



WAIMAKARIRI
DISTRICT COUNCIL

ENGINEERING CODE OF PRACTICE

PART TWO

GENERAL REQUIREMENTS

April 2009

Part 2: General Requirements

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2.1 INTRODUCTION

The CoP serves as a basis of compliance for projects carried out by the Council as part of its capital works programme, as well as the subdivision and development of land, where these activities are subject to the Resource Management Act 1991.

This Part of the CoP includes both those components of the design process common to all developments or not restricted to one asset type and those components particular to the subdivision of land.

The provisions of the Engineering Code of Practice must be read subject to the provisions of the *District Plan* and to any applicable statutes, regulations and bylaws.

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2.2 CONSENT AND COMPLIANCE ISSUES

2.2.1 Legislation

2.2.1.1 Resource Management Act (1991) and amendments (2005)

The Resource Management Act (RMA) is the principal statute under which the use and subdivision of land is controlled.

The *District Plan* is a resource management instrument with the purpose of achieving the promotion of sustainable management of natural and physical resources, which is the overarching purpose of the RMA.

The CoP serves as a technical compliance manual and, although outside the *District Plan*, its provisions are referred to and given effect through conditions of resource consent and through capital works' project briefs.

2.2.1.2 Local Government Act (2002) and amendments (2006)

The mechanism for requiring contributions under the Local Government Act, through land or cash, is set out in the *Long Term Council Community Plan* and the *Development Contributions Policy*.

2.2.1.3 Health & Safety in Employment Act (1992) and amendments (2002)

The object of the Health and Safety in Employment Act is to promote the prevention of harm to all people at work, and others in, or in the vicinity of, places of work.

The Act applies to all New Zealand workplaces and places duties on employers, the self-employed, employees, principals and others who are in a position to manage or control hazards.

The Act deals with all safety and health issues in all workplaces and during all work activity. Nothing in the CoP shall detract from the requirements of the Health & Safety in Employment Act, or vice versa.

2.2.1.4 Building Act (2004) and amendments (2005)

The Building Act 1991 provides a national focus for building control to ensure that buildings are safe and sanitary and have suitable means of escape from fire, and the Building Regulations made under the Act provide the mandatory requirements for building control in the form of the *New Zealand Building Code*.

The *Building Code* contains the objective, functional requirements and performance criteria that building works must achieve.

Where infrastructural development associated with capital works and the subdivision or development of land involves the creation of structures with associated site works, observe the requirements of the Building Act. Nothing in the CoP shall detract from the requirements of the Building Act or the *Building Code*, or vice versa.

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2.2.2 Resource Consents

The developer shall be responsible for obtaining any necessary resource consents from the Waimakariri District Council and Environment Canterbury (Canterbury Regional Council) before any construction work commences. Works requiring resource consents could include those outlined below, but the developer should satisfy him/herself as to the actual consents required.

- Generation of noise;
- The discharge of odours from pump stations, rising mains or pipelines;
- On-site treatment and disposal;
- Working within a waterway, or within 20 metres of a waterway
- Any other works that disrupt the surrounding environment

Resource consents for permanent works that will become the responsibility of the Council shall be sought for the maximum term possible and in the name of the Waimakariri District Council. Application shall be approved by the Council before submission to ECan.

2.2.3 Consent and Approval from the Waimakariri District Council

Works that may affect natural waterways or cause erosion, sedimentation or dust problems, and new stormwater, wastewater and water systems require approval from Council and consent from Environment Canterbury.

Approval may be by way of a permitted activity or rule in the District plan or by a discharge permit. A land-use consent and a discharge permit are generally required for subdivisions and capital works projects and when significant water quantity and quality issues need to be addressed.

For any works within a road reserve, the developer shall obtain a road opening permit from the Council. Refer also to QP-C843 *Standard Specification – Road Openings*.

Authorising officers from both Councils should be consulted prior to consent application. It is good practice for the Council and Environment Canterbury to process subdivision and water-related resource consents simultaneously and deal with land and water issues at a joint hearing pursuant to Section 102 of the RMA.

In some situations, approval is also required from the local Runanga. Within the Waimakariri District, this is Te Ngai Tuahuriri Runanga and TRONT.

2.2.4 Consent from the Canterbury Regional Council

Regional plan requirements will generally be limited to effects on the natural environment. However, territorial authorities have a responsibility to manage land and adverse effects under section 31 of the RMA.

Consent from Environment Canterbury will be required for the following types of works:

- Works within or affecting natural waterways unless the works meet any conditions that apply to the existing system;
 - The discharge of stormwater unless the discharge is to an authorised existing utility stormwater drainage system and meets any conditions that apply to the existing system;
 - The disposal of wastewater unless the discharge is to an authorised existing utility wastewater system and meets any conditions that apply to the existing system;
 - The supply of water unless the supply point is an existing utility water supply system and meets any conditions that apply to the existing system;
 - Construction of a new road (land-use)
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The WDC has a consent for works within natural waterways between the months of July and August. Consent from Environment Canterbury will also be required unless the waterway is man-made, such as a stormwater drain.

Other activities often associated with works which must be authorised by Environment Canterbury include:

- The diversion of natural water during construction work;
- The permanent diversion of natural water as a consequence of the development;
- Activities in the bed or on the banks of a natural waterway;
- Damming waterways;
- Temporary discharges from construction sites.
- Dust dispersal
- Build-up of sediments in a waterway
- Erosion soil from the banks and/or bed of a waterway

Other activities, where effects are considered minor, **may** be authorised as a permitted activity subject to certain conditions in the regional plan. Authorisation may also be by way of a comprehensive consent held for a large area or entire catchment.

Site-specific water permits must be obtained for new schemes.

All wastewater assets to be vested in the Waimakariri District Council shall comply with the requirements of the NRRP.

2.2.5 Information Required for a Consent Application

Provide the following information to support the concept drawings and/or Resource Consent plans, as a minimum:

- Key topographical features
- Locations of all buildings, roads, property boundaries, existing services, easements and other important structures;
- The location of any natural waterways, springs, wells, bores, water races or wetlands within the site or in close proximity to a boundary. The location in plan and level of the water's edge and shoulder of the banks must be indicated;
- The proposed proximity of works to the water's edge and/or shoulder of the banks;
- The location of existing surface drainage pathways (including secondary flowpaths) and the impact of any proposed filling or excavation on existing overland flow paths;
- Representative pre-existing and post development cross-sections through any natural waterways or wetlands, including the areas immediately adjacent to the proposed development;
- Clear identification of the extent of any existing and post-development river or coastal floodplains on or in close proximity to the site and overland flow paths within the site;
- Details of investigations such as ground water levels, profiles, infiltration testing and effects on the environment and geological or water quality assessments.
- Protected trees, other significant vegetation and other features to be protected and retained (e.g. natural landforms, ecological protection areas);
- The location of archaeological and historical features, where present. See *Te Whakatau Kaupapa* for more information.

