

Thursday, 18 July 2024

Te Hui o Te Kaunihera ā-Rohe o Heretaunga
Hastings District Council
Hearings Committee Meeting

Kaupapataka

Attachments - Volume 1

(Oderings Nurseries CHCH Limited - 55 and 57 Brookvale Road, H Nth)

Te Rā Hui:
Meeting date: **Thursday, 18 July 2024**

Te Wā:
Time: **9.30am**

Te Wāhi:
Venue: **Council Chamber
Ground Floor
Civic Administration Building
Lyndon Road East
Hastings**

ITEM	SUBJECT	PAGE
------	---------	------

2.	ODERINGS NURSERIES CHCH LIMITED - RESOURCE CONSENT APPLICATION FOR RESIDENTIAL DEVELOPMENT OF 55 AND 57 BROOKVALE ROAD, HAVELOCK NORTH (RMA20230145)	
----	---	--

<u>Document 2</u>	Containing these attachments	
Attachment B	Application & Assessment of Environmental Effects	Pg 3
Attachment C	Record of Title	Pg 53
Attachment D	Scheme Plan	Pg 55
Attachment E	Infrastructure Report	Pg 61
Attachment F	Landscape & Visual Assessment	Pg 123
Attachment G	Traffic Assessment	Pg 173

[Subject]

Assessment of Environmental Effects



55 Brookvale Road, Havelock North

Proposal to construct 35 new dwellings and associated subdivision

Oderings Nurseries ChCh Limited

30 May 2023

Attachment B



1

30 May 2023

Details and Version Control

Job	
Number	202204005
Client	Oderings Nurseries ChCh Limited
Contributors	
Author	David Clark
Reviewer	Joe Gray
Approver	Joe Gray
Version Control	
Date	Version
25/05/2023	Draft for Review
30/05/2023	Final for Lodgement

Disclaimer

This report was prepared for Oderings Nurseries ChCh Limited. No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other person.

This disclaimer shall apply withstanding that this report may be made available to other persons for an application for permission or approval or to fulfil a legal requirement.

Acknowledgement of Submission



David Clark
Planner, Saddleback Planning Limited



[Subject]

Assessment of Environmental Effects



TABLE OF CONTENTS

1	Applicant and Site Details	5
2	Introduction	6
3	Site	7
4	Surrounding Environment	9
5	Proposal.....	12
6	Consultation	16
7	Reasons for the Application	18
8	Assessment of Environmental Effects.....	19
9	Notification Assessment.....	29
10	Statutory Assessment	31
11	Conclusion	38
Appendix A	Records of Title	
Appendix B	Scheme Plan	
Appendix C	Infrastructure Report	
Appendix D	Landscape and Visual Assessment	
Appendix E	Traffic Assessment	
Appendix F	Contaminated Land Assessment	
Appendix G	Urban Design Statement	
Appendix H	Soil Assessment	



[Subject]

Assessment of Environmental Effects



Appendix I Masterplan

Appendix J Economic Assessment



[Subject]

Assessment of Environmental Effects



1 APPLICANT AND SITE DETAILS

Applicant Name:	Oderings Nurseries CHCH Limited
Site Address:	55 & 57 Brookvale Road, Havelock North 4130
Legal Description:	Lot 1 DP 8274, Lot 2 DP 311724 and Section 10 SO 330242
Site Area:	2.415 ha
Plans:	Hastings District Plan (HDP)
Zoning:	Plains Production Zone
Designations:	-



[Subject]

Assessment of Environmental Effects



2 INTRODUCTION

In 2022 Oderings Nurseries ChCh Limited ('the applicant') sought to advance a resource consent application for a residential development at 55 & 57 Brookvale Road, Havelock North ('the site') via the Covid-19 fast track consenting pathway. The Ministry for the Environment declined to process the application, preferring for the application to pass through the normal resource consent process.

Due to the anomalous rural zoning of the site, a plan change application was then considered, however to progress the development in a timely manner, the applicant decided to lodge a resource consent application while potentially lodging a 'clean up' plan change application in the future.

The applicant seeks resource consent to establish 35 dwellings at the site as well as undertake the necessary enabling works to undertake this development. Resource consent is also sought to subdivide around these dwellings creating 35 freehold lots as well as commonly owned access lots.



[Subject]

Assessment of Environmental Effects



SITE

2.1 Site Description



Figure 1: Subject site (Source: Hastings District Council Map Viewer).

The site in question comprises two lots owned by the applicant at 55 & 57 Brookvale Road.

The site was the previous location of a plant nursery which has been relocated to another site in the Hastings District and is currently occupied by a garden centre and a single residential lot. A resource consent was recently obtained to establish a new café within the garden centre (RMA20220268, 25 July 2022) however the café is yet to be constructed.

