



***ESK SHIRE COUNCIL***

***July 2007***

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**PLANNING SCHEME POLICY 13  
DEVELOPMENT PROCEDURES**

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# Document Control

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### 1.0 DEVELOPMENT APPLICATIONS PROCEDURES AND SUPPORTING DOCUMENTATION

- (i) All applications are to be in accordance with the IDAS provisions contained within the Integrated Planning Act 1997.
- (ii) This section contains additional information to assist in the preparation of a development application.

#### 1.1 DEVELOPMENT ASSESSMENT REVIEW TEAM MEETING

- (i) If required an applicant may request a DART meeting to seek clarification on development assessment issues from council prior to the lodgement of a development application.
- (ii) Council are to be notified with sufficient time prior to the meeting of any information or reports they will be required to bring to the meeting. E.g. Available traffic or drainage reports or existing standard of construction of road frontage and connecting system.
- (iii) Council may clarify the key issues of the development needed to be addressed in the development application and will provide necessary information needed to respond to relevant codes.
- (iv) Refer to the Pre Design Meeting Section for possible key issues.
- (v) Any clarification of the level of detail of the supporting documents may also be confirmed.

#### 1.2 DEVELOPMENT APPLICATION SUPPORTING DOCUMENTS

If an Engineering Report is required to accompany a Reconfiguration of Lot or Material Change of Use Application this section details the minimum information required to be provided.

##### 1.2.1 Physical Characteristics of the Subject Land

- (i) Topography: Slope, Elevation.
- (ii) Geotechnical characteristics.
- (iii) Hydrology: Catchment Area(s), Drainage flow paths.
- (iv) Nature and extent of vegetation.

##### 1.2.2 Access

- (i) The nature of existing roads (those both immediately adjoining and those providing access to the nearest "collector" or higher standard road).
- (ii) Information should detail nature of construction, width of pavements, whether kerb and channelling is present or not, intersection details, etc.
- (iii) Having regard to the potential traffic volumes generated by the proposal, and the nature of the existing road system, whether there is a need for a Traffic Engineering Report as determined by Council, Queensland Transport or Department of Main Roads as applicable.

##### 1.2.3 Traffic Engineering Report

- (i) The nature of the existing road system servicing the property.
- (ii) An outline of any existing Traffic Studies affecting the applicable area, undertaken by Council or other bodies.
- (iii) Assessment of the adequacy of the existing receiving road system to cater for the additional traffic flows generated by the proposed development, and proposed solutions, where required.
- (iv) Assessment of whether or not the traffic volumes generated would result in the need for a noise attenuation barrier.

#### **1.2.4 Water Supply**

- (i) Location, sizes and nature of the nearest existing water supply reticulation.
- (ii) Location and nature of existing “headworks” or “external works” infrastructure servicing the site.
- (iii) Assessment of the adequacy of the existing infrastructure, particularly in elevated areas, to satisfy the demands of the project, and the need and nature of any new or augmented works or services (including system “head” and flows and delivery main sizes based on a broad scale network analysis).
- (iv) Outline of any existing Council water supply strategy for the area, and the extent to which the proposal is consistent with or differs from such strategy, as applicable.
- (v) Information not available by Council will need to be obtained by the applicant.

#### **1.2.5 Sewerage Services**

- (i) Location, sizes and nature of existing sewerage infrastructure servicing the land.
- (ii) Assessment of the adequacy of the existing infrastructure to satisfy the demands of the project, and the need and nature of any new or augmented works or services, including treatment facilities, pump stations and rising mains, and trunk mains.
- (iii) Outline of any existing Council sewerage strategy for the area, and the extent to which the proposal is consistent with or differs from such strategy, as applicable.
- (iv) Information not available by Council will need to be obtained by the applicant.

#### **1.2.6 Stormwater**

- (i) Unless provided for in an existing strategy it is necessary to determine the Q<sub>100</sub> level in the stream/waterway adjacent to a proposed development, incorporating an impact study detailing pre and post development scenarios.
- (ii) The study will then be utilised to determine the infrastructure requirements and the minimum building pad levels of the development.
- (iii) Where fill is to be placed within the flood plain it will be necessary to verify that the placement of fill will not detrimentally affect any existing flooding upstream or downstream of the development by analysing the existing and developed cases.
- (iv) Review any flood studies which have been previously undertaken within the relevant catchment.
- (v) Identification of potential flooding impact from Q<sub>50</sub> and Q<sub>100</sub> floods, where applicable.
- (i) Assess impact of stormwater discharge from the proposed development on downstream and adjacent properties.
- (ii) Identify legal point of downstream discharge and whether there is a need for any intervening easements or drainage reserves.
- (iii) If retardation or detention basins are proposed, identify location and assess required size/capacity, and whether intended to be “wet” or “dry”.
- (iv) Outline means to protect/enhance water quality.
- (v) Refer to the Operational Works Supporting Documents section of this manual for Stormwater Hydraulic Report and Stormwater Management Plan detail requirements.

#### **1.2.7 Other Services**

Detail the nature and extent of existing services (e.g. Power, Telecommunications, Lighting, Gas, etc) and the need arising from the project for extended, augmented, or additional services, as appropriate.

#### **1.2.8 Council Contributions**

From information provided by council identify the extent, and provide budget opinion of costs, for proposed Council Contributions that will be applicable to: compensation for land resumption; provision of headworks infrastructure; or for the provision of services that are larger than that required by Council policy.

### **1.2.9 Developer Contributions**

Identify the extent, and provide budget opinion of costs, for proposed Developer Contributions that will be applicable to: parks & open space; car parking; road construction; or the provision of water, sewer & stormwater headworks infrastructure. Particular attention should be paid to providing sufficient and accurate information for the proper calculation of headworks contributions for development proposals that entail land uses not specifically detailed in Council's Headworks Policies.

### **1.2.10 Infrastructure Capacities**

Where Council is unable to provide information relating to the location and capacity of existing infrastructure, the Developer will be required to provide this information and, where necessary, upgrade the existing infrastructure within the following limitations:

- (i) Water: from the intersection with the closest trunk main identified in Council's strategy or the closest 225mm diameter main where no strategy exists.
- (ii) Sewerage: from the first downstream pumping station [including pump capacity], or trunk main defined in Council's policy.
- (iii) Stormwater: downstream to the legal point of discharge and only that part of the catchment upstream of the development.
- (iv) Roads: to the intersection with the closest collector road, and intersection upgrading as identified in global strategy analysis to be prepared at the Developer's expense.

### **1.2.11 Ecological Assessment**

Refer to the Environment Section of the Development Manual for Ecological Assessment detail requirements.

### **1.2.12 Environmental Management Plan**

Refer to the Environment Section of the Development Manual for Environmental Management Plan detail requirements.

### **1.2.13 Good Quality Agricultural Land**

If an application involving land identified as or adjoining good quality agricultural land – information in accordance with State Planning Policy 1/92 Planning Guidelines – The Identification of Good Quality Agricultural Land and State Planning Policy 1/92 Planning Guidelines – Separating Agricultural and Residential Land Uses.

### **1.2.14 Water Quality - Stormwater Management Plan**

Refer to the Operational Works supporting documents section of this manual for Stormwater Management Plan detail requirements.

### **1.2.15 Scenic amenity**

To assist in the assessment of impacts on areas identified in the Lockyer Scenic Amenity Study as having state or regional scenic amenity significance. Council may require a report evaluating the impacts of development on scenic amenity, economic, social and environmental outcomes in accordance with the guidelines established in the study.

### **1.2.16 Acoustic**

To assist in the assessment of impacts on acoustic amenity within the Shire the Council may require a noise assessment report to be prepared. This report will assist in facilitating appropriate development in the Shire in terms of meeting realistic expectations of acoustic amenity.

### **1.2.17 Hazard Prone Area**

To assist in the assessment of impacts with development in hazard prone areas within the shire the Council may require the following information to be provided:

- (i) the degree of severity of the hazard;

- (ii) flood, bushfire or landslide hazard assessments specific to the development site;
- (iii) how the development is intending to mitigate the affects of the natural hazards; and
- (iv) the impacts of natural hazards on other land due to the development.

## **2.0 OPERATIONAL WORKS APPLICATION PROCEDURES AND DOCUMENTATION STANDARDS**

- (i) All applications are to be in accordance with the provisions contained within the Integrated Planning Act 1997.
- (ii) This section contains additional information to assist in the preparation of a operational works application.

### **2.1 PRE-DESIGN MEETING WITH COUNCIL**

#### **2.1.1 Purpose**

- (i) The aim of the consulting engineers meeting with Council prior to the commencement of detailed design is for Council to agree to the approach taken by the engineers to satisfy the conditions of the development approval. The agreement sets the extent and method of the analysis required, but is subject to the analysis proving an acceptable outcome.
- (ii) If the development does not require a formal meeting then it is the engineer's responsibility to obtain formal approval for any non-standard designs, materials, or construction methods proposed for the development.
- (iii) All site specific details including non-conformance items are to be stated in the engineering summary lodged with the plans at the Operational Works Application, irrespective of the Council agreement at the pre-design meeting.
- (iv) The applicant is to record the outcome of the meeting in dot point minutes which are summarised to clarify with council at the conclusion of the meeting. This record is to accompany the future operational works application as part of the supporting documentation.

### **2.2 MEETING TOPICS**

#### **2.2.1 General**

- (i) If a Development Assessment Review Team meeting was undertaken prior to the development approval then the minutes are to be reviewed in conjunction with the topics discussed.
- (ii) Refer also to the preliminary design checklist provided in the appendix to this manual.

#### **2.2.2 Stormwater Methodology**

- (i) Proposed Legal Point(s) of Discharge.
- (ii) Adopted Start HGL levels.
- (iii) Compliance with Overall Stormwater Strategy.
- (iv) Non-Standard variables adopted.
- (v) Lot Grading and Interallotment Drainage Layout.

#### **2.2.3 Functional Road Layout Plan**

- (i) Slow point devices.
- (ii) Intersections.
- (iii) Footpaths.
- (iv) Shared Bikeways.

#### **2.2.4 Open Space Contribution**

- (i) Details of the location of Open Space proposed on the site where included or revised to satisfy DA conditions.
- (ii) Details of works proposed on the site where included to satisfy DA conditions.

### **2.2.5 Concept Water Layout Plan**

- (i) Connection Points for Water Reticulation.
- (ii) Non-Standard Alignments or Materials proposed.
- (iii) Network Analysis results.
- (iv) Proposed Pump Station location.
- (v) Allowance made for future connection.

### **2.2.6 Concept Sewer Layout Plan**

- (i) Connection Points for Sewer Reticulation.
- (ii) Non-Standard Alignments or Materials proposed.
- (iii) Sewer Capacity Calculations.
- (iv) Proposed Pump Stations and Rising Main location.
- (v) Allowance made for future connection.

### **2.2.7 Addressing of Conditions of the Development**

- (i) Any non-standard method of satisfying a condition imposed on the site.
- (ii) Preliminary design of safety structures to wet detention basins.

### **2.2.8 Non-standard Designs resulting from Site Constraints**

Any site specific constraints and the resulting the proposed non-standard design is to be table for consideration and discussion of the viability of the solution.

### **2.2.9 External Infrastructure Works**

- (i) External Infrastructure works identified in the approval conditions are to be reviewed for completeness with their associated credits.
- (ii) External Infrastructure works required for the development which were not detailed in the approval conditions are to be identified by the developer with an application for council to review the works for completeness and their associated credits.

## **2.3 OPERATIONAL WORKS PLAN DETAIL REQUIREMENTS**

### **2.3.1 General Detail Requirements**

All engineering plans drawn on standard size sheets, as follows:

- (i) Size Overall Dimensions: (one set of each is required until plans are approved, refer to approved plans section for post approval requirements)
  - A1 841mm x 594mm – normal maximum size
  - A3 420mm x 297mm
- (ii) The following Scales are to be used:
  - Plans – 1:1000 or 1:500;
  - Longitudinal section:
    - horizontal 1:1000 and vertical 1:100; or
    - horizontal 1:500 and vertical 1:50;
  - intersection details – 1:250;
  - Cross-sections:
    - Existing and new road reserve – horizontal 1:100 and vertical 1:100;
- (iii) All linear dimensions on plans to be in metres;
- (iv) Standard pegging intervals as follows:
  - roadworks, centrelines (or other construction lines) are to be pegged and levelled at 20m intervals, with further division to 10m to 5m intervals, where necessary, owing to horizontal or vertical curvature;
  - for stormwater and roofwater drainage, at all manhole positions and major changes in topography;
  - chainage on plans to be expressed to 0.01m;

- levels to be reduced to Australian Height Datum and expressed to three decimal places of a metre.

