



**WAIMAKARIRI**  
DISTRICT COUNCIL

**ENGINEERING CODE OF PRACTICE**

# **ASSOCIATED DOCUMENTS**

**April 2009**



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## References, Glossary & Abbreviations

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## References, Glossary & Abbreviations

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### **1.1 INTRODUCTION**

Each Part of the Engineering Code of Practice is based in part on the appropriate section of the CCC Infrastructure Design Standard, by agreement, and with the consent of Christchurch City Council.

Where a conflict exists between any external document and the specific requirements outlined in the Engineering Code of Practice (CoP), the CoP takes preference (at the discretion of the Council).

The terms, and their definitions, used in this standard are consistent with those of NZS ISO 9000: 2000 and NZS 3910: 2003.

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## References, Glossary & Abbreviations

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### 1.2 REFERENCED DOCUMENTS

Please note that the internet addresses provided for referenced documents were accurate at the time of issue; however, these are subject to change without notice.

#### 1.2.1 Planning & Policy

##### 1.2.1.1 Waimakariri District Council

- The *District Plan*, [www.waimakariri.govt.nz/planning/Plan\\_Change/index.htm](http://www.waimakariri.govt.nz/planning/Plan_Change/index.htm)
- *Long Term Council Community Plan (LTCCP)*, [www.waimakariri.govt.nz/publications/ltccp/ltccp/index.htm](http://www.waimakariri.govt.nz/publications/ltccp/ltccp/index.htm)
- Activity Management Plans
  - Stormwater
  - Water Supply, 2005
  - Wastewater
  - Parks & Recreation
- Bylaws, [www.waimakariri.govt.nz/publications/bylaws/index.htm](http://www.waimakariri.govt.nz/publications/bylaws/index.htm)
  - *Stormwater and Land Drainage Bylaw 2002 (DRAFT)*
  - *Wastewater Bylaw 2007*
  - *Rural Water Supplies Bylaw 1992*
  - *Parking Bylaw (2007)*
  - *Speed Limit Bylaw (2004) and amendments 2 & 3*
  - *Vehicle Crossing Bylaw (2007)*
- Policies, [www.waimakariri.govt.nz/council/policy\\_man.htm](http://www.waimakariri.govt.nz/council/policy_man.htm)
  - *Oxford Sewer Individual Pumping Systems (S-CP-5006)*
  - *Sewage Disposal – Residential 4A-4B Zones (S-CP-5005)*
  - *Applications for Extension to Water Supply and Sewage Disposal (S-CP-5610)*
  - *Private Individual Water Supplies (S-CP-5607)*
  - *Water Supplies – Residential 4A-4B Zones (S-CP-5609)*
  - *Refuse and Recyclable Material Collection (S-CP 4305)*
  - *Street Trees (QS-R900 – QS-R912)*
  - *Subdivision Irrigation & Watering Systems (S-CP 4925)*
  - *Neighbourhood Reserves (SP-C 4408)*
- Strategies
  - *Road Safety*, [http://www.waimakariri.govt.nz/community/road\\_safety/](http://www.waimakariri.govt.nz/community/road_safety/)
  - *Walking and Cycling*, [www.waimakariri.govt.nz/otherways/04121300029.pdf](http://www.waimakariri.govt.nz/otherways/04121300029.pdf)
- Guidelines
  - *Street Name Blade Guidelines*

##### 1.2.1.2 Christchurch City Council

- Infrastructure Design Standard (DRAFT)
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### 1.2.1.3 Environment Canterbury (Canterbury Regional Council)

- *Natural Resources Regional Plan (NRRP)*  
[www.ecan.govt.nz/Plans+and+Reports/NRRPNEW/](http://www.ecan.govt.nz/Plans+and+Reports/NRRPNEW/)
- *Transitional Regional Plan (TRP) 1991*  
[www.ecan.govt.nz/Plans+and+Reports/TransitionalRegionalPlan/](http://www.ecan.govt.nz/Plans+and+Reports/TransitionalRegionalPlan/)
- *Regional Land Transport Strategy*  
[www.ecan.govt.nz/Plans+and+Reports/transport/rllts-2005-2015.htm](http://www.ecan.govt.nz/Plans+and+Reports/transport/rllts-2005-2015.htm)

### 1.2.1.4 Various

- Building Industry Authority (BIA) *New Zealand Building Code*  
[www.dbh.govt.nz/bcl-get-a-copy-of-building-code](http://www.dbh.govt.nz/bcl-get-a-copy-of-building-code)
- Fencing Act (1978)
- IPENZ Practice Note 02 *Peer Review – Reviewing the work of another engineer*  
[www.ipenz.org.nz/ipenz/forms/pdfs/PN02\\_Peer\\_Review.pdf](http://www.ipenz.org.nz/ipenz/forms/pdfs/PN02_Peer_Review.pdf)
- Land Transport NZ *Traffic Control Devices Rule 2004*  
[www.ltsa.govt.nz/rules/traffic-control-devices-2004.html](http://www.ltsa.govt.nz/rules/traffic-control-devices-2004.html)
- Land Transport NZ *Setting Speed Limits Rule 2003*
- NAMS *New Zealand Infrastructure Asset Valuation and Depreciation Guidelines*  
[www.nams.org.nz/Infrastructure%20Asset%20Valuation%20and%20Depreciation%20Guidelines%202006%20Edition](http://www.nams.org.nz/Infrastructure%20Asset%20Valuation%20and%20Depreciation%20Guidelines%202006%20Edition)
- Te Maire Tau, Anake Goodall, et al. *Te Whakatau Kaupapa*, Aoraki Press, 1992
- Transit New Zealand *Planning Policy Manual* (state highways)  
[www.transit.govt.nz/technical/view\\_manual.jsp?content\\_type=manual&=edit&primary\\_key=46&action=edit](http://www.transit.govt.nz/technical/view_manual.jsp?content_type=manual&=edit&primary_key=46&action=edit)
- Transit New Zealand *Quality Standard TQS2: Second Edition*, June 2005

## 1.2.2 Design

### 1.2.2.1 Christchurch City Council

- Design Specifications
    - Sewage Pumping Station
    - Private Wastewater Pumping Station
    - Water Supply Wells, Pumping Station and Reservoir
  - Bush Birds, [www.ccc.govt.nz/parks/publications/environmental\\_bush\\_birds.asp](http://www.ccc.govt.nz/parks/publications/environmental_bush_birds.asp)
  - Streamside Planting Guide,  
[www.ccc.govt.nz/parks/theenvironment/StreamsidePlantingGuide.pdf](http://www.ccc.govt.nz/parks/theenvironment/StreamsidePlantingGuide.pdf)
  - Stormwater Tanks on Private Property,  
[www.ccc.govt.nz/QuickAnswers/documents/StormwaterTanksOnPrivateProperties.pdf](http://www.ccc.govt.nz/QuickAnswers/documents/StormwaterTanksOnPrivateProperties.pdf)
  - Waterways, Wetlands and Drainage Guide, Ko Te Anga Whakaora mō Ngā Arawai Rēpo 2003 (WWDG), [www.ccc.govt.nz/parks/TheEnvironment/waterways.asp](http://www.ccc.govt.nz/parks/TheEnvironment/waterways.asp)
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### 1.2.2.2 Environment Canterbury (Canterbury Regional Council)

- *Erosion and sediment control guidelines 2007*  
[www.ecan.govt.nz/Our+Environment/Land/ErosionAndSediment/ErosionSedimentControlGuidelines.htm](http://www.ecan.govt.nz/Our+Environment/Land/ErosionAndSediment/ErosionSedimentControlGuidelines.htm)
- *Erosion and sediment control guidelines for small sites*  
[www.ecan.govt.nz/Our+Environment/Land/ErosionAndSediment/ErosionSedimentControlGuidelineSmallSites.htm](http://www.ecan.govt.nz/Our+Environment/Land/ErosionAndSediment/ErosionSedimentControlGuidelineSmallSites.htm)

### 1.2.2.3 NZ Standards, <http://www.standards.co.nz/>

- NZS 3604:1999 *Timber framed buildings*
- NZS 3910: 2003 *Conditions of contract for building and civil engineering construction*
- NZS 4121:2001 *Design for Access and Mobility: Buildings and Associated Facilities*
- NZS 4229:1999 *Concrete masonry buildings not requiring specific engineering design*
- NZS 4275:1995 *Methods of Test for underground Marking Tape – series*
- NZS 4404: 2004 *Land development and subdivision engineering*
- NZS 4431:1989 *Code of practice for earthfill for residential purposes*
- NZS 5828: 2004 *Playground equipment and surfacing*
- NZS 6701:1983 *Code of practice for road lighting*
- AS/NZS 1100 *Technical drawing – series*
- AS/NZS 1158 *Lighting for roads and public spaces – series*
- AS/NZS 1546.1: 1998 *On-site domestic wastewater treatment units – Septic tanks*
- AS/NZS 1547: 2000 *On-site domestic wastewater management*
- AS/NZS 2566.1:1998 *Buried flexible pipelines structural design* (including supplement 1)
- AS/NZS 2845.1:1998 *Water supply – Backflow prevention devices*
- AS/NZS 4020:2002 *Testing of products for use in contact with drinking water*
- AS/NZS 4130:2003 *Polyethylene (PE) pipes for pressure applications*
- AS/NZS 60598.12003 *Luminaries – General requirements and tests*
- NZS/AS 1657: 1992 *Fixed platforms, walkways, stairways and ladders. Design, construction and installation*
- AS/NZS ISO 9000: 2000 *Quality management systems*
- AS/NZS ISO 9001:2000 *Quality management systems – requirements*
- SNZ HB 8630: 2004 *Tracks and outdoor visitor structures*