The level datum used must be Lyttelton Mean Sea Level 1937 (MSL). Plans should be "to scale".

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2.2.6 Approval Process

Resource consent issues can be complex and the consent process long. Seek the advice of the Council at the earliest stage of planning for works.

The works shall be constructed to comply with the approved plans. 'As built' plans and documentation shall be prepared and certified by the developer's representative.

The Council will issue an Engineering Release Certificate or a Certificate in terms of Section 224(c) of the Resource Management Act 1991 upon Council approval and prior to the commencement of the activity's end use.

The following shall be completed prior to the issue of Engineering Release Certificate or 224(c) Certificate:

- Earthworks and bulk of topsoiling exclusive of road reserves;
- Full road construction including footpaths;
- Street names, and traffic signs;
- Stormwater, sanitary sewer and water reticulation: inspected tested and arrangements in place for hook-up. Note that all valve and hydrant boxes must be in place and clearly identified;
- Installation of energy, street lighting, communications and gas reticulation where applicable;
- As-Built drawings approved by Council.

The Council will audit compliance with resource consent conditions by both site inspections and checking of associated documentation to the extent necessary to ensure the work is completed in accordance with the approved plans and specifications and to the Council's standards.

2.2.7 Exercising Consents

Discharge consents, water use consents, land-use consents, and temporary consents required during construction must be applied for by, and exercised in the name of, the developer.

This includes any consents for works to be transferred to the Council upon completion.

Any application involving consents intended to be transferred to the Council should be discussed with the Council first. The Council must approve these prior to application as it will not accept the transfer of a consent unless it has previously approved the conditions of that consent.

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2.3 ENGINEERING PLAN APPROVAL

The Council's asset managers prefer that, before a proposed activity associated with a resource consent is commenced, engineering plans that adequately specify the works and materials are prepared and approved by the Council and any other relevant network utility operator. The required consents shall be obtained before construction can commence.

2.3.1 Documentation

The following documents and calculations shall be required for approval, where appropriate:

- **Stormwater Catchment Plan and calculations:** Showing catchments and drainage reticulation design, secondary flow paths, minimum floor levels for lots adjacent to flowpaths.
- **Sanitary sewer catchment plan and calculations:** if trunk or primary reticulation is proposed or if requested by Council.
- **Existing drains:** Where an existing private reticulation is proposed to be included as a Council asset the condition of the reticulation may require verification. Verification can be in the form of closed circuit television video inspection and/or pressure test.
- **Road pavement design calculations.**
- **Structural calculations.**
- **Geotechnical stability calculations.**
- **Test results:** to support Roading, Structural or Geotechnical calculations
- **Construction management plan:** outlining methods of dust, noise control etc.
- **Health and safety plan:** required for any work in Council Land. Must identify any potential hazards and proposed measures of dealing with them.
- Any work intended to be undertaken on third party property must be clearly identified on the plan, e.g. where material is borrowed or stockpiled.
- Where open cut excavation is proposed on existing roads this work must be identified on the plans. A Road Opening Permit shall be obtained from the Waimakariri District Council.
- Plans & Specifications.
- Any other resource consents required for the execution of the development.

2.3.2 Drawings

The following drawings shall be required for approval, where appropriate:

- **Locality plan:** Showing location of work in relation to existing roads and features to enable the site to be easily located.
 - **Staged development plan:** Where development is planned in stages then each stage shall be accompanied by a plan showing how that particular stage relates to the development as a whole and also to other stages. The physical execution of the works to be staged shall align with that staging detailed in the resource consent application.
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- **General Roading Works Plan:**
 - Plans showing horizontal alignment, kerbs, benchmark positions, setting out data, co-ordinates etc.
 - Detailed plans with contours of intersections, cul-de-sac heads, parking bays.
 - Long-section showing, at maximum 20 m chainage intervals existing ground levels, proposed final levels, cuts and fills, grades, vertical curve details, horizontal curves and services.
 - Cross sections and typical cross sections.
- **Drainage, Sewerage and Water Reticulation:**
 - Separate plans showing the reticulation in relation to lot boundaries.
 - Long sections of each drainage line with existing and final ground levels at minimum 20 m intervals, pipe sizes lengths and grades, manhole cover levels, invert levels and depths.
 - Any existing services shall be shown on cross sections and accurately located in the field by potholing or other buried service location techniques.
- **Energy (Electrical) reticulation:** Plan showing all structures, such as power poles, and any underground lines laid outside the approved location (see SD 600-245A/B/C)
- **Street lighting layout**
- **Communications reticulation layout:** Plan showing all structures, such as telecommunications cabinets, and any underground lines laid outside the approved location (see SD 600-245A/B/C)
- **Gas reticulation layout:** (if applicable)
- **Earthworks and Sediment Control Plan:** Separate plan showing final contours, areas of cutting and filling together with depths relative to original ground level. Also include a copy of any plan submitted to ECan as part of any other resource consent requirement.
- **Topographical survey plan:** Showing and identifying existing features, spot levels on permanent features, invert levels, pipe and manhole materials, flow directions. The survey must be oriented by reference to legal survey pegs and not merely boundary fences or buildings.
- **Detail drawings:** Standard and other Detail drawings showing details of kerbs and/or channels, pram crossings, paving and underchannel drains, stormwater inlet and outlet structure details, manholes, junctions, ramped risers, sumps, pipe bedding.
- **Structural drawings** (if applicable).
- **Ducting Plan** showing ducts for communications, energy, traffic-lights, water connections etc.
- **Road signs and markings plan** including street names.
- **Pump station details** (if applicable).
- **Landscape Planting Plan.**
- **Works to Reserve areas.**

2.3.3 Submission of Application for Engineering Plan Approval

Upon works completion the certificate of design compliance that states that all works have been designed in accordance with the appropriate standards and sound engineering practice should accompany the application.

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The Supervising Engineer/Surveyor shall submit a programme of inspection that should demonstrate an adequate level of inspection will be undertaken.

2.3.4 Engineering Plan Approval

The Council will check the Engineering Plans and Specifications for compliance with this Engineering Code of Practice. The Council's approval of complying documents will be given in writing.

If alterations are required the plans and documents will be returned with the request that updated plans are amended. Minor amendments required will be endorsed on all copies of the plans.

Where the resource consent application includes a proposal plan for the proposed activity and a resource consent is granted that is conditional on works being completed in accordance with the approved plans then the Council will return a set of stamped approved plans and specifications to the developer.

