APPENDIX 13 – WAINGAWA STRUCTURE PLAN DESIGN GUIDE

Purpose of Design Guide

This Design Guide has been prepared for the Waingawa Industrial Area to provide direction to the design of future industrial development that helps to achieve an integrated design vision for the area. The guidelines aim to protect and enhance surrounding rural amenity values and to create a cohesive, integrated industrial landscape. Measures are incorporated in the Design Guide to mitigate the potential adverse effects of industrial development, and to provide for opportunities for environmental enhancement during the development of the area.

This Guide recognises the prominent location of the Waingawa Industrial Area (on State Highway 2) and the open and generally exposed rural landscape of its environs. It also recognises that development within the area may have adverse effects on the natural systems within the locality, notably the Waingawa wetland and stream, and encourages ways to protect if not enhance these features and their values.

This Guide also seeks to recognise the need to provide for a wide range of industrial activities that may occur in the Waingawa Industrial Area, with differing development and operational requirements. There is therefore great flexibility in how the elements of this Guideline may be implemented on a specific site-by-site basis.

These guidelines are to be used:

- To provide people with information about the environmental needs and requirements for the Waingawa Industrial Area
- To provide both general and technical information for planning and design consultants in preparing or assessing development plans, design statements and consents
- To provide decision-makers with the necessary information to guide their assessment of development proposals
- To build on to and add greater depth of understanding and meaning to the Waingawa Industrial Area design objectives

The Design Guide is to be read in conjunction with the Structure Plan prepared for the Waingawa Industrial Area, and other supplementary information.

Design & Planning Objectives

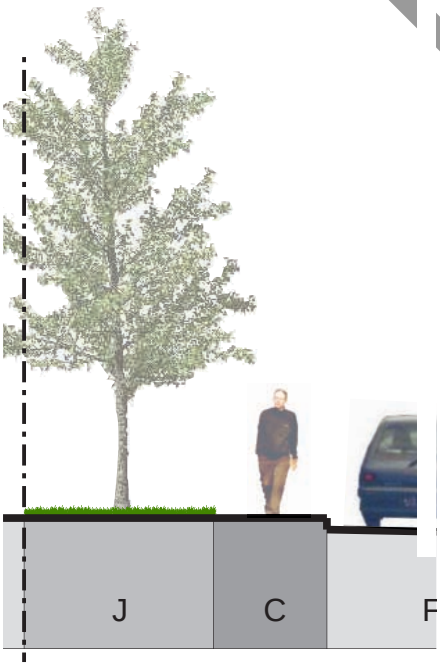
- Provide flexible opportunities for industrial development
- Work with the rural character and pattern of the land
- Protect and enhance natural assets
- Promote social interaction
- Promote a cohesive identity
- Protect adjoining properties and amenity values of those living in the rural area

This design guide has been developed to ensure not only a consistent and coordinated environment is achieved in terms of the urban form, landscape and servicing but that development is structured flexibly, allowing for variable future needs and opportunities within this area.

Design guidance in provided to address the following aspects:

- Pedestrian & Vehicle Access
- Infrastructure & Engineering
- Protection of Natural Assets
- Site Development
- Landscape Treatment

Pedestrian & Vehicle Access



PEDESTRIAN ACCESS

Pedestrian and cycle access is to be provided throughout the site in the form of footways along all primary and secondary access roads, and cycle paths along all primary access roads. Internal footpaths and cycle paths are to be connected with local linkages or paths outside the industrial area where appropriate.

The main pedestrian entrance to each building shall be clearly visible and lit.

Bicycle racks or enclosed bicycle parking for employees and visitors are encouraged.

All footpaths and cycle paths shall be a minimum width of 1.5m, and clearly marked and defined as visibly separate.

Along primary access roads (type T1) there is to be provision of footways and cycle paths on both sides of the carriageway, divided by a minimum 1m wide landscape strip that includes street tree planting at 10m intervals.

Along secondary access roads there is to be provision of footways to one side of the carriageway.

