CODE OF PRACTICE FOR CITY INFRASTRUCTURE & LAND DEVELOPMENT

ENGINEERING STANDARDS MANUAL

QUALITY AND RELEASE MANUAL

CONTENTS

SECTION 1.0: INTRODUCTION

The Quality and Release Manual of the Code describes the quality assurance, acceptance and release procedures and requirements for the construction phase of subdivisions and other land development projects.

This Manual focuses primarily on subdivision developments that involve the provision of new infrastructure in accordance with resource consent conditions and approved engineering designs.

The testing requirements can be found within the relevant sections of the Engineering Standards Manual.

SECTION 2.0: INSPECTION REQUIREMENTS

2.1
Prior to the commencement of any land development works the developer shall contact the relevant Council officer to confirm requirements.

2.2
Most projects will involve a pre-construction meeting of all of the affected parties, i.e.

- Developer or agent (Engineer/Consultant)
- The Contractor
- The WCC Regulatory Officer
- The WCC Asset Engineer's Representative

2.3
Inspection Schedule

INSPECTION/MEETING	**REQUIRED ATTENDANCE**
Preconstruction meeting:	- Developers Representative - Contractors Representative - WCC Regulatory Service - ARC, other WCC Officers and affected parties if necessary
Earthworks/Silt Control:	- Developers Representative - Contractors Representative - WCC Drainage Assets Engineer if necessary - ARC if necessary
Drainage Inspections: During Construction	- Developers Representative - Contractors Representative - WCC Drainage Assets Engineer if necessary
Roading Inspections: • Sub-base Measure & Test • Underchannel drainage inspection • Sub-Base Measure • Kerb & Channel Alignment • Basecourse Measure & Inspection • Pre-seal Inspection • Finished Seal Measure & Inspection	- Developers Representative - Contractors Representative - WCC Regulatory Officer as applicable
Watermain Inspections: During Construction	- Developers Representative - Contractors Representative - WCC Regulatory Officer or Water Assets Engineer if necessary
Stormwater Inspection: • Upon Practical Completion • Visual Inspection and Video Inspection	- Developers Representative - Contractors Representative - WCC Regulatory Officer or Drainage Assets Engineer if necessary

A Video Inspection is required to be undertaken in accordance with the EcoWater specifications and the New Zealand Pipe Inspection Manual, Latest Edition.
The resulting Video and Report shall be evaluated by WCC for Compliance.

INSPECTION/MEETING	**REQUIRED ATTENDANCE**
Wastewater Inspection: • Upon Practical Completion • Visual Inspection and Pressure Test	- Developers Representative - Contractors Representative - WCC Regulatory Officer or Drainage Assets Engineer if necessary - Watercare Services Officer if necessary

A Video Inspection is required to be undertaken in accordance with the EcoWater specifications and the New Zealand Pipe Inspection Manual, Latest Edition.
The resulting Video and Report shall be evaluated by WCC for Compliance.

Watermain Inspection: • Upon Practical Completion • Surface Inspection and Pressure Test	- Developers Representative - Contractors Representative - WCC Regulatory Officer - Representative for Water Assets Engineer (Techscape staff)
• Sterilisation Test	- Results to WCC Regulatory Officer

Note: All watermain fittings (i.e. valves, hydrants, CI bends), to be inspected prior to backfilling.

Final Inspection: • Berms • Landscaping & Planting • Other Utilities • Maintenance Issues	- Developers Representative - Contractors Representative - WCC Regulatory Officer - Other WCC Officers - ARC & Other affected parties as necessary
Maintenance Inspection: • Final Completion • Re-Tests • Minor Works Complete	- WCC Regulatory Officer - Other parties as for Final Inspection as necessary

SECTION 3.0: QUALITY ASSURANCE CHECKLIST

3.1
Preconstruction Meeting

Date:

Present: - Developer's Representative .....

- Contractor's Representative .....

- WCC Officers .....

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- Others .....

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- Approved design on site Y/N
- Safety programmes in place Y/N
- Contract formalised Y/N
- Contractors programme Y/N
- Other approvals verified

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- Inspection programme
- Information gathering

3.2
Construction Inspections

Date:

Present: - Developer's Representative .....

- Contractor's Representative .....

- WCC Officers .....

.....

- Others .....

3.2.1
Earthworks & Silt Control

- Silt controls in place Y/N
- Bulk earthworks may commence Y/N
- Silt controls function properly Y/N Date: .....

3.2.2
Drainage Inspections

- Materials OK Y/N Date: .....
- Trenching OK Y/N Date: .....
- Bedding OK Y/N Date: .....
- Pipes straight Y/N Date: .....
- Manholes correct Y/N Date: .....
- Backfill/hardfill OK Y/N Date: .....

3.2.3
Water Supply and Other Utilities

- Materials OK Y/N
- Trenching OK Y/N
- Pipes and fitting laid properly Y/N
- Backfill OK Y/N

3.2.4
Roading Inspections

3.2.4.1
Subgrade

- Measure OK Y/N
- Scala's OK Y/N
- Undercuts OK Y/N
- Proof rolling OK Y/N

3.2.4.2
Subgrade Improvements

- Depth check OK Y/N
- Strength test OK Y/N
- Measure OK Y/N

3.2.4.3
Underchannel Drainage

- Measure OK Y/N
- Clean Surface OK Y/N
- Materials OK Y/N

3.2.4.4
Subbase Course

- Measure OK Y/N
- Materials OK Y/N

3.2.4.5
Kerb, Channels, Cesspits

- Measure OK Y/N
- Sight alignment OK Y/N
- Materials OK Y/N

3.2.4.6
Base Course

- Materials OK Y/N
- Measure OK Y/N
- Benkleman Beams OK Y/N
- Surface OK Y/N

3.2.4.7
Pre-Seal

- Sweeping OK Y/N
- Materials OK Y/N
- OK to proceed Y/N

3.2.4.8
Sealing

- Application rates OK Y/N
- Materials OK Y/N

3.2.4.9
Post-Sealing

- Measure OK Y/N
- Surface OK Y/N

3.3
Final Inspections

Date:

Present: - Developer's Representative .....

- Contractor's Representative .....

- WCC Officers .....

.....

- Others .....

3.3.1
Earthworks & Silt Control

- Geotechnical Completion Report Y/N
- Silt Controls Removed Y/N
- Grass Take Satisfactory Y/N
- As-built Contour Plans Y/N
- Retaining Structures OK Y/N

3.3.2
Roading

- Final Beam Test OK Y/N
- Berms OK Y/N
- Remedial Items Y/N
- RAMM Information OK Y/N
- Road Marking, Signs and Controls Y/N
- Street Lighting Y/N

3.3.3
Stormwater

- Pipe Inspection OK Y/N
- Manhole Inspection OK Y/N
- Floodways OK Y/N
- Open Water Courses OK Y/N
- As-built Plans, MFL's Y/N
- Video Inspection Provided Y/N
- Remedial Items Y/N
- Hook-up Arrangements Y/N

3.3.4
Wastewater

- Pipe Inspection OK Y/N
- Manhole Inspection OK Y/N
- Pressure Tests OK Y/N
- Manhole Tests OK Y/N
- As-built plans OK Y/N
- Video Inspection Provided Y/N
- Remedial Items Y/N
- Hook-up Arrangements Y/N

3.3.5
Water Supply

- Pressure Test OK Y/N
- Markers, Boxes, Connections, Inspections OK Y/N
- As-built Plans Y/N
- Remedial Items Y/N
- Hook-up Arrangements Y/N
- Sterilisation Test OK Y/N

3.3.6
Other Utilities

- Electricity OK Y/N
- Telecommunications OK Y/N
- Gas OK Y/N
- Remedial Items Y/N

3.3.7
General

- Bonding Y/N
- Certifications Y/N
- Scheme Plan Conditions Y/N
- Right of Entry Release Y/N
- ARC Approvals Y/N

3.4
Maintenance Inspections

Date:

Present: - Developer's Representative .....

- Contractor's Representative .....

- WCC Officers .....

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- Others .....

- Remedial Works Complete Y/N
- Maintenance Repairs Identified Y/N
- Bond Release Y/N
- Subsequent Testing Y/N

SECTION 4.0: RELEASE DOCUMENTATION

This Section of the Quality and Release Manual contains the following information to assist with the release of subdivision developments.

Section	Description
4.1	Geotechnical Reports
4.2	As-built Plans
4.3	RAMM Information
4.4	Completion Certificates
4.5	Fees
4.6	Tax Barter Invoices
4.7	Application for Release

Associated forms are contained in the following Section 5.0: Forms as below.

Forms Reference	Description
5.1	As-built Certification
5.2	Completion Certificate
5.3	RAMM Information Lists – RAMM Forms 1 to 19
5.4	Tax Barter Invoice

4.1
Geotechnical Reports

4.1.1
For subdivisions, a Geotechnical Completion Report is required by the Council as a prerequisite to Release of the 224 Certificate. If no earthworks have been carried out on the site then a Foundation Completion Statement is required and that the material exposed in trenches confirmed the findings of the Geotechnical Investigation Report.

It is to the developer's advantage if the Geotechnical Completion Report can be submitted to the Council by the Soils Engineer as soon as practical after the bulk earthworks are completed. This enables the checking process to be carried out at an early stage. The Geotechnical Completion Report should be submitted at least 6 weeks before application for 224 Certificate.

4.1.2
Accompanying the Geotechnical Completion Report shall be the owner's lawyer's name and the Deposited Plan number.

4.2
As-built Plans

The As-built plans are required to be submitted by the Developer's Representative for any work where new drainage/sewerage, stormwater features, watermains and / or ICT Infrastructure have been created. As-built plans are also required for any new connections or alterations to Councils existing networks.

The Developer's Representative -or for Council initiated works, the Council appointed Consultant - is responsible for providing this information.

This information is required to enable the Council to be able to maintain asset management databases. To ensure completeness, the following information is to be supplied, to the standards outlined below.

4.2.1
General As-built Requirements

a) As-built plans are to record the following information: all sanitary sewers, stormwater and land drainage (including overland flow paths), watermains, fittings, service connections and ICT Infrastructure, together with the relevant surface structures and a copy of the final contour plan. Depths of fill, in metre contours, are required for use by Building Control or consents.

b) Geodetic Datum change: All surveys acceptable in terms of Standard 2000 Geodetic Datum being Mt. Eden Circuit, Circuit Origin = Mt. Eden 800000mN, 400000mE. Coordinates shall be provided for all point features as outlined below, to an accuracy of 0.01m.
Surveys acceptable in terms of Standard 1949 Geodetic Datum being Mt. Eden Circuit, Circuit Origin = Mt. Eden 700000mN, 300000mE. Coordinates shall be provided for all point features as outlined below, to an accuracy of 0.01m.

c) A schedule of all pipe invert levels and lid levels shall be provided as outlined below to an accuracy of 0.01m. Levels are to be in terms of Terralink N.Z. Ltd Datum, Auckland 1946 Datum (M.S.L.).

d) The As-built plan shall be based on the Title Plan boundaries with Lot numbers and street names, including new street names where new roads have been created.

e) The kerb lines of any new roads or new kerb alignments shall be shown on the As-built drawings.

f) Certification is required by a Chartered Professional Engineer or Licensed Cadastral Surveyor that the information supplied on the As-built is accurate within normal acceptable engineering and survey tolerances. The Council will accept As-built plans prepared by a person holding a N.Z. Certificate in Engineering and/or Surveying provided the person is working under the direction of a Chartered Professional Engineer or Licensed Cadastral Surveyor. The form of Certification is shown on Form 5.1.

This certification shall be reproduced, signed and dated on all As-built drawings submitted. Drawings submitted without the relevant signed certification will be rejected. For “minor works” the Council may accept, by prior approval, As-built plans from Registered Drainlayers. Certification for “minor works” is to be signed in these instances by the Registered Drainlayer.

g) The Council relies totally on the information supplied on the As-built drawings, which is the reason the Council requires Signed and Dated Certification on the face of each plan.

h) The developer shall clearly state on the As-built plans, the Developers Representative or Consultant, Contractor(s) and the date of construction.

i) A copy of the As-built plan shall be provided on computer disk, in a format compatible with the Council’s Geographic Information Systems (G.I.S.). At this stage Council is accepting Autocad R14 .jpg files and later .dwg files and .dxf files. This specification is subject to review and may be amended at any time by the Council. All CAD files are to be spatially correct.

j) The Developer’s Representative shall submit 6 x A3 copies of the above As-built plans and 1 x Full Size set of As-built plans. If the development has 2 or less new manholes, then the number of copies may be reduced to 4 x A3 copies and 1 x Full Size set of drawings. All drawings submitted shall be at an appropriate scale that is clear and legible (including the A3 sized copies), be able to be reproduced in black and white, and shall be no smaller than 1:1000. The hardcopy drawings are to be a direct plot of the data provided digitally as outlined above. The As-built plans shall be submitted for Council approval upon completion of the works, prior to testing of the water and sewer systems. No testing will be undertaken until suitable plans have been submitted.

k) In special circumstances variations of the above requirements may be granted. Any request for variations should be made in writing to the Senior Subdivisions Engineer, for subdivision & development works; or to the relevant Asset Engineer for capital & renewal works.

4.2.2
Wastewater Pipes

a) Nominal internal diameter (ID) of pipe except where PE pipe was used in which case the nominal outside diameter (OD) should be specified.

b) Lengths of pipe (m) – distances between centres of manholes/nodes and for branch lines it shall be between the blank cap and the centres of manholes.

c) Pipe material and manufacturer.

d) Pipe class i.e. SN16, SDR17, Class (3), Class (x), pipe wall type etc.

e) Bedding material and details of any undercutting & additional bedding. Details of areas of undercut to be marked on As-built plan detailing distance from downstream manhole as per house connections.

f) Details of any special joints used on any pipeline specifying type, source and operator as relevant.

g) Any changes in direction such as prefabricated joints and bends shall be located on the drawing and a schedule of coordinates provided.

h) If the pipeline changes in material type, diameter or age, these points shall be located on the drawing and a schedule of coordinates provided.

i) The location of any pipe bridges shall be coordinated (start & end points). Details/specification and drawings of any pipe bridges shall be provided.

j) Any branch lines or blank caps/plates greater than 5.0m in length should be coordinated and Invert Levels shall be provided.

k) Any rising mains shall be clearly labelled on the face of the plan and shall be coordinated at 20m intervals along the main where the rising main deviates from a straight alignment.

l) Any private drainage shall be clearly identified on the face of the plan, with the letter ‘P’ over the pipeline i.e. --------P-------

m) The new drainage should show clearly where and how it is connected to Councils existing network. The existing network is defined as being currently on Councils G.I.S. system. Where the new drainage is connecting to an existing feature that is not currently on Councils G.I.S. records, the developer shall provide details of the existing unplotted network, including coordinates, pipe diameters & where possible – pipe material type.

n) Any existing drainage that has been abandoned/removed/or replaced as part of the construction process should be clearly identified on the As-built plan.