### 1.2.2.4 Various

- Austroads, <http://www.austroads.com.au/>
    - *Guides to Traffic Engineering Practice and the New Zealand Supplements*
    - *Pavement Design Manual*
    - *Urban Road Design - Guide to the Geometric Design of Major Urban Roads*
    - *Rural Road Design - Guide to the Geometric Design of Rural Roads*
  - Auckland Regional Council
    - *Stormwater Treatment Devices: Design Guideline Manual (TP10)*, [www.arc.govt.nz/plans/technical-publications/technical-publications-1-50.cfm](http://www.arc.govt.nz/plans/technical-publications/technical-publications-1-50.cfm)
    - *Erosion and sediment control: Guidelines for land disturbing activities in the Auckland Region (TP90) (1999)*, [www.arc.govt.nz/plans/technical-publications/technical-publications-51-100.cfm](http://www.arc.govt.nz/plans/technical-publications/technical-publications-51-100.cfm)
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- BRANZ (1987) Assessment of slope stability at building sites, Study Report 4
- Building Industry Authority (BIA) *New Zealand Building Code* and Compliance Documents, <http://www.dbh.govt.nz/compliance-docs-get-copies>
- Landcare Research Report LC0203/111 Soil Conservation Guidelines for the Port Hills (2003)
- Ministry of Justice *National Guidelines for Crime Prevention through Environmental Design in New Zealand Parts 1 & 2* (2005) (CPTED)  
[www.justice.govt.nz/pubs/reports/2005/cpted-part-1/index.html](http://www.justice.govt.nz/pubs/reports/2005/cpted-part-1/index.html)
- New Zealand Geotechnical Society *Field Description of Soil and Rock* December 2005  
<http://www.nzgeotechsoc.org.nz/guidelines.cfm>
- New Zealand Utilities Advisory Group  
[www.nzuag.org.nz/](http://www.nzuag.org.nz/)
- Transit New Zealand (TNZ)
  - All TNZ manuals and standards including Criteria and Guidelines
  - *Guidelines for Planting for Road Safety*
  - *Bridge Manual* (2003)
- *Geotechnical Issues in Land Development*, Proceedings of NZ Geotechnical Society Symposium, Hamilton (1996)
- Cook, D., Pickens, G.A., MacDonald, G., *The Role of Peer Review*, Report by S.A. Crawford, NZ Geomechanics News (Dec 1995)
- McKerchar and Pearson, *Flood Frequency In New Zealand*, 1989
- New Zealand Building Code Compliance Document G13 *Foul Water*
- Water Industry Specification 4-34-04 *Specification for renovation of gravity sewers by lining with cured-in-place pipe* (WIS 4-34-04)
- Ministry of Health *Drinking Water Standards for New Zealand* 2005
- SNZ/PAS 4509:2003 New Zealand Fire Service *Fire Fighting Water Supplies Code of Practice* (Fire Service Code of Practice)
- All Land Transport New Zealand (LTSA) guidelines (including RTS series) and manuals
- Land Transport New Zealand *On Road Tracking Curves for Heavy Vehicles* (RTS 18)  
<http://www.ltsa.govt.nz/roads/rts/rts-18/>
- Trafanz *Guide to Pedestrian Crossing Facilities*, August 2001

### 1.2.3 Construction

#### 1.2.3.1 Christchurch City Council

- *Civil Engineering Construction Standard Specifications Parts 1-7* 2006 (CSS),  
[www.ccc.govt.nz/doingbusiness/css/](http://www.ccc.govt.nz/doingbusiness/css/)

#### 1.2.3.2 NZ Standards, <http://www.standards.co.nz/>

- NZS 6401: 1973 *Specification for PVC-Insulated Cables for Electric Power and Lighting*
  - NZS 7649:1988 *Unplasticised PVC Sewer and Drain Pipe and Fittings*
  - NZS 8603:2005 *Design and application of outdoor recreation symbols*
  - AS/NZS 4026: 1992 *Electric Cables – For Underground Residential Distribution Systems*
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### 1.2.3.3 Various

- *Mainpower Network Connection Standards 2006*
  - *Road Safety Manufacturers Association Compliance Standard for Traffic Signs*
  - *Transit New Zealand T/10 Skid Resistance Investigation and Treatment Selection*
  - *Transit New Zealand & Land Transport Safety Association Manual of Traffic Signs and Markings, Parts 1 & 2*
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### 1.3 GLOSSARY

The following definitions apply in the Engineering Code of Practice, unless inconsistent with the context. These definitions are additional to those definitions in the *District Plan*.

<b>Abutment</b>	An end support of a bridge or similar structure.
<b>Access chamber</b>	A chamber with working space at <i>drain</i> level through which the <i>drain</i> passes either as an open channel or as a pipe incorporating an <i>inspection point</i> .
<b>Accessway</b>	Any area of land the primary purpose of which is to provide access between the body of any allotment(s) or site(s) and any road and includes any rights of way, access lot, access leg or private road.
<b>Alignment</b>	The horizontal or vertical geometric form of the centreline of the carriageway.
<b>Allotment</b>	The meaning ascribed to it by Section 10 of the Building Act 2004.
<b>Amenity</b>	Amenity can be defined as those values, being natural or physical qualities and characteristics of an area, that contribute to people's appreciation of their pleasantness, aesthetic coherence, and cultural and recreational attributes. This is a subjective quality.
<b>Annual average daily traffic</b>	For volumes over 5000 vehicles per day, the figure shall be the count multiplied by the appropriate factor detailed in Transit New Zealand Report documentation.
<b>Annual Exceedance Probability</b>	A statistical term defining the probability of an event occurring annually. Expressed as a percentage and generally used in hydrology to define rainstorm intensity and frequency. This has replaced the concept of a "return period" but has a similar meaning.
<b>Annulus</b>	Gap between the original pipe and an inserted pipe.
<b>Applicant</b>	The person or body corporate applying to carry out development, which may require a Resource Consent. The code includes the Applicant as the Developer.
<b>Arboriculture</b>	The management of individual trees or groups of trees primarily for their amenity value.
<b>As-Builts</b>	Final plans and specifications that require submitting to the Council for approval. Standard scales for As-Built drawings are 1:50, 1:100, 1:200, 1:250, 1:500, 1:750, 1:1000 & 1:1500.
<b>Applicant's Representative</b>	A person appointed by the Applicant to act on its behalf. The Applicant's Representative may be a Consultant engaged by the Applicant. All notices and correspondence to the Applicant from the Council will be to the attention of the Applicant's Representative.
<b>Austrroads</b>	Abbreviation for Association of Road Transport and Traffic Authorities in Australia and New Zealand (previously NAASRA).
<b>Average Dry Weather Flow</b>	The daily average wastewater flow from domestic, industrial and commercial sources, excluding infiltration and surface entry, as determined in clause 6.4 – Wastewater Design Flows (Wastewater Drainage)
<b>Back pressure</b>	A condition where the downstream pressure is greater than the supply pressure.
<b>Backfill</b>	The material used to refill an excavation.
<b>Backflow</b>	A flowing back or reversal of the normal direction of the flow that is caused by <i>back-pressure</i> . Backflow includes <i>back-siphonage</i> .
<b>Back-siphonage</b>	<i>Back-flow</i> caused by the supply pressure being less than atmospheric pressure.
<b>Basecourse</b>	The layer of material constituting the uppermost structural element of a pavement, immediately beneath the wearing course; or the graded aggregate that can be used in such a layer.
<b>Basic boundary fence</b>	Treated timber post and three rail fence with vertical 1.8m timber palings.
<b>Berm</b>	The edge of a road reserve between the kerb or surface water channel and the property boundary, exclusive of footpath.
<b>Betterment</b>	The increased value of land arising from improved access.

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<b>Booster main</b>	Booster main reticulation is connected to trunk reticulation to provide boost capacity to trunk mains.
<b>Bridge</b>	A structure designed to carry a road or path over an obstacle by spanning it. This includes culverts with a cross-sectional area greater than or equal to 3.14 square metres.
<b>Building consent</b>	A consent to carry out <i>building work</i> granted by a <i>territorial authority</i> under Section 49 of the Building Act; and includes all conditions to which the consent is subject.
<b>Building</b>	<p>The meaning ascribed to it by Sections 8 and 9 of the Building Act (2004) as follows: meaning of <i>building</i> -</p> <p>(1) In the <i>Building Act</i>, unless the context otherwise requires, the term “<i>building</i>” means any temporary or permanent movable or immovable structure (including any structure intended for occupation by people, animals, machinery, or chattels); and includes any mechanical, electrical, or other systems, and any utility systems, attached to and forming part of the structure whose proper operation is necessary for compliance with the <i>building code</i>; but does not include:</p> <ul style="list-style-type: none"><li>• Systems owned or operated by a <i>network utility operator</i> for the purpose of reticulation of <i>other property</i>; or</li><li>• Cranes, including any cranes as defined in regulations in force under the Health and Safety in Employment Act 1992; or</li><li>• Cablecars, cableways, ski tows, and other similar stand alone machinery systems, whether or not incorporated within any other structure; or</li><li>• Any description of vessel, boat, ferry, or craft used in navigation, whether or not it has any means of propulsion, and regardless of that means; nor does it include: a barge, lighter, or other like vessel; a hovercraft or other thing deriving full or partial support in the atmosphere from the reactions of air against the surface of the water over which it operates; a submarine or other thing used in navigation while totally submerged; or</li><li>• Vehicles and motor vehicles (including vehicles and motor vehicles as defined in section 2(1) of the Transport Act 1962 and section 2(1) of the Transport (Vehicle and Driver Registration and Licensing) Act 1986, but not including vehicles and motor vehicles, whether movable or immovable, which are used exclusively for permanent or long-term residential purposes; or</li><li>• Aircraft, including any machine that can derive support in the atmosphere from the reactions of the air otherwise than by the reactions of the air against the surface of the earth; or</li><li>• Containers as defined in section 2 of the Dangerous Goods Act 1974; or</li><li>• Magazines as defined in section 2 of the Explosives Act 1957; or</li><li>• <i>Scaffolding</i> used in the course of the construction process; or</li><li>• <i>False work</i> used in the course of the construction process.</li></ul> <p>(2) For the purposes of Part IX of the Building Act, a <i>building consent</i>, a <i>code compliance certificate</i>, and a <i>compliance schedule</i> the term <i>building</i> also includes -</p> <ul style="list-style-type: none"><li>• Any part of a <i>building</i>; and</li><li>• Any two or more buildings that, on completion of any <i>building work</i>, are intended to be managed as one <i>building</i> with a common use and a common set of ownership arrangements.</li></ul> <p>(3) For the purposes of subsection (2) of this section, where any utility system or any part of any utility system -</p> <ul style="list-style-type: none"><li>• Is external to the building; and</li><li>• Is also connected to or is intended to be connected to a network under the control of a network utility operator, or some other facility which is able to provide for the successful functioning of the utility system in accordance with its intended design - that utility system or that part of the utility system shall be deemed to be part of a building.</li></ul> <p>(4) Notwithstanding the provisions of subsection (3) of this section, where a septic tank is connected to a <i>building</i> utility system the septic tank shall be deemed to form part of that <i>building</i> utility system.</p>