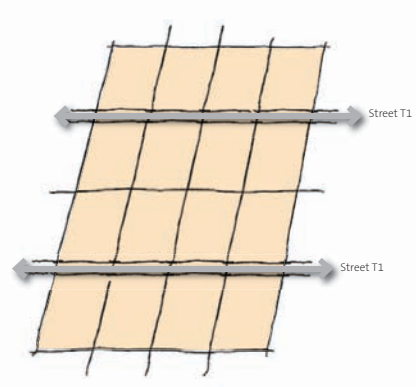
VEHICLE ACCESS

There shall be a road hierarchy distinguishing between primary access roads, secondary access roads, and service lanes within the Waingawa Industrial area. The different road types are to be distinguished by their total formation width, which shall comprise a motor vehicle carriageway, car parking, pedestrian access, berms and street tree planting. Road layout shall be in general accordance with the Structure Plan. All primary access roads shall provide for a continuous circulation loop within the Waingawa Industrial Area, and shall ensure connection across property boundaries as appropriate.

Secondary Access roads are shown indicatively on the Structure Plan; notwithstanding their location, such roads should be planned to connect to a primary access road at each end and not form cul-de-sacs. Roading patterns are required to be in general accordance with the landscape pattern of the area, which has a strong northeast-southwest grid characteristic.

Roads should be laid out to ensure maximum flexibility for subdivision into a range of lot sizes to cater for both large and small industries whilst future proofing the ability for the Waingawa

Pedestrian & Vehicle Access

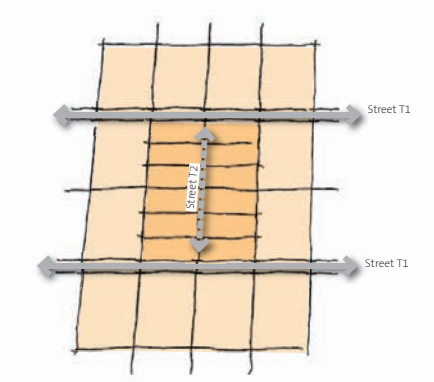


area to accommodate new activities, particularly where they link to future potential development. Small lots should be clustered together, with access from secondary roads in preference to primary access roads.

Service lanes are to be designed and designated for servicing and trade access only.

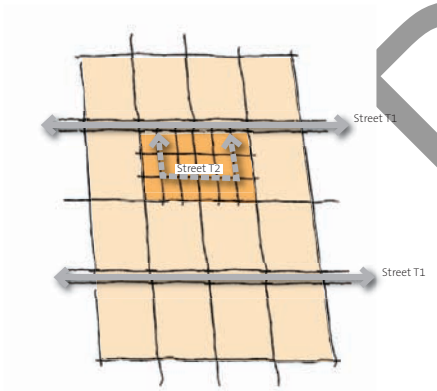
Driveways are to be shared between neighbouring lots where appropriate.

All truck manoeuvring areas are to be located fully within each individual lot. A minimum of two road entry/exit points must be provided, unless there is a shared access arrangement between properties.



The total road reserve of primary access roads (T1) is to be a minimum of 20m width, and shall comprise 1.5m wide footpaths, street tree planting, a cycle path and 2.5m parallel car parking on both sides of a minimum 7.4m wide vehicle carriageway.

The total road reserve of secondary access roads (T2) is to be 17.5m wide, and shall comprise a 2.5m landscape berm, a footpath and 2.5m wide parallel car parking on one side of a 7.4m wide vehicle carriageway, as well as a 4m wide landscape berm on the other side of the carriageway. Street trees on both sides of the road shall be either in the form of individual plantings at alternating centres of 7.5m along the road (i.e., at 15m intervals on one side), or as continuous shelter belts as indicated on the Structure Plan. Refer Appendix 1 of the Design Guide.



One vehicular access point to each lot is allowed for and these must be from internal roads only. A second access point to each lot is permitted from the opposite side of the lot to the main access, along a service lane.

Vehicular driveways shall be no more than 10m wide generally, but no more than 7m where heavy truck traffic is not expected.

Unless otherwise specified by this Guideline, all roads, parking and access points need to comply with Appendix 5 of the Wairarapa Combined District Plan.

Infrastructure & Engineering

LIGHTING
All light fittings shall consider minimizing glare and light pollution to adjoining properties, buildings, roads, and the night sky.

The quality of fixtures, fittings and lighting poles shall match the quality of the building design. Metal halide (white) lighting is recommended. High pressure sodium (orange) or low pressure sodium (yellow) should not be used

If fluorescent lighting is to be used it must be recessed into the building form. Flashing strobe lighting and exposed neon should not be used.