4.2.3
Wastewater - Manholes / Nodes

a) A schedule of coordinates (accuracy = 0.01m) for all manholes, inspection chambers, dry chambers, pump station, blank caps/plates and any other node point.

b) A schedule of all pipe invert levels and lid levels (accuracy=0.01m) at each manhole, inspection chamber, dry chamber, pump station, blank cap/plate and any other node point.

c) A schedule of nominal diameters (mm) for all manholes, inspection chambers, dry chambers, pump stations etc.

d) Offsets from boundaries (min. 2 offsets per feature) for all manholes, inspection chambers, dry chambers, pump station, blank caps/plates and any other node point.

e) Any manhole or structure with a landing platform shall be identified on the plan, and the R.L. of the landing platform is to be recorded.

f) Any manhole or structure with an external drop shall be identified on the plan & the invert level of the external drop pipe shall be recorded.

g) The manufacturer of the manhole shorts shall be stated on the plan.

h) Any pumping stations shall be clearly identified on the plan and details/specifications and drawings shall be provided.

i) Any private structures shall be clearly identified on the face of the plan.

j) Any existing structures that have been abandoned/removed/or replaced as part of the construction process should be clearly identified on the As-built plan.

4.2.4
Wastewater – House Connections

a) House connections greater than 5m long should be treated as wastewater pipes (see requirements above).

b) Nominal internal diameter of pipe (mm).

c) Length of connection (m) is required where connection is more than just a stub connection.

d) Distance of connections from the nearest downstream manhole (m).

e) Pipe material and manufacturer.

f) Pipe class i.e. SN16, SDR17, Class (3), Class (x) etc.

g) Any house connection greater than 5.0m in length should be coordinated and Invert Levels shall be provided.

h) Any private connections shall be clearly identified on the face of the plan.

4.2.5
Stormwater – Pipes

a) Nominal internal diameter (ID) of pipe except where PE pipe was used in which case the nominal outside diameter (OD) should be specified.

b) Lengths of pipe (m) – distances between centres of manholes/nodes and for branch lines it shall be between the blank caps and the centres of manholes.

c) Pipe material and manufacturer.

d) Pipe class i.e. SN16, SDR17, Class (3), Class (x) etc.

e) Bedding material and details of any undercutting & additional bedding. Details of areas of undercut to be marked on As-built plan detailing distance from downstream manhole as per house connections.

f) Details of any special joints used on any pipeline specifying type, source and operator as relevant.

g) Any changes in direction such as prefabricated joints and bends shall be located on the drawing and a schedule of coordinates provided.

h) If the pipeline changes in material type, diameter or age, these points shall be located on the drawing and a schedule of coordinates provided.

i) Any branch lines or blank caps/plates greater than 5.0m in length should be coordinated and pipe Invert Levels shall be provided.

j) Any private drainage shall be clearly identified on the face of the plan, with the letter 'P' over the pipeline i.e. --------P-------

k) The new drainage should show clearly where and how it is connected to Councils existing network. The existing network is defined as being currently on Councils G.I.S. system. Where the new drainage is connecting to an existing feature that is not currently on Councils G.I.S. records, the developer shall provide details of the existing unplotted network, including coordinates, pipe diameters & where possible – pipe material type.

l) Any existing drainage that has been abandoned/removed/or replaced as part of the construction process should be clearly identified on the As-built plan.

m) Any overland flow paths shall be identified on the plan.

4.2.6
Stormwater - Manholes/Nodes

a) A schedule of coordinates (accuracy = 0.01m) for all manholes, cesspit manholes, inspection chambers, dry chambers, cesspits, inlet/outlet structures, blank caps/plates and any other node point.

b) A schedule of all pipe invert levels and lid levels (accuracy=0.01m) at each manhole, cesspit manhole, inspection chamber, dry chamber, cesspits, inlet/outlet structures, blank cap/plate and any other node point.

c) A schedule of nominal diameters (mm) for all manholes, cesspit manholes, inspection chambers, dry chambers, etc. & nominal sizes of all cesspits.

d) Offsets from boundaries (min. 2 offsets per feature) for all manholes, inspection chambers, dry chambers, cesspits, inlet/outlet structures, blank caps/plates and any other node point.

e) Any manhole or structure with a landing platform shall be identified on the plan, and the R.L. of the landing platform is to be recorded.

f) Any manhole or structure with an external drop shall be identified on the plan & the invert level of the external drop pipe shall be recorded.

g) The manufacturer of the manhole shorts shall be stated on the plan.

h) Any private structures, ponds, stormwater features etc. shall be clearly identified on the face of the plan.

i) Any existing structures that have been abandoned/removed/or replaced as part of the construction process should be clearly identified on the As-built plan.

j) Construction details of inlet/outlet structures such as prefabricated concrete, rock rip, timber flume, reno mattress etc. shall be provided.

k) Stormwater ponds shall be identified on the plan. The outlines of these ponds shall be coordinated, and the pond type identified on the plan according to the following types:

- Pond C - combination, detention & quality
- Pond D - detention pond
- Pond Q - quality pond
- Pond W - wetland

Details & specifications shall be provided.

l) Stormwater treatment facilities shall be identified on the plan. The stormwater treatment types are as follows:

- Trt-DP - dry pond, swale, drainage reserve
- Trt-RG - rain garden
- Trt-ME - mechanical device
- Trt-PP - permeable pavement
- Trt-SF - sand filter

Details & specifications shall be provided.

4.2.7
Stormwater – House Connections

a) House connections greater than 5m long should be treated as wastewater pipes (see requirements above).

b) Nominal internal diameter of pipe (mm).

c) Length of connection (m) is required where connection is more than just a stub connection.

d) Distance of connections from the nearest downstream manhole (m).

e) Pipe material and manufacturer.

f) Pipe class i.e.SN16, SDR17, Class (3), Class (x) etc.

g) Any house connection greater than 5.0m in length should be coordinated and Invert Levels shall be provided.

h) Any private connections shall be clearly identified on the face of the plan.

4.2.8
Water Supply – Pipes

a) Nominal internal diameter of pipe (mm) for all PVC and steel mains, (external diameter for all PE mains).

b) Pipe material and manufacturer.

c) Pipe class i.e. SN16, SDR11, Class (c), etc.

d) Type of pipe jointing used for PE pipe i.e. fusion butt welded (FBW) or electrofusion coupler (EC).

e) Bedding material and details of any undercutting & additional bedding. Details of areas of undercut to be marked on As-built plan detailing.

f) Any changes in direction such as; where the pipeline deviates from the standard location or prefabricated bends are used etc. shall be located on the drawing and a schedule of coordinates provided.

g) If the pipeline changes in material type, diameter or age, these points shall be located on the drawing and a schedule of coordinates provided.

h) The location of any pipe bridges shall be coordinated (start & end points). Details/specification and drawings of any pipe bridges shall be provided.

i) Any private watermains shall be clearly identified on the face of the plan, with the letter 'P' over the pipeline i.e. --------P-------

j) The new water supply should show clearly where and how it is connected to Councils existing network. The existing network is defined as being currently on Councils G.I.S. system. Where the new drainage is connecting to an existing feature that is not currently on Councils G.I.S. records, the developer shall provide details of the existing unplotted network, including coordinates, pipe diameters & where possible – pipe material type.

4.2.9
Water Supply – Valves/Hydrants/Nodes

a) A schedule of coordinates (accuracy = 0.01m) for all valves, fire hydrants, pump stations, reservoirs, blank caps/plates and any other node point.

b) A schedule of lid / ground levels (accuracy=0.01m) at each valve, fire hydrant, pump station, etc.

c) A schedule of all valves and hydrants identifying their nominal diameter & valve type.

d) Offsets from boundaries for all tees, bends and road crossings.

e) Any pumping stations shall be clearly identified on the plan and details/specifications and drawings shall be provided.

f) Any private features shall be clearly identified on the face of the plan.

g) Any existing features such as valves / hydrants etc. that have been abandoned/removed/or replaced as part of the construction process should be clearly identified on the As-built plan.

4.2.10
Water Supply – House Connections

a) Nominal internal diameter of house connection (mm)

b) Length of connection (m) is required where connection is more than just a stub connection.

c) Location of house connection – all new connections, and any existing connection that has been reconnected to a new watermain shall be dimensioned from the closest side property boundary.

d) House connection material type and manufacturer

e) House connection pipe class i.e. SN16, SDR17, Class (c) etc.

f) Any private connections shall be clearly identified on the face of the plan

4.2.11
ICT Infrastructure

a) Nominal internal diameter (I.D.) of pipe (mm).

b) Lengths of duct (m) – distances between chambers/nodes, and cover (accuracy = 0.10m) shall be clearly stated on the Plan. Any changes in duct depth shall be located and noted on the plan.

c) Pipe material and manufacturer including:

- Pipe class i.e. uPVC, SN6, PE 80, SDR17
- Pipe jointing method.

d) Any changes in direction such as prefabricated joints and bends shall be located on the drawing and a schedule of coordinates provided.

e) If the pipeline changes in material type, diameter or age, these node points shall be located on the drawing and a schedule of coordinates provided.

f) The location of any pipe bridges shall be coordinated (start & end points). Details/specification and drawings of any pipe bridges shall be provided.

g) Any private ducting shall be clearly identified on the face of the plan, with the letter 'P' over the pipeline i.e. --------P-------

h) Any existing ducting that has been abandoned/removed/or replaced as part of the construction process should be clearly identified as abandoned/removed/or replaced on the As-built plan.

4.2.12
Telecommunications Nodes/Chambers

a) A schedule of coordinates (accuracy = 0.10m) for turning pits, entry pits and chambers, blank caps/plates and any other node point.

b) A schedule of Depth to Inverts shall be provided for all turning pits, entry pits and chambers, and any other node point (accuracy = 0.01m).

c) A schedule of nominal sizes (mm) for all turning pits, entry pits, and chambers, and the supplier / manufacturer.

d) Offsets from boundaries (min. 2 offsets per feature) for all chambers, blank caps/plates and any other node point.

e) Any private structures shall be clearly identified on the face of the plan and lettered 'P'.

f) Any existing structures that have been abandoned, removed or replaced as part of the construction process should be clearly identified as abandoned, removed or replaced on the As-built plans.

4.2.13
ICT – Service Connections

a) Nominal diameter of service connection.

b) Location of house connection (accuracy = 0.10m) measured off the nearest node/chamber point or property boundary.

MAINTENANCE PERIODS

The maintenance periods for the new infrastructure assets shall be -

Stormwater pipe network	**Stormwater Ponds**	**Stormwater Devices**	**Wastewater pipe network**	**Water Supply**
6 months or to 31 October whichever is longer	**Pond structure – 6 months or to 31 October whichever is longer.** **Pond Planting – 24 months***	**6 months or to 31 October whichever is longer**	**6 months or to 31 October whichever is longer**	**6 months or to 31 October whichever is longer. ****

Developer may have the option to engage Council's maintenance contractor for the maintenance of pond planting.

**** Refer to 6.3.6.2 (ii) for maintenance period of PE welded joints.**

4.3
RAMM Information

4.3.1
As part of the Council's Asset Management programme including mandatory requirements from Transit NZ all information regarding new assets (metal depths, street lights, signs, street furniture etc) shall be provided on the forms enclosed in the Quality and Release section of the Code of Practice (see RAMM forms 1 through to 19). The information required shall be presented upon request for 224 Certificate.

4.3.2
All the information required should normally be readily available to the Developer's Representative who would need details of any additional undercutting or metal placed for certifying payment to the Contractor.

4.4
Completion Certificates

On completion of all the construction work on site, the Council requires the Developer's Representative to formally submit a 'Completion Certificate' before release of the 224 Certificate. An acceptable form is shown as Form 5.2 which basically states the Developer's Representatives qualifications, and that the completed works have been constructed in accordance with sound and accepted engineering principles, and comply with the Council's Engineering Standards. In addition to the formal Certificate, the Council will require results of the formal inspections, to be submitted. Developer's Representatives should as a matter of course keep inspection reports of other site inspections, so that reference can be made to these by Council if required.

4.5
Fees

The developer shall pay all the Council's fees and associated costs in accordance with the approved scale of fees, prior to release of the 224 Certificate.

4.6
Tax Barter Invoices

4.6.1
IRD confirmed in 1989 that transactions involving approval of subdivisions and developments by Councils and the vesting or roads, reserves and public services are subject to GST.

4.6.2
IRD will accept a 'barter', while it is assumed that the value ('sale') of Council approving the subdivision is the same amount of the value ('sale') to Council of reserves, roads, and services.

4.6.3
This has the effect to two tax invoices of equal value being given and received by both the Council and the Developer.

4.6.4
Further details and sample forms of the Barter Invoice are contained as Form 5.4.

4.6.5
If the Developer is not registered for GST, then a declaration form is required.

4.7 Application for Release

4.7.1
At the stage that the Developer's Representative is of the opinion that all the resource consent conditions have been complied a written request for release should be sent to Council.

4.7.2
It will be of assistance to the processing officer, if **all** the resource consent conditions are addressed, and in the same order as the Resource Consent. Included in this application should be a statement to the effect that all construction work on site has been completed and approved by the Senior Subdivisions Engineer. If certain works have been bonded for, then this should be stated.

FORM 5.1

WAITAKERE CITY COUNCIL

Certificate for As-built Drawings

I, ... Chartered Professional Engineer/Licensed Cadastral Surveyor hereby certifies that the Manhole positions, Schedule of Co-ordinates, Invert and Lid Levels, and distances between Manholes and Pipe sizes are correct. Connections to the lines have been plotted and dimensioned from information supplied to us by the Contractor for the work .....……..

Chartered Professional Engineer/Licensed Cadastral Surveyor

_____

Date

FORM 5.2

WAITAKERE CITY COUNCIL

Certificate of Completion of Roads and Services

I ,..... being registered under the provisions of the Engineers Registration Act 1924/Surveyors Act 1938, and currently holding an Annual Practising Certificate, hereby certify that (all works including services and roading) shown on plans numbered ..... and relating to the subdivision/development.....
have been constructed in accord with sound and accepted principles and in accordance with the approved drawings (or approved amendments thereto). All works comply with the provisions of the Waitakere City Council Code of Practice for City Infrastructure & Land Development.