At all times during construction a copy of the stamped approved plans shall be kept on site, together with a copy of the Resource Consent.

The works shall be constructed to comply with the approved plans. 'As built' plans and documentation shall be prepared and certified by the developer's representative.

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2.4 EXPANDING ON DISTRICT PLAN REQUIREMENTS

2.4.1 Fees

The Council has a set scale of fees covering most types of subdivision application. Applications are not accepted without the fee being paid. For those types of application not covered by the scale of fees, a deposit is required. The balance of the full cost of processing the application is payable after the release of the Section 224(c) certificate.

2.4.2 Pre-Application Meeting

Developers and designers of “greenfield” subdivisions that will result in substantial infrastructural assets being vested in the Council, or smaller complex subdivisions on the hills, are strongly advised to request a pre-application meeting at which issues and options can be discussed with the Council.

Submit a concept plan before this meeting.

2.4.3 Future Development

Where further development, upstream of or adjacent to the area under consideration, is provided for in the *District Plan*, the Council may require infrastructure or additional capacity to be constructed to the upper limits of the development.

Make allowance for these requirements where specified by the Council in the consent conditions or project brief.

2.4.4 Environmental Considerations

The Council has a number of policies designed to protect and enhance the District’s natural environment. It also encourages parties to retain and enhance the natural environment in tandem with development works. When carrying out a design, evaluate its overall impact on the environment for both the construction and operational phases, consistent with legislation and the *District Plan*.

Wherever possible, avoid environmentally significant areas. Some examples of these areas include:

- Stands of native vegetation, bushland, habitats of threatened native species.
- Waterways and floodways.
- Wetlands, swamps, estuaries, sand dunes, foreshore areas.
- Heritage item precincts and protected trees.
- Maori relics and significant indigenous sites.
- Landfill sites and contaminated land.
- Areas of aggressive ground conditions, e.g. acid sulphate soil, aggressive groundwater.

Wherever it is not possible to avoid environmentally sensitive areas, consider the following environmental issues during the design:

- The environmental impact of the construction;
 - The use of alternative excavation technology such as tunnelling, boring, directional drilling and micro-tunnelling;
 - The type and size of construction equipment;
 - Issues raised in CoP Part 4: *Geotechnical Requirements*.
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In some situations, the Council may specify that an environmental impact assessment must be completed during the investigative stage.

Ensure that the appropriate resource consents are obtained for work in the vicinity of protected trees and that the work is carried out in accordance with the Council's requirements.

2.4.5 Road Name Signs

When the development contains new roads, private ways or access lots that require signage, the developer is responsible for erecting the nameplates where this is a consent condition. The developer is also responsible for moving existing signage, where the new work affects its installation.

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2.5 REQUIREMENTS FOR DESIGN AND CONSTRUCTION

2.5.1 Investigation and Design

All investigation, calculations, design, supervision and certification of the works, as outlined in the CoP, must be carried out by or under the control of persons who:

- Are experienced in the respective fields;
- Have appropriate professional indemnity insurance.

The provisions of the CoP do not reduce the responsibility of those professionals to exercise their judgement and devise appropriate solutions for the particular circumstances of each development or project.

2.5.2 Construction

All works carried out in any development must be done by persons who:

- Have the appropriate experience in the relevant areas;
- Have the appropriate equipment;
- Are approved for that type of work e.g. authorised drainlayers, authorised water supply installers, Site Traffic Management Supervisors. Refer to <http://www.ccc.govt.nz/doingbusiness/approvedcontractors/> for details;
- Meet the requirements of the Health and Safety in Employment Act.

All construction must comply with the requirements of the CCC *Construction Standard Specifications* (CSS).

Erect Notice Boards, complying with Standard Drawings 600-250 and CCC CSS: *Part 1*, at all construction sites. Where work is being carried out on behalf of other parties e.g. land development or subdivision, include the developer's name in place of the Waimakariri District Council name and logo on the signs.

2.5.3 Quality Assurance

All quality aspects of the investigation, design and construction must comply with CoP Part 3: *Quality Assurance* over the lifetime of the project. If any or all of the certificates or other documents referred to in Part 3 are not supplied, the Council may refuse to accept the work and refuse to issue the certification of the work pursuant to Section 224(c) of the RMA.

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2.6 SURVEY REQUIREMENTS

2.6.1 Level Datum

The level datum used in the Waimakariri District must be Lyttelton Mean Sea Level 1937 (MSL). Where a Waimakariri District Council benchmark is not available within 1.0 kilometre of the site, use a LINZ level mark. State both the source of the levels (the benchmark) and the datum used on the engineering drawings.

2.6.2 Benchmarks

Establish a permanent benchmark where required by the Council as a condition of subdivision consent or as part of a project brief for capital works. As a general rule, a permanent bench mark will be required when, in the case of a subdivision, there is an extension to the Council's sewer, water, stormwater or roading network resulting in a distance of more than 650 m from an existing permanent bench mark.

Benchmarks must be accurate to ± 5 mm.

Obtain a stainless steel washer with the unique benchmark number from the Council. Fix it by Ramset nail to a kerb, drainage structure or to other substantial concrete structure within the legal road or council reserve.

Provide the following documentation:

- A finder diagram showing the reduced level to three decimal places e.g. 13.225 m, complying with the Standard Draughting Layout requirements in QP-C811-AA (attached as Appendix A);
 - Certification from a Licensed Cadastral Surveyor (a template certificate is provided in QP-C811-AC, attached as Appendix C);
 - The methodology used e.g. differential levelling, GPS.
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2.7 DRAWINGS

Engineering drawings must be legible, clear, readable and complete. They must clearly illustrate the proposal and enable both assessment of compliance with the CoP and accurate construction. Produce drawings on ISO-A series format. Follow the draughting requirements in Appendix A and detailed in AS 1100.101: 1992 and AS 1100.401:1984. The *United States National CAD Standard* is also an acceptable standard.

Engineering drawings generally include the following:

- A locality diagram giving the overall layout and location of the works;
- Detailed drawings, longitudinal sections, cross sections and diagrams of the proposed developments and/or works;
- Special details where the standard drawings are not sufficient;
- Benchmarks at a maximum spacing of 650 m;
- A north point, preferably pointing above the horizontal (i.e. in the top 180 degrees);
- Standard sheet notes, referring particularly to the CCC CSS;
- Set out information;
- A service legend, where services are shown on the drawing;
- A planting key or clearly labelled planting, where it is shown on the drawing.

If the project is large, provide a separate landscape drawing. On smaller projects, landscaping details may be shown on the engineering drawings. In both cases, show landscape planting areas on the roading construction drawings, by shading or patterning.