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<b>Building work</b>	The work for or in connection with the <i>construction, alteration, demolition, or removal of a building</i> ; and includes <i>sitework</i> .
<b>Canopy</b>	The branches and foliage of a tree out to the drip line.
<b>Capital Contributions</b>	For a subdivision, the Council levies fees for upgrading utility services to cope with the increased demand caused by new connections to a utility service. Fees are set by the Council and apply for each new connection to each new lot created and that requires servicing (for water supply, sanitary and stormwater disposal).
<b>Carriageway</b>	That portion of the road devoted particularly for the movement of vehicles. It includes sealed shoulders but excludes parking areas and cycle lanes.
<b>Catchment</b>	A geographical unit within which surface water runoff is carried under gravity by a single drainage system to a common outlet or outlets. Also commonly referred to as a Watershed or Drainage Basin.
<b>Cattlestop</b>	A ground level grid crossing a carriageway to prevent stock crossing.
<b>Causeway</b>	A raised road across water or a floodplain.
<b>Centre line</b>	A line (or series of lines) painted on a road to delineate the centre.
<b>Centreline</b>	The line, at the centre or axis of a road or other work. It is often the line from which measurements for setting out or constructing the work can conveniently, be made.
<b>Channel</b>	That part of a watercourse where normal flow is contained. The channel is generally incised into the flood plain and for many of the stable stream systems in New Zealand can be defined in capacity as being just able to accommodate the annual return period flow (100% AEP) without overtopping.  Also refers to an artificial conduit such as a ditch excavated to convey water.
<b>Channel Storage</b>	The amount of water temporarily stored in channels while <i>en route</i> to an outlet.
<b>Channelisation</b>	A system of islands or markings on a carriageway to direct traffic into predetermined paths, usually at an intersection or junction.
<b>Check valve</b>	A valve that permits flow in one direction but prevents a backflow. Also called a non-return valve or backflow preventor.
<b>Chevron board</b>	A chevron patterned reflective sight board that highlights an abrupt change in road direction.
<b>Chip seal</b>	A water proofing and wearing course consisting of a layer or layers of uniform sized chips bound to a layer of bitumen which is in turn bound to the road metalcourse layer.
<b>Cladding</b>	The exterior weather-resistant surface of a <i>building</i> .
<b>Class 1 Loading</b>	The axle loading, at particular spacing, as defined in the Heavy Motor Vehicle Regulations.
<b>Clay (Soils)</b>	A general term for very fine mineral soils either with or without cohesive properties with soil particles smaller than 0.002 mm
<b>Clean Water</b>	Any water that has no visual signs of suspended solids, e.g. that originating from stable well-vegetated or armoured surfaces.
<b>Compact</b>	To reduce the volume of a material by closer packing of its particles by rolling, tamping or other mechanical means.
<b>Conduit</b>	Any channel intended for the conveyance of water, whether open or closed.
<b>Consultant</b>	A technical advisor to the applicant/developer. A professional with qualifications and experience in a given discipline giving advice within that area of competence to the applicant/developer.  A Consultant shall have appropriate Professional Indemnity Insurance.
<b>Corrugations</b>	(on a road) Closely spaced ripples running across the line of traffic, generally where braking and acceleration of vehicles occurs.
<b>Council</b>	Generally refers to the Waimakariri District Council. Christchurch City Council is always referred to in full or abbreviated as "CCC". Canterbury Regional Council is always referred to as Environment Canterbury or abbreviated as "ECan".

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<b>Cover</b>	The depth of material between the surface of the ground or pavement and the top of a culvert, cable or pipe.
<b>Crib wall</b>	A retaining wall made of interlocking concrete or timber sections with earth or gravel fill between.
<b>Cross connection</b>	Any actual or potential connection between a potable water supply and a source of contamination or pollution between two or more properties.
<b>Crossfall</b>	The slope or camber measured at right angles to the alignment upwards to the centre or edge of a road. Usually measured in degrees or a ratio.
<b>Crown</b>	The highest point and finished level on the cross-section of a carriageway with two-way cross-fall.
<b>Culvert</b>	A culvert is a pipe or other structure that is not considered integral to a drainage reticulation system, for example where a watercourse or drain crosses under a road.
<b>Cultivar</b>	Proprietary seed type and or mixture.
<b>Cut-off-drain</b>	An interceptor drain often constructed along the top of a cutting or batter to prevent stormwater flowing where not preferred.
<b>Cycle lane</b>	That portion of the road devoted to the exclusive use of pedal cycles only.
<b>Cycle route</b>	A route (on or off roads) recommended for use by pedal cycles.
<b>Cycleway</b>	An off-road cycle lane.
<b>Dam</b>	A barrier to confine or raise water for storage, diversion, retention or detention, to create a hydraulic head, to prevent gully erosion, or to retain soil, rock or other debris.
<b>Detention Basin</b>	An area of land or structure purpose built for slowing or controlling stormwater runoff by storage and/or controlled outflow.
<b>Detention Dam</b>	A dam, constructed for the temporary storage of storm flow, which releases the stored water at controlled rates in order to reduce flooding hazard downstream of the dam.
<b>Developer</b>	The person or body corporate applying to carry out development that may require a Resource Consent (see also Applicant). as defined in NZS 4404: 2004
<b>Diameter</b>	(or bore) The nominal internal <i>diameter</i> of a pipe or duct. All pipe diameters are internal, unless specifically stated otherwise.
<b>Direction sign</b>	A sign placed usually at an intersection to direct traffic along a route or toward a destination.
<b>Discharge pipe</b>	Any pipe which is intended to convey discharge from sanitary fixtures or sanitary appliances and includes a waste pipe, combined waste pipe, branch discharge pipe and discharge stack.
<b>District Plan</b>	Waimakariri District Council Proposed District Plan as amended by Council decisions and publicly notified on 24 February 2001.
<b>Divided highway</b>	A road with physically separated carriageways for traffic travelling in opposite directions.
<b>Drain</b>	A pipe, or, in the case of surface water/stormwater, conduit normally laid below ground level and intended to convey <i>foul water</i> or <i>surface water</i> to an <i>outfall</i> . The definition includes including fittings and equipment.
<b>Drainage</b>	The removal of excess surface water or ground water from land by means of surface or subsurface drains. (As defined in NZS 4404: 2004.)
<b>Drip line</b>	From one outer extremity of the canopy of a tree(s) to the other outer extremity of the canopy in a 360° aspect.
<b>Drop Structure</b>	A structure built to lower the level of an open channel abruptly from one level to a lower level without increasing the velocity of the water in the channel.
<b>Durable</b>	Resistant to wear and decay for not less than the intended life of the product or material.
<b>Earthwork</b>	Any alteration to ground by means of excavation and/or backfilling, as defined in NZS 4404: 2004.

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## References, Glossary & Abbreviations

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<b>Easement</b>	The right an entity has to some use to the property of another. In the context of this Code, this refers to the right of the WDC to access and make use of a piece of property for the provision of public services (e.g. water supply, wastewater disposal). All Council easements are deemed to be "easements-in-gross".
<b>Edge line</b>	A line painted on a road to indicate the outer edge of the traffic lane.
<b>Electrical installation</b>	Any <i>electrical fixed appliances</i> , cables and other components used in the reticulation of electricity and which are intended to remain permanently attached to and form part of the <i>building</i> .
<b>Electrical supply system</b>	A source of energy in the form of electricity external to the <i>electrical installation</i> .
<b>Embankment</b>	A construction work (usually of earth or stone) which raises the ground (or formation) level above the natural surface. Similar to a causeway.
<b>Engineer</b>	As defined in NZS 3910: 2003.
<b>Engineering Acceptance</b>	The written confirmation of the Council's acceptance of the Design Report and design, including drawings, calculations, specifications.
<b>Environment Canterbury</b>	Usually abbreviated as "ECan", promotional name of the Canterbury Regional Council,
<b>Erosion and Sediment Control Plan (E&amp;SCP)</b>	A detailed plan normally prepared by a consultant, that details the way erosion is to be minimised and treatment of sediment laden overland flow is to be undertaken.
<b>Establishment (landscape)</b>	As defined in <i>CSS: Part 7</i> clause 14.
<b>Even ground surface</b>	A ground surface that is essentially planar and usually a result of shaping from earthworks.
<b>Filter Strip</b>	A long, narrow vegetative planting used to retard or collect sediment for the protection of adjacent properties or receiving environments.
<b>First Coat Seal</b>	The initial seal placed on a prepared base course.
<b>Floodgate</b>	A gate on the outlet of an open channel or piped system that prevents water from downstream, whether of tidal or other origin entering back to the pipe or channel.
<b>Flow Control</b>	Flow Control (for stormwater) is intended to limit the amount of stormwater that leaves a site or proposed development. Design and construction for flow control will remedy or mitigate adverse effects from increased velocities, flows and flooding downstream.
<b>Flume</b>	An open channel for conveying water across lower level ground. Also referred to as a chute. Typically flume velocities are turbulent.
<b>Flush Tank</b>	An underground chamber that fills with water automatically and that is used to flush clean a gravity pipe system. These may be required at the upstream end of the system and are dependent on pipe flow and grade.
<b>Footpath</b>	That portion of the road reserve set aside for the use of pedestrians.
<b>Ford</b>	A shallow place in a water-course, stream or river where the bed may be crossed by traffic.
<b>Foul water</b>	The discharge from any sanitary fixture or sanitary appliance.
<b>Foul water drainage system</b>	<i>Drains</i> , joints and fittings normally laid underground and used specifically for the conveyance of water from the <i>plumbing system</i> to an <i>outfall</i> .
<b>Frangible (tree)</b>	As defined in <i>Transit Guidelines for Planting for Road Safety</i> , mature trees, not hardwoods, with a trunk diameter less than 100mm at 400mm above the ground.
<b>Frangible (street lighting column)</b>	As defined in TNZ M/19.
<b>Freeboard</b>	The height between the surface level of the flow and the level at which overtopping occurs.
<b>Functional requirements</b>	In relation to a building, means those functions that a building is to perform for the purposes of the Building Act.