_____

Chartered Professional Engineer/Licensed Cadastral Surveyor

_____

Date

FORM 5.3

WAITAKERE CITY COUNCIL

RAMM Forms

RAMM FORM NO 1

Waitakere City Council
Te Taiao o Waitakere

CARRIAGEWAY INVENTORY

CARRIAGEWAY SECTION

Road Number	: [ ]		Road Name	: [ ]	
Start Displacement	: [ ]		Start Name	: [ ]	
End Displacement	: [ ]		End Name	: [ ]	
Area	: [ ]				
Sub-Area	: [ ]				

** See note:*

MISCELLANEOUS

Road class	:	[ ]
Urban / Rural	:	[ ]
Hierarchy	:	[ ]
Pavement type	:	[ ]
Pavement Use	:	[ ]
Use category	:	[ ]

CARRIAGEWAY

Length	:	[ ] m
Width	:	[ ] m
Reserve width	:	[ ] m
Irregular/regular	:	[ ]
No of lanes	:	[ ]
Lane width	:	[ ] m

EXTRA AREAS

Bus Bays	:	[ ] sq m
Islands	:	[ ] sq m
Intersections	:	[ ] sq m
Other Areas	:	[ ] sq m

RESPONSIBILITY

Owner type	:	[ ]
Controlled by	:	[ ]
Maintained by	:	[ ]

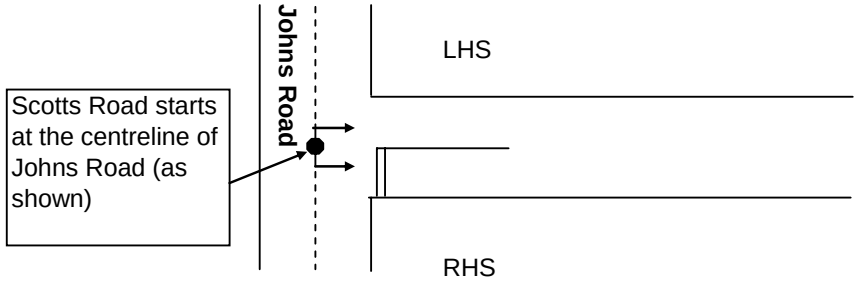
DATA SOURCES

Name	:	[ ]
Date	:	[/ /]
Name	:	[ ]
Updated	:	[/ /]

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION ON REVERSE SIDE

Prepared by:		Return to:	Waitakere City Council
Address:			City Services
			Transport Assets
Phone:			Private Bag 93 109
Checked by:			**Waitakere City**
Approved by:			**Attention:** Operations Manager
Ref. No:			
			Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*



RAMM FORM NO 2

Waitakere City Council
Te Taiao o Waitakere

CARRIAGEWAY SURFACING

*** 1st Coat Seals (includes membrane), 2nd Coat Seals and Reseals**

Road ID : [ ]
Road Name : [ ]

Surfacing Section : (Please use RAMM distances)
(House number, seal join or road location)

Surface Start (m) : [ ] Surf Start Name : [ ]
Surface End (m) : [ ] Surf End Name : [ ]

Surfacing Information :

Date of Work : [ ] *Expected Life Cycle* : [ ]
Surface Function : [*] Depth / Thickness : [ ]
Surface Material : [ ] Size / Grade : 1st [ ] 2nd [ ]
Width Sealed : [ ] Aggregate Source : [ ]
Length : [ ] Contractor : [ ]
Offset from LHS edge: : [Y / N] Contract Number : [ ]
Area Sealed sq.m. : [ ] Polished Stone Value : [ ]
Full Width (circle one) : Average Least Dimension [: [ ] mm
[ ] pph
Cutter Quantity : [ ] pph Cutter Type : [ ]
Adhesion Quantity : [ ] pph Adhesion Type : [ ]
Additive Quantity : [ ] pph Additive Type : [ ]
Flux Quantity : Binder Type : [ ] (Bitumen; Emulsion etc. and Penetration Grade)
Res. App. Rate : [ ] Litres/sq. meter or @ Binder content

Comments: [ ]

Note: Boxes marked * not required to be completed by contractor

Road ID : [ ]
Road Name : [ ]

Surfacing Section : (Please use RAMM distances)
(House number, seal join or road location)

Surface Start (m) : [ ] Surf Start Name : [ ]
Surface End (m) : [ ] Surf End Name : [ ]

Surfacing Information :

Date of Work : [ ] *Expected Life Cycle* : [ ]
Surface Function : [*] Depth / Thickness : [ ]
Surface Material : [ ] Size / Grade : 1st [ ] 2nd [ ]
Width Sealed : [ ] Aggregate Source : [ ]
Length : [ ] Contractor : [ ]
Offset from LHS edge: : [Y / N] Contract Number : [ ]
Area Sealed sq.m. : [ ] Polished Stone Value : [ ]
Full Width (circle one) : Average Least Dimension [: [ ] mm
[ ] pph
Cutter Quantity : [ ] pph Cutter Type : [ ]
Adhesion Quantity : [ ] pph Adhesion Type : [ ]
Additive Quantity : [ ] pph Additive Type : [ ]
Flux Quantity : Binder Type : [ ] (Bitumen; Emulsion etc. and Penetration Grade)
Res. App. Rate : [ ] Litres/sq. meter or @ Binder content

Comments: [ ]

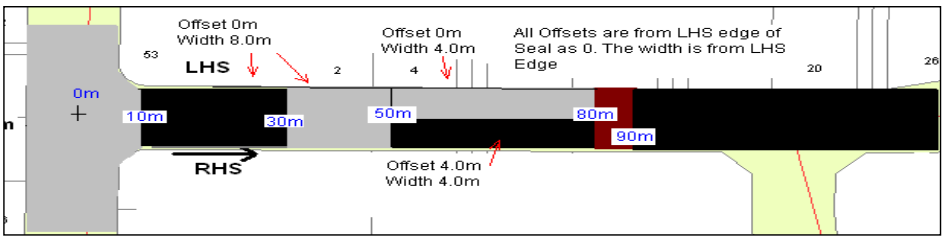
PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION ON REVERSE SIDE

Note: Boxes marked * not required to be completed by contractor

Prepared by: _____
Address: _____
_____
Phone: _____
Checked by: _____
Approved by: _____
Ref. No: _____

Return to: Waitakere City Council
City Services
Transport Assets
Private Bag 93 109
Waitakere City
Attention: Operations Manager

Phone: 836 8000, Ext 8794



Surface Material	Description
	Asphaltic concrete
	BOLIDT Polyurethane Mix
Material	Bicouche/Sandwich
AC	Bitumen Bound Macadam
BOLID	Concrete
B/S	Interlocking concrete blocks
BBM	Locking Coat Seal
CONC	Metal running course
INBLK	Open Graded Porous Asphalt
LOCK	Open graded emulsion mix
METAL	Other material type
OGPA	Premium skid surface PSV >70
OGEM	Prime and seal
OTHER	Racked in Seal
PSKID	Red Chip Seal (McCullum)
PSEAL	SAFEGRIP-safety surface
RACK	Single Coat Seal
RCHIP	Slurry Seal
SGRIP	Stone Mastic Asphalt
1CHIP	Texturising Seal
SLRY	Two Coat Seal
SMA	Void fill seal
TEXT	
2CHIP	
VFILL	

Binder	Surface Binder Description
3POT	ANTI-SKID TREATMENT BINDER
B130	Bitumen 130/150
B180	Bitumen 180/200
B45	Bitumen 45/55
B60	Bitumen 60/70
B80	Bitumen 80/100
E180	Emulsion 180/200
E80	Emulsion 80/100
PORT	Portland Cement
UNKN	Unknown
WATR	Water

RAMM FORM NO 3

Waitakere City Council
Te Taiao o Waitakere

PAVEMENT STRUCTURE

Location Information:

Road ID : [ ]
Road Name : [ ]

Start Metres : [ ]
End Metres : [ ]

Structural Information:

LAYER 1 - TOP (Not Surface Information)		**LAYER 2**		**LAYER 3**	
Date of Work	[ ]	Date of Work	[ ]	Date of Work	[ ]
Offset	[ ]	Offset	[ ]	Offset	[ ]
Width	[ ]	Width	[ ]	Width	[ ]
Material	[ ]	Material	[ ]	Material	[ ]
Thickness	[ ]	Thickness	[ ]	Thickness	[ ]
Source	[ ]	Source	[ ]	Source	[ ]
Rehab?	[ ]	Rehab?	[ ]	Rehab?	[ ]

LAYER 4		**LAYER 5**		**SUBGRADE**	
Date of Work	[ ]	Date of Work	[ ]	Test Date	[ ]
Offset	[ ]	Offset	[ ]	Material	[ ]
Width	[ ]	Width	[ ]	CBR result	[ ]
Material	[ ]	Material	[ ]	(Soaked/Unsoaked/Field S U F	
Thickness	[ ]	Thickness	[ ]	Agent	[ ]
Source	[ ]	Source	[ ]	Quantity	[ ] %
Rehab?	[ ]	Rehab?	[ ]		

Comments: [ ]

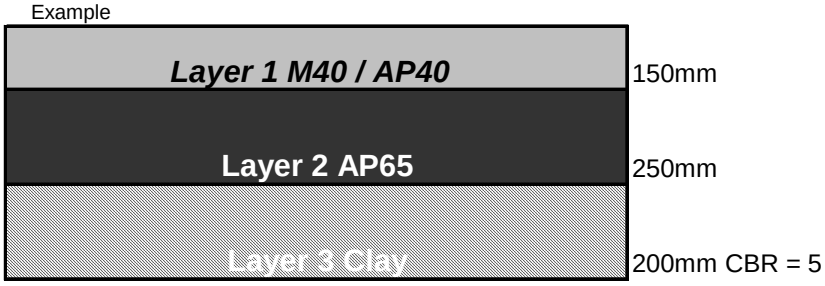
PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION AND CROSS SECTION ON REVERSE SIDE

Prepared by: _____
Address: _____
_____
Phone: _____
Checked by: _____
Approved by: _____
Ref. No: _____

Return to: Waitakere City Council
City Services
Transport Assets
Private Bag 93 109
Waitakere City
Attention: Operations Manager

Phone: 836 8000, Ext 8794

Example



Material Code	Description
125 OL	125 OLAY/150 CE
300 L/	300 L/100 OLAY
PM01	300 L/200 C
300 LI	300 LIME/100 CE
PM02	300 LIME/100 OL
AP100	All passing 100mm sieve
AP150	All passing 150mm sieve
AP20	All passing 20MM sieve
AP40	All passing 40MM sieve
AP65	All passing 65MM sieve
AP7	All passing 7mm sieve
BOLDER	Boulders - Uncrushed Random
COMP	Composite of different recycle
CR	Crusher Run
DEFAUL	DEFAULT ENTRY
DIGOUT	DIGOUT
FABRIC	Fabric
FILTER	Filter cloth
GAP100	Graded all passing 100mm sieve
GAP150	Graded all passing 150mm sieve
GAP20	Graded all passing 20mm sieve
GAP40	Graded all passing 40mm sieve
GAP65	Graded all passing 65mm sieve
GAP7	Graded all passing 7mm sieve
LIME/C	LIME/CEMENT
LIME	Lime Rock
M3	M3 Specification
M4	M4 Specification
M5	M5 Specification
NOT KN	NOT KNOWN
SEALS	Old seals
STRIP	Quarry Strippings - Ungraded
RR	River Run
ROP300	Run of Pit - Graded Max 300mm
ROP500	Run of Pit - Graded Max 500mm
ROR300	Run of River - Graded Max 300
ROR500	Run of River - Graded Max 500
S	S
SAP100	Scoria all passing 100mm sieve
SAP150	Scoria all passing 150mm sieve
SAP20	Scoria all passing 20MM Sieve
SAP40	Scoria all passing 40mm sieve
SAP65	Scoria all passing 65mm sieve
SAP7	Scoria all passing 7mm sieve

RAMM FORM NO 4

Waitakere City Council
Te Taiao o Waitakere

PAVEMENT REHABILITATION

Location Information:

Road ID : [ ]
Road Name : [ ]

Start Metres : [ ] Start Name : [ ]
End Metres : [ ] End Name : [ ]

Rehabilitation Information:

LAYER NUMBER				**LAYER NUMBER**				**LAYER NUMBER**			
Date of Work	: [ ]			Date of Work	: [ ]			Date of Work	: [ ]		
Start	: [ ]	m		Start	: [ ]			Start	: [ ]	m	
End	: [ ]	m		End	: [ ]	m		End	: [ ]	m	
Offset	: [ ]	m		Offset	: [ ]	m		Offset	: [ ]	m	
Width	: [ ]	m		Width	: [ ]	m		Width	: [ ]	m	
Type	: [ ]			Type	: [ ]	m		Type	: [ ]		
Depth	: [ ]	mm		Depth	: [ ]			Depth	: [ ]	mm	
Agent	: [ ]			Agent	: [ ]	mm		Agent	: [ ]		
Quantity	: [ ]	%		Quantity	: [ ]	%		Quantity	: [ ]	%	

LAYER NUMBER				**LAYER NUMBER**				**LAYER NUMBER**			
Date of Work	: [ ]			Date of Work	: [ ]			Date of Work	: [ ]		
Start	: [ ]	m		Start	: [ ]			Start	: [ ]	m	
End	: [ ]	m		End	: [ ]	m		End	: [ ]	m	
Offset	: [ ]	m		Offset	: [ ]	m		Offset	: [ ]	m	
Width	: [ ]	m		Width	: [ ]	m		Width	: [ ]	m	
Type	: [ ]			Type	: [ ]	m		Type	: [ ]		
Depth	: [ ]	mm		Depth	: [ ]			Depth	: [ ]	mm	
Agent	: [ ]			Agent	: [ ]	mm		Agent	: [ ]		
Quantity	: [ ]	%		Quantity	: [ ]	%		Quantity	: [ ]	%	

Comments : [ ]

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION AND CROSS SECTION ON REVERSE SIDE

Prepared by: _____
Address: _____
_____
Phone: _____
Checked by: _____
Approved by: _____
Ref. No: _____

Return to: Waitakere City Council
City Services
Transport Assets
Private Bag 93 109
Waitakere City
Attention: Operations Manager

Phone: 836 8000, Ext 8794

RAMM FORM NO 5

Waitakere City Council
Te Taiao o Waitakere

SURFACE WATER CHANNEL INVENTORY

Add [ ]
Update [ ]
Delete [ ]