Infrastructure & Engineering

STORMWATER MANAGEMENT

There is to be a sustainable approach to stormwater management within the Waingawa Industrial Area, with existing drainage channels and streams to be used for stormwater disposal and management, and detention areas and stream margins are to be designed to enhance ecological values and local biodiversity.

A 2m wide stormwater swale is to be provided adjoining one side of primary access roads where appropriate, which are to be used to collect stormwater and divert it to stormwater detention areas.

The first option for stormwater from roofs and hard stand areas is to soakage, with overflows discharging to clearly defined and protected overland flow paths. Where this option is adopted design of the soakage pit/field shall cater for a 10 minute, 10% AEP (1 in 10 year) event and overflow outlet adequately protected from scour. In all other respects design shall comply with the Building Act.

Protection of Natural Assets

QE2 WETLANDS

The freshwater wetland system to the north of the development (the "Waingawa Wetland") has been incorporated into the Structure Plan as an ecological site with regional significance, recognising that development in its immediate vicinity may not only adversely affect its physical characteristics and its ecological values, but also may actually present opportunities to enhance its ecological values.

There shall be a minimum of a 20m wide buffer around the wetland margin to prevent any further encroachment and to define the wetland edge from surrounding development.

A management plan is to be provided when developing lots that include any part of the wetland area identified in the Structure Plan, unless the wetland area is to be vested with the District Council.

In the long-term, increased public access to and around the wetland is to be encouraged and may provide benefits in terms of maintenance, funding, weed control, and replanting.

EXISTING STREAMS

There shall be a greenway to contain and buffer the Waingawa Stream: the indicative width is shown on the Structure Plan. The greenway is to include detention areas for peak stormwater events. Generally, public access to the greenway is to be encouraged, and a secondary road must be located along at least one edge of the greenway, running approximately north/south. Secondary roads running along both edges of the greenway are to be encouraged.

The treatment of the relationship between the secondary road and the greenway are to be as shown on the relevant cross-section for Street Type T2.

Appropriate indigenous riparian planting within the Waingawa Stream Greenway is to be encouraged

The existing modified stream in the western corner of the Waingawa Industrial Area is to be re-diverted to within the 30m wide green buffer and shelterbelt along the boundary with Wiltons Road (the diversion would allow the development and use of this part of the Waingawa Industrial Area).

Protection of Natural Assets

There shall be a minimum of 5m building setback from existing streams not contained with the Waingawa Stream Greenway.

CHARACTER

The character of the surrounding area is open but structured, with rural lifestyle blocks to the west, open pastoral land to the north and south and the Waingawa River to the east. Lines of trees, shelterbelts, roads, fencing and property boundaries lend a strong sense of direction to the land and are intermittently contrasted by natural forms such as the fault line escarpment and watercourses. To promote the integration of development within the Waingawa Industrial Area into the broader landscape, as well as to minimise the effects of large building forms and other industrial characteristics, the following measures are sought:

Existing rows of trees and shelterbelt planting that reinforce the circulation to and from SH2 are to be retained or replaced with additional tree and shelter planting that will visually break up the Waingawa Industrial Area, providing elements of screening and a sense of openness whilst relating form back to the natural grain of the landscape

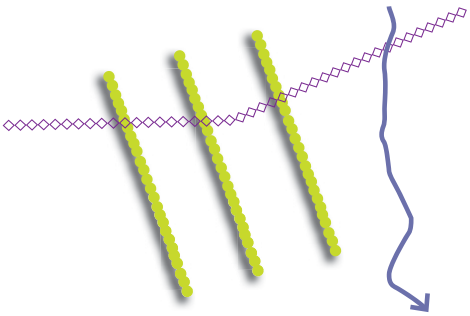
Additional shelterbelts and landscape buffer area are to be provided in general accordance with the structure plan.

EXISTING TREES

The existing Group of Bartrum's Oak trees (Quercus x hetrophylla Regis) along Norman Avenue are considered to provide a high degree of landscape amenity. A group of the 63 healthiest trees have been identified and registered with the Royal New Zealand Institute of Horticulture as notable (registration No. 255). This group is also recognised and protected within the District Plan (TC1).

Valuable characteristic include a rarity in New Zealand of the species, the combined group value and avenue arrangement. These trees and supplements to ensure a future continuation/ succession of the avenue are to be retained and incorporated sensitively into any development or roading , in a manner that ensures its future viability within an industrial environment.