### **2.3.2 Roadworks, Stormwater and Roof Drainage Detail Requirements**

Plans are to include the following information:

- (i) title block;
- (ii) locality plan, including the location of the subdivision in relation to adjacent main roads, major streets, etc;
- (iii) layout and stage plan;
- (iv) a plan of each new road, including:
  - road reserve boundaries;
  - allotment boundaries, both existing and proposed;
  - centreline, or other construction line;
  - chainages, on centre-line or construction line or set out coordinates;
  - bearings of the centreline or construction line (if used);
  - offsets, if the construction line is not the centre line;
  - tangent point chainages or coordinates of each curve;
  - radius of each curve, tangent length, deflection angle and length of curve;
  - centreline and bearing of each intersecting road;
  - chainage or coordinates of the intersection point of road centrelines;
  - kerb lines, kerb radii and chainage or coordinates of all tangent points of the kerb line;
  - edge of pavement, where no kerb is to be constructed;
  - dimensioned road reserve, footpath and pavement widths;
  - location and details of signs and roadmarkings to be provided;
  - drainline locations, diameters and class of pipe;
  - manhole location, chainage and offset or coordinates and inlet and outlet invert levels;
  - gully locations, chainage and offset or coordinates and invert and kerb levels;
  - location and levels of existing utilities or other existing works within the site;
  - limits and levels of lot filling or excavations;
  - location and levels of bench marks and reference pegs;
  - north point; and
  - footpaths and combined cycleways/footpaths;
- (v) a detailed plan of each intersection, including all the relevant information required for plans of each new road, as listed in above, together with additional details such as kerb levels on kerb returns (i.e. at tangent points plus 3 additional points on curve at equal intervals with max. interval 5m), pavement contours (0.2m vertical intervals) and channelisation works;
- (vi) longitudinal section of each road, including:
  - chainages;
  - existing surface or peg levels;
  - design road centreline and top of kerb levels;
  - cut or fill depths;
  - design grades – minimum 0.5% and radii of vertical curves;
  - chainage and levels of grade intersection points;
  - chainage and levels of tangent points of vertical curves;
  - length and radii of vertical curves; and
  - details of super elevation where applicable;
- (vii) standard cross-sections for each road including:
  - road reserve width;
  - pavement widths;
  - footpath widths;
  - crossfalls of pavement and footpaths;
  - pavement depth;

- type of kerb and channel; and
- type of pavement surfacing;
- (viii) cross sections of each road are to be drawn such that the maximum interval between cross sections does not exceed 20m, including top of ridge and bottom of gully and:
  - road reserve boundaries with labels - i.e. northern property boundary;
  - pavement centre-line (or other construction line);
  - natural surface;
  - design cross-section;
  - crossfall of pavement and footpath, pavement and footpath widths, and pavement depths wherever these differ from the standard cross-section;
  - where design is for a road in an existing road reserve, the design cross-section must show the existing profile and ultimate profile for the full reserve width;
- (ix) longitudinal section of each drainline is to be drawn along the centreline of the drainline and show:
  - chainages;
  - existing surface levels;
  - proposed surface level;
  - design invert levels, obvert level and hydraulic gradeline;
  - manhole chainages and inlet and outlet invert levels;
  - distances between manholes;
  - grade of each pipe;
  - diameter of each pipe length; and
  - class of each pipe length.

### **2.3.3 Drainage Detail Requirements**

Plans are to include the following information—

- (i) drainage calculations and catchment plans for drainage design prepared in accordance with QUDM are to be submitted with the engineering plans, including the minor and major drainage systems, all drainage structures and drainage channels and a separate table showing the extent of the 1 in 100 Average Recurrence Interval (ARI) flow width in roadways;
- (ii) for developments which are likely to have a significant adverse impact on water quality, detailed working plans and specifications of the water quality control structures or works outlined in the Local Government approved Water Quality Management Plan.

### **2.3.4 Erosion and Sediment Control Plan Detail Requirements**

- (i) an Erosion and Sediment control program including plans and specifications is to be prepared for both temporary and permanent control of sediments, erosion and gross pollutants;
- (ii) the erosion and sediment control plan is to be prepared in accordance with the Erosion and Sediment Control Policy and Operational Guidelines outlined in the Institution of Engineers, Australia (Qld) "Soil Erosion and Sediment Control", Engineering Guidelines for Queensland Construction Sites, June 1996.
- (iii) The erosion and sediment control plan is to show the following information—
  - the site's existing topography (i.e. site boundaries, controls, drainage paths, discharge point);
  - how and where it will be altered (i.e. any stockpile areas, proposed construction works);
  - the sediment and erosion control measures that are proposed to be used (marked distinctively on the plan);
  - the catchment boundaries and the direction of flow for the different drainage areas before and after development;
  - the stormwater management system proposed.

### **2.3.5 Cut or Fill Areas**

- (i) proposed fill areas and cut areas are to be shown on the engineering plans and any significant fill or cut batters (i.e. steeper than 1:6 slope and greater than 0.8m in height) are to be covered by a separate Consultant's certification with respect to stability and erosion;
- (ii) where cut or fill areas are adjacent to boundaries with existing residential or commercial uses, development cross-sections showing the batter or retaining wall in relation to the adjoining land use are to be shown on the engineering plans;
- (iii) the effects on the drainage of adjoining properties of any cut or fill operation is to be considered and details shown on the engineering plans.

### **2.3.6 Contaminated Soils**

- (i) any areas of soil known to be contaminated and required to be removed is to be shown on the Engineering plans;
- (ii) specific details are to be provided of the means of removal or treatment of the contaminated soil.

### **2.3.7 Water Reticulation Detail Requirements**

Plans are to include the following information:

- (i) title block, including:
  - estate name (if any);
  - real property description;
  - locality;
  - developer's name;
  - scales – bar scales;
  - plan number and sheet number;
  - schedule and date of amendments;
  - signed design certification by a Registered Professional Engineer (RPEQ);
  - street names (where applicable);
  - locality plan, including the location of the subdivision in relation to adjacent main roads, main street, etc; and
  - layout and stage plan;
- (ii) layout and water reticulation plan, including:
  - road reserve boundaries;
  - allotment boundaries, both existing and proposed;
  - kerb lines, or pavement edge where there is no kerb;
  - location and levels of other utility services where affected by the water reticulation works;
  - limits and levels of allotment filling or excavations;
  - location and levels of bench marks and reference pegs;
  - north point;
  - location of concrete footpaths;
  - layout and conduits;
  - schedule of pipes and fittings to be used; and
  - electrical layout and conduits as approved by Energex and the Local Government.

### **2.3.8 Sewerage Reticulation Detail Requirements**

Plans are to include the following information:

- (i) title block, including:
  - estate name (if any);
  - real property description;
  - locality;
  - developer's name;
  - scales – bar scales;
  - schedule and date of amendments;

- signed design certification by a Registered Professional Engineer (RPEQ); and
- street names (where available) and lot numbers;
- (ii) locality plan, including the location of the subdivision in relation to adjacent main roads, major streets etc;
- (iii) layout and stage plan;
- (iv) layout and sewerage reticulation plan, including:
  - road reserve boundaries;
  - allotment boundaries,
  - both existing and proposed;
  - location of all existing and proposed services;
  - location of all existing and proposed sewer lines and manhole locations;
  - location of all house connection branches;
  - contours at one metre intervals (for terrains of less than 2% contours at 0.5m intervals are required);
  - kerb lines or edge of pavement where no kerb exists;
  - north point;
  - roofwater drainage layout; and
  - PSM or reference point and level;
- (v) longitudinal sections of sewer lines, including:
  - chainages;
  - existing surface levels;
  - finished surface levels and depth to invert;
  - design sewer invert levels;
  - design top of Manhole levels;
  - type of manhole;
  - type of manhole cover;
  - house connection branch location, type, invert level;
  - invert level of any connection of the private drainage system to the street drainage system;
  - type of pipe, class, diameter and gradient; and
  - bulkheads (where required).

### **2.3.9 General List of Civil Plans Required to be Submitted**

Refer to the Checklists in the Appendix of this manual for detail requirements for each of the following plans to be submitted as applicable for any development.

- (i) Locality Plan
- (ii) Project Notes
- (iii) Erosion and Sediment Control Plan
- (iv) Earthworks Plan
- (v) Roadworks Plan
- (vi) Intersection Details Plan
- (vii) Roadworks Longitudinal Sections
- (viii) Roadworks Cross Sections
- (ix) Stormwater and Interallotment Drainage Plan
- (x) Stormwater Drainage Longitudinal Sections
- (xi) Interallotment Drainage Longitudinal Sections or Tables
- (xii) Stormwater Calculations Table
- (xiii) Stormwater Manhole and Culvert Details
- (xiv) Sewerage Reticulation Plan
- (xv) Sewer Pump Station Plan
- (xvi) Sewerage Reticulation Longitudinal Sections
- (xvii) Sewer Rising Main Longitudinal Sections
- (xviii) Water Reticulation Plan
- (xix) Water Pump Station Plan

### **2.3.10 Civil Details Required to be Submitted, as applicable**

- (i) stormwater outlet structures, other than standard headwalls;
- (ii) gross pollutant traps;
- (iii) surcharge structures;
- (iv) overland drainage paths;
- (v) sewer pump stations showing all relevant levels for pumps, etc;
- (vi) any structure not satisfactorily detailed in a Council Standard Drawing;
- (vii) structural details of any retaining walls;
- (viii) noise attenuation works; and
- (ix) detention basin drawing are to contain:
  - plan and sectional view;
  - details of basin wall construction;
  - details of low and high level outlets;
  - extent of any permanent storage;
  - maximum level of storage;
  - extent and nature of any landscaping; and
  - safety fencing and barrier details as required.

### **2.3.11 Carpark Plan**

- (i) Numbered car park layout with parking spaces, aisle widths and manoeuvring areas dimensioned.
- (ii) Access locations and dimensions.
- (iii) Wheel stops and traffic control devices.
- (iv) Line marking details.
- (v) Dimensioned pedestrian walkways.
- (vi) Surfacing details.
- (vii) Stormwater drainage details including identification of the overland flow path for the major storm event and collection at access points.
- (viii) Subsoil drainage.
- (ix) Irrigation systems.
- (x) Landscaping details (refer to landscaping design and drafting standards).

### **2.3.12 Landscape Concept Sketches**

- (i) Concept Sketches (reconfigurations)      Scale 1:1000 min
- (ii) Concept Sketches (building)              Scale 1:200 min

### **2.3.13 Environmental Protection Plan**

- (i) Environmental Protection Plans (reconfigurations)      Scale 1:1000 min
- (ii) Environmental Protection Plans (building)              Scale 1:200 min

### **2.3.14 Landscape Working Plan**

- (i) Landscape working drawings are to be adequately detailed to enable accurate construction of the proposed works conforming to the criteria of the Landscaping Design and Construction sections of the Development Manual. They are generally to conform to the format and detail shown on the civil drawings and must show:-
  - All existing or proposed landscape and associated treatments are - including edges, paving, fences, walls, signage, retaining structures, lighting, pillar boxes, street lights/poles, bollards, drainage systems, overland flow paths, culverts, pits, playground equipment, park amenity equipment, landscaping furniture, gazebos, swimming pools, mail boxes, clothes hoists, waste disposal bins, taps, etc;
  - Planting Plans with plant canopies clearly grouped, coded and referenced to the plant schedule;
  - Irrigation plans showing the mains connection meters/valves, back flow prevention, power connection point, irrigation controller, valves, filters, pumps,

- chemical injectors, sprinklers, emission devices, sensing devices, layout of all pipe work and wiring including conduits/crossings;
  - Areas where access is limited or restricted due to environmental considerations or vegetation preservation requirements including notations to define and protect these areas;
  - Earthworks cut/fill profile with levels noted;
  - Any specific vegetation or areas of vegetation that are proposed to be removed including relevant notations describing the removal process, where filling exceeds 300mm council assumes vegetation will require removal;
  - Schematic location of all existing and proposed services in the vicinity of the landscape works (e.g. water, sewer, stormwater, telecom, power);
  - Drawing notations which illustrate all landscape treatments where required by Council for construction details, installation procedures, product type and quality descriptions;
  - Subsoil drainage details;
  - Shade tree calculation workings;
  - Landscape area details; and
  - Root Guard details, where applicable.
- (ii) Any amendments to the design plans specified by Council are to be clearly identified on the drawing and/or in the revision block of the drawing prior to resubmission for approval.
- (iii) The operational works may be approved and conditioned subject to satisfactory landscaping approval should the approval be ready prior to the scrutiny of the submitted Landscape Design.
- (iv) Landscaping in accordance with the approved plan is to be completed to Council's satisfaction prior to the issue of a Certificate under the Building Act of 1975 or the use of the land for the proposed purpose. Landscaping will be accepted as bonded where necessary due to construction constraints.
- (v) Schematic Layout Details (Reconfigurations)      Scale 1:500 min  
 Schematic Layout Details (Buildings)              Scale 1:200 min  
 Complex Planting Details                                Scale 1:100 min  
 Specification and Construction Details              Scale 1:50 min