2.7.1 Content of Drawings

Show the following information on the drawings:

- The extent of the works showing existing and proposed roads, and the relationship of the works with adjacent works, services and/or property, including adjacent property levels;
 - Proposed and existing property boundaries and street numbers
 - Significant existing vegetation to be removed and any special or protected trees, and any areas of heritage significance that may be affected by the works;
 - The extent of earthworks, including earthworks on proposed reserves, existing and proposed contours, areas of cut and fill, batter slopes, proposed stockpiles, subsoil drainage, erosion and sediment control measures both temporary and permanent;
 - Details and location of existing and proposed stormwater primary and secondary flowpaths;
 - The design of proposed roads (and their connections with existing roads), including plans, longitudinal and cross sections, horizontal and vertical geometry and levels, typical cross sections, details of proposed pavement and surfacings, kerbing, berms, footpaths, cycleways, tree planting, road marking and signage and all other proposed street furniture;
 - Details and location of existing water, wastewater and stormwater mains and service connections, valves, hydrants, manholes, sumps, bends, tees, thrust blocks, meters and backflow devices;
 - The horizontal and vertical alignment and location, including invert levels, physical grades, lengths, sizes, materials, types, minimum cover, cut to invert, position relative to other services of all proposed water, wastewater and stormwater mains and service connections, valves, hydrants, manholes, sumps, bends, tees, thrust blocks, meters and backflow devices, and services that may be reconnected or plugged;
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- Details and location of mechanically restrained portions of pipelines, pipeline bridges, pumping stations, reservoirs, intake and outlet structures, headwalls, swales, basins, ponds and the location of surface obstructions, hazards, or other features that may be affected by the works;
- In respect of water mains - chlorination points, pressure reducing valves with upstream and downstream design pressures;
- The street lighting layout showing the location and type of each light, proposed and existing significant road features (e.g. kerbs, property boundaries, planting and traffic management features) and property addresses;
- Details and location of existing and proposed telecommunications, electricity and gas supply, including proposed underground and above-ground junction boxes, transformers and similar equipment;
- The bedding and backfill depths, design compactions and trench restoration details for all underground services;
- Details of proposed landscaping of roads and allotments, and details of proposed reserve development including earthworks, landscaping features, landscaping structures, tree planting, irrigation, hard and soft surface treatment, park furniture and playground equipment. Include details of the ongoing maintenance requirements where appropriate.

This information may be expanded in the relevant part.

2.7.2 Form of Drawings

Provide all drawings in paper and/or electronic form. Normally hardcopy drawings should be supplied as full size prints to allow 'as-built' drawings to be prepared prior to filing.

All drawings must be legible at A3 size. Prepare electronic drawings in one of the following formats: DWG, DXF or DGN (V8), suitable for later addition of as-built information and inclusion in the Council's asset map base. Drawings can be supplied as PDFs able to be converted to TIFs. In particular, electronic transfer of drawings may be required.

The co-ordinate system may be New Zealand Transverse Mercator Projection (NZTMP) or New Zealand Map Grid (NZMG).

Only metric units are to be used. Principally these are millimetres (mm), meters (m), litres/sec (L/s), and cubic meters/day (m³/day). All levels are to be to 2 decimal places.

Plans shall be completed to the appropriate scales. Standard scales are 1:50, 1:100, 1:200, 1:250, 1:500, 1:750, 1:1000 and 1:1500. Map symbols to be those required by AS/NZS 1100. All text and symbols must be legible at A3 size. Format dates as day/month/year.

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2.8 ACCEPTANCE OF DESIGN

This section applies to works carried out under subdivision consent.

2.8.1 Documents to Be Submitted For Engineering Acceptance

The Council will require a design report to be submitted. CoP Part 3 clause 3.3.1 – *Design Report* sets out in detail what is required in a design report.

Submit the design records, incorporating drawings, calculations, specifications, material specifications where not detailed elsewhere, graphical representations and calculations of infrastructure where requested, with the design report. This information should enable the process to be followed easily and should allow for replication of the results.

Include the geotechnical engineer's report on the suitability of the land for subdivision and/or development, including any site investigations.

Each separate Part of the CoP sets out those aspects particular to that Part which must be covered by the design or design report, where relevant.

2.8.2 Cost Benefit or Life-Cycle Costing

Where considered appropriate by the Council, carry out a cost benefit or life cycle costing of a proposal. This will typically be for larger or unique projects.

Life cycle costing may be used to consider options within a proposal or a proposal as a whole. In undertaking life cycle costing, consider the initial costs borne by the developer or the Council and the maintenance and replacement costs borne by the future owners and/or the Council. Maintain a reasonable balance between these short-term and long-term costs.

Assets designed to minimise capital cost at the expense of overall lifecycle shall not be accepted.

2.8.3 Engineering Acceptance

When it is satisfied that the design and design report meets the requirements of the CoP, the Council shall notify the designer that the design and design report has been accepted and endorse the quality plans, engineering drawings, specifications and other documents accordingly. For the purpose of this acceptance, the Council may require amendments to any quality plans, engineering drawings, specifications and/or other documentation and further reports submitted. In considering the design and design report and giving its acceptance, the Council shall act without undue delay.

Work must not commence on site unless and until:

- A resource consent for the work has commenced, except when no such consent is required;
 - The Council has given engineering acceptance;
 - Any other consent required has been granted e.g. NZ Railways Corporation, Department of Conservation, landowner.
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2.9 APPROVAL OF CONSTRUCTION

2.9.1 Commencement of Works

The Developer shall not commence any engineering works without prior approval from the Council of the Engineering Plans, Resource Consent issue (where applicable) and all other necessary Consents are obtained. For substantial developments a pre-construction meeting is normally held on site between the developer and the Council's representative.

Prior to physical works commencing the developer shall ensure that all pre-construction conditions have been met. The Council will audit these where applicable.

The Developer's Representative shall provide the Council with such information as reasonably requested. The Council requires 5 working days notice of intention to commence work. A minimum of 2 working days notice shall be given for pre-construction or final inspections. 24 hours notice is required for other inspections.

No work shall occur on any legal road until the Council has approved the traffic management plan for the works.

2.9.2 Notification of Hold or Witness Points

Hold or witness points form part of the Contract Quality Plan required for each development. The developer or contractor must notify the Council at all 'hold' or 'witness' points and such other times as the Council may determine, for Council's information and to enable audits or witnessing to be carried out.

Give the Council at least one working days notice and adequate access for audits or tests. Audits will be carried out within one working day of notification if possible. The Council will inform the developer of any problems encountered with these audits so they can be addressed at an early stage.