CARRIAGEWAY SECTION

Road ID : [ ] Road Name : [ ]

Start Displacement : [ ] Start Name : [ ]
End Displacement : [ ] End Name : [ ]
** See note:*

SWC LOCATION (Use additional sheets if the characteristics of the SWC vary significantly within the carriageway section)

Side	: [ ]	L / R	Side	: [ ]	L / R
Start Displacement	: [ ]	Metres	Start Displacement	: [ ]	Metres
End Displacement	: [ ]	Metres	End Displacement	: [ ]	Metres
Length	: [ ]	Metres	Length	: [ ]	Metres
Distance to Seal	: [.]	Metres	Distance to Seal	: [.]	Metres
Date of Work	: [/ /]		Date of Work	: [/ /]	
Type of SWC*	: [ ]		Type of SWC*	: [ ]	

Side	: [ ]	L / R	Side	: [ ]	L / R
Start Displacement	: [ ]	Metres	Start Displacement	: [ ]	Metres
End Displacement	: [ ]	Metres	End Displacement	: [ ]	Metres
Length	: [ ]	Metres	Length	: [ ]	Metres
Distance to Seal	: [.]	Metres	Distance to Seal	: [.]	Metres
Date of Work	: [/ /]		Date of Work	: [/ /]	
Type of SWC*	: [ ]		Type of SWC*	: [ ]	

Types of SWC :
DA-*Dish channel (asphalt);* **DC**-*Dish channel (concrete)* ; **DP**-*Dish channel (half pipe)* ;
DS-*Dish channel (sealed)*
KC-*Kerb only (concrete)* : **KCC**-*Kerb & channel (concrete)* ; **KCS**-*Kerb & channel (stone)* ;
KDG- *Kerb & dish channel (concrete)* : **KS**-*Kerb only (stone)*
MKC-*Mountable kerb only (concrete)* ; **MKCC**-*Mountable kerb & channel (concrete)*
Other-*Other type not listed, please describe in Comments;* **SLTC**- *Slot Channel (concrete)*
SWCD-*Deep surface water channel (water table) >200 mm depth*
SWCS-*Shallow surface water channel (water table) <200 mm depth*

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION ON REVERSE SIDE

Prepared by: _____
Address: _____
_____
Phone: _____
Checked by: _____
Approved by: _____
_____
_____
Ref. No: _____

Return to: Waitakere City Council
City Services
Transport Assets
Private Bag 93 109
Waitakere City
Attention: Operations Manager

Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM. The distance from seal is from the Edge of seal either side*

RAMM FORM NO 6

Waitakere City Council
Te Taiao o Waitakere

FOOTPATH INVENTORY AND SURFACING INFORMATION

Add [ ]
Update [ ]
Delete [ ]

CARRIAGEWAY SECTION

Road Number : [ ] Road Name: [ ]
Start Displacement : [ ]
End Displacement : [ ]

Please add new where Position changes and footpath stops for side road(s).

FOOTPATH LOCATION

Positions are: B=Boundary; E or J = Accessway (Ends away from road) (Joins another road)
K=Kerb, L=Looping F/P, M=Middle, R=F/P Remote from road), U=Unknown

FOOTPATH LOCATION			FOOTPATH LOCATION		
Position	: [ ]	*B /E /J /K /L /M /R /U	Position	: [ ]	*B /E /J /K /L /M /R /U
Side	: [ ]	Left / Right	Side	: [ ]	Left / Right
Start Displacement	: [ ]	Metres	Start Displacement	: [ ]	Metres
End Displacement	: [ ]	Metres	End Displacement	: [ ]	Metres
Length	: [ ]	Metres	Length	: [ ]	Metres
Width	: [.]	Metres	Width	: [.]	Metres
Surface Material	: [ ]		Surface Material	: [ ]	
Binder	: [ ]		Binder	: [ ]	
Date of Work	: [/ /]		Date of Work	: [/ /]	
Depth / Thickness (mm)	: [ ]		Depth / Thickness (mm)	: [ ]	

FOOTPATH LOCATION			FOOTPATH LOCATION		
Position	: [ ]	*B /E /J /K /L /M /R /U	Position	: [ ]	*B /E /J /K /L /M /R /U
Side	: [ ]	Left / Right	Side	: [ ]	Left / Right
Start Displacement	: [ ]	Metres	Start Displacement	: [ ]	Metres
End Displacement	: [ ]	Metres	End Displacement	: [ ]	Metres
Length	: [ ]	Metres	Length	: [ ]	Metres
Width	: [.]	Metres	Width	: [.]	Metres
Surface Material	: [ ]		Surface Material	: [ ]	
Binder	: [ ]		Binder	: [ ]	
Date of Work	: [/ /]		Date of Work	: [/ /]	
Depth / Thickness (mm)	: [ ]		Depth / Thickness (mm)	: [ ]	

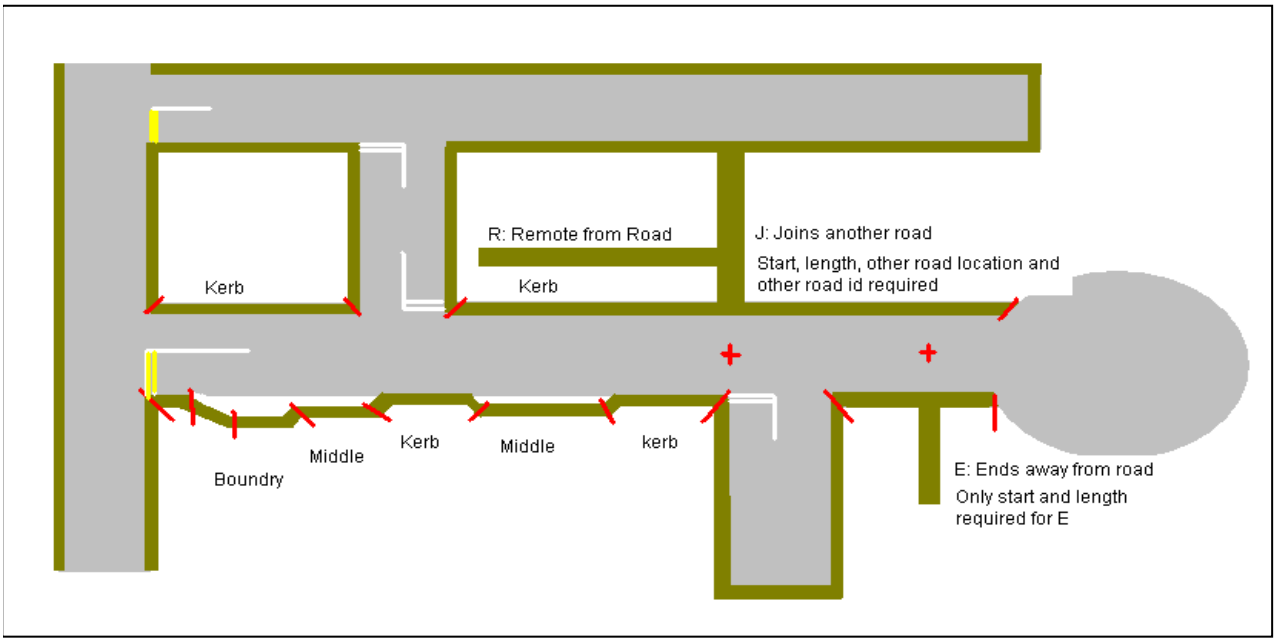
Comments ______________________________

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION AND CROSS SECTION ON REVERSE SIDE

Prepared by: ______________	Return to:
Address: ______________	Waitakere City Council
______________	City Services
Phone: ______________	Transport Assets
Checked by: ______________	Private Bag 93 109
Approved by: ______________	**Waitakere City**
Ref. No: ______________	**Attention:** Operations Manager
	Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*

Example of start and end locations and Positions
The line marks are where the sections should stop and a new footpath section started.



RAMM FORM NO 7

Waitakere City Council
Te Taiao o Waitakere

SHOULDER INVENTORY

Add [ ]
Update [ ]
Delete [ ]

CARRIAGEWAY SECTION

Road ID : [ ]   Road Name : [ ]

Start Displacement : [ ]   Start Name : [ ]
End Displacement : [ ]   End Name : [ ]

** See note:*
Please add new wherewidth changes and shoulder stops and starts again due to side roads.

Material type: G = Grass; M = Metal; O = Other (comments)

SHOULDER LOCATION

Material : [ ] Start Displacement : [ ] Metres End Displacement : [ ] Metres Width : [.] Metres Side : [ ] Asset Owner : [ ] LA / Crown	Material : [ ] Start Displacement : [ ] Metres End Displacement : [ ] Metres Width : [.] Metres Side : [ ] Asset Owner : [ ] LA / Crown
Material : [ ] Start Displacement : [ ] Metres End Displacement : [ ] Metres Width : [.] Metres Side : [ ] Asset Owner : [ ] LA / Crown	Material : [ ] Start Displacement : [ ] Metres End Displacement : [ ] Metres Width : [.] Metres Side : [ ] Asset Owner : [ ] LA / Crown
Material : [ ] Start Displacement : [ ] Metres End Displacement : [ ] Metres Width : [.] Metres Side : [ ] Asset Owner : [ ] LA / Crown	Material : [ ] Start Displacement : [ ] Metres End Displacement : [ ] Metres Width : [.] Metres Side : [ ] Asset Owner : [ ] LA / Crown

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION ON REVERSE SIDE

Prepared by: ____________ Address: ____________ ____________ Phone: ____________ Checked by: ____________ Approved by: ____________ Ref. No: ____________	Return to: Waitakere City Council City Services Transport Assets Private Bag 93 109 **Waitakere City** **Attention:** Operations Manager Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*

RAMM FORM NO 8

Waitakere City Council
Te Taiao o Waitakere

BERM INVENTORY

Add	**[ ]**
Update	**[ ]**
Delete	**[ ]**

CARRIAGEWAY SECTION

Road ID : [ ] Road Name : [ ]

Start Displacement : [ ] Start Name : [ ]
End Displacement : [ ] End Name : [ ]

Type is B: Bank or L : Level

BERM LOCATION

Type	: [ ]	B / L	Type	: [ ]	B / L
Start Displacement	: [ ]	Metres	Start Displacem	: [ ]	Metres
End Displacement	: [ ]	Metres	End Displaceme	: [ ]	Metres
Width	: [.]	Metres	Width	: [.]	Metres
Side	: [ ]	Left / Right	Side	: [ ]	Left / Right
Plants	: [ ]		Plants	: [ ]	
Trees (No.)	: [ ]		Trees (No.)	: [ ]	
Comments	: [ ]		Comments	: [ ]	
Type	: [ ]	B / L	Type	: [ ]	B / L
Start Displacement	: [ ]	Metres	Start Displacem	: [ ]	Metres
End Displacement	: [ ]	Metres	End Displaceme	: [ ]	Metres
Width	: [.]	Metres	Width	: [.]	Metres
Side	: [ ]	Left / Right	Side	: [ ]	Left / Right
Plants	: [ ]		Plants	: [ ]	
Trees (No.)	: [ ]		Trees (No.)	: [ ]	
Comments	: [ ]		Comments	: [ ]	

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION AND CROSS SECTION ON REVERSE SIDE

Prepared by: _____
Address: _____
_____
Phone: _____
Checked by: _____
Approved by: _____
Ref. No: _____

Return to: Waitakere City Council
City Services
Transport Assets
Private Bag 93 109
Waitakere City
Attention: Operations Manager

Phone: 836 8000, Ext 8794

Plant Cover Types and Codes

C Cover	G Grass	S Shrubs
F Flowers	GC Grass, Cover	SC Shrubs, Cover
FC Flowers, Cover	GF Grass, Flowers	
FS Flowers, Shrubs	GFS Grass, Flowers, Shrubs	
FSC Flowers, Shrubs, Cover	GS Grass, Shrubs	

RAMM FORM NO 9

Waitakere City Council
Te Taiao o Waitakere

CROSSING INVENTORY

Add [ ]
Update [ ]
Delete [ ]

CARRIAGEWAY SECTION

Road ID	: [ ]		Road Name	: [ ]	
Start Displacement	: [ ]		Start Name	: [ ]	
End Displacement	: [ ]		End Name	: [ ]	

Types : **BK** Bevelled Kerb; **BR** Bridge; **HD** Heavy duty, **SL** Slot

Compliant; **N**on-compliant; **U**nknown

CROSSING LOCATION

Side	: [ ]	Left / Right		Side	: [ ]	Left / Right	
Start Displacement	: [ ]	Metres		Start Displacement	: [ ]	Metres	
House Number				House Number			
Width	: [ ]	Metres		Width	: [ ]	Metres	
Type	: [ ]			Type	: [ ]		
Quantity	: [ ]			Quantity	: [ ]		
Complies	: [ ]			Complies	: [ ]		
Condition	: [ ]			Condition	: [ ]		
Date Inspected	: [/ /]			Date Inspected	: [/ /]		
Date Constructed	: [/ /]			Date Constructed	: [/ /]		

Comments : [ ]

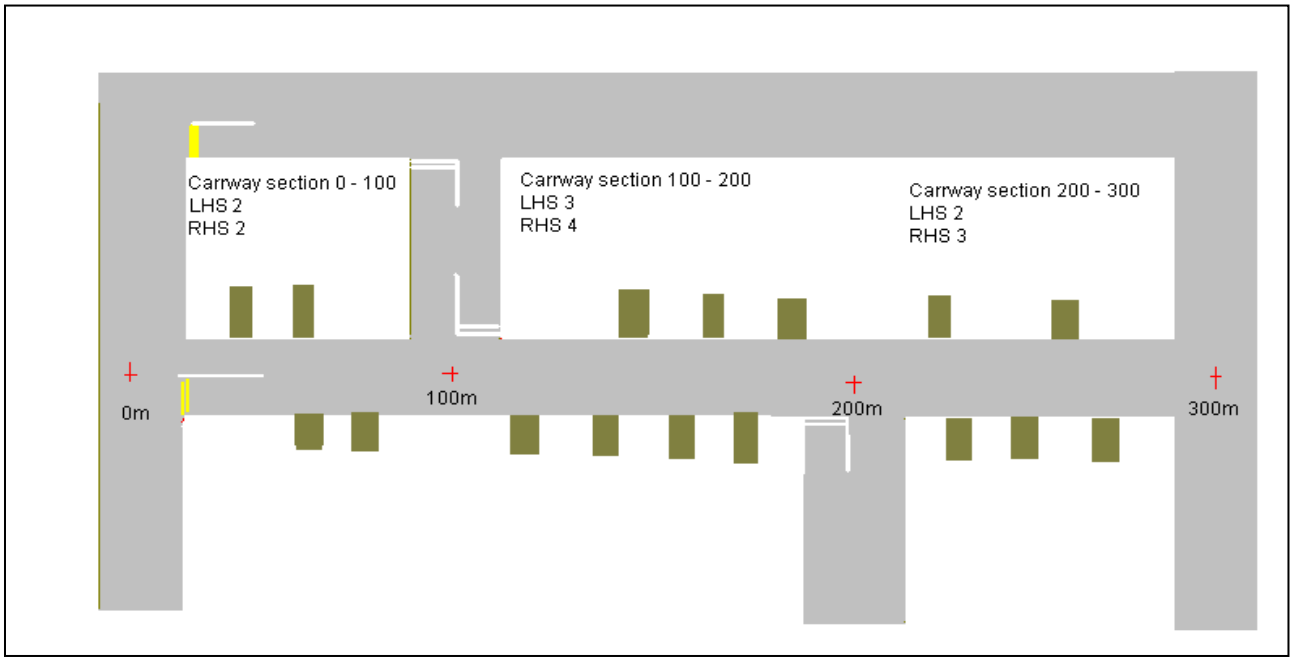
1=excellent; **2**=good; **3**=average
4=poor, **5**=very poor, **U**=unknown