**2.3.14.1 Table – Landscaping Detail Requirements for Building Development Types**

| LANDSCAPING DETAILS REQUIRED TO BE SHOWN ON A LANDSCAPE PLAN ACCORDING TO DOCUMENT TYPE  | PROPOSED DEVELOPMENT            |                     |                    |              |   |
|--|---------------------------------|---------------------|--------------------|--------------|---|
|  | DWELLING (not exempt) OR DUPLEX | ACCOMMODATION UNITS |                    |              | NON-RESIDENTIAL e.g. INDUSTRIAL or COMMERCIAL |
|  |                                 | LESS THAN 10 UNITS  | MORE THAN 10 UNITS |              |   |
|  |                                 |                     | SINGLE STOREY      | MULTI STOREY |   |
| The submission of a site plan drawn to acceptable scale, showing site boundaries, proposed building, existing on-site improvements and north point.  | ✓                               | ✓                   | ✓                  | ✓            | ✓   |
| The location of at least three (3) trees or shrubs existing or to be planted between the street frontage and the building line with at least a minimum of six (6) trees or shrubs on-site. | ✓                               | ✓                   | ✓                  | ✓            |   |
| The location of at least three (3) trees or shrubs existing or to be planted which will grow to height of at least three (3) metres when mature.   | ✓                               | ✓                   | ✓                  | ✓            |   |
| Where at least one (1) tree will be located of a variety existing on the footpath reservation or as nominated by Council.  | ✓                               | ✓                   | ✓                  | ✓            |   |

| LANDSCAPING DETAILS REQUIRED TO BE SHOWN ON A LANDSCAPE PLAN ACCORDING TO DOCUMENT TYPE  | PROPOSED DEVELOPMENT            |                     |                    |              |   |
|--|---------------------------------|---------------------|--------------------|--------------|---|
|  | DWELLING (not exempt) OR DUPLEX | ACCOMMODATION UNITS |                    |              | NON-RESIDENTIAL e.g. INDUSTRIAL or COMMERCIAL |
|  |                                 | LESS THAN 10 UNITS  | MORE THAN 10 UNITS |              |   |
|  |                                 |                     | SINGLE STOREY      | MULTI STOREY |   |
| The location, name, spread and height at maturity of any proposed tree or shrub exceeding a 600mm height or spread.  |                                 | ✓                   | ✓                  | ✓            | ✓   |
| The location and finishing material used in vehicular driveways, parking areas and pedestrian ways.  | ✓                               | ✓                   | ✓                  | ✓            | ✓   |
| The extent of any changes in natural surface levels including cut and fill procedures.   | ✓                               | ✓                   | ✓                  | ✓            |   |
| The extent of ground surface treatment, including recreation feature and associated amenity, eg rockeries, water, stones and plants less than 600mm high at maturity, swimming pool, tennis court.                           |                                 |                     | ✓                  | ✓            |   |
| The location, height and type of structural material used in any fence, screen, bank, terrace or wall existing or proposed on-site or around the property boundary.  |                                 | ✓                   | ✓                  | ✓            | ✓   |
| The location of any refuse collection area.  |                                 | ✓                   | ✓                  | ✓            | ✓   |
| The location of any building on the adjoining allotment within three (3) metres of the common boundary.  |                                 |                     |                    | ✓            |   |
| The location, name, spread and height of any tree or any tree on an adjoining allotment of land within three (3) metres of the common boundary.  |                                 |                     |                    | ✓            |   |
| When parking provisions are located within three (3) metres of a side or rear boundary, the extent and type of solid screen fence at least 1.80m high together with a dense hedge type foliage plantings one (1) metre wide. |                                 | ✓                   | ✓                  | ✓            |   |
| The provision of a 100mm wide mower strip of approved material between any landscaped area and the street alignment.   | ✓                               | ✓                   | ✓                  | ✓            | ✓   |

## 2.4 SPECIFICATION REQUIREMENTS

### 2.4.1 Civil Project Specification

The Project Specification is not submitted or reviewed by Council, it is the responsibility of the consulting engineer to ensure that works are undertaken in accordance with the specification contained within the contract documents and to provide a copy upon request if required during construction. The specification is required to reflect best practices and incorporate modifications as required by this Development Manual and the conditions of approval, Council Local laws, policies and codes and the relevant Australian Standard Codes of Practices and applicable authorities (E.g. Australian Standards, Water Services Association Standards, DMR Standards, etc).

### **2.4.2 Parks and Landscaping Project Specification**

The Landscaping Project Specification is to accompany the operational works submission for approval. The specification is required to reflect best practices and incorporate modifications as required by this Development Manual and the conditions of approval, Council Local laws, policies and codes and the relevant Australian Standard Codes of Practices and applicable authorities (E.g. Australian Standards, DMR Landscape Manual, etc).

### **2.4.3 Scheduled Bill of Quantities**

The detailed bill of quantities for the project civil and landscaping works is to accompany the operational works submission.

## **2.5 OPERATIONAL WORKS APPLICATION SUPPORTING DOCUMENTS**

### **2.5.1 General**

Council will only accept an engineering design submitted by the following:

- (i) a person registered by the Board of Professional Engineers of Queensland (R.P.E.Q.); and
- (ii) the engineer or engineering company submitting the design is to carry minimum insurance cover for Professional Indemnity of \$500,000 and Public Liability of \$5,000,000.

Operational works applications are processed in accordance with the Integrated Planning Act 1997.

### **2.5.2 Document Requirements**

- (i) IDAS application form 1, Parts A and E, and design submission checklist complete with all required attachments, are to be completed and included in the original submission.
- (ii) The design submission checklist summarises Council's minimum requirements as detailed in Council's Policies, the provisions of this Policy, Local Laws and Standards and is to be completed in accordance with the requirements of the development.
- (iii) A Non Compliance Report that is to be completed in the event that some part of the design is not in accordance with the requirements contained herein.
- (iv) The non compliance report assists and expedites Council checking and approval by identifying the nature and number of non-complying items and nominating the consultant's justification for performing the design in that fashion.

### **2.5.3 Assessment by Council**

- (i) Council officers are not responsible 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 Council's standards, acceptable engineering practice and produces a safe and acceptable design.
- (ii) Council's checking will be on an audit basis only.
- (iii) If, however, the audit checking reveals any matters found to have been incorrectly ticked off as being attended to, or, casually attended to, the submission will be returned to the consultant for their resubmission once rectified.
- (iv) A rechecking fee will be levied in these cases.
- (v) Council will hold the applicant and/or their consultant responsible beyond application and construction approval stages if Council discovers that default or negligence has occurred at some stage.
- (vi) In the event that a dispute will arise over design fundamentals the applicant may appoint an independent consultant associated with the Institute of Arbitrators Australia at the applicants own cost in order to help resolve any disputes, however, Council is under no obligation to accept the consultant's advice if it deem the advice not to be in the best interests of the wider community and surrounding environment.

#### **2.5.4 Processing of the Minor Works through Building Application**

- (i) Minor civil site works designs submitted in conjunction with building applications will generally be approved in conjunction with the building application. All commercial and Industrial projects will require a separate operational works application in addition to any building application as triggered by the Planning Scheme.
- (ii) The approval will be subject to amendments or conditions similar to more complex designs.
- (iii) Very minor amendments will however be marked in red on the drawings approved by Council and returned to the applicant for their approval.
- (iv) Council may request further information in order to determine the application.  
Responses is to include:
  - a copy of the letter requesting further information;
  - resubmission fee, if applicable;
  - one (1) copy of each amended drawing/specification with amendments clearly identified;
  - any relevant supporting documentation; and
  - details of any non-conforming design and reasons for proposing its use.

#### **2.5.5 Minutes of the Pre-Design Meeting with Council**

If a Pre-design Meeting was held with Council then the minutes of the meeting recorded by the applicant are to be included in the operational works submission.

#### **2.5.6 Engineering Design Summary**

A brief summary of design methodologies for the different design elements is to be included as applicable to aid the interpretation of the plans for assessment purposes. Where design options differ from outcomes determined in the pre-design meeting, explanations are also to be included.

#### **2.5.7 Stormwater Hydraulic Report Requirements**

- (i) Refer to the Design section for content criteria.
- (ii) The flood study will be required to clearly identify the flood levels and flow velocities of both the existing and developed scenarios.
- (iii) Presentation is to include the following:
  - Catchment Map;
  - Summary of all modelling parameters and assumptions used in the model;
  - Stream flood profile and bed profile for the study area showing cross section locations;
  - Cross sections of the stream and flood plain;
  - Tabulated Calculations of the pre and post developed scenarios;
  - Plan Showing proposed finished surface contours with the flood line interpolated;
  - Q<sub>100</sub> levels are to be shown where the flood line crosses property boundaries; and
  - Copies of the models and all relevant files.
- (iii) Full set of drawings and Calculations are to be submitted for the pre-development and post development drainage strategies.

#### **2.5.8 Stormwater Quality Management Plan Requirements**

- (i) The water quality objectives are to be nominated and the temporary and permanent methods of satisfying these objectives is to be identified utilising the integration of water quantity, water quality and waterway corridor issues into the design.
- (ii) Engineering drawings of the proposed methods of water quality control.
- (iii) Discussion and model calculations which demonstrate the achievement of the objectives.
- (iv) A maintenance plan stating how the proposed methods are to be maintained including as applicable:
  - Inspection and approximate clean out frequency, access and consumables;
  - Dewatering and waste disposal frequency;

- Staff training, Equipment and Workplace Health and Safety requirements; and
  - Approximate maintenance cost and recommended performance monitoring.
- (v) The preparation of a site based Stormwater Management Plan (SBSMP) for intensive and major developments that demonstrates development and stormwater quality measures are in accordance with the Development Manual do not result in:
- increased peak discharges; and/or
  - increased flood levels or volumes outside the boundaries of the site; and/or
  - increased erosion potential; and
  - increased sediments and contaminants in stormwater discharge; and
  - failure to achieve any required water quality parameters.
- (vi) Where development is high risk (SEQ Water Corporation Development Guidelines for Water Quality Management identify “high risk” development as those that have the potential to contaminate or increase run-off unless supported by often complex measures to mitigate negative impacts) pollutant export modelling (by a qualified and experienced water quality modeller) that estimates concentrations and pollution loads relative to existing conditions versus proposed construction and operational conditions is conducted, and demonstrates that any environmental values and water quality objectives being sought are achieved. Council may have regard to the development guidelines for water quality management prepared by SEQ Water Corporation to assist with the assessment of impacts on water quality.

### **2.5.9 Hydraulic Analysis of the Water Reticulation Network**

Where required, a hydraulic analysis of the water reticulation network includes the following information:

- (i) an assessment of the network’s capacity and the effect of the proposed use connecting, including proposed measures to overcome any identified problems;
- (ii) an assessment of any new works required both internal and external to the proposed development, including an appreciation of the infrastructure needs of nearby existing or future development;
- (iii) an assessment of the current water supply planning for the area, the size and type of development and it’s anticipated impact on the water supply network and the need to address the following matters:
  - extent of the proposed development;
  - extent of the study area;
  - existing population;
  - future population projections;
  - timing and staging of development;
  - contour levels;
  - water consumption demand;
  - diurnal patterns;
  - fire fighting flows and any booster pump requirements
  - review of previous water planning studies;
  - identify existing water supply infrastructure;
  - identify planned augmentation works;
  - identify works required to service the study area;
  - identify internal and connecting works required to service the proposed development;
  - identify any potential zone rationalisation; and
  - provide hydraulic model simulations under varying demand criteria.

Prior to the submission and approval of the development, a water analysis report in accordance with the requirements of this manual may require to be submitted to Council. The report will include, but is not be limited to:

- (i) Flows and pressures in the network prior to development;
- (ii) Appropriate connection location;

- (iii) Water main augmentation (if applicable); and
- (iv) Flow and pressure available at the most hydraulic disadvantaged lot.

It is noted that Council will only guarantee a minimum residual pressure of 21m head of water at the lot frontage.