2.9.3 Testing

Any work required to be tested by the contractor or developer in the presence of the Council must be pre-tested and proved satisfactory before test witnessing by the Council is requested.

The developer shall provide the Council a minimum of two working days notice that a test inspection is required.

In the event of an unsatisfactory test then subsequent re-tests and/or re-inspection may result in additional charges against the developer.

The Council does not normally test materials or products. Plan and specification approval is not evidence that the Council has approved the material or product. The Council may require verification that a material or product is tested for conformance, quality or adequacy.

Part 2: General Requirements

2.10 CONSTRUCTION

2.10.1 Supervision and Setting Out

The developer shall engage a practising Registered Civil Engineer or Registered Surveyor prior to commencement of any works who shall supervise all engineering works and setting out.

Within five working days of the date of any site inspection or visit, the Supervising Engineer/Surveyor shall forward to the Council copies of all Site Inspection notes.

All work on any legal road shall be carried out in accordance with the traffic management plan approved by Council.

2.10.2 Maintenance of Standards

It is the developer's responsibility both directly and through its appointed representative to ensure that all physical construction work, whether carried out directly or by contractors or sub-contractors, is at all times in accordance with the approved engineering plans.

2.10.3 Departure from Approved Plans

Any departure from the requirements of the approved plans that may be necessary to meet particular circumstances shall be referred to the Council for approval.

2.10.4 Conditions Auditing

The Council will audit compliance with the conditions of consent. Auditing will involve both site inspections and checking of associated documentation to the extent necessary to ensure the work is completed in accordance with the approved plans and specifications, and to the Council's standards. The Council will undertake auditing inspections and checking of resource consent conditions as part of the Council's fixed fees for subdivision resource consents or otherwise a fee based on the officer's concerned current hourly charge out rates together with current vehicle running costs/kilometre.

The developer shall notify the Council that audit inspections are required giving at least one working day notice. The minimum level of inspection will be as outlined in Table 2.1.

Table 2.1 Minimum Inspections Required

Type of Works	Situations Where Inspections Required
Roading	Following shaping of roading and footpath subgrade prior to placement of sub-base material.
	Following metalling up, prior to pouring of kerb and channel.
	Following compaction of base course prior to final surfacing. This surface is to be tested with a Benkelman Beam, or other approved method, and the results submitted to Council for approval.
Trenching/Road Opening	Prior to backfilling of service trenches
Services	Testing of water, sewer and stormwater mains and laterals
	Disinfection of water mains
Water	Following completion of required works
Sewer	Following completion of required works
Stormwater/Land Drainage	Following completion of required works
Footpaths	Prior to pouring concrete
Vehicle crossings / Entrances / Rights-of-Way	On completion of excavation to subgrade
	Following compaction of base course prior to final surfacing

Part 2: General Requirements

Where additional inspections are required because of faulty workmanship or work not being ready contrary to the receipt of a notification, such inspections will be carried out for an additional fee, for the additional hours required and distance travelled.

2.10.5 Emergency

Should a situation arise whereby the safety of the public, public or private property or the operation of any public facility is endangered, the Council may instruct the developer to stop work or to carry out such remedial measures required to remove the danger. Any work so ordered shall be at the expense of the Developer.

2.10.6 Fencing

The developer shall erect temporary fencing, in accordance with their approved Health and Safety plan. This fencing must protect the general public, particularly children, from all danger areas including dams and ponds. Danger signs approved by the Council shall be erected that warn persons of the danger.

2.10.7 Sewerage, Stormwater and Water Supply Connections

The Council will perform or directly supervise all connections to the Council's water supply and drainage reticulation network. All such connections require a Council Permit and Council certification.

Part 2: General Requirements

2.11 COMPLETION OF LAND DEVELOPMENT WORKS

2.11.1 Completion Documentation

Upon completion of all subdivisional developments, provide completion documentation in accordance with Part 3: *Quality Assurance* and Part 12: *As-Builts*. Additionally, provide evidence that reticulation and plant to be taken over by network utility operators has been installed to their standards and will be taken over, operated and maintained by the network utility operator concerned.

Completion documentation includes, as a minimum:

- The geotechnical reports, certificates and as-built drawings required by CoP Part 4: *Geotechnical Requirements*;
- Completion documentation required by CoP Part 11: *Lighting*;
- As-built drawings of all infrastructure, where required by the subdivision consent or contract, showing the information required by each Part;
- As-built data in RAMM format for all roads;
- Project and contract records, e.g. inspection and test plans, non-conformance reports;
- Completion certificates as per CoP Part 3: *Quality Assurance*;
- Other documentation required by the Council including, but not limited to, operation and maintenance manuals and warranties for stormwater treatment facilities and new facilities involving electrical or mechanical plant; asset valuations for all infrastructure to be taken over by the Council;
- Evidence of a complying post construction safety audit for works on or becoming legal road.

When all the conditions of approval that are imposed on a resource consent for subdivision have been met, the Council will issue a Section 224(c) Compliance Certificate or Practical Completion Certificate to that effect.

2.11.2 Approval of Uncompleted Work

Where in the opinion of the Council it is appropriate, the Council may approve uncompleted work, subject to satisfactory bonds being arranged.

2.11.3 Defects Liability

For contracted works, the defects liability period for all works must be 12 months from the issue of the Practical Completion Certificate. Of the total retentions held back during the course of the contract, half shall be released with the issue of the Practical Completion Certificate, and the remainder held until the end of the defects liability period.

For work completed under a 224 certificate, the developer shall maintain the works until they are formally taken over by the Council or to a date specified in a bond for completion of uncompleted works. A bond equal to 5% of the construction works shall be lodged with Council for the defects liability period.

The developer must also remedy defective works, as defined in NZS 3910, over this period. Establish and maintain landscaping, in accordance with CCC CSS: *Part 7*, over this period or until the landscape establishment bond is released. Maintenance shall include appropriate and regular mowing of grass and watering of all plants and trees together with the replacement of any perished specimens.

Part 2: General Requirements

The Council, upon request from the developer or contractor, will issue formal notification that the maintenance period has expired, the works are satisfactory and that the bond or retentions will be released. This notification will be followed by the release of the maintenance bond or remaining retentions. This notification will not be released until maintenance matters and defects have been remedied.

2.11.4 Defects

Council's receipt and acceptance of 'As Built' plans does not absolve the Developer of any responsibility for accuracy. In the event of any inaccuracy being discovered on the 'as built' plan the Council will verify the correct information with the consultant and require the consultant to provide corrected as-built plans.

After agreement with the developer, the Council will accept new reticulation that connects to Council's infrastructure. The Council will then operate and maintain that reticulation. However, the developer remains financially responsible for any hidden defects and defects bonded for and covered by the Practical Completion Certificate.

