18/12/15 |

ROOF SLAB TOP STEEL

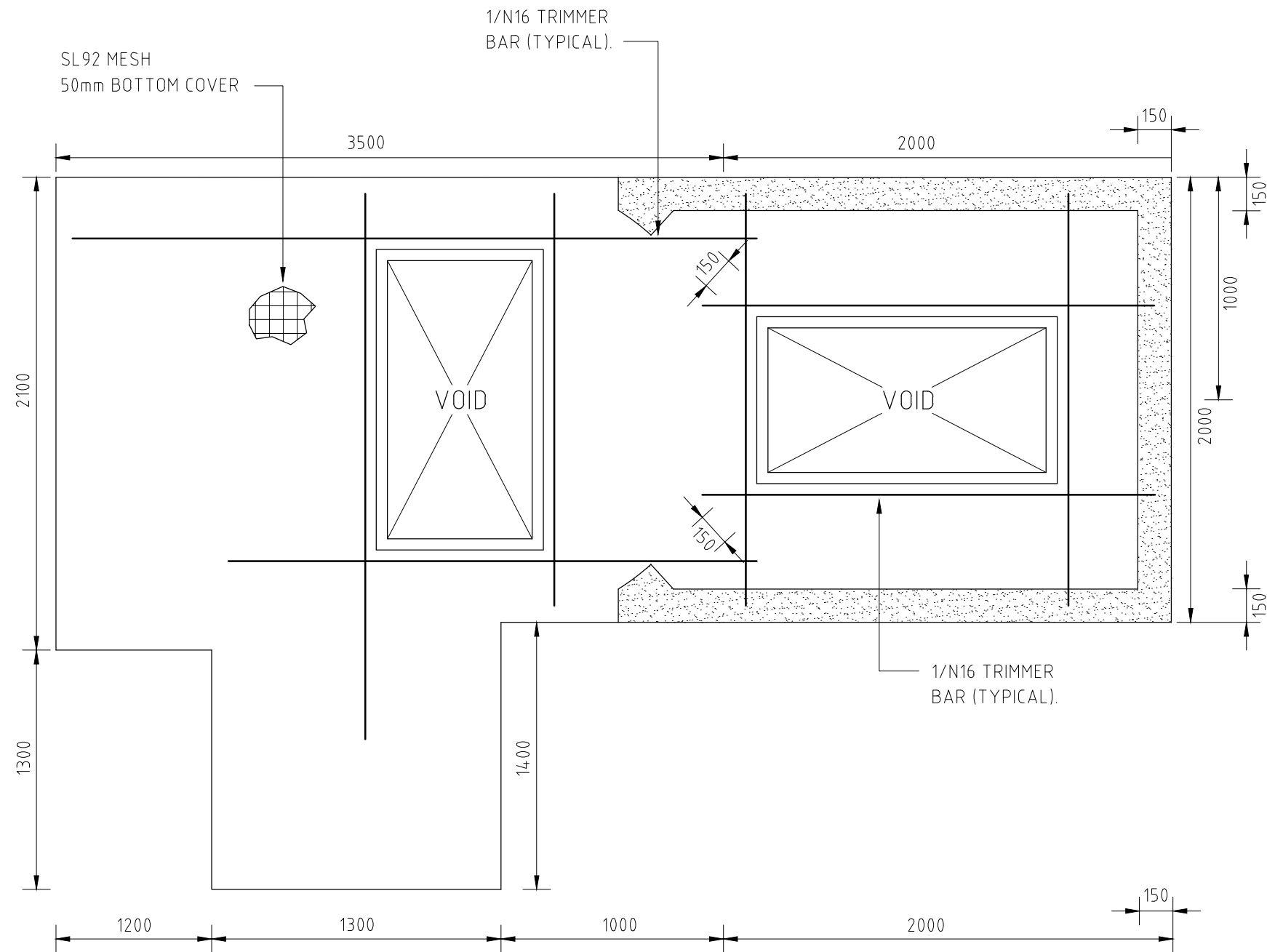
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| 2  | UPDATED WBW LOGO      | R.C. | 29.8.16 |
| 1  | DRAWING UPDATED       | PG   | 12.7.4  |
| MK | DETAILS OF AMENDMENTS | APPR | DATE    |

|      |       |    |   |   |   |   |   |   |
|------|-------|----|---|---|---|---|---|---|
| FILE | SHEET | OF |   |   |   |   |   |   |
| A3   | PS09  |    |   |   |   |   |   |   |
| a    | b     | c  | d | e | f | g | h | i |

ROOF SLAB TOP STEEL

170 THICK R.C. SLAB  
 N32 CONC. GRADE  
 PROVIDE 225mm MIN. LAP  
 TO ALL REINFORCEMENT

SPECIAL NOTE:  
 INTERNAL FACE OF PUMP WELL TO BE  
 COATED TO A 5mm THICKNESS WITH KL11  
 OR SIMILAR PRODUCT APPROVED BY WBW.



WIDE BAY WATER  
 29-31 ELLENGOWAN ST  
 P.O BOX 5499  
 HERVEY BAY, QLD, 4655

1800mm DIAMETER  
 SEWAGE PUMP STATION

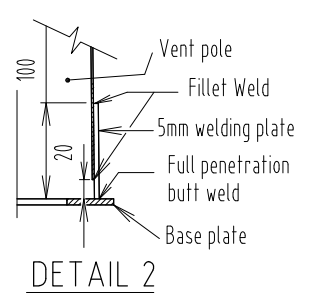
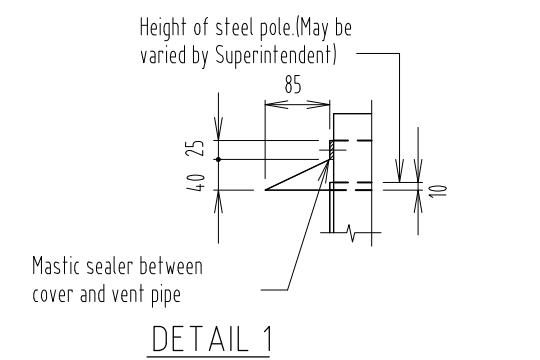
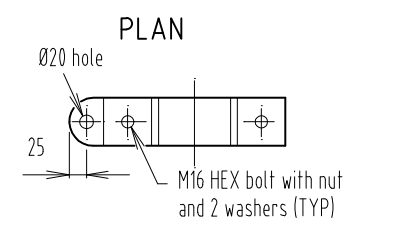
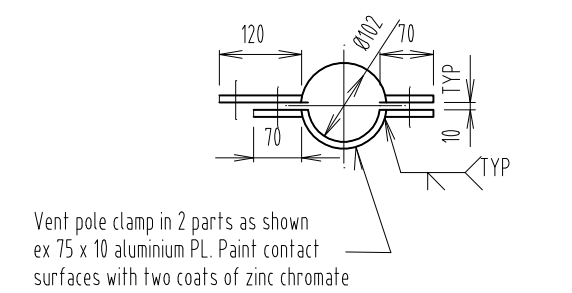
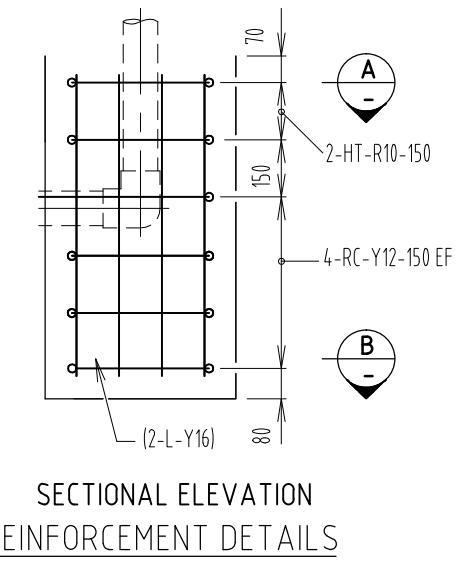
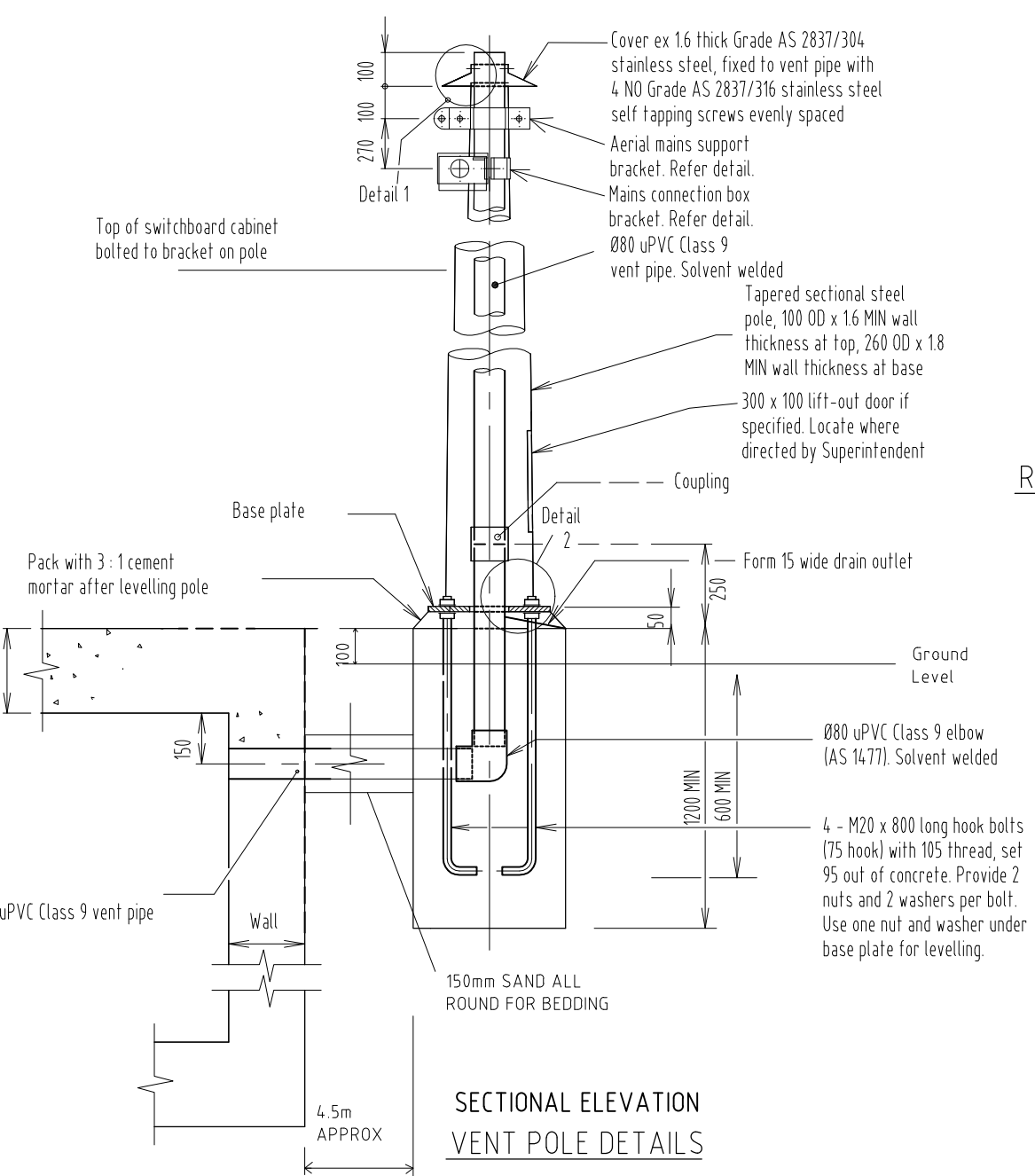
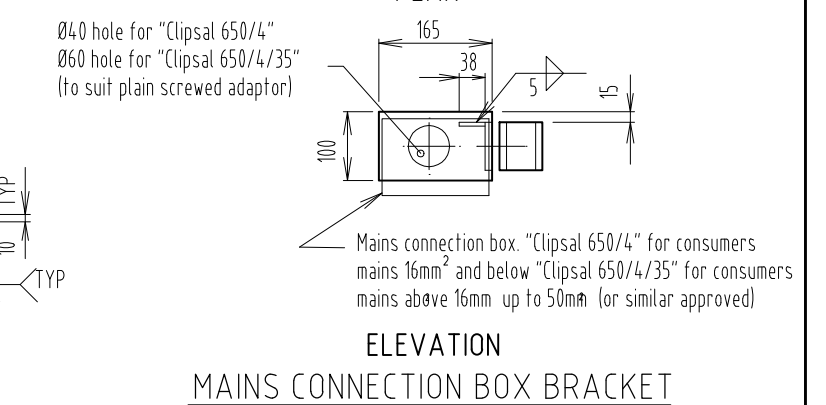
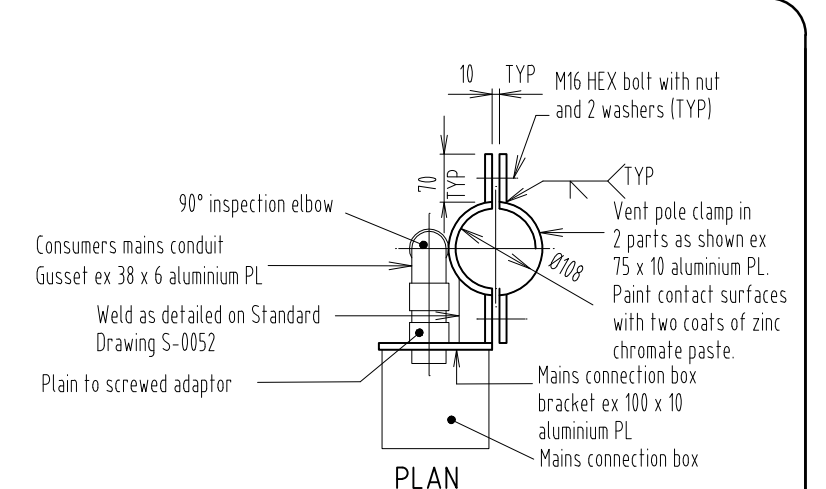
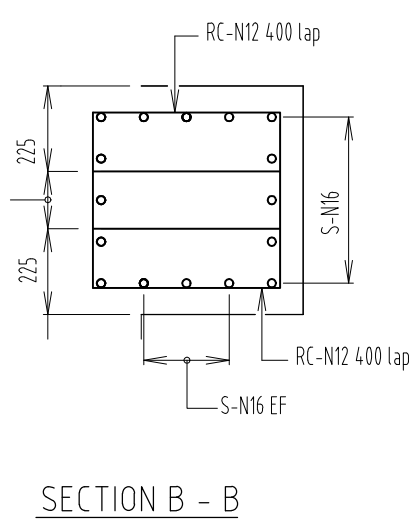
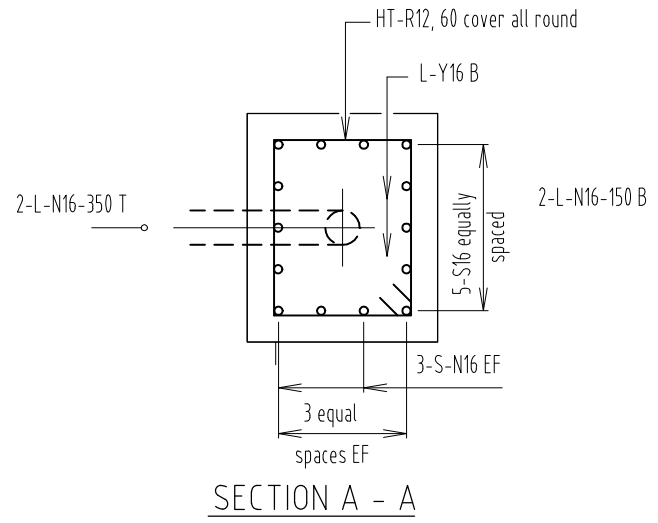
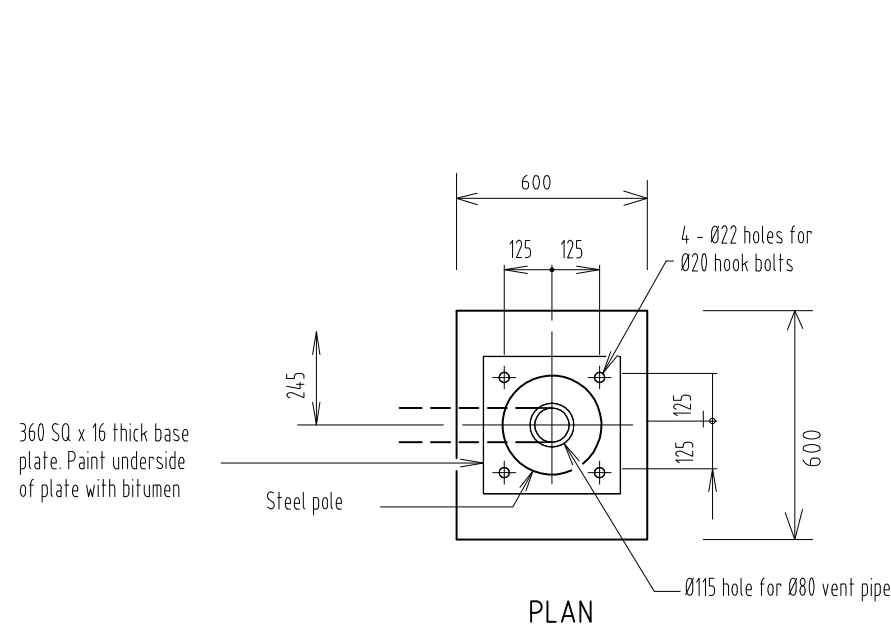
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|--------|----------|----------|
| SCALE  | DESIGN   | DATE     |
| SCALE  | CEB      | 23/07/99 |
| DRAWN  | CHECKED  | DATE     |
| WJF    |          |          |
| SURVEY | APPROVED | DATE     |
|        | S.KHAN   | 18/12/15 |
| DATUM  | APPROVED | DATE     |
| DATUM  |          |          |

ROOF SLAB BOTTOM STEEL

|    |                       |      |         |
|----|-----------------------|------|---------|
| 2  | UPDATED WBW LOGO      | R.C. | 29.8.16 |
| 1  | DRAWING UPDATED       | PG   | 12.7.4  |
| MK | DETAILS OF AMENDMENTS | APPR | DATE    |

|      |       |    |   |   |   |   |   |   |
|------|-------|----|---|---|---|---|---|---|
| FILE | SHEET | OF |   |   |   |   |   |   |
| A3   | PS10  |    |   |   |   |   |   |   |
| a    | b     | c  | d | e | f | g | h | i |

ROOF SLAB BOTTOM STEEL



- NOTES
- Concrete S32 in accordance with AS 1379 and AS 3600.
  - Wind loads have been calculated for Terrain Category 2 and 3 in accordance with AS1170.2. Mt = 1. Region B.
  - Unless noted otherwise, steelwork shall be hot dip galvanized after fabrication to AS 1650.
  - All bolts, nuts and washers shall be Grade AS 2837/316 stainless steel.
  - Anti-galling lubricant "Loctite 222 or 567" or similar approved shall be used on all threads and between all stainless steel abutting surfaces
  - Reinforcement identification is in accordance with Section 3 of AS 1100.501.
  - Reinforcing bars to AS 1302. Reinforcement cover 50mm MIN.
  - All electrical conduits to AS 2053.
  - All dimensions in millimetres.



WIDE BAY WATER

29-31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

PUMPING STATION  
7.2m VENT POLE

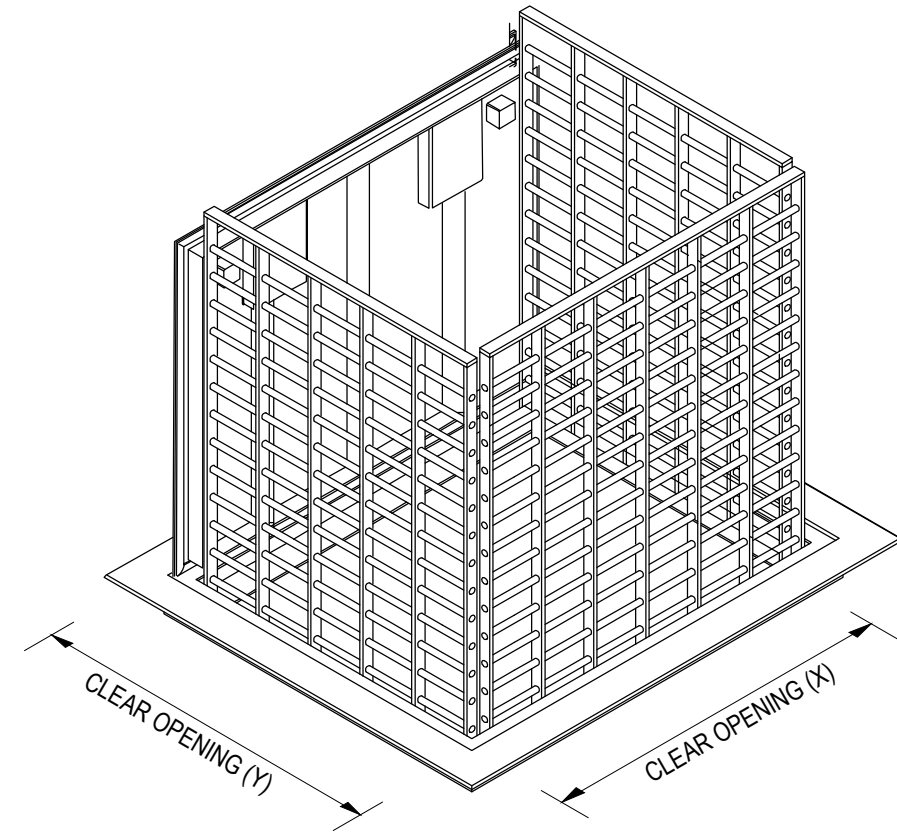
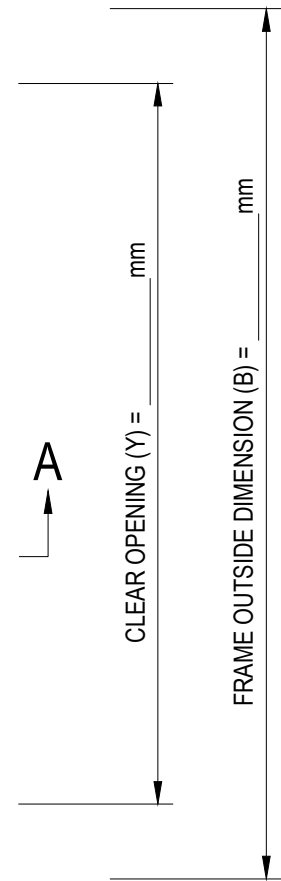
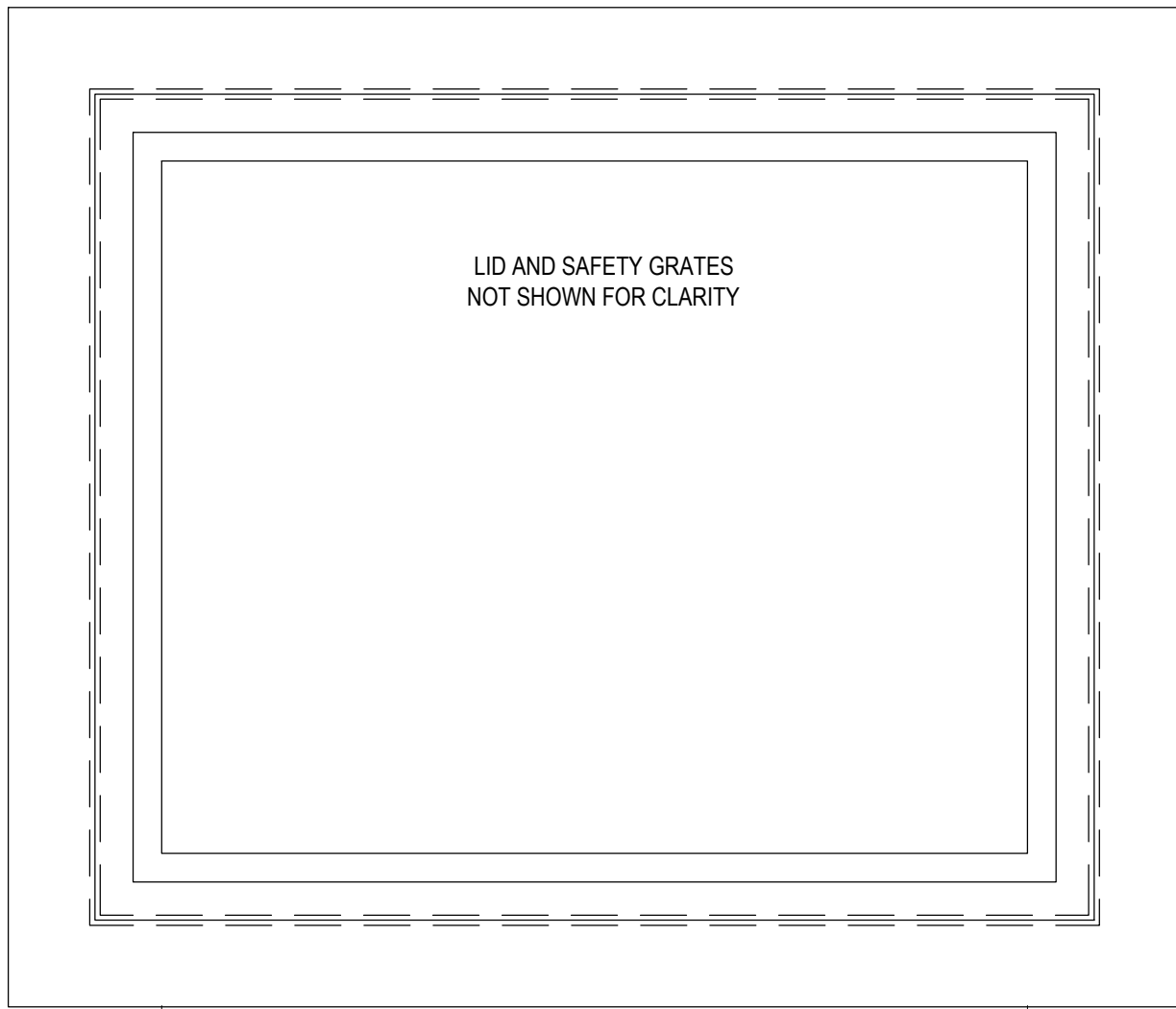
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|--------|----------|----------|
| SCALE  | DESIGN   | DATE     |
| SCALE  | EM       | 04/09/02 |
| DRAWN  | CHECKED  | DATE     |
| WJF    |          |          |
| SURVEY | APPROVED | DATE     |
|        | S.KHAN   | 18/12/15 |
| DATUM  | APPROVED | DATE     |
|        |          |          |

TERRAIN CAT 2 AND 3  
(NON-CYCLONIC)

|    |                       |       |         |
|----|-----------------------|-------|---------|
|    |                       |       |         |
|    |                       |       |         |
|    |                       |       |         |
|    |                       |       |         |
| 2  | UPDATED WBW LOGO      | R.C.  | 29.8.16 |
| MK | DETAILS OF AMENDMENTS | APPR' | DATE    |

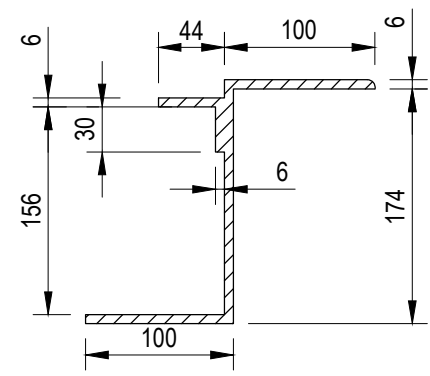
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| FILE | SHEET | OF |
| A3   | PS11  |    |

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|---|---|---|---|---|---|---|---|---|



ISOMETRIC VIEW - OPEN

PLAN VIEW



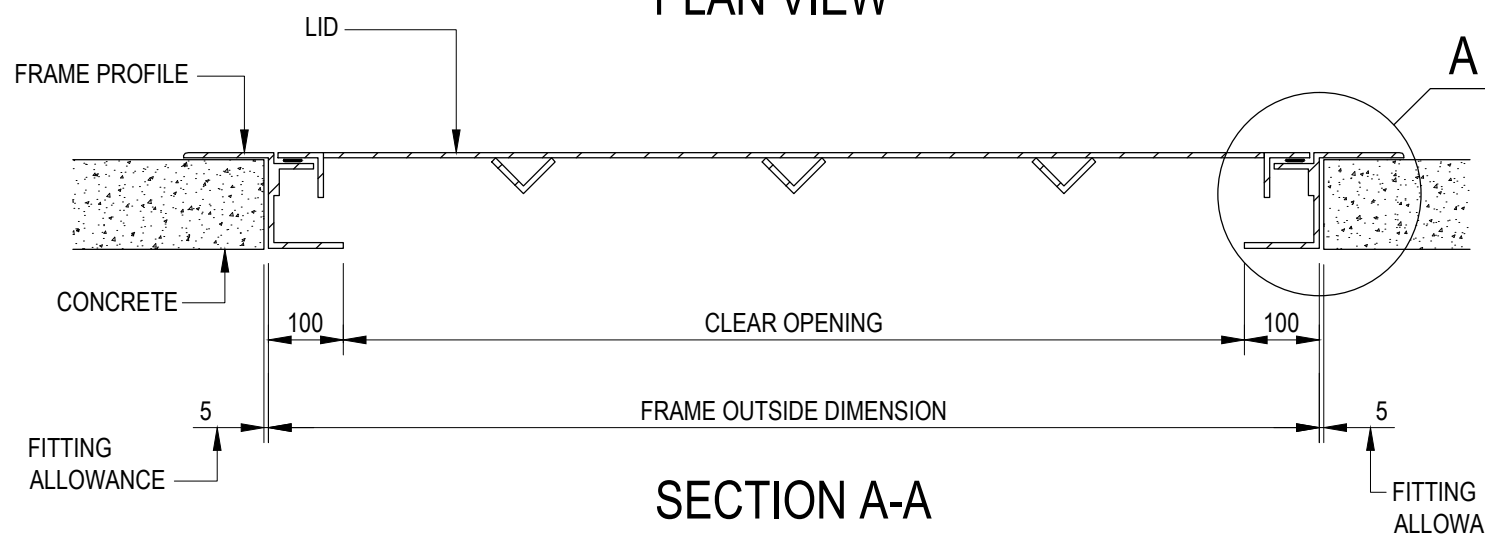
DETAIL A

**UNLESS NOTED OTHERWISE**

- REPRESENTATION ONLY.
- DIMENSIONS GIVEN IN MILLIMETERS.
- DIMENSIONS GIVEN ARE APPROXIMATE AND MAY VARY.
- DO NOT SCALE FROM DRAWINGS.
- IF IN DOUBT OR UNCLEAR, CONSULT MCBERNS PTY LTD.