### **2.5.10 Hydraulic Analysis of the Sewer Reticulation System**

Where required, a hydraulic analysis of the sewer reticulation system includes the following information:

- (i) an assessment of the system's capacity and the effect of the proposed use connecting, including proposed measures to overcome any identified problems;
- (ii) an assessment of any new works required both internal and external to the proposed development, including an appreciation of the infrastructure needs of nearby existing or future development;
- (iii) an assessment of the current sewerage planning for the area, the size and type of development and its anticipated impact on the sewerage system and the need to address the following matters:
  - extent of the proposed development;
  - extent of the study area;
  - existing population;
  - future population projections;
  - timing and staging of development;
  - contour levels;
  - sewerage discharge loadings;
  - sewerage diurnal patterns;
  - review of previous sewerage planning studies;
  - identify existing sewerage system infrastructure;
  - identify planned augmentation works;
  - identify works required to service the study area;
  - identify internal and connecting works required to service the proposed development; and
  - provide hydraulic model simulations under varying demand criteria.

### **2.5.11 Structural Certification of Major Structures**

Any major structure or earth retaining structures including, boulder walls, gravity retaining walls, cantilever retaining walls, crib walls, sleeper walls are to be shown on the engineering plans, detailed in cross-section and is to be covered by a Consultant's Structural Certification.

### **2.5.12 Pavement Design Report**

- (i) The report need not be submitted with the operational works application but Council will not inspect pavement subgrade or permit the placement of pavement materials until a pavement design has been submitted and approved.
- (ii) Refer to the checklist in the appendix for details.

### **2.5.13 Q-Leave Form**

A Q-Leave payment advice in accordance with the requirements of the Building and Constructing Portable Long Service Leave Scheme is to be submitted prior to the approval of any application for operations works.

### **2.5.14 Approved Plans**

- (i) Within 10 working days of Council's approval, the consultant is to submit three (3) complete sets of A3 size and two (2) complete sets of A1 size approved drawings for Council's use. One A1 copy and one A3 copy are stamped and returned to the applicant.

- (ii) Where no amendment of the original submission was required the original submission is acceptable.

## **3.0 CONSTRUCTION PROCEDURES AND CERTIFICATION STANDARDS**

### **3.1 GENERAL STANDARDS**

#### **3.1.1 Consultant's Duties**

It is the responsibility of the consultant to arrange for all testing, inspections and certifications.

#### **3.1.2 Contractor's Duties**

It is the responsibility of the contractor to maintain quality of workmanship between inspections.

#### **3.1.3 Testing**

The testing requirements as detailed in this section are summarised for reference in the appendix of this manual.

### **3.2 PRE-START MEETING STANDARDS**

#### **3.2.1 General**

Prior to construction work commencing, a Council representative is to attend the pre-start meeting.

#### **3.2.2 Prerequisites**

Following operational works approval, but before construction work may commence, the Local Government requires the following:

- (i) Notification by the Consulting Engineer of the:
  - contractor(s) on-site and after hours telephone number;
  - supervising engineer(s) office and after hours telephone number;
  - date of commencement of works;
  - program of works showing major components.
- (ii) An invitation to attend the meeting on a specified date with 3 working days notice.
- (iii) For any Public (municipal) works associated with developments other than the reconfiguration of land, the provision of a bank guarantee or bond equivalent of not less than 10% (minimum \$1,000) of the value of the works as security for the performance of the various construction obligations including the provision of engineering certification and "as constructed" information.
- (iv) The consent of property owners affected by the approved works, as required by any development approval conditions.

### **3.3 SUBGRADE INSPECTION STANDARDS**

#### **3.3.1 General**

- (i) This inspection will generally include:
  - checking service conduit locations against markers, if kerb and channel is in place;
  - check backfill of service trenches;
  - check location of mitre and subsoil drains;
  - 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 shall be 8 tonne). Deflections detected in the subgrade indicating weakness may require rectification and re-inspection;
  - checking of subgrade level and crossfall. (Reduced levels are to be taken at a minimum of four locations across the pavement at pegged intervals prior to the inspection);

- checking all related civil works;
  - confirm the proposed limits of different pavement depths by visual inspections of subgrade material or identify the need for further testing;
  - an approved pavement design and compaction test results for the subgrade and backfill to trenches is to be available at the time of the inspection;
  - check that the location of the tests is to be representative of the subgrade; and
  - check to ensure that all unsuitable material (including organic matter) has been removed.
- (ii) If Council's engineer considers that a unique case exists which requires further examination, they may require further testing to be performed. If these tests do not satisfy the compaction standards contained herein the cost of such tests will be borne by the developer, otherwise Council will pay for the tests if they pass.
- (iii) 24 hours notice is required from the inspection date.

### **3.3.2 Soil Testing of the Subgrade Material**

- (i) To determine the nature of the subgrade material upon which the pavement will be placed soil tests are to be taken at the approximate level of the subgrade.
- (ii) An assessment of the site needs to be made to determine the approximate horizontal limits of the different soil types and any significant moisture variations within the subgrade.
- (iii) Excavation of test holes is to extend 500mm below the subgrade level to identify any stratified variation of the subgrade material.
- (iv) On 150mm thick pavements a minimum of two 4 day soaked CBR tests under a 4.5kg surcharge on each different subgrade material is to be undertaken.
- (v) Where any significant variation in the test results occurs, further testing of the material will be necessary to determine the soaked CBR strength or identify different subgrade soil types.
- (vi) For stratified subgrade materials the lowest soaked CBR identified within the 500mm of the subgrade level is to be used as the basis for pavement design.
- (vii) After in situ calibration of a Dynamic Cone Penetrometer against an identified subgrade material type, in situ Dynamic Cone Penetrometer testing may be used to determine the exact limits of the different strength subgrade materials identified by the CBR testing.
- (viii) Where subgrade replacement with selected material or roadway embankment filling is to be undertaken, the depth of the imported material is to be greater than 500mm before pavement design can be based on the soaked CBR of the imported material.
- (ix) The design is to otherwise be based on the weakest material in the 500mm zone below the subgrade level.

### **3.3.3 Materials Testing**

All materials testing is to be carried out by a NATA accredited soils testing laboratory using the procedure described in the following manuals or codes of practice.

- (i) SAA - Standards Association of Australia.
- (ii) QDMR - Queensland Department of Main Roads.
- (iii) ASTM American Society of Testing and Materials.
- (iv) BS - British Standards.
- (v) Where a test is described in more than one of these references, the procedure which is described in the first of these references is to be used.

## **3.4 SUB-BASE PAVEMENT INSPECTION**

Sub-base Pavement Inspection may be required by Council depending upon the results of the Subgrade Inspection. Elements of the subgrade test procedure may be employed.

## **3.5 PRE-SEAL INSPECTION STANDARDS**

### **3.5.1 General**

- (i) This inspection will generally include:
  - Checking base course gravel after compaction;
  - Compaction test results and gravel quality test results of the base, sub-base and select fill courses are to be available for the inspection if required. Final approval is dependant upon satisfactory pavement test results being submitted to Council;
  - 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;
  - 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 are to be taken at a minimum of four locations across the pavement prior to the inspection);
  - Pre-prime inspection to check that the surface is suitable for priming; and
  - Proof rolling the top of the base course with a single rear axle loaded water truck or similar (minimum load on rear wheels shall be 8 tonne). Deflections detected will require rectification and subsequent reinspection.
- (ii) Before priming, the conduit markers are checked against the service conduits.
- (iii) Before priming, the proposed application rates of prime and binder and spread rates of pre-coated aggregate are to 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.
- (iv) Before priming, the proposed application rates of prime and results of mix acceptance tests are to have been approved prior to the inspections.
- (v) Stormwater drainage works affecting the roadworks completed.
- (vi) All pipe and service crossings of the roads completed, and determined to be correctly located by the Consultant.
- (vii) Kerb and channel line and levels checked and determined to be within tolerances by Consultant.
- (viii) Check intersection contouring.
- (ix) 24 hours notice is required from the inspection date.

## **3.6 SEWER TESTING AND INSPECTION STANDARDS**

- (i) All sewers and house drains are, when laid and jointed, to be submitted to a water test or air test as specified in the Development Manual and the checklist in the appendix of this manual. Pressure testing for certification purposes is to be undertaken upon practical completion of the development works.
- (ii) The Local Government is to be notified when the pressure testing is to be undertaken.
- (iii) The sewer is to be pressurised to a minimum pressure of 30kPa and the pressure held for three minutes.
- (iv) If during this period the pressure in the main falls below 25 kPa the line will be deemed to have failed.
- (v) The Consultant is to decide on the appropriate remedial works to be undertaken and the section is then to be retested.
- (vi) The Consulting Engineer is to supply copies of all results of tests performed on each manhole length and include them with the engineering certification.
- (vii) Lines which do not pass the test will be rejected and the Consulting Engineer is to ensure that the necessary rectification works are undertaken, and the line re-tested.
- (viii) When requested by Council, a CCTV film of all sewer lines is to be provided to Council prior to the On-Maintenance inspection.
- (ix) Test results are to be submitted prior to the On- Maintenance inspection.
- (x) 24 hours notice is required for inspection dates.

### **3.7 WATER FLUSHING AND STERILISATION STANDARDS**

- (i) The main is to be flushed prior to chlorination.
- (ii) After flushing, the main is to be charged with water and super-chlorinated.
- (iii) This is to be held in the main for a period of 24 hours.
- (iv) The mains are to be retested for a residual chlorine count of 5mg/L before flushing the chlorinated water out of the mains.
- (v) If a residual count of 5mg/L is not obtained, then the mains are to be scoured, re-chlorinated and the above procedure repeated.

### **3.8 WATER PRESSURE TEST STANDARDS**

- (i) The whole of the mains laid by the contractor are to be hydraulically tested as specified in this manual and the checklist in the appendix of this manual.
- (ii) The consultant is to provide test results prior to the "On Maintenance" inspection.
- (iii) 24 hours notice is required for inspection dates.
- (iv) The mains, including valves, are to be pressure tested to 1200kPa.
- (v) Once the test pressure is reached, it is to stand without make-up water for fifteen (15) minutes.
- (vi) The test is passed if no make-up water is required to maintain pressure.
- (vii) The pressure test is to be certified by the Supervising Engineer or by a tester approved by the Local Government.
- (viii) The certification is to be supplied with the Engineers Certificate for the completed works.

### **3.9 CONCRETE TESTING STANDARDS**

- (i) Where applicable, concrete structures are to be in accordance with the relevant DMR manuals as stated in the consultants project specification.
- (ii) Prior to the "On Maintenance" inspection being carried out, all available concrete test results are to be submitted to the Local Government.
- (iii) The minimum requirement is for all seven (7) day test results to be available.
- (iv) All outstanding test results (28 day tests) are to be submitted during the Maintenance Period.
- (v) Tests are to be carried out as set out in the appendix of this manual.

### **3.10 MATERIALS TESTING**

#### **3.10.1 General**

- (i) The materials testing identified in the checklists in the Appendix of this manual are to be carried out by qualified operators within NATA registered laboratories.
- (ii) The supplier's Quality Assurance documentation is to be retained by the consulting engineer as part of the project documentation.
- (iii) The consulting engineer is required to certify that the constructed works comply with Council's minimum requirements.
- (iv) It is therefore the consulting engineer's responsibility to assure themselves that all materials used in the construction of the works comply with those minimum requirements.
- (v) To obtain this assurance, it may be necessary for the consultant to inspect materials before installation to ensure the appropriate Quality Assurance stamps are in place and where appropriate, ensure that the quality control measures, claimed to be carried out by a material supplier, are being carried out.
- (vi) 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.

- (vii) Compaction testing of crushed rock and earth materials is to be carried out at the minimum intervals detailed in the inspection check sheets which are in accordance with Australian Standards.
- (viii) Where no test method is specified, any method recognised by Australian Standards may be utilised.
- (ix) It is, however, necessary that calibration requirements for quick test methods (e.g. nuclear densometer) are strictly observed for each different material being tested.
- (x) Council do not require a copy of all the documentation from this testing, however random audits will be carried out to ensure compliance by requesting the consultant provide all the inspection reports and quality control documents as per the checklists within 10 working days of the request.

### **3.11 GENERAL MAINTENANCE STANDARDS**

The following is a list of the maintenance works generally considered applicable to development work.