Part 2: General Requirements

2.12 BONDS

2.12.1 Uncompleted Works Bonds

Generally, bonds shall not be permitted for minor uncompleted works; however, this type of bond may be permitted at the discretion of the Council.

Bonds must be secured by an appropriate guarantee or must be in cash and lodged with the Council. Where necessary bonds must be executed and registered.

The amount of the bond shall be the estimated value of the uncompleted work plus a margin to cover additional costs estimated to be incurred by the Council in the event of default.

An uncompleted works bond template is available in QP-C811-AD (attached as Appendix D).

2.12.2 Maintenance Bonds

Bonds to cover maintenance of completed works are recognised as an acceptable procedure and will be permitted at the discretion of the Council, except that acceptance of a bond for maintenance shall not be unreasonably withheld.

Bonds must be secured by an appropriate guarantee or must be in cash and lodged with the Council. Where necessary bonds must be executed and registered.

The amount of the bond shall be the estimated value of the maintenance plus a margin to cover additional costs estimated to be incurred by the Council in the event of default.

A maintenance bond template is available in QP-C811-AE (attached as Appendix E).

Part 2: General Requirements

2.13 ASSOCIATED DOCUMENTS

Appendix A Standard Draughting Layout & Format Requirements (QP-C811-AA)

Appendix B Draughting Checklist (QP-C811-AB)

Appendix C Benchmark Certificate (QP-C811-AC)

Appendix D Uncompleted Works Bond Form (QP-C811-AD)

Appendix E Maintenance Bond Form (QP-C811-AE)



Standard Draughting Layout & Format Requirements

Provide drawings to a minimum standard that complies with AS/NZS 1100.101: 1992 and AS/NZS 1100.401:1984. Electronic drawings complying with the *United States National CAD Standard*, used in conjunction with AS/NZS 1100, are also acceptable.

The scale for drawings is generally 1:200 but other accepted engineering scales may be used to suit the level of details on the drawings. Scales progress in multiples of 10 e.g. 1:1, 1:2, 1:5 as detailed in Table 5.1, AS/NZS 1100.101. All drawings shall be submitted in no larger than A1 original format.

Ensure that electronic drawings are arranged in levels, in addition to the layout and formatting requirements below. Levels should be labelled appropriately where possible.

1. DRAWING BASE DATA (EXISTING TOPOGRAPHY)

Draw existing features in a lighter line thickness e.g. 0.18 mm or 0.25 mm. Draw standard draughting symbols un-shaded for existing features.

2. DRAWING PROPOSED WORK

Draw proposed work in a heavier line thickness e.g. 0.35 mm and thicker. Use the same line type, to enable clear differentiation between existing features and proposed work. Draw standard draughting symbols filled in for proposed features.

3. LABELLING

Draw text such that it is legible on an A3 sheet.

Differentiate between existing features and proposed features by using different formatting:

- lower case or upper case;
- normal format or bold format;
- 0.25 mm pen weight or 0.5 mm pen weight.

Use the abbreviations in Table 1.

Table 1 Feature Abbreviations

Feature	Abbreviation
Asphaltic concrete	AC
Edge of seal	EOS
Tangent point	TP
Curve Tangent point	CTP

Ensure notes do not go through other notes and that leaders do not cross.

Place road names above the north road boundary but not through section boundary lines. Show spot levels on the legal boundary and at least 3m inside the abutting private property.

Use standard cells for trees, lights, service covers and boxes. Typical symbols are shown in the example drawings in section 14 of this appendix. Typical abbreviations are shown in Table 1, Table 3, Table 4 and 9.

4. SETOUT DATA

Label setout data clearly and concisely. Mark tangent points with a line that goes through the kerb only. Label TP's and CTP's in a Pegging Box only and place the pegging box (e.g. Table 2) as close to the pegs they represent as possible. Drawings may be more understandable if a separate drawing for construction setout is provided.



Standard Draughting Layout & Format Requirements

Table 2 Pegging Box Example

Peg	Peg Level	Kerb Level	Cut or Fill	Kerb Offset (front or behind)
1TP	13.290	13.280	C0.010	1.5mF
2	13.305	13.285	C0.020	1.5mF
3	13.330	13.295	C0.035	1.5mF
4	13.345	13.300	C0.045	1.5mF
5TP	13.345	13.310	C0.035	1.5mF

Show join or match lines, referencing the relevant adjoining sheet.

5. UNDERGROUND SERVICES

Distinguish services by using different line types and colours. Ensure that services may be easily identified when printed in black & white. Table 2.2.1b of AS/NZS 1100.401 may be used as a guideline for labelling services. Provide a legend where necessary.

Label all of the following items:

- High voltage cables and all fibre optic cables.
- Utility structures or boxes.
- Water meters (these include the backflow preventers installed as part of the connection on each side).

Table 3 Service Abbreviations

Service Type	Abbreviation
Water meter	WM
Fire hydrant	FH
Power box (above ground)	PB
Power pole	PP
Sluice valve	SV
Gate valve	GV
Pressure reducing valve	PRV
Backflow preventer	BFP

Note: Label telecommunications boxes, manholes and pillars to suit the development.

6. PIPEWORK

Label all stormwater and sewer pipes with pipe size and flow direction, using similar terminology to that used by the manufacturer to code or classify the pipe e.g. label a 225 mm diameter stormwater pipe as Ø225 RCRR Class X stormwater or DN225 PVC-U stormwater. Show sewer laterals.

For major pipes 750 mm and above, show the outside width of the pipe and manholes, as the manhole lid may not be on the pipe centreline. Show the actual shape of special manholes.

Standard Draughting Layout & Format Requirements

Label all sumps and manholes with the structure identifier e.g. MH with a unique letter and sump abbreviation with a unique number. Structures that are not affected by the work do not require a unique letter or number. Start at one end of the project and number or letter continuously through. Where an existing sump is being modified, draw the proposed sump over it. Label any structures that are being altered in height.

Table 4 Drainage Structure Abbreviations

Drainage Structure	Abbreviation
Single Sump	SS
Double Sump	DS
Triple Sump	TS
House Drain Sump	HDS
Hillside Sump	HS
Corner Sump	CS
Manhole	MH
Inspection Chamber	IC
Flush Tank	FT
Flush Manhole	FM
Air Gap Separator	AGS

7. LANDSCAPE

Show existing trees, including those to be removed and retained, as well as proposed trees, using the symbols in Figure 1. Label any heritage or protected tree(s). Distinguish existing vegetation from proposed vegetation. Show the full canopy of existing trees that will be retained.