**FEATURES**

- FLUSH MOUNTED WITH LOW PROFILE HINGES
- RUBBER SEAL UNDER LIDS
- CONCEALED LOCK BOXES WITH STANDARD KEY ENTRY
- ANTI-THEFT, NON-SLIP GREEN RUBBER COATING
- PAD LOCKABLE GREASED S/S LOCKING PIN
- PUMP-OUT FLAP IN SAFETY GRATE
- GAS SAMPLING PORT



SECTION A-A

A3

| REVISION HISTORY |            |                  |  |
|------------------|------------|------------------|--|
| INDEX            | DATE       | REVISIONS        |  |
| A                | 29/08/2016 | UPDATED WBW LOGO |  |
|                  |            |                  |  |
|                  |            |                  |  |

| DRAWING INFORMATION |        |          |
|---------------------|--------|----------|
| DESIGN              | DRAWN  |          |
|                     |        |          |
| CHECKED             |        |          |
| APPROVED            | S.KHAN | 18/12/15 |
| APPROVED            |        |          |
|                     | NAME   | DATE     |

SIGNED

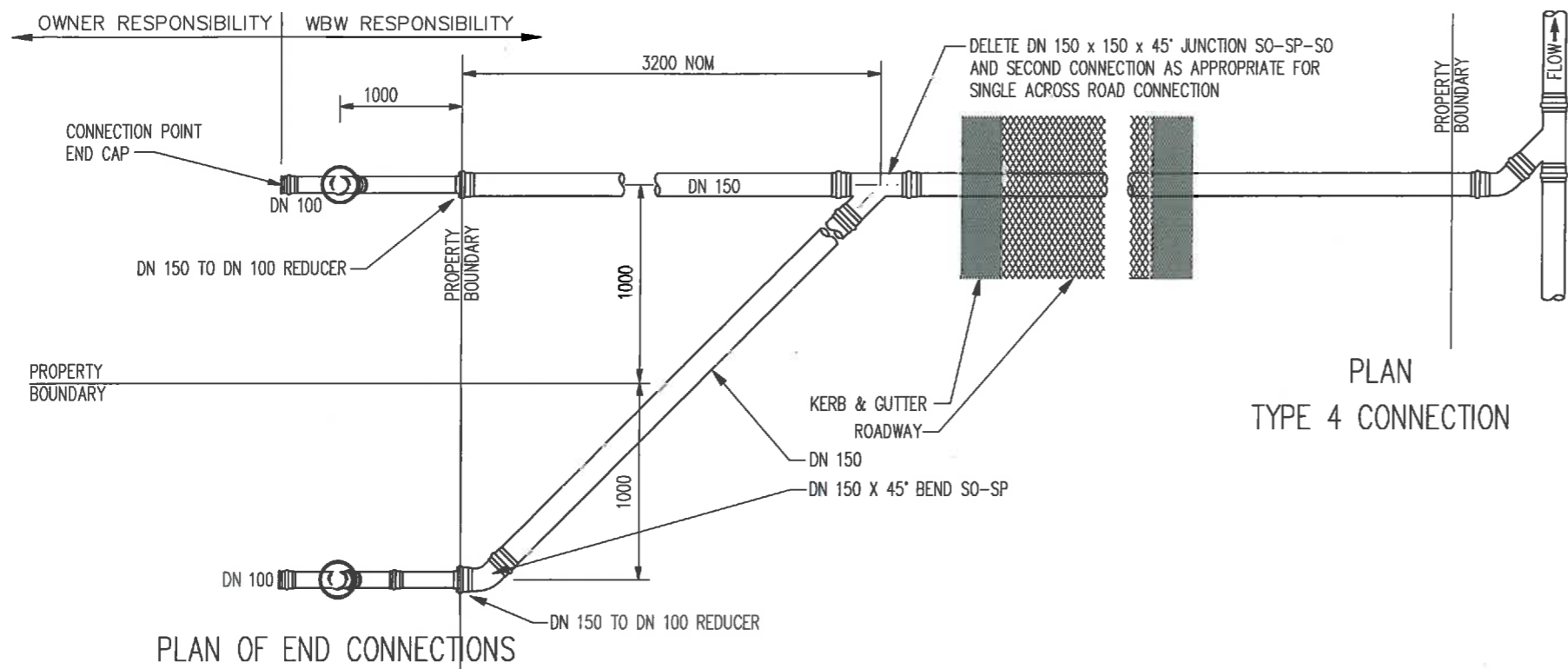


WIDE BAY WATER  
29-31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

**WIDE BAY WATER**

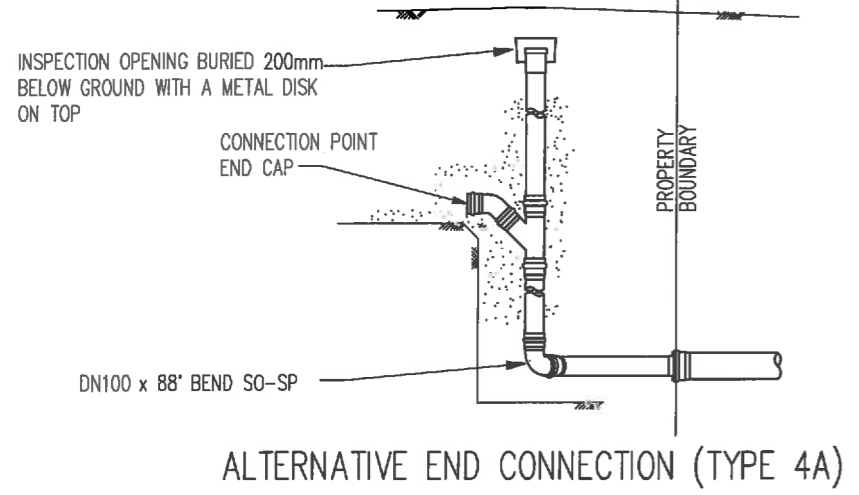
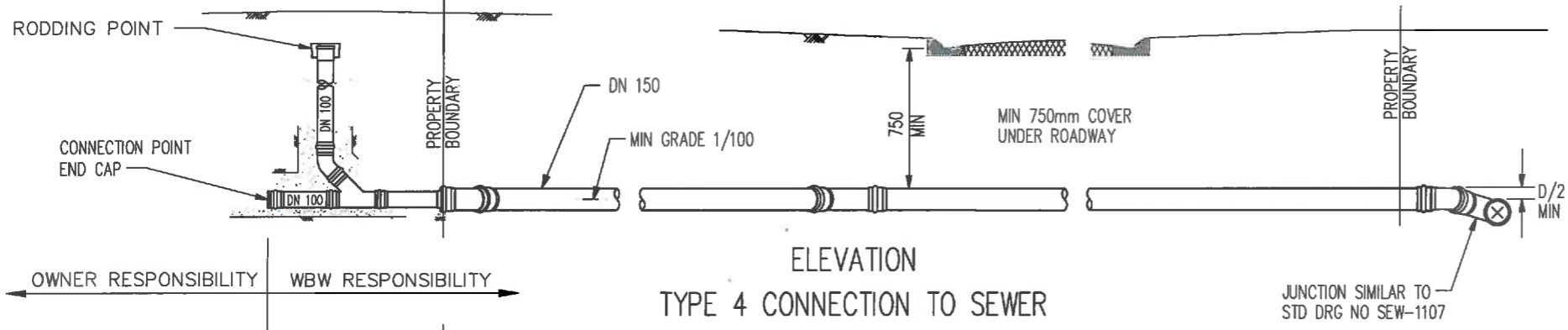
STANDARD DRAWINGS  
SAFETY BARRIER SYSTEM

|             |        |
|-------------|--------|
| FILE        |        |
| SCALE       | N.T.S. |
| SHEET       | OF     |
| DRAWING NO. | PS12   |
| REV.        |        |



**NOTES :**

1. THIS DRAWING DEPICTS THE SEWER AND SEWER CONNECTION CONSTRUCTED IN PVC. OTHER APPROVED PIPELINE MATERIALS ARE PERMITTED UPON WBW APPROVAL.
2. THE CLASS OF ALL PIPES SHALL BE AS SPECIFIED ON THE PROJECT DESIGN PLANS / PROJECT SPECIFICATIONS.
3. ELASTOMERIC SEALING RINGS FOR USE WITH PIPELINE MATERIALS COMPLYING WITH AUSTRALIAN STANDARDS SHALL COMPLY WITH AS 1646. ELASTOMERIC SEALING RINGS SHALL BE OF A MATERIAL TYPE APPROVED BY WBW.
4. PVC PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH AS 2032. PIPE INSTALLATION SHALL COMPLY WITH THE PROJECT SPECIFICATION.
5. FOR SEWER CONNECTIONS LARGER THAN DN 150 DETAILS SHALL BE SUBMITTED TO WBW FOR APPROVAL.
6. INSTALL HEAVY DUTY INSPECTION OPENINGS IN ROAD OR FOOTPATH RESERVES OR WHERE SPECIFIED ON PROJECT PLANS / SPECIFICATIONS.
7. USE REINFORCED 'DEEP SEWER' JUNCTIONS WHERE INSTALLATION DEPTH IS GREATER THAN 3 METRES.



**A3**

| REVISION HISTORY |         |   |        |         |          |
|------------------|---------|---|--------|---------|----------|
| INDEX            | DATE    | REVISIONS   | DRAWN! | CHECKED | APPROVED |
| C                | 11/2017 | ADDED 150 TO DN100 REDUCER LABEL TO PLAN OF END CONNECTIONS | R.C    | J.H.    | P.ORR    |
| B                | 05/2017 | UPDATED DRAWING   | R.C    | J.H.    |          |
| A                | 08/2016 | UPDATED WBW LOGO  | R.C    | J.H.    |          |
|                  | 12/2015 | ORIGINAL APPROVED VERSION                                   | R.C    | S.K.    | S.K.     |

| DRAWING INFORMATION |      |          |
|---------------------|------|----------|
| DESIGN              | NAME | DATE     |
| J.HINDMARSH         |      | 9/05/17  |
| R.CATLING           |      | 12/05/17 |
| J.HINDMARSH         |      | 12/05/17 |
| J.MANN              |      | 12/05/17 |
| T.DEAN              |      | 29/11/17 |

SIGNED  
*T. Dean*  
 RPEA  
 19458

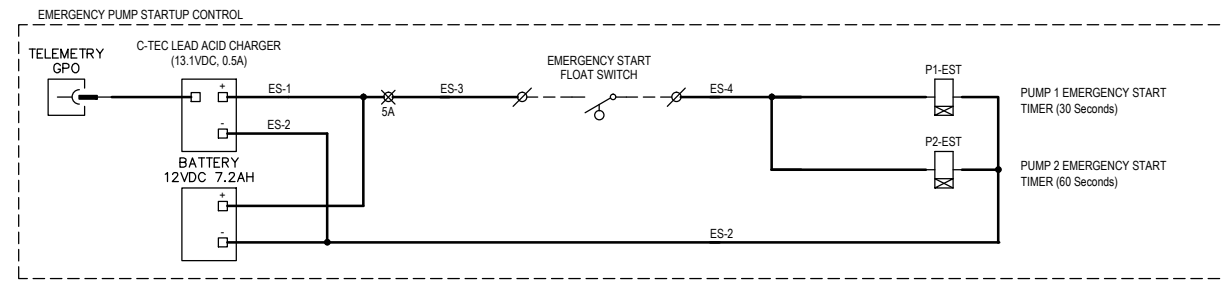
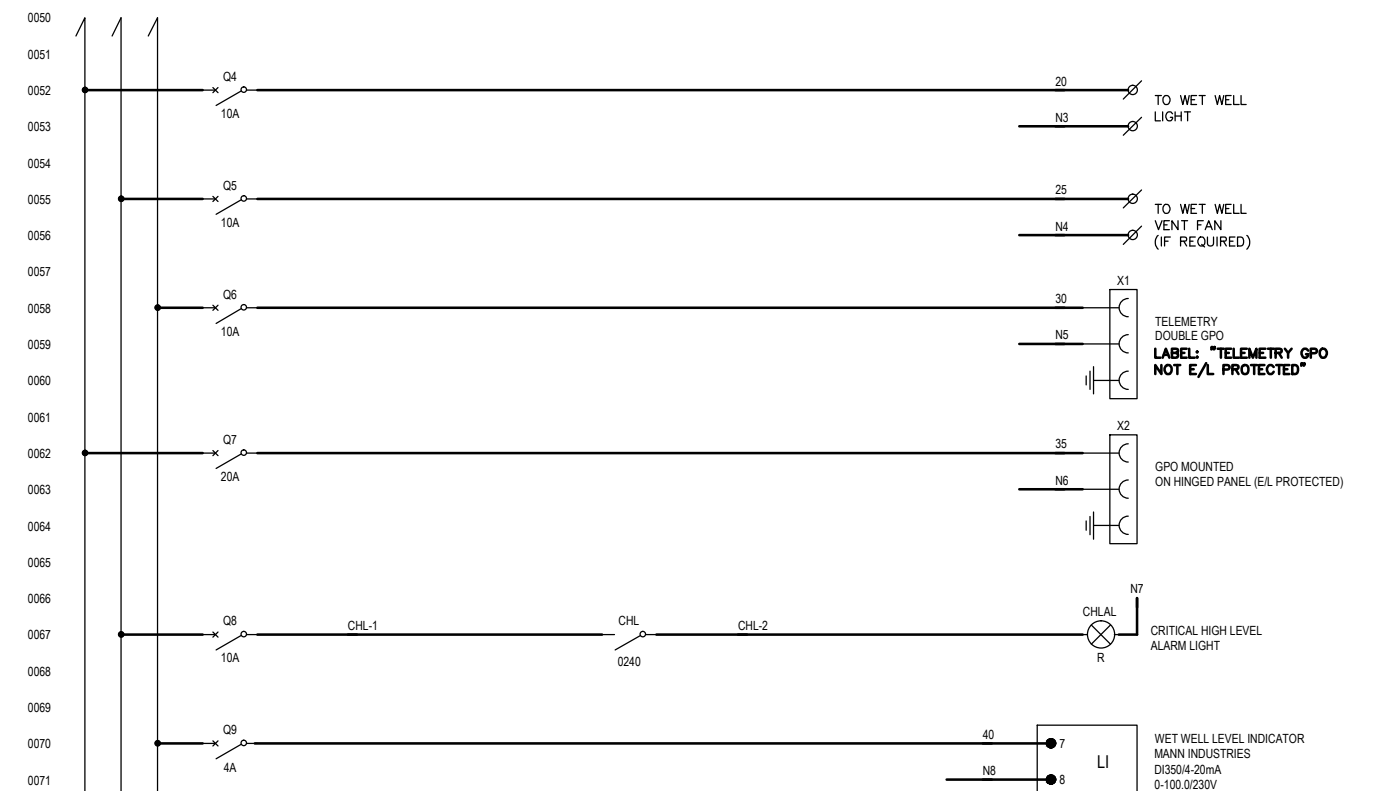
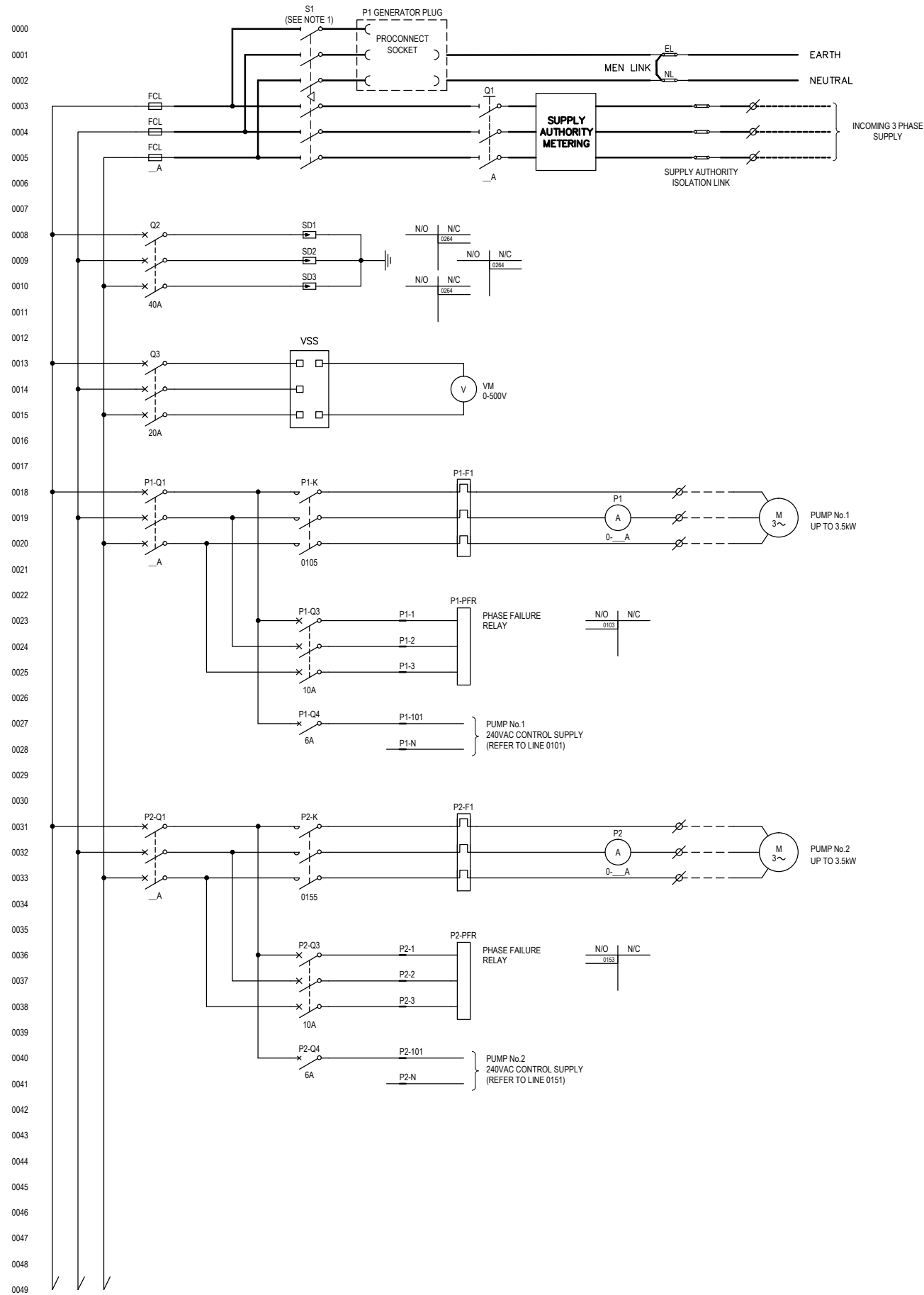


**WIDE BAY WATER**  
 29-31 ELLENGOWAN ST  
 P.O BOX 5499  
 HERVEY BAY, QLD, 4655

**WIDE BAY WATER**

STANDARD DRAWINGS  
 SEWER SERVICE CONNECTIONS  
 CONNECTION ACROSS ROAD

|             |               |
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| FILE        |               |
| SCALE       | N.T.S.        |
| SHEET       | OF            |
| DRAWING NO. | <b>SHC 01</b> |
| REV.        | <b>C</b>      |



- NOTES:**
- THE GENERATOR / MAINS CHANGEOVER SWITCH HAS 3 POSITIONS.
    - MAINS
    - OFF
    - GENERATOR

**TERMINAL LEGEND**

⊘ SWITCHBOARD TERMINAL

⊗ FUSED TERMINAL

A3

| REVISION HISTORY |            |                  | DRAWING INFORMATION |         |          | CONTRACTOR INFORMATION |      |  |
|------------------|------------|------------------|---------------------|---------|----------|------------------------|------|--|
| INDEX            | DATE       | REVISIONS        | DRAWN               | CHECKED | APPROVED | INITIALS               | DATE |  |
| B                | 29/08/16   | UPDATED WBW LOGO | R.C.                |         | S.K.     |                        |      |  |
| A                | 30/11/2015 | FOR CONSTRUCTION | T.M.                | T.M.    |          |                        |      |  |

| DRAWING INFORMATION |         |          | CONTRACTOR INFORMATION |            |  |
|---------------------|---------|----------|------------------------|------------|--|
| DRAWN               | CHECKED | APPROVED | INITIALS               | DATE       |  |
| T.M.                | T.M.    |          |                        | 30/11/2015 |  |
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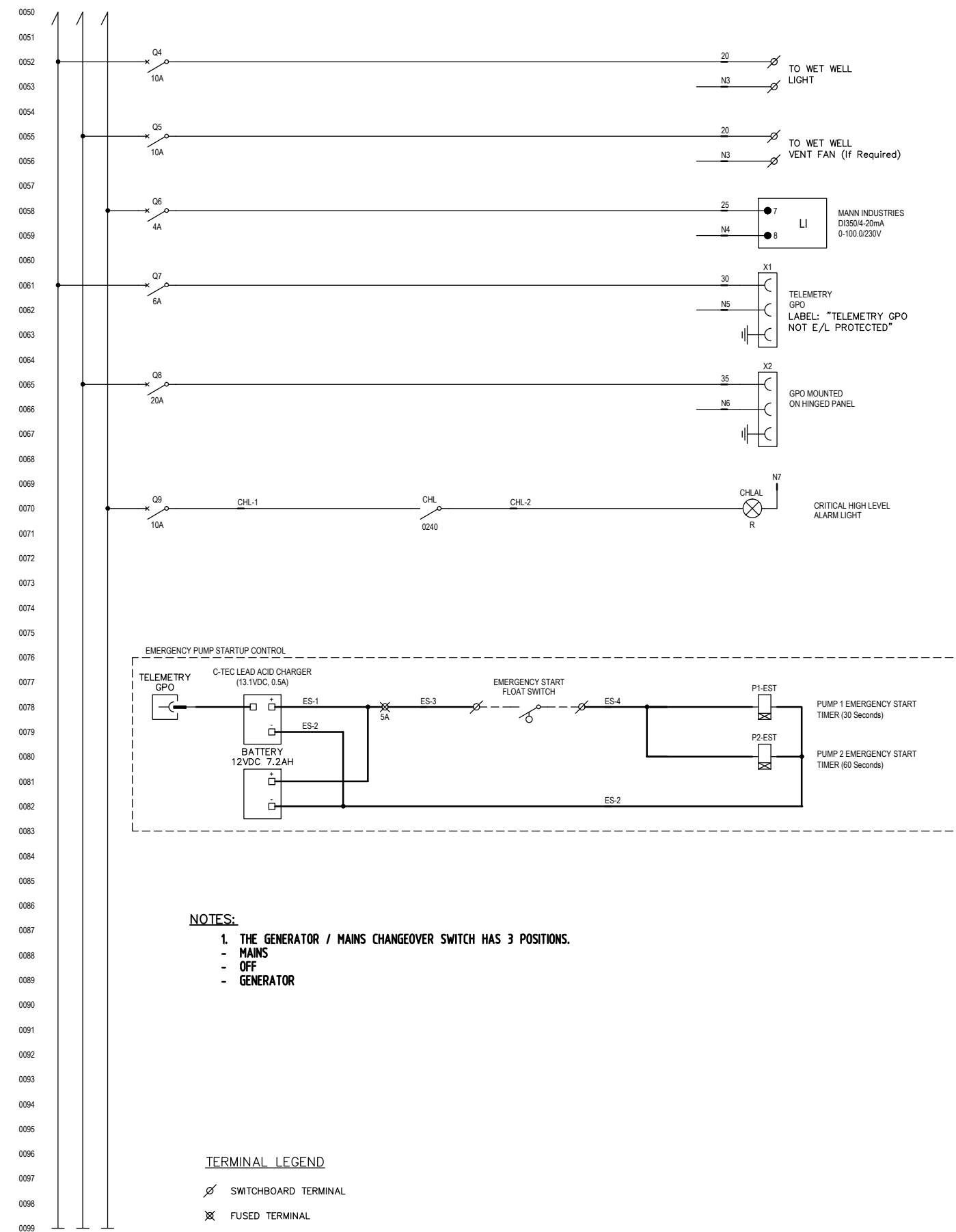
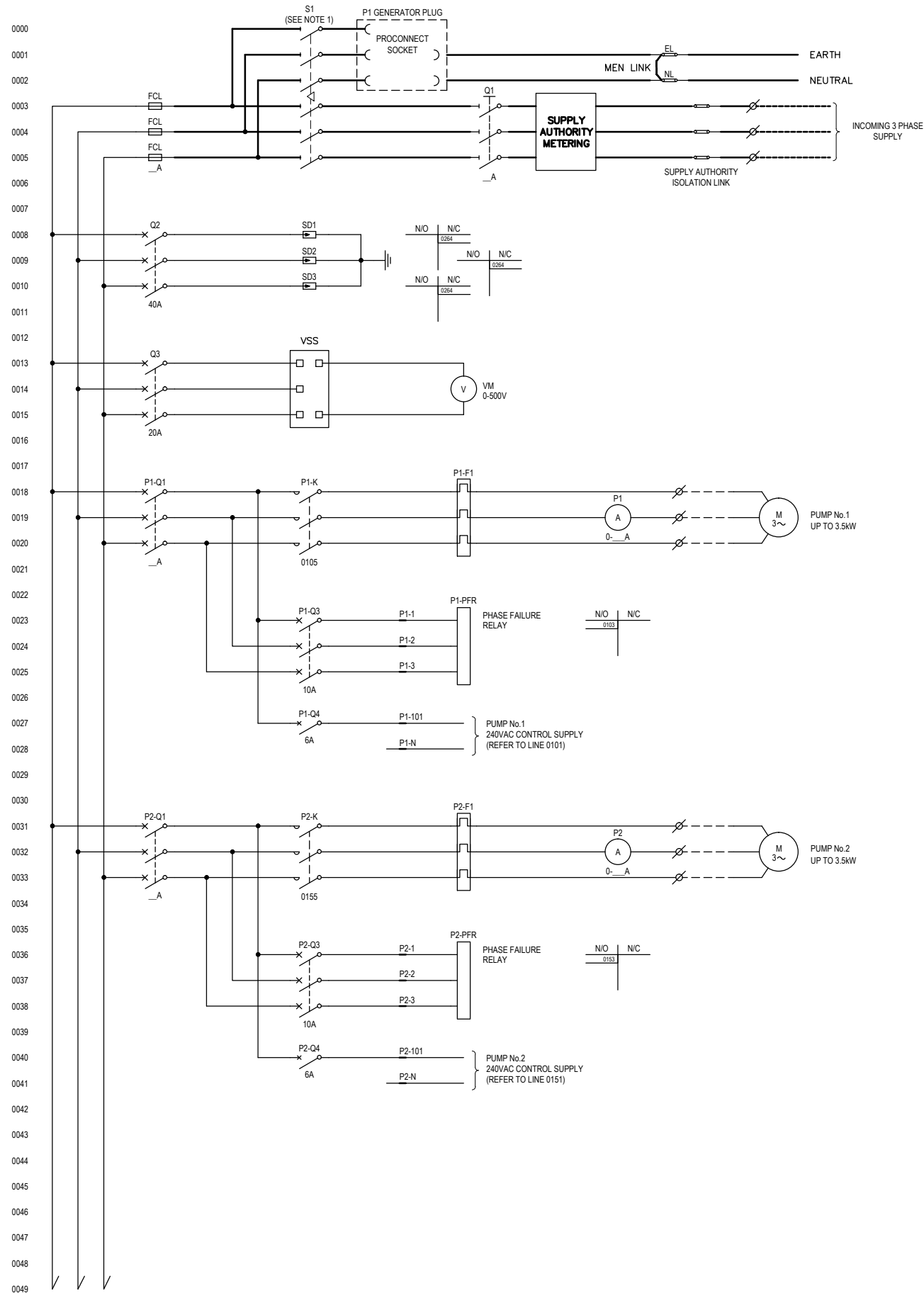
WIDE BAY WATER  
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

**HERVEY BAY SPS**

STANDARD SEWAGE PUMP STATION (DOL < 3.5KW)  
THREE LINE 415V POWER DISTRIBUTION  
SCHEMATIC DIAGRAM

|             |       |
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| FILE        |       |
| SCALE       | N.T.S |
| SHEET       | OF    |
| DRAWING NO. |       |
| DOL-001     |       |
|             | A     |





- NOTES:**
1. THE GENERATOR / MAINS CHANGE OVER SWITCH HAS 3 POSITIONS.
    - MAINS
    - OFF
    - GENERATOR

**TERMINAL LEGEND**

⊘ SWITCHBOARD TERMINAL

⊗ FUSED TERMINAL

A3

| REVISION HISTORY |            |                  | DRAWING INFORMATION |         |          | CONTRACTOR INFORMATION |      |  |
|------------------|------------|------------------|---------------------|---------|----------|------------------------|------|--|
| INDEX            | DATE       | REVISIONS        | DRAWN               | CHECKED | APPROVED | INITIALS               | DATE |  |
| B                | 29/08/16   | UPDATED WBW LOGO | R.C.                |         | S.K.     |                        |      |  |
| A                | 30/11/2015 | FOR CONSTRUCTION | T.M.                | T.M.    |          |                        |      |  |

| DRAWING INFORMATION |         |          | CONTRACTOR INFORMATION |            |  |
|---------------------|---------|----------|------------------------|------------|--|
| DRAWN               | CHECKED | APPROVED | INITIALS               | DATE       |  |
| T.M.                | T.M.    |          |                        | 30/11/2015 |  |
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WIDE BAY WATER  
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