While most of the built structures that formerly occupied the site have been removed or demolished most of the site remains impervious and a significant portion of the site area is covered with a thin layer of sealed concrete.



[Subject]

Assessment of Environmental Effects



2.2 Historical activities on site

An investigation of historical imagery undertaken by Environmental Solutions Limited (see Appendix F) has shown that the site was originally used for pastoral land uses before being developed into a small orchard and market garden in the 1960s. Between 1969 and 1972 the site was developed with a number of glass and shade houses, and between 1972 and 1994 the shade houses continued to expand across the site. By 1999 the site had been redeveloped into a garden centre. Between 1999 and 2004 the shade houses expanded to cover the full extent of the site. No significant changes occurred on site until the nursery operating onsite started to be dissembled and relocated to a new site at Gimblett Road from 2019.

2.3 Other Activities on Site Not Part of the Application

The application relates to the proposed and not yet consented residential development on site and the proposed carpark that will service the adjacent garden centre and café. As such the existing/consented garden centre and café are outside the scope of this application and are either existing activities or activities legally approved under resource consent.

2.4 Records of Title and Interest

Copies of the record of title of the site are attached as Appendix A.



[Subject]

Assessment of Environmental Effects



3 SURROUNDING ENVIRONMENT

3.1 Surrounding Environment Description



Figure 2: Surrounding Environment (Source: Hastings District Council Map Viewer).

The site is located on the northern fringe of the town of Havelock North. The area south of the site is dominated by residential activities, pocket parks and recreation areas and to the north-east a new residential development approved by resource consent is currently being constructed. Across the western boundary the site sits adjacent to sports fields and to the north the area transitions to vineyards and farmland.

3.2 Natural Environment

Much of the surrounding environment is highly modified, the only natural features of note in the vicinity are the open fields associated with Guthrie Park and the Karituwhenua Stream which passes by the site to the north and east, although the Karituwhenua Stream where it passes the site is highly modified.



[Subject]

Assessment of Environmental Effects

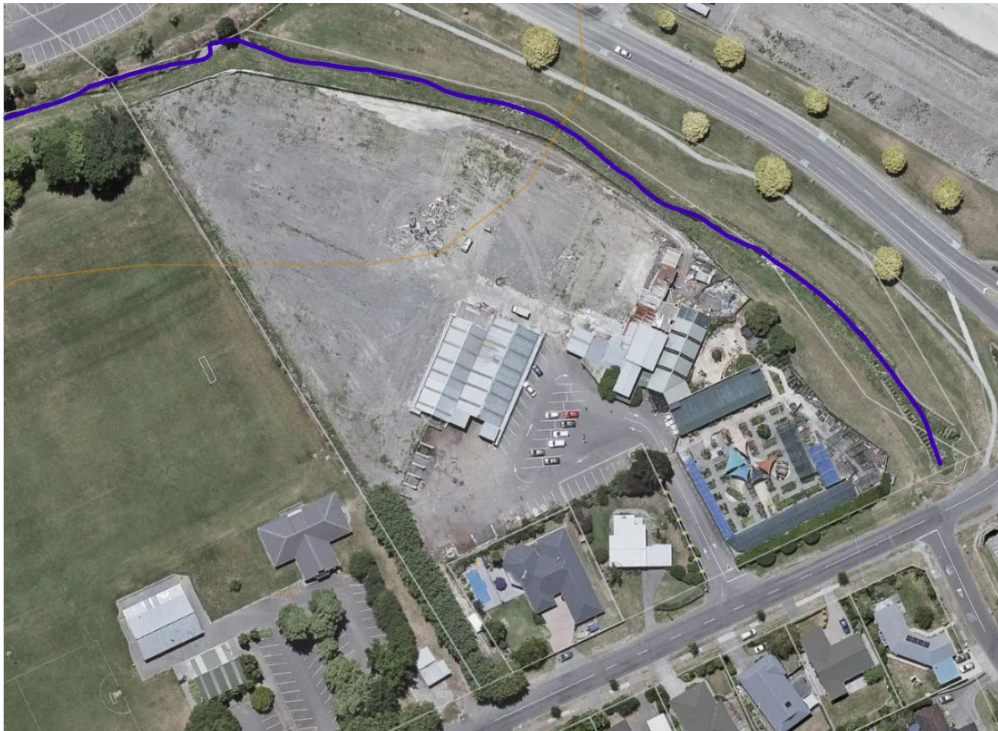


Figure 3: Karituwhenua Stream marked in blue (Source: Hastings District Council Map Viewer).

3.3 Built Environment

While the site is surrounded across its north, east and west boundaries by large areas of undeveloped open space, across the southern boundary the site adjoins urban development within the town of Havelock North. This existing built development is characterised by single-storey detached dwellings on landscaped sites. It should be noted that the area to the east of the site being developed as a residential subdivision.