- (i) Water and fertilise all disturbed areas to obtain the minimum 40% grass coverage required to prevent erosion within 6 months of the works being accepted "On-maintenance".
- (ii) Further maintain revegetation areas to achieve the minimum acceptance coverage of 80% before the works are due for acceptance "Off-Maintenance".
- (iii) Water, fertilise and weed all landscaped areas provided as part of the development works.
- (iv) Slash all private property remaining in control of the developer and drainage reserves to maintain a grass length of less than 300mm.
- (v) Mow road verges, pathways and park areas to maintain a grass length of less than 150mm.
- (vi) Sweep roads to maintain a surface free of loose stones and excessive dirt deposits.
- (vii) Remove silt and debris washed into kerb and channel, stormwater pipes and structures by stormwater runoff.
- (viii) Temporary and permanent stormwater quality control structures are to be cleared of silt and debris when filled to 50% capacity.
- (ix) Repair scours; replace topsoil and grassing to areas eroded by stormwater.
- (x) Severe scouring may indicate the need for the installation of permanent erosion control structures.
- (xi) Repair all trench subsidence to water, sewer, stormwater, and power and telephone trenches.
- (xii) Maintain all fire hydrants and valves free of silt and in an operable condition.
- (xiii) Repaint road linemarking as necessary.
- (xiv) Specific works may however have special maintenance requirements that may also need to be carried out during the maintenance period.
- (xv) The general performance bond required to be submitted for all development works may be used by Council to undertake remediation where the developer fails to undertake immediate action to correct faulty road signage.

### **3.12 "ON MAINTENANCE"**

#### **3.12.1 General**

- (i) The need for a detailed inspection is to be at the discretion of the Local Government.
- (ii) In the majority of cases it is intended that an "audit" inspection only be necessary.
- (iii) The on-site inspection is to be attended by the Consulting Engineer, the Civil Contractor(s) and the Local Government representative(s).

### **3.12.2 “On Maintenance” Inspection Prerequisites**

- (i) The pre-inspection checklist is to be in the form given in the advising that all works as per the checklist have been completed and inspected to the satisfaction of the Consulting Engineer.
- (ii) The checklist is to be forwarded to Council five (5) working days prior to the requested “On Maintenance” inspection date.
- (iii) The Local Government inspection will not be carried out if this checklist has not been received from the Consultant.
- (iv) If more than two (2) items on the checklist (items not of a minor nature) are found to be incorrect and the site is not ready, the inspection may be immediately cancelled at the discretion of the Local Government’s representative.
- (v) In addition to the pre-inspection checklist, the consultant is to submit a formal Consulting Engineer’s Certificate (on the consultant’s letterhead) for the works, which is to be in a form similar to that shown in the example in the Appendix.

### **3.12.3 Non-Conforming “On Maintenance” Inspection**

- (i) If the development fails to satisfy the requirements of the inspection as outlined in the pre-on maintenance inspection checklist (other than for minor defects) the Consulting Engineer is to be so advised.
- (ii) When the defects have been remedied, the Consulting Engineer is to arrange another inspection.
- (iii) Any construction works that either the Consulting Engineer or Council’s Engineer deems unacceptable will be itemised in a defects list.
- (iv) Minor defects, being those defects when the total value of rectification works for all defects is less than \$1,000.00, may be attended to within 30 days of the inspection and will not delay Council’s acceptance of the works “On-Maintenance”.
- (v) Major defects, defects affecting public safety, or minor defects where the total value of rectification works exceeds \$1,000.00, will be required to be rectified prior to Council’s acceptance of the works “On-Maintenance”.
- (vi) A reinspection of the rectification works and payment of a reinspection fee may be required.

### **3.12.4 Formal “On Maintenance” Documentation Requirements**

The Consulting Engineer is to forward to the Local Government the following information prior to formal acceptance of the works “On Maintenance”—

- (i) Letter confirming satisfactory completion of the “On Maintenance” inspection and requesting that the maintenance period commence from the date of inspection.
- (ii) Certification by the Consulting Engineer that the works have been completed in accordance with the approved Design and Specifications.
- (iii) Refer to the Formal “On Maintenance” Requirements Checklist located in the Appendix for complete requirements.
- (iv) Upon confirmation of the documentation requirements the Council’s Engineer will arrange for the release or reduction of any incompleting works bond(s) held and issue a formal advice on the date on which the work was accepted “On Maintenance”, in conjunction with the certificate of practical completion.

### **3.12.5 Letter of Reinstatement**

- (i) If works are required to be carried out through private property, prior written approval from the landowner is to be obtained, including the standard of reinstatement required.
- (ii) Upon completion of the works this letter is to be again signed by the landowner confirming that all reinstatement works are to their satisfaction.
- (iii) This letter is required to be submitted as part of the “as-constructed” documentation.

### **3.12.6 Contractor Guarantee**

The Contractor is to sign the guarantee form located in the Appendix of this Manual and it is to be attached to the documentation submission.

### **3.12.7 Checklist of the Sealing of the Survey Plan**

If no bond has been submitted for the early release of survey plans, the Plan Sealing Checklist located in the Appendix of this Manual is to be submitted, complete with all required attachments.

## **3.13 MAINTENANCE PERIOD**

### **3.13.1 General**

- (i) During the maintenance period, responsibility and liability for the maintenance and rectification of defects of materials and works, lies with the developer or consultant, not the Local Government.
- (ii) All development works and works that will be transferred to Council control are subject to a 12 month maintenance period during which time the developer is to maintain the works, and any defects relating to materials, workmanship and design errors or omissions are to be corrected at the developer's expense.
- (iii) The maintenance period for bridges shall be 12 months minimum extending to 18 months for bridges which incorporate timber elements.
- (iv) At any time during the maintenance period Council may undertake random inspections to determine the satisfactory maintenance of the works.
- (v) Where maintenance requirements or defects are noted, written advice will be sent to the developer's Consulting Engineer requiring appropriate works to be carried out within 30 days.
- (vi) Where public safety or health is at risk as a result of poor maintenance or defective works, verbal advice will be given to the Consulting Engineer requiring appropriate action within 24 hours.
- (vii) Where neither of Council's notifications are complied with, Council may undertake the necessary works without further reference to the developer.
- (viii) All costs incurred by Council in carrying out the works will be recovered from the maintenance bond.
- (ix) The maintenance period for Landscaping Works is 18 months.
- (x) The maintenance period for Detention Basin Works is 24 months.

### **3.13.2 Construction and Design Defects and Omissions**

- (i) The repair of construction defects or the rectification of design errors and omissions will be required to be undertaken as they are identified.
- (ii) Where after Council's 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, that portion of the works will be required to be rectified.
- (iii) The civil works are also required to perform in accordance with the design intent.
- (iv) Where there is an indication that a portion of the civil infrastructure provided as part of the works is not performing in accordance with the design intent, Council may request the design engineer to investigate the matter and submit a formal report identifying the causes for the failure to perform, and recommendations for any rectification works that may be needed.
- (v) These reports are to be submitted within 30 days of Council's request.

## **3.14 “OFF MAINTENANCE” INSPECTION STANDARDS**

### **3.14.1 General**

- (i) Refer to the checklist of the items that are generally required to be inspected at an "Off Maintenance" Inspection located in the Appendix of this Manual???
- (ii) All areas inspected at the “On Maintenance” stage are to be re-inspected with special emphasis placed on any unsatisfactory points noted during the “On Maintenance” inspection or any points that have been brought to the Local Government's attention during the maintenance period.
- (iii) Any matters outstanding at the time of this inspection will constitute incomplete work and such works will not be accepted by the Local Government.
- (iv) 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.
- (v) At the time of the “Off-Maintenance” inspection, all aspects of the works are to indicate that they are performing in accordance with the “design intent”.
- (vi) Where there is indication that the works are not performing or may be subject to a reduced design life, rectification work will be required to be carried out before the development is accepted “Off-Maintenance”.
- (vii) 10 working days notice is required from the inspection date.

### **3.14.2 Non-Conforming “Off Maintenance” Inspection**

- (i) Any construction works that either the Consulting Engineer or Council's Engineer deems unacceptable will be itemised in a defects list.
- (ii) When the unsatisfactory or outstanding works have been remedied, the Consulting Engineer is to arrange another inspection.
- (iii) A reinspection of the rectification works and payment of a reinspection fee may be required.

### **3.14.3 Formal “Off Maintenance” Documentation Requirements**

The Consulting Engineer is to forward to the Local Government the following information prior to formal acceptance of the works "Off Maintenance":

- (i) Following a satisfactory “Off-Maintenance” inspection, the Consultant is to submit a written request to Council's Engineer for acceptance of the works “Off-Maintenance”, and release of the maintenance security bond.
- (ii) The provision of items agreed at the time of formal acceptance of the works “On-Maintenance” is required.
- (iii) Council's Engineer will, upon confirmation that no outstanding accounts arising from the development are due to Council, provide confirmation of Council's acceptance of the works “Off-Maintenance”, and arrange for the release of the maintenance security bond.

## **3.15 BONDS**

### **3.15.1 General**

- (i) Bonding is the submission of a financial security to Council by the developer to cover obligations stated in the conditions of the development permit.
- (ii) All security bonds submitted to Council are to be in the form of cash or an irrevocable, unconditional, open-dated guarantee issued by a bank, insurance office or other financial institution acceptable to the Council in the developer's name. Bonds of \$5,000 or less are to be cash or bank cheque only.
- (iii) The submission of a cash bond is to be accompanied by details of the bond and the development project on Council's standard lodgement form. Council will issue a receipt acknowledging acceptance of the cash. The receipt needs to be retained as

proof of lodgement. Council will only return unused portions of cash bonds to the person or company nominated on the receipt as lodging the bond unless specifically directed in writing by the lodger of the bond to make alternate payment.

- (iv) Council will not accept any other form of security, such as mortgages, holding Titles to land, shares or insurance bonds, etc.
- (v) Ultimate care is to be taken to ensure that bonds are appropriately addressed when transferring property between owners before development is completed.
- (vi) For bank guarantees, it is important to ensure that the bond document clearly identifies the contributions and works being bonded.
- (vii) Where it is intended to convert the bond to a future maintenance bond, this is also to be identified.
- (viii) Estate marketing names and staging numbers are not to be used as primary identification as these may be subject to change and amendment as development progresses. Include the full and correct real property description to identify the property in which the works are being bonded (e.g. Lots 11 to 22 on Survey Plan No 123456, cancelling part of Lot 999 on SP 100482).
- (ix) Council will formally notify the institution issuing the bond of any reduction in the security required due to payment of contributions or satisfactory completion of works for which the bond was lodged. The developer will be carbon copied to ensure notification.
- (x) If, at any time, the bond is to be redirected to secure contributions or works not specifically stated on the bond document, Council will require a letter from the institution approving the redirection of the security.
- (xi) Where a bond is required to be released prior to the completion of payments or the construction of works, (due to property transfer, etc) Council will not release the bond until an appropriate alternate security is lodged.
- (xii) Under no circumstances will Council release a bond on the basis that a legitimate outstanding development issue is not the responsibility of a developer or contractor submitting either a performance or maintenance bond.
- (xiii) At council's discretion, works such as Electricity Supply may be considered for bonding.

### **3.15.2 Release or Reduction of Bond Amount**

- (i) Unless otherwise notified by the applicant, the maintenance bond will be refunded after acceptance of the works formally "Off-Maintenance".
- (ii) The Principal Consultant shall lodge a formal request for the return or reduction of any bonds outlining the reasons and including the following details:
  - Description of development;
  - Council file reference for development;
  - Bond amount originally lodged with Council;
  - Name of Trading Bank (Bank Guarantee Bond only);
  - Council receipt number (Cash/Cheque Bonds only); and
  - Date bond lodged with Council.

### **3.16 GENERAL PERFORMANCE BOND**

- (i) Council requires the submission of a general performance bond before any development works commence.
- (ii) The bond is to cover the cost of any remedial action undertaken by Council to:
  - control dust, smoke or noise nuisance emanating from a development site;
  - cleaning of silt from downstream waterways or stormwater drains that has resulted from erosion attributed to the development works;
  - repair of upstream or downstream erosion attributed to the development works;
  - improvement or repair of road works warning signs to comply with the approved signage plan;
  - rectification of damage to adjacent private property or common fencing; and

- repair of damage to Council infrastructure caused by the works.
- (iii) Council costs will include administration costs and overtime costs where urgent remedial works are required to be undertaken outside of normal work hours.
- (iv) Remedial works may be undertaken at the direction of Council's Safety Officer or Council's Engineer.
- (v) The supervising Engineer for the works will however be given a minimum of 24 hours notice of any pending action by Council, except where the general public's safety is considered to be at risk and immediate Council action is warranted.
- (vi) The notice will initially be given verbally and will be confirmed by written notice within the notification period.
- (vii) The general performance bond may also be used for the payment of fines imposed under Local Law 26 "Control of Nuisances" or for any purpose considered appropriate by The Director of Development Services.
- (viii) The general performance bond will be required to be submitted for all developments that require works to be undertaken within public land or road reserve, or for any private development where the site area is greater than 5,000m<sup>2</sup>.
- (ix) An exclusion is applicable to building works that are required to submit a public property bond as part of the conditions for building application approval.
- (x) Council may accept a standing bond from a contractor or developer undertaking a number of development projects within the City.
- (xi) The value of the standing bond is to be three times the value of a single performance bond.
- (xii) Works are countersigned by the owner of the standing bond.
- (xiii) Where development works commence without formal notification to Council and the submission of the general performance bond, Council's Engineer will issue a stop work notice.
- (xiv) The bond is to be valued at \$5,000.00 and be submitted as cash, irrevocable bank guarantee or other form accepted by the Council.
- (xv) The release of the bond will not occur until all works that are to revert to Council control are capable of being accepted "On-Maintenance", including the submission of "As Constructed" drawings, Engineer's certification and the maintenance bond.
- (xvi) For projects that do not involve works that will revert to Council and the submission of a separate maintenance bond, the bond will be retained by Council until all earth surfaces disturbed by the development are revegetated to the minimum standard for the prevention of erosion as defined in this policy.