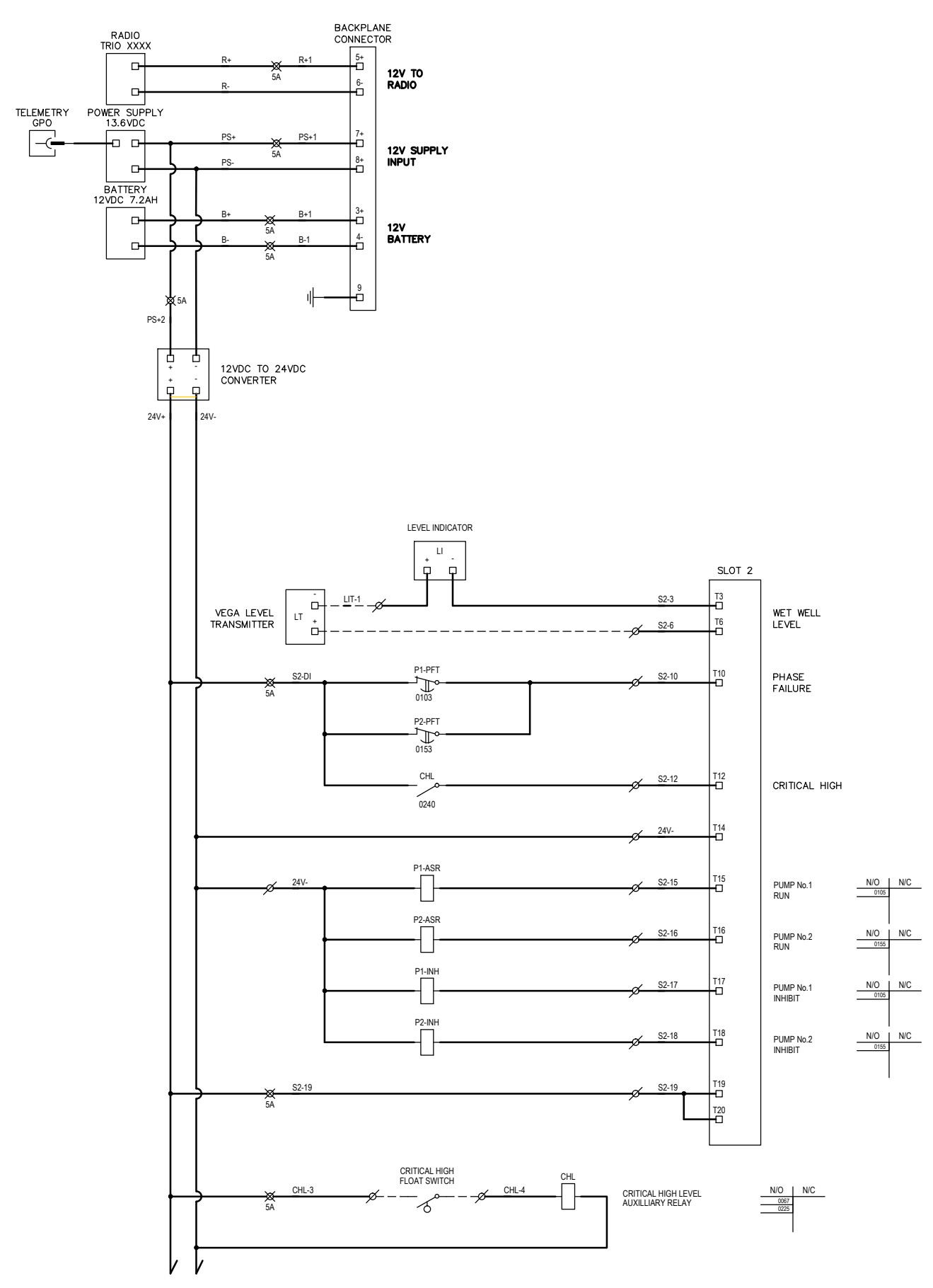
**HERVEY BAY SPS**

STANDARD SEWAGE PUMP STATION (DOL < 3.5KW)  
THREE LINE 415V POWER DISTRIBUTION  
SCHEMATIC DIAGRAM

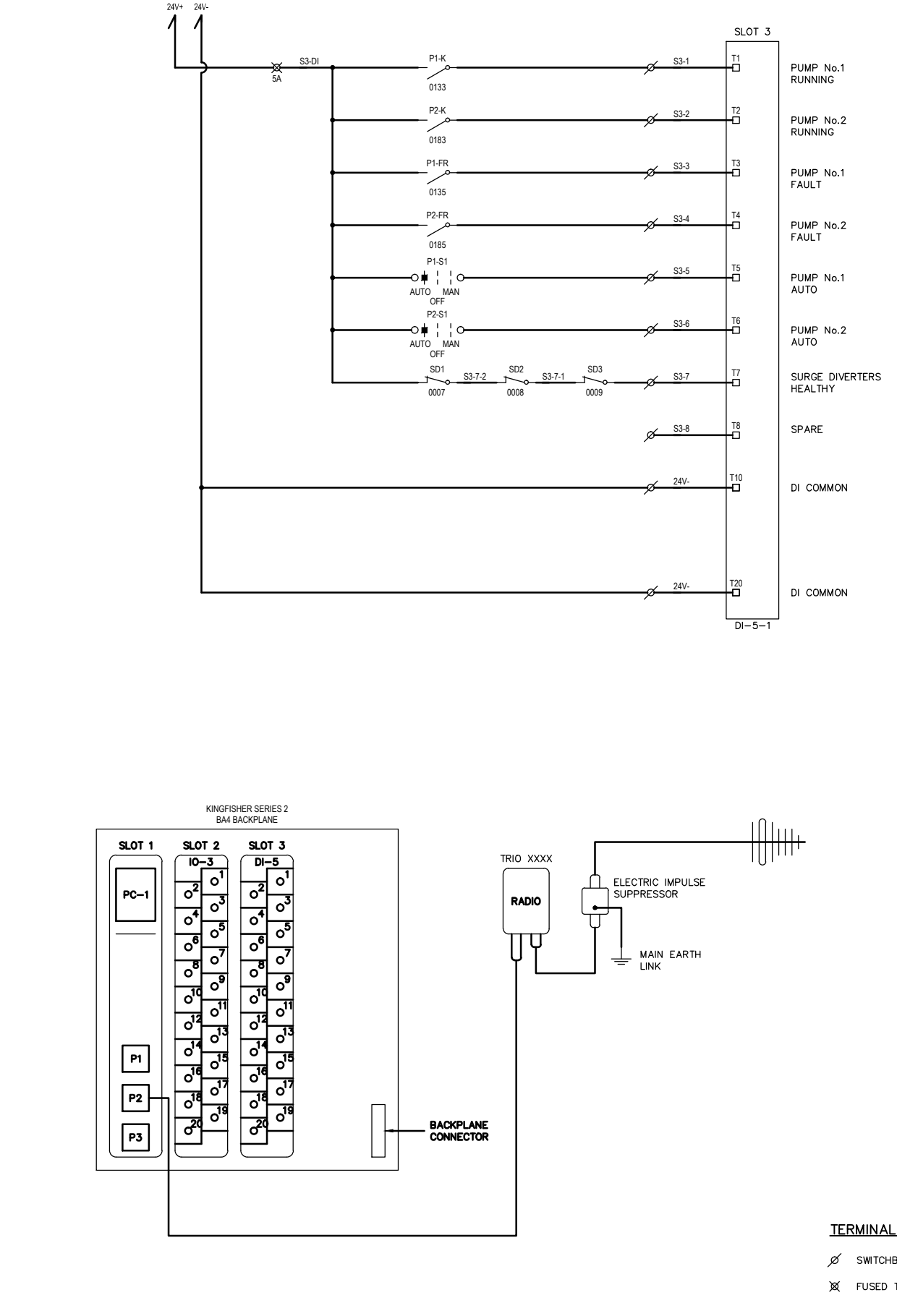
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| SHEET       | OF    |
| DRAWING NO. |       |
| DOL-001     |       |
|             | A     |



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A3

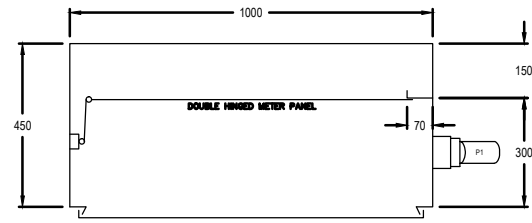
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| INDEX            | DATE       | REVISIONS        | DRAWN               | CHECKED | APPROVED | INITIALS               | DATE |  |
| B                | 29/08/2016 | UPDATED WBW LOGO | R.C.                |         | S.K.     |                        |      |  |
| A                | 30/11/2015 | FOR CONSTRUCTION | T.M.                | T.M.    |          |                        |      |  |

| DRAWING INFORMATION |         |          | CONTRACTOR INFORMATION |            |  |
|---------------------|---------|----------|------------------------|------------|--|
| DRAWN               | CHECKED | APPROVED | INITIALS               | DATE       |  |
| T.M.                | T.M.    |          |                        | 30/11/2015 |  |
|                     |         |          |                        | 30/11/2015 |  |

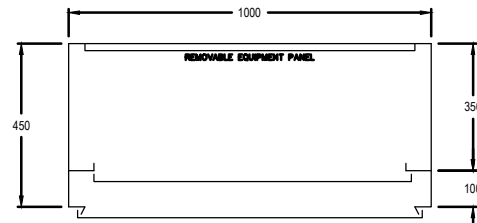
WIDE BAY WATER  
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

**HERVEY BAY SPS**  
STANDARD SEWAGE PUMP STATION (DOL < 3.5KW)  
TELEMETRY WIRING  
SCHEMATIC DIAGRAM

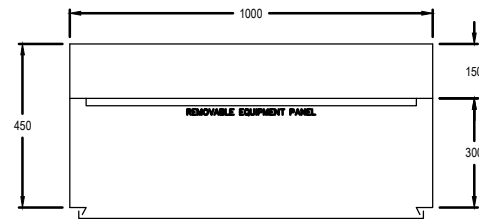
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| DOL-003     |       |
|             | A     |



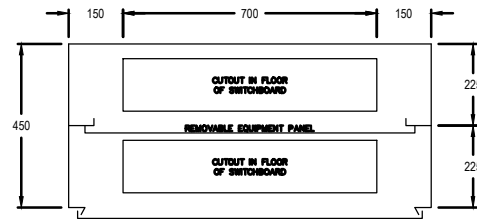
SECTION C - C



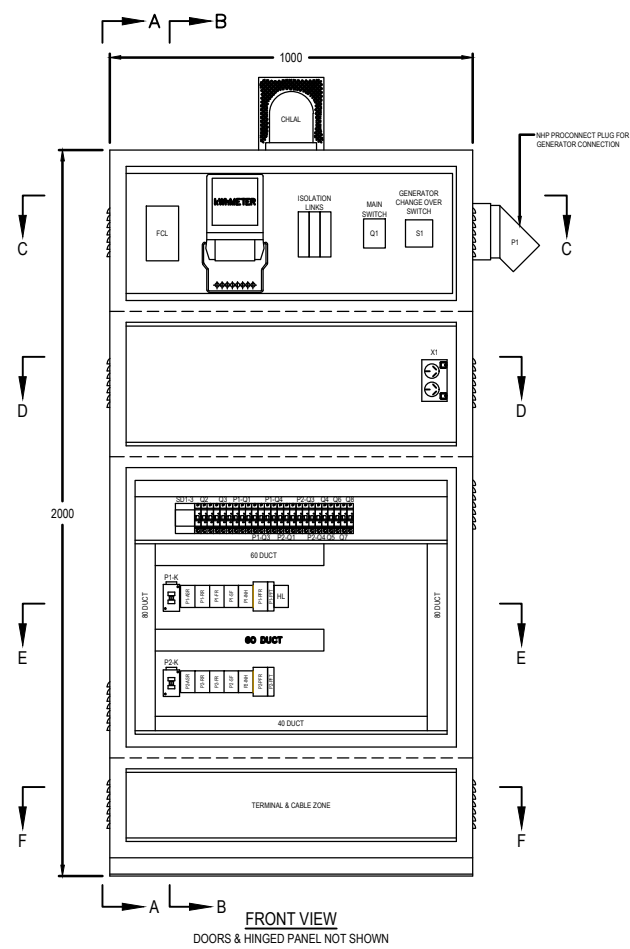
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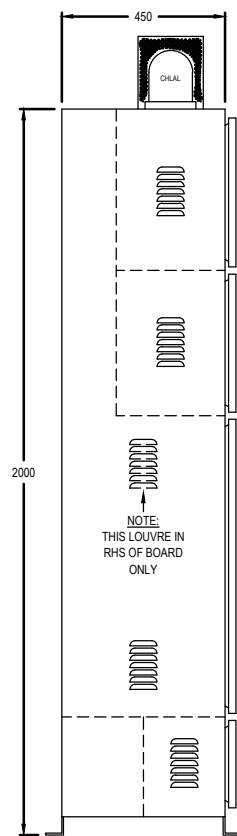
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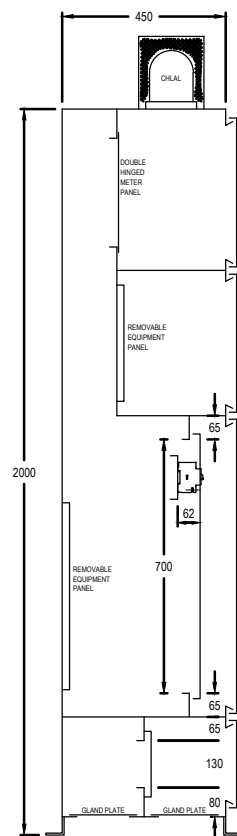
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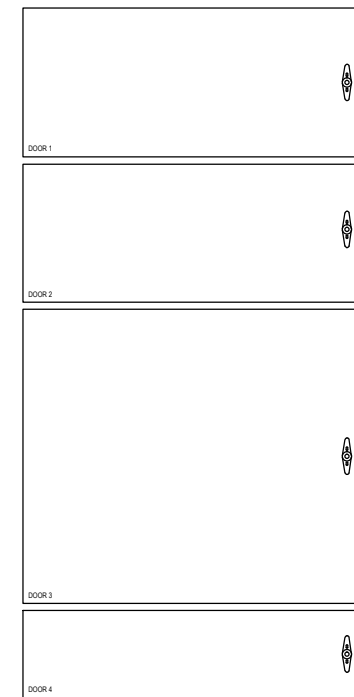
FRONT VIEW  
DOORS & HINGED PANEL NOT SHOWN



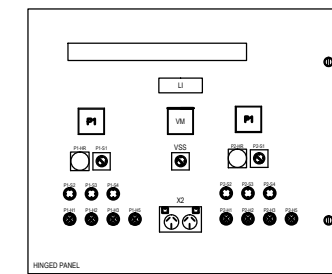
SECTION A - A



SECTION B - B



DOORS



HINGED PANEL

A3

| REVISION HISTORY |            |                  |       |         |          |
|------------------|------------|------------------|-------|---------|----------|
| INDEX            | DATE       | REVISIONS        | DRAWN | CHECKED | APPROVED |
| B                | 29/08/2016 | UPDATED WBW LOGO | R.C.  |         | S.K.     |
| A                | 30/11/2015 | FOR CONSTRUCTION | T.M.  | T.M.    |          |

| DRAWING INFORMATION |         |          |
|---------------------|---------|----------|
| DRAWN               | CHECKED | APPROVED |
| T.M.                | T.M.    |          |
| INITIALS            | DATE    |          |

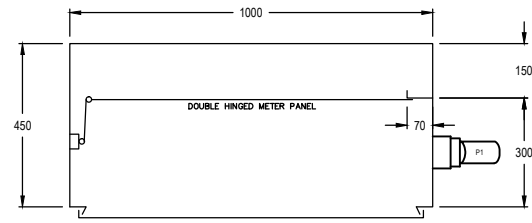
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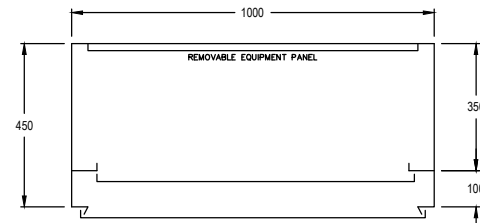
WIDE BAY WATER  
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

**HERVEY BAY SPS**  
STANDARD SEWAGE PUMP STATION (DOL < 3.5KW)  
GENERAL LAYOUT

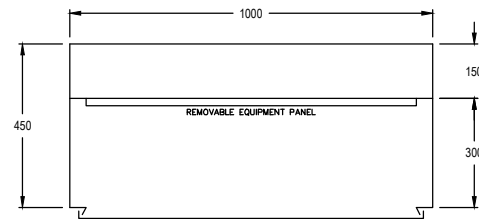
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| DOL-004     |       |
|             | A     |



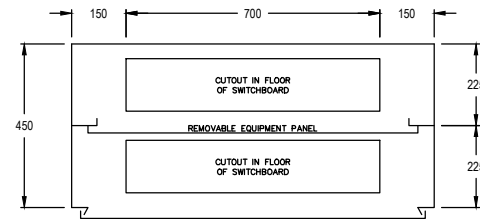
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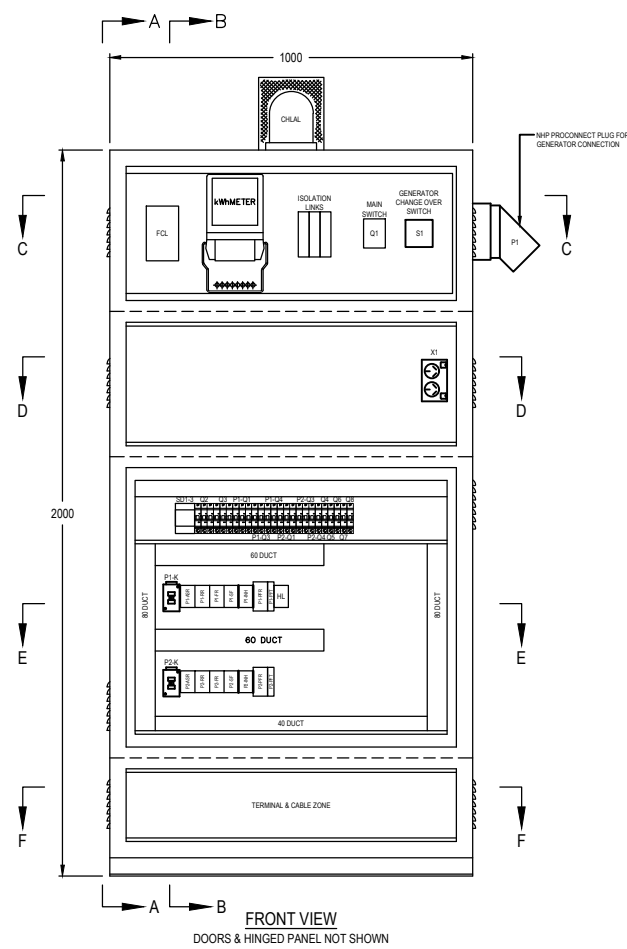
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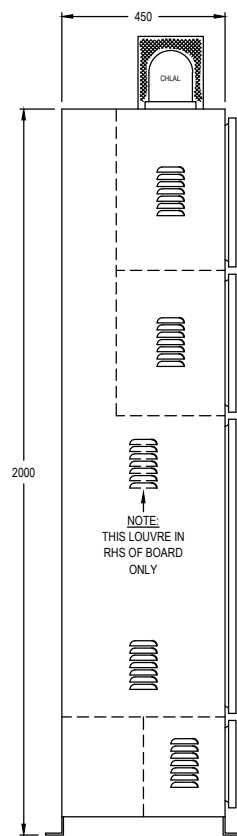
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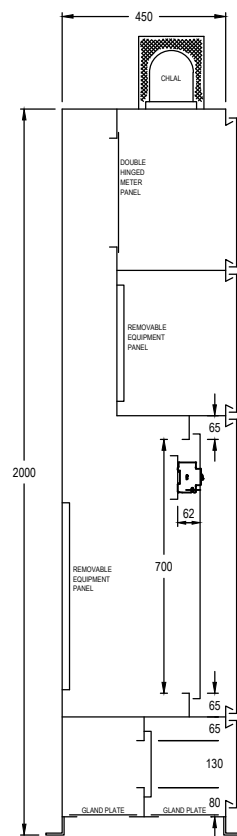
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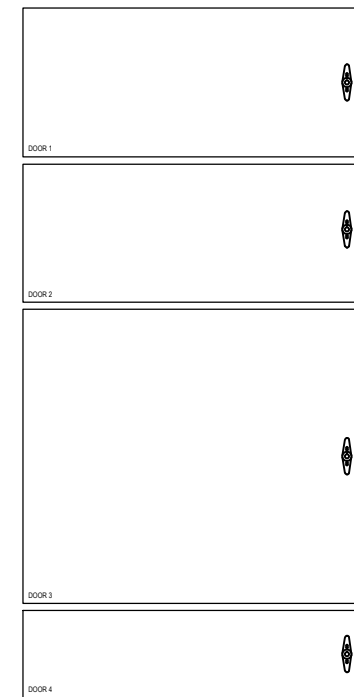
FRONT VIEW  
DOORS & HINGED PANEL NOT SHOWN



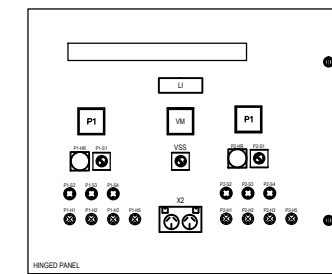
SECTION A - A



SECTION B - B



DOORS



HINGED PANEL

A3

| REVISION HISTORY |            |                  |       |         |          |
|------------------|------------|------------------|-------|---------|----------|
| INDEX            | DATE       | REVISIONS        | DRAWN | CHECKED | APPROVED |
| B                | 29/08/2016 | UPDATED WBW LOGO | R.C.  |         | S.K.     |
| A                | 30/11/2015 | FOR CONSTRUCTION | T.M.  | T.M.    |          |

| DRAWING INFORMATION |         |          |
|---------------------|---------|----------|
| DRAWN               | CHECKED | APPROVED |
| T.M.                | T.M.    |          |
| INITIALS            | DATE    |          |

| CONTRACTOR INFORMATION |  |  |
|------------------------|--|--|
|                        |  |  |



WIDE BAY WATER  
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

**HERVEY BAY SPS**  
STANDARD SEWAGE PUMP STATION (DOL < 3.5KW)  
GENERAL LAYOUT  
SCHEMATIC DIAGRAM

| FILE        |       |
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| SCALE       | N.T.S |
| SHEET       | OF    |
| DRAWING NO. |       |
| DOL-004     |       |
|             | A     |

| Item         | Make & Number                              | Description                      | Label              |
|--------------|--|----------------------------------|--------------------|
| Q1           | CLIPSAL PT_____                            | LOAD SWITCH                      | MAIN SWITCH        |
| Q2           | HAGER NT340C                               | CIRCUIT BREAKER                  | Q2                 |
| Q3           | HAGER NT320C                               | CIRCUIT BREAKER                  | Q3                 |
| Q4,5,6,8     | HAGER NT110C                               | CIRCUIT BREAKERS                 | Q4,5,6,8           |
| Q7,Q9        | HAGER NT120C, NT104C                       | CIRCUIT BREAKERS                 | Q7,Q9              |
| P1,2-Q1      | HAGER NDN3__A                              | CIRCUIT BREAKERS                 | PUMP No.1,2        |
| P1,2-Q3      | HAGER NT310C                               | CIRCUIT BREAKERS                 | P1,2-Q3            |
| P1,2-Q4      | HAGER NT106C                               | CIRCUIT BREAKERS                 | P1,2-Q4            |
| SD1-3        | HAGER SP140D c/w AUX. CONTACT              | SURGE ARRESTORS                  | SD1-3              |
| NL           | CLIPSAL L10A                               | NEUTRAL LINK                     | NEUTRAL            |
| EL           | CLIPSAL L10P                               | EARTH LINK                       | EARTH              |
| FCL          | NHP _____                                  | FAULT CURRENT LIMITER FUSES      | FCL                |
| VSS          | KRAUS & NAIMER CA10-A004-FT2               | VOLTMETER SELECTOR SWITCH        | VSS                |
| VM           | NHP 72mm SQUARE (0-500V)                   | VOLTMETER                        | VM                 |
| X1           | HPM XL/777PA c/w 140CH                     | DOUBLE GPO                       | X1                 |
| X2           | HPM XL/777EL30                             | DOUBLE E/L GPO                   | X2                 |
| CHLAL        | CLIPSAL 545 RED c/w 547 BASE & 60W LAMP    | CRITICAL HIGH LEVEL FAULT LIGHT  | CHLAL              |
| P1,2         | NHP 72mm SQUARE (5xOVERRANGE)              | AMMETERS                         | P1,2               |
| P1,2-PFR     | RHOMBERG BRASSLER SP430D                   | PHASE FAILURE RELAYS             | PFR1,2             |
| P1,2-PFT     | NAIS PM4H MULTI RANGE                      | TIMERS                           | P1,2-PFT           |
| P1,2-S1      | KRAUS & NAIMER CA10-A211-623-FT2           | SELECTOR SWITCHES                | P1,2-S1            |
| P1,2-H2      | MOELLER M22-L-W c/w M22-A & M22-LED230-W   | PILOT LIGHTS                     | AVAILABLE          |
| P1,2-H3,4    | MOELLER M22-L-Y c/w M22-A & M22-LED230-Y   | PILOT LIGHTS                     | FAULT/WATER IN OIL |
| P1,2-H1      | MOELLER M22-L-G c/w M22-A & M22-LED230-G   | PILOT LIGHTS                     | RUN                |
| P1,2-S3      | MOELLER M22-DL-G c/w M22-AK10              | PUSHBUTTON                       | START              |
| P1,2-S2      | MOELLER M22-DL-R c/w M22-AK01              | PUSHBUTTON                       | STOP               |
| P1,2-S4      | MOELLER M22-DL-B c/w M22-AK01, & M22-K01   | PUSHBUTTON                       | RESET              |
| P1,2-HR      | GRASSLIN UWZ48E 240V                       | HOUR RUN METERS                  | P1,2-HR            |
| P1,2-K       | SPRECHER & SCHUH CA7-_____                 | CONTACTOR                        | P1,2-K             |
| P1,2-RR,FR   | FINDER                                     | 240VAC RELAY                     | P1,2-RR,FR         |
| P1,2-SF      | ATC 78562                                  | WATER IN OIL RELAYS              | P1,2-SF            |
| P1,2-ASR     | FINDER                                     | 24VDC RELAYS                     | P1,2-ASR           |
| P1,2-F1      | SPRECHER & SCHUH CEP7-____ c/w CEP7-33-P-A | ELECTRONIC OVELOAD               | P1,2-F1            |
|              | SIEMENS 4mm?                               | TERMINALS                        |                    |
| P1,2-OT      | TELEMECANIQUE LT3SMOOM                     | THERMISTOR RELAY                 | P1,2-OT            |
| LI           | MANN INDUSTRIES DI350                      | LEVEL INDICATOR                  | LI                 |
|              | MEANWELL 5-60-12                           | TELEMETRY 13.6VDC POWER SUPPLY   | POWER SUPPLY       |
|              | MEANWELL SD-50A-24                         | 12/24VDC CONVERTER               | DC CONVERTER       |
| FLOAT SWITCH | ITT FLYGT HEAVY DUTY FLOAT SWITCH          | CRITICAL HIGH LEVEL FLOAT SWITCH | FLOAT SWITCH       |
| LEVEL TRANS. | VEGAWELL 72 SERIES PRESSURE TRANSDUCER     | WELL LEVEL TRANSMITTER           | LEVEL TRANSMITTER  |
|              | WEIDMULLER SA SERIES                       | TELEMETRY FUSED TERMINAL BLOCKS  |                    |
| EPS          | MEANWELL DR-4524                           | 240VAC TO 24VDC POWER SUPPLY     | EPS                |

A3

| REVISION HISTORY |            |                  |           |
|------------------|------------|------------------|-----------|
| INDEX            | DATE       | REVISIONS        |           |
| B                | 29/08/2016 | UPDATED WBW LOGO | R.C. S.K. |
| A                | 30/11/2015 | FOR CONSTRUCTION | T.H. T.H. |

| DRAWING INFORMATION |      |            |  |
|---------------------|------|------------|--|
| DRAWN               | T.H. | 30/11/2015 |  |
| CHECKED             | T.H. | 30/11/2015 |  |
| APPROVED            |      |            |  |
| INITIALS            | DATE |            |  |

| CONTRACTOR INFORMATION |  |
|------------------------|--|
|                        |  |

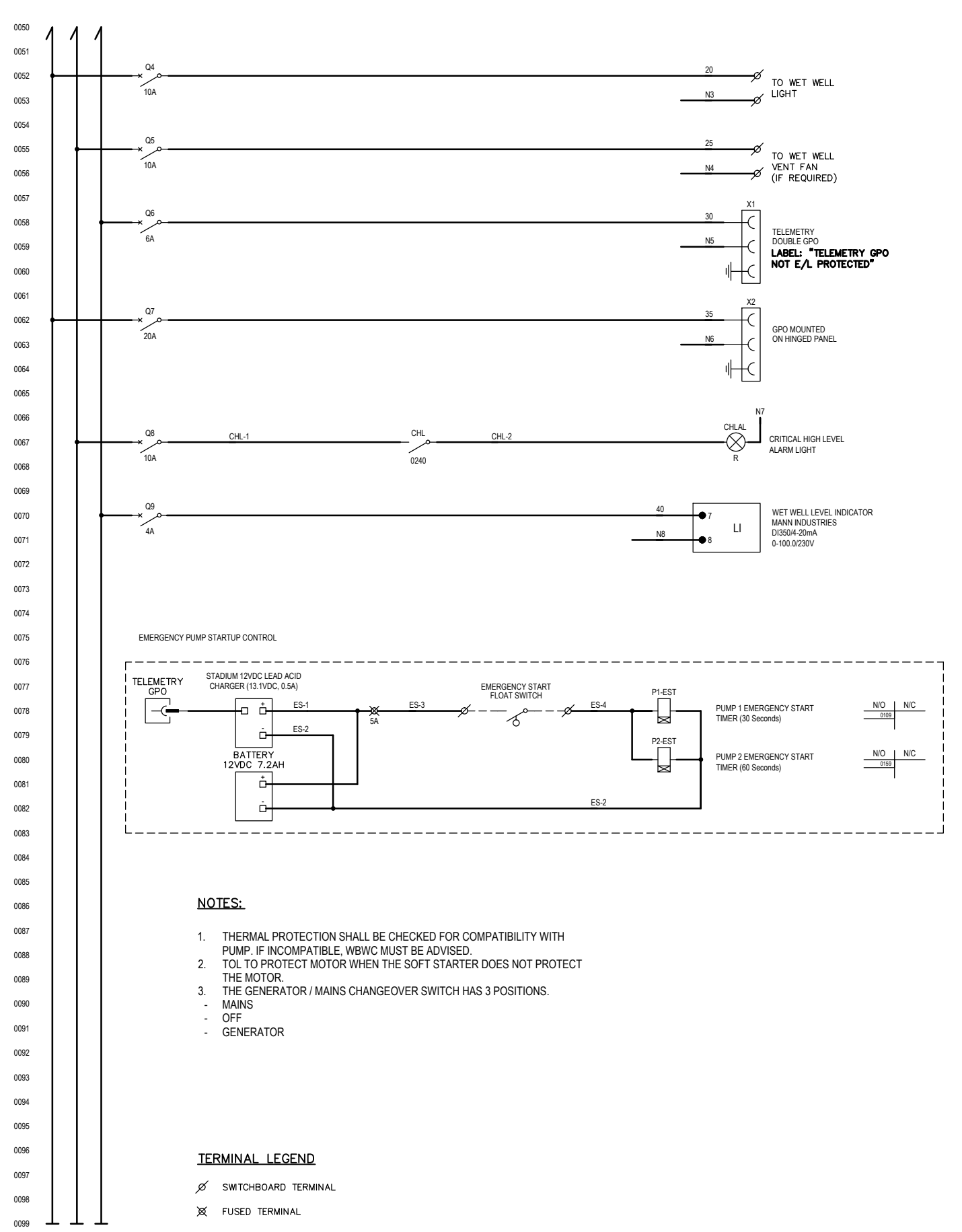
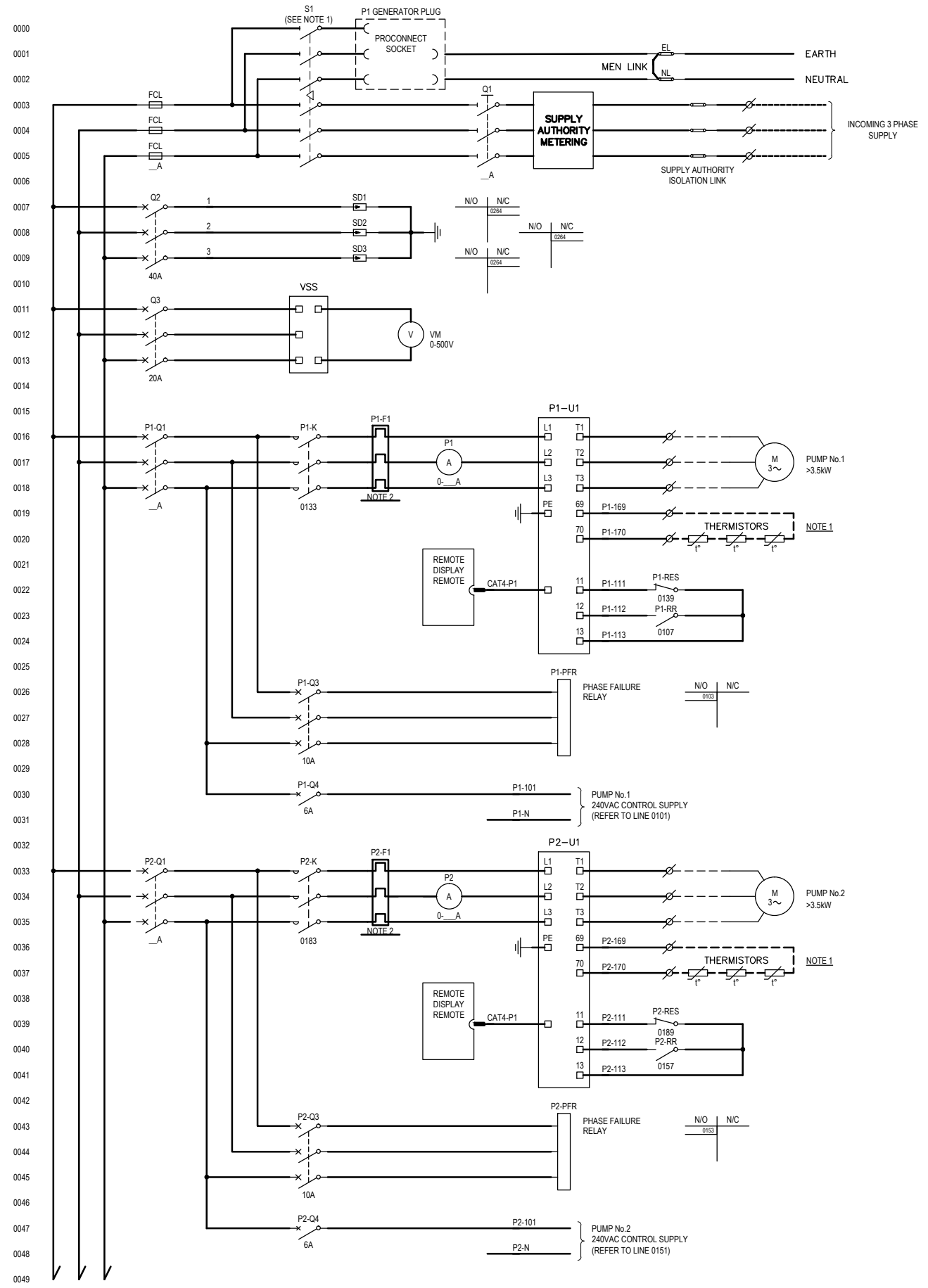