[Subject]

Assessment of Environmental Effects



3.4 Plan Context



Figure 4. Plan context (Source: Hastings District Council Map Viewer).

Under the HDP the surrounding area is zoned Havelock North General Residential Zone to the south, Plains Production Zone to the North and east and Open Space Zone to the west. It should be noted that and the area to the north and east is earmarked for urban development as part of the Heretaunga Plains Urban Development Strategy 2017 (HPUDS) (see Figure 3 below).

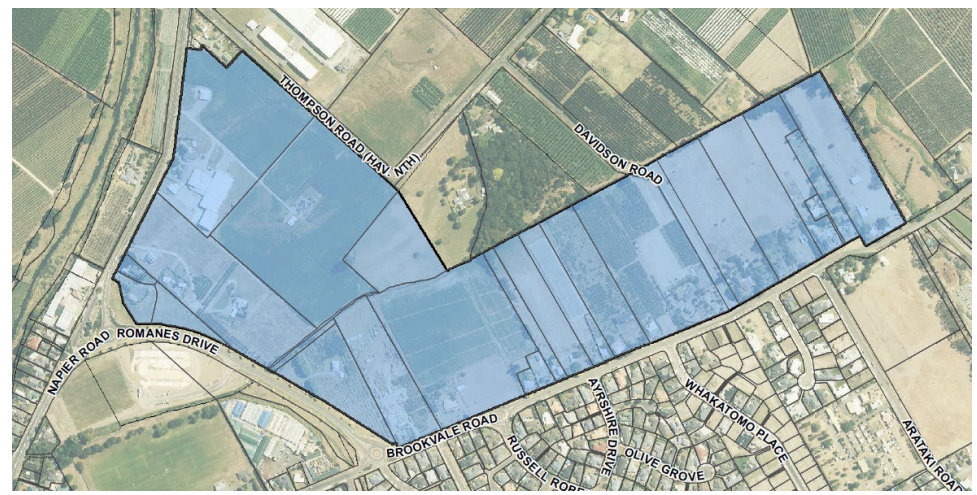


Figure 5: Future urban growth in Havelock North marked in blue (Source: HPUDS).



[Subject]

Assessment of Environmental Effects



4 PROPOSAL



Figure 6: Masterplan.

The part of the site that is proposed to be redeveloped was formerly occupied by a plant nursery which has been relocated to a site at Gimblett Road, Hastings. As such most of the site is currently unoccupied and the applicant proposes to redevelop the available land with 35 new residential dwellings in a range of typologies including:

- Five two-storey fully detached dwellings;
- Three two-storey terrace style dwellings;
- Four two-storey dwellings in two duplex structures;
- Eighteen two-storey zero-lot dwellings;
- Four single-storey zero-lot dwellings; and,



[Subject]

Assessment of Environmental Effects



- One bespoke solution (single storey facing Brookvale Drive).

After construction, it is proposed to subdivide around these dwellings creating 35 residential lots, as well as commonly owned access lots and a separate lot for the garden centre and car park.

The balance of the site will be retained for the continued operation of the existing garden centre and a new café. This garden centre and café do not form part of the proposal (other than the car park) and consent for garden centre has been obtained separately, with the garden centre having existing use rights. However, the new carpark that will be constructed to service the garden centre and new café is proposed to be used as after-hours carparking for visitors to the proposed residential development. As such, this additional use is considered part of the proposal.

4.1 Access and car parking

Vehicle access to the proposed development will be via an entryway off Brookvale Road. An accessway will run north from the vehicle crossing before branching off at a roundabout to the café and to the residential accessways. The entry road will have an 18m legal width and a 6.4m carriageway and the remaining private roads will range in legal width and carriageway width (8m-14.5m and 4.5m-6m respectively).

Pedestrian access will be provided throughout the proposed development. Separated pedestrian pathways will provide access between Guthrie Park, the garden centre and Brookvale Road. A shared access is proposed beyond the roundabout that will service units 4-35. Within the shared access a pedestrian area will be demarcated but will be at the same grade as the nominated vehicle access area.

A total of 8 car parks are proposed within the private road and 43 car parks are available within the garden centre car park. All the proposed dwellings will have onsite carparks in attached garages or parking pads.

4.2 Stormwater Management

The Infrastructure Report attached as Appendix C includes a stormwater design and strategy to attenuate and treat stormwater from the proposed development. All stormwater from the proposed development will continue to be directed to the Karituwhenua Stream.



[Subject]

Assessment of Environmental Effects



The post-development flow will be less than the pre-development stormwater flow as the site is currently in hardstand as a result of the prior nursery. The proposed development will result in a total impervious footprint of 1.570ha, which is lower than the existing impervious area of approximately 1.877ha.