Protection of Natural Assets



An open space corridor of 60m along Norman Avenue is proposed to contain the trees and provide a boulevard linking SH2 to the wetlands as a greenway on the structure plan. This area shall be planned and designed as a reserve. Additional planting of Bartrum's Oak will enhance this asset.

The retention and enhancement of existing shelter belts along northwest-southeast alignments and their incorporation into subdivision layouts is required, while the incorporation of existing trees into subdivision layouts as features or focal points is to be encouraged (refer to Structure Plan for location).

The row of existing shelter trees along the edge of Wiltons Road is to be retained and enhanced by supplementary tree planting as indicated on the Structure Plan.

Site and Location

GRADING AND DRAINAGE

Modifications to finished grades and any overland flow paths are to be minimised.

Benching of land for building platforms that leaves terracing or retaining visible to public areas should be avoided; where level platforms and stepped landforms are required they should be evenly graded back to existing levels in natural forms in character with the surrounding landscape. Banks should have a maximum 1:4 slope and be planted.

On-site stormwater systems shall be provided where calculated stormwater discharges from impermeable surfaces is greater than the permitted parameters (refer to infrastructure section). On-site stormwater retention and cleansing systems are to be connected to the reticulated stormwater system ensuring all discharged water from the site is clean.

Where possible, stormwater retention measures should be incorporated into roof-top and site drainage systems. Roof-top water should ideally be captured and stored for irrigation and other purposes to reduce water demand and also peak flows in the reticulated stormwater and storage system.

Site and Location

The design and operation of stormwater systems to ensure that only clean surface water runoff flows into the common stormwater swale and water bodies. Vegetated bio swales and other practical ways of filtering out sediment and impurities are to be encouraged.

CAR PARKING AND SERVICE AREAS

On-site car parking must be safe and convenient within an efficient internal circulation pattern. All outdoor car parking areas and service lanes are to be managed and concealed as much as possible from street view by good building siting, and, where needed, using selected planting and hard landscaping.

car park screening

Loading and unloading service entrances and lanes are not to be visually dominant from State Highway 2, Wiltons Road, Norfolk Road, or internal streets, and generally should be located at the side or rear of buildings.

Outdoor storage and rubbish areas shall be suitably screened from public view.

Maximum site coverage for car parking and service areas (not including storage / service areas associated with commercial operation) is 25%.

Landscape

A qualified landscape/horticultural professional or experienced landscape specialist must be consulted to ensure appropriately designed proposals are prepared as required, particularly for proposed public areas (such as roads, greenways) or for landscaping used to screen or buffer the industrial area from public areas or rurally zoned properties.

PLANTING

All on-lot planting should be designed and selected to project a high quality image matching the overall objectives for Waingawa Industrial Area. Species selection shall reflect the overall design and use, being appropriate to the climatic and contextual conditions.

native species appropriate to the climate

Simple large scale robust planting design is encouraged as opposed to smaller species groupings of 'garden' character. Where appropriate, planting should reinforce the legibility of the site layout: for example, to identify entrances.

The inclusion of climbing plants to create 'green walls' is encouraged to appropriate building façades.

simple robust planting design

All trees are to be planted at a minimum size of 95Pb. They are to be planted and guyed in accordance with horticultural best practice. All Trees shall include a 1.2m dia mulch surround or adequate mowing strip to prevent damage from adjacent grass cutting operations.

All new trees are to be adequately protected from strong winds during establishment in a method that will allow adjustment to the environment i.e. semi open screening not fully enclosed. Species selected for windy locations should be suitable for the conditions.

Where landforms or bunding is utilised as screening particularly within buffer areas, trees should not be planted on top of the bunds but either in front or behind to reduce the likelihood of damage and growth in an irregular form by way of the strong prevailing winds.

On-site shrub and groundcover areas shall have a minimum width of 1.5m and a maximum width of 5m (excluding buffer areas). The use of mulch is encouraged to prevent weed growth. Planting densities should reflect good horticultural practice in accordance with each species.

Landscape

Planting specifications should include information on topsoil, fertilizers, plant quality, wind protection, and ground preparation to reflect landscape industry best practice.