WIDE BAY WATER  
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

**HERVEY BAY SPS**

STANDARD SEWAGE PUMP STATION (DOL < 3.5KW)  
EQUIPMENT LIST

| FILE        | SCALE | N.T.S |
|-------------|-------|-------|
| SHEET       | OF    |       |
| DRAWING NO. |       |       |
| DOL-006     |       |       |
|             |       | A     |



- NOTES:**
1. THERMAL PROTECTION SHALL BE CHECKED FOR COMPATIBILITY WITH PUMP. IF INCOMPATIBLE, WBWC MUST BE ADVISED.
  2. TOL TO PROTECT MOTOR WHEN THE SOFT STARTER DOES NOT PROTECT THE MOTOR.
  3. THE GENERATOR / MAINS CHANGEOVER SWITCH HAS 3 POSITIONS.
    - MAINS
    - OFF
    - GENERATOR

**TERMINAL LEGEND**

Ø SWITCHBOARD TERMINAL

⊗ FUSED TERMINAL

| REVISION HISTORY |            |                  | DRAWING INFORMATION |         |          | CONTRACTOR INFORMATION |            |  |
|------------------|------------|------------------|---------------------|---------|----------|------------------------|------------|--|
| INDEX            | DATE       | REVISIONS        | DRAWN               | CHECKED | APPROVED | INITIALS               | DATE       |  |
| B                | 29/08/16   | UPDATED WBW LOGO | R.C.                |         | S.K.     | T.M                    | 30/11/2015 |  |
| A                | 30/11/2015 | FOR CONSTRUCTION | T.M                 | T.M     |          | T.M                    | 30/11/2015 |  |

WIDE BAY WATER

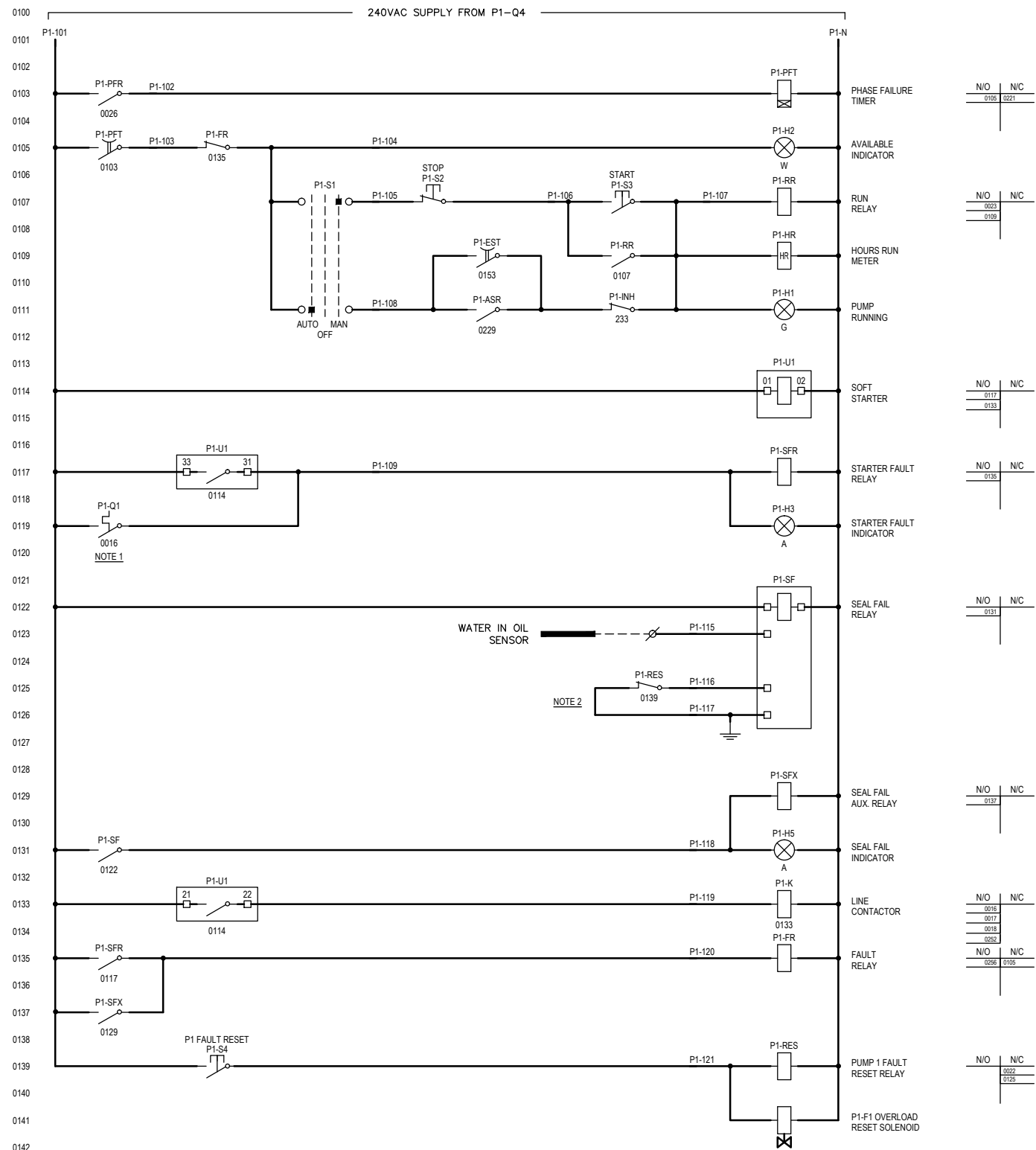
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

## HERVEY BAY SPS

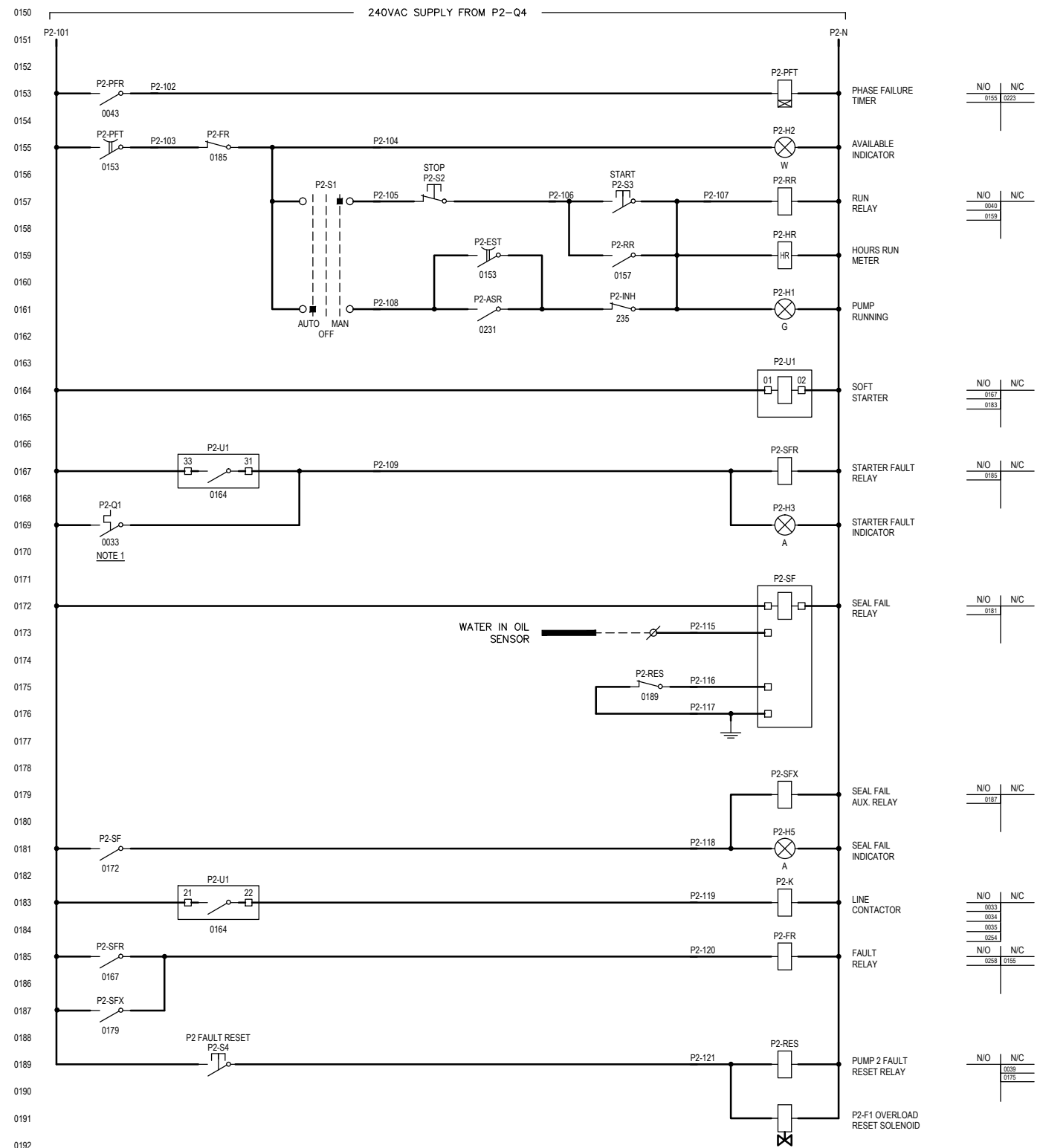
STANDARD SEWAGE PUMP STATION (SS > 3.5KW)  
THREE LINE 415V POWER DISTRIBUTION  
SCHEMATIC DIAGRAM

|             |       |
|-------------|-------|
| FILE        |       |
| SCALE       | N.T.S |
| SHEET       | OF    |
| DRAWING NO. |       |
| SS-001      |       |

**A3**



- NOTE:**
- ADJUSTABLE TOL TO PROTECT MOTOR WHEN THE SOFT STARTER DOES NOT PROTECT THE MOTOR.
  - SEAL FAILURE PROTECTION SHALL BE CHECKED FOR COMPATABILITY WITH PUMP.



**TERMINAL LEGEND**

- SWITCHBOARD TERMINAL
- FUSED TERMINAL

A3

| REVISION HISTORY |            |                  |       |         |
|------------------|------------|------------------|-------|---------|
| INDEX            | DATE       | REVISIONS        | DRAWN | CHECKED |
| B                | 29/08/16   | UPDATED WBW LOGO | R.C.  | S.K.    |
| A                | 30/11/2015 | FOR CONSTRUCTION | T.M.  | T.M.    |

| DRAWING INFORMATION |      |            |
|---------------------|------|------------|
| DRAWN               | T.M. | 30/11/2015 |
| CHECKED             | T.M. | 30/11/2015 |
| APPROVED            |      |            |
| INITIALS            | DATE |            |

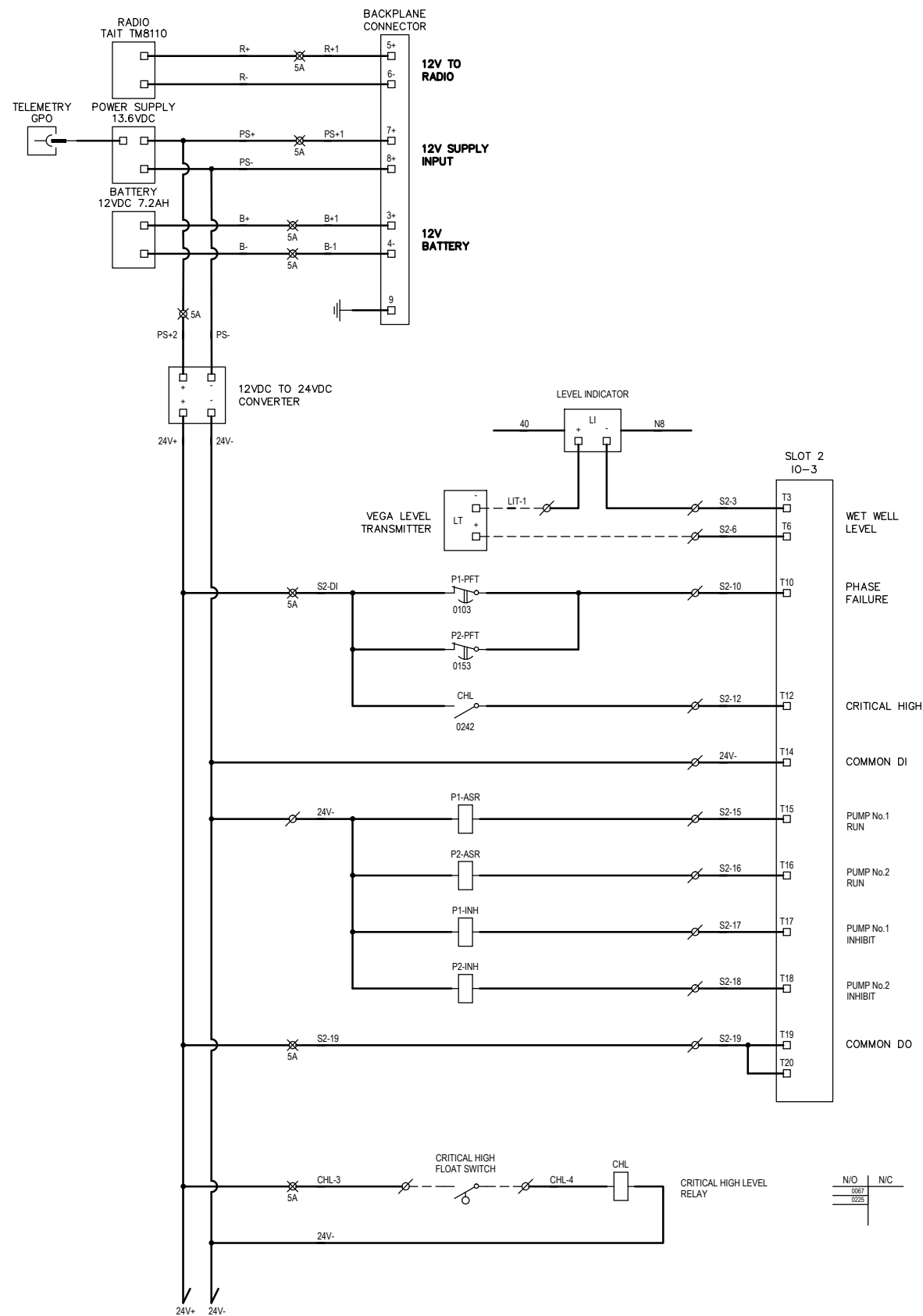
| CONTRACTOR INFORMATION |  |  |
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WIDE BAY WATER  
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

**HERVEY BAY SPS**  
STANDARD SEWAGE PUMP STATION (SS > 3.5KW)  
PUMP CONTROLS  
SCHEMATIC DIAGRAM

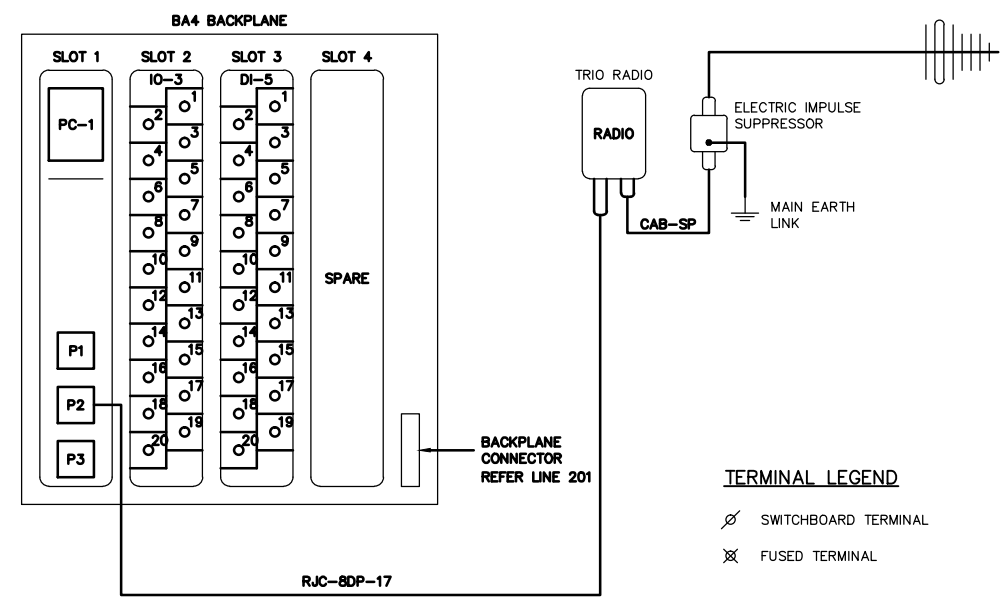
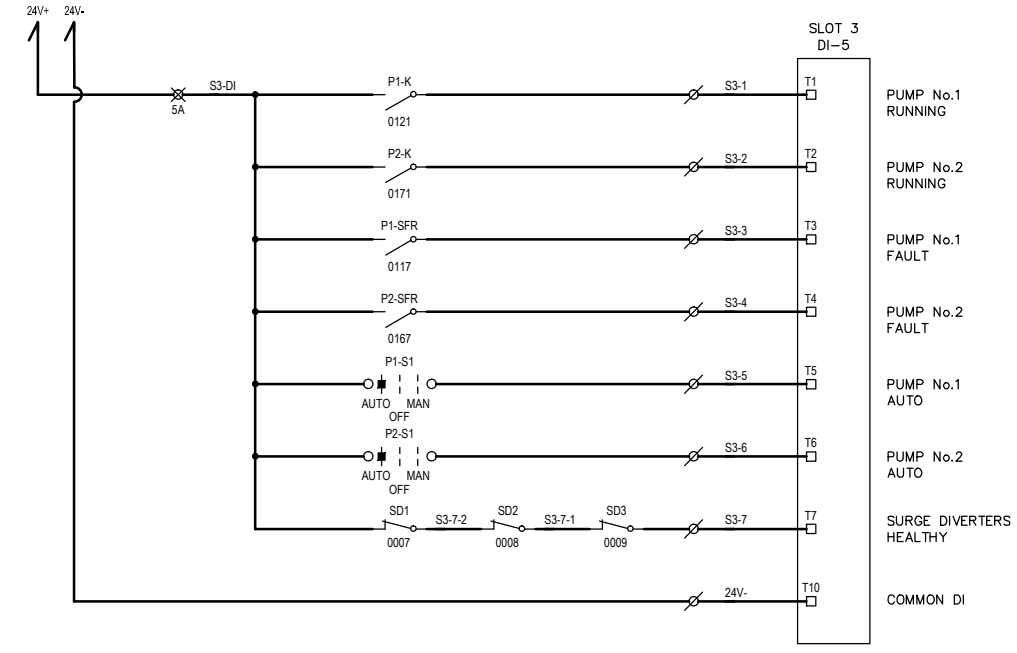
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| SCALE       | N.T.S  |
| SHEET       | OF     |
| DRAWING NO. | SS-002 |
|             | A      |

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| N/O  | N/C  |
| 0161 |      |
| N/O  | N/C  |
| 0111 |      |
| N/O  | N/C  |
| 0161 |      |
| N/O  | N/C  |
| 0007 | 0008 |
| 0009 |      |
| N/O  | N/C  |
| 0007 | 0008 |
| 0009 |      |

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**TERMINAL LEGEND**

- ⊘ SWITCHBOARD TERMINAL
- ⊗ FUSED TERMINAL

A3

| REVISION HISTORY |            |                  | DRAWING INFORMATION |         |          | CONTRACTOR INFORMATION |            |  |
|------------------|------------|------------------|---------------------|---------|----------|------------------------|------------|--|
| INDEX            | DATE       | REVISIONS        | DRAWN               | CHECKED | APPROVED | INITIALS               | DATE       |  |
| B                | 29/08/16   | UPDATED WBW LOGO | R.C.                |         | S.K.     |                        | 30/11/2015 |  |
| A                | 30/11/2015 | FOR CONSTRUCTION | T.M.                | T.M.    |          |                        | 30/11/2015 |  |

| DRAWING INFORMATION |         |          | CONTRACTOR INFORMATION |            |  |
|---------------------|---------|----------|------------------------|------------|--|
| DRAWN               | CHECKED | APPROVED | INITIALS               | DATE       |  |
| T.M.                | T.M.    |          |                        | 30/11/2015 |  |

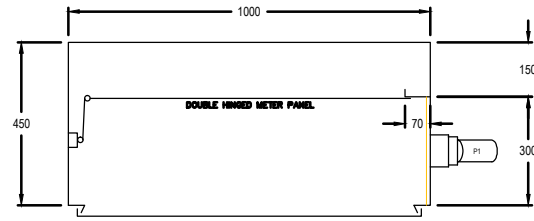


WIDE BAY WATER  
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

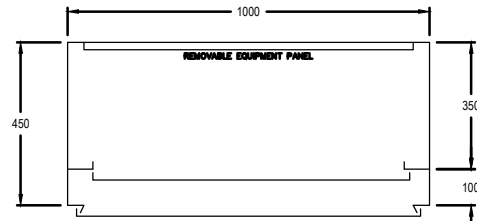
**HERVEY BAY SPS**  
STANDARD SEWAGE PUMP STATION (SS > 3.5KW)  
TELEMETRY WIRING  
SCHEMATIC DIAGRAM

|               |       |
|---------------|-------|
| FILE          |       |
| SCALE         | N.T.S |
| SHEET         | OF    |
| DRAWING NO.   |       |
| <b>SS-003</b> |       |

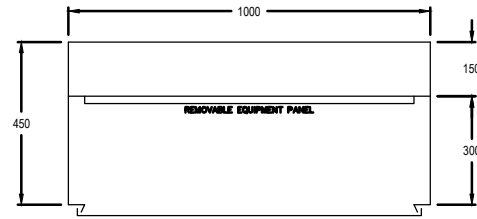




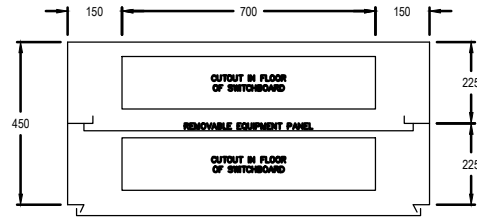
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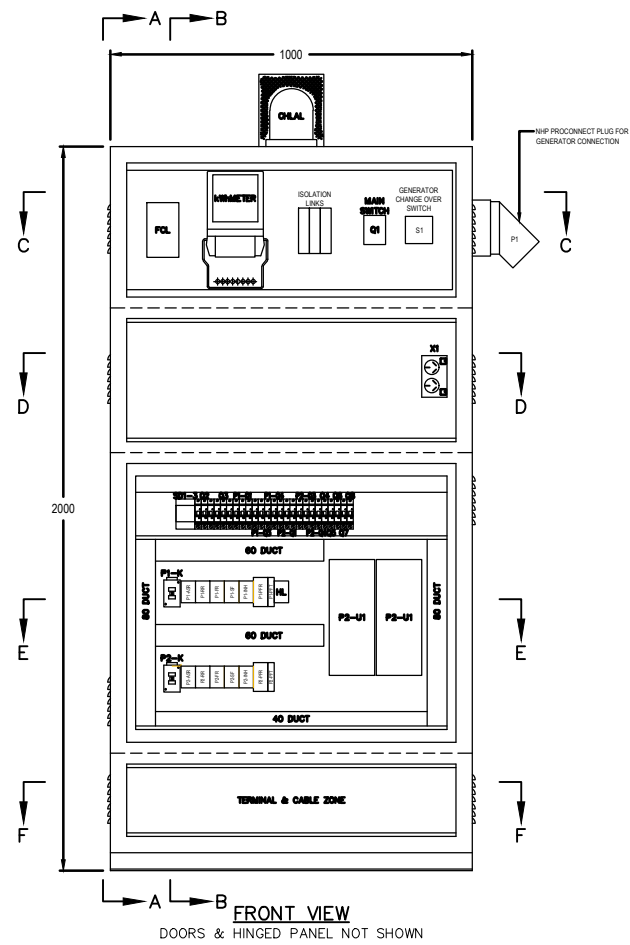
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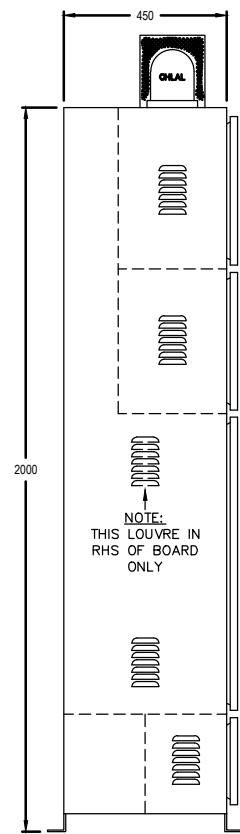
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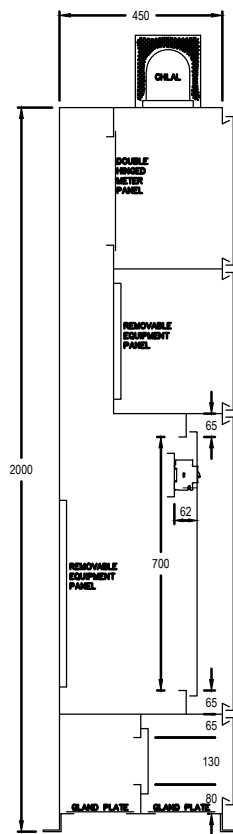
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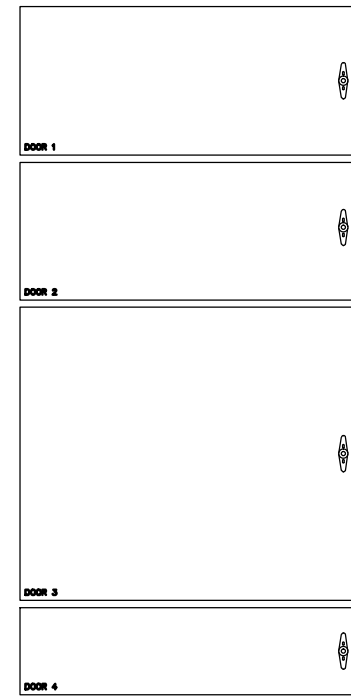
FRONT VIEW  
DOORS & HINGED PANEL NOT SHOWN



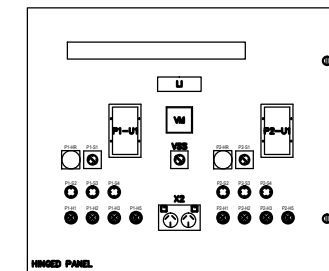
SECTION A - A



SECTION B - B



DOORS



HINGED PANEL

A3

| REVISION HISTORY |            |                  | DRAWING INFORMATION |         |          | CONTRACTOR INFORMATION |      |  |
|------------------|------------|------------------|---------------------|---------|----------|------------------------|------|--|
| INDEX            | DATE       | REVISIONS        | DRAWN               | CHECKED | APPROVED | INITIALS               | DATE |  |
| B                | 29/08/16   | UPDATED WBW LOGO | R.C.                |         | S.K.     |                        |      |  |
| A                | 30/11/2015 | FOR CONSTRUCTION | T.M.                | T.M.    |          |                        |      |  |

| DRAWING INFORMATION |         |          | CONTRACTOR INFORMATION |            |  |
|---------------------|---------|----------|------------------------|------------|--|
| DRAWN               | CHECKED | APPROVED | INITIALS               | DATE       |  |
| T.M.                | T.M.    |          |                        | 30/11/2015 |  |



WIDE BAY WATER  
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

**HERVEY BAY SPS**  
STANDARD SEWAGE PUMP STATION (SS > 3.5KW)  
GENERAL LAYOUT

|             |       |
|-------------|-------|
| FILE        |       |
| SCALE       | N.T.S |
| SHEET       | OF    |
| DRAWING NO. |       |
| SS-004      |       |
|             | A     |

|                                 |   |
|---------------------------------|---|
| PROJECT:                        | STANDARD SEWAGE PUMP STATION  |
| JOB NO:                         |   |
| ITEM:                           | MCC Construction Notes  |
| DOCUMENT NO:                    | Drawing No. _____   |
| DESIGN DETAILS: -               |   |
| Place of installation           | Outdoor   |
| Type of installation            | Stationary  |
| S.C.A. Design                   | Custom  |
| S.C.A. Detail                   | Front Access, Front Connect, Bottom Entry / Exit  |
| Current Rating                  | 80A   |
| Frequency                       | 50 Hz   |
| Rated Voltage (operational)     | 415 VAC 3 Phase and Neutral   |
| Control Voltage                 | 240VAC / 24VDC  |
| Insulation Rating               | 0.6 / 1 kV  |
| Short Circuit withstand Current | ___ kA for 1 second   |
| Type Tested in accordance with  | AS3439.1  |
| Arc Fault Containment           | Not Specified   |
| Segregation Classification      | Form 2 to AS3439.1  |
| Degree of Protection            | IP55 to AS1939  |
| Internal Degree of Protection   | IP20  |
| Design Ambient Temperature      | 40°C  |
| Design Temperature Rise         | 50°C above Ambient  |
| Earthing System                 | Men   |
| Men Link                        | Required  |
| CONSTRUCTION DETAILS: -         |   |
| Cubicle Material                | 3mm thick Marine Grade Aluminium  |
| Equipment Panels                | 2mm thick Marine Grade Aluminium  |
| Fixings                         | All Fixings shall be Chrome Plated  |
| Welding                         | Fully Welded  |
| Sealing Against Sewer Gas       | Switchboard to be Sealed to Limit Ingress of Sewer Well Gases                                 |
| Stiffening                      | To prevent warping and form a rigid enclosure   |
| Plinth - Material Type          | Steel Angle   |
| Plinth - Material Dimensions    | 50 x 50 x 6 mm  |
| Plinth - Finish                 | Hot Dip Galvanised  |
| Gland Plates                    | 3mm thick Aluminium fitted with gasket and fixed with M6 Hex Head Bolts, Earthed as Necessary |
| Door Sealing                    | Adhesive backed Neoprene Rubber   |
| Hinges Doors / Hinged Panel     | Stainless Steel   |
| Door Lock - Door 1              | Chrome Plated "T" Handle Lockwood LW8474 for Ergon (Qld Locksmiths)                           |
| Door Locks - Doors 2, 3, 4      | Chrome Plated Lockable (keyed 92268) "T" Handles  |
| Escutcheon Locks                | 1/4 turn with Slotted Insert  |
| Three Point Locking             | Required  |
| Door Earthing                   | Earth Doors with 6mm? Tinned Copper Braid   |
| Door Opening                    | 110' min  |
| Door Stays                      | Drop Stays  |
| Equipment Shrouding             | IP20 for Controlgear  |
| Drawing Holder                  | Fit to Rear of Door 3   |
| Legend Card Holder              | Fit to Rear of Door 3   |
| Meter Panel                     | Double Hinged / 6mm Laminated Phenolic Resin  |
| Ventilation                     | Louvres with Mesh Gauze and removable Filter Material, refer drawing for detail               |
| Door Switch Brackets            | Fit Door Switch Brackets to Cubicle Body, refer drawing for detail                            |

|                                |   |
|--------------------------------|---|
| PAINTING: -                    |   |
| Paint Type                     | Polyester Powdercoat to 40 Micron Minimum thickness               |
| Preparation                    | Grind Smooth all Welds, Descale and Degrease                      |
| Exterior / Doors Colour        | Dulux Mist Green No.36648   |
| Interior Colour                | Dulux White No.19143  |
| Equipment Panel Colour         | White   |
| Escutcheon Colour              | White   |
| CABLE DETAILS: -               |   |
| Power                          | V75 0.6 / 1 kV Multi-Stranded, Min. Size 2.5mm (7/0.67)           |
| Control                        | V75 0.6 / 1 kV Tinned Flexible, Min. Size 1.5mm (30/0.25)         |
| Protection / Metering          | V90 0.6 / 1 kV Tinned Flexible, Min. Size 1.5mm (30/0.25)         |
| Colours:                       |   |
| Power Wiring to 16mm           | Red, White, Blue  |
| Power Wiring above 16mm        | Red With Phase Identification at Cable Ends                       |
| Phase Neutral                  | Black   |
| Earth                          | Green Yellow  |
| Control Active 240VAC          | Pump 1 - Red / Pump 2 - White                                     |
| Control Neutral 240VAC         | Black   |
| Control Positive ELV           | Brown   |
| Control Negative ELV           | Grey  |
| Thermistors & No Volt Contacts | Orange  |
| Telemetry                      | Violet  |
| Screen Analog Positive         | White   |
| Screen Analog Negative         | Black   |
| Terminations:                  |   |
| Control Cable Identification   | Brady Marking System (Clear Plastic Sleeves with Insertable Tabs) |
| Cable Ends                     | Metal Ferrules / Crimp Lugs as Necessary                          |
| Mains Incoming                 | Direct into Main Switch   |
| Outgoing                       | Direct Onto Terminals   |
| Control                        | Terminals   |
| LABELS: -                      |   |
| Material                       | Traffolyte  |
| Fixings External               | 316 Grade Stainless Steel Metal Threads and Adhesive              |
| Fixings Internal               | 316 Grade Stainless Steel Metal Threads and Adhesive              |
| Mounting                       | Labels to be secured to Equipment Panels                          |
| General Labels                 | WBW / 4mm Letters   |
| Warning Labels                 | WRW / 6mm Letters   |
| Danger Labels                  | RWR / 6mm Letters   |
| Drive Labels                   | WBW / 6mm Letters   |
| Main Switch Labels             | RWR / 8mm Letters   |
| S.C.A. Main Label              | WBW / 20mm Letters  |

A3

## REVISION HISTORY

| INDEX | DATE       | REVISIONS        | DRAWN | CHECKED | APPROVED |
|-------|------------|------------------|-------|---------|----------|
|       |            |                  |       |         |          |
| B     | 29/08/16   | UPDATED WBW LOGO | R.C.  |         | S.K.     |
| A     | 30/11/2015 | FOR CONSTRUCTION | T.M.  | T.M.    |          |

## DRAWING INFORMATION

| DRAWN    | T.M. | 30/11/2015 |
|----------|------|------------|
| CHECKED  | T.M. | 30/11/2015 |
| APPROVED |      |            |
| INITIALS | DATE |            |

## CONTRACTOR INFORMATION



WIDE BAY WATER  
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

## HERVEY BAY SPS

STANDARD SEWAGE PUMP STATION (SS > 3.5KW)  
CONSTRUCTION NOTES

## FILE

SCALE N.T.S.