### **3.17 INCOMPLETED WORKS BONDS**

#### **3.17.1 General**

- (i) Council may, at its discretion, accept a bond to secure incomplete works associated with a reconfiguration of a lot and seal the plans of survey prior to the completion of the works.
- (ii) The works within the common property and the connection of services such as sewerage, water and electricity to each of the individual lots associated with Community Title Scheme are required to be completed or bonded to the same requirements as standard reconfigurations.
- (iii) There are 3 options that may be followed to have the survey plans sealed by Council:
  - if the development has no sewer reticulation - bond works prior to, or during, construction;
  - Bonding the remaining works during construction upon completion of the sewer reticulation and earthworks completed in accordance with the relevant standards or conditions of approval; or
  - After completion of all works, including the submission of the Consulting Engineer's certification of the works and the 'As Constructed' drawings, no bond is required to be submitted.

### 3.17.2 Incomplete Works Bond Prerequisites

The Local Government may approve Plans of Subdivision, prior to acceptance of works "On Maintenance", subject to the following prerequisites.

- (i) The bulk earthworks are completed and the general layout of the reconfiguration is evident.
- (ii) Incomplete works are not to exceed 50% of the value of total works.
- (iii) Where a bond is accepted, the amount to be bonded is the value of outstanding works plus 25%, provided that at all times the minimum bond is not less than 25% of the total value of the works.
- (iv) The Consulting Engineer is to provide a certified Schedule of Quantities and rates for the outstanding works as the basis for the Local Government determining the appropriate amount of the bond.
- (v) A written undertaking is to be given by the Developer to insert the following clause in all contracts of sale entered into prior to the completion of works and their acceptance "On Maintenance"— "The purchaser hereby acknowledges that he/she is aware that the works relative to the construction of the land herein purchased are not completed at the date of signing of this contract and have been bonded so as to enable the early approval of the plan by the Local Government. The purchaser(s) hereby undertake not to require the Local Government or any private certifier to give to the purchasers a development permit for building work in respect of this land until such time as the works are completed and the Local Government has "Accepted On Maintenance" such works."
- (vi) The Developer is to give an undertaking, in writing to the Local Government, that unless all outstanding development (operational) works are completed and "Accepted On Maintenance" within three (3) months of the date of the approval of the Plans of Subdivision (or such longer time as the Local Government may approve), the Local Government may call up the bond and undertake all works to complete the approved development, including all testing and compilation of "As Constructed" information.
- (vii) Bonding is to be in the form of a Bank Guarantee, except for very minor works where the Local Government may agree to accept a cash bond.
- (viii) In no case will Council seal a plan of survey for a reconfiguration of a lot until:
  - operational works for the reconfiguration have been approved by Council; and
  - Council's Engineer is satisfied that the reconfiguration is capable of being serviced as required by the conditions of approval.
- (ix) All sewerage works are to be complete and associated 'As Constructed' documents are to be submitted to Council.
- (x) All water reticulation works are to be complete and associated 'As Constructed' documents are to be submitted to Council.
- (xi) All earthworks within private property created by the reconfiguration are to be complete.
- (xii) All outstanding works, both internal and external to a reconfiguration, are capable of being completed within three months from the date Council seals the survey plan for the reconfiguration.
- (xiii) Council's Engineer may require the Developer's Consulting Engineer to submit a works program detailing all major portions of the work and their programmed completion dates.
- (xiv) All outstanding works that are required to comply with the conditions of reconfiguration or material change of use are to be secured with Council by a bond.

### 3.17.3 Bond Value

The determination of the value of security to be lodged is determined as follows:

- (i) For works that have not been subject to a tender process and a contract has not been signed, security is to be lodged to the value of 125% of the approved value of the works;

- (ii) An estimate and preliminary engineering designs to substantiate the estimate are to be provided by a registered professional engineer;
- (iii) For very minor works Council's Engineer may nominate an arbitrary bond value without a formal estimate;
- (iv) For works that are subject to a signed fixed price contract, security is to be lodged to the value of 115% of the value of the contract price;
- (v) A copy of the contract together with the schedule of quantities and rates is to be provided to Council as verification of the value of the works;
- (vi) For works that are subject to a signed fixed price contract and are partially complete, security is to be lodged to the value of 115% of the outstanding works; and
- (vii) The developer's Consulting Engineer is to submit a certified schedule of quantities for the outstanding works together with the contract rates as verification of the value of the outstanding works.

#### **3.17.4 Minimum Bond Values**

Notwithstanding the above, the following minimum value for bonds lodged as security for outstanding works will be applied:

- (i) the value of the maintenance bond being 5% of the total contract value of the works plus the value of the outstanding works as calculated above; or
- (ii) the value of the maintenance bond being 5% of the total contract value of the works or \$10,000, whichever is the greater.

#### **3.17.5 Reduction of Bonds**

- (i) Upon written request the value of the security bond held by Council in relation to the incomplete works may be reduced to 115% of the estimated value of the works remaining at the time of the request.
- (ii) The value of the security will however not be reduced to less than the minimum bond value as determined above or to the value of the maintenance bond until all works are complete, associated documentation is submitted and the works are accepted 'On-Maintenance'.
- (iii) Only 3 bond reductions at one month intervals will be permitted before the works are accepted 'On-Maintenance'.
- (iv) The application for the reduction of security is to be accompanied by the developer's Consulting Engineer's certified schedule of quantities and contract rates for the incomplete works.
- (v) Where a security bond issued by a financial institution is to be reduced to the value of the reconfiguration maintenance bond, then the wording of the bond on the original issue of the bond is to clearly state that the purpose of the bond is for "the maintenance of and incomplete works associated with" the particular reconfiguration.

#### **3.17.6 Realisation of Bonds**

- (i) Works that remain incomplete 3 months after Council has sealed the plan of survey may be undertaken by Council or by a contractor under the direction of Council.
- (ii) All costs incurred by Council in undertaking the works, including Council's supervision costs will be recovered from the security bond.
- (iii) 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.

### **3.18 CONTRIBUTIONS BOND**

- (i) Bonds submitted for contributions to Council will be required to be converted to payments before any use of the site permitted by the development approval is commenced.
- (ii) Council may reduce bonds as contributions are paid.

### **3.19 MAINTENANCE BOND**

- (i) At the completion of construction and acceptance of the development “On-Maintenance”, incompleting works bonds held by Council may either be released or reduced to the value of the maintenance bond.
- (ii) The maintenance bond, valued at 5% of the total value of works, is to be submitted to Council.
- (iii) The bond from the developer is to be accompanied by details of the bond and the development project on Council’s standard lodgement form.

### **3.20 CONTRIBUTIONS**

All contributions will be required to be paid in full prior to Council's sealing of the survey plan, issue of building approval for the site, or before any Material Change of Use commences, whichever is the earlier.

### **3.21 APPLICATION FOR SEALING OF SURVEY PLAN**

#### **3.21.1 General**

The applicant must submit to Council a plan of survey and accompanying documents where Council has issued a development permit or as required by the condition of a development permit or if Council approval is required by another act.

#### **3.21.2 Prerequisites**

- (i) Where stamp duty is applicable to the transfer of any land necessitated by development, it will be required to be paid by the developer.
- (ii) Reinstall survey marks and install new survey marks in their correct position in accordance with the plan of survey. Such work shall be certified in writing by a licensed Surveyor.
- (iii) Ensure there are no outstanding rates or charges levied by Council or expenses that are a charge over the land under any act.
- (iv) Refer to the “Incompleted Works Bonds” section for Council’s requirements for securing incomplete works.
- (v) In the event that either the conditions of approval have not been fully complied with, or all of the required documentation as stated below has not been submitted with the application for plan sealing, Council will return the plan to the applicant and a fresh application for sealing will be required.
- (vi) The new application will be required to be accompanied by an application fee and no credit will be granted for the previous non-conforming application.
- (vii) Lodge for approval with Council prior to the end of the currency period, if applicable

#### **3.21.3 Documents Required to Accompany a Plan Sealing Application**

- (i) Standard forms and fees associated at the time of the application.
- (ii) Concise plan sealing report indicating compliance with all conditions of the development permit where applicable and an A4 copy of all relevant plans or documents.
- (iii) Prepared in accordance with all development permit conditions.
- (iv) Suitable for lodgement in the office of the relevant registering authority.
- (v) An original plan certified by a licensed surveyor and signed by the registered owner/s of the land and company seal affixed, if required.
- (vi) A copy of Council’s formal “On Maintenance” or “Uncompleted Works” acceptance letter, as applicable.

**APPENDICES**

**A. CHECKLISTS AND FORMS**

**A.1 Form - Certificate Of Compliance - Landscape Design**

Council Reference File No: .....

Date:.....

**CERTIFICATE OF COMPLIANCE—LANDSCAPE DESIGN**  
(Documentation of Proposed Works)

The documentation of the proposed Landscape Works

at

.....

in accordance with the following drawings

.....

.....

for

.....

I, ..... of

.....

being duly authorised in this behalf, do certify that the documentation of the proposed Landscape Works for the above development, comply with the desired standards of service for ..... as per Planning Scheme Policy 12 - Development Manual. Where items are non-complying, a statement has been prepared in accordance with Planning Scheme Policy 12 - Development Manual.

Designation .....

Certified this ..... day of ..... 20 .....

**4.2 Form - Certificate Of Compliance - Landscape Construction**

Council Reference File No: .....

Date:.....

**CERTIFICATE OF COMPLIANCE—LANDSCAPE CONSTRUCTION**  
(Practical Completion of Landscape Works)

The construction of the proposed Landscape Works

at

.....

in accordance with the following drawings

.....

.....

for

.....

I, ..... of

.....

being duly authorised in this behalf, do certify that the proposed Landscape Works for the above development, have been completed in accordance with the approved drawings, the conditions of approval for the Development incorporating any approved amendments within generally accepted tolerances, also in accordance with relevant certificates, sound Landscape Architectural principles and practices and that the works are for the purpose for which they are intended. And I make this certificate conscientiously believing that I/We have appropriate procedures for inspection in place to assure the quality of the works and conscientiously believing these procedures have been followed during the construction of the works.

Designation .....

Certified this ..... day of ..... 20 .....

**4.3 Form - Consulting Engineer's Certificate**

Council Reference File No: .....

Date:.....

**CONSULTING ENGINEER'S CERTIFICATE**

The construction of the Roadworks, Stormwater Drainage, Sewer Reticulation, Water Reticulation and Associated Works.

at

.....

for

.....

I, ..... of

.....

Consulting Engineers, being duly authorised in this behalf, do certify that the earthworks, roadworks, stormwater drainage, sewer reticulation, water reticulation and associated works for the above Development, have been completed in accordance with the approved drawings, designs, schedules and specifications, the conditions of approval for the Development incorporating any approved amendments, and within specified tolerances or, where not specified, within generally accepted tolerance, also in accordance with relevant certificates, sound engineering principles and practices and that the works are fit for the purpose for which they are intended.

And I make this certificate conscientiously believing that I/We have appropriate procedures for inspection and testing in place to assure the quality of the works and conscientiously believing these procedures have been followed during the construction of the works.

Designation .....

RPEQ No .....

#### **A.4 Checklist – Operational Works Lodgement Requirements**

Application No: ..... / .....

Development Name: .....