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## References, Glossary & Abbreviations

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<b>Gabion</b>	A rectangular wire mesh cage filled with rocks, used to retain embankments and riverbanks.
<b>Gantry</b>	A structure covering a public way providing protection from both the side and overhead.
<b>Geotechnical Engineer</b>	As defined in NZS 4404: 2004.
<b>Geotextiles</b>	A generic name for (usually) synthetic fabrics used for drainage or to improve the stability or load carrying ability of soil.
<b>Good ground</b>	<p>Any soil or rock capable of permanently withstanding an ultimate bearing pressure of 300kPa (i.e. allowable bearing pressure of 100kPa with a factor of safety of 3.0), excluding:</p> <ul style="list-style-type: none"> <li>• Potentially compressible ground such as topsoil, soft soils such as clay which can be moulded easily in the fingers, and uncompacted loose gravel containing obvious voids,</li> <li>• Expansive soils being those that have a liquid limit of more than 50% when tested in accordance with NZS 4402 Test 2.2, and a linear shrinkage of more than 15% when tested in accordance with NZS 4402 Test 2.6, and</li> <li>• Any ground which could foreseeably experience movement of 25mm or greater for any reason including one or a combination of: land instability, ground creep, subsidence, seasonal swelling and shrinking, frost heave, changing ground water level, erosion, dissolution of soil in water, and effects of tree roots.</li> <li>• Soils (excepting those described above) tested with a dynamic cone penetrometer in accordance with NZS 4402 Methods of testing soils for civil engineering purposes Test 6.5.2, shall be acceptable as good ground for building foundations if penetration resistance is no less than: <ul style="list-style-type: none"> <li>– Minimum 3 blows per 75mm at depths no greater than footing width.</li> <li>– Minimum 4 blows per 75mm at depths greater than the footing width.</li> </ul> </li> </ul> <p>Depths shall be measured from the underside of the proposed footing.</p>
<b>Grade</b>	The surface slope of a road, channel or natural ground.
<b>Gradient</b>	The longitudinal slope of a road or pipe or drain.
<b>Granular material</b>	Material with a particle size no smaller than sand.
<b>Grease trap</b>	A device designed to intercept grease in a <i>foul water</i> discharge.
<b>Grit</b>	Fine angular mineral aggregate, usually passing a 4.75 mm sieve but retained on a 1.18 mm sieve.
<b>Ground water</b>	Water flowing or lying under the natural surface of the ground.
<b>Guard rail</b>	An engineering rail erected for safety to restrain vehicles after leaving a road carriageway in an uncontrolled and unintentional direction.
<b>Gully trap</b>	A fitting designed to prevent foul air escaping from the drainage system and used to receive the discharge from <i>waste pipes</i> .
<b>Handrail</b>	A rail that provides support to, and assists with the movement of a person.
<b>Hazard</b>	Any unreasonable risk to people that may cause bodily injury or deterioration of health.
<b>Hazardous</b>	Creating an unreasonable risk to people of bodily injury or deterioration of health.
<b>Hazardous substance</b>	The meaning ascribed to it by the Fire Service Act 1975.
<b>Headwaters</b>	The source of a watercourse. The water upstream of a structure or point on a watercourse.
<b>Hilly</b>	Terrain is considered hilly where the slope is greater than 1v: 20h. In the District this terrain is typically found on river terraces or otherwise to the north-west and west in the foothills.
<b>Impervious</b>	That which does not allow the passage of moisture or infiltration of water.
<b>Information sign</b>	A road sign for the purpose of giving information, not being a warning or regulatory sign.
<b>Inspection chamber</b>	A chamber with working space at ground level through which the <i>drain</i> passes either as an open channel or as a pipe incorporating an <i>inspection point</i> .

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## References, Glossary & Abbreviations

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<b>Inspection point</b>	A removable cap at <i>drain</i> level through which access may be made for cleaning and inspecting the drainage system.
<b>Interceptor drain</b>	A type of drain that collects and channels water in a particular direction.
<b>Interceptor trap</b>	A device that will separate and retain required liquids and solids from a liquid stream and which will provide a water barrier to prevent foul air or gas from entering any downstream system.
<b>Invert</b>	The bottom of the inside of a pipe drainage channel.
<b>Kerb</b>	A border of rigid material that is usually raised concrete, which is formed at the edge of a traffic lane or shoulder.
<b>Kerb and channel</b>	Combined kerb and sealed drainage channel.
<b>Kerb ramp</b>	A short ramp that either cuts through a kerb or is built up to the kerb.
<b>Land held under the same title</b>	This is all land appearing on an individual Certificate of Title issued by the District Land Registrar and includes a piece of land, or a <i>building</i> or part of a <i>building</i> , or both, that is: <ul style="list-style-type: none"> <li>• A unit under the Unit Titles Act 1972, or</li> <li>• Leased under a cross-lease registered under the Land Transfer Act 1952, or</li> <li>• Leased under a company lease registered under the Land Transfer Act 1952</li> </ul>
<b>Lane line</b>	A line other than a centre line or edge line painted on a road dividing adjacent traffic lanes.
<b>Living Zone</b>	As defined in the <i>District Plan</i> .
<b>Marker post</b>	A post placed at the edge of the road, equipped with a reflector to assist night driving that complies with MOTSAM.
<b>Maximum operating pressure</b>	This is specified by the Engineer and is the maximum pressure the pipeline must sustain, including surge.
<b>Median</b>	A raised or flush divider separating traffic.
<b>Median barrier</b>	A device used on multi-lane roads to keep opposing traffic in prescribed carriageways.
<b>Mitigation</b>	Off-setting adverse environmental effects caused by development.
<b>Modified Rational Method</b>	The modified rational method is an extension of the rational method for rainfalls lasting longer than the time of concentration $t_c$ . This modified method uses concepts of the rational method to develop hydrographs for storage design rather than only flood peak discharges. The modified rational method can be used for preliminary design of detention storage for catchment sizes up to approximately 15 Ha.
<b>Natural waterway</b>	See Watercourse
<b>Network utility operator</b>	A person or organisation that: <ul style="list-style-type: none"> <li>• Undertakes the distribution or transmission by pipeline of natural or manufactured gas, petroleum, or geothermal energy; or</li> <li>• Is an electricity operator or electrical distributor as defined by section 2(1) of the Electricity Act 1992 for the purposes of an works defined by that Act; or</li> <li>• Undertakes the piped distribution of <i>potable</i> water for supply; or</li> <li>• Is the operator of a sewerage system or a stormwater drainage system;</li> <li>• Is the operator of a water race or stock water race system.</li> </ul>
<b>Notable Plant</b>	A plant as defined in the Proposed District Plan as amended by Council decisions Chapter 10 – Notable Plants.
<b>Optimum moisture content</b>	The moisture content at which a specified amount of compaction will produce a maximum density under specified conditions.
<b>Other property</b>	Any land or <i>buildings</i> or part thereof which are: <ul style="list-style-type: none"> <li>• Not held under the same <i>allotment</i>, or</li> <li>• Not held under the same ownership - and includes any road.</li> </ul>

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## References, Glossary & Abbreviations

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<b>Outfall</b>	That part of the disposal system discharging or receiving <i>surface water</i> or <i>foul water</i> from the drainage system. For <i>foul water</i> , the <i>outfall</i> may include a <i>sewer</i> or a septic tank. For <i>surface water</i> , the <i>outfall</i> may include a natural water- course, kerb and channel, or soakage system.
<b>Overland Flow</b>	See Secondary Flow
<b>Overland Flow Path</b>	See Secondary Flow Path
<b>Overpass</b>	A grade separation where the traffic passes over an intersecting highway or railway.
<b>Owner</b>	<p>In relation to any land, including any <i>buildings</i> on that land, means the <i>person</i> who is for the time being entitled to the rack rent thereof or who would be so entitled if the land were let to a tenant at a rack rent; and, for the purposes of sections 30, 33 and 43 of the Building Act, includes the:</p> <ul style="list-style-type: none"> <li>• Owner of the fee simple of the land; and</li> <li>• Any <i>person</i> who has agreed in writing, whether conditionally or unconditionally, to purchase the land or any leasehold estate or interest in the land, or to take a lease of the land, while the agreement remains in force, and <b>ownership</b> has a corresponding meaning.</li> </ul> <p>(As defined in NZS 4404: 2004.)</p>
<b>Passing bay</b>	A widened length on a narrow bridge or road at which vehicles travelling in opposing directions can pass each other.
<b>Passing lane</b>	An additional lane on a road to allow one to overtake vehicles travelling in the same direction.
<b>Pavement</b>	The road structure that is constructed on a subgrade and supports the traffic loading.
<b>Pavement markings</b>	Any lines painted on the road to control traffic movement or parking.
<b>Pedestrian crossing</b>	A specially marked area giving right of way to pedestrians crossing the road.
<b>Perennial Stream</b>	A stream that maintains water in its channel throughout the year or maintains a series of discrete pools that provides habitats for the continuation of the aquatic ecosystem.
<b>Performance criteria</b>	In relation to a <i>building</i> , means those qualitative or quantitative criteria that the <i>building</i> is to satisfy in performing its <i>functional requirement</i> .
<b>Person</b>	Includes the Crown, a corporation sole, and also a body of persons, whether corporate or unincorporated.
<b>Piping system</b>	An assembly of pipes, pipe fittings, gaskets, bolting and pipe supports.
<b>Plans and specifications</b>	<p>Means the drawings, specifications, and other documents according to which a <i>building work</i> is proposed to be constructed, altered, demolished, or removed, including proposed procedures for inspection during <i>construction</i>, <i>alteration</i>, demolition, or removal, and also including (in respect of <i>construction</i> or <i>alteration</i>):</p> <p>The <i>intended use</i> of the work, and</p> <p>The design features or systems which the applicant considers will be required to be included in any <i>compliance schedule</i> issued in terms of section 44 of the Building Act; and</p> <p>The proposed procedures for inspection and routine maintenance for the purposes of that <i>compliance schedule</i> in respect of those design features or systems.</p>
<b>Pressure control valve</b>	A pressure limiting valve, or pressure reducing valve.
<b>Primer</b>	In roading, the material applied to a prepared base to facilitate the binding of bitumen to the road surface.
<b>Principal main</b>	Principal main reticulation is typically 100 mm & 150 mm diameter and includes fire hydrants.
<b>Private Drain</b>	A drain that is not a public drain. A drain that is privately owned or of largely private benefit.