Planting areas must be specified with adequate topsoil depths, typically:

- 1-1.5m for trees
- 600mm for hedges
- 450mm for shrubs
- 300mm for groundcover
- 150mm for lawn

Preferred species are listed in the Recommended Plant Species List.

MAINTENANCE

On-site landscape areas along roads shall be planted with a combination of trees, ground cover, and grass. Species appropriate to the climatic and contextual conditions are required. Irrigation or provision of a nearby hose connection is recommended along building frontages. All planting is to be adequately maintained and watered during first 2 years establishment.

timber screening

All hard and soft landscape visible to public areas must be maintained in good order. Any plant materials or trees that do not survive must be replaced by the property owner / leaser on an ongoing basis.

FENCES AND SCREENING

A buffer strip of 10m is required between lot boundaries to any boundary with State Highway 2 or adjoining Rural Zoned land in the form of a green buffer, planted to provide visual screening.

A buffer strip of 30m is required from lot boundaries to the Wiltons Road boundary in the form of a green buffer to be planted to provide visual screening.

Parking and loading, container storage, rubbish and recycling, transformers and all outdoor storage areas shall be screened from adjacent roads, public areas and State Highway 2.

Solid fences are to be avoided unless the lengths are shorter than 5m or if used as screening for outdoor storage. Generally, wire mesh or some other form of 'open' intervisible fencing is to be provided.

Fences, walls and other structures exceeding 1.2m shall not be located on any road frontage. Fences, walls and screens higher than 3m will not be permitted, unless as wire security fencing at the rear or side boundaries. Any security fencing to the front of lots must be set back a minimum 5m from the boundary. Where visible from the street, all security fencing shall be carefully designed in combination with planting to address visual effects on the street.

Ecologically Sustainable Development (ESD)

Building and site design should incorporate environmentally sustainable design initiatives and these will be an accepted feature of the external design and appearance of buildings.

All building owners and developers are encouraged to co-operate with neighbouring building owners to find synergies to allow exchange of energy / combine water recycling services or other natural resource use savings.

Recommended Plant Species







STREET TREES

Road Type 1 Options:

Fraxinus angustifolia 'Raywood'.	Claret Ash (north of railway)
Fraxinus Ornus.	Manna Ash (north of railway)
Northofagus fusca	Red Beech (south of railway)
Quercus hetrophylla	Bartrams Oak (Norman Avenue)
Quercus palustris	Pin Oak (Norman Avenue in lieu of of Bartrams Oak if no specimens propagated from the existing seed source viable)

Road Type 2 Options:

Alnus cordata	Alder
Gleditsia tricanthus inermis	Honey locust
Banksia integrifolia	Banksia

SHELTER BELTS

Populus Sp. Where running northwest-south east as shelter belts

TALL TREES (Buffer Planting)

Alectyron excelsa	Titoki
Knightia excelsa	Rewarewa
Podocarpus totara	Totara

TREES AND TALL SHRUBS (Greenway and Buffer Planting)

Kunzea ericoides	Kanuka
Leptospermum scoparium	Manuka
Pittospermum eugenoides	Lemonwood / Tarata
Plagianthus regius	Ribbonwood
Pseudopanax arboreus	Five-Finger
Pseudopanax lessonii	Houpara
Sophora microphylla	Kowhai
Cortaderia fulvida	Toetoe

SHRUBS (Greenway and Buffer Planting)

Anemanthele lessoniana	Pheasant's Tail Grass
Astelia fragrans	Bush Flax / Kakaha
Chionochloa flavicans	Miniature Toetoe
Coprosma species	
Corokia species	
Juncus pallidus	Pale Rush
Myrsine australis	Mapou
Olearia paniculata	Akiraho
Phormium cookianum	Mountain Flax
Phormium tenax	Harakeke Flax

GROUNDCOVER

Astelia fragrans	Bush Flax / Kakaha
Carex species	Sedge
Phormium tenax	Harakeke Flax
Poa cita	Silver Tussock

PLANTED DETENTION SWALES / GREENWAY

Astelia fragrans	Bush Flax / Kakaha
Carex species	Sedges
Coprosma species	
Cordyline australis	Cabbagetree / Ti Kouka
Cortaderia richardii	Toetoe
Juncus effusus	
Phormium tenax	Harakeke Flax
Plagianthus regius	Ribbonwood
Sophora microphylla	Kowhai
Sophora tetraptera	Kowhai