To treat gross pollutants within the stormwater new raingardens are proposed within landscaping areas in the northern access lot and eastern side of the car park. A new underground proprietary device (Hynds Up-Flo Filter) is proposed at the northern end of the private road to treat runoff from roads, paths and driveways etc.

Maintenance obligations will be met via a residents association or similar entity.

4.3 Flood Mitigation

The HBRC Hazard maps indicate that there is a risk of inundation within the 1 in 50-year event and raising levels of the site has the potential to reduce the flood storage capacity of the Karituwhenua Stream. Despite this being a negligible effect, to ensure that the Karituwhenua Stream maintains its current flood storage capacity, it is proposed to cut existing ground material from the southern bank of the stream at the northern boundary.

To further ensure any flood risks are avoided, dwellings 10-18 will also have a minimum floor level of 200mm above the identified flood level. All the remaining dwellings will be outside of the identified flood risk area.

4.4 Wastewater and Water servicing

The Infrastructure Report attached includes calculations to identify wastewater and water demand for the proposed development and sets out the connections proposed. Wastewater will be directed to a new pump station in the north of the site and then a new rising main will be established along the boundary of Guthrie Park that will connect to existing wastewater reticulation within Brookvale Road.

Council has recently engaged a third party to undertake wastewater and potable water modelling for the wider catchment to understand if there are any constraints within the public system. It is understood that this information will be available soon. If the Council modelling indicates that there are capacity constraints within the wastewater networks, then provisions for wastewater mitigation can be



[Subject]

Assessment of Environmental Effects



addressed as a condition of consent. It is understood that the capacity in the local water supply network can accommodate the proposed development.

4.5 Earthworks

Due to the relatively flat topography earthworks will be generally limited to:

- Cuts of up to 1.3m and fill of up to 1.0m
- A total cut volume of 1,236m³ and a total fill volume of 1,076m³ (subject to the volume of unsuitable material discovered); and
- A total earthworks footprint of 1.44ha.

The proposed earthworks include establishment of infrastructure within Guthrie Park and stormwater outfalls to the Karituwhenua Stream. Typical designs of the outfalls are provided within the infrastructure report attached as Appendix C.

The earthworks will be carried out in accordance with a management plan and erosion and sediment control plan that will be prepared following engagement of a civil contractor.

4.6 Subdivision

Subsequent to construction of the development a subdivision is proposed creating freehold residential lots, COALs, a commercial lot to accommodate the garden centre and lots to vest in council.

The main entry to the site, including the mountable roundabout, is to be vested as road. The remaining sections of road will be jointly owned and maintained by the owners and a Residents Association (or similar) will be formed to enable the ongoing function of the jointly owned services. These mechanisms are becoming increasingly common, and are also a way to assist with providing a sense of community across the residents.

A public pedestrian access easement is proposed to allow access to Guthrie Park, adjacent to the Bridge Club. The park entry to the north of the site will be for residents only and signage will be established to direct members of the public to the south.

No staging of the subdivision is proposed.



[Subject]

Assessment of Environmental Effects



5 CONSULTATION

5.1 Hastings District Council

Discussions about development of the site have been ongoing with HDC staff since early 2022, when an application was made to the Ministry for the Environment to have the application progressed under the COVID-19 Recovery (Fast-track Consenting) Act. The applicant was advised by the Minister to lodge the application with HDC. It is anticipated that this was due to the relatively small scale of the proposal, and the Minister's wish to reserve the Fast-track Consenting process to the larger projects.

Discussions were then progressed with HDC about re-zoning the site from Rural to Residential via a plan change application, however after a number of meetings and discussions the applicant decided that a resource consent application followed by a plan change request was the best course of action in the interest of time.

Council planning, engineering, transport and parks staff have reviewed the masterplan layout and have provided initial feedback which has been incorporated into the final application.

5.2 Hawke's Bay Regional Council

Discussions are underway with Hawkes Bay Regional Council to confirm if the application will trigger stormwater discharge consent under the regional plan. At this stage it is understood that a stormwater discharge consent is not required as the site falls within the catchment of the HDC pending stormwater network discharge consent.

5.3 Mana Whenua

Marei Atapu of Te Taiwhenua o Heretaunga has facilitated a desktop review of archaeological sites within the area and has distributed details of the proposal to representatives of the local marae in the area, including:



[Subject]

Assessment of Environmental Effects



- Matahiwi marae
- Waipatu marae; and
- Ruahapia marae.

A remote meeting was held with Mr Atapu and Waiariki Davis of Waipatu on 24 May 2023. At this stage, no changes have been requested by the parties, however it was agreed that an onsite meeting would be held in early-mid June. The applicant will continue to engage with Mr Atapu and the marae representatives.

5.4 Surrounding landowners

Letters have been distributed to the following parties with plans of the proposed development:

- The neighbours immediately opposite Brookvale Road
- The owner of the land immediately opposite Romanes Drive; and
- The Bridge Club, the Wanderers Football Club, and the BMX club.