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## References, Glossary & Abbreviations

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<b>Private way</b>	As defined by s315 of the Local Government Act 1974.
<b>Producer statement</b>	Any statement that is supplied by or on behalf of an applicant for a <i>building consent</i> or by or on behalf of a person who has been granted a <i>building consent</i> that certain work will be or has been carried out in accordance with certain technical specifications.
<b>Property</b>	Land, <i>buildings</i> , and goods; but does not include incorporeal (without material form or substance) forms of <i>property</i> .
<b>Proposed District Plan as amended by Council decisions</b>	The Council's district plan that is prepared under the Resource Management Act 1991. The purpose of the Resource Management Act 1991 is to promote the sustainable management of natural and physical resources.
<b>Protected tree</b>	A (notable) tree as listed in the Proposed District Plan Appendix 28.3.
<b>Public Carpark</b>	Public carparks are those in public ownership to which members of the public can be expected to have free access (almost) as of right.
<b>Public Drain</b>	Means a passage or channel on or over the ground for the reception and discharge of stormwater, whether the drain is continuously or intermittently flowing, that any local authority is authorised to construct, undertake, establish, manage, operate or maintain. On private property a public drain may be covered by easements in favour of the Council for the purposes of right to drain and/or right of way.
<b>Public Place</b>	Re <i>dangerous goods</i> – any place which is freely open to and frequented by the public, excluded is, private property where the licensee can control the access of the public to dangerous goods
<b>Pump Station</b>	A building housing one or more pumps for the distribution of potable or waste-water from one part of the network to another.
<b>Qualified Arborist</b>	A person who is in possession of a recognised arboriculture degree, diploma or certificate, and on the job experience, is familiar with the equipment and hazards involved in arboriculture operations, has demonstrated proficiency in inspecting, analysing and treating hazardous trees and has demonstrated the ability to perform the tasks involved. A Certificate shall consist of a minimum of 240 credits of learning (i.e. Level 4).
<b>Qualified Horticulturalist</b>	A person who is in possession of a recognised horticulture degree, diploma or certificate, and on the job experience, is familiar with the equipment, hazards and techniques involved in horticulture operations, and has demonstrated the ability to perform the tasks involved. A Certificate shall be a minimum of Level 3 i.e. the equivalent to one year full time study.
<b>RAMM</b>	A computer-based maintenance management system including an inventory, which assists in the management of the maintenance and rehabilitation of pavements and related features. RAMM stands for Road Assessment and Maintenance Management (System).
<b>Rainfall Intensity</b>	The volume of rainfall falling in a given time. Normally expressed as mm/hour.
<b>Rated Pressure</b>	This is specified by the manufacturer as the limit that the particular component can sustain in use.
<b>Relevant boundary</b>	A line from which space separation requirements are measured. It may be: <ul style="list-style-type: none"> <li>• The boundary between two property titles,</li> <li>• The property boundary on the far side of an abutting street, railway or public place, or</li> <li>• A notional boundary.</li> </ul> <p>Note that separation requirements are related to the potential threat from the effects of a fire emanating from the exterior wall of a building. A boundary is not a relevant boundary, if lines drawn parallel to the face of the building and to the boundary, intersect at an angle of more than 80°.</p>
<b>Residual Pressure</b>	Remaining pressure at a point under a particular demand.
<b>Retaining wall</b>	A wall constructed to resist lateral pressure from the adjoining ground or to maintain in position a mass of earth.

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## References, Glossary & Abbreviations

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<b>Retention Basin (Detention Basin)</b>	An area of land or structure purpose built for the holding or delaying stormwater runoff with a controlled outflow and an engineered overflow.
<b>Reticulation</b>	A system of interlacing pipes, wires and other connections, constructed like a net, which feed out from a central supply to customers.
<b>Reticulation (Fluids)</b>	A system of pipes or drains for the conveyance of fluids.
<b>Reticulation (Energy &amp; Communications)</b>	Reticulation includes all overhead and underground cables, support structures, points of supply, relays, switchgear, fittings, ducting and conduits (whether empty or used).
<b>Return Period</b>	The statistical interpretation of the frequency of a given intensity and duration rainstorm event. Refer AEP.
<b>Rider main</b>	Rider main (sub-main) reticulation is typically 50 mm diameter, includes service lateral connections and excludes fire hydrants.
<b>Riparian</b>	Of, inhabiting, or situated on the bank of a river.
<b>Road</b>	An area formed for vehicular traffic to travel on. The term "road" usually describes the area between kerbs or surface water channels and includes medians, shoulders and parking areas. Refer also the Local Government Act, Land Transport Act and Transit New Zealand. Road includes — <ul style="list-style-type: none"> <li>(a) A street; and</li> <li>(b) A motorway; and</li> <li>(c) A beach; and</li> <li>(d) A place to which the public have access, whether as of right or not; and</li> <li>(e) All bridges, culverts, ferries, and fords forming part of a road or street or motorway, or a place referred to in paragraph (d);</li> <li>(f) All sites at which vehicles may be weighed for the purposes of the Land Transport Act or any other enactment.</li> </ul>
<b>Road Furniture</b>	A general term to describe features placed on or near the road to improve safety and assist drivers. Furniture includes barriers, guard rails, lighting, parting meters, poles, posts, signs, lights, seats and rubbish bins.
<b>Road Opening Notice</b>	A formal application to Waimakariri District Council for the installation of a network service within legal roads.
<b>Road reserve</b>	A legally described area within which facilities such as roads, footpaths and associated features may be constructed and maintained for public travel.
<b>Rodding point</b>	A removable cap at ground level through which access may be made for cleaning and inspecting the drainage system.
<b>Roughness</b>	Irregularities in the longitudinal profile of a road, with wavelengths 0.1 to 15 metres and usually measured in NAASRA counts.
<b>Roundabout</b>	An intersection of two or more carriageways at a common level where all traffic travels around a central island, which induces weaving movements in lieu of direct crossings.
<b>Route marker</b>	A sign indicating by means of a number, a device, or a colour, the course of a particular route.
<b>Running course</b>	A thin layer of graded stone that protects the base course of an unsealed road (e.g. AP20 – Stabilised Average Particle Size 20 mm).
<b>Rural Drainage Area</b>	Means any area constituted for land drainage purposes in the District under Part XXIX (Land Drainage and River Clearance) of the Local Government Act 1974.
<b>Safety sign</b>	A particular type of sign that comprises a geometric form and a safety <i>colour</i> , together with a <i>safety symbol</i> or text (that is words, letters numbers or a combination of these) and gives a particular safety message.
<b>Safety symbol</b>	A graphic symbol used in a <i>safety sign</i> .

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## References, Glossary & Abbreviations

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<b>Sanitary appliance</b>	An appliance that is intended to be used for <i>sanitation</i> , such as machines for washing dishes and clothes.
<b>Sanitary fixture</b>	Any <i>fixture</i> that is intended to be used for <i>sanitation</i> .
<b>Scaffolding</b>	Used in the course of the <i>construction</i> process:  Any structure, framework, swinging stage, suspended <i>scaffolding</i> , or boatswain's chair, of a temporary nature, used or intended to be used for the support or protection of workers engaged in or in connection with <i>construction</i> work for the purpose of carrying out that work, or  For the support materials used in connection with any such work; and include any plank, coupling, fastening, fitting or device used in connection with the <i>construction</i> , erection or use of <i>scaffolding</i> .
<b>Second coat seal</b>	A chip seal placed on top of a first coat sealed surface.
<b>Secondary Flow (Overland Flow)</b>	The path over which <i>surface water</i> will follow if the drainage system reaches design capacity and then surcharges.
<b>Secondary Flow Path (Overland Flow Path)</b>	The route of concentrated flow, often in the form of sheet flow. This can be designed to carry and channel secondary flow to minimise flooding hazard to buildings and infrastructure.
<b>Sediment</b>	Solid material, both mineral and organic, that is in suspension, being transported, or has been moved from site of origin by air, water, gravity, or ice and has come to rest on the earth's surface either above or below water.
<b>Self Cleansing (Velocity)</b>	In gravity pipe systems, that minimum velocity able to keep the pipe flushed from any expected solids, therefore removing the requirement to install an upstream flush-tank.
<b>Sewage</b>	Waste matter carried away in sewers.
<b>Sewer</b>	A <i>drain</i> that is under the control of, or maintained by, a <i>network utility operator</i> and used to convey sewerage or stormwater.
<b>Sewerage</b>	A system of sewers.
<b>Sheet Flow</b>	Shallow dispersed overland flow.
<b>Shoulder</b>	That portion of the road outside the traffic lanes and designed to provide lateral structural support to the carriageway.
<b>Side drain</b>	A surface drain normally constructed on the road reserve near the outer boundary to prevent water flowing onto the road, or into the pavement layers, or to take water from a surface water channel and carry it to a water course or other outfall.
<b>Sight rail</b>	A timber or metal rail (usually reflective or painted white) placed to highlight a change in road direction or some other hazard but not designed to act as a guard rail.
<b>Significant Tree</b>	A notable plant.
<b>Siphons</b>	A pipeline between two open channels or two water holding structures, that has all, or part of, its soffit at a lower level than that of the adjacent channels or structures.
<b>Sitework</b>	Work on any site, including earthworks, preparatory to or associated with the <i>construction</i> , <i>alteration</i> , demolition or removal of a <i>building</i> or any other work.
<b>Slurry seal</b>	A specialist road surface treatment consisting of a mixture of bitumen emulsion, fine aggregate and portland cement.
<b>Soak pit</b>	An excavation to create a void suitable for receipt of surface water run-off, enabling it to soak away (refer standard drawing 600-390 – Roadside Soakhole).
<b>Soil fixture</b>	A <i>sanitary fixture constructed</i> to receive solid and/or liquid excreted human waste. It includes a bedpan disposal unit, slop sink, urinal, water closet pan, bidet and water-flushed sanitary town disposal unit.