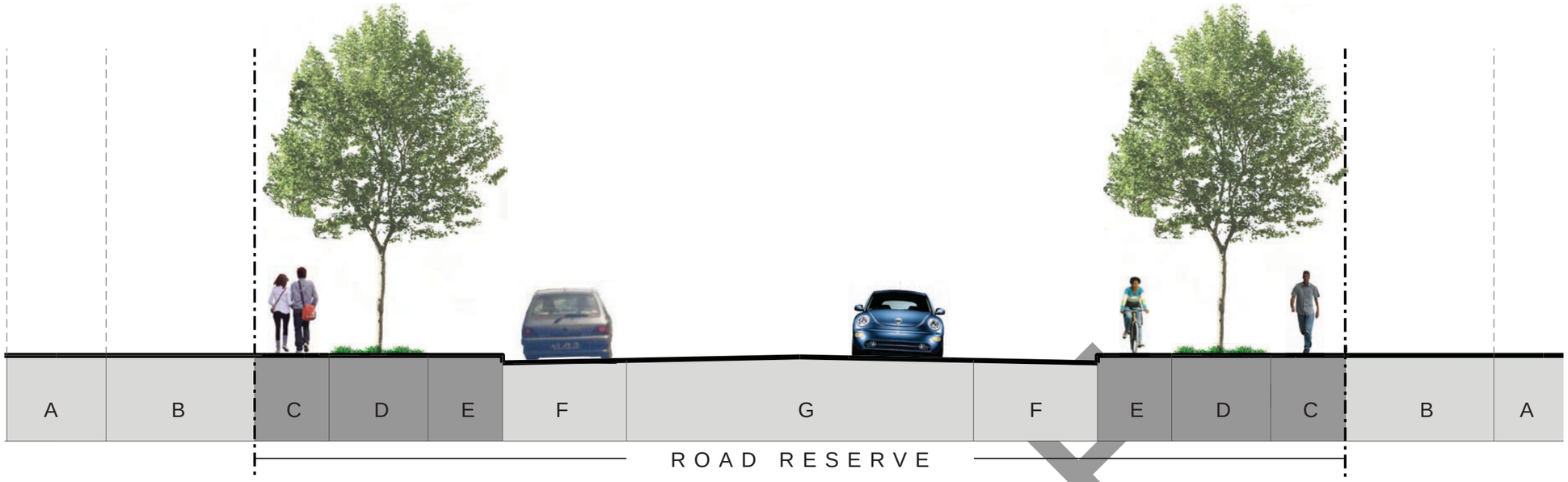
APPENDIX 1 – ROAD CROSS SECTION DRAWINGS

Road Sections

Drawing LA-SP-003
Revision 03
Scale: 1:100 @ A3

Street Type T1 - Primary Access / Industrial Distributor

12m carriageway inc. parking to both sides



Note:

Tree root barriers are required to all street trees to avoid service / construction conflicts.