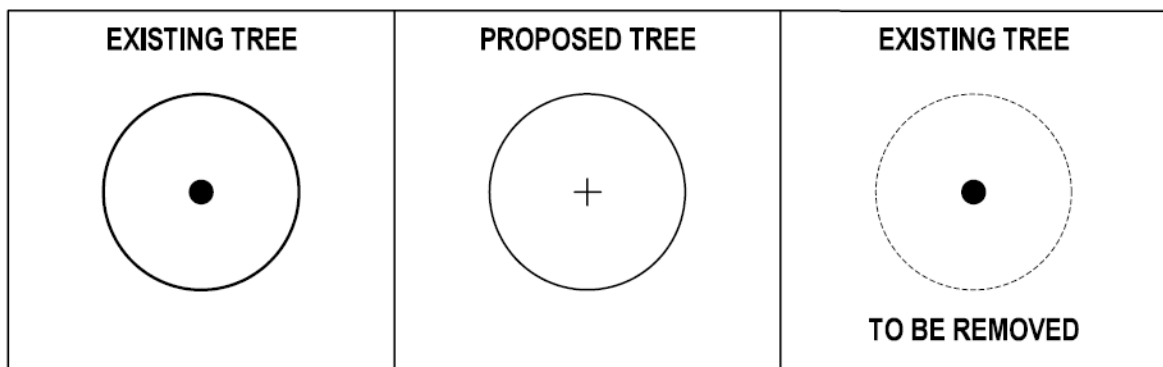


Figure 1 Landscape draughting symbols

Cross reference all other related drawings, including irrigation or lighting. Show underground services and street light locations on planting drawings.

All planting drawings must have a plant list. The plant list must include the following:

- Botanical name;
- Common name;
- Container size and/or height of plant at time of planting;
- The quantity of that type used.



Standard Draughting Layout & Format Requirements

The plant list can also include any abbreviations used, planting centres (plant spacings) and any special maintenance requirements to retain the initial concept i.e. hedge heights, park furniture treatments. Where there is a separate plant list for trees only, cross reference any other plant lists/drawings.

8. STREETLIGHTING

Where streetlighting will be altered, label all affected poles as detailed in Table 5. Label poles to be removed with "R". Number each affected streetlight with the related number from the lighting schedule on the drawing. Label existing poles that won't be affected as "E". Show the lighting wattage of all proposed and remaining lights.

Table 5 Lighting Symbols

Symbol	Use	Numbering system
Pxxx	Every pole upon which work is to be carried out. Existing poles shall have construction material and manufacturer's pole code shown on the drawing	Prefix to be followed with unique identifier either Network Operators pole number or sequential number for project.
Lxxx	Any alteration to lighting. Provide separate codes for replacement, new and differing light, lamp, pole or arm details	Prefix to be followed with unique identifier.
Rxxx	Any lighting equipment to be removed that is not covered by a "L" reference	Prefix to be followed with unique identifier.

9. TITLE BLOCKS

The title block must include the following information:

- A project title, including street address;
- A unique number or identifier, preferably the consent or project number;
- The designer's name, signature and contact details;
- The draughtsperson's name;
- The drawing checker's name;
- The design reviewer's name and signature;
- The stage of work e.g. for acceptance, accepted engineering drawings, construction, as-built;
- The date of preparation and of acceptance;
- The scale or scales used;
- A graphic scale;
- The datum and origin;
- The original sheet size;
- A drawing title e.g. Long section;
- Sheet numbers, including the number in the set;
- An amendment box, including brief description of amendment and sign off by designer.

10. LONG-SECTIONS

Draw horizontal scales generally to match the plan. Vertical scales may be 1:20 or 1:50, to improve clarity.

Show concrete surround on the pipe long-section. Label structures and vertical curves. Use thicker line weights for proposed work.



Standard Draughting Layout & Format Requirements

11. CROSS-SECTIONS

Label levels with identifiers e.g. K12.400. Use thicker line weights for proposed work.

Provide a minimum of one fully detailed typical cross-section per sheet.

Show construction depth outlines for roads, paths, grass berms and landscape planting. Label legal boundaries vertically.

12. ROAD MARKING DRAWING

Use different line types to distinguish between specific roadmarkings.

The road marking drawing must show:

- The existing markings to be removed (i.e. sandblasted);
- The new road markings to be installed;
- How the proposed markings mate into the existing markings at the project's extents.

Show roadmarking on a drawing base that is essentially 'as-built' in terms of features such as kerbs and paths. Indicate the type of marker, generally by using standard symbols and descriptions and providing a legend.

Note: Specify numbers, spacings and colours for reflective pavement markers and kerb top markers.

13. LOCALITY DIAGRAM

Show the road boundaries and street names. Show the limit of the development. Draw the locality diagram true to the map orientation or at the same orientation as the engineering drawing.



ENGINEERING CODE OF PRACTICE

Draughting Checklist

DRAWING – (LAYOUT)	
Street names and waterways correctly spelt and orientated with correct text size.	
Running distances are shown at top of drawing - at right angles to drawing.	
Join lines (if any) are shown and labelled.	
North point (should be correctly orientated i.e. not pointing down), service legend and standard notes (bottom right hand corner of sheet) shown. Drawing to be labelled with scale.	
Leader arrows from notes should not cross one another.	
Existing notes and proposed notes do not overlap one another, or the boundary and section lines.	
Title block filled out correctly, including sheet numbers.	
Any amendment to drawing to be indexed in amendments box as a letter (not number) with small description and date.	
Any details or sections to be labelled correctly.	
Related drawings cross referenced.	
Locality diagram labelled and orientated correctly	
Proposed notes are standard in wording. Benchmark referenced.	

DRAWING – (EXISTING FEATURES)	
Existing kerb and channel correctly labelled.	
All existing manholes, sumps, fences, grass berms, footpaths, driveways and landscape features are labelled.	
Boundaries shown – existing and proposed, including easements.	
Property levels or contours are shown over development, at boundary and 3m outside development.	
All buildings to be hatched and labelled (e.g. DAIRY).	
House numbers shown at correct orientation.	
All existing reticulation pipes are correctly labelled with flow direction shown.	
All existing utilities are correctly labelled.	
Existing vegetation, including that to be removed, is clearly shown, in both canopy size and position.	