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## References, Glossary & Abbreviations

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<b>Specified intended life (Building)</b>	The meaning ascribed to it by section 39 of the Building Act as follows: “ <i>Specified intended life</i> ” in relation to a proposed <i>building</i> or any existing <i>building</i> proposed to be altered, and which is intended to have an indefinite use but not less than 50 years, means the period of time, as stated in an application for a <i>building consent</i> or in the consent itself, for which the <i>building</i> is proposed to be used for its <i>intended use</i> .
<b>Stabilisation (Soil)</b>	Providing adequate measures, vegetation and/or structural that will protect exposed soil to prevent erosion.
<b>Stabilise</b>	To modify any natural aggregate to improve, or maintain its load carrying capacity. (Usually by adding lime, cement or clay.)
<b>Standard day</b>	For the purposes of determining natural lighting, the hours between 8 am and 5 pm each day with an allowance being made for daylight saving.
<b>Street</b>	A road usually within an urban locality. (Has the same meaning as “road” as defined by s315 of the Local Government Act 1974.)
<b>Sub-base</b>	An optional layer of pavement material placed under the basecourse and above the sub-grade.
<b>Sub-soil drain</b>	A drain below the ground designed to collect water throughout its length and lower than ground water level in the surrounding soil.
<b>Substructure</b>	The piers and abutments (including wing walls) of a bridge that support the superstructure.
<b>Subway</b>	A structure constructed to permit the passage of pedestrians, cycles or stock beneath the road.
<b>Sump</b>	A chamber that is installed in a <i>drain</i> and incorporates features to intercept and retain silt, gravel and other debris prior to outfalling into piped reticulation. Elsewhere also known as a cess pit.
<b>Superelevation</b>	The continuous transverse slope normally given to the carriageway at horizontal curves to facilitate the safe movement of vehicles.
<b>Superstructure</b>	That part of a bridge structure above deck level.
<b>Surface Runoff</b>	Rain that runs off a surface rather than infiltrating the ground or being retained by the surface on which it falls.
<b>Surface Water</b>	All naturally occurring water, other than subsurface water, which results from rainfall on the site or water flowing onto the site, includes that flowing from a <i>drain</i> , stream, river, lake or sea and all that with its surface exposed to the atmosphere. (As defined in NZS 4404: 2004.)
<b>Surface Water Channel</b>	An open drain or ditch along the side of the road which collects water running off the road’s surface, thereby, preventing ground water from entering the pavement layers.
<b>Suspended Solids</b>	Solids either floating or suspended in water, including colloidal solids.
<b>Swale</b>	An elongated depression in the land surface that can be seasonally wet, is usually vegetated, is normally without flowing water and is designed or used to convey water. Swales conduct stormwater to primary drainage channels and can provide groundwater recharge.
<b>Territorial Authority</b>	The meaning ascribed to it by Section 5 of the Local Government Act 2002; and includes any organisation that is authorised to permit structures pursuant to section 12(1) (b) of the Resource Management Act 1991.
<b>Test pressure</b>	This is the pressure the pipeline must sustain during the test.
<b>Time Of Concentration (tc)</b>	The time for runoff to flow from the most remote part of the drainage area/catchment to the outlet/point at which measurement is taken.
<b>Title boundary</b>	A boundary with <i>other property</i> . Comment: The terms “Habitable Work” and “Title Boundary” in this document replace the definition “Protected Work” used in the Dangerous Goods Regulations 1980/46, 1985/188, 1985/170.
<b>Toe (of slope)</b>	Where the slope stops or levels out. Bottom of the slope.

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## References, Glossary & Abbreviations

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<b>Traffic island</b>	A defined area, usually raised above the surface, within a road, usually at an intersection, from which traffic is intended to be excluded, and which is used for control of vehicular movements and for pedestrian refuge.
<b>Traffic lane</b>	A portion of the carriageway allotted for the use of a single line of vehicles.
<b>Traffic volume</b>	The number of vehicles flowing in one or both directions past a particular point in a given time (for example, vehicles per hour, vehicles per day).
<b>Trap</b>	A chamber that is installed in a <i>drain</i> and incorporates features to intercept and retain floatable debris.
<b>Treatment</b>	Treatment (for stormwater) is intended to reduce the amount of suspended solids and other pollutants that is carried by stormwater off the site/proposed development. Treatment will remedy or mitigate the amount of suspended solids and pollutants entering watercourses and waterways downstream.
<b>Trunk Main</b>	Trunk main reticulation is defined as strategic. This reticulation conveys supply from one pump station or area to another and does not include fire hydrants.
<b>Turning Template</b>	A template used (in plan form) to describe the swept path of a specific vehicle when turning.
<b>Two Coat (Chip) Seal</b>	Two coats of hot bitumen chipseal sprayed and laid during the same designed procedure. Usually a Grade 6 chip over a Grade 4 chip or a Grade 3 chip over a Grade 5 chip.
<b>Undercurrent</b>	A sub-surface watercourse that may present itself as water above ground. Sometimes termed ephemeral springs undercurrent may be considered in an uncertain and random nature, not unlike a phenomenon. Historically undercurrent has demonstrated presence in only some parts of the district. Once evident undercurrent can be very difficult to control and may be present for an uncertain length of time.
<b>Underpass</b>	A grade separation where vehicular or pedestrian traffic passes under an intersecting highway or railway.
<b>Urban Road/Street</b>	Any road in a speed environment less than 70 km/h (kilometres per hour).
<b>Utility</b>	Utility is any service that is reticulated to provide separate consumers with a connection to that service. Services include water, sewer, stormwater, electricity, telephone & gas. (As defined in <i>District Plan</i> but excluding those utilities owned and operated by Waimakariri Council.)
<b>Utility service provider</b>	A utility service provider is that organisation that provides services such as gas, water, electricity, telephone, sewer and stormwater.
<b>Vehicle crossing</b>	Means that area of land from the carriageway up to and including the road frontage of any site or allotment used by vehicles to access the site or allotment from the carriageway
<b>Vehicle Template</b>	A template used (in plan form) to describe the swept path of a specific size turning vehicle. See also <i>Turning Template</i> .
<b>Viaduct</b>	A (long) bridge composed of a series of spans used to carry a road, usually over land.
<b>Void-fill seal</b>	An emulsion seal, usually consisting of grit or small chips, for filling the voids in an existing coarse textured chip seal surface.
<b>Wastewater</b>	As defined in NZS 4404: 2004.
<b>Watercourse</b>	Any pathway for concentrated overland flow, including rivers, streams and ephemeral channels.
<b>Water hammer</b>	Transient pressure surges can be positive and negative pressure.
<b>Water main</b>	A water supply pipe vested in, or is under the control, or maintained by, a <i>network utility operator</i> .
<b>Water storage tank</b>	A fixed and covered <i>water</i> tank generally used for reserve water storage in case of failure of the <i>water main</i> .
<b>Water supply system</b>	Pipes, fittings and tanks used or intended to be used in the piping of water from a <i>water main</i> or other water source to <i>sanitary fixtures</i> , <i>sanitary appliances</i> and fittings within a <i>building</i> .

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## References, Glossary & Abbreviations

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<b>Water supply tank (or cistern)</b>	A covered <i>water tank</i> generally used for the supply to <i>sanitary fixtures</i> or to <i>storage water heaters</i> . A float control valve normally regulates the water supply to the tank.
<b>Water Table</b>	The upper surface of the free groundwater in a zone of saturation; locus of points in soil water at which hydraulic pressure is equal to atmospheric pressure.
<b>Water Table Drain</b>	A drain that parallels a carriageway to drain surface and subsurface water from the road formation (See also <i>Surface Water Channel</i> ).
<b>Water trap</b>	A fitting designed to prevent foul air escaping from the plumbing system or <i>foul water drainage system</i> and entering a <i>building</i> .
<b>Wearing course</b>	The top bonded layer of an unsealed pavement. Intended to provide a waterproof skid and abrasion resistant surface. It is also the layer reshaped during grader maintenance.
<b>Wholesome</b>	Wholesome water is defined in the Drinking-Water Standards for New Zealand 1995.
<b>Windrow</b>	The long ridge of material usually formed by a grader or earth-moving machine. May also apply to loose gravel built up by traffic between/beside the wheel tracks on unsealed roads.
<b>Wing wall</b>	A wall extending an abutment, as in a bridge, for retaining the side slopes of earth fill.
<b>Working day</b>	Any day except a Saturday, a Sunday, Good Friday, Easter Monday, Christmas Day, Boxing Day, ANZAC Day, Labour Day, the Sovereign's birthday, Waitangi Day, and any other day observed in any locality concerned as a public holiday.
<b>Working pressure</b>	This is the typical pressure under which the pipeline will operate.

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## References, Glossary & Abbreviations

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### 1.4 ABBREVIATIONS

The following abbreviations apply in the Engineering Code of Practice. These abbreviations are additional to those abbreviations in NZS 4404: 2004.

<b>AADT</b>	Annual average daily traffic.
<b>ADWF (l/s)</b>	Average Dry Weather Flow
<b>AEP</b>	Annual Exceedance Probability.
<b>BIA</b>	Building Industry Authority
<b>CoP</b>	Waimakariri District Council Engineering Code of Practice
<b>CPTED</b>	Ministry of Justice National Guidelines for Crime Prevention through Environmental Design
<b>CSS</b>	Christchurch City Council Construction Standard Specifications
<b>DN</b>	Nominal Diameter
<b>ECan</b>	Environment Canterbury
<b>H<sub>2</sub>S</b>	Hydrogen sulphide
<b>HCV</b>	Heavy Commercial Vehicle.
<b>HIRDS</b>	High Intensity Rainfall Design System in the form of software produced by NIWA
<b>IDS</b>	Christchurch City Council Infrastructure Design Standard
<b>ISO</b>	International Standards Organisation
<b>LTCCP</b>	Waimakariri District Council <i>Long-Term Council Community Plan 2006-2016</i>
<b>LTSA</b>	Land Transport Safety Authority.
<b>MoT</b>	Ministry of Transport.
<b>NAASRA</b>	National Association of Australian State Road Authorities (now Austroads)
<b>NZS</b>	New Zealand Standard, as published by the Standards Association of New Zealand (SANZ).
<b>OD</b>	Outside diameter
<b>P/A ratio</b>	Peak to average ratio PSF/ASF
<b>PDWF (l/s)</b>	Peak Dry Weather Flow
<b>PE 80B</b>	Polyethylene type 80B
<b>PE 100</b>	Polyethylene type 100
<b>PN</b>	Pressure nominal
<b>PSF (l/s)</b>	Peak wastewater flow
<b>PVC-o</b>	Oriented Poly Vinyl Chloride
<b>PWWF (l/s)</b>	Peak Wet Weather Flow is the instantaneous design total peak
<b>RMA</b>	Resource Management Act
<b>RON</b>	Road opening notification
<b>RRPM</b>	Raised Reflective Pavement Marker

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## References, Glossary & Abbreviations

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<b>RTS</b>	Road and Traffic Standards (Published by the LTSA)
<b>SCADA</b>	Supervisory, Control And Data Acquisition
<b>SN</b>	Stiffness number
<b>SPF</b>	Storm peak factor
<b>TNZ</b>	Transit New Zealand
<b>WDC</b>	Waimakariri District Council
<b>WWDG</b>	Christchurch City Council Waterways, Wetlands and Drainage Guide