SHEET OF

DRAWING NO.

SS-005

A


| Item         | Make & Number                              | Description                      | Label             |
|--------------|--|----------------------------------|-------------------|
| Q1           | CLIPSAL PT__                               | LOAD SWITCH                      | MAIN SWITCH       |
| Q2           | HAGER NT340C                               | CIRCUIT BREAKER                  | Q2                |
| Q3           | HAGER NT320C                               | CIRCUIT BREAKER                  | Q3                |
| Q4,5,6,8     | HAGER NT110C                               | CIRCUIT BREAKERS                 | Q4,5,6,8          |
| Q7,Q9        | HAGER NT120C, NT104C                       | CIRCUIT BREAKERS                 | Q7,Q9             |
| P1,2-Q1      | HAGER NDN3__A                              | CIRCUIT BREAKERS                 | PUMP No.1,2       |
| P1,2-Q3      | HAGER NT310C                               | CIRCUIT BREAKERS                 | P1,2-Q3           |
| P1,2-Q4      | HAGER NT106C                               | CIRCUIT BREAKERS                 | P1,2-Q4           |
| SD1-3        | HAGER SP140D c/w AUX. CONTACT              | SURGE ARRESTORS                  | SD1-3             |
| NL           | CLIPSAL L10A                               | NEUTRAL LINK                     | NEUTRAL           |
| EL           | CLIPSAL L10P                               | EARTH LINK                       | EARTH             |
| FCL          | NHP 80AMP                                  | FAULT CURRENT LIMITER FUSES      | FCL               |
| VSS          | KRAUS & NAIMER CA10-A004-FT2               | VOLTMETER SELECTOR SWITCH        | VSS               |
| VM           | NHP 72mm SQUARE (0-500V)                   | VOLTMETER                        | VM                |
| X1           | HPM XL/777PA c/w 140CH                     | DOUBLE GPO                       | X1                |
| X2           | HPM XL/777EL30                             | DOUBLE E/L GPO                   | X2                |
| CHLAL        | CLIPSAL 545 RED c/w 547 BASE & 60W LAMP    | CRITICAL HIGH LEVEL FAULT LIGHT  | CHLAL             |
| P1,2         | NHP 72mm SQUARE (5xOVERRANGE)              | AMMETERS                         | P1,2              |
| P1,2-PFR     | RHOMBERG BRASSLER SP430D                   | PHASE FAILURE RELAYS             | PFR1,2            |
| P1,2-PFT     | NAIS PM4H MULTI RANGE                      | TIMERS                           | P1,2-PFT          |
| P1,2-S1      | KRAUS & NAIMER CA10-A211-623-FT2           | SELECTOR SWITCHES                | P1,2-S1           |
| P1,2-H2      | MOELLER M22-L-W c/w M22-A & M22-LED230-W   | PILOT LIGHTS                     | AVAILABLE         |
| P1,2-H3      | MOELLER M22-L-Y c/w M22-A & M22-LED230-Y   | PILOT LIGHTS                     | FAULT             |
| P1,2-H1      | MOELLER M22-L-G c/w M22-A & M22-LED230-G   | PILOT LIGHTS                     | RUN               |
| P1,2-S3      | MOELLER M22-DL-G c/w M22-AK10              | PUSHBUTTON                       | START             |
| P1,2-S2      | MOELLER M22-DL-R c/w M22-AK01              | PUSHBUTTON                       | STOP              |
| P1,2-S4      | MOELLER M22-DL-B c/w M22-AK01, & M22-K01   | PUSHBUTTON                       | RESET             |
| P1,2-HR      | GRASSLIN UWZ48E 240V                       | HOUR RUN METERS                  | P1,2-HR           |
| P1,2-K       | SPRECHER & SCHUH CA7-_____                 | CONTACTOR                        | P1,2-K            |
| P1,2-RR,FR   | FINDER                                     | 240VAC RELAY                     | P1,2-RR,FR        |
| P1,2-ASR     | FINDER                                     | 24VDC RELAYS                     | P1,2-ASR          |
| P1,2-F1      | SPRECHER & SCHUH CEP7-____ c/w CEP7-33-P-A | ELECTRONIC OVELOAD               | P1,2-F1           |
|              | SIEMENS 4mm?                               | TERMINALS                        |                   |
| LI           | MANN INDUSTRIES DI350                      | LEVEL INDICATOR                  | LI                |
|              | MEANWELL 5-60-12                           | TELEMETRY 13.6VDC POWER SUPPLY   | POWER SUPPLY      |
|              | MEANWELL SD-50A-24                         | 12/24VDC CONVERTER               | DC CONVERTER      |
| FLOAT SWITCH | ITT FLYGT HEAVY DUTY FLOAT SWITCH          | CRITICAL HIGH LEVEL FLOAT SWITCH | FLOAT SWITCH      |
| FLOAT SWITCH | ITT FLYGT HEAVY DUTY FLOAT SWITCH          | EMERGENCY START FLOAT SWITCH     | FLOAT SWITCH      |
| LEVEL TRANS. | VEGAWELL 72 SERIES PRESSURE TRANSDUCER     | WELL LEVEL TRANSMITTER           | LEVEL TRANSMITTER |
|              | WEIDMULLER SA SERIES                       | TELEMETRY FUSED TERMINAL BLOCKS  |                   |
| EPS          | MEANWELL DR-4524                           | 240VAC TO 24VDC POWER SUPPLY     | EPS               |
| P1,2-U1      | EMOTRON SOFT STARTER MSF RANGE             | SOFT STARTER                     | P1,2-U1           |

A3

| REVISION HISTORY |            |                  |           |
|------------------|------------|------------------|-----------|
| INDEX            | DATE       | REVISIONS        |           |
| B                | 29/08/2016 | UPDATED WBW LOGO | R.C. S.K. |
| A                | 30/11/2015 | FOR CONSTRUCTION | T.H. T.H. |

| DRAWING INFORMATION |         |          |            |
|---------------------|---------|----------|------------|
| DRAWN               | CHECKED | APPROVED | DATE       |
| T.H.                | T.H.    |          | 30/11/2015 |

| CONTRACTOR INFORMATION |         |       |       |
|------------------------|---------|-------|-------|
| NAME                   | ADDRESS | PHONE | EMAIL |
|                        |         |       |       |

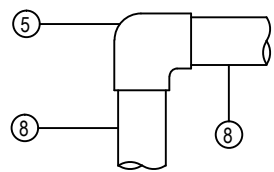
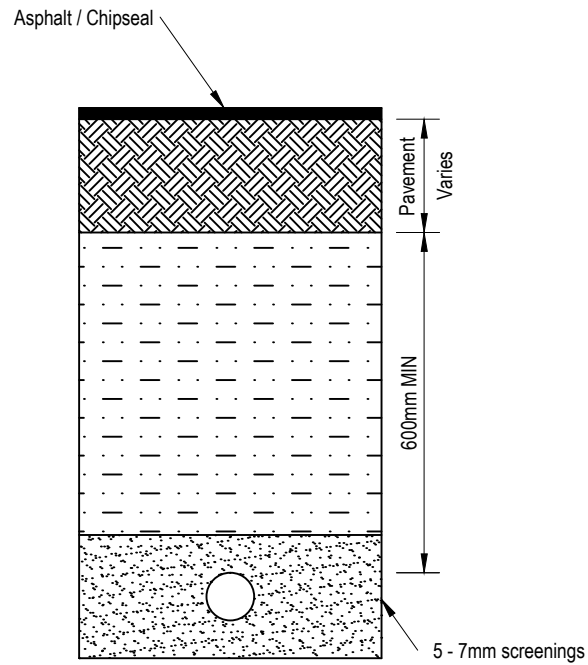


WIDE BAY WATER  
31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

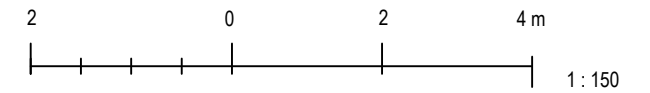
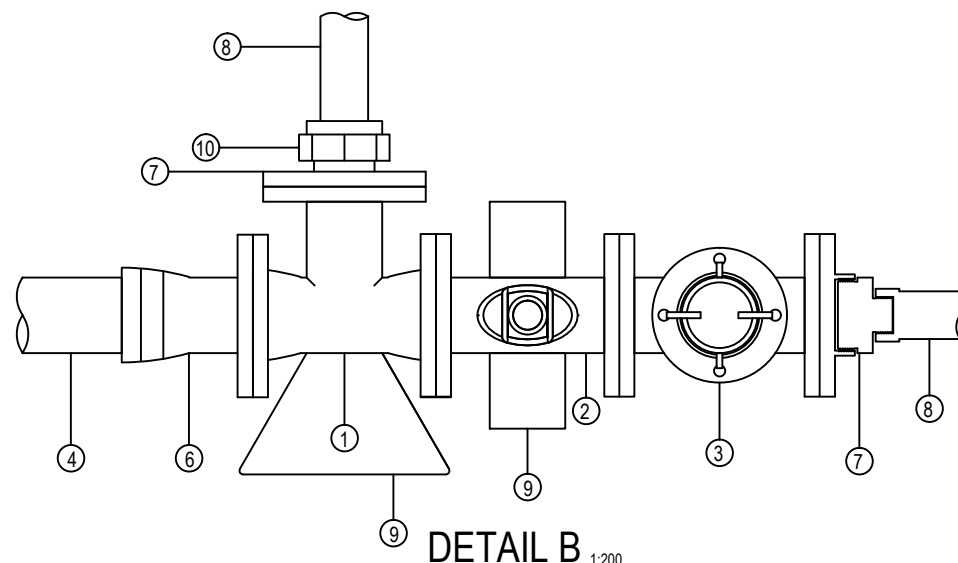
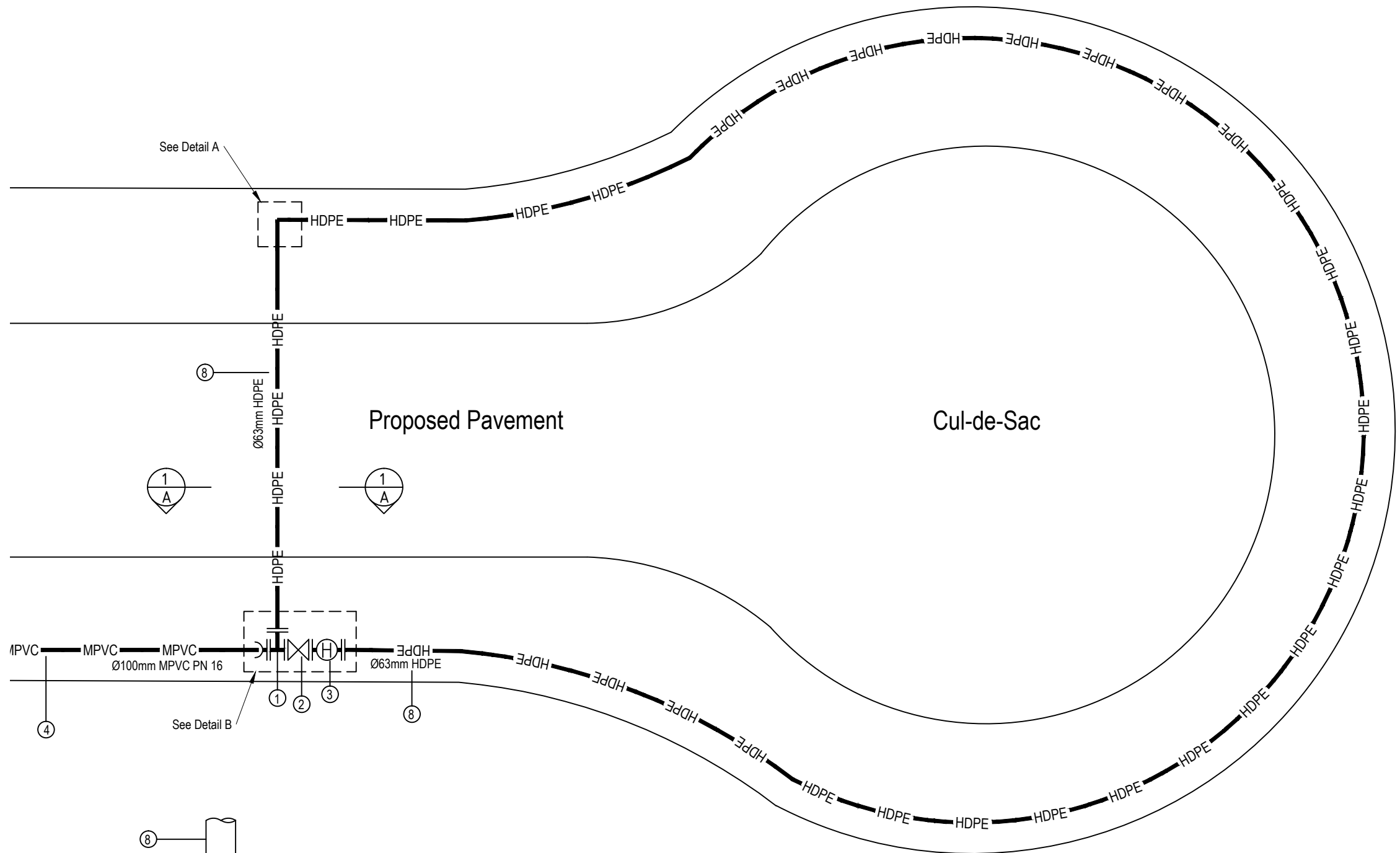
**HERVEY BAY SPS**

STANDARD SEWAGE PUMP STATION (SS > 3.5KW)  
EQUIPMENT LIST

|             |       |
|-------------|-------|
| FILE        |       |
| SCALE       | N.T.S |
| SHEET       | OF    |
| DRAWING NO. |       |
| SS-006      |       |



| FITTING NO. | DESCRIPTION                            |
|-------------|--|
| 1           | 100mm FL-FLxFL Tee                     |
| 2           | 100mm FL RSV                           |
| 3           | 100mm x 80mm FL-FLxFL Hydrant Assembly |
| 4           | 100mm Pipe SO-SP                       |
| 5           | 63mm Plasson Elbow                     |
| 6           | 100mm SO-FL Connector                  |
| 7           | 100mm x 63mm Vinindex FL Reducer       |
| 8           | 63mm OD HDPE Pipe                      |
| 9           | Thrust Block to Suit                   |
| 10          | 100mm to 63mm Plasson Reducer          |



A3

| REVISION HISTORY |            |                  |       |         |
|------------------|------------|------------------|-------|---------|
| INDEX            | DATE       | REVISIONS        | DRAWN | CHECKED |
| A                | 29/08/2016 | UPDATED WBW LOGO | R.C.  | S.K.    |

| DRAWING INFORMATION |           |          |
|---------------------|-----------|----------|
| DESIGN              | DRAWN     | CHECKED  |
| R.CATLING           | R.CATLING | S.KHAN   |
| 16/12/15            | 16/12/15  | 18/12/15 |
| APPROVED            | NAME      | DATE     |

SIGNED



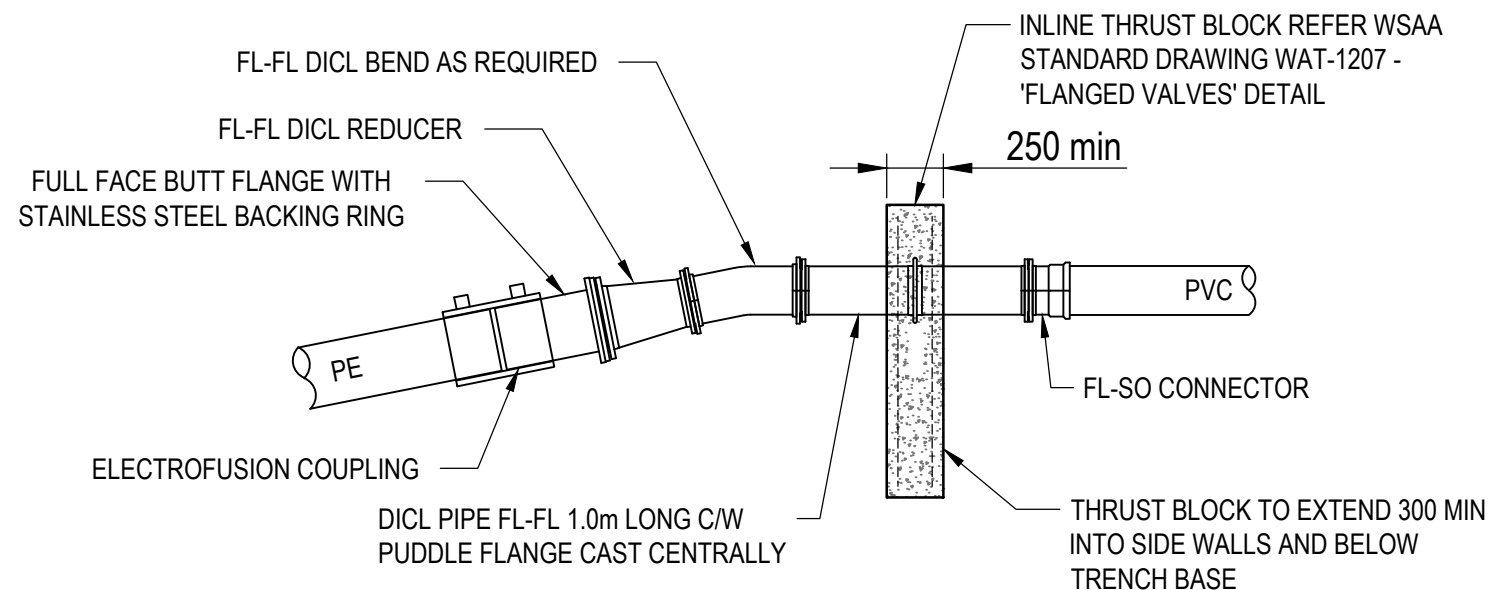
WIDE BAY WATER  
29-31 ELLENGOWAN ST  
P.O BOX 5499  
HERVEY BAY, QLD, 4655

WIDE BAY WATER  
STANDARD DRAWINGS  
CUL-DE-SAC DETAIL

| FILE         |          |
|--------------|----------|
| SCALE N.T.S. | SHEET OF |
| DRAWING NO.  | REV.     |
| WM 01        |          |

**NOTES:**

- THRUST BLOCKS MUST MEET MINIMUM DIMENSIONAL REQUIREMENTS AS SPECIFIED IN CONNECTION DETAIL AS WELL AS MINIMUM VOLUME REQUIREMENTS SPECIFIED IN WSA 02-2002 DRAWING NO. WSA1207



**TYPICAL PVC TO PE CONNECTION**

ELEVATION DETAIL - NOT TO SCALE

**COMPONENT SIZES WITH SIMILAR INTERNAL DIAMETERS**

| PVC-O PN16<br>NOMINAL<br>DIAMETER | HDPE100 PN16        |                    |            | HDPE100 PN20        |                    |            |
|-----------------------------------|---------------------|--------------------|------------|---------------------|--------------------|------------|
|                                   | NOMINAL<br>DIAMETER | SS BACKING<br>RING | DICL TAPER | NOMINAL<br>DIAMETER | SS BACKING<br>RING | DICL TAPER |
| DN100                             | DN140               | 140x125            | 100x125    | DN160               | 160x150            | 150x100    |
| DN150                             | DN200               | 200x200            | 200x150    | DN225               | 225x200            | 200x150    |
| DN200                             | DN280               | 280x250            | 250x200    | DN280               | 280x250            | 250x200    |
| DN250                             | DN355               | 355x300            | 300x250    | DN355               | 355x300            | 300x250    |
| DN300                             | DN400               | 400x375            | 375x300    | DN450               | 450x450            | 450x300    |
| DN375                             | DN500               | 500x500            | 500x375    | DN500               | 500x500            | 500x375    |

A3

| REVISION HISTORY |            |                  |       |          |
|------------------|------------|------------------|-------|----------|
| INDEX            | DATE       | REVISIONS        | DRAWN | APPROVED |
| A                | 29/08/2016 | UPDATED WBW LOGO | R.C.  | S.K.     |

| DRAWING INFORMATION |           |          |
|---------------------|-----------|----------|
| DESIGN              | R.CATLING | 16/12/15 |
| DRAWN               | R.CATLING | 16/12/15 |
| CHECKED             |           |          |
| APPROVED            | S.KHAN    | 18/12/15 |
| APPROVED            |           |          |
| NAME                |           | DATE     |

SIGNED

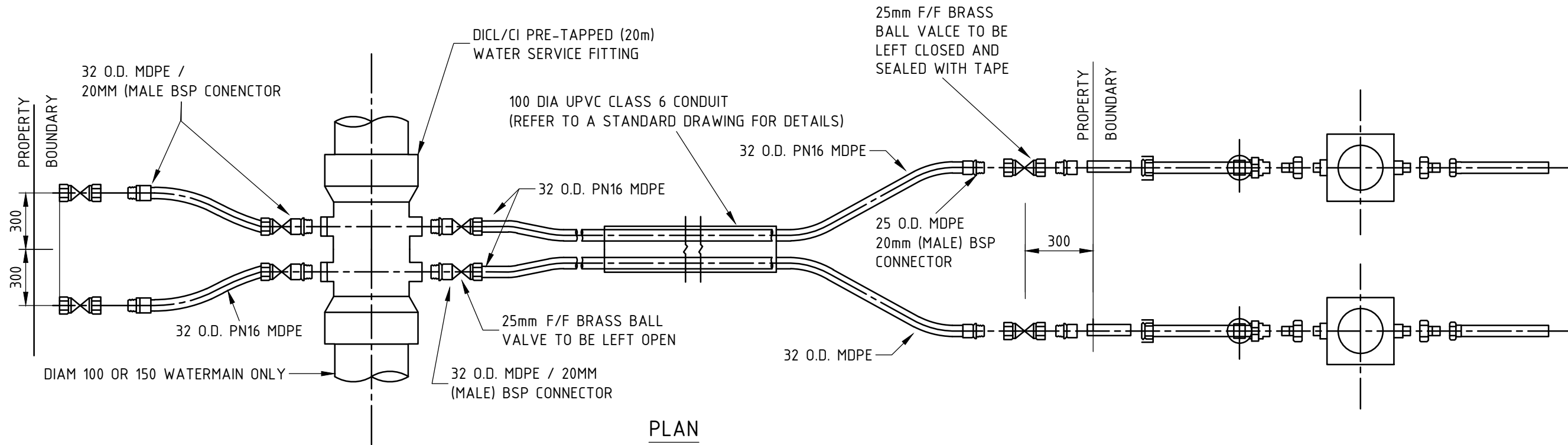


WIDE BAY WATER  
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**WIDE BAY WATER**

STANDARD DRAWINGS  
PE TO PVC CONNECTION DETAIL

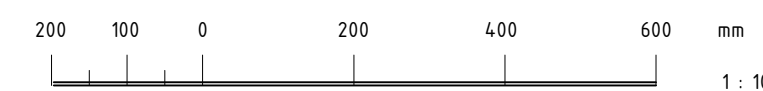
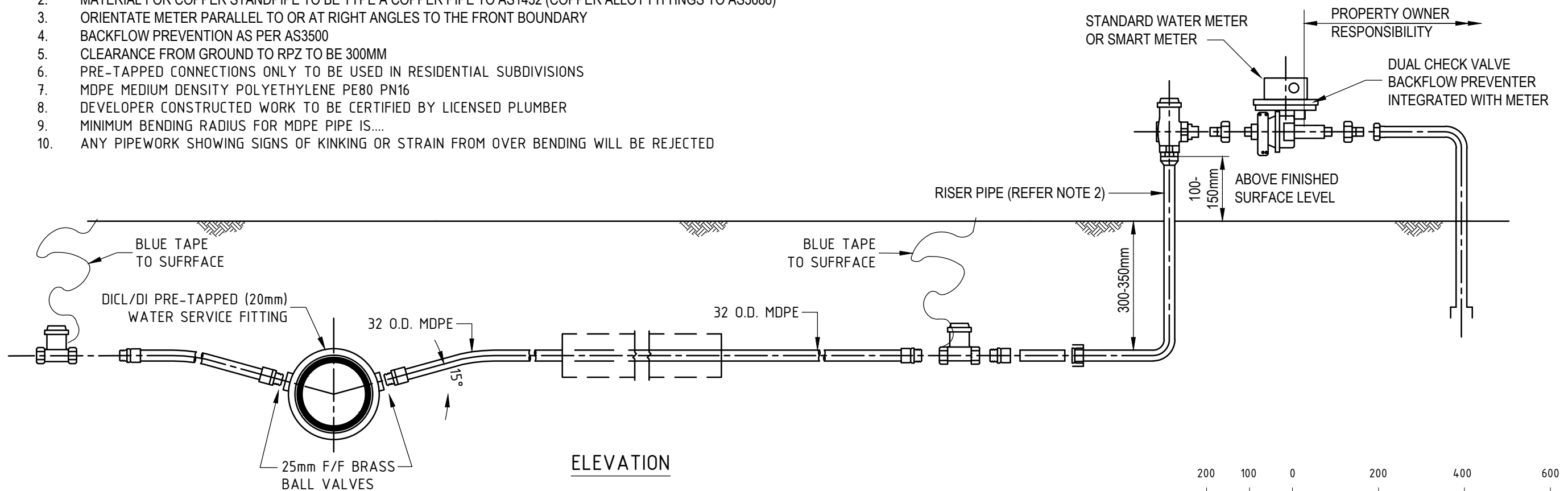
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| SHEET       | OF     |
| DRAWING NO. | WM 02  |
| REV.        |        |



**PLAN**  
**32 O.D. [25 NOM. DIA.]**  
**TYPICAL SERVICE CONNECTION**

**NOTES:**

1. ALL DIMENSERS IN MILLIMETERS
2. MATERIAL FOR COPPER STANDPIPE TO BE TYPE A COPPER PIPE TO AS1432 (COPPER ALLOY FITTINGS TO AS3688)
3. ORIENTATE METER PARALLEL TO OR AT RIGHT ANGLES TO THE FRONT BOUNDARY
4. BACKFLOW PREVENTION AS PER AS3500
5. CLEARANCE FROM GROUND TO RPZ TO BE 300MM
6. PRE-TAPPED CONNECTIONS ONLY TO BE USED IN RESIDENTIAL SUBDIVISIONS
7. MDPE MEDIUM DENSITY POLYETHYLENE PE80 PN16
8. DEVELOPER CONSTRUCTED WORK TO BE CERTIFIED BY LICENSED PLUMBER
9. MINIMUM BENDING RADIUS FOR MDPE PIPE IS....
10. ANY PIPEWORK SHOWING SIGNS OF KINKING OR STRAIN FROM OVER BENDING WILL BE REJECTED



**A3**

| REVISION HISTORY |            |                  |       |                    |
|------------------|------------|------------------|-------|--------------------|
| INDEX            | DATE       | REVISIONS        | DRAWN | CHECKED / APPROVED |
| A                | 29/08/2016 | UPDATED WBW LOGO | R.C.  | S.K.               |

| DRAWING INFORMATION |           |          |
|---------------------|-----------|----------|
| DESIGN              | DRAWN     | APPROVED |
| R.CATLING           | R.CATLING | S.KHAN   |
| 16/12/15            | 16/12/15  | 18/12/15 |

SIGNED



WIDE BAY WATER  
 29-31 ELLENGOWAN ST  
 P.O BOX 5499  
 HERVEY BAY, QLD, 4655

WIDE BAY WATER  
 STANDARD DRAWINGS  
 25-32mm SMART WATER METER

|             |              |          |      |
|-------------|--------------|----------|------|
| FILE        | SCALE N.T.S. | SHEET OF | REV. |
|             |              |          |      |
| DRAWING NO. | <b>WS 01</b> |          |      |

## Appendix SC6.3E List of acronyms

| Abbreviation/Acronym | Description   |
|----------------------|---|
| AC                   | Asphaltic Concrete  |
| ADWF                 | Average Dry Weather Flow  |
| ARI                  | Average Recurrence Interval   |
| AS                   | Australian Standard   |
| CBR                  | California Bearing Ratio  |
| CPTED                | Crime Prevention Through Environmental Design                       |
| DICL                 | Ductile Iron Cement Lined   |
| DN                   | Nominal Internal Diameter   |
| DTMR                 | Department of Transport and Main Roads                              |
| EP                   | Equivalent Persons  |
| ED                   | Equivalent Dwelling   |
| ED                   | Equivalent Demand   |
| ESA                  | Equivalent Standard Axles   |
| FCRC                 | Fraser Coast Regional Council                                       |
| FRP                  | Fibre Reinforced Plastic  |
| HAT                  | Highest Astronomical Tide   |
| IECA                 | International Erosion Control Association                           |
| IFD                  | Intensity-Frequency-Duration  |
| IO                   | Inspection Outlet   |
| IPWEAQ               | Institute of Public Works Engineering Australia Queensland Division |
| L                    | Litre   |
| L/ED/day             | Litres /Equivalent Dwelling/Day                                     |
| LIDAR                | Light Detection and Ranging   |
| MH                   | Maintenance Holes, Man Holes  |
| MHWS                 | Mean High Water Springs   |
| mm                   | Millimetre  |
| NATA                 | National Association of Testing Authorities, Australia              |
| NATSPEC              | National Specification System of Australia                          |
| PE                   | Polyethylene  |
| QUDM                 | Queensland Urban Drainage Manual                                    |
| RPEQ                 | Registered Professional Engineer of Queensland                      |
| uPVC                 | Unplasticised Polyvinyl Chloride                                    |
| WSUD                 | Water Sensitive Urban Design  |



## Appendix SC6.3F Glossary

Terms used in the Planning scheme policy for development works have the following meaning for the purpose of this planning scheme policy.

| <b>Development Category</b>            | <b>Definition</b>  |
|--|--|
| Commercial development category        | Land included in the Principal centre zone, District centre zone, Local centre zone, Neighbourhood centre zone, High density residential (Precinct HDR1 – Hervey Bay Tourism Nodes) zone, Mixed use (Precinct MU1 – Urangan harbour) zone and Specialised centre zone. |
| Industrial development category        | Land included in the Low impact industry zone, Medium impact industry zone and High impact industry zone.  |
| Urban residential development category | Land included in the Low density residential zone, Medium density residential zone and High density residential zone (excluding the High density residential precinct (HDR1)).   |

## **SC6.4 Planning scheme policy for information that the Council may require**

### **SC6.4.1 Purpose**

- (1) The purpose of this planning scheme policy is to identify information, other than that specified in another planning scheme policy, that the Council may require to inform the proper assessment of a development application.
- (2) In particular, this planning scheme policy provides advice and guidance about the circumstances when the following types of plans and reports may be required as well as the typical content to be included in such plans and reports:-
  - (a) acid sulfate soils (ASS) investigation and management plan;
  - (b) acoustic assessment report;
  - (c) bushfire hazard assessment report and management plan;
  - (d) ecological assessment;
  - (e) flood hazard assessment and mitigation report;
  - (f) koala impact assessment report; and
  - (g) traffic impact assessment report.