None of the neighbours have requested to meet, however the Wanders Football Club have advised that at some stage would like to establish lights within Guthrie Park for the main football field. The applicant responded to the Football Club requesting to meet and discuss further, with an intent to reach an outcome that is acceptable to both parties.

Separate discussions are also underway with the neighbour immediately adjacent at 53 Brookvale Road. Following a meeting at the property in mid-April, the applicant agreed to lower the height of the proposed dwelling within Lot 35 from two-levels to one-level.



[Subject]

Assessment of Environmental Effects



6 REASONS FOR THE APPLICATION

Resource consent is being sought as the proposal triggers reasons for consent under the Hastings District Plan.

6.1 Reasons for Consent

Hastings District Plan

- The proposal involves more than one residential dwelling per site and cannot comply with standard 6.2.6B(a) and is a **non-complying** activity under Rule PP38.
- As required by Table 30.1.6A the minimum lot size in the Plains Production Zone is 12 ha. The proposal involves subdivision creating lots smaller than 12 ha and is a **non-complying** activity under Rule SLD25.
- The proposal involves the removal offsite of greater than 25m³ of soil and is a **discretionary** activity under Rule EM11.

National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011

- The proposal involves soil disturbance on HAIL land greater than the 25m² per 500m² permitted under Regulation 8(3)(c) and is a **controlled** activity under Regulation 9.

6.2 Activity Status

The application therefore seeks resource consent for a **non-complying** activity.



[Subject]

Assessment of Environmental Effects



7 ASSESSMENT OF ENVIRONMENTAL EFFECTS

7.1 Introduction

When considering an application for resource consent, the consent authority must, subject to part 2, have regard to any actual and potential effects on the environment of allowing the activity. In the Act, the term effect includes both adverse and positive effects.

7.2 Permitted Baseline

The permitted baseline is relevant to both the assessment under sections 95A to 95G and section 104 of the RMA, as well as section 104D. Under these sections, Council has a discretion to disregard those effects.

7.3 Receiving Environment

The receiving environment is a mandatory consideration when assessing the potential adverse effects on the environment. The receiving environment beyond the subject site includes permitted activities under the relevant plans, lawfully established activities (via existing use rights or resource consent), and any unimplemented resource consents that are likely to be implemented. The effects of any unimplemented consents on the subject site that are likely to be implemented also form part of this foreseeable receiving environment.

The receiving environment in which the adverse effects of the proposed development has been assessed is described in Section 2 of this report.

7.4 Adverse Effects

Effects on the neighbourhood character

As the site has historically been used as a plant nursery, the proposed development represents a change in use. Furthermore, as the site is zoned Plains Production Zone, the proposed use is a departure from the planned character of the site. These matters have the potential to adversely affect the character of the surrounding area and underlying zone. However:



[Subject]

Assessment of Environmental Effects



- To the south the area has a well-developed residential character that is clearly part of the Havelock North urban area.
- The area to the east is currently being developed as a large residential subdivision, and in the near future this area will form a clear part of the Havelock North urban area.
- The area to the north is earmarked for urban development under the HPUDS and in the medium term can be reasonably anticipated to form part of Havelock North's urban area.
- The area to the west the site is adjacent to a public reserve which is a community facility supporting urban development in Havelock North.
- As the site is surrounded by existing or anticipated residential development and supporting activities, and the proposal is for residential development is generally of a scale and form consistent with existing residential development in the area, the proposal cannot be considered to adversely affect the character of the surrounding area.
- While the proposal is a departure from the character anticipated by the underlying zone, as the area has already transitioned away from this planned character the overall character of the Plains Production Zone will be unaffected by the proposal.
- The Urban Design Statement provided in Appendix G comprehensively details how the development is consistent with, and makes a positive contribution to, the character of the surrounding area.

For the reasons given above, any adverse effects on neighbourhood character will be less than minor.

Physical effects on the locality, including landscape and visual effects

The change in form and intensity of development on site has the potential to give rise to adverse visual and landscape effects on visual receptors within the public domain. However:

- The proposed development is consistent with the existing urban landscape.
- The proposal will involve extensive onsite landscaping which will soften the appearance of the development.
- The proposal is an improvement in terms of the visual amenity values offered by the site. At present the site is occupied by a large hardstand area which offers no visual interest or natural landscape value.



[Subject]

Assessment of Environmental Effects



A specific landscape and visual assessment has been prepared by Narrative Landscape (NL) in support of the application. NL concludes that the scale of built form is considered appropriate in this location and, in conjunction with the retained garden centre, will have an overall positive effect on the wider landscape setting (particularly when compared to the former commercial nursery activity, or its current largely vacant and open state).