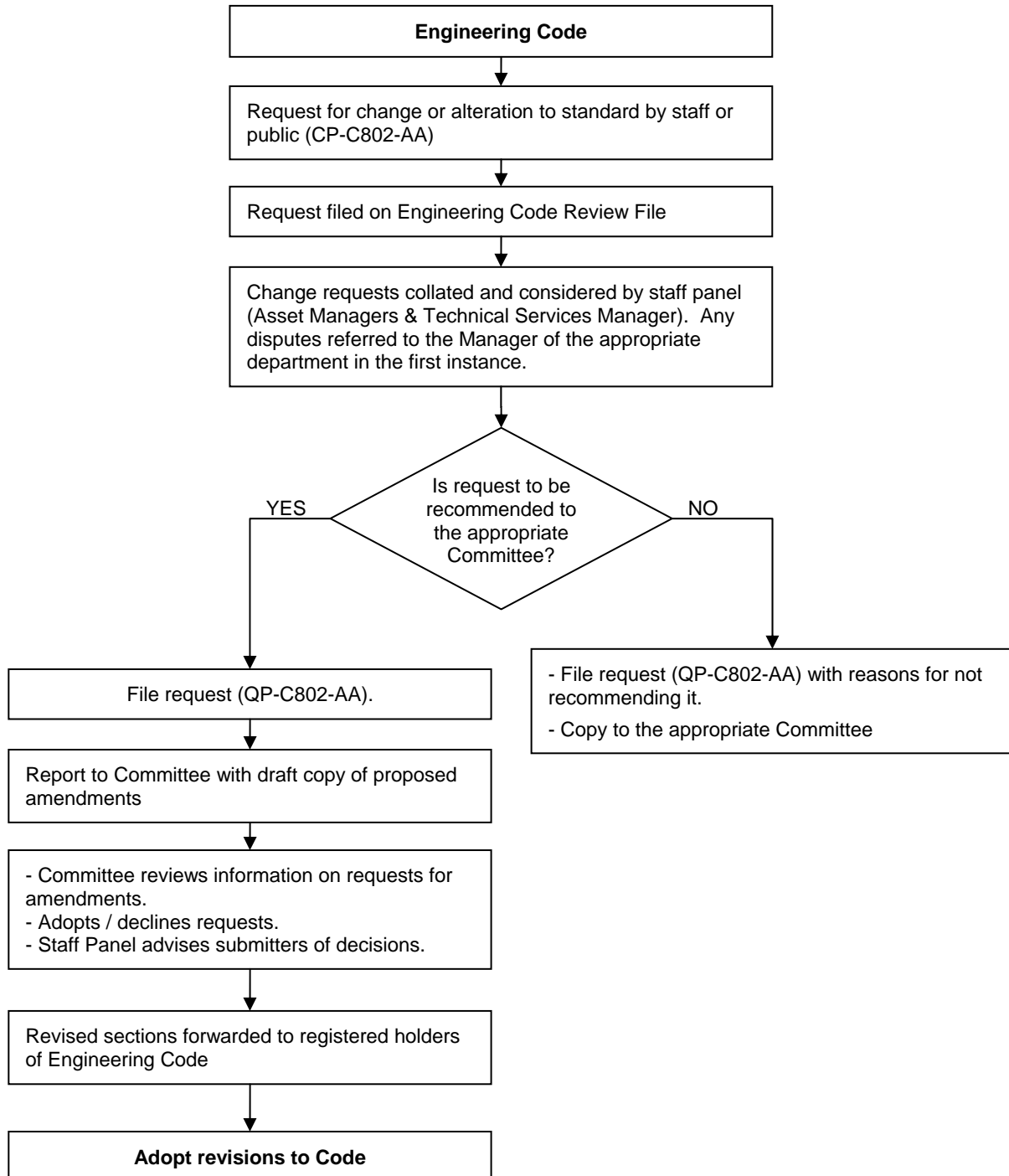


**ENGINEERING CODE OF PRACTICE**

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## Engineering Code Review Process

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- QP-C802-AA Amendment Request Form  
QP-C802-AB Order Form  
QP-C802-AC Record of Amendments Form (*Please keep a copy of this form at the front of the Code and use it to record receipt of amendments.*)  
QP-C802-AD Change of Address Form
-



ENGINEERING CODE OF PRACTICE

Amendment Request Form

Submitted By: \_\_\_\_\_ of \_\_\_\_\_  
Date: \_\_\_\_\_

Suggested amendment to:  
Volume No. \_\_\_\_\_ Part No. \_\_\_\_\_ Clause No. \_\_\_\_\_ Page No. \_\_\_\_\_

Description of Problem:

(continue on separate page if necessary)

Suggestion for improvement:

Send this form to : Helen Field  
Email: [helen.field@wmk.govt.nz](mailto:helen.field@wmk.govt.nz)  
Fax: (03) 313 4432,  
Post: Technical Services Unit, Waimakariri District Council, Private Bag 1005, Rangiora 7440

(for office use only)

Document No. \_\_\_\_\_

Received by Helen Field Date: \_\_\_\_\_

Forwarded to Dept Manager: \_\_\_\_\_ Date: \_\_\_\_\_

Dept Manager Recommendation:

- Amend manual as requested (for simple amendments)
- or
- I have passed this to \_\_\_\_\_ for review / action.

Expected date of completion : \_\_\_\_\_  
Dept Manager

Return copy to: Helen Field, Engineer, Technical Services Unit as soon as possible.

Amendments made to Document (where appropriate):  Date: \_\_\_\_\_  
Submitter informed of outcome:  Date: \_\_\_\_\_  
Amended pages posted to copy holders  Date: \_\_\_\_\_

Signed: \_\_\_\_\_  
(Dept Manager) (Helen Field)



**ENGINEERING CODE OF PRACTICE**

## Order Form

To purchase a CD of the **WDC Engineering Code of Practice**, please download this form, complete your details and email, post or fax it to the following address:

Technical Services Unit  
Waimakariri District Council  
Private Bag 1005  
Rangiora 7440

Fax: 03 313 4432  
Phone: 03 313 6136  
Email: [margaret.pesther@wmk.govt.nz](mailto:margaret.pesther@wmk.govt.nz)

Item	Quantity	Cost (\$) (incl. GST)
CD containing PDF files		40.00
<b>Total Cost</b>		

**Method of payment**

- Cheque (please make cheques payable to Technical Services Unit, Waimakariri District Council)
- Invoice (please provide order number below)

N.B. Credit Card payments can not be accepted.

**Delivery and Manual Registration Details**

Organisation:	
Contact Person:	
Email address (for contact person):	
Postal Address:	
Street Address:	
Telephone No.	
Fax No.	
Your Order No:	

<b>Office Use Only:</b>	Name	Date
<i>Order Received</i>		
<i>Controlled Copy No. Allocated</i>		
<i>Document Dispatched</i>		
<i>Invoice Issued</i>		





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## Change of Address Form

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To: **Technical Services Manager**  
**Waimakariri District Council**  
**Private Bag 1005**  
**RANGIORA 7440**

**Fax: 03 313 4432**

Current Address:

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New Address:

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Signed: \_\_\_\_\_

Position: \_\_\_\_\_

Date: \_\_\_\_\_

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**ENGINEERING CODE OF PRACTICE**

**List of Documents**

Note that the document numbering system has been altered in the last update. The old numbers are provided here to assist identification of documents. All references to documents within the CoP shall be according to the new system.

<b>Section</b>	<b>Old Document No.</b>	<b>Current Issue No.</b>	<b>Current Document No.</b>
Cover & Table of Contents	QP-C800	3	QP-C800
References, Definitions & Abbreviations	QP-C808	3	QP-C801
Engineering Code Review Process	QP-C810	3	QP-C802
Order Form	QP-C810-AB	3	QP-C802-AB
Amendment Request Form	QP-C810-AA	4	QP-C802-AA
Record of Amendments Form	QP-C810-AC	3	QP-C802-AC
Change of Address Form	QP-C810-AD	3	QP-C802-AD
List of Documents	QP-C800	1	QP-C803
List of Standard Specifications		1	QP-C804
List of Drawings	QP-C820	6	QP-C805
<b>Part 1: Introduction</b>	<b>QP-C806</b>	<b>3</b>	<b>QP-C810</b>
<b>Part 2: General Requirements</b>	<b>QP-C811</b>	<b>3</b>	<b>QP-C811</b>
Standard Draughting Layout & Format Requirements		1	QP-C811-AA
Draughting Checklist		1	QP-C811-AB
Benchmark Certificate		1	QP-C811-AC
Uncompleted Works Bond Form		1	QP-C811-AD
Maintenance Bond Form		1	QP-C811-AE
<b>Part 3: Quality Assurance</b>		<b>1</b>	<b>QP-C812</b>
Design Report (Template)		1	QP-C812-AA
Contract Quality Plan (Template)		1	QP-C812-AB
Producer Statement – Design		1	QP-C812-AC
Producer Statement – Construction		1	QP-C812-AD
Non-conformance Report (Template)		1	QP-C812-AE
Engineer’s Checklist		1	QP-C812-AF
Construction Checklist – Pipe Construction		1	QP-C812-AG
Construction Checklist – Basecourse Stringing		1	QP-C812-AH
<b>Part 4: Geotechnical Requirements</b>	<b>QP-C812</b>	<b>3</b>	<b>QP-C813</b>
Statement of Professional Opinion on the Suitability of Land for Building Construction		1	QP-C813-AA
Soil Description Method		1	QP-C813-AB
WDC Soil Log		1	QP-C813-AC
<b>Part 5: Stormwater &amp; Land Drainage</b>	<b>QP-C816</b>	<b>3</b>	<b>QP-C814</b>
Rainfall Intensity Tables		1	QP-C814-AA
<b>Part 6: Wastewater</b>	<b>QP-C815</b>	<b>3</b>	<b>QP-C815</b>
Wastewater Scheme Selection Flowchart		1	QP-C815-AA
Wastewater Materials Selection Flowchart		1	QP-C815-AB



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## List of Documents

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<b>Section</b>	<b>Old Document No.</b>	<b>Current Issue No.</b>	<b>Current Document No.</b>
<b>Part 7: Water</b>	<b>QP-C814</b>	<b>3</b>	<b>QP-C816</b>
Water Supply System Selection Flowchart		1	QP-C816-AA
Water Materials Selection Flow Chart		1	QP-C816-AB
Chemical Quality of Potable Water	QP-C814-AA	3	QP-C816-AC
<b>Part 8: Roading</b>	<b>QP-C813</b>	<b>3</b>	<b>QP-C817</b>
<b>Part 9: Utilities</b>	<b>QP-C817</b>	<b>3</b>	<b>QP-C818</b>
<b>Part 10: Reserves, Streetscapes &amp; Open Spaces</b>	<b>QP-C819</b>	<b>3</b>	<b>QP-C819</b>
<b>Part 11: Lighting</b>		<b>1</b>	<b>QP-C820</b>
Lighting Categories		1	QP-C820-AA
Lighting Specification Form		1	QP-C820-AB
Lighting Equipment List		1	QP-C820-AC
Lighting Completion Form		1	QP-C820-AD
<b>Part 12: As-Builts</b>		<b>1</b>	<b>QP-C821</b>
As-Built Data Checksheet – Stormwater		1	QP-C821-AA
As-Built Data Checksheet – Land Drainage		1	QP-C821-AB
As-Built Data Checksheet – Wastewater		1	QP-C821-AC
As-Built Data Checksheet – Water Supply		1	QP-C821-AD

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**STANDARD SPECIFICATION**

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## List of Standard Specifications

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The following documents are standard specifications produced by the Waimakariri District Council for use by developers and contractors for works within the District.