### **SC6.4.2 Acid sulfate soils (ASS) investigation and management plan**

- (1) Where a development is subject to the Acid sulfate soils overlay code, an applicant may be requested to provide additional information in the form of an acid sulfate soils (ASS) investigation and management plan.
- (2) The purpose of an ASS investigation and management plan is to provide additional information regarding the existence/location, treatment and management of acid sulfate soils (ASS) or potential acid sulfate soils (PASS) on a development site.
- (3) An ASS investigation is required to include the following information:-
  - (a) the lowest point in metres AHD of the proposed excavation and the volume of excavation below 5m AHD;
  - (b) the height in metres AHD of land to be filled, and the volume and thickness of the fill to be placed below 5m AHD;
  - (c) a detailed acid sulfate soils investigation which, as a minimum, is to include sufficient details on the following:-
    - (i) whether ASS/PASS are present in the area to be disturbed, and if so, the location, depth and existing/potential acidity of ASS/PASS relative to the proposed disturbance;
    - (ii) the testing results;
    - (iii) methodology used for sampling and analysis (both field and laboratory);
    - (iv) an assessment of the potential for acid sulphate soils to be disturbed either through drainage or excavation; and
    - (v) potential impacts on adjoining areas.

Note—the level of testing undertaken in the acid sulfate soils investigation should be commensurate with the level of risk.

- (4) Sampling and analysis included in an ASS investigation is to be carried out in accordance with the procedures described in the *Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils (ASS) in Queensland*, produced by the Department of Natural Resources (1998). For the purposes of the performance outcomes and acceptable outcomes in the Acid sulfate soils overlay code, the following are also relevant guidelines:-
- (a) *Acid sulfate soils laboratory methods guidelines* (Department of Natural Resources and Mines, 2004);
  - (b) *Soil management guidelines – Queensland acid sulfate soils technical manual* (Department of Natural Resources and Mines, 2002); and
  - (c) Australian Standard AS 4969 *Analysis of acid sulfate soil – Dried samples – Methods of test*.
- (5) If ASS or PASS identified in an ASS investigation is proposed to be disturbed by the development, an ASS management plan should be prepared. As a minimum, the ASS management plan is to detail the following:-
- (a) the methods of treating/managing soils;
  - (b) details of any pilot project or field trial to be undertaken to prove the effectiveness of any new technology or innovative management practice being proposed;
  - (c) details of the monitoring and reporting procedures to be established and implemented; and
  - (d) details of contingency procedures including accident/emergency response procedures, and performance criteria to be used to assess the effectiveness of the ASS management and monitoring measures.

#### **SC6.4.3 Acoustic assessment report**

- (1) An acoustic assessment report may be required where a proposed development is likely to cause noise impacts or where a proposed development site is located in close proximity to an area which may cause noise impacts on the proposed development (often referred to as reverse amenity impacts).
- (2) An acoustic assessment report should provide an assessment of:-
- (a) the potential noise impacts associated with the proposed development; and
  - (b) the measures proposed to avoid or minimise adverse noise impacts.
- (3) The acoustic assessment report should have regard to:-
- (a) Australian Standards AS 1055.2 *Acoustics – Description and measurement of environmental noise – Application to specific situations* and AS 2107 *Acoustics – Recommended design sound levels and reverberation times for building interiors*;
  - (b) *Environmental Protection Act 1994* and *Environmental Protection (Noise) Policy 1997* (EPP Noise);
  - (c) *Planning for Noise Control*, Department of Environment and Resource Management, 2004; and
  - (d) *Road Traffic Noise Management Code of Practice*, Department of Transport and Main Roads, 2008.

- (4) The acoustic assessment report should include identification of:-
  - (a) noise standards;
  - (b) nature of the noise;
  - (c) times of operation of the noise source and use/development on site;
  - (d) the use categories from AS 2107 that may apply;
  - (e) type and proximity of adjacent land uses;
  - (f) details of any prescribed planning levels in the EPP (Noise) that may apply to the adjacent land uses; and
  - (g) whether any noise data exists for those adjacent land uses.
- (5) The report should include justification of the appropriate noise planning assessment methodology to determine the noise impacts on and from the land uses and structures both on the subject site and adjacent sites. The report should also provide an assessment of whether the noise emission complies with the calculated limiting criteria. If noise is likely to be unacceptable, the report should describe the control measures that will be used to ensure compliance.

#### **SC6.4.4 Bushfire hazard assessment report and management plan**

- (1) This component of the planning scheme policy applies to development which requires assessment against the Bushfire hazard overlay code.
- (2) Where development requires assessment against the Bushfire hazard overlay code, an applicant may be requested to provide additional information in the form of a bushfire hazard assessment report and management plan.
- (3) In particular, compliance with the Bushfire hazard overlay code may be demonstrated (in part) by the submission of a bushfire hazard assessment report and/or a bushfire hazard management plan prepared by a competent person in accordance with the following guidelines.

##### Bushfire hazard assessment report

- (4) The level of bushfire hazard identified on a bushfire hazard overlay map in **Schedule 2 (Mapping)** needs to be confirmed via the preparation of a site-specific bushfire hazard assessment report. A bushfire hazard assessment report is to:-
  - (a) be prepared generally in accordance with the methodology prescribed in Appendix 5 of the *State Planning Policy Guideline – Guidance on flood, bushfire and landslide hazards*;
  - (b) include more detailed site specific calculations of the bushfire hazard score(s) for the development site based upon:-
    - (i) a quantitative assessment of predicted bushfire behaviour including calculation of predicted fire intensity and rate of spread using McArthur's equation and radiant heat flux using a recognised model (i.e. the View Factor Model or the Leicester Model). Calculations should be based on an forest fire danger index (FFDI) of 50 and maximum predicted fuel loads to determine appropriate setbacks;
    - (ii) a quantitative assessment including discussion of past fire behaviour/history, any prescribed burning undertaken on the site or adjoining sites, likely fire paths, site factors that would minimise or maximise fire behaviour, fuel arrangements and loads, potential ignition

- points, fire run distances towards houses (or proposed house sites), slopes and any other matter considered important in respect to the issue; and
- (iii) a comparison of the above to the more general calculation methodology prescribed in Appendix 5 of the *State Planning Policy Guideline – Guidance on flood, bushfire and landslide hazards*;
- (c) include a bushfire hazard management summary detailed on an A3 size map/s at a scale of 1:500; and
- (d) be informed by consultation with the local Fire Brigade and where the land adjoins Council, State or Commonwealth land, the relevant land manager.

*Bushfire hazard management plan*

- (5) Where a site-specific bushfire hazard assessment confirms that a development site is subject to a medium, high or very high bushfire hazard, a bushfire hazard management plan may need to be prepared to mitigate the adverse impacts of the hazard.
- (6) A bushfire hazard management plan is to:-
  - (a) state the purpose, aim and objectives of the bushfire hazard management plan (e.g. having regard to the level of hazard on the land, identify measures, actions and responsibilities for the management of the hazard);
  - (b) summarise the results of the bushfire hazard assessment undertaken for the land, including identification of the various parts of the land that have been determined to be very high, high and medium bushfire hazard area;
  - (c) be informed by consultation with the local Fire Brigade and where the land adjoins Council, State or Commonwealth land, the relevant land manager;
  - (d) include consideration of potential off-site sources of fire hazard including particular land uses or physical features of the surrounding area (including details of properties within 100m of the land);
  - (e) address the impacts of the proposed development on the level of fire hazard experienced by other land in the surrounding area, including any land containing water, electricity, gas or telecommunications infrastructure;
  - (f) address any implications for ecologically important areas<sup>1</sup>, areas of cultural heritage significance or areas of landscape significance, including steps taken to minimise the potential impacts of specified fire hazard mitigation measures;
  - (g) address the potential impacts of bushfire hazard mitigation measures on slope stability, and on water quality in local receiving waters;
  - (h) specify fire hazard mitigation measures, such as:-
    - (i) elements of the development design, including the layout of roads and driveways, and the location, size and orientation of lots and buildings;
    - (ii) specifications and materials for building design and construction in accordance with the Building Code of Queensland;
    - (iii) fire fighting infrastructure, including water supply and storage, equipment and fittings, fire breaks and maintenance/access trails;
    - (iv) potential areas of clearing of native vegetation based on an ecological assessment report or environmental management plan recently prepared for the site;

<sup>1</sup> Ecologically important areas are defined in **Schedule 1 (Definitions)** and are identified on the Biodiversity areas, waterways and wetlands overlay maps in **Schedule 2 (Mapping)**.

- (v) details of landscape design requirements, including installation and maintenance requirements;
  - (vi) information for occupants, including required training for persons employed on the site during both construction and operational phases;
  - (vii) details of long term management requirements, including the frequency, extent and intensity of burning in areas proposed to be subject to regular controlled ignitions;
  - (viii) details of areas to be subject to mosaic or patch burning techniques and manual fuel reduction zones; and
  - (ix) any other measures based on or identified in a recently approved ecological assessment report or environmental management plan for the site;
- (i) identify the parties to be responsible for specific actions taken under the terms of the bushfire management plan; and
  - (j) provide justification for any variation from the bushfire hazard mitigation measures outlined in the Bushfire hazard overlay code.

#### **SC6.4.5 Ecological assessment**

- (1) Where development requires assessment against the Biodiversity areas, waterways and wetlands overlay code, an applicant may be requested to provide additional information in the form of an ecological assessment.
- (2) In particular, compliance with the Biodiversity areas, waterways and wetlands overlay code may be demonstrated (in part) by the submission of an ecological assessment report prepared by a suitably qualified and competent person in accordance with the following guidelines.
- (3) Persons preparing or undertaking field work for detailed ecological reports must have relevant tertiary qualifications in ecology, biology, environmental science or other appropriate disciplines. Assessment and mapping of remnant vegetation must be carried out by accredited persons trained in regional ecosystem identification by the Queensland Herbarium. Tree management inspections, reports and plans must be carried out and produced by an arborist with a tertiary qualification in arboriculture or a person with a minimum of 5 years arboriculture experience and possessing a Level 4 Diploma in Arboriculture.

#### Ecological assessment report

- (4) The purpose of an ecological assessment is to:-
  - (a) identify the ecological values and ecosystem processes on and adjacent to the site;
  - (b) determine the potential impacts of the proposed development on the values and processes;
  - (c) identify measures required for long-term protection of ecologically important areas and ecosystem processes; and
  - (d) provide measures to mitigate potential impacts identified.
- (5) An ecological assessment report is required to include the following parts and sub-parts, although Council accepts that the level of detail and the scale of assessment will be dependent on the specifics of the site and the development. A request for further information will take precedence over these guidelines.

- (a) Desktop assessment:-
- (i) identification of records of flora and fauna species known to occur, currently occurring and likely to occur on and surrounding the site. Records may include published and unpublished reports, local knowledge and anecdotal reports, Wildnet database searches, Queensland Museum and Queensland Herbarium records;
  - (ii) review of the available commonwealth, state and local habitat and vegetation mapping for the area;
  - (iii) identification of the history of land use on and surrounding the site; and
  - (iv) identification of broad habitat types and ecological corridors on and surrounding the site.
- (b) Field assessment must (noting that when designing and conducting the field assessment adequate consideration needs to be given to seasonal variation, timing and duration and climatic conditions):-
- (i) utilise the results of the desktop assessment to design the field survey. The field assessment should be comprehensive enough to cover all habitat types within the subject site including ecotones;
  - (ii) undertake ground survey and map areas of remnant vegetation and high value regrowth. Methodology for mapping is to be consistent with the Regional Ecosystem mapping methodology adopted by the Queensland Herbarium and accepted by the Department of Environment and Heritage Protection under the *Vegetation Management Act 1999*;
  - (iii) undertake a fauna and flora survey for the species known to, or likely to, occur in the area, including a targeted survey in habitats that may support significant species from the region;
  - (iv) identify and map pest species declared under the current state pest management legislation and the Fraser Coast Pest Management Plan;
  - (v) identify and map wetlands and waterways on site. For wetlands the wetland Mapping and Classification Methodology Version EPA 2005 is to be used;
  - (vi) map any ecological corridors present on or adjacent to the site; and
  - (vii) identify and map key habitat features or evidence of fauna species, for example:-
    - (A) trees supporting scratch marks and hollows;
    - (B) location and identification of scats, tracks and other traces;
    - (C) fruit and seed falls;
    - (D) fauna trails;
    - (E) fallen logs;
    - (F) termite mounds;
    - (G) ground diggings;
    - (H) rock outcrops;
    - (I) nests in banks; and
    - (J) roost/nest/den trees.
- (c) Conservation status assessment:-
- (i) identify the conservation significance of the ecological values. The Department of Environment and Heritage Protection uses the Method for Mapping Ecological State Interests for Land-use Planning and Development Assessment DERM 2010 to determine conservation status of terrestrial habitat areas and the Aquatic Biodiversity Assessment and Mapping Method (EPA, 2006) for wetlands and waterways; and
  - (ii) identify spatial and temporal ecological processes operating on and adjacent to the site.



- (d) Impact assessment:-
  - (i) outline the proposed development and identify relevant statutory and non-statutory planning mechanisms that affect the development site and adjacent lands or trigger development controls; and
  - (ii) provide details of potential spatial and temporal (short, long-term and cumulative) impacts of the operational and construction phases of the development on the ecological values and ecological processes identified on and adjoining the site.
  
- (e) Mitigation and management:-
  - (i) prepare proposal plans and management plans detailing the location, extent and nature of all measures designed to prevent, avoid, mitigate and/or manage the identified impacts;
  - (ii) determine an appropriate buffer to protect identified ecological values. For wetlands, the Department of Environment and Heritage Protection has developed the *Queensland Wetland Buffer Planning Guidelines* (EHP, 2011). For terrestrial areas, the buffer needs to mitigate the impacts of edge effects, ensure adequate bushfire management buffers and provide long-term protection for vegetation to be protected (a minimum setback of at least 1.5 times the mature height of the vegetation is considered an appropriate buffer for individual trees unless otherwise determined by an arborist);
  - (iii) design appropriate ecological corridors. As a guide, local ecological corridors and koala corridors are to be a minimum of 100m in width, regional corridors a minimum of 200m in width and state corridors 500m in width;
  - (iv) incorporate tree protection measures as outlined in *AS4940 – Protection of Trees on Development Sites*;
  - (v) if an environmental offset is proposed then an Environmental Rehabilitation Plan is to be submitted as per the Planning scheme policy for development works; and
  - (vi) in some circumstances, a Construction and Environmental Management Plan that contains a Flora and Fauna Management Plan may be required. If required this report is to be compiled in accordance with the Planning scheme policy for development works.
  
- (f) Reporting is to include:-
  - (i) a scaled map showing the location of all ecological values including corridors, fauna species habitat including habitat trees, remnant, high value regrowth and non-remnant vegetation overlaying a plan of development. The plan is to include any Water Sensitive Urban Design features, associated stormwater infrastructure, services, roads (noting that a differential GPS or Total Station-EDM must be used to accurately map ecological features);
  - (ii) a detailed description of the methods used and assumptions made; and
  - (iii) a scaled drawing showing areas surveyed across the site.

#### **SC6.4.6 Flood hazard assessment and mitigation report**

- (1) This component of the planning scheme policy applies to development which requires assessment against the Flood hazard overlay code.
- (2) This component of the planning scheme policy is intended to identify and provide guidance about information that may be required to support a development application where subject to the Flood hazard overlay code.
- (3) In particular, compliance with the Flood hazard overlay code may be demonstrated (in part) by the submission of a flood hazard assessment report and/or a flood hazard

mitigation report prepared by a competent person in accordance with the following guidelines.

Flood hazard assessment report

- (4) A flood hazard assessment report is to:-
- (a) be prepared in accordance with the methodology prescribed in SC6.3.5 of *the Planning scheme policy for development works*;
  - (b) consider Council's adopted flood and drainage studies for the relevant catchment(s); and
  - (c) as relevant, include accurate hydrological and hydraulic modelling of the waterway network and assessment of existing flooding and flood levels of major water systems, including modelling of the 50%, 10%, 5%, 1%, 0.5% and 0.2% AEP flood events and the PMF.

Flood hazard mitigation report

- (5) A flood hazard mitigation report is to:-
- (a) assess the potential impacts of the development on flood hazard;
  - (b) assess the potential impacts of flood hazard on the development;
  - (c) recommend strategies to be incorporated into the proposed development to satisfy the outcomes of the Flood hazard overlay code;
  - (d) describe and evaluate the impact of the proposed mitigation strategies on the existing and likely future use of land and buildings in proximity to the proposed development; and
  - (e) address the following:-
    - (i) water quality;
    - (ii) waterways, including bank stability;
    - (iii) impacts on adjacent properties both upstream and downstream;
    - (iv) preferred areas and non-preferred areas on site for various activities, based on the probability of inundation and the volume and velocity of flows;
    - (v) the use of flood resistant materials and construction techniques able to withstand relevant hydraulic and debris loads where appropriate;
    - (vi) the location and height of means of ingress and egress, including possible flood-free escape routes;
    - (vii) the location and height of buildings, particularly habitable floor areas;
    - (viii) structural design, including the design of footings and foundations to take account of static and dynamic loads (including debris loads and any reduced bearing capacity owing to submerged soils);
    - (ix) the location and design of plant and equipment, including electrical fittings;
    - (x) access requirements for maintenance of proposed infrastructure;
    - (xi) the storage of materials which are likely to cause environmental harm if released as a result of inundation or stormwater flows;
    - (xii) the appropriate treatment of water supply, sanitation systems and other relevant infrastructure;
    - (xiii) relevant management practices, including flood warning and evacuation measures;
    - (xiv) details of any easements or reserves required for stormwater design; and
    - (xv) details of detention/retention storages.

- (6) The level of detail required for a particular development application should be determined in consultation with Council's development assessment officers.

#### **SC6.4.7 Koala impact assessment report**

- (1) The preparation of a koala impact assessment report may be required where development is proposed within, or adjacent to, land containing koala habitat (as shown on the Biodiversity areas, waterways and wetlands overlay maps or otherwise identified as koala habitat).
- (2) The preparation of a koala impact assessment report can assist in demonstrating compliance with performance outcome PO1 of **Table 8.2.4.3.2 (Criteria for assessable development – Koala habitat areas and Koala conservation)** of the Biodiversity areas, waterways and wetlands overlay code by providing further detail as to the type and extent of koala habitat, the value of the koala habitat, the likely impacts on koala populations, the type of mitigation measures proposed to protect koalas and koala habitat, and an assessment of the effectiveness of those mitigation measures.
- (3) The assessment of the koala habitat value is to be conducted by a suitably qualified professional experienced in conducting flora, fauna, or ecological assessments with skills in koala detection and eucalypt identification. The assessment methodology utilised is to be appropriate for the subject site and surrounds, and conducted in accordance with best practice koala survey methodology. Agreement should be sought from Council's development assessment officers as to the methodology to be employed prior to conducting the site specific survey. Third party advice may also be sought from other agencies such as the Department of Environment and Heritage Protection (DEHP) to determine an appropriate site specific survey methodology.
- (4) The koala impact assessment report may include supporting photographs, maps, plans, diagrams, tables and the like and should contain the following:-
- (a) an ecological survey of the site that locates, maps and describes koala habitat and preferred koala food trees in terms of distribution, density, species, size, condition, and other characteristics relevant to koala populations;
  - (b) an estimate of the size, composition and condition of the koala population occupying or moving through the site as part of its normal range;
  - (c) an assessment of the local ecological context of the site, including the relationship of the site to adjacent and other nearby koala habitat areas and the identification of existing and potential koala movement corridors to, from, and through the site;
  - (d) an assessment of potential impacts of development of the general form proposed (e.g. residential subdivision, motel, school) on koala habitat values on and off the site;
  - (e) a description of the scale, density and distribution of development, design elements, construction techniques and other actions recommended to be incorporated in the proposed development to avoid, minimise or ameliorate the likely detrimental impacts on koala habitat values on and off the site;
  - (f) a qualitative assessment of the extent to which the specific development proposed (incorporating the actions recommended in item (e)) would either reduce, sustain or improve the capacity of the site and the surrounding area to support koala occupation, movement and behaviours patterns in the short and long term, compared to the situation prevailing prior to development.
- (5) Koala's have strong regional preferences for certain eucalypt species, and in a particular district may feed almost entirely on one or two species. When preparing a

koala impact assessment report identification of, and reference to, the particular regional or district koala food trees is required.

#### **SC6.4.8 Traffic impact assessment report**

- (1) Performance outcome PO2 of **Table 9.4.4.3.2 (Criteria for assessable development only)** of the Transport and parking code requires that development involving high trip generating land uses minimises any adverse impacts on surrounding land uses and the external transport network, including by the provision of infrastructure and services to increase the use of public and active transport.
- (2) Compliance with this performance outcome of the Transport and parking code may be demonstrated (in part) by the submission of a traffic impact assessment report prepared by a competent person in accordance with the following guidelines.
- (3) As a minimum, the traffic impact assessment report should provide:-
  - (a) an assessment of the traffic generation and movements and/or on-site manoeuvring associated with the proposed development;
  - (b) an assessment of the proposal and its impacts in the context of the surrounding road network; and
  - (c) recommendations and/or design solutions to mitigate any traffic impacts associated with the development.
- (4) Depending on the nature and scale of the proposed development and the location and characteristics of the development site, the traffic impact assessment report may also need to consider:-
  - (a) specific measures to ensure the proposal will contribute towards encouraging walking, cycling and greater use of public transport in preference to using private cars;
  - (b) the need to improve public transport services and infrastructure as a result of the development;
  - (c) measures to ensure maximum accessibility to public transport, including future expanded services;
  - (d) a review of the existing and proposed traffic network and traffic operating conditions based on an appropriate planning horizon (with a minimum of 10 years);
  - (e) the amount of other traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect of traffic on the movement of other traffic on the road system. This includes the impact of generated traffic on:-
    - (i) key nearby intersections;
    - (ii) local streets in the neighbourhood of the development;
    - (iii) the environment;
    - (iv) existing nearby major traffic generating development;
    - (v) the major road network;
  - (f) existing parking supply and demand in the vicinity of the proposed development;
  - (g) level of provision for parking in the development based on land use and public transport provision;

- (h) whether the proposed means of ingress to or egress from the site of the development are adequate and located appropriately according to the Council's road hierarchy;
- (i) adequate provision to be made for the loading, unloading, manoeuvring and parking of vehicles within that development or on that land;
- (j) movements of freight carrying vehicles associated with the proposal and how these are to be minimised;
- (k) the possibility of integration with adjacent development;
- (l) the effects on public transport, traffic operations and parking, of any temporary works required during construction;
- (m) any comments made by the Department of Transport and Main Roads that are in accordance with the rights and powers of this agency;
- (n) the existing and likely future amenity of the surrounding area; and
- (o) a statement of all of the assumptions made in the preparation of the report and the design parameters adopted in the technical analysis.

## SC6.5 Planning scheme policy for environmental and vegetation offsets

### SC6.5.1 Purpose

The purpose of this planning scheme policy is to:-

- (a) provide advice about achieving outcomes in the Biodiversity areas, waterways and wetlands overlay code where any permanent, irreversible loss of identified ecological values or ecosystem function may occur;
- (b) provide advice about achieving outcomes in the Vegetation management code where the loss of vegetation occurs; and
- (c) identify information that may be required to support a development application where involving the restoration of an area/s of environmental significance, due to the loss of ecological values, ecosystem function and/or vegetation.

Editor's note—**section SC6.3.8 (Rehabilitation and revegetation)** of the **Planning scheme policy for development works** provides advice on preparing a rehabilitation plan and undertaking revegetation works and should be read in conjunction with this planning scheme policy.

### SC6.5.2 Application

This planning scheme policy applies to assessable development in urban localities<sup>2</sup>, which:-

- (a) requires assessment against the Biodiversity areas, waterways and wetlands overlay code or the Vegetation management code;
- (b) is likely to have an adverse impact on ecologically important areas<sup>3</sup> or other native vegetation because there is no feasible alternative to avoid, minimise or mitigate the damage; and
- (c) is not otherwise subject to the Federal Biodiversity Offset Policy under *the Environmental Protection and Biodiversity Conservation Act 1999* or the Queensland Biodiversity Offset Policy<sup>4</sup> under the *Sustainable Planning Act 2009*.

Note—the Biodiversity areas, waterways and wetlands overlay code, the Vegetation management code and this planning scheme policy do not apply to 'Exempt vegetation clearing' as defined in **Schedule 1 (Definitions)**.

### SC6.5.3 Advice about achieving outcomes in the Biodiversity areas, waterways and wetlands overlay code

The following is advice for achieving outcomes in the Biodiversity areas, waterways and wetlands overlay code relating to matters of State ecological significance (MSES), matters of local ecological significance and local wetlands, where any permanent loss of identified ecological values or ecosystem processes may occur:-

- (a) **Appendix SC6.5A (Schedule of Fraser Coast environmental rehabilitation sites)** identifies a list of priority areas currently within Council ownership and/or trusteeship that provide significant opportunities for ecological restoration; however other reserves or private property may also be considered appropriate by Council;

<sup>2</sup> For the purposes of this planning scheme policy, 'urban localities' include the urban area, urban expansion area and future urban area identified on Strategic framework maps SFM-001 and SFM-001a in **Schedule 2 (Mapping)**.

<sup>3</sup> Ecologically important areas are defined in **Schedule 1 (Definitions)** and are identified on the Biodiversity areas, waterways and wetlands overlay maps in **Schedule 2 (Mapping)**. For the purposes of this planning scheme policy they include:-

- (a) a natural waterway or wetland, including associated buffers; and,
- (b) habitat for flora and/or fauna species of local ecological significance.

The loss of ecologically important areas includes permanent loss or irreversible degradation of an area.

<sup>4</sup> Environmental offsets in accordance with the Queensland Biodiversity Offset Policy may be required outside of urban localities if permanent loss or damage of ecological values occur.

- (b) Compliance with performance outcomes PO2 and PO3 of **Table 8.2.3.3.1 (Criteria for assessable development – Areas of ecological significance and nature conservation)** of the Biodiversity areas, waterways and wetlands overlay code may be demonstrated (in part) or aided by the submission of:-
- (i) an ecological assessment report prepared by a competent person in accordance with the **Planning scheme policy for information that the Council may require**, that:-
    - (A) demonstrates that every effort to avoid or minimise adverse impacts on ecologically important areas or vegetation, including the redesign or resiting of buildings, has been exhausted; and
    - (B) identifies the ecosystem and habitat values that will suffer permanent or irreversible loss as a result of the development;
  - (ii) a rehabilitation proposal to undertake ecological restoration within an appropriate lot listed in **Appendix SC6.5A (Schedule of Fraser Coast environmental rehabilitation sites)** or an alternative location approved by Council (e.g. land managed as part of the Community Environment Program) to mitigate the loss of ecosystem function; and
  - (iii) a rehabilitation plan if one does not already exist. A rehabilitation plan must be prepared by a competent person and in accordance with section **SC6.3.8 (Rehabilitation and revegetation)** of the **Planning scheme policy for development works**.

Note—the applicant must enter into a rehabilitation agreement with Council regarding the area to be rehabilitated and works to be undertaken, prior to the issue of a development approval. The applicant will be responsible for all costs associated with the identification, implementation and management of the rehabilitation area, although contracting this work to a third party organisation may be acceptable.

#### **SC6.5.4 Advice about achieving outcomes in the Vegetation management code**

The following is advice for achieving outcomes in the Vegetation management code relating to the clearing of vegetation where the loss of native vegetation occurs:-

- (a) **Appendix SC6.5A (Schedule of Fraser Coast environmental rehabilitation sites)** identifies a list of priority areas currently within Council ownership and/or trusteeship that will provide significant opportunities for rehabilitation; however other reserves or private property may also be considered appropriate by Council.
- (b) Compliance with performance outcome PO1 of **Table 9.4.5.3.1 (Criteria for assessable development)** of the Vegetation management code may be demonstrated (in part) or aided by the submission of:-
  - (i) an assessment report that demonstrates why it is not feasible or practicable to retain the vegetation (such as building re-design) and identifies the number, type, location and species of vegetation to be removed as a result of the development; and
  - (ii) a rehabilitation proposal to replace vegetation at a minimum rate of two new plants for the removal of one plant within a lot listed in **Appendix SC6.5A (Schedule of Fraser Coast environmental rehabilitation sites)**. An alternative location may be approved by Council, such as another reserve within proximity of the subject site, where rehabilitation will mitigate the loss of the vegetation and reinstate amenity and/or habitat values, preferably within the urban areas of the Fraser Coast.

Note— the applicant must enter into a rehabilitation agreement with Council regarding the area to be rehabilitated and works to be undertaken, prior to the issue of a development approval. The rehabilitation agreement will include a schedule of species and planting specifications (such as size and number), as well as maintenance requirements. The applicant will be responsible for all costs associated with the identification, implementation and management of the rehabilitation area, although contracting this work to a third party organisation may be acceptable.