Carriageway in accordance with NZS 4404:2004

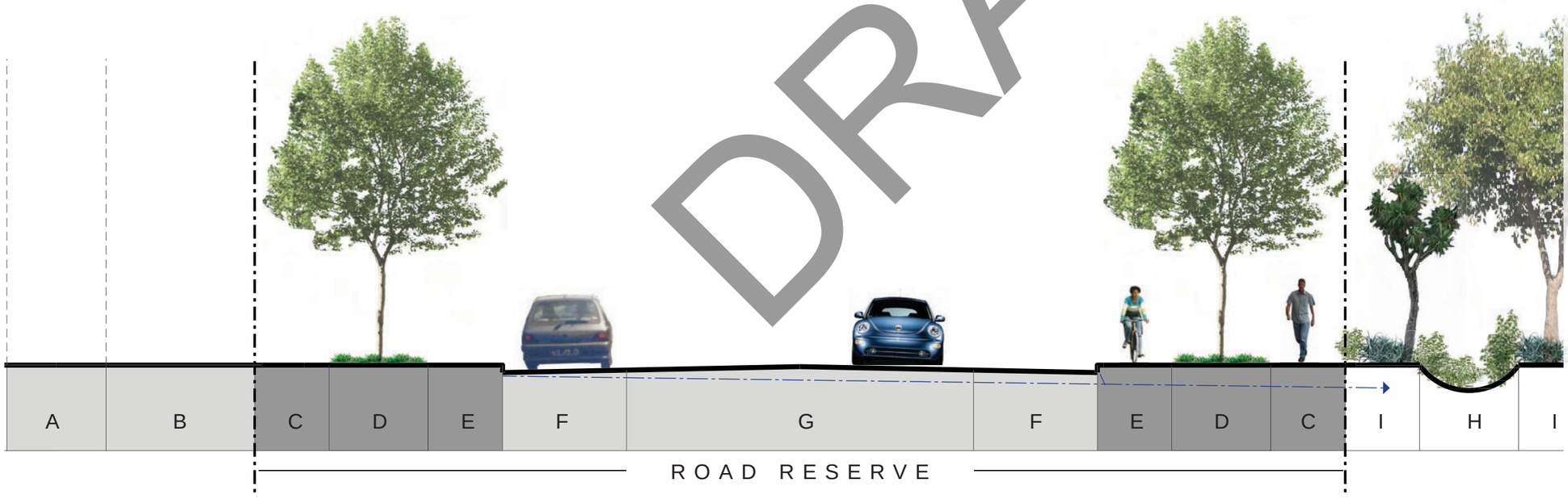
Parking lanes to be omitted on all street corners & 90 degree bends.

A - building frontage zone
B - 3m landscape set back
C - 1.5m pedestrian footway
D - 2m berm with clear stem street trees @ 10m centres
E - 1.5m cycle lane
F - 2.5m parking lane / services zone
G - 7m carriageway (12m inc. parking lanes)

total road reserve dimension - 22m

Street Type T1A - Primary Access / Industrial Distributor with Stormwater Swale

12m carriageway inc. parking to both sides



A - building frontage zone
B - 3m landscape set back
C - 1.5m pedestrian footway
D - 2m berm with clear stem street trees @ 10m centres
E - 1.5m cycle lane
F - 2.5m parking lane / services zone
G - 7m carriageway (12m inc. parking lanes)
H - stormwater swale
I - landscape buffer / berm