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION ON REVERSE SIDE

Prepared by:	_____	Return to:	Waitakere City Council
Address:	_____		City Services
	_____		Transport Assets
Phone:	_____		Private Bag 93 109
Checked by:	_____		**Waitakere City**
Approved by:	_____		**Attention:** Operations Manager
Ref. No:	_____		
			Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*

Example


Carrway section 0 - 100
LHS 2
RHS 2
Carrway section 100 - 200
LHS 3
RHS 4
Carrway section 200 - 300
LHS 2
RHS 3
0m
100m
200m
300m

RAMM FORM NO 10

TRAFFIC SIGN AND SUPPORT INVENTORY

CARRIAGEWAY SECTION

Road ID: Road Name:

Start (m) Start Name:

End (m) End Name:

SIGN INFORMATION

Type (Code)	Location (m)	Side L C R	Offset (m)	Width (mm)	Height (mm)	Legend	Reverse Legend	Legend		Background		Bracket			
								Material	Colour	Material	Colour		Substrate	Sign Owner	Installation Date

Additional Comments:

Recorded By:…… *Date :* ……. /… / ……..

Validated By:…….. *Date :* ……. /… / ……..

Entered By:…… *Date :* ……. /… / ……..

RAMM FORM NO 10B

Waitakere City Council
Te Taiao o Waitakere

TRAFFIC SIGN AND SUPPORT INVENTORY

MOUNTING and BRACKET

Type of Gr : [(**BF** Bolted Flange, **CO** concrete, **GP** Ground Plant, **NA** Not applicable)
(**RE** Rectangular socket, **RS** Round socket, **UN** Unknown)

Type of Pl : [(**DI** Direct in ground, **DY** Dynabolts, **HD** Hold down bolts, **NA** Not applicable)
(**RE** Rectangular socket in concrete, **RS** Round socket in concrete, **UN** Unknown)

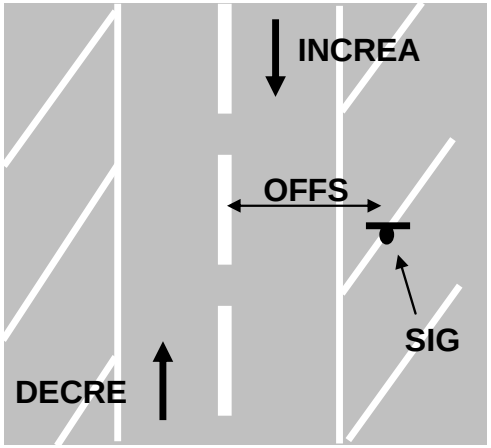
Ground Ty : [(**FP** Footpath, **GR** Grass berm, **IS** Island, **NA** Not applicable, **UN** Unknown)

Frangible : [(**NA** Not applicable, **Q1** Quick-fix (screw), **Q2** Quick-fix (collar), **SE** Self erecting, **SJ** Slip joint, **SS** Sawn slot, **UN** Unknown)

Sign to su : [(**CS** Coachscrew, **RS** RTL streetname bracket, **SB** SIGNFIX streetname bracket, **SE** Self erecting, **TA RTL** TD1 63 mm, **T2 RTL** TD2 63 mm, **TB** through bolt, **TS** Tek screw, **WS** Wood scre, **UN** Unknown)

OFFSET to be taken from road centreline. Examples below:

Single carriageway



MATERIAL	
CODE	**DESCRIPTION**
NR	Non-reflective
EG	Engineering grade (no pattern)
HI	High intensity (honey comb pattern)
DG	Diamond grade (diamong shape pattern)
UN	Unknown

COLOUR	
CODE	**DESCRIPTION**
RE	Red
BR	Brown
BU	Blue
BK	Black
WH	White
YE	Yellow
GR	Green
UP	Unpainted
UN	Unknown

Sign Codes

Type	Description	Type	Description
AAH	Adopt A Highway	I47	HISTORIC PLACE 400m
BRP	Bridge Route Position	I48	HISTORIC PLACE
BSB	Black and Silver Bands (Bus Stop)	I49A	ON LEFT
BSW	Bus Stop sign Whenuapai Bus Co	I49B	ON RIGHT
BSY	Bus Stop sign Yellow Bus Co	I50	PARKING BUILDING
CP	Car Parking	I51	CAR PARK
CPM	Culvert Position Marker	I52	TOILET
DOC	Department of Conservation	I60	COUNTY/DISTRICT BOUNDARY
DRP	Dumping of Rubbish Prohibited	I61	RIVER/STREAM
DUCKS	WCC - Ducks	I62	_____ SUMMIT "_____"m
ERP	Established Route Position	I63	ELEVATION "_____"m
FAC	Facility direction	I64	_____ FALLS
FH	Fire Hazard (Grapefruit sign)	I65	_____ RAPIDS
G-ADS1	Advance direction (Stack) - Cross roads	I66	HOT SPRINGS
G-ADS2	Advance direction (Stack) - Skew intersection	I67	THERMAL AREA
G-ADS3	Advance direction (Stack) - "T" intersection	IG08	SLOW VEHICLE BAYS NEXT "_____" km
G-ADS4	Advance direction (Map) - "T" or cross roads	IG09	SLOW VEHICLE BAY "_____"m
G-ADS5	Advance direction (Map) - Roundabout	IG10	SLOW VEHICLE BAY with arrow
G-ADSN	Advance Direction- Street name sign	IM01	Speedo Test Warning
G-ALDS1	Advanced lane direction - Arrow	IM02	Speedo Test Start
G-ALDS2	Advanced lane direction - Message	IM03	Speedo Test End
G-CDS1	Confirmation Destination	IM04	ROAD INFORMATION
G-IDS1	Intersection Direction	IM05	CHECK YOUR LIGHTS
G-IDS1A	Intersection Direction sign with Street name sign	IM06	Information (Miscellaneous Sign) - User Defined
G-IDS2	Intersection Direction - with arrow	IM07	*555 Traffic Patrol
G-IDS2A	Intersection Direction - with arrow and St. name sign	IM10	HOSPITAL
G-IDS3	Intersection Direction - with route marker	IM11	Motorist Amentities
G-IDS3A	Intersection Direction - route marker with St.name sign	IM12	Caravan Park
G-IDS4	Intersection Direction - Urban	IM13	Caravan Waste Disposal
G-IDS4A	Intersection Direction - Urban with Strret name sign	IM14	Camping Area
G-IDS5	Intersection Direction - "T"	IM15	Emergency Telephone
G-IDS5A	Intersection Direction - "T" with Street name sign	IM21	Airport Direction (pictorial)
G-IDSN	Intersection Direction - Street name sign	IM22	Flucal CHILDREN CROSSING
G-PNS1	Place Name	IM23	NO HORSES
G-PNSI	Place name	IM24	FUNERAL
G-RMS1	Route Marker - Single numeral	LNF	LIGHT NO FIRES
G-RMS2	Route Marker - Double numeral	MOB	WCC - Mobile Library
G-RMS3	Route BEGINS	MS1.1	One service "_____"m ON left/right
G-RMS4	Route ENDS	MS1.2	Two services "_____"m ON left/right
H01	Chevron Board	MS1.3	Three services "_____"m ON left/right
H01-15	Chevron Board - Advisory speed 15km/h	MS1.4	Four services "_____"m ON left/right
H01-25	Chevron Board - Advisory speed 25km/h	MS2.1	One service TURN left/right "_____"m
H01-35	Chevron Board - Advisory speed 35km/h	MS2.2	Two services TURN left/right "_____"m
H01-45	Chevron Board - Advisory speed 45km/h	MS2.3	Three services TURN left/right "_____"m
H01-55	Chevron Board - Advisory speed 55km/h	MS2.4	Four services TURN left/right "_____"m
H01-65	Chevron Board - Advisory speed 65km/h	MS3.1	One service with chevron
H01-75	Chevron Board - Advisory speed 75km/h	MS3.2	Two services with chevron
H01-85	Chevron Board - Advisory speed 85km/h	MS3.3	Three services with chevron
H01-95	Chevron Board - Advisory speed 95km/h	MS3.4	Four services with chevron
H01Y	Chevron Board (yellow reflectorised)	MS4.1	One service with arrow
H01Y-15	Chevron Board (yellow) - Advisory speed 15km/h	MS4.2	Two services with arrow
H01Y-25	Chevron Board (yellow) - Advisory speed 25km/h	MS4.3	Three services with arrow
H01Y-35	Chevron Board (yellow) - Advisory speed 35km/h	MS4.4	Four services with arrow
H01Y-45	Chevron Board (yellow) - Advisory speed 45km/h	MSR	Radio Information
H01Y-55	Chevron Board (yellow) - Advisory speed 55km/h	NOENTRY	WCC - No Entry
H01Y-65	Chevron Board (yellow) - Advisory speed 65km/h	NOEXIT	WCC - No Exit
H01Y-75	Chevron Board (yellow) - Advisory speed 75km/h	NOHORS	WCC - No Horses
H01Y-85	Chevron Board (yellow) - Advisory speed 85km/h	NORUB	WCC - No Rubbish
H01Y-95	Chevron Board (yellow) - Advisory speed 95km/h	NOTIP	WCC - No Tipping
H04	Single Chevron	PHONE	Public Telephone
H05	Hazard Marker	PW1	Stop Ahead "_____" m
H07	Bridge End Marker	PW10	Tee Junction - Controlled
I02	STOPPING RESTRICTION ENDS	PW10.1	Tee Junction - Uncontrolled
I04	PASSING LANE 400m	PW11	Side Road Junction - Controlled
I04-1	PASSING LANE 1km	PW11.1	Side Road Junction - Uncontrolled
I04-2	PASSING LANE 2km	PW12	Y-Junction - Controlled
I04-5	PASSING LANE 5km	PW12.1	Y-Junction - Uncontrolled
I05	PASSING BAY "_____"m	PW13	Railway Crossing On Side Road - Controlled

Sign Codes

Type	Description	Type	Description
I06	NO EXIT	PW13.1	Railway Crossing On Side Road - Uncontrolled
I08	CONSTRUCTION ZONE	PW13.2	Railway Crossing At Tee Junction - Controlled
I09	FREE TURN	PW13.3	Railway Crossing At Tee Junction - Uncontrolled
I10	THANK YOU	PW14	RAILWAY CROSSING
I12	BELLS OFF (Railway level crossing)	PW15	RAILWAY "_____ " TRACKS
I13	HEAVY TRAFFIC BY PASS "_____"m	PW16	Sharp Curve - Approx 90 degrees
I14	HEAVY TRAFFIC BY PASS	PW17	Curve - 15 to 90 degrees
I20	National State Highway route marker	PW18	Curve - 90 to 120 degrees
I21	Provincial State Highway route marker	PW19	Curve - Greater Than 120 degrees
I22	Advance Direction (Cross Roads)	PW2	Give Way Ahead "_____" m
I23	Advance Direction (T Intersect tail on side)	PW20	Reverse Curve - Less Than 60 degrees
I24	Advance Direction (T Intersect head of T ahead)	PW21	Reverse Curve - Greater Than 60 degrees
I25	ADVANCE DIRECTION (Skew Intersection)	PW22	Reverse Curve - Decreasing Radii
I26	ADVANCE DIRECTION (Cross Roads)	PW23	Reverse Curves (less than 1km in extent)
I27	DESTINATION (Stack)	PW24	Winding Road NEXT "_____" km
I28	CONFIRMATORY DESTINATION	PW25	Curve Advisory Speed (never erected separately)
I29	PLACE NAME	PW25-05	Curve Advisory Speed 5km/h
I30	FINGER BOARD	PW25-15	Curve Advisory Speed 15km/h
I31	END OF STATE HIGHWAY	PW25-25	Curve Advisory Speed 25km/h
I32A	INFORMATION CENTRE "_____"m (km)	PW25-35	Curve Advisory Speed 35km/h
I32B	INFORMATION CENTRE	PW25-45	Curve Advisory Speed 45km/h
I33	DESTINATIONS (Flag)	PW25-55	Curve Advisory Speed 55km/h
I34	INTERSECTION ADVANCE WARNING	PW25-65	Curve Advisory Speed 65km/h
I40	HOTEL(S)	PW25-75	Curve Advisory Speed 75km/h
I41	MOTEL(S)	PW25-85	Curve Advisory Speed 85km/h
I42	MOTOR CAMP(S)	PW25-95	Curve Advisory Speed 95km/h
I43	REST AREA 400m	PW26	Concealed Exit On Curve
I44	REST AREA	PW27	Steep Grade - Downgrade
I45	_____ LOOKOUT 400m	PW27.1	Steep Grade - Upgrade
I46	_____ LOOKOUT	PW28	TRUCKS USE LOW GEAR (PW27 Supplementary)
Type	**Description**	**Type**	**Description**
PW29	Pedestrians	RG26.2	Cycle Route - ENDS
PW3	Traffic Signals	RG26.3	Cycle Route - "_____"
PW30	Pedestrian Crossing	RG26.4	Cycle Route - Arrow
PW31	Children	RG27	TURNING TRAFFIC GIVE WAY TO PEDESTRIANS
PW32	SCHOOL	RG28	SCHOOL PATROL
PW33	SCHOOL Crossing	RG29	Overhead Lane Use Arrows
PW34	SCHOOL BUS ROUTE	RG3	Limited Speed Zone
PW34A	SCHOOL BUS TURNS	RG30	Stop On Red Signal
PW35	Cyclists	RG31	Railway Level Crossing Give Way
PW36	Horses	RG32	Railway Level Crossing Stop
PW37	Stock (Cattle)	RG33	Railway Level Crossing Flashing Light Signal
PW37.1	Stock (Sheep)	RG4	Speed Limit - TEMPORARY
PW38	Sudden Dip	RG4-20	Temporary Speed Limit 20km/h
PW39	Hump	RG4-30	Temporary Speed Limit 30km/h
PW4	Merging Traffic	RG4-50	Temporary Speed Limit 50km/h
PW40	Uneven Surface	RG4-60	Temporary Speed Limit 60km/h
PW41	Slippery Surface (never erected separately)	RG4-70	Temporary Speed Limit 70km/h
PW41.1	Slippery Surface - WHEN FROSTY	RG5	STOP
PW41.1A	Slippery surface - WHEN FROSTY - next"____"km	RG6	GIVE WAY
PW41.2	Slippery Surface - WHEN WET	RG6.1	_____TRAFFIC (RG6 supplementary)
PW41.3	Slippery Surface - GRAVEL ROAD	RG6.2	STRAIGHT AHEAD TRAFFIC (RG6 supplementary)
PW42	Slips/Falling Debris	RG6.3	RIGHT TURNING TRAFFIC (RG6 supplementary)
PW43	Road Narrows (Left or Right Side Narrowing)	RG7	No Right Turn
PW43.1	Road Narrows (Both Sides Narrowing)	RG8	No Left Turn
PW43.2	Road Narrows Ahead "___"m	RG9	NO ENTRY
PW44	Narrow Bridge	RH1	Road Classification - Heavy Vehicles
PW44.1	Narrow Bridge - CAUTION WIDE VEHICLES	RH2	HEAVY VEHICLES - MAX LENGTH
PW45	Low Clearance - Advance Warning	RH4	HEAVY VEHICLE - BRIDGE LIMITS
PW46	Low Clearance On Structure Or Tunnel	RH5	Heavy Vehicle - RH4 Supplementary - "_"m
PW47	Overhead Electric Cable (never erected separately)	RH6	HEAVY VEHICLE - AXLE LIMIT
PW48	Wind Gusts	RP1	No Stopping
PW49	Fire Station	RP1.1	No Stopping At All Times
PW5	Diverge	RP1.2	No Stopping FOR "_____" km
PW50	Trucks	RP1.3	No Stopping - ENDS (RP1 Supplementary)
PW51	Aircraft	RP10	Disabled Parking