## Appendix SC6.5A      Schedule of Fraser Coast environmental rehabilitation sites

| Location   | Lot/Plan  | Address   | Area (ha)        |
|--|---|---|------------------|
| Petrie Park Tiaro  | 202 MCH5330, 2 SP178905 (part of)   | Van Doorn Road, Tiaro   | 15               |
| Craignish Dundowran foreshore                                | 161 MCH2506, 237 MCH4092, 209 MCH4444, 53 SP131584, 112 RP222315, 1 RP222315, 26 MCH5295, 53 RP224701, 39 RP902272, 53 RP8533888, 5 RP190573, 27 RP213303, 52 RP224701, 52 RP8533888, 94 SP147570 and road reserves | Esplanade, Craignish and Dundowran Beach                      | 62               |
| Allerton Road Enviro Levy lot                                | 1 RP859765  | Allerton Road, Booral   | 24               |
| Mathiesen Road Enviro Levy lots                              | 261 M37876, 262 M37876, 17 M37876 and road reserve  | 204-242 River Heads Road and 124-166 Mathiesen Road, Booral   | 48               |
| Burrum Heads Road Beelbi Creek Enviro Levy lots and reserves | 2 RP212432, 61 CK1108, 60 CP900876  | Pialba-Burrum Heads Road, Beelbi Creek                        | 134              |
| Teddington reserves and Council owned freehold               | 130 MCH5203, 9 MCH2356, 131 MCH2614, 88 W39987, 1 RP134329, 3 RP134329, 2 RP134330, 1 RP134331, 4 RP134330, 2 RP134372, 2 RP134371, 1 RP134506, 4 RP134328, 2 RP134328, 2 RP134327, 1 RP134373 and road reserves    | Teddington and Sandy Creek, Magnolia                          | 563              |
| Cassava Dams reserve land                                    | 199 MCH812153   | Churchill Mine Road, Burgowan                                 | 2,860            |
| Stockyard Creek Reserve                                      | 192 MCH4428   | 56 Old Walligan Road, Walligan                                | 17               |
| River Heads Reserve  | 500 RP229173  | 55 Seafarer Drive, River Heads                                | 18               |
| Martins Creek Reserve  | 1003 SP184675   | Lorikeet Avenue, Toogoom                                      | 16               |
| North Head Mary River  | 56 SP145093, 95 SP119901 and road reserves  | North Esplanade, River Heads and Sheridan Street, River Heads | 683              |
| Round Island   | 1 MCH2821   | Shelly Bank, Great Sandy Strait                               | 1                |
| Hervey Bay Foreshore (Esplanade)                             | 220 SP185042, 110 MCH4291, 108 MCH4289, 210 SP226997, 215 SP235162  | Charlton Esplanade, Hervey Bay                                | 15km linear area |
| Poona reserves   | 27 MCH5499, 94 MCH5498, 84 MCH4331, 9 SP168334, 901 SP178944, 903 RP899098, 904 RP899098, 900 SP179263, 902 RP899098, 905 SP179264, 906   | Boronia Drive, Poona and Livistonia Drive, Poona              | 175              |

| Location                      | Lot/Plan  | Address                                     | Area (ha) |
|-------------------------------|---|---|-----------|
|                               | SP179264, 907 SP179265, 909 RP906981, 908 RP906982            |   |           |
| Pulgul Creek reserves         | 194 MCH4537, 237 MCH5021                                      | Esplanade, Urangan                          | 22        |
| Maria Creek Howard            | 29 RP13675, 30 RP13675, 7 RP13676, 5 RP13663 and road reserve | Thomas, James, William and Maria St, Howard | 6         |
| Sawmill Road                  | 117 RP222315, 502 RP867435                                    | Sawmill Road, Dundowran Beach               | 10        |
| Cheelii Lagoons               | 502 SP113098, 505 SP169208, 504 SP169208, 200 SP200627        | Ivor Drive, Burrum Heads                    | 8         |
| Nikenbah rifle range reserve  | 195 MCH4548, 265 MCH5244                                      | Old Rifle Range Road, Sunshine Acres        | 203       |
| Dundowran showgrounds reserve | 199 SP235071  | 127 Dundowran Road, Walligan                | 300       |
| Burrum River reserves Howard  | 43 CK3339, 66 CK2673, 57 CP859068 and road reserve            | River Road, Howard                          | 24        |
| Black Swamp Creek             | 3 RP847425  | Maryborough Hervey Bay Road, Susan River    | 26        |
| Pioneer Park                  | 136 MCH4636<br>35 MCH4510                                     | Sunrise Drive/Gympie Road, Tinana           | 26.88     |
| Moolyir Creek                 | 6 U50017  | Moolyir Street, Urangan                     | 0.658     |
| Parraweena Park               | Part of Lot 227 SP235162                                      | Esplanade, Pt Vernon                        | 0.4       |
| Eli Creek                     | 170 and 171 MCH2799   | Martin Street and Esplanade, Eli Creek      | 11.3      |

## SC6.6 Planning scheme policy for the Urangan Harbour Master Plan

### SC6.6.1 Purpose

The purpose of this planning scheme policy is to:-

- (a) provide a 30 year redevelopment vision to maximise land use opportunity in line with suitable land tenure of the Urangan Harbour and key surrounding areas;
- (b) provide advice about achieving development and land use outcomes in the Urangan Harbour Master Plan sub-precincts as identified in **Figure 6.2.18.A** and **Figure 6.2.18.B** and **Table 6.2.18** of the Mixed Use Zone Code; and
- (c) identify key attributes and design outcomes of the relevant sub-precincts of the Urangan Harbour.

### SC6.6.2 Application

This planning scheme policy applies to assessable development located within the Mixed use zone **Precinct MU1 (Urangan Harbour)**, which requires assessment against the Mixed use zone code.

This planning scheme policy is to be read in conjunction with the Mixed use zone code and reference given to **Schedule 2 – Mixed use precinct 1 sub-precinct zone map**.

### SC6.6.3 Sub-precincts land use intent

The following is general advice about satisfying the sub-precinct land use, design and amenity outcomes:-

| Column 1<br>Sub-precinct                   | Column 2<br>Design and Land Use Outcomes   |
|--|--|
| Sub-precinct 1<br>High Density Residential | <ul style="list-style-type: none"> <li>- Promote high density residential development that will cater for both long and short term accommodation with boutique and resort style commercial uses, restaurants and bars at the ground level fronting the Esplanade.</li> <li>- Promote a strong linkage with the Urangan Harbour and create an interactive boulevard along the Esplanade to create an engaging and pedestrian friendly locality.</li> </ul>  |
| Sub-precinct 2<br>SOHO Opportunity         | <ul style="list-style-type: none"> <li>- SOHO refers to small office / home office where certain types of uses occur in residential areas adjacent to a key urban development area, employment node, retail precinct or tourism node.</li> <li>- This sub-precinct has been identified as a suitable SOHO opportunity locality that could support the commercial, retail, tourism and short term accommodation uses being promoted within the Urangan Harbour Master Plan sub-precincts.</li> <li>- The types of complementary SOHO opportunities could include beauty services, tour booking office, professional services, boutique dentist and medical services and small café/barista.</li> <li>- The intent of this sub-precinct is to maintain the dominant residential amenity within the locality, whilst encouraging small bespoke commercial enterprises on sites where fronting the Esplanade or Miller Street.</li> <li>- The residential use types encouraged in the sub-precinct include dwelling houses, multiple dwellings and retirement living.</li> </ul> |
| Sub-precinct 3<br>Mixed Use Development    | <ul style="list-style-type: none"> <li>- Promote a range of uses that are complementary to the Urangan Harbour marina and tourism activities.</li> <li>- The types of uses encouraged within this sub-precinct includes</li> </ul>   |

|   |   |
|---|---|
|   | <p>short and long term accommodation, backpackers, retail, small scale commercial uses and function facilities.</p> <ul style="list-style-type: none"> <li>- The Mixed Use Development sub-precinct is also located on key entry sites into the Urangan Harbour from the Esplanade therefore the built form and landscaping is to be of a high standard to create an attractive entry statement.</li> <li>- The Mixed Use Development sub-precincts intent is to encourage high quality accommodation uses with supporting retail, hospitality and commercial activities that create a sense of place upon arrival into the Urangan Harbour area and support the marina.</li> </ul> |
| Sub-precinct 4<br>Community and<br>Club Facilities                      | <ul style="list-style-type: none"> <li>- Accommodate marine based public services such as volunteer Marine Rescue, Coastguard, Police/Customs/Border Protection, sailing clubs and training facilities.</li> <li>- The intent of this sub-precinct is to co-locate similar public service and community based organisations to share common facilities and training areas and create a focal point within the Urangan Harbour area for maritime public services.</li> </ul>   |
| Sub-precinct 5<br>Marine Facilities<br>(Wet Marina)                     | <ul style="list-style-type: none"> <li>- To continue providing recreational, commercial and live-on boat moorings and berths and dredge spoil disposal operations.</li> <li>- The commercial moorings and berths will accommodate a range of commercial activities including tourism, fishing, boat charter, barge and short-term berths.</li> <li>- Any expansion of the marina or relocation or construction of an additional seawall will avoid or mitigate impacts on areas of ecological significance including the values of the Great Sandy Marina Park and protected and endangered species and their habitat such as Dugong and Sea Turtles.</li> </ul>                    |
| Sub-precinct 6<br>Retail, Hospitality<br>and Tourism                    | <ul style="list-style-type: none"> <li>- Seeks to encourage a range of commercial, retail and tourism uses within the sub-precinct ranging from restaurants and cafes, clubs and licensed premises, take away and fish monger stores, convenience store, retail shopping, booking offices, marine tourism (i.e. aquarium) and function facilities.</li> <li>- The intent of this sub-precinct is to encourage commercial and tourism activities that complement the marina activities and the surrounding short-term accommodation uses whilst also providing an engaging tourism marina attraction for the Fraser Coast.</li> </ul>  |
| Sub-precinct 7<br>Marine Facilities<br>(Dry Marina)                     | <ul style="list-style-type: none"> <li>- Provide the operational and industrial services essential for a marina. This includes mechanical / electrical services, boat builders, sail makers and marine trimmers, travel lift, fuelling facilities, dry storage (boat yard, etc) and commercial fish receivables. These uses and services are essential for the daily operations and maintenance of the marina, moored boats and commercial vessels and will be accommodated collectively at the southern end of the marina to provide opportunity to share services, facilities and ease of access to the services for the boats.</li> </ul>  |
| Sub-precinct 8<br>Open Space and<br>Recreation (Car<br>Trailer Parking) | <ul style="list-style-type: none"> <li>- To create passive recreational areas as well as sufficient car and trailer parking facilities with direct access to the recreational boat ramps proposed for this sub-precinct.</li> <li>- The open space areas will also provide amenities such as toilets and change facilities, pontoons, fish cleaning and wash down areas and there will also be bike and pedestrian networks linking the open space sub-precinct to other areas within the Urangan Harbour.</li> </ul>   |
| Sub-precinct 9<br>Open Space and<br>Recreation                          | <ul style="list-style-type: none"> <li>- To create passive recreational areas that provides beautiful green space settings throughout the Urangan Harbour, and also provide for views and vistas through the harbour out towards Fraser Island.</li> <li>- The open space areas will also provide amenities such as toilets and change facilities, playgrounds and BBQ facilities and there will also be bike and pedestrian networks linking the open space and recreation sub-precinct to other areas within the Urangan Harbour.</li> </ul>  |
| Sub-precinct 10   | <ul style="list-style-type: none"> <li>- Key Recreation Area A is intended to be a “high profile park” that</li> </ul>  |

|   |  |
|---|--|
| Key Recreation Areas A & B                    | <p>will provide for market and festival activities, beautifully landscaped parklands and also contribute to the Boat Harbour Drive entry statement into the Urangan Harbour.</p> <ul style="list-style-type: none"> <li>- Key Recreation Area B is intended to be a major recreational swimming area for surrounding residents and visitors staying within the Urangan Harbour precinct. Amenities and facilities will be provided for as well as a maintained park area for picnic and BBQ facilities.</li> <li>- These two key recreation areas will be linked to the Urangan Harbour by pedestrian and bicycle networks and a boardwalk extended from the “swimming area” to the marina.</li> </ul>   |
| Sub-precinct 11 Special Tourism Opportunities | <ul style="list-style-type: none"> <li>- Identifies part of the existing dredge material disposal and rehandling facility as a potential resort and commercial opportunity providing a unique location and visitor experience with vistas of Fraser Island and the Great Sandy Strait.</li> <li>- Building design and height will need to demonstrate iconic characteristics and sustainability due to the location and view lines from sub-precincts 3, 6 and 9.</li> <li>- This Special Investigations sub-precinct will need to demonstrate that the characteristics of the site are suitable for development, particularly considering potential contamination of the dredge spoil and that the reclaimed land is structurally suitable for the development.</li> <li>- The operational demands for the existing dredge material disposal and rehandling facility are to be maintained in accordance with the dredge management plan for the Urangan Harbour including the future planned expansion. If the dredge disposal facility is to be relocated, the new facility will: <ul style="list-style-type: none"> <li>o meet the operational demands for future dredging operations; and</li> <li>o avoid or mitigate impacts on areas of ecological significance including the values of the Great Sandy Marine Park and protected and endangered species and their habitat such as Dugong and Sea Turtles; and</li> <li>o avoid or mitigate impacts on fisheries and commercial fishers.</li> </ul> </li> </ul> |
| Sub-precinct 12 Wet Marina Investigation Area | <ul style="list-style-type: none"> <li>- Identifies a potential opportunity to extend the wet marina beyond the existing harbour wall to allow for fixed pontoon style moorings for short term visitation by larger vessels currently unable to navigate the Urangan Harbour.</li> <li>- This area will be subject to investigations into demand, design, climatic exposure, management, impacts on the environment and provision of services including sewerage pump out and vehicular access to this precinct.</li> <li>- Any expansion of the wet marina in this precinct will: <ul style="list-style-type: none"> <li>o avoid or mitigate impacts on areas of ecological significance including the values of the Great Sandy Marine Park and protected and endangered species and their habitat such as Dugong and Sea Turtles.</li> <li>o avoid or mitigate impacts on fisheries and commercial fishers.</li> </ul> </li> </ul>  |

#### SC6.6.4 Urangan Harbour Master Plan overall design intent

The Urangan Harbour Master Plan is an ultimate, long-term plan that combines land use redevelopment opportunity, infrastructure establishment and improvements and design objectives whilst facilitating the free holding of State government tenure for potential investors and businesses seeking to develop within the Urangan Harbour Master Plan area during a 30 year timeframe.

The Urangan Harbour Master Plan identifies all developable land in the master plan area as well as identifying possible complementary land uses abutting the State managed boat harbour boundary, for completeness and improved integration with the surrounding community.

The Urangan Harbour Master Plan seeks to promote and encourage key development opportunities to help set the Urangan Harbour apart from other harbours. The key development opportunities envisaged for the master plan area include a Casino, Tourist Attraction and Cruise Ship Terminal.

## **SC6.6.5 Sub-precinct Outcomes**

### **SC6.6.5.1 Sub-precinct 1 – High Density**

#### Precinct Intent

- (1) Sub-precinct 1 will accommodate predominately residential development providing for both long and short term accommodation that supports the Urangan Harbour.
- (2) High density development will provide for commercial uses are the ground level where fronting the Esplanade to promote an interactive boulevard and provide a direct linkage to the surrounding commercial areas of the Urangan Harbour.
- (3) The building heights reflect **Figure 6.2.18.B** in the Mixed Use Zone Code.
- (4) Development in Sub-precinct 1 will ensure urban design and land uses:
  - (a) have regard to the new connection from the Esplanade to Jetty Street; and
  - (b) provide for a new upgraded intersection at Boat Harbour Drive and the Esplanade.
- (5) Preferred land uses:
  - Bar – where forming part of a residential building and at ground level;
  - Child care centre;
  - Food and drink outlet – where forming part of a residential building and at ground level;
  - Function facility;
  - Health care services;
  - Hotel;
  - Indoor sport and recreation;
  - Multiple dwelling;
  - Office – where forming part of a residential building and at ground level;
  - Rooming accommodation;
  - Resort complex;
  - Short-term accommodation;
  - Shop – where forming part of a residential building and at ground level;
  - Shopping centre – where forming part of a residential building and at ground level; and
  - Theatre.

### **SC6.6.5.2 Sub-precinct 2 – SOHO Opportunity**

- (1) Sub-precinct 2 will provide opportunity for small office / home office uses that are compatible with the predominant residential amenity and complementary to the Urangan Harbour short term accommodation, commercial and tourism activities.

- (2) The types of complementary SOHO opportunities could include beauty services, tour booking office, professional services, boutique dentist and medical services and small café/barista.
- (3) The intent of this sub-precinct is to maintain the dominant residential amenity within the locality, whilst encouraging small bespoke commercial enterprises on sites where fronting the Esplanade or Miller Street.
- (4) The building heights reflect **Figure 6.2.18.B** in the Mixed Use Zone Code.
- (5) Preferred land uses:
  - Bar;
  - Child care centre;
  - Community residence;
  - Dwelling houses;
  - Dual occupancy;
  - Food and drink outlet – where located within an existing building;
  - Health care services;
  - Home based business;
  - Multiple dwellings;
  - Office – where located within an existing building;
  - Relocatable home park;
  - Residential care facility;
  - Retirement facility;
  - Rooming accommodation;
  - Shop – where located within an existing building;
  - Short term accommodation; and
  - Tourist park.

#### **SC6.6.5.3 Sub-precinct 3 – Mixed Use Development**

- (1) Development in Sub-precinct 3 will form a large part of the Urangan Harbour master plan area. Overall, Sub-precinct 3 will provide for mixed use residential, retail and commercial development as well as parking areas and providing access to key view corridors to Fraser Island and the Great Sandy Strait.
- (2) Development in sub-precinct 3 will enhance opportunities to connect to the marina and is likely to provide early development opportunities which will support further development in the area. Throughout the sub-precinct a variety of residential solutions will be supported which will allow for increased density in proximity to the marina in sub-precinct 5.
- (3) Development in Sub-precinct 3 will support residential development and the creation of the mixed use node. Residential uses are appropriate throughout the precinct where not in conflict with other desired outcomes. Retail and commercial uses should seek to locate within the mixed use node at ground level to activate street frontages.
- (4) The building heights reflect **Figure 6.2.18.B** in the Mixed Use Zone Code.
- (5) Development in Sub-precinct 3 will ensure residential and mixed use design and land uses:
  - (a) support the creation of the mixed use development sub-precinct where active commercial or retail uses are focused, providing convenience retail, tourist and commercial uses (such as shops and professional offices well as other non-retail functions such as childcare, cafes and restaurants) to serve the local catchment of residents and visitors;



- (b) activate public space and deliver the highest density of development and activities in the sub-precinct in order to benefit from access to and outlook onto the marina area and Fraser Island;
  - (c) deliver a key arrival and departure point within the master plan area, providing sufficient and comfortable areas for interaction and circulation;
  - (d) contribute to an articulated streetscape with active frontages in the mixed use development sub-precinct along key pedestrian and street connections and fronting key focal points, which provide continuous awnings along footpaths and support zero setbacks of building facades along the Esplanade, Miller and Jetty Streets and Buccaneer Drive;
  - (e) ensure active frontages are built up to or near public space edges, are visually and physically permeable and do not incorporate blank walls, plant rooms, parking areas or other back of house facilities;
  - (f) support office and residential uses above ground floor retail development in the mixed use development sub-precinct;
  - (g) provide to 5,000m<sup>2</sup> GFA of neighbourhood centre scale active retail uses serving mainly the convenience shopping needs of the local catchment;
- (6) Development will contribute to establishing a street and movement network which complements uses in the mixed use development sub-precinct and promotes pedestrian connection with the waterfront and marina. Development in Sub-precinct 3 will contribute to a street and movement network which:
- (a) supports Miller street acting as a key road within the Mixed use development sub-precinct as the main entrance to the Urangan Harbour and linking development to the external road network and acting as a focus for access and connectivity within the Master Plan area, including activated frontages with appropriate access to parking areas;
  - (b) establishes a new road which links to Jetty Street; and
  - (c) has regard to the need for adequate car parking within the sub-precinct to meet the needs of the marina.
- (7) Preferred land uses:
- Bar;
  - Child care centre;
  - Club;
  - Community use;
  - Emergency services;
  - Food and drink outlet (where located at ground level);
  - Function facility;
  - Health care services;
  - Hotel;
  - Indoor sport and recreation;
  - Multiple dwelling;
  - Nightclub entertainment facility;
  - Office;
  - Port services;
  - Resort complex;
  - Rooming accommodation;
  - Service industry;
  - Shop – where located within a mixed use building and at ground level;
  - Shopping centre – where located within a mixed use building and at ground level;

- Short term accommodation;
- Theatre;
- Tourist attraction; and
- Tourist park.

#### **SC6.6.5.4 Sub-precinct 4 – Community & Club Facilities**

- (1) Sub-precinct 4 will include development that provides community and government services that support the marina activities. This will include sailing clubs, State Government departments such as Fisheries, Marine Rescue, Coastguard, Police/Customs/Boarder Protection and training facilities.
- (2) Development occurring in sub-precinct 4 will need to have regard to:
  - (a) access requirements of water based vessels to ensure the operational component of the community facilities are accommodated for; and
  - (b) suitable co-location of the various community uses are provided where possible.
- (3) Preferred land uses:
  - Community use;
  - Emergency services;
  - Landing;
  - Office – where located in an existing building;
  - Port services; and
  - Service industry.

#### **SC6.6.5.5 Sub-precinct 5 – Marine Facilities (Wet Marina)**

- (1) Sub-precinct 5 will include development and works undertaken in the wet marina. This will include the opportunity for an expansion to the existing marina and relocation of the existing sea wall to allow for the additional moorings.
- (2) A promenade and over the water boardwalk will be provided to increase pedestrian access to the wet marina and provide a direct link with sub-precinct 6 from surrounding areas.
- (3) Development occurring in areas of water will need to have regard to:
  - (a) avoiding conflict between recreational and commercial boating activity and ensuring the safety of all boating movements;
  - (b) access requirements of water based vessels including need for widening or provision of new channels;
  - (c) requirements for capital and or maintenance dredging associated with development;
  - (d) the treatment and or disposal of dredge spoil;
  - (e) appropriate protection, mitigation or environmental offsets associated with impacts to areas or species of ecological significance;
  - (f) dredging and channel access requirements associated with development to be undertaken in Sub-precinct 5, including extending the existing marina to accommodate existing and future boating activities both private and commercial.

- (4) Preferred land uses:
- Aquaculture;
  - Community use;
  - Emergency services;
  - Landing;
  - Low impact industry;
  - Marine industry;
  - Medium impact industry;
  - outdoor sport and recreation;
  - Port services;
  - Service industry;
  - Service station (for marina purposes);
  - Utility installation; and
  - Warehouse.

**SC6.6.5.6 Sub-precinct 6 – Retail, Hospitality & Tourism**

- (1) Development in Sub-precinct 6 is the main focal point of the Urangan Harbour master plan area. Overall, Sub-precinct 6 will provide for retail, hospitality, commercial and tourism development as well as areas of public open space providing key view corridors to Fraser Island and the Great Sandy Strait.
- (2) Development in sub-precinct 6 will enhance opportunities for the wet marina by encouraging tourism and hospitality uses that support the marina based activities including commercial vessels.
- (3) The building heights reflect **Figure 6.2.18.B** in the Mixed Use Zone Code.
- (4) Development in Sub-precinct 6 will ensure retail, hospitality and tourism design and land uses that:
- (a) provide for public access to the marina in Precinct 5;
  - (b) support the creation of development where active commercial and retail uses are focused, providing convenience retail, tourist and commercial uses (such as shops and professional offices well as other non-retail functions such as cafes and restaurants) to serve the local catchment of residents and visitors;
  - (c) contribute to an articulated streetscape with active frontages to ensure a strong interface with the mixed use development sub-precinct 3 along key pedestrian and street connections, which support zero setbacks of building facades;
  - (d) ensure active frontages are visually and physically permeable and do not incorporate blank walls, plant rooms, parking areas or rows of fire escapes;
- (5) Development will contribute to establishing a new street and movement network at the southern end of sub-precinct 6 which complements uses in sub-precincts 3, 6 and 8.
- (6) Preferred land uses:
- Bar;
  - Child care centre;
  - Club;
  - Emergency services;
  - Function facility;
  - Food and drink outlet;
  - Hotel;
  - Indoor sport and recreation;

- Landing;
- Multiple dwelling;
- Nightclub entertainment facility;
- Office;
- Port services;
- Resort complex;
- Rooming accommodation;
- Service industry;
- Shop;
- Shopping centre;
- Short term accommodation;
- Theatre; and
- Tourist attraction.

**SC6.6.5.7 Sub-precinct 7 – Marine Facilities (Dry Marina)**

- (1) Sub-precinct 7 will include development and works undertaken in the dry marina being maintenance and operational services and industry to service the wet marine (sub-precinct 5). This will include the expansion to the existing marina and relocation of the existing sea wall which will provide for the majority of this sub-precinct.
- (2) Sub-precinct 7 will be sleeved by an improved and realigned extension of Boat Harbour Drive to support vehicular access requirements of sub-precinct 7.
- (3) Development occurring in sub-precinct 7 must have regard to:
  - (a) Operational and maintenance needs of sub-precinct 5;
  - (b) access requirements of water based vessels including need for a new slipway; and
  - (c) appropriate protection, mitigation or environmental offsets associated with impacts to areas or species of ecological significance.
- (4) Preferred land uses:
  - Car wash;
  - Emergency services;
  - Landing;
  - Low impact industry;
  - Marine industry;
  - Medium impact industry;
  - Office;
  - Outdoor sales;
  - Parking station;
  - Port services;
  - Research and technology industry;
  - Service industry;
  - Service station (for marina purposes);
  - Shop;
  - Utility installation; and
  - Warehouse.

**SC6.6.5.8 Sub-precinct 8 – Open Space & Recreation (Car Trailer Parking)**

- (1) Development in sub-precinct 8 will create passive recreational areas as well as sufficient car and trailer parking facilities with direct access to the recreational boat ramps proposed for this sub-precinct.

- (2) Sub-precinct 8 will provide amenities such as toilets and change facilities, pontoons, recreational boat ramps and fish cleaning and wash down areas to enhance the recreation activities available within the sub-precinct.
- (3) Sub-precinct 8 will provide for bike and pedestrian networks linking sub-precinct 8 to other sub-precincts within the Urangan Harbour Master Plan area.
- (4) Development in Sub-precinct 8 will ensure design and land uses:
  - (a) support the recreational activities intended for the sub-precinct where embellished open space area are focused, providing suitable public amenities for users of the sub-precinct;
  - (b) provide adequate public car and trailer parking facilities that enable sufficient and safe access to the recreational boat ramps; and
  - (c) deliver the highest quality of development and activities in the sub-precinct to complement the outlook onto the marina area and across to Fraser Island.
- (5) Preferred land uses:
  - Community use;
  - Food and drink outlet;
  - Landing;
  - Market;
  - Park;
  - Parking station;
  - Port services;
  - Shop; and
  - Utility installation.

#### **SC6.6.5.9 Sub-precinct 9 – Open Space & Recreation**

- (1) Development in sub-precinct 9 will create passive recreational areas that will provide beautiful green space settings throughout the Urangan Harbour Master Plan area, and also provide for views and vistas through the harbour out towards Fraser Island.
- (2) Sub-precinct 9 will provide amenities such as toilets and change facilities, BBQ facilities and playgrounds along with pontoons and fish cleaning areas to enhance the recreation activities available within the sub-precinct.
- (3) Sub-precinct 9 will accommodate bike and pedestrian networks linking to other sub-precincts within the Urangan Harbour Master Plan area.
- (4) Development in Sub-precinct 9 will ensure design and land uses:
  - (a) support the recreational activities intended for the sub-precinct where embellished open space areas are focused, providing suitable public amenities for users of the sub-precinct; and
  - (b) deliver the highest quality of development and activities in the sub-precinct to complement the outlook onto the marina area and across to Fraser Island.
- (5) Preferred land uses:
  - Community use;
  - Food and drink outlet;
  - Landing;
  - Market;

- Park;
- Port services; and
- Utility installation.

#### **SC6.6.5.10 Sub-precinct 10 – Key Recreation Sites**

- (1) Development in sub-precinct 10 will create special recreational areas that will provide key recreation opportunities to complement the Urangan Harbour Master Plan area.
- (2) **Key Recreation Area A** will be a “high profile park” that will provide for market and festival activities, beautifully landscaped parklands and also contribute to the Boat Harbour Drive entry statement into the Urangan Harbour Master Plan area.
- (3) **Key Recreation Area B** will be a major recreational swimming area for surrounding residents and visitors of the Urangan Harbour Master Plan area. Amenities and facilities will be provided for along with a maintained park area for picnic and BBQ facilities.
- (4) Both Key Recreation Areas in sub-precinct 10 will provide amenities such as toilets and change facilities, BBQ facilities and playgrounds to enhance the recreation activities available within the sub-precinct.
- (5) The two key recreation areas in sub-precinct 10 will be linked to the Urangan Harbour by pedestrian and bicycle networks and a boardwalk extended from the **Key Recreation Area B** to the marina in Sub-precinct 5.
- (6) Development in Sub-precinct 10 will ensure design and land uses:
  - (a) support the recreational activities intended for the sub-precinct where embellished open space areas are focused, providing suitable public amenities for users of the sub-precinct; and
  - (b) deliver the highest quality of development and activities in the sub-precinct to complement the outlook onto the marina area and across to Fraser Island.
- (7) Preferred land uses:
  - Community use;
  - Landing;
  - Park; and
  - Utility installation.

#### **SC6.6.5.11 Sub-precinct 11 – Special Tourism Opportunities**

- (1) Sub-precinct 11 is a special tourism opportunities investigation sub-precinct which identifies part of the existing dredge material disposal and rehandling facility as a potential resort and commercial opportunity providing a unique location and visitor experience with vistas of Fraser Island and the Great Sandy Strait subject to tenure, operational and design requirements.
- (2) Building design and height would need to demonstrate iconic characteristics and sustainability due to the location and view lines from sub-precincts 3, 6 and 9.
- (3) Sub-precinct 11 will need to demonstrate that the operational demands for the existing dredge material disposal and rehandling facility are maintained in accordance with the dredge management plan for the Urangan Harbour including the future planned expansion of sub-precinct 5.

- (4) Development in Sub-precinct 11 will ensure design and land uses:
- a. support the creation of a tourism development sub-precinct where active commercial or retail uses are focused, providing tourist and commercial uses (such as shops and non-retail functions such as cafes and restaurants) to complement short-term accommodation facilities envisaged for the investigation sub-precinct; and
  - b. deliver the highest quality of development and activities in the sub-precinct to complement the outlook onto the marina area and Fraser Island.
- (5) Preferred land uses:
- Bar;
  - Food and drink outlet (where located at ground level);
  - Function facility;
  - Hotel;
  - Landing;
  - Nightclub entertainment facility;
  - Office;
  - Park;
  - Resort complex;
  - Shop – where located within a mixed use building and at ground level;
  - Short term accommodation; and
  - Theatre.