Note that the document numbering system has been altered in the last update. The old numbers are provided here to assist identification of documents. All references to documents within the CoP shall be according to the new system.

<b>Title</b>	<b>Old Document No.</b>	<b>Current Issue No.</b>	<b>Current Document No.</b>
Designing for Surge and Fatigue		1	QP-C841
Street Name Blades	QP-C813-AF	2	QP-C842
Road Openings	QP-C813-AE	3	QP-C843
Preliminary Notification of Work on the Road (Template)	QP-C813-AE-1	2	QP-C843-AA
Road Opening Notice (RON)	QP-C813-AE-2	2	QP-C843-AB
Works Completion Notice (Template)	QP-C813-AE-3	2	QP-C843-AC
Works Maintenance Notice (Template)	QP-C813-AE-4	2	QP-C843-AD
Amenity Garden Planting & Revegetation Areas		1	QP-C844
Tree Planting		1	QP-C845
Grassed Areas		1	QP-C846
Protection of Existing Features		1	QP-C847

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**ENGINEERING CODE OF PRACTICE**

List of Standard Drawings

Type	Title	Issue	Plan No.
Kerbs & Channels	Kerb and Flat Channel	D	600-201A
	Commercial Vehicle Crossing Reinforcing Beam	E	600-201B
	Mountable Kerb	C	600-203A
	Mountable Kerb & Channel	D	600-203B
	Hillside Channel	C	600-204
	Kerb Only	C	600-205
	Vee Channels	D	600-206
Crossings	Typical Residential Concrete Vehicle Crossing (Flat Channel)	E	600-211A
	Typical Residential Hot Mix Vehicle Crossing (Flat Channel)	A	600-211B
	Typical Residential Hot Mix Vehicle Crossing (Dish Channel)	D	600-211C
	Typical Residential Vehicle Crossing, Zones: 3, 4 & 5	D	600-211D
	Typical Commercial Concrete Vehicle Crossing (Flat Channel)	B	600-212A
	Typical Commercial Hot Mix Vehicle Crossing (Flat Channel)	A	600-212B
	Typical Commercial Hot Mix Vehicle Crossing (Dish Channel)	C	600-212C
	Pedestrian Cutdown	E	600-213
	Typical Rural Zone Entranceway	D	600-217
	Typical Rural Zone Commercial Access	E	600-218
	Changes of Grade at Vehicle Crossing	C	600-219
	Pegasus Res6 Vehicle Crossing (With Swale)	E	600-220A
	Pegasus Res6 Vehicle Crossing (Without Swale)	E	600-220B
	Pegasus Commercial Hot Mix Vehicle Crossing (Flat Channel)	A	600-220C
	Mapleham Vehicle Crossing (With Footpath)	A	600-221A
Mapleham Vehicle Crossing (Without Footpath)	A	600-221B	
Paths	Footpaths and Berms	E	600-222
	Kerb Outlet	D	600-224
	House Drain Entry To Hillside Channel	C	600-226
	Typical Footpath Meander Detail	D	600-227
Road Humps & Islands	Road Hump Details	D	600-231
	Interlocking Concrete Block Pavement Edge Treatments	D	600-233
Miscellaneous	Local Rural Zone Road. Culvert Sight Rail. Typical Detail.	B	600-241
	Typical Wire Mesh Fence for Accessways	C	600-242
	Trenching in Public Property	B	600-243
	Standard Fabricated Light Pole	C	600-244
	Services in the Roadside (1)	A	600-245A
	Services in the Roadside (2)	A	600-245B
	Services in the Road Reserve	D	600-245C
	Trench Installation of PVC Pipes	D	600-246
	Cattle Stop – Plan & Section	B	600-248A
	Cattle Stop – Steelwork Detail	B	600-248B
	Cattle Stop – General Layout	B	600-248C
	Construction Information Sign	D	600-250-d



**ENGINEERING CODE OF PRACTICE**

List of Standard Drawings

Type	Title	Issue	Plan No.
Intersections	Standard Rural "X" & "T" Junction Notes	B	600-260A
	Standard Rural Junction Detail – Quadrant Kerb	C	600-260B
	Standard Rural "T" Junction Type A	F	600-261A
	Standard Rural "T" Junction Type A (Constrained)	F	600-261B
	Standard Rural "X" Junction Type A	F	600-261C
	Standard Rural "T" Junction Type B	F	600-262A
	Standard Rural "X" Junction Type B	F	600-262B
	Standard Rural "T" Junction Type C	F	600-263A
Typical Roading Cross Sections	Standard Rural "X" Junction Type C	F	600-263B
	Typical Cross Section – Road in Rural Zone	D	600-270
	Typical Cross Section – Residential 4A or 4B	D	600-271
	Typical Cross Section – Road & Cul-de-Sac	D	600-272
	Typical Cross Section – Rural Right of Way	D	600-273
	Typical Cross Section – Residential & Business Right of Way	D	600-274
Manholes	Turning Areas	C	600-275
	Manhole Casting – Component Details	C	600-301A
	Manhole Vent & Trafficable House Drain Sump Frames & Covers	B	600-301B
	Cast In-situ Manholes Square	C	600-302A
	Cast In-situ Manholes Square Top	C	600-302B
	Cast In-situ Manholes Square Top Reinforcement	A	600-302C
	Precast Manholes Circular	B	600-303A
	Precast Manholes Circular Top	C	600-303B
	Precast Manholes Square Base	A	600-303C
Flush Tanks	150mm NB Diameter Drop Manholes	C	600-305
	Flush Tanks	A	600-311A
	Flush Tanks	A	600-311B
	Flush Manholes	A	600-312
Sumps	Air Gap Separator	A	600-313
	Side Entry Sumps – Precast Kerb Unit	C	600-321
	Side Entry – Enlarged Sumps	C	600-322
	Hillside Sump	C	600-324
	Single Sump – Kerb & Flat Channel	D	600-325
	Single Sump – Kerb & Dish Channel	D	600-326
	Corner Sump	C	600-327
	Double Sump – Flat Channel	C	600-328
	House Drain Inspection Box	B	600-329
	Soak Pit With Overflow	B	600-330A
Pipe Work	Soak Pit Without Overflow	A	600-330B
	Concrete Surround for Under Channel Piping 225 to 300mm Diameter	D	600-331
	Pipelaying at Manholes & Sumps - Concrete & Ceramic Pipes	A	600-341A
	Pipelaying at Manholes & Sumps - CPVC Pipes	A	600-341B
	Pipelaying at Manholes & Sumps - PE Pipes	A	600-341C



**ENGINEERING CODE OF PRACTICE**

List of Standard Drawings

Type	Title	Issue	Plan No.
	Pipe Protection	B	600-342
	PVC Manhole Starters and Finishers	A	600-343
	Pipelaying Haunching Details - Concrete Pipes	A	600-344A
	Pipelaying Haunching Details - Flexible & Ceramic Pipes	A	600-344B
	Pressure Pipelines Thrust Blocks	A	600-346
	Water Stops	B	600-347
	Sleeving Sewer Mains	C	600-351
	Septic Tank Wet Wells on Council Reticulated Rural Schemes	E	600-352A
	Rural Zone Package Sewage Treatment Service Lateral	D	600-352B
	Land Based Treated Effluent Disposal System 1D	B	600-354A
	Land Based Treated Effluent Disposal System 2	B	600-354B
	Septic Tank on Council Reticulated Rural Schemes	E	600-355
	Direct Connections to Existing Pipes	B	600-361
	Pipelaying Junctions off Factory Moulded & Vertical Risers	A	600-363
	PE Junctions, Swept Bends Inspections & Adaptors	A	600-364
	Standard Circular Inspection Chamber	A	600-376
	Subsoil Drains - Interceptors	A	600-377A
	Subsoil Drains - Swale	A	600-377B
	Subsoil Drain Pipes	A	600-377C
	Vacuum Column Backflow Preventer	A	600-381
	Standard Pump Line Connection to Gravity Wastewater Lateral	B	600-382
	Roadside Soakholes	F	600-390
Water Supply	Flushing Valve Setup For Dead-Ends On 50mm Main	A	600-404
	Thrust Blocks	B	600-405
	Water Surface Box Installation	A	600-406
Lateral Connections	Residential Stormwater Lateral Location	B	600-410
	Residential Sewer Lateral Location (Public Land)	C	600-411A
	Residential Sewer Lateral Location (Private Land)	B	600-411B
	Residential Water Supply Lateral Location	B	600-412
	Residential Sewer Lateral Layout At Point Of Discharge	B	600-413A
	Residential Sewer Lateral Junctions.	C	600-413B
	Trade Waste Point Of Discharge	B	600-413C
Reserves	Service Lateral Connections Water	B	600-414
	Street Bench Installation	B	600-500
	Diagonal Tree Staking	B	600-501A
	Vertical Tree Staking	B	600-501B
	Pedestrian Accessway Chicane – Surface Mounted Steel Bollards	B	600-502