total road reserve dimension - 22m

Waingawa Structure Plan

Reference: W07151

April 2008

Prepared for Carterton District Council by Boffa Miskell

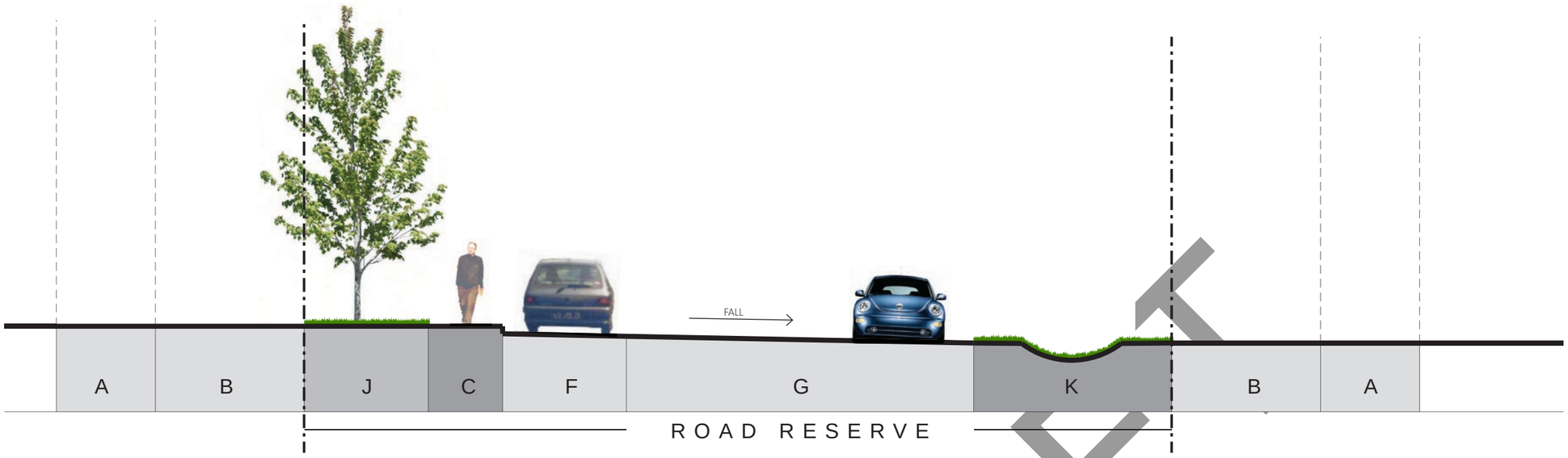
Reference: W07151_RS_Graphics/indesign

Road Sections

Drawing LA-SP-004
Revision 04
Scale: 1:100 @ A3

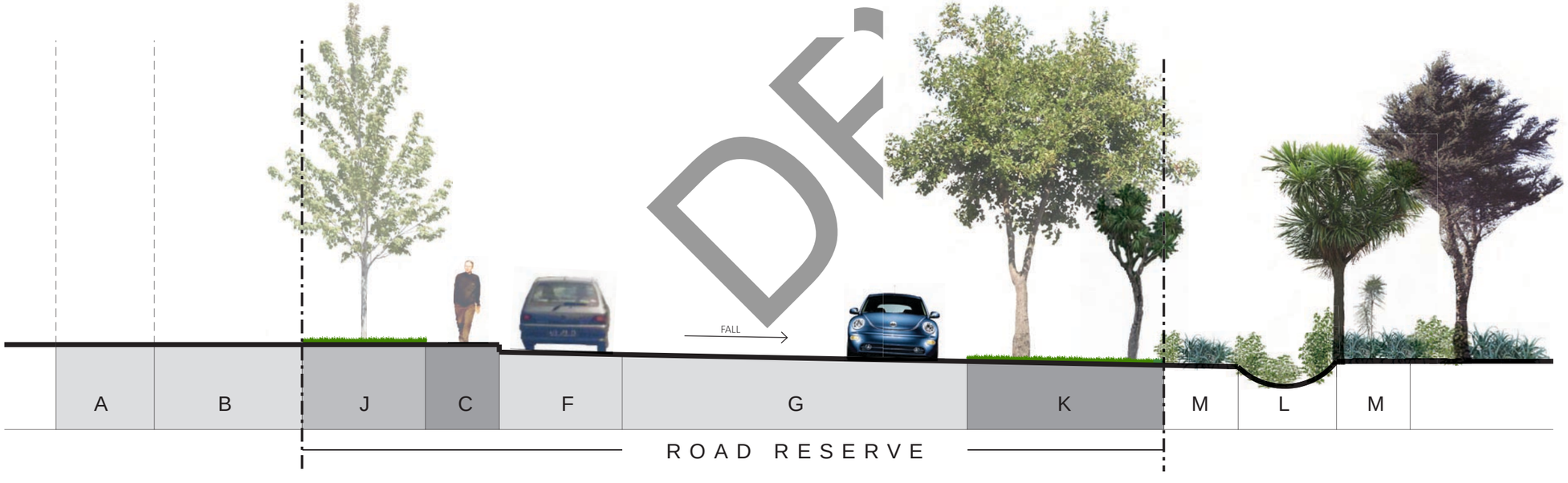
Street Type T2 - Secondary Access / Local Industrial

9.5m carriageway inc. parking to one side



Street Type T2A - Secondary Access / Local Industrial with Adjoining Greenway

9.5m carriageway inc. parking to one side



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Tree root barriers are required to all street trees to avoid service / construction conflicts.

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Parking lanes to be omitted on all street corners & 90 degree bends.

A - building frontage zone
B - 3m landscape set back
C - 1.5m pedestrian footway
E - 1.5m cycle lane
F - 2.5m parking lane / services zone
G - 7m carriageway
(12m inc. parking lanes)
J - 2.5m landscape berm with clear stem street trees @ 10m centres
K - 4m landscape berm

total road reserve dimension - 17.5m

A - building frontage zone
B - 3m landscape set back
C - 1.5m pedestrian footway
E - 1.5m cycle lane
F - 2.5m parking lane / services zone
G - 7m carriageway
(12m inc. parking lanes)
J - 2.5m landscape berm with clear stem street trees @ 10m centres
K - 4m landscape berm
L - existing stream/drainage channel
M - greenway reserve

total road reserve dimension - 17.5m

Waingawa Structure Plan

Reference: W07151

April 2008

Prepared for Carterton District Council by Boffa Miskell

Reference: W07151_RS_Graphics/indesign