DRAWING – (PROPOSED FEATURES)	
Proposed kerb and channel correctly labelled.	
Proposed kerb and flat channel has fender line shown.	
All radii on proposed kerb and channel shown.	
TP's, CTP's on proposed kerb face have 'tick' shown.	
Proposed cutdowns are shown and labelled (particularly at intersections and adjacent to pedestrian islands). Does not apply to standard driveways.	
Proposed pipes to be installed or removed correctly labelled.	
Proposed property/spot levels and contours are 'proposed' weight.	
All proposed paths/paving/other hard surfaces are shaded and labelled correctly.	
Correct Peg box attached.	
Manholes being altered or installed have an allocated letter.	
Extent of filling, finished levels shown.	
If landscape planting is shown on drawing there must be a landscape planting key.	
If there is a separate landscape planting drawing, planting to be patterned and labelled on roading drawing; cross referenced to the landscape planting drawing.	



ENGINEERING CODE OF PRACTICE

Draughting Checklist

LANDSCAPE DRAWING (additional to layout)

Proposed features/structures labelled, including furniture/bins/signs/fountains/fencing.	
Proposed playground equipment/sofffall areas/sports fields/recreational hard surfaces labelled.	
Proposed vegetation/plant symbols clearly labelled and/or listed in plant list.	
Plant list has correctly spelled botanical names, common names, sizes and quantities.	

LONG SECTION (additional to layout)

Proposed kerbs, crowns, edge of seals to be labelled. No existing kerbs, edge of seals are shown (when required, small sections may be shown for clarity).	
Pipe size, class, protection shown, vented manholes labelled.	
Longitudinal section to have title below section.	
Sump numbers/MH letters correspond to the drawing.	
Running distances from easily located point on engineering drawing.	
All required grades shown and labelled.	
Existing and proposed levels shown, including cuts and fills.	
Property boundaries, road intersections, crossing services shown.	
Datum. Shown to 3 decimal places.	

ROAD MARKING DRAWING (additional to layout)

RPM'S and KTM's use the symbols and are correctly labelled.	
Correct line types are used for 100 mm WHITE, NO STOPPING, CONTINUITY etc.	
Correct line weights used for 'ex lines to be removed'; 'ex lines to remain' and 'proposed markings'.	

CROSS SECTIONS (additional to layout)

Every cross section sheet to have at least one typical cross section showing construction in full and labelled correctly with standard notes.	
The word chainage should not appear. Cross sections labelled with chainage value only (i.e. 20.00 m) to be centred under cross section.	
Proposed kerb and fender, quarter points, crown, interpath channel, and invert of swales to have levels shown.	
Sump numbers/MH letters correspond to the drawing.	
Proposed pipes, manholes, sumps and any services which could be disturbed to be shown.	
North, south or west and east boundaries to be labelled as such.	
Proposed trees and other plantings are shown in relation to underground services, paths and carriageways.	
Datum text to be positioned at left hand side of cross section on datum line.	

DESIGN CHECK BY: _____ **DATE:** _____



ENGINEERING CODE OF PRACTICE

Benchmark Certificate

ISSUED BY: _____
(Surveyor)

TO: _____
(Developer)

TO BE SUPPLIED TO: _____
(Territorial authority)

IN RESPECT OF: _____
(Description of benchmark)

AT: _____

(Address)

I, _____ a Licensed Cadastral / Registered Professional Surveyor
(Surveyor) (delete one)

hereby certify that the benchmark shown on finder diagram _____
has been installed in accordance with the requirements of the Infrastructure Design Standard and
good survey practice, using _____ methodology.

(Signature of Surveyor) Date: _____

(Surveyor)

(Address)



ENGINEERING CODE OF PRACTICE

Uncompleted Works Bond

SCHEDULE

SUBDIVISION REFERENCE: _____

THE OWNER: _____

ADDRESS OF ACTIVITY: _____

DATE FOR COMPLETION: _____

DESCRIPTION OF WORK: _____

BOND VALUE: _____ GL Code _____

THE OWNER described below for himself, his successors and assigns, hereby confirms and ratifies that the conditions set out below are the conditions upon which he has lodged the said sum and hereby covenants to complete the works listed in the schedule by the date specified therein.

_____	_____	_____
Owner	Signature	Date

THE WAIMAKARIRI DISTRICT COUNCIL hereby acknowledges:

- (a) Receipt of the cash refundable bond (Receipt No. _____)
- (b) That such sum is to be held by it as a cash refundable bond for uncompleted subdivisional works on the conditions set out below.

_____	_____	_____
Council's Representative	Signature	Date

CONDITIONS

1. If the owner completes all the work listed in the Schedule below to the satisfaction of the Council by the date specified, the sum shall be refunded to the Owner in full.
2. If the Owner does not complete all the said work by the said date the Council, on the Owner's behalf, may carry out or cause to be carried out the said work or such parts as shall not be completed and may apply the said sum towards the cost of so doing. Any surplus after completion by the Council shall be refunded to the Owner.
3. The Council shall not however, be obliged to carry out all or any of the said work and if it chooses to do so the carrying out of such work shall be without prejudice to the Council's exercise of any other rights remedies or powers which it may have against the Owner.
4. Bond monies will be refunded once Council costs attending to the outstanding works and confirming compliance have been recovered. An invoice will be raised in due course for these costs.
5. Bond monies are non-interest bearing.



ENGINEERING CODE OF PRACTICE

Maintenance Bond

SCHEDULE

SUBDIVISION REFERENCE: _____

THE OWNER: _____

ADDRESS OF ACTIVITY: _____

DATE FOR COMPLETION: _____

DESCRIPTION OF WORK: _____

BOND VALUE: _____ GL Code _____

THE OWNER described below for himself, his successors and assigns, hereby confirms and ratifies that the conditions set out below are the conditions upon which he has lodged the said sum and hereby covenants to complete the works listed in the schedule by the date specified therein.

_____	_____	_____
Owner	Signature	Date

THE WAIMAKARIRI DISTRICT COUNCIL hereby acknowledges:

- (a) Receipt of the cash refundable bond (Receipt No. _____)
- (b) That such sum is to be held by it as a cash refundable bond for uncompleted subdivisional works on the conditions set out below.

_____	_____	_____
Council's Representative	Signature	Date

CONDITIONS

1. If the owner completes all the work listed in the Schedule below to the satisfaction of the Council by the date specified, the sum shall be refunded to the Owner in full.
2. If the Owner does not complete all the said work by the said date the Council, on the Owner's behalf, may carry out or cause to be carried out the said work or such parts as shall not be completed and may apply the said sum towards the cost of so doing. Any surplus after completion by the Council shall be refunded to the Owner.
3. The Council shall not however, be obliged to carry out all or any of the said work and if it chooses to do so the carrying out of such work shall be without prejudice to the Council's exercise of any other rights remedies or powers which it may have against the Owner.
4. Bond monies will be refunded once Council costs attending to the outstanding works and confirming compliance have been recovered. An invoice will be raised in due course for these costs.
5. Bond monies are non-interest bearing.