In terms of adverse effects, NL notes that:

"The potential adverse landscape effects are Very Low on the majority of locations, with the exception being on the adjacent property of 53 Brookvale Rd which is Low-Moderate. The potential adverse visual effects are Very Low or Low for most locations considered, with a limited area along Romanes Drive and the adjacent property (53 Brookvale Road) being a Low-Moderate effect."

Therefore, I consider that any adverse landscape and visual effects are no more than minor.

Noise effects

The proposal will require minimal earthworks due to the generally flat topography of the site and will not involve any rock breaking activities. Any adverse effects will be less than minor.

Contaminated Land

Historical orcharding and nursery activities on site involved: the use and storage of pesticides; the storage of hydrocarbons; and the potential use of asbestos in built structures. As such, the underlying soils of the site are potentially contaminated with harmful compounds. However, a Detailed Site Investigation report prepared by Environmental Solutions Limited (attached as Appendix F) has found that:

- No asbestos was detected.
- No polycyclic aromatic hydrocarbons were detected.
- No heavy metals were detected in a concentration in excess of the acceptable standard for residential uses.
- While organic compounds were detected, they were not detected at a level which could pose a risk to the health of future occupiers of the site.



[Subject]

Assessment of Environmental Effects



For the reasons given above, the effects of establishing residential activities on contaminated land are considered less than minor.

Effects of earthworks

Standard earthworks management methodologies will be implemented during the temporary works. These will relate to the management of noise, vibration, dust, and construction traffic to ensure any potential adverse effects are managed within the site and not displaced onto the surrounding environment. There will be ample space retained on the site to accommodate necessary construction vehicles and storage of materials.

Due to the flat topography and limit depth of cut and fill, earthworks will be completed over a relatively short period. Erosion and sediment controls will be in place to minimise sediment discharges to the Karitūwhenua Stream.

An earthworks management plan (EMP) will be prepared and implemented prior to works commencing. The EMP will include:

- Earthworks traffic management plan.
- Final erosion and sediment control plan.
- Measures to ensure only clean fill is accepted onsite.
- Measures to manage noise.
- Measures to minimise dust onsite.

For the reasons given above, any adverse effects associated with earthworks will be less than minor.

Effects on Three Waters Infrastructure

Calculations have been provided that demonstrate the demand that the proposed development will generate on water supply infrastructure. From discussions with Council to date, it is understood that the existing public water reticulation has capacity to accommodate the proposed development.

Calculations have also been provided that demonstrate the demand on Council wastewater infrastructure. As noted above, the results of Council wastewater modelling are expected to be available soon. In the event where there is a capacity shortfall, mitigation in the form of onsite wastewater retention can be provided. If necessary, this would involve a small volume of wastewater being retained



[Subject]

Assessment of Environmental Effects



in an underground tank adjacent to the proposed pump station. The discharge of wastewater to the Council reticulation can then be controlled to avoid pressure on the network at peak times. The underground tank would be fitted with controls such as emergency storage and alarms to avoid the risk of any spills.

Because the total impervious area will reduce as a result of the development, there will be a net reduction in the volume of stormwater runoff from the site. Stormwater will continue to be discharged to the Karituwhenua Stream (which forms part of the Council stormwater drainage network) via two new stormwater outfalls. The outfalls will be fitted with riprap aprons to dissipate stormwater flow prior to discharging to the stream. To treat gross pollutants within the stormwater new raingardens are proposed within landscaping areas in the northern access lot and eastern side of the car park. A new underground proprietary device (Hynds Up-Flo Filter) is also proposed at the northern end of the private road to treat runoff from roads, paths and driveways etc.

Overall, any adverse effects on three waters infrastructure can be appropriately mitigated to a less than minor level.

Traffic Effects

The application is supported by a traffic impact assessment prepared by East Cape Consultants (ECC). A summary of the findings from ECC is provided below:

- The incremental traffic generation from the new residential lots is expected to have a negligible effect on the operation of the surrounding network.
- The proposed internal road cross sections are a departure from the District Plan standards but have been shown to appropriately accommodate the needs of light and heavy traffic as well as pedestrians and cyclists.
- The individual lots are expected to provide on-lot parking and additional on-street.

For the reasons given above, any adverse effects on the traffic network and internal operation of the proposed development will be less than minor.

Natural Hazard Effects

The HBRC Hazard maps indicate that there is a risk of inundation within the 1 in 50-year event and raising levels of the site has the potential to reduce the flood storage capacity of the Karituwhenua



[Subject]

Assessment of Environmental Effects



Stream. To ensure that the Karituwhenua Stream maintains its flood storage capacity, it is proposed to cut existing ground material from the southern bank of the stream at the northern boundary. To further ensure any flood risks are avoided, dwellings 10-18 will have a minimum floor level of 200mm above the identified flood level. All the remaining dwellings will be outside of the identified flood risk area.