#### **Application Forms**

Completed IDAS Application Forms

#### **Design Information**

- Two (2) complete sets design drawings (1 x A3 and 1 x A1 size) including landscaping, electrical\* and telephone authority\* drawings
- Engineering Summary Report – Design
- Proposed Inspection & Testing Plan (where differs from standard requirements)
- Sufficient supporting calculations to enable the design to be checked
- Any information requested in the subdivision approval
- Relevant standard drawings where standard drawings do not conform to Council's standard drawing
- One (1) copy of contract specification where unusual or irregular materials or construction practices are proposed
- Approvals and Clearances: #  
DPI - Water Resources  
Queensland Transport  
Letters of Approval from adjoining property owners for works on their property  
Qrail (crossing of land)
- Any consultant's certificate required (Specific certification is required for each structure requiring a structural analysis)
- Consulting Engineer's estimate for Council contribution towards infrastructure being provided by the Developer
- Pavement Design Report\*
- Application to Traffic Advisory Committee for approval of regulatory signs

#### **Fees**

- Plan Examination
- Site Inspection
- Reinspection of Design Plans

#### **Notes**

- \* These may be submitted later under separate cover, however a subgrade inspection will not be carried out until these items are submitted.
- # These items may be submitted later under separate cover, however Council's approval of the design will not be granted until all third party clearances and approvals are finalised

Conscientiously believing the above statements to be true and correct:

Consultant: \_\_\_\_\_ Signature: \_\_\_\_\_

Checking Officer: \_\_\_\_\_ Position: \_\_\_\_\_

Name in full: \_\_\_\_\_ Date: \_\_\_\_\_

## 4.5 Checklist - Requirements for the Lodgement of Pavement Design Report

Application No: ..... / .....

Development Name: .....

- All test results must be included.
- A plan showing location of all soil tests.
- Table showing soil test results, depth (from natural surface to subgrade level) and location
  - a) Soaked CBR's
  - b) DCP tests \*
  - c) Test pit visual soil type identification.
- A table which establishes the design CBR's and pavement depth limits for each road or street based on the results above.

For example:

| Road      | Chainage | Design ESA          | Design CBR | Pavement Depth |
|-----------|----------|---------------------|------------|----------------|
| John St   | 0-700    | 1 x 10 <sup>5</sup> | 8          | 275            |
| Jeremy Rd | 0-100    | 8 x 10 <sup>5</sup> | 6          | 425            |
| Harold Ct | 100-700  | 8 x 10 <sup>5</sup> | 10         | 275            |

- A plan showing limits of pavement depths derived above if necessary.
- A table showing the profile of each pavement depth.

For Example:

| Course            | Depth (mm) | Depth (mm) |
|-------------------|------------|------------|
| Asphalt Surfacing | 25         | 25         |
| Base Course       | 125        | 125        |
| Sub Base Course   | 125        | 125        |
| Selected Subgrade | -          | 200        |
| <b>TOTAL</b>      | 275        | 475        |

- Any supporting information from geotechnical testing authority and the manufacturer should any non-standard treatment or pavement stabilisation be required.
- For unsealed roads, if natural material is to be used.

APPLICANT'S SIGNATURE: \_\_\_\_\_ NAME: \_\_\_\_\_

NAME OF CONSULTANCY: \_\_\_\_\_ DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

## 4.6 Checklist - "Pre-On Maintenance" Inspection Checklist of Works

### PRE-ON MAINTENANCE INSPECTION CHECKLIST

DEVELOPMENT .....

COUNCIL REFERENCE FILE NO. ....

| Item   | Work Passed<br>(yes/no/n.a) | Comment |
|--|-----------------------------|---------|
| <b>Roofwater Drainage System</b>   |                             |         |
| The works have been finally inspected and—   |                             |         |
| (a) Roofwater drainage system is constructed to plan.  |                             |         |
| (b) Roofwater pits have been constructed to a satisfactory standard, i.e.—<br>- benching;<br>- correct cover, embossed RWD;<br>- location relative to lot boundaries;<br>- 50-75mm proud of finished surface level.  |                             |         |
| (c) Pipework has been visually inspected and is satisfactory, i.e.—<br>- alignment and grade;<br>- free of debris and siltation;<br>- sanded end connector, for uPVC pipework;<br>- no visual sign of trench subsidence.   |                             |         |
| (d) Outlets (especially to kerb and channel) are satisfactory.   |                             |         |
| (e) Lots not provided with roofwater drainage system can be drained to kerb and channel.   |                             |         |
| <b>Stormwater Drainage System</b>  |                             |         |
| The works have been finally inspected and—   |                             |         |
| (a) Pipe layout is as per plan or approved amendments with respect to pipe size, levels and location.  |                             |         |
| (b) Pipework has been visually inspected and is satisfactory, i.e.—<br>- alignment and grade;<br>- free of debris and siltation;<br>- pipe joints satisfactory;<br>- lifting plug holes sealed;<br>- no visible sign of trench subsidence.   |                             |         |
| (c) Gully pits and manholes have been constructed to the correct standards, i.e.—<br>- correct type of grate or cover;<br>- backstones;<br>- side entry slots;<br>- benching;<br>- pipe connections are not constructed to the corner of two walls such that the pipe capacity is reduced;<br>- grates are satisfactorily seated in frames;<br>- weepholes provided to bedding material. |                             |         |
| (d) All density tests of backfill are available and satisfactory.  |                             |         |
| (e) PSD's have been submitted or are available for bedding material.   |                             |         |
| (f) Outlet/inlet structures are satisfactorily constructed and are free from scour or siltation.   |                             |         |
| (g) All manhole and gully pit pipe connections are mortared<br>flush with the walls and no pipe reinforcement is exposed.  |                             |         |
| (h) Open cut channels have been finally inspected and are satisfactory, i.e.—<br>- cut to design profiles;   |                             |         |

| Item  | Work Passed<br>(yes/no/n.a) | Comment |
|---|-----------------------------|---------|
| - lining of channel is to the required thickness and reinforcement, with appropriate weepholes.   |                             |         |
| (i) Overland flow works have been finally inspected and appropriate flowpaths are provided and clear of obstruction.  |                             |         |
| (j) Outlets and outfalls have been constructed to control discharge flow in accordance with the plans.  |                             |         |
| (k) Subsoil drainage discharges to gullies or other approved point of discharge.  |                             |         |
| <b>Earthworks</b>   |                             |         |
| The works have been finally inspected and—  |                             |         |
| (a) Tow of batters not on road reserve except as approved.  |                             |         |
| (b) Retaining walls clear of road reserve except as approved.   |                             |         |
| (c) Batter slopes stabilised against erosion.   |                             |         |
| (d) Interim drainage constructed in accordance with drawings.   |                             |         |
| (e) All areas distributed by the works have been grass seeded and fertilised.   |                             |         |
| <b>Road Pavements</b>   |                             |         |
| The works have been finally inspected and—  |                             |         |
| (a) Plan layout and geometry of road system is in accordance with the drawings.   |                             |         |
| (b) Finished levels at crown and channel are at design levels.  |                             |         |
| (c) Crossfalls are to the approved plan.  |                             |         |
| (d) AC is satisfactory with regard to finish and thickness.   |                             |         |
| (e) Joints in the seal (especially where various development stages apply) are flush.   |                             |         |
| (f) The sealed surface is free of blemishes, including those caused by the base of backhoe legs. (When caused by service authorities, the damage is to be repaired during the maintenance period.)  |                             |         |
| <b>Segment Pavers</b>   |                             |         |
| The works have been finally inspected and—  |                             |         |
| (a) All pavers have been correctly laid to pattern, within allowable tolerance, compacted and the joints filled.  |                             |         |
| (b) Bedding sand for pavers drains to sub-soil drainage.  |                             |         |
| (c) Pavers adjacent to CKC, edge restraints etc have been correctly cut and laid.   |                             |         |
| <b>Sewer Reticulation</b>   |                             |         |
| The works have been finally inspected and—  |                             |         |
| (a) Pipe layout is as per the plan or approved amendments with respect to pipe size, levels and location.   |                             |         |
| (b) Pipework has been visually inspected and is satisfactory, i.e.—<br>- pipework flush with internal walls of manhole;<br>- alignment and grade;<br>- flexible joints;<br>- line flushed and clean;<br>- no visible sign of trench subsidence. |                             |         |
| (c) Manholes have been constructed to the correct standards, i.e.—<br>- benching<br>• curvature;<br>• ponding;  |                             |         |

| Item  | Work Passed<br>(yes/no/n.a) | Comment |
|---|-----------------------------|---------|
| <ul style="list-style-type: none"> <li>• profile;</li> <li>• no weeps;</li> <li>- concrete work <ul style="list-style-type: none"> <li>• no honey combing;</li> <li>• no weeps etc;</li> </ul> </li> <li>- covers <ul style="list-style-type: none"> <li>• correct type;</li> <li>• imprint;</li> <li>• depth of cover surround;</li> <li>• depth of top slab;</li> </ul> </li> <li>- location <ul style="list-style-type: none"> <li>• relative to lot boundaries;</li> <li>• 50-75mm proud of finished surface level.</li> </ul> </li> </ul> <p>All density tests of backfill are available and satisfactory.</p> |                             |         |
| (d) Grading results for bedding material have been submitted or are available.  |                             |         |
| (e) Pressure test results and CCTV film have been submitted or are available.   |                             |         |
| <b>Water Reticulation</b>   |                             |         |
| The works have been finally inspected and—  |                             |         |
| (a) Pipe layout and service fixtures (valves and hydrants) is as per the plan or approved amendments with respect to pipe size and location.  |                             |         |
| (b) Pipework has been pressure tested in accordance with Local Government's requirements and test results are available and satisfactory.   |                             |         |
| (c) Valves and hydrants have been inspected and are satisfactory, i.e.— <ul style="list-style-type: none"> <li>- location;</li> <li>- setts and surrounds correctly installed;</li> <li>- brick packing, correctly installed to prevent ingress of soil, etc;</li> <li>- depth to top of hydrant or valve stem within limits;</li> <li>- dust caps to hydrants;</li> <li>- marker post correctly installed— <ul style="list-style-type: none"> <li>• colour;</li> <li>• marking plate;</li> <li>• size and distance;</li> <li>• reflector tabs.</li> </ul> </li> </ul>  |                             |         |
| (d) Grading results for bedding material have been submitted or are available.  |                             |         |
| <b>Concrete Kerb and Channel Medians</b>  |                             |         |
| The works have been finally inspected and—  |                             |         |
| (a) The correct type has been used at all locations (including medians) in accordance with standards.   |                             |         |
| (b) Ponding of stormwater does not occur.   |                             |         |
| (c) Transitions and connections to existing construction are smooth and to a satisfactory standard of workmanship.  |                             |         |
| (d) Service markers have been placed to kerb face.  |                             |         |
| (e) Lip and back of kerb are flush with the roadway and footpath respectively.  |                             |         |
| (f) All channelisation works and medians have been satisfactorily completed.  |                             |         |
| (g) Infill treatment of medians has been inspected and found satisfactory. Any landscaping has been completed to standard.  |                             |         |
| (h) Backing strips have been provided to median kerbs where required.   |                             |         |
| (i) Side drains have been provided under medians.   |                             |         |

| Item   | Work Passed<br>(yes/no/n.a) | Comment |
|--|-----------------------------|---------|
| <b>Footpaths</b>   |                             |         |
| The works have been finally inspected and—   |                             |         |
| (a) Profiles are as per plan.  |                             |         |
| (b) Footpath has been topsoiled to Local Government's requirements.  |                             |         |
| (c) Footpaths have been grass seeded and fertilised or turfed to Local Government's requirements.  |                             |         |
| (d) All service fixtures (such as valves etc) are flush with the surrounding footpath.   |                             |         |
| (e) Concrete footpaths have been constructed to Local Government's requirements.   |                             |         |
| (f) Kerb ramps constructed as required.  |                             |         |
| <b>Pathways, Driveways and Bikeways</b>  |                             |         |
| The works have been finally inspected and—   |                             |         |
| (a) Location and width are as per the plan.  |                             |         |
| (b) Kerb ramps and crossings are constructed.  |                             |         |
| (c) Safety rails and signs have been installed.  |                             |         |
| <b>Other</b>   |                             |         |
| (a) Street name signs, traffic signs and pavement marking have been installed.   |                             |         |
| (b) Works have not resulted in problems on neighbouring properties. Clearance letters as may be applicable have been submitted or are available.           |                             |         |
| (c) All boundaries of Reconfiguration/Development have been inspected to ensure works as constructed will not affect adjoining properties.                 |                             |         |
| (d) All necessary testing to ensure the quality of the work has been carried out and results are available and have been provided to the Local Government. |                             |         |
| (e) Engineer's Certificate of completion is available and has been provided to the Local Government.   |                             |         |
| (f) Private works accounts for live sewer and water connections etc have been paid.  |                             |         |
| (g) "As Constructed" details are available and have been provided to the Local Government including pavement depth details.                                |                             |         |
| (h) All lot boundaries, easements etc, have been pegged.   |                             |         |
| (i) Any outstanding fees and charges have been paid, i.e. Design Review, Works Inspection, Road Opening Permit, Permit to Draw Water.                      |                             |         |
| <b>NOTE:</b> Construction is within stated tolerances or otherwise within normally accepted engineering standard tolerances.                               |                             |         |

APPLICANT'S SIGNATURE: \_\_\_\_\_ NAME: \_\_\_\_\_

NAME OF CONSULTANCY: \_\_\_\_\_ DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

## 4.7 Checklist - Formal "On Maintenance" Requirements

### FORMAL ON MAINTENANCE REQUIREMENTS CHECKLIST

Application No: ..... / .....