Sign Codes

Type	Description	Type	Description
PW52	Tunnel	RP2	No Stopping - Specified Period
PW53	Other Hazard (never erected separately)	RP2.1	Late Night Extension - (RP2 Supplementary)
PW54	Other Hazard - FORD	RP3	CLEARWAY - Single Peak Period
PW55	Other Hazard - CATTLE STOP	RP3.1	CLEARWAY - Two Peak Period
PW56	Other Hazard - GATE	RP3.2	BEGINS (RP3 RP3.1 Supplementary)
PW57	Train	RP3.3	ENDS (RP3 RP3.1 Supplementary)
PW57.1	Railway Level Crossing "-" Ahead	RP3.4	MON-FRI (Clearway Supplementary)
PW58	Railway Level Crossing FLashing Light Signals Ahead	RP3.5	CLEARWAY With Parking Restriction
PW6	Two Way	RP4	Restricted Parking - Standard Hours
PW60	Railway Level Crossing Substantially at a Right Angle	RP4.1	Restricted Parking - Non Standard Hours
PW60.1	Railway Level Crossing at an Oblique Angle	RP4.2	Restricted Parking - Other Times
PW60.2	Railway Level Crossing at an Oblique Angle	RP4.3	Restricted Parking - Late Night Extension
PW61	Railway Level Crossing Intermediate Advance Warning	RP5	BUS STOP
PW62	Railway Level Crossing on a Side Road Advance Warning	RP5.1	BUS STOP - With Arrow
PW63	Tram	RP6	TAXI STAND
PW64	Prepare to Stop	RP6.1	TAXI STAND - With Arrow
PW64.1	Hidden Queue	RP7	LOADING ZONE
PW64.2	Queued Vehicles	RP7.1	LOADING ZONE - With Arrow
PW65	Belisha Beacon Disk	RP7.2	Loading Zone - GOODS VEHICLES ONLY (Supplementary)
PW7	Two Way Ahead "_____" m	RP8	Motorcycle Parking
PW8	Rotary Junction	RP8.1	Motorcycle Parking - With Arrow
PW9	Cross Roads - Controlled (priority route ahead)	RP9	Cycle Stand
PW9.1	Cross Roads - Controlled (priority route turns)	RP9.1	Cycle Stand - With Arrow
PW99	Kiwi Crossing	RPM	Route Position Marker
PWS1	Supplementary 1 line	RS	Reference Station
PWS2	Supplementary 2 line	SNP	Street name
PWS3	Supplementary 3 line	SP	Special - not classed
PWS4	Supplementary 4 line	THT	Tourist Heritage Trail
R21	Special - not classed	TR1	Tourist route marker - arrow only
RAILWAY	Special - not classed	TR2	Tourist route marker - arrow and route number
RG10	No Turns	TR3	Tourist route marker - END and route number
RG-100	Speed Limit 100km/h	TR4	TOURIST DRIVE TURN side "_____"m
RG11	Turn	TR5	TOURIST DRIVE with Route marker and Chevron
RG1-100	Speed Limit 100km/h	TR6	TOURIST DRIVE "_____"km FOLLOW route marker
RG12	Turn Left	TRANZ	Tranz Metro direction
RG1-20	Speed Limit 20km/h	TS1	Feature "_____"m ON left/right
RG13	Turn Right	TS2	Feature TURN left/right "_____"m
RG1-30	Speed Limit 30km/h	TS3A	Position sign - One line description with chevron
RG14	ONE WAY	TS3B	Position sign - Two line description with chevron
RG15	No U Turn	TS4	Feature name with arrow
RG1-50	Speed Limit 50km/h	TS5	Major tourist attractions - special information
RG16	ROAD CLOSED	TSW	Welcome To .....
RG1-60	Speed Limit 60km/h	TW32	Cattle
RG17	Keep Left - Single Disc	TW33	Slippery Surface - Ice/Grit
RG17.1	Keep Left - Twin Disc	TW8	Other Hazard - Flooding
RG1-70	Speed Limit 70km/h	WM01	RESIDENTIAL AREA
RG18	WRONG WAY	WM02	AGED PERSONS
RG1-80	Speed Limit 80km/h	WM03	Warning (Miscellaneous Sign) - User defined
RG19	Single Lane Bridge - Give Way (symbolic)	WM06	WEIGH STATION AHEAD
RG19.1	Single Lane Bridge - Supplementary GIVE WAY	WM07	TRUCKS STOP - Weighstation
RG19.1A	Road Narrows - Supplementary GIVE WAY	WM08	NO TRUCKS
RG19A	Road Narrows - Give Way (symbolic)	WM09	LEFT LANE EMERGENCY VEHCILES ONLY
RG2	Speed Limit 100km/h	WM12	SIGNALS AHEAD
RG2.1	Derestriction	WM13	SLOW - LANE CONTROL
RG20	Single Lane - Priority		
RG20A	Road Narrows - Priority		
RG21	Low Clearance At Electrified Railway Crossing		
RG22	USE LEFT LANE UNLESS PASSING		
RG23	No Pedestrians		
RG24	No Cycling		
RG25	Pedestrians		
RG26	Cycle Route		
RG26.1	Cycle Route - BEGINS		

RAMM FORM NO 11

Waitakere City Council
Te Taiao o Waitakere

STREETLIGHT POLE INVENTORY

Add [ ]
Update [ ]
Delete [ ]

CARRIAGEWAY SECTION

Road ID : [ ] Road Name : [ ]

Start Displacement : [ ] Start Name : [ ]
End Displacement : [ ] End Name : [ ]
** See note:*

POLE LOCATION & DETAILS

If all Poles are the same only one entry required.

Installed : [/ /] Shape : [ ] Control : [ ]
Material : [ ] Make : [ ]
Owner : [ ] Mount : [ ]

Displacement : [ ] Metres	Displacement : [ ]	Displacement : [ ]
Side : [ ] L / R	Side : [ ]	Side : [ ]
Offset : [ ] Metres	Offset : [ ]	Offset : [ ]
Pole Number : [ ]	Pole Number : [ ]	Pole Number : [ ]
House Nos [ ]	House Nos [ ]	House Nos [ ]
Comments : [ ]	Comments : [ ]	Comments : [ ]
Displacement : [ ] Metres	Displacement : [ ]	Displacement : [ ]
Side : [ ] L / R	Side : [ ]	Side : [ ]
Offset : [ ] Metres	Offset : [ ]	Offset : [ ]
Pole Number : [ ]	Pole Number : [ ]	Pole Number : [ ]
House Nos [ ]	House Nos [ ]	House Nos [ ]
Comments : [ ]	Comments : [ ]	Comments : [ ]

DIMENSIONS

If all Poles are the same only one entry required.

Level : [ ] Metres
Accuracy : [ ] E / M / N
Max. Base : [ ] mm
Min. Base : [ ] mm
Use Height : [ ] Metres

INTERSECTS WITH ROAD

Road Number : [ ]
Start Disp. : [ ] Metres
End Disp. : [ ] Metres
Displacement : [ ] Metres
Side : [ ] L / R

INSTALLATION REPLACEMENT

Installed : [/ /] ddmmyy
Dispatch ID : [ ]
Reason : [ ]
Replaced : [/ /] ddmmyy
Dispatch ID : [ ]
Reason : [ ]

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION ON REVERSE SIDE

Prepared by: _____
Address: _____
_____
Phone: _____
Checked by: _____
Approved by: _____
Ref. No: _____

Return to: Waitakere City Council
City Services
Transport Assets
Private Bag 93 109
Waitakere City
Attention: Operations Manager

Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*

RAMM FORM NO 11B

Waitakere City Council
Te Taiao o Waitakere

STREETLIGHT BRACKET / LANTERN INVENTORY

Add [ ]
Update [ ]
Delete [ ]

CARRIAGEWAY SECTION

Road ID : [ ] Road Name : [ ]

Start (m) : [ ] Start Name : [ ]
End (m) : [ ] End Name : [ ]

If all Poles, Lights and Gear are the same only one entry required.

POLE LOCATION

Displacement : [ ] A = All or displacement of each if different.
Side : [ ] if not all required to match sheet 12
Offset : [ ] if not all required to match sheet 12

BRACKET DETAILS

Bracket ID : [ ]
Type : [ ]
Angle : [ ] degrees
Height : [ ] Metres
Accuracy : [ ] E / M / N
Outreach : [ ] Metres
Comments : [ ]

BRACKET INSTALLATION / REPLACEMENT

Installed : [/ /] ddmmyy
Dispatch ID : [ ]
Reason : [ ]
Replaced : [/ /] ddmmyy
Dispatch ID : [ ]
Reason : [ ]

LIGHT, GEAR & LAMP DETAILS

Owner : [ ] Light ID : [ ] Supply Point : [ ] OH /UG /UN
Description : [ ]

LIGHT	GEAR	LAMP
Make : [ ]	Make : [ ]	Make : [ ]
Model : [ ]	Model : [ ]	Model : [ ]
Installed : [/ /] ddmmyy	Installed : [/ /] ddmmyy	Installed : [/ /] ddmmyy
Dispatch ID : [ ]	Dispatch ID : [ ]	Dispatch ID : [ ]
Reason : [ ]	Reason : [ ]	Reason : [ ]
Status : [ ] **N**ew / **R**econditioned	Status : [ ] **N**ew / **R**econditioned	Comments : [ ]
Tilt : [ ] degrees	Comments : [ ]	
Comments : [ ]	Replaced : [/ /] ddmmyy	Replaced : [/ /] ddmmyy
Replaced : [/ /] ddmmyy	Dispatch ID : [ ]	Dispatch ID : [ ]
Dispatch ID : [ ]	Reason : [ ]	Reason : [ ]
Reason : [ ]		

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION ON REVERSE SIDE

Prepared by: _____
Address: _____
_____
Phone: _____
Checked by: _____
Approved by: _____
Ref. No: _____

Return to:
Waitakere City Council
City Services
Transport Assets
Private Bag 93 109
Waitakere City
Attention: Operations Manager

Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*

RAMM FORM NO 12

Waitakere City Council
Te Taiao o Waitakere

DRAINAGE INVENTORY

Add	**[ ]**
Update	**[ ]**
Delete	**[ ]**

CARRIAGEWAY SECTION

Road ID : [ ] Road Name : [ ]

Start Displacement : [ ] Start Name : [ ]
End Displacement : [ ] End Name : [ ]

DRAINAGE LOCATION

Type*	: [ ]		Type*	: [ ]	
Date	: [ ]		Date	: [ ]	
Culvert Number	: [ ]	(If known)	Culvert Number	: [ ]	(If known)
Displacement	: [ ]	Metres	Displacement	: [ ]	Metres
Offset from C/line	: [.]	Metres	Offset from C/line	: [.]	Metres
Side	: [ ]	L / R	Side	: [ ]	L / R
Length	: [ ]	Metres	Length	: [ ]	Metres
Diam / Height / Depth	: [ ]	mm	Diam / Height / Depth	: [ ]	mm
Intake	: [ ]	Yes / No / Grid	Intake	: [ ]	Yes / No / Grid
Outlet	: [ ]	Yes / No	Outlet	: [ ]	Yes / No
Material ***	: [ ]		Material ***	: [ ]	
Waterway name	: [ ]		Waterway name	: [ ]	

LARGE CULVERT DATA (>3.5 sq.m)

Type ** : [ ]

Width : [.] Metres
Area : [ ] Sq Metres

* Drainage type	CP1 /CP2 /CP3 /CUL /DAM /DeepWell /FLUME /OTHER / SCOUR/SIDEdrain /SoakPit /MHOLE /SUB /SUMP /WEIR /WaterRace. Please see back for more.
** Culvert type	ARCH /BOX /CIRC /OTHER /TWIN_ARCH /TWIN_BOX / TWIN_CIRC /WATERDRV
*** Material	CON /STEEL / AC / EarthenWare /ARMCO / WOOD PVC / NaturalGround / ALUM