A geotechnical investigation has also been provided which concludes that the risk of liquefaction and consolidated settlements from the likely building loads are low.

Any adverse effects associated with natural hazards can be appropriately mitigated and are less than minor.

Effects on the productive capacity of the land

As the underlying land of the site has been identified as LUC 2 land within the New Zealand Land Use Resource Inventory, the proposed use of the site has the potential to affect the productive capacity of the site's soils. However, the soil assessment provided within Appendix H has concluded that the site's soils have undergone significant modification and are no longer appropriate for productive use. As such, further modification of the site is not considered to have any impact on the productive capacity of the land. Furthermore, making the site available for urban development lessens the need for new greenfield land outside urban boundaries that can be turned to productive uses.

Positive effects

Visual amenity

At present the site is largely undeveloped. Apart from the existing garden centre and café occupying the south-eastern corner, the site is mostly covered in a layer of concrete with no landscaping or built development. This represents a negative visual outcome in the context of Havelock North's urban landscape and the visual amenity values anticipated in the Plains Production Zone. As such, the proposed extensive landscaping around residential dwellings and throughout the commonly owned areas represents a significant improvement in terms of the visual amenity offered by the site.

Housing provision

The proposal will result in the construction of 35 new residential dwellings which will assist in addressing the shortfall of housing being experienced locally and nationwide.



[Subject]

Assessment of Environmental Effects



Economic effects

An Economic Impact Assessment Prepared by Phil Osbourne of Property Economics Limited has been submitted in support of the application within Appendix J. This report has concluded that the project will render the following economic benefits for the Hawkes Bay economy:

- Just under \$26 million in spending in the Hawkes Bay economy over the four-year development period.
- Contribution of 100 jobs during peak activity and a total employment contribution of 250 full time equivalent years over the development period.
- Increased housing supply will increase competitiveness in the local housing market, resulting in more affordable housing.
- Economies of scale associated with comprehensively designed and implemented development will reduce marginal infrastructure costs.
- The project will support employment levels through the predicted economic downturn and uncertain employment environment of a post-pandemic economy.



[Subject]

Assessment of Environmental Effects



7.5 Adversely affected persons



Figure 7: Plan context (Source: Hastings District Council Map Viewer).

The properties identified in Figure 8 above are adjacent to the site and specific assessment of potential adverse effects on the owners or occupiers of these properties has been provided below. Note that any earthworks, construction, traffic, infrastructure, landscape, or natural hazard effects on adjacent properties are considered to have been adequately assessed in Section 8.4 above. As such, the below assessment covers potential visual effects on surrounding properties based on the Landscape and Visual Assessment provided in Appendix D. Note that the Landscape and Visual Assessment uses an effects scale ranging from very low to very high. For the purposes of this assessment:



[Subject]

Assessment of Environmental Effects



- Any visual effects that are very low or low are considered less than minor.
- Any visual effects that are low-moderate are considered minor.
- Any visual effects that are moderate or greater are considered more than minor.

Guthrie Park (Part Lot 1 DP 1956, Part Section 18 Block IV Te Mata SD, Section 7 SO 330242) – North and West

Guthrie Park has a large shared boundary with the proposed development and has clear views of the site, however:

- The potential adverse visual effects on park users are considered to range from very low to low as park users are not considered sensitive to the proposed built form.
- The proposal is visually integrated with the landscape due to the proposed landscaping.
- The proposal will have a positive interface visual interface with the adjacent park presenting a high-quality urban edge that is an improvement over the old commercial nursery and current vacant hardstand lot.

As such any adverse visual effects on the users of Guthrie Park are considered less than minor.

158 Napier Road (Part Lot 3 DP 28880) and 33 Romanes Drive (Lot 102 DP 563793) – North and East

There are clear views of the development from the properties across Romanes Drive at 158 Napier Road and 33 Romanes Drive, however there are no existing dwellings within the vicinity of the proposed development. The site at 33 Romanes Drive is currently being developed into housing following a recent plan change. The proposed development will not appear overly visually dominant as the future dwellings will be separated by Romanes Drive and the Karituwhenua Stream.

Any adverse effects on persons within properties to the north and east will be no more than minor.

15 Legorne Lane (Lot 1 DP 23150), 54 Brookvale Road (Lot 2 DP 23150) 56 Brookvale Road (Lot 3 DP 23150), 58 Brookvale Road (Lot 4 DP 23150) and 60 Brookvale Road (Lot 5 DP 23150) and 62 Brookvale Road – South

Because the section of the site fronting Brookvale Road currently comprises dwellings and the nursery, the proposed development will not result in a significant change in the neighbour's views across



[Subject]

Assessment of Environmental Effects



Brookvale Road. The only material change along the frontage will be the addition of the proposed dwelling within Lot 35 and replacement of the existing dwelling at 55 Brookvale Road with the proposed dwelling within Lot 2. The proposed landscaping will assist in mitigating the visual impacts on the neighbours opposite also.