Development Name: .....

#### General

- Engineer's Certificate of Construction
- "Pre-On Maintenance" Inspection Checklist
- Geotechnical and Structural Certification as applicable i.e. retaining walls, cut/fill batters etc.
- "As Constructed" Plan
- Digital "As Constructed" Information
- "As Constructed" Certification
- Completed asset register form.
- A copy of the prepared plan of survey.
- Copy of the certified contract value.

#### Earthworks

- Lot fill compaction test results
- As required by Development Approval conditions
- Certification from geotechnical testing company of any Level 1 supervision works.

#### Roadworks

- CBR test results
- Subgrade compaction test results
- Pavement gravel materials compaction test results
- Pavement gravel quality compliance test results
- Pavement gravel Quality Assurance test results
- Asphalt quality test results
- Asphalt compaction test results
- Pavement depth verification test results – signed by consultant and surveyor

#### Stormwater

- Trench backfill compaction test results
- PDS's for bedding material if required by the Local Government

#### Sewer

- Trench backfill compaction test results
- Pressure test results
- PSD's for bedding material if required by the Local Government
- Payment of connection fee. Receipt No.: .....
- Copy of the CCTV video recording of sewer inspection.

#### Water

- Trench backfill compaction test under roads, only if requested
- Pressure test results
- Water quality test results – required within four (4) weeks of date of test
- Payment of connection fee. Receipt No.: .....

**Concrete**

- As required by A.S. Specification and Manufacture of Concrete

**Miscellaneous**

- Clearance letters
- Outstanding design documentation
- Matters listed during construction
- Maintenance Security Deposit (5% of total cost of the works with minimum \$1000)
- Payment of Outstanding Private Works accounts
- Payment of Outstanding Fees

**Others As Applicable**

- Technical manuals, maintenance schedules and product guarantee documentation for all machinery installed as part of the works, including sewage pumps and pressure reducing valves, park play equipment, etc
- Copy of the Maintenance management plans for public open space areas.
- Approval from any other authorities that works within their jurisdiction have been completed satisfactorily.
- Copy of State Government approvals or licenses, e.g. WRC licence for works in creeks, pump station overflows or BPA approval of works in erosion prone areas.
- Letter of reinstatement

## 4.8 Checklist - Off Maintenance Requirements

Application No: ..... / .....

Development Name: .....

### Roadworks

- pavements and surfacing for deformation/shrinkage;
- minimum acceptance coverage of specified grass to all disturbed areas;
- street signs and linemarking
- kerb and channel to be cleaned and excess screenings to be removed from bitumen seal.

### Stormwater Drainage

- roads, pipes, structures, flowpaths clear of silt and debris;
- no ponding on roads, in pipes, structures, kerbs on flow paths;
- turfing to prescribed areas;
- pipes for damage/movement;
- exposure of steel;
- overland flow path;
- stormwater scouring repaired;
- interallotment drainage system for damage/movement.

### Water Supply and Sewerage

- hydrants and valves to be cleaned, have boxes centralised (if required) and checked for operation, caps to be replaced on hydrants if required;
- hydrant and valve marker posts;
- sewers for damage/movement. All lines to be visually inspected a maximum of 14 days prior to "Off Maintenance" inspection;
- any kerb or road markings repainted (if required);
- manholes not buried/damaged.

### General

- stormwater quality measures maintained and temporary measures removed;
- integrity of environmentally significant areas;
- all grassed areas in road and drainage reserves, parks and open space slashed;

APPLICANTS SIGNATURE: \_\_\_\_\_ NAME: \_\_\_\_\_

NAME OF CONSULTANCY: \_\_\_\_\_ DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

## 4.9 Checklist - Plan Sealing Requirements

Application No: ..... / .....

Development Name: .....

### General

- Application for Sealing of Plans of Survey completed
- Any rezoning of the land completed and approved by Governor
- Engineering design approved by Council
- Written approval obtained from any other relevant State Government Departments e.g. DPI - Water Resources, Queensland Department of Transport, Qrail, Department of Environment & Heritage, etc
- Landscape design approved by Council
- Completed estimated rates and Bill of Quantities (if construction work not started) or completed tender (if construction work started)
- All sewer and earthworks on the lots completed to the satisfaction of Council's Engineer.
- The subdivision has been pegged
- Confirmation from the Power Authority that arrangements have been made for the supply of electricity
- All necessary reserves & easements for downstream drainage to the Legal Point of Discharge completed and/or letter for temporary drainage outlet across balance allotment
- Incompleted Works Bond amount submitted in form of bank guarantee
- Maintenance Security Bond (if construction is complete)
- General Performance bond paid
- All rates and charges against the land have been paid
- All headworks charges have been paid
- Any contributions to downstream stormwater drainage have been paid
- All "Public Use Land" noted with description on the face of the plan
- The survey plan signed by the owner
- All easement documents over the land signed
- All Form 1 Transfer documents for transfer of land to Council signed
- Solicitors undertaking for lodgement of transfer documents

APPLICANTS SIGNATURE: \_\_\_\_\_ NAME: \_\_\_\_\_

NAME OF CONSULTANCY: \_\_\_\_\_ DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

#### A.10 Table - Material Quality Compliance Test Summary

Testing for quality compliance is to be carried out in accordance with the applicable standard test procedures of the Department of Main Roads, including in particular the following—

| DMR Test Method Method No. | Description   |
|----------------------------|---|
| Q101                       | Preparation of Distributed Sample                       |
| Q102                       | Moisture Content  |
| Q103A                      | Particle Size Distribution (wet sieving)                |
| Q104A                      | Liquid Limit (Cone penetrometer)                        |
| Q105                       | Plastic Limit and Plasticity Index                      |
| Q110A                      | Dry Density/Moisture Relationship (standard compaction) |
| Q110B                      | Dry Density/Moisture Relationship (modified compaction) |
| Q113A                      | California Bearing Ratio (standard compaction)          |
| Q215                       | Determination of Crushed Faces                          |
| Q106                       | Linear Shrinkage  |
| Q119                       | Resistance to Weathering                                |
| Q204B                      | Aggregate Crushing Value (wet)                          |

**Note :** Los Angeles Abrasion Test and the Sodium Soundness Test is to be in accordance with the following ASTM Specification—

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| Los Angeles Abrasion Test ASTM C    | <u>Course - Fine</u><br>535 and C131 |
| Sodium Sulphate Soundness Test ASTM | C88 – 69                             |

#### **A.11 Table - Compliance Requirements for Concrete Testing**

| <b>ITEM</b>                        | <b>TARGET STRENGTH<br/>(28 DAYS)</b> | <b>FREQUENCY</b> | <b>SUBMIT TO LOCAL<br/>GOVERNMENT</b> | <b>WHEN REQUIRED</b>          |
|------------------------------------|--------------------------------------|------------------|---------------------------------------|-------------------------------|
| Kerb and Channel                   | 25MPa                                | 1 per 300 m      | Yes                                   | On or Off Mtce <sup>(3)</sup> |
| Vehicular Crossings                | 25 MPa                               | 1 per crossing   | No                                    |                               |
| Bikeways                           | 25 MPa                               | 1 per 300 m      | Yes                                   | On or Off Mtce <sup>(2)</sup> |
| Footpaths                          | 25 MPa                               | 1 per 300 m      | Yes                                   | On or Off Mtce <sup>(2)</sup> |
| Concrete channels                  | 25 MPa                               | 1 per 150 m      | Yes                                   | On Mtce <sup>(3)</sup>        |
| Structures <sup>(5)</sup>          | per design                           | as directed      | Yes                                   | On Mtce <sup>(4)</sup>        |
| Manholes/Gully-Pits <sup>(6)</sup> | per design                           | as directed      | Yes                                   | On Mtce <sup>(4)</sup>        |

**Notes:**

1. Test according to AS 1012 (pts 1-14) "Method of Testing Portland Cement Concrete".
2. Tests may be submitted after On Maintenance only if bonded.
3. Minimum Requirement is for the 7-day tests to be provided at On Maintenance.
4. 28-day test required.
5. Bridges, retaining walls, cast insitu box culverts, etc.
6. Major structures other than standard manholes and gully-pits.

#### 4.12 Table - Compliance Requirements for Public Works

| TESTS AND CERTIFICATES   | PROVIDE PRIOR TO   | COMMENTS  |
|--|--|---|
| <b>Earthworks</b><br>- Density Tests<br>- Retaining walls and Batters, Structural and Geotechnical Certification   | On Maintenance<br>On Maintenance   | Consultant responsible for submission of all relevant test results.   |
| <b>Roadworks</b><br>- Subgrade CBR/OMC<br>- Pavement Design<br>- Subgrade, Field Density<br>- Pavement—<br>- Field Density<br>- CBR's/PSD<br>- Material Quality<br>- As Constructed Levels<br>- AC Surfacing—<br>- Marshall Tests<br>- Delivery Dockets<br>- Compaction Tests  | Pavement Construction<br>Pavement Construction<br>Subgrade Inspection<br><br>Preseal Inspection<br><br>On Maintenance<br>On Maintenance<br>On Maintenance<br>Off Maintenance | Consultant responsible for submission of all relevant test results  |
| <b>Stormwater Drainage</b><br>- Trench and backfill compaction<br>- under road<br>- other<br>- PSD's for bedding material  | Subgrade Inspection<br>On Maintenance<br>On Maintenance  | Consultant responsible for submission of all relevant test results.   |
| <b>Sewerage Reticulation</b><br>- Trench and backfill compaction<br>- under road<br>- other<br>- PSD's for bedding material<br>- Pressure test results   | Subgrade Inspection<br>On Maintenance<br>On Maintenance<br>On Maintenance  | Consultant responsible for submission of all relevant test results.   |
| <b>Water Reticulation</b><br>- trench and backfill compaction<br>- under road<br>- other (if applicable)<br>- Pressure test results<br>- Water quality test results  | Subgrade Inspection<br>On Maintenance<br>On Maintenance<br>On Maintenance  | Consultant responsible for submission of all relevant test results.   |
| <b>Concrete Tests</b><br>- CKC<br>- Footpaths<br>- Bikeways<br>- Crossings<br>- Other  | See Table – Compliance Requirements for concrete testing   |   |
| <b>Other</b><br>- Pre-Inspection Certificate / Checklist<br>- Engineers Certificate<br>- As Constructed<br>- Bonding Arrangement<br>- Private Works Accounts<br>- Clearance letters if applicable<br>- Outstanding fees and charges<br>- Request for works to go On Maintenance<br>- As Constructed pavement depth details | On Maintenance<br><br>On Maintenance<br>On Maintenance<br>On Maintenance<br>On Maintenance<br><br>On Maintenance   | Required before inspection will proceed<br>Consultant to advise<br><br>Consultant to formally request list of outstanding items, works to be rectified to be included |
| <b>Maintenance Period</b><br>- Rectify all defects<br>- AC Core Tests<br>- Concrete Tests<br>- Provide any additional "As  | Off Maintenance<br>Off Maintenance   |   |

| TESTS AND CERTIFICATES  | PROVIDE PRIOR TO  | COMMENTS   |
|---|---|--|
| <p>Constructed" details as may be required by the Local Government</p> <ul style="list-style-type: none"> <li>- Submit any other outstanding test results or certificates</li> </ul>        | <p>Off Maintenance</p>  |  |
| <p><b>Off Maintenance</b></p> <ul style="list-style-type: none"> <li>- Request to take works off maintenance</li> <li>- All works rectified</li> <li>- Maintenance security bond</li> </ul> | <p>Off Maintenance<br/>Off Maintenance<br/>Post Off Maintenance</p> | <p>Consultant to formally request</p> <p>Consultant to formally request release of maintenance security bond</p> |