Comments : [ ]

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION ON REVERSE SIDE

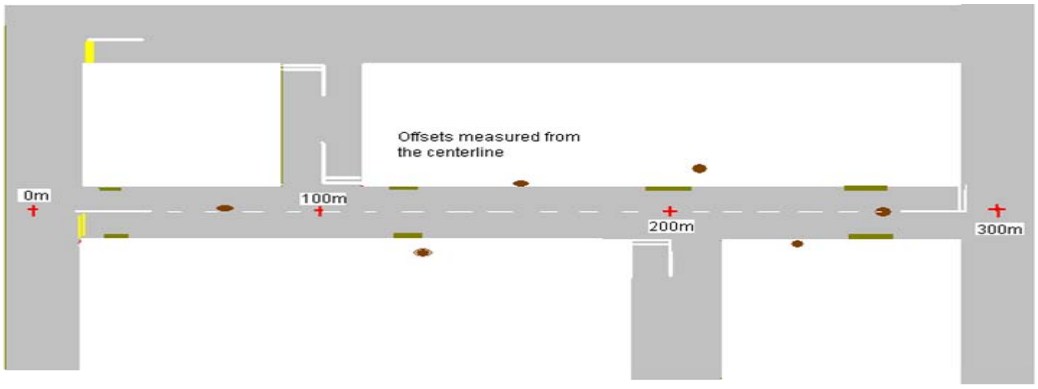
Prepared by: _____
Address: _____
_____
Phone: _____
Checked by: _____
Approved by: _____
_____
_____
Ref. No: _____

Return to: Waitakere City Council
City Services
Transport Assets
Private Bag 93 109
Waitakere City
Attention: Operations Manager

Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*

Example: Offsets measured from centerline



Type	Detailed Description
ALUFL	Corrugated Aluminium pipe
BFCP	boundary
CP1	This is located in the carriageway and consists of either a single grate or a kerb entry in the face of the kerb.
CP2	This is located in the carriageway and consists of either a double grate or a double kerb entry in the face of the kerb.
CP3	This is a cesspit which has three entry points for the stormwater runoff. These can be 3 gratings or 3 kerb entry points.
CPMH	large concrete chamber with a grate on top
CUL	Pipe laid under the road, not connected to a stormwater system. Normally transfers water from one side of the road to the other.
CULMH	This is found at the end of a culvert. The Manhole that has a short length of pipe attached, which drains the earth side drain. Used in a variety of situations but usually when the adjoining drain is well below the road level.
DAM	Unknown
DCHM	This is a vertical pipe which often has a grate. Its purpose is to transfer water from a side drain, to a culvert which is located at a lower level some depth below the road.
DG	Grate which has a rounded surface.
DRCP	Similar to CP2.
DWELL	Deepwell shafts are a manhole style structure that has been constructed near a slip. The purpose of which is to house a drilling machine to bore into the hillside in order to drain the off the ground water from the impervious surface on which the overburden is moving. Once the machine has finished, an outlet pipe is laid through the wall of the manhole which drains away the water collected by the bores.
FLUME	This is a U shaped structure. Its purpose is to contain the flow of water flowing from a culvert or side drain. It can consist of variety of materials timber, half round pipe or poured concrete.
GRID	Unknown
KECP	A cesspit where the rain water is removed from the road via a slot in the back of the kerb.
LFCP	Normally found in the grassed areas adjacent to the road. This is a large grate on a large dia. Concrete chamber. The openings on the grate are larger than normal so the do not become blocked by grass clippings.
MHOLE	Concrete chamber with a round steel lid.
MMH	Smaller version of the above
OFCUL	Unknown
OTHER	Used to cater for the unusual drainage features. A description is always necessary in the comments section.
RFCP	Normally found in the grassed areas adjacent to the road. This is a large grate on a large dia. Concrete chamber. The openings on the grate are larger than normal so the do not become blocked by grass clippings.
SD	Unknown
SDCUL	These are the culverts that are located in the side drains alongside a road. There purpose is to provide access across the side drain to houses and farm entrances etc..
SFCP	Normally found in the grassed areas adjacent to the road. This is a smaller grate on a concrete chamber.
SIDE	These are deep drains. Often used to drain neighbouring country side as well as taking the water from the road.
SP	These are usually formed by holes drilled into the ground and lined with manhole style "well liners" {these are normally porous} which allows the water collected to soak away into the surrounding soil.
SPILL	Unknown
SRCP	This is located in the carriageway and consists of a single grate, usually at the kerb on the side of the carriageway.
SUB	A perforated pipe laid underground to drain off the ground water.
SUMP	Unknown
SWC	A surface water channel can be anything that controls/contains the water that runs off the carriageway, e.g. Kerb and Channel, dish Channel.
SWMH	This is a manhole which is constructed over a Stormwater pipe.
TRCP	This is a cesspit which has three entry points for the stormwater runoff. These can be 3 gratings or 3 kerb entry points.
WEIR	Unknown
WR	Unknown

RAMM FORM NO 13

Waitakere City Council
Te Taiao o Waitakere

RAILING INFORMATION

Add [ ]
Update [ ]
Delete [ ]

CARRIAGEWAY SECTION

Road Number : [ ] Road Name : [ ]

Start Displacement : [ ]
End Displacement : [ ]

Type : [ ] **Start (m)** [ ] **End (m)** [ ]

HR= Hand Rail
NJ= New Jersey Barrier
SDCC= Steel Drum Crash Cushion
SIBC= Steel Median Barrier IBC
FEC A-H= ACC Fence types A-H (use one type only)
CHAIN= Access Barrier Chain
OTHER= Doesn't fit any defined type (describe below)
PEDCW= Pedestrian Barrier At Kerb
SR= Sight Rail
STP= Steel Tube Post Barrier
SWR= Steel Wire Rope Barrier
TBGR= TTHRIE Beam Steel Guard Rail
TRIC= TRIC Block Concrete Barrier
WGR= W Section Guard Rail

Length : [ ] m Date installed (if known) : [ ]

Side : [ ] **L**eft/**R**ight/**C**entre/**U**nknown Width (if applicable) : [.] m
Offset : [.] m Ground Height (to top) : [.] m
(from road centreline)
Shape : [ ] **C**urved/**S** bend/straigh**T**
Railing Start type : [ ] **B**ull Nose/**C**able End /**U**nkown
Railing End type : [ ] **T**erminal End/**F**ishtail or **B**utterfly
Ground fixture type : [ ] **GP** Ground Plant / **NA** Not appl / **TP1M** Timber posts 1m interval /
TP2M Timber posts 2 m interval **/ TP3M** Timber posts 3m interval / **UN** Unknown
Attachments : [ ]
Colour : [ ]
Make (if known) : [ ]
Material : [ ] **ARMCO / COMP** Steel Composite / **CON** Concrete / **DRUM** Steel Drum / **EARTH /**
GALV Galvanised steel / **GT** Galv Rail & Timber parts / **PT** Plastic & Timber parts / **STEEL / STONE**
/ UN Unknown **/ WOOD**

RESPONSIBILITY

Owner Type : [ ]
Controlled by : [ ]
Maintained by : [ ]

BARRIER / FENCE / RAILING CONTINUES INTO:
Road Name : [ ]
Road ID Number : [ ]
Distance : [ ] m
Side : [ ]
NB: This section to be completed if the Railing is on 2 different roads

Reason (for barrier / fence / railing) : [ ]
Other comments : [ ]

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION

Prepared by: _____
Address: _____
_____
Phone: _____
Checked by: _____
Approved by: _____
Ref. No: _____

Return to: Waitakere City Council
City Services
Transport Assets
Private Bag 93 109
Waitakere City
Attention: Operations Manager

Phone: 836 8000, Ext 8794

RAMM FORM NO 14

Waitakere City Council
Te Taiao o Waitakere

RETAINING WALL INVENTORY

Add [ ]
Update [ ]
Delete [ ]

CARRIAGEWAY SECTION

Road ID : [ ] Road Name : [ ]

Start Displacement : [ ] Start Name : [ ]
End Displacement : [ ] End Name : [ ]
** See note:*

RETAINING WALL - LOCATION and CONSTRUCTION INFORMATION

Type* : **[WALL]** Length : [ ] Metres
Subtype : [ ] Width : [.] Metres 0.0
Material : [ ] (If Known) Height : [.] Metres 0.0
Displacement : [ ] Metres Clearance : [.] Metres 0.0
Offset from C/line : [.] Metres 0.0 Date Built : [/ /]
Side : [ ] **L**eft / **R**ight / **C**entre / **U**nknown

MATERIAL

ARMCO	Amco
COMP	Steel Composite
CON	Concrete
DRUM	Steel Drum
EARTH	Earth
GALV	Galvanised steel
STEEL	Steel
STONE	Stone
UNKN	Unknown
WOOD	Wood

SUB-TYPE

ANCH	*Anchored*	**EARTH**	*Reinforced Earth*
BIN	*Bin*	**GABN**	*Gabion*
CANT	*Cantilever*	**GRAV**	*Gravity*
COUNT	*Counterfoil*	**MCRIB**	*Minicrib*
CRIB1	*Single crib*	**PILED**	*Sheet Pile*
CRIB2	*Double crib*	**ROCK**	*Rock*
CRIB3	*Triple crib*		
ROCKB	*Rock wall bound with MATERIAL*		
ROCKU	*Rock wall unbound (drystone)*		

Comments : [ ]

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION ON REVERSE SIDE

Prepared by: _____
Address: _____
_____
Phone: _____
Checked by: _____
Approved by: _____
Ref. No: _____

Return to: Waitakere City Council
City Services
Transport Assets
Private Bag 93 109
Waitakere City
Attention: Operations Manager

Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*

RAMM FORM NO 15

Waitakere City Council
Te Taiao o Waitakere

MINOR STRUCTURE INVENTORY

Add	**[ ]**
Update	**[ ]**
Delete	**[ ]**

CARRIAGEWAY SECTION

Road Number	: [ ]	Road Name	: [ ]
Start Displacement	: [ ]	Start Name	: [ ]
End Displacement	: [ ]	End Name	: [ ]

** See note:*

MINOR STRUCTURE - LOCATION and CONSTRUCTION INFORMATION

(NB: If structure has unique Name or Number then include in comments)

Type	: [ ]	**Gantry /** Over**BR**idge / Under**PASS / WALL / W**eigh**STAT**ion			
Subtype	: [ ]	Refer to table below	Length	: [ ]	Metres
Material	: [ ]	Refer to table below	Width	: [.]	Metres 0.0
Displacement	: [ ]	Metres	Height	: [.]	Metres 0.0
Offset from C/line	: [.]	Metres 0.0	Clearance	: [.]	Metres 0.0
Side	: [ ]	**L**eft / **R**ight / **C**entre	Date Built	: [/ /]	

TYPE	SUB-TYPE	DESCRIPTION
GANTRY	**DBL**	Double
	SNGL	Single
OVERBRIDGE & UNDERPASS	**PED**	Pedestrian
	RAIL	Railway
	STOCK	Stock (Animals)
	VEH	Vehicles
TUNNEL & WEIGHSTATIONS		Leave blank

MATERIAL	
ARMCO	Amco
COMP	Steel Composite
CON	Concrete
DRUM	Steel Drum
EARTH	Earth
GALV	Galvanised steel
STEEL	Steel
STONE	Stone
UNKN	Unknown
WOOD	Wood

Photo or Video Reference:

Comments : [ ]

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION ON REVERSE SIDE

Prepared by:		Return to:	Waitakere City Council
Address:			City Services
			Transport Assets
Phone:			Private Bag 93 109
Checked by:			**Waitakere City**
Approved by:			**Attention:** Operations Manager
Ref. No:			Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*

RAMM FORM NO 16

Waitakere City Council
Te Taiao o Waitakere

BRIDGE INVENTORY

CARRIAGEWAY SECTION

Road Number : [ ] Road Name : [ ]

Start Displacement : [ ] Start Name : [ ]
End Displacement : [ ] End Name : [ ]
** See note:*

BRIDGE INFORMATION

Bridge number : [ ] {computer assigned} Bridge Name : [ ]

Start Displacement : [ ] m Number of lanes : [ ] Map Ref. : [ ]
End Displacement : [ ] m Built : [ ] Year Skew : [ ]
Length : [ ] m Waterway Name : [ ]

Superstructure Type : [ ] see list 1
Deck Construction : [ ] see list 2
Foundation : [ ] see list 3
Bearing : [ ] see list 4
Expansion Joint : [ ] see list 5
Surface material : [ ] see list 6
Guard/Hand rail : [ ] see list 7

Kerb width : [.] m
Kerb Height : [.] m
Rail Width : [.] m
Rail Height : [.] m
Span arrangement : [ ]
Number of spans : [ ]
Vertical clearance : [.] m
Waterway Clearance [ ]
Waterway Area [ ]

Design Loading : [ ]
Speed Restriction : [ ] Kmh
Vehicles / Day : [ ]
Replacement Priority : [ ]
Axle Limit : [.] Tonnes
Gross Limit : [ ]
Structural Rating [ ]
ASR Rating [ ]

Frequency of check : [ ]
Next check due (B) : [ ] (C) : [ ] (D) : [ ]

RESPONSIBILITY
Owner Type : [ ]
Controlled by : [ ]
Maintained by : [ ]

DATA SOURCES
Name : [ ]
Date : [/ /]
Name : [ ]
Updated : [/ /]

Comments : [ ]

PLEASE INCLUDE A DIMENSIONED SKETCH OF BRIDGE LOCATION & SPAN LAYOUT ON REVERSE SIDE

Prepared by: _____
Address: _____
_____
Phone: _____
Checked by: _____
Approved by: _____
Ref. No: _____

Return to: Waitakere City Council
City Services
Transport Assets
Private Bag 93 109
Waitakere City
Attention: Operations Manager

Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*

BRIDGE INVENTORY - TYPE CODES

1 BRIDGE SUPERSTRUCTURE TYPE

BG	Box Girder
CBS	Comp Beam and
DA	Deck Arch
DT	Deck Truss
MA	Masonary Arch
NBS	Non Comp Beam
OTH	Other
PF	Portal frame
PU	Precast Units
PUS	Precast Units
SLB	Slab
SUS	Suspension
TA	Through Arch
TMA	Twin Masonary
TT	Through Truss
UKN	Unknown

2 BRIDGE DECK TYPE

OTH	Other
PC	Prestressed Concrete
RC	Reinforced Concrete
ST	Steel
TIM	Timber
UKN	Unknown