It is acknowledged that the proposal will increase the number of vehicles entering and exiting the site, however the traffic activity will not be dissimilar to the former wholesale nursery on the site.

Any adverse effects on persons within properties to the south, opposite Brookvale Road, will be no more than minor.

53 Brookvale Road (Lot 1 DP 311724)

The proposed development will surround the existing dwelling at 53 Brookvale Road to the east, north and west. The indoor and outdoor living areas are located to the on the eastern side of the site and the outdoor area includes a pool in the north-western corner of the site.

As noted above, the applicant has met with the neighbour to present the proposal and discuss the proposed development. The neighbours fundamental concern was visual dominance privacy effects resulting from two-level dwellings on the northern and western boundary. Following the meeting the design was amended so that all dwellings adjacent to the western and northern boundary were limited to one-level to address the neighbours' concerns.

The proposed landscaping, including fencing, will provide additional screening to further mitigate any adverse visual and privacy effects of the proposed development.

Any adverse effects on persons within 53 Brookvale Road will be no more than minor.

7.6 Conclusion

For these reasons, it is considered that the proposal's adverse effects on the environment and persons on adjacent land regarding land use will be minor and the relevant assessment criteria will be achieved.



[Subject]

Assessment of Environmental Effects



8 NOTIFICATION ASSESSMENT

8.1 Public Notification

Section 95A of the RMA specifies the steps the Council must follow to determine whether to publicly notify an application. These steps are addressed below.

Table 1: Public Notification Assessment

Public Notification Steps	Assessment
Step 1: Mandatory public notification in certain circumstances	
Public notification is required if it is requested by the applicant, required under section 95C or the application is made jointly with an application to exchange recreation reserve land.	While we have concluded that any adverse effects associated with the proposal are at most minor, the applicant recognises the anomalous nature of the sites zoning, and values the feedback of the community on the application. As such, the applicant is requesting public notification, Step 1 applies and Step 2-4 need not be considered.
Step 2: If not required by Step 1, public notification precluded in certain circumstances	
Public notification is precluded if all applicable rules and national environmental standards preclude public notification; or if the application is exclusively for a controlled activity and/or a restricted discretionary, discretionary or non-complying boundary activity.	-
Step 3: If not precluded by Step 2, public notification is required in certain circumstances	
Public notification is required if an applicable rule or national environmental standard requires public notification; or if the activity is likely to have adverse effects on the environment that are more than minor.	-
Step 4: Public notification in special circumstances	
If notification is precluded under Step 2, or is not	-



[Subject]

Assessment of Environmental Effects



required under Step 3, consideration must be given to whether special circumstances exist that warrant public notification of the application.

Public Notification Assessment Conclusion

The applicant has requested that the application be publicly notified.



[Subject]

Assessment of Environmental Effects



9 STATUTORY ASSESSMENT

Under section 104(1) of the RMA, the Council must, subject to Part 2, have regard to the following matters when assessing a resource consent application and any submissions received.

9.1 Section 104(1) (a)

Council must have regard to the actual and potential effects on the environment of allowing the activity.

As assessed in Section 5 above, the proposal will have actual and potential effects that are minor and acceptable.

9.2 Section 104(1) (ab)

Council must have regard to any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity.

In this case, the proposal is not of a scale or nature that would require specific offsetting or environmental compensation measures to ensure positive effects on the environment.

9.3 Section 104(1) (b)

Council must have regard to the relevant provisions of operative or proposed national, regional and district planning documents as well as other regulations.

An assessment of the relevant statutory documents that corresponds with the scale and significance of the effects that activity may have on the environment has been provided below.

National Policy Statement on Urban Development 2020

The proposal is consistent with the requirements and directives of the National Policy Statement for Urban Development (NPSUD) as:

- The proposed development will contribute to a well-functioning urban environment by:
 - Directing rural land use activities away from the sensitive urban residential environment surrounding the site.



[Subject]

Assessment of Environmental Effects



- Increasing housing supply within the urban boundary of Havelock North, consolidating urban growth and avoiding sprawl.
- Enabling variety in the type of housing available by offering more compact typologies than existing development in the neighbourhood.
- Providing good accessibility for residents to Havelock North, which is an important regional employment centre.

This will provide for the social and economic needs of the community by meeting the local and national demand for housing and contributing to a compact urban form (**Objective 1, Policy 1**).

- The proposal will support housing supply and competition in the housing market. (**Objective 2, Policy 2**).
- The NPSUD recognises that urban environments and their amenity values will change over time in the response to the changing needs of people and that this in and of itself is not an adverse effect. As such the proposed change of development intensity on site is acceptable within the context of the