#### **SC6.6.5.12 Sub-precinct 12 – Wet Marina Investigations Area**

- (1) Sub-precinct 12 identifies a potential opportunity to extend the wet marina beyond the existing harbour wall to allow for fixed pontoon style moorings for short term visitation by larger vessels including a cruise ship terminal and luxury yachts that are currently unable to navigate the Urangan Harbour.
- (2) Development within sub-precinct 12 will be subject to investigations into demand, design, climatic exposure, management, services including sewerage pump out and vehicular access to this precinct
- (3) Development occurring in sub-precinct 12 must have regard to:
- (a) avoiding conflict and ensuring safety of all boating movements into and out of the main section of the marina (sub-precinct 5);
  - (b) access requirements of water based vessels; and
  - (c) appropriate protection, mitigation or environmental offsets associated with impacts to areas or species of ecological significance.
- (4) Preferred land uses:
- Landing



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## Appendix 1 Index and glossary of abbreviations and acronyms

Table AP1.1 Abbreviations and acronyms

| Abbreviation/acronym | Description  |
|----------------------|--|
| the Act              | <i>Planning Act 2016</i>                               |
| AEP                  | Annual exceedance probability                          |
| AHD                  | Australian height datum                                |
| ALC                  | Agricultural Land Classification                       |
| ANEF                 | Australian noise exposure forecast                     |
| ARI                  | Average recurrence interval                            |
| AS                   | Australian Standard                                    |
| ASS                  | Acid sulfate soil                                      |
| CPTED                | Crime prevention through environmental design          |
| BCA                  | Building Code of Australia                             |
| CAMBA                | China–Australia Migratory Bird Agreement               |
| DFE                  | Defined flood event                                    |
| DFL                  | Defined flood level                                    |
| DSS                  | Desired standards of service                           |
| DSTE                 | Defined storm-tide event                               |
| EVNT                 | Endangered, vulnerable and near threatened             |
| GFA                  | Gross floor area                                       |
| GLFA                 | Gross leasable floor area                              |
| GES                  | General ecological significance                        |
| HAT                  | Highest astronomical tide                              |
| ICOMOS               | International Council on Monuments and Sites           |
| JAMBA                | Japan–Australia Migratory Bird Agreement               |
| km                   | Kilometres   |
| LGIP                 | Local Government infrastructure plan                   |
| m                    | Metres   |
| MSES                 | Matters of State environmental significance            |
| MCU                  | Material change of use (of premises)                   |
| mm                   | Millimetres  |
| NDB                  | Non-directional beacon                                 |
| OLS                  | Obstacle limitation surface                            |
| PIA                  | Priority infrastructure area                           |
| PMF                  | Probable maximum flood                                 |
| QDC                  | Queensland Development Code                            |
| RaL                  | Reconfiguring a lot                                    |
| RFL                  | Recommended flood level                                |
| RSTEL                | Recommended storm-tide event level                     |
| s                    | Second   |
| SCL                  | Strategic cropping land                                |
| SPP                  | State Planning Policy                                  |
| the Regulation       | <i>Planning Regulation 2017</i>                        |
| the SP Act           | <i>Sustainable Planning Act 2009 (repealed)</i>        |
| the SP Regulation    | <i>Sustainable Planning Regulation 2009 (repealed)</i> |
| VHF                  | Very High Frequency                                    |

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## Tables in Appendix 2

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## Appendix 2 Table of amendments

Table AP2.1 Table of amendments

| Date of adoption and effective date                                     | Planning scheme version number | Amendment type        | Summary of amendments  |
|---|--------------------------------|-----------------------|--|
| <p>Adoption Date – 7 May 2014; and<br/>Effective Date – 19 May 2014</p> | <p>Version 2</p>               | <p>Administrative</p> | <ul style="list-style-type: none"> <li>• Amended Sections 3.2 to 3.8 of the consolidated contents page to correct page number errors;</li> <li>• Part 5.5, Table 5.5.1 – Assessment Criteria heading was realigned;</li> <li>• Part 5.5, Table 5.5.1 – Third column, 8th row, deleted extra dot point;</li> <li>• Part 5.5, Table 5.5.2 – Third column, 3rd row, deleted extra dot point;</li> <li>• Part 5.5, Table 5.5.9, third column, 1st row, inserted dot point;</li> <li>• Part 5.5, Table 5.5.15, second column, 11.1, 11.2, 15.1 and 15.2 rows reformatted;</li> <li>• Part 5.5, Table 5.5.18, third column, 3rd row, deleted extra dot point;</li> <li>• Part 5.5, Table 5.5.18, second column, 8th and 9th rows reformatted;</li> <li>• Part 5.6, Table 5.6.1, third column, 3rd row, reformatted dot point;</li> <li>• Part 5.6, Table 5.6.1, Riverfront Local Plan Precinct (Business Activities) deleted extra rows;</li> <li>• Part 5.9, Table 5.9.1, Excavation and filling, changed reference to “filling and excavation”;</li> <li>• Part 5.6 (Local Plan – Maryborough) Table 5.6.1 (Riverfront Precinct, Recreational Activities: Indoor Sports and Recreation – Code Assessment). Deleted “The Planning Scheme” from the ‘assessment criteria column and inserted:             <ul style="list-style-type: none"> <li>- Business uses code;</li> <li>- Maryborough principal activity centre local plan code;</li> <li>- Principal centre zone code;</li> <li>- Landscaping code;</li> <li>- Transport and parking code;</li> <li>- Works, services and infrastructure code.</li> </ul> </li> <li>• Part 5.8 (Building Works), Table 5.8.1 (Editor’s note) reference to be changed from Table 9.3.6.3.1 to Table 9.3.5.3.1;</li> <li>• Part 8, Table 8.2.4.3.1, AO1.2(b), Inserted a “)” at the end of the sentence;</li> <li>• Part 8, Section 8.1, 5(d), page 9-1, changed “plane” to “plan”;</li> <li>• Part 8, Section 8.2.3.2, 2(e), page 8-9, changed “Environmental Protection Policy (water) 2009” to “Environmental Protection (Water) Policy 2009”;</li> <li>• Part 9.3.2, Table 9.3.2.3.1, AO3.1,</li> </ul> |

| Date of adoption and effective date   | Planning scheme version number | Amendment type | Summary of amendments  |
|---|--------------------------------|----------------|--|
|   |                                |                | <ul style="list-style-type: none"> <li>• changed “AO3.1” to “AO3”;</li> <li>• Part 9.3.10, Table 9.3.10.3.1, AO6.2, corrected alignment;</li> <li>• Part 9.4.4, Table 9.4.4.3.1, AO3, changed “in” to “is” in the ‘Note’ for AO3;</li> <li>• Schedule 3 – PIP Mapping, replaced PFTI (Public Parks and Land for Community Facilities) map P-006 with updated version reflecting the correct PIA Boundary; and</li> <li>• Schedule 6 – Subsections of SC6.2 to SC6.5 to be renumbered to correct numbering error.</li> </ul>  |
| <p>Adoption Date – 18 June 2014; and</p> <p>Effective Date – 30 June 2014</p> | Version 3                      | Minor          | <ul style="list-style-type: none"> <li>• Revision of Part 6 – Zone Codes into code table format;</li> <li>• Revision of Part 9 – Development Codes to include particular provisions from “other development codes” and to include additional tables and provisions to assist self and code assessment;</li> <li>• Revision of Part 5 – Tables of Assessment to reflect changes to Part 9;</li> <li>• Revision to Part 8 – Overlays to comply with the State Planning Policy (Airport Environs Overlay, Biodiversity Areas, Waterways and Wetlands Overlay, Bushfire Hazard Overlay, Coastal Protection Overlay, Good Quality Agricultural Land Overlay, Infrastructure Overlay);</li> <li>• Amendments to Schedule 2 – Mapping to reflect the State Planning Policy in the Overlay Maps;</li> <li>• Revision to Part 7 – Local Plans to include three new Local Plans (St Helens, Granville and Nikenbah);</li> <li>• Revision to Part 3 – Strategic Framework to reflect the changes to Part 7 and Part 8;</li> <li>• Amendments to Schedule 2 – Mapping to reflect the new zoning of the three new Local Plan areas in the Emerging Community Zone;</li> <li>• Amendment to Schedule 2 – Mapping to correct zoning error of three sites (Lot 131 on MCH1232, Lot 168 on MCH1276 and Lot151 on MCH82);</li> <li>• Consequential amendments to Part 1, Part 2, Part 5, Part 6, Part 7 and Schedule 1 to reflect the amendments associated with the State Planning Policy Compliance and the inclusion of new Local Plans;</li> <li>• Amendments to the Demolition Control Area in the Schedule 2 – Overlay Map for the Heritage and Neighbourhood Character Overlay;</li> <li>• Amendments to Schedule 1 – Definitions to comply with the</li> </ul> |

| Date of adoption and effective date                                       | Planning scheme version number | Amendment type | Summary of amendments  |
|---|--------------------------------|----------------|--|
|   |                                |                | <p>Queensland Planning provisions Version 3, amendment of the Nominated Road Frontage administrative definition to provide greater clarity and include a new definition for "Total Use Area" in the administrative definitions to assist with interpretation;</p> <ul style="list-style-type: none"> <li>• Amendments to Part 5 – Tables of Assessment to address changes to definitions in Schedule 1;</li> <li>• Amendments to Part 5 – Tables of Assessment involving changes to the level of assessment for "Food and drink outlet" in the High Density Residential Zone, "Outdoor sales" in the Medium Impact Industry Zone and the Waterfront and Marine Industry Zone, and "Air services" in the Community Facility Zone where located in the CF2 zone annotation;</li> <li>• Update of Schedule 4 to include current Preliminary Approvals that affect the planning scheme;</li> <li>• Update of Schedule 5 to include a new community infrastructure designation (Hervey Bay State High School);</li> <li>• Update of Schedule 6 to reflect changes to Part 8 – Overlays and schedule 2 – Overlay Maps; and</li> <li>• Update of the Strategic Transport Network Figures (Figures 9.4.4A – 9.4.4F) showing updated road hierarchy.</li> </ul> |
| <p>Adoption Date – 8 July 2015; and<br/>Effective Date – 20 July 2015</p> | <p>Version 4</p>               | <p>Major</p>   | <ul style="list-style-type: none"> <li>• Amendment to Schedule 2 – Zone Map: <ul style="list-style-type: none"> <li>- Rezone of Lot 69 on RP4140 from Open Space Zone to Low Density Residential Zone;</li> <li>- Rezone of 20 on RP100944 from Open Space Zone to Low Density Residential Zone;</li> <li>- Rezone of Lots 9 &amp; 10 on RP4082 from Open Space Zone to Low Density Residential Zone;</li> <li>- Rezone part of Lot 7 on SP170865 from Community Facilities Zone to Mixed Use Zone (Precinct MU6 – Maryborough Residential Airpark);</li> <li>- Rezone Lot 1 on RP104434 from Community Facilities Zone to Sport and Recreation Zone;</li> <li>- Rezone Lot 18 on RP45303 from Community Facilities Zone to Neighbourhood Centre Zone; and</li> <li>- Rezone Lot 3 on CP847069 from Community Facilities Zone to Low Density Residential Zone.</li> </ul> </li> <li>• Amendment to Part 5 to include new uses "Dwelling House" and "Aviation Facilities" to the level of assessment</li> </ul>   |

| Date of adoption and effective date | Planning scheme version number | Amendment type | Summary of amendments   |
|-------------------------------------|--------------------------------|----------------|---|
|                                     |                                |                | <p>table 5.5.18 – Mixed Use Zone;</p> <ul style="list-style-type: none"> <li>• Amendment to Part 5, Table 5.5.19 Rural Zone to reference table 9.3.4.3.2 for assessment criteria for Dual Occupancy;</li> <li>• Amendment to Part 5, Table 5.5.8 to correct incorrect reference to assessment criteria for Low Impact Industry;</li> <li>• Amendment to Part 5, Part 5.3.3 paragraph 4, to insert semicolons at the end of (4)(b)(i) and (4)(c)(i);</li> <li>• Amendment to Part 5, Table 5.5.21 to delete extra dot point in 7<sup>th</sup> row;</li> <li>• Amendment to Part 6 to include new MU6 – Maryborough Residential Airpark Precinct;</li> <li>• Amendment to Part 6, Table 6.2.5.3.1 to correct incorrect numbering from PO4 and AO4;</li> <li>• Amendment to Part 6, Table 6.2.17.3.1 to correct spelling error;</li> <li>• Amendment to Part 8 to include new acceptable outcome AO2.2(e) to table 8.2.3.3.2;</li> <li>• Amendment to Part 8, Part 8.2.7.2 clause (1) to correct typo;</li> <li>• Amendment to Part 9, Table 9.3.10.3.1, PO8 to delete reference to “Charlton” Esplanade;</li> <li>• Amend 9.3.10 Multi-unit Residential Code to include the provisions from the SPP Code resulting in provisions PO22 and associated AO22.1 and AO22.2, PO23 and associated AO23 and Po 24 and associated AO24;</li> <li>• Amend 9.3.13 Residential Care Facility and Retirement Facility Code to include the provisions from the SPP Code resulting in provisions PO13 and associated AO13.1 and AO13.2, PO14 and associated AO14 and PO15 and associated AO15;</li> <li>• Introduce a new code to Part 9 of the Scheme, specifically 9.4.7 Ship-sourced Pollutants Reception Facilities in Marinas Code including the provisions from the SPP Code;</li> <li>• Amend Table 5.5.8 Low Impact Industry Zone, assessment criteria for <i>Port Services</i> to also list Ship-sourced Pollutants Reception Facilities in Marinas Code;</li> <li>• Amend Table 5.5.18 Mixed Use Zone, assessment criteria for <i>Port Services</i> to also list Ship-sourced Pollutants Reception Facilities in Marinas Code;</li> <li>• Amend 9.3.1 Business Uses Code to include the provisions from the SPP resulting in provisions PO13 and associated AO13 in Table 9.3.1.3.1 as well as the inclusion of new tables</li> </ul> |



| Date of adoption and effective date | Planning scheme version number | Amendment type | Summary of amendments   |
|-------------------------------------|--------------------------------|----------------|---|
|                                     |                                |                | <p>being Table 9.3.1.3.9 and Table 9.3.1.3.10;</p> <ul style="list-style-type: none"> <li>• Amend 9.3.8 Industry Uses Code to include the provisions from the SPP resulting in provisions PO8 and associated AO8 in Table 9.3.8.3.1 as well as the inclusion of new tables being Table 9.3.8.3.3 and Table 9.3.8.3.4;</li> <li>• Amend 9.3.10 Multi-unit Residential Code to include the provisions from the SPP resulting in provisions PO19 and associated AO19 in Table 9.3.10.3.1 as well as the inclusion of new tables being Table 9.3.10.3.7 and Table 9.3.10.3.8;</li> <li>• Amend 9.3.14 Rural Uses Code to include the provisions from the SPP resulting in provisions PO12 and associated AO12 in Table 9.3.14.3.4 as well as the inclusion of new tables being Table 9.3.14.3.7 and Table 9.3.14.3.8;</li> <li>• Amend 9.4.3 Reconfiguring a Lot Code to include the provisions from the SPP resulting in provisions PO14 and associated AO14 in Table 9.4.3.3.1 as well as the inclusion of new tables being Table 9.4.3.3.6 and Table 9.4.3.3.7;</li> <li>• Amendment to 9.4.6 Works, Services and Infrastructure Code to include the provisions from the SPP resulting in provisions PO1 and associated AO1 in Table 9.4.6.3.4 as well as the inclusion of new tables being Table 9.4.6.3.6 and Table 9.4.6.3.7;</li> <li>• Amendment to Section 3.3.2.6 by removing reference to “strategic cropping land (SCL) and potential strategic cropping land (PSCL)” and replacing with Agricultural Land Class A and Class B”;</li> <li>• Amendment to Section 3.4.2.5(c) by removing reference to strategic cropping land (SCL) and potential strategic cropping land (PSCL) and replacing with “ACA Class A and Class B”;</li> <li>• Amendment to Section 3.8.2.2(b)(vi)(A) by removing reference to “strategic cropping land” and replacing with “Agricultural Land Class A and Class B”;</li> <li>• Amendment to the Nature Based Tourism Code section 9.3.11.3, PO3 and AO3 by removing reference to “good quality agricultural land and strategic cropping land (SCL)” from items (a) and (b) of AO3 and replacing with “Agricultural Land Class A and Class B”;</li> <li>• Amendment to Part 1 to include new</li> </ul> |

| Date of adoption and effective date   | Planning scheme version number | Amendment type | Summary of amendments  |
|---|--------------------------------|----------------|--|
|   |                                |                | <p>Mixed Use Zone Precinct MU6 – Maryborough Residential Airpark;</p> <ul style="list-style-type: none"> <li>Update Part 2 to amend wording regarding the Schemes compliance against the SPP in accordance with the Ministers letter dated 9 March 2015 (Attachment 2);</li> <li>Amendment to Schedule 1, Administrative Definitions, Public Safety Definition to refer to correct overlay;</li> <li>Amendment to Schedule 1, Administrative Definitions, Exempt Vegetation Clearing to include “very high” bushfire hazard reference to comply with the SPP;</li> <li>Amendment to Schedule 6, page S6-97 paragraph (2) to correct incorrect table reference; and</li> <li>Consequential amendments to the consolidated contents page to reflect the above changes.</li> </ul>  |
| <p>Adoption Date – 21 October 2015; and</p> <p>Effective Date – 23 October 2015</p> | 5                              | Minor          | <ul style="list-style-type: none"> <li>Amendment to Schedule 2 – Zone Map ZM-002 and ZM-003 to rezone part of Lot 2 on SP268957 from Community Facilities Zone to Mixed Use Zone (Precinct MU6 – Maryborough Residential Airpark).</li> </ul>  |
| <p>Adoption Date – 10 February 2016; and</p> <p>Effective Date – 4 March 2016.</p>  | 6                              | Major          | <ul style="list-style-type: none"> <li>Part 1 correction of typos;</li> <li>Update Part 5 Table of Contents;</li> <li>Amend Table 5.5.18 and Table 5.8.1 to include revised levels of assessment for Uses in the Urangan Harbour Master Plan Area;</li> <li>Update Part 6 Table of Contents;</li> <li>Amend Mixed use zone code to incorporate new Performance Outcomes and Acceptable Outcomes for Precinct MU1 (Urangan Harbour) and include Figure 6.2.18A Urangan Harbour Master Plan, Figure 6.2.18B Urangan Harbour Master Plan Building Heights, Table 602018.3.2 Urangan Harbour Master Plan Sub-Precinct Design and Land Use Intent.</li> <li>Consequential amendments to Mixed use zone code including updated numbering and correction of typos;</li> <li>Amend 9.3.1 Business uses code AO13 to include Table titles;</li> <li>Update Part 9 Table of Contents;</li> <li>Amend 9.3.7 Home based business code to include provisions for small scale commercial activities;</li> <li>Amend 9.3.8 Industry uses code AO8 to include table titles;</li> <li>Amend 9.3.10 Multi-unit residential uses code AO19 to include table titles, correct a typo in PO23 and remove reference to Charlton in AO8;</li> <li>Amend 9.3.13 Residential care</li> </ul> |

| Date of adoption and effective date   | Planning scheme version number | Amendment type | Summary of amendments  |
|---|--------------------------------|----------------|--|
|   |                                |                | <ul style="list-style-type: none"> <li>facility and retirement facility code PO14 to correct a typo;</li> <li>• Amend 9.3.14 Rural uses code AO12 to include table titles;</li> <li>• Amend 9.4.3 Reconfiguring a lot code AO14 to include table titles and correct a typo in PO19;</li> <li>• Amend 9.4.4 Transport and parking code Table 9.4.4.3.4 Minimum on-site parking requirements;</li> <li>• Amend 9.4.6 Works, services and infrastructure code Table 9.4.6.3.4 AO1 to include table titles;</li> <li>• Correct Schedule 1 typo in Rooming Accommodation definition;</li> <li>• Amend SC1.4 Administrative definitions to include a definition for “Bedroom and amend numbering.</li> <li>• Update Schedule 2.1 Map index to include the Mixed Use Zone Precinct MU1 Sub-Precinct Map ZPM-001;</li> <li>• Include the Mixed Use Zone Precinct MU1 Sub-Precinct Map ZPM-001 in SC2.2 Zone Maps;</li> <li>• Amend Schedule 6 Table of Contents;</li> <li>• Update SC6.1 Planning Scheme Policy Index;</li> <li>• Include SC6.6 Planning Scheme Policy for the Urangan Harbour Master Plan;</li> <li>• Update consolidated Table of Contents;</li> <li>• Amendment to Schedule 2 – Zone Maps: <ul style="list-style-type: none"> <li>– Rezone Lots 8, 9, 10 and 11 on RP700096 from Sport and Recreation Zone to Low Density Residential Zone;</li> <li>– Rezone Lot 2 on RP159084 from Rural Zone to Sport and Recreation Zone.</li> <li>– including the entire Urangan Boat Harbour Master Plan area within the “Mixed Use Zone”;</li> </ul> </li> <li>• introduce ZPM-001 Mixed use zone precinct MU1 sub-precinct map into Schedule 2;</li> <li>• Amend 9.3.11 Nature based tourism code PO3 to remove reference to superseded SPP terminology.</li> </ul> |
| <p>Adoption Date – 10 February 2016; and</p> <p>Effective Date – 4 March 2016</p> | 6                              | Minor          | <ul style="list-style-type: none"> <li>• Amendments to Schedule 2 – Zone Maps: <ul style="list-style-type: none"> <li>– Rezone Lots 1-41 on SP276110 from Emerging community zone to Low density residential zone.</li> <li>– Rezone part of Lot 3 on SP257055 from Emerging community to Medium density residential.</li> </ul> </li> <li>• Amendments to Schedule 2 – Overlay Maps:</li> </ul>   |

# Appendix 2

| Date of adoption and effective date  | Planning scheme version number | Amendment type | Summary of amendments   |
|--|--------------------------------|----------------|---|
|  |                                |                | <ul style="list-style-type: none"> <li>- Biodiversity areas, waterways and wetlands overlay map</li> <li>- Bushfire hazard overlay map</li> <li>- Coastal protection overlay map</li> <li>- Infrastructure overlay map</li> <li>- Flood hazard overlay map</li> <li>- Heritage and neighbourhood character overlay map</li> <li>• Update SC2.1 Map Index.</li> </ul>  |
| <p>Adoption Date – 27 July 2016; and</p> <p>Effective Date – 8 August 2016</p> | 7                              | Major          | <ul style="list-style-type: none"> <li>• Table 1.2.4 Development codes add “(aa)Ship-sources pollutants reception facilities in marinas code”.</li> <li>• Part 5 Tables of Assessment: <ul style="list-style-type: none"> <li>- Add Self- contained recreational vehicle ground within an existing Tourist park Self assessable in the Low density residential zone, Medium density residential zone, High density residential zone, Low impact industry zone (Precinct LII1 City Reach), Open Space zone and Rural zone;</li> <li>- Add Nature based tourism – self-contained recreational vehicle ground as Self assessable if located on Council owner or controlled land in the Open space zone and Community facilities zone;</li> <li>- Add Nature based tourism – self-contained recreational vehicle ground as Self assessable if located in the Environmental management and conservation zone and the Limited development (constrained land) zone;</li> <li>- Add “Community use” as Code assessable where not otherwise specified in the table for Sport and recreation zone, open space zone;</li> <li>- Add Assessment criteria to table 5.5.19 Rural zone for Nature based tourism “Nature-based tourism code (if Self-contained recreational vehicle ground only)”;</li> <li>and</li> <li>- Amend Table 5.5.9 Medium impact industry zone Assessment criteria for Service station to state “Medium industry impact zone code”.</li> </ul> </li> <li>• Add Table 9.3.11.3.2 Criteria for self-assessable and assessable development (Self-contained recreational vehicle grounds only) to 9.3.11 Nature-based tourism code.</li> <li>• Add Table 9.3.12.3.2 Criteria for self-assessable and assessable development – Self-contained recreational vehicle ground within an existing Tourist park to 9.3.12</li> </ul> |

| Date of adoption and effective date | Planning scheme version number | Amendment type | Summary of amendments   |
|-------------------------------------|--------------------------------|----------------|---|
|                                     |                                |                | <p>relocatable home park and tourist park code.</p> <ul style="list-style-type: none"> <li>• Transfer provisions from 9.4.5 Vegetation management code to the 8.2.4 Biodiversity areas, waterways and wetlands overlay code.</li> <li>• Amend 9.3.4 Dual occupancy code Table 9.3.4.3.1 AO12 and Table 9.3.4.3.2 AO5 Flood immunity provisions.</li> <li>• Amend 9.3.5 Dwelling house code Table 9.3.5.3.2 AO1 Flood immunity provisions.</li> <li>• Add Access design and construction provisions to 9.3.5 Dwelling house code Table 9.3.5.3.2.</li> <li>• Add provisions for Movement and illumination to 9.4.1 Advertising devices code Table 9.4.1.4.1 P02.</li> <li>• Amend 9.4.1 Advertising devices code Table 9.4.1.4.1 AO14.3 (b) to state “erected only on land not in a residential zone or a rural residential zone.</li> <li>• Add provisions for site access PO10 to 9.4.3 Reconfiguring a lot code Table 9.4.3.3.</li> <li>• Add definitions for “Self-contained recreational vehicle ground” and “Self-contained vehicle” to SC1.4 Administrative definitions.</li> <li>• Amend Table SC1.4.2 Administrative definition for: <ul style="list-style-type: none"> <li>- “Recommended flood level” to remove reference to superseded State Planning Policy references; and</li> <li>- Gross leasable floor area.</li> </ul> </li> <li>• Amendments to Schedule 2 – Zone Maps: <ul style="list-style-type: none"> <li>- Rezone Lots 147- 151 and Lots 154-156 on RP69338, and Lots 40-41 and Lot 74 on RP72195 from Limited Development (constrained land) zone to Low density residential zone; and</li> <li>- Rezone Lot 5 on SP279697 and Lot 3 on SP257049 from Emerging community zone and Rural zones to Environmental Management and Conservation.</li> </ul> </li> <li>• Amend ZPM-001 Mixed use zone sub-precinct map to include missing labels.</li> <li>• Amendments to Schedule 2 – Overlay Maps: <ul style="list-style-type: none"> <li>– Bushfire hazard overlay map.</li> <li>– Coastal protection overlay map.</li> <li>– Infrastructure overlay map.</li> <li>– Heritage and neighbourhood character overlay map.</li> </ul> </li> <li>• Update SC2.1 Map Index.</li> <li>• Consequential amendments to the</li> </ul> |

| Date of adoption and effective date  | Planning scheme version number | Amendment type  | Summary of amendments   |
|--|--------------------------------|---|---|
| Adoption Date – 7 September 2016; and<br>Effective Date – 19 September 2016. | 8                              | Minor   | <ul style="list-style-type: none"> <li>• consolidated contents pages, etc., to reflect the above changes.</li> <li>• Amendments to Schedule 6.3 Planning scheme policy for development works.</li> <li>• Updates to Flood Hazard Overly Map OM-008.1 and OM-008.2.</li> </ul>   |
| Adoption date – 24 May 2017<br>Effective date - 3 July 2017                  | 9                              | LGIP and Administrative Amendments  | <ul style="list-style-type: none"> <li>• Replacement of all of Part 4 contents with the Local Government infrastructure plan.</li> <li>• Replacement of all Schedule 3 contents with the Local Government infrastructure plan mapping and tables.</li> <li>• Replacement of all references to “Priority Infrastructure Plan” with “Local Government infrastructure plan”.</li> <li>• Update the main table of contents.</li> </ul>  |
| Adoption date – 14 June 2017<br>Effective date – 3 July 2017                 | 9                              | Alignment Amendment   | <ul style="list-style-type: none"> <li>• Alignment amendments in accordance with the Alignment Amendment rules and Section 293 of the Planning Act 2016 including: <ul style="list-style-type: none"> <li>- Replacing terminology from the repealed Act with terminology and references consistent with the Planning Act 2016.</li> <li>- Transfer of concepts from the Strategic framework to the following codes: <ul style="list-style-type: none"> <li>• High Density residential zone code</li> <li>• Principal centre zone code</li> <li>• District centre zone code</li> <li>• Local centre zone code</li> <li>• Mixed use zone code</li> <li>• Specialised centre zone code</li> <li>• Maryborough principal activity centre local plan code</li> <li>• Pialba principal activity centre local plan code</li> <li>• St Helens emerging community local plan code</li> <li>• Agricultural land overlay code</li> <li>• Business uses code</li> </ul> </li> <li>- Updates to Schedule 1 Definitions to reflect the Planning Regulation 2017.</li> </ul> </li> </ul> |
| Adoption date – 25 July 2018<br>Effective date – 13 August 2018              | 10                             | Interim LGIP, Qualified State Interest, Minor and Administrative Amendments | <ul style="list-style-type: none"> <li>• Inclusion of Richard Charles Drive, from Main Street to Kawungan Way/Urraween Road Extension intersection, as a “Future Major Collector” trunk road.</li> <li>• Specific outcomes for renewable energy and coastal environment added to Part 3.</li> <li>• Amend Part 5 Tables of</li> </ul>   |

| Date of adoption and effective date | Planning scheme version number | Amendment type | Summary of amendments  |
|-------------------------------------|--------------------------------|----------------|--|
|                                     |                                |                | <p>assessment:-</p> <ul style="list-style-type: none"> <li>- Outdoor sales assessment benchmarks</li> <li>- Market now "accepted subject to requirements"</li> <li>- Operational Work for tidal work</li> <li>- Alignment with updates to part 8 Overlays</li> <li>• Part 6 – clarified LGIP densities in the Low, Medium, High density residential and Rural Residential zone codes.</li> <li>• Part 8 - Input reference to Planning Scheme Policy for development works (Table SC6.3.5.4d (updated)) into Coastal Hazard Overlay and Flood Hazard Overlay Code.</li> <li>• Amend the following:- <ul style="list-style-type: none"> <li>- 9.3.4 Dual Occupancy code, clarification in LDR1 Precinct and Mixed use zone</li> <li>- 9.3.17 Telecommunications facility code, new performance and acceptable outcomes</li> <li>- 9.4.3 Reconfiguring a Lot code, connection to sewer and water, requirements for further reconfiguration</li> </ul> </li> <li>• Schedule 1 – clarification of 'Exempt Vegetation Clearing'.</li> <li>• Schedule 4:- <ul style="list-style-type: none"> <li>- SC4.1 – Updated to include recent approvals</li> <li>- SC4.2 – Updated to reflect 1 March 2017 infrastructure charges resolution</li> </ul> </li> <li>• Schedule 5 – Included new designations.</li> <li>• Schedule 6:- <ul style="list-style-type: none"> <li>- Updates to SHC 01 drawing</li> <li>- 4.5 minimum verge width for truncations</li> </ul> </li> <li>• Alignment State Planning Policy (SPP) July 2017:- <ul style="list-style-type: none"> <li>- 8.2.3 Airport and Aviation facilities overlay code</li> <li>- 8.2.6 Coastal protection overlay code</li> <li>- 8.2.11 Water Resource Catchments overlay code</li> </ul> </li> <li>• Alignment with <i>Planning Regulation 2017</i>; Part 6 Zone purpose. statements alignment.</li> <li>• Updated Overlay Maps:- <ul style="list-style-type: none"> <li>- Airport and Aviation Facilities (reflect SPP)</li> <li>- Biodiversity Areas, Waterways &amp; Wetlands (reflect SPP)</li> <li>- Bushfire Hazard (admin updates)</li> <li>- Coastal Protection (reflect SPP)</li> <li>- Extractive Resources (Add Yerra Rd KRA)</li> </ul> </li> </ul> |

| Date of adoption and effective date  | Planning scheme version number | Amendment type  | Summary of amendments  |
|--|--------------------------------|-----------------|--|
|  |                                |                 | <ul style="list-style-type: none"> <li>- Heritage and Neighbourhood Character (reflect State and Local updates)</li> <li>- Infrastructure Overlay (reflect DTMR noise corridor updates)</li> <li>- Water Resource Catchments (reflect SPP)</li> <li>• ZM-001, ZM-002, ZM-003 – Planning Zones Map - Rezoning amendments.</li> <li>• Updated Mapping DCDB errors.</li> <li>• Figures 9.4.4A to 9.4.4F (2031 Strategic Transport Network) – reflects newly constructed roads.</li> <li>• Update main table of contents.</li> <li>• Amend spelling, typographical and formatting errors.</li> </ul> |
| <p>Adoption date – 28 August 2019</p> <p>Effective date – 9 September 2019</p> | 11                             | Minor Amendment | <ul style="list-style-type: none"> <li>• Update OM-008.1 and OM-008.2 Flood Hazard Overlay Maps</li> </ul>   |