3 BRIDGE FOUNDATIONS TYPE

CBP	Cast Insitu Bored Piles
CDP	Cast Insitu Driven Steel Shell Pile
CYL	Cylinders
DCP	Driven Concrete Piles
DSP	Driven Steel Piles
DTP	Driven Timber Piles
OTH	Other
SF	Spread Footings
UKN	Unknown

4 BRIDGE BEARING TYPE

CMF	Concrete with or without Mortar/Fabric
OTH	Other
REM	Rubber with Metal Plates
RSS	Rubber with PTFE/Stainles
SHP	Steel Hinge with or without Plates
SHR	Steel Hinge with Rollers
SMS	Superstructure Monolithic
SPR	Steel Plates with Rockers
UKN	Unknown
UR	Unreinforced Rubber

5 EXPANSION JOINT TYPE

A G	Air gap
BFG	Bitumen Filled Gap
NON	None
OTH	Other
REP	Rubber Extrusion with Plates
REU	Rubber Extrusion - Unreinforced
RSP	Rubber Seal with Plates
RSS	Rubber Seal (Solid)
SFJ	Steel Finger Joint
SSP	Steel Sliding Plate
UKN	Unknown

6 BRIDGE SURFACE WEARING TYPE

AC	Asphaltic Concrete
CON	Concrete
CS	Chip Seal
GR	Gravel
OTH	Other
TDP	Timber Deck Planks
TRP	Timber Running Plank
UKN	Unknown

7 BRIDGE GUARD / HAND RAIL TYPE

CAB	Cable
CON	Concrete
CPR	Concrete Post with Timber Rails
CPT	Concrete Post with Steel Tube
GLT	Glue Laminate Timber
NJB	New Jersey Barrier
NLT	Nail Laminate Timber
NON	No Rails
OTH	Other
SAL	Steel or Aluminium
SC	Steel Channel
SFR	Steel Flexbeam - Cable Reinforced
SFU	Steel Flexbeam - Unreinforced
SPR	Steel Post with Timber Rails
TIM	Timber
TPT	Timber Post with Steel Tube
UKN	Unknown

RAMM FORM NO 17

ROAD MARKING INVENTORY

Add	**[ ]**
Update	**[ ]**
Delete	**[ ]**

MARKING LOCATION

Road id : [ ] Road Name : [ ]

Start Displacement : [ ] Start Name : [ ]

End Displacement : [ ] End Name : [ ]

** See note:*

JFACTURER (if Known) **MARKING DETAILS** Date of Application: / /

Marking Type*	Start (m)	End (m)	Marking Material	Side (L / R / C)	Offset from C/line	Colour *	Thickness	Reflectorised: Y / N

** Refer to back of this form for appropriate choices*

Comments : [ ]

Prepared by:		Return to:	Waitakere City Council
Address:			City Services
			Transport Assets
Phone:			Private Bag 93 109
Checked by:			**Waitakere City**
Approved by:			**Attention:** Operations Manager
Ref. No:			
			Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*

ROAD MARKING TYPES

MARKING TYPE

M01	Centreline 100mm continuous
M02	Centreline 100mm 3 x 7
M03	No Overtaking 100mm continuous
M04	No Overtaking advance 100mm 13 x 7
M05	RPM non-reflective
M06	RRPM yellow mono-directional
M07	RRPM white mono-directional
M08	RRPM white bi-directional
M09	RRPM white/yellow bi-directional
M10	RRPM yellow bi-directional
M11	RRPM red (edge line) mono-directional
M12	lane 100mm 3 x 7
M13	Edge 150mm continuous
M14	Edge 75mm continuous
M15	Edge 100mm continuous
M15A	Edge 200mm continuous
M16	Painted shoulder
M17	Painted island
M18	Island pre warn
M19	Right turn bay
M20	Pedestrian crossing
M21	Pedestrian crossing diamond
M22	Signalised mid-block crosswalk
M23	Signalised intersection crosswalk
M24	Railway crossing
M25	Emerg exit sig sh white
M26	CROSS ROADS
M28	SLOW
M29	ONE LANE BRIDGE
M30	STOP
M31	GIVE WAY
M32	NO LEFT TURN
M33	NO RIGHT TURN
M34	ONE WAY
M35	NO ENTRY
M36	NO TURNS
M37	NO EXIT
M38	Speed circles
M3850	Speed circle 50km/h
M3870	Speed circle 70km/h
M40	straight arrow
M41	right turn arrow
M42	Left turn arrow
M43	Combination arrows
M44	TURN LEFT
M45	TURN RIGHT
M46	KEEP CLEAR
M47	DISABLED PARKING
M48	NO PARKING
M49	CHILDREN
M50	STOP AHEAD
M51	GIVE WAY AHEAD
M52	PED. CROSS AHEAD
M53	SCHOOL PATROL
M55	Destination Legend
M56	SCHOOL
M57	SPEED HUMP
M58	Painted Speed Hump
M59	Intersection Continuity Lines (150mm 1 x 3)
M60	No Stopping Line (yellow) 100mm 1 x 1
M61	Loading zone
M62	Bus stop
M63	Taxi stand
M64	Other zone
M65	Park Limit Lines parallel
M66	Park meter bays
M67	Park bays angle
M70	Fire hydrant
M71	CAUTION
M72	CYCLE LANE
M73	Cycle symbol
M74	Flush Median
M75	BUS LANE
M76	BUS LANE ENDS

MARKING MATERIAL

PT	Paint
RP	Reflectorised Paint
TP	Thermoplastic
UN	Unknown
PM	Raised Pavement Marker

MARKING COLOUR

RE	Red
BU	Blue
BK	Blacking out paint
WH	White
YE	Yellow
UN	Unknown

ATTACHMENTS

HCCD	Highway Ceramics ceramic dome
AXCDRP	Apex ceramic dome, radial pattern on base
AXCDMD	Apex ceramic dome, matrix dot on base
AXRPM	Apex plastic body with filler
AXRPM921	Apex 921 plastic body with filler
AXRPM926	Apex 926 plastic body with filler
CATRRPM	Cataguide ABS plastic octagonal body with filler
RORPMABS	Ray-o-lite ABS plastic body with filler
RORPMAA	Ray-o-lite acrylic plastic shell with filler (AA)
RSERPM18	RSE Swareflex ABS plastic body model 3017.3018
RSERPM28	RSE Swareflex ABS plastic body with anchor stem 3027.3028
SNRPM911	Stimsonite acrylic plastic body with filler model 911
SNRPM88	Stimsonite acrylic plastic body with filler type 88
3MRPM	3M series 240 and 280

APPLICATION TYPE

DO	Drop-on
IM	Intermix
VB	Visibead
DI	Drop-on/Intermix
DV	Drop-on/Visibead
IV	Intermix/Visibead
3A	Drop-on/Intermix/Visibead

BRAND NAME

ACWH	Acrylic road marking white
ACYE	Acrylic road marking yellow
AKWH100	Alkyd road marking white 100
AKWH102	Alkyd road marking white 102
AKYE201	Alkyd road marking yellow 201
AKYE204	Alkyd road marking yellow 204
AKYE205	Alkyd road marking yellow 205
HTNZM7W	Highway TNZ M7W
HTNZM7Y	Highway TNZ M7Y
HATNZM7W	Highway aqua TNZ M7W
HATNZM7Y	Highway aqua TNZ M7Y
AKWH	Standard alkyd roadmarking paint white
AKYE	Standard alkyd roadmarking paint yellow
HSAKYE	High solids alkyd roadmarking paint yellow
HSAKWH	High solids alkyd roadmarking paint white
CRBWH	Chlorinated rubber bead binder roadmarking paint white
CRBYE	Chlorinated rubber bead binder roadmarking paint yellow
WBACWH	Waterbased acrylic roadmarking paint white
TMCRWH	Tarmak modified chlorinated rubber white
TMCRYE	Tarmark modified chlorinated rubber yellow
LWR6WH	LWR6 white
LWR8WH	LWR8 white
100SYE	100S yellow
XRM7-4	XRM7-4
A100WH	A100 white
A100YE	A100 yellow
A150WH	A150 white
A200WH	A200 white
WB90YE	WB90 yellow water based rapid dry

MANUFACTURER

FH	Fulton Hogan Ltd
FH	Fulton Hogan Ltd
FH	Fulton Hogan Ltd
FH	Fulton Hogan Ltd
FH	Fulton Hogan Ltd
FH	Fulton Hogan Ltd
FH	Fulton Hogan Ltd
IP	Bay of Plenty Industrial Paint
IP	Bay of Plenty Industrial Paint
IP	Bay of Plenty Industrial Paint
IP	Bay of Plenty Industrial Paint
LV	Levene Paint Manufacturing Ltd
LV	Levene Paint Manufacturing Ltd
LV	Levene Paint Manufacturing Ltd
LV	Levene Paint Manufacturing Ltd
LV	Levene Paint Manufacturing Ltd
LV	Levene Paint Manufacturing Ltd
LV	Levene Paint Manufacturing Ltd

RS	Resene Paints Ltd
RS	Resene Paints Ltd
RS	Resene Paints Ltd
RS	Resene Paints Ltd
RS	Resene Paints Ltd
RS	Resene Paints Ltd
LO	Linaro NZ Ltd
LO	Linaro NZ Ltd
LO	Linaro NZ Ltd
LO	Linaro NZ Ltd
LO	Linaro NZ Ltd

RAMM FORM NO 18

Waitakere City Council
Te Taiao o Waitakere

FEATURE INVENTORY

Add	**[ ]**
Update	**[ ]**
Delete	**[ ]**

CARRIAGEWAY SECTION

Road Number : [ ] Road Name : [ ]

Start Displacement : [ ] Start Name : [ ]

End Displacement : [ ] End Name : [ ]

** See note:*

FEATURE INFORMATION

Displacement : [ ] Metres

Length : [ ] Metres

Offset : [ ] Metres

Side : [ ]
Left / **R**ight / **B**oth / **C**entre/ **N**ot applicable

Feature type : [ ]
See panel below for types

FEATURE TYPES

BUILD Historical building
CBWALL Crib retaining wall
CGRID Cattle grid
COWALL Concrete retaining wall
DOSLI DOSLI Benchmark
GANTRY Gantry
GWALL Gabion Retaining wall
HMLT High Mast Light Towers
HUMP Speed 'hump'
INT Intersection
LP Lighting Pole
MAC Major access
MON Monument
OTHER See comments for description
PARK_M Parking meter - Multiple space
PARK_S Parking meter - Single space
PEDOBR Pedestrian overbridge
PEDSUB Pedestrian subway
PILE Stockpile site
PLAQUE Plaque/historical location
REST Rest area
RKWALL Rock retaining wall
RLOBR Rail overbridge
SFBOLL Street furniture - Bollard
SFLITC Street furniture - Conc Litter Bin
SFLITM Street furniture - Metal Litter Bin
SIGINT Signal Controlled Intersection
SP Slope protection
SRVCOV Utility service cover
STKSUB Stock Underpass

TABLE Speed 'Table'
TUNNEL Tunnel
TWALL Timber retaining wall
UNDEFI Undefined
VEHOBR Vehicle overbridge
VEHSUB Vehicle Subway
WEIGH Weigh Station
XING Rail Crossing

PLEASE INCLUDE A DIMENSIONED SKETCH OF LOCATION ON REVERSE SIDE

Prepared by:		Return to:	Waitakere City Council
Address:			City Services
			Transport Assets
Phone:			Private Bag 93 109
Checked by:			**Waitakere City**
Approved by:			**Attention:** Operations Manager
Ref. No:			Phone: 836 8000, Ext 8794

** All road start displacements are taken from the centreline of the intersecting road. The direction of increasing is indicated by the start and end name in RAMM.*

FORM 5.4

SUBDIVIDER'S/DEVELOPER'S TAX INVOICE REGISTERED FOR GST

(Company Name) .....

(Address) .....

.....

GST Number: .....

Date: .....

Issued to: **WAITAKERE CITY COUNCIL**

Dr to: ..... (Subdivider/Developer)

For barter with WAITAKERE CITY COUNCIL of roading, reserve, drainage and watermains included in Consent reference number(s) .....
being a subdivision/ development located at .....

Land Transfer Number: .....

Land to vest excluding recreation reserves:

Lot No. ....., …….. m^2 at $ .....per m^2 Total $.....(excl GST)
Lot No. ....., …….. m^2 at $ .....per m^2 Total $.....(excl GST)
Lot No. ....., …….. m^2 at $ .....per m^2 Total $.....(excl GST)

Total land to vest Total $.....(excl GST)

Construction Cost of Infrastructure to vest:

Roads. Lot No's……	$.....	(excl GST)
Water Supply……	$.....	(excl GST)
Wastewater Drainage……..	$.....	(excl GST)
Stormwater Drainage……..	$.....	(excl GST)
Stormwater Devices (eg Pond, Filter etc)……	$.....	(excl GST)
ICT(Information Communications Technology)……..	$.....	(excl GST)
Infrastructure on Parks……	$.....	(excl GST)
Total Infrastructure to vest……	$.....	(excl GST)
GST @ 0%.....	$ 0.00	
INVOICE TOTAL (Land & Infrastructure)……	$.....	

SUBDIVIDER'S/DEVELOPER'S INVOICE
NOT REGISTERED FOR GST

(Name) .....

(Address): .....

.....

Date: .....

Issued to: **WAITAKERE CITY COUNCIL**

Dr To: ..... (Subdivider/Developer)

For barter with WAITAKERE CITY COUNCIL of roading, reserve, drainage and watermains included in Consent reference number(s) .....

being a subdivision/ development located at .....

Land Transfer Number(s): .....

Land to vest excluding recreation reserves:

Lot No. ....., …….. m^2 at $ .....per m^2 Total $.....(incl GST)
Lot No. ....., …….. m^2 at $ .....per m^2 Total $.....(incl GST)
Lot No. ....., …….. m^2 at $ .....per m^2 Total $.....(incl GST)

Construction Cost of Infrastructure to vest:

Roads. Lot No's.....	$.....	(incl GST)
Water Supply……	$.....	(incl GST)
Wastewater Drainage……..	$.....	(incl GST)
Stormwater Drainage……..	$.....	(incl GST)
Stormwater Devices (eg Pond, Filter etc)……	$.....	(incl GST)
ICT(Information Communications Technology)……..	$.....	(incl GST)
Infrastructure on Parks……	$.....	(incl GST)
TOTAL LAND & INFRASTRUCTURE TO VEST……	$.....	(incl GST)

I/We confirm that for the purpose of the above subdivision/development
I am/We are not registered for GST

_____

Signed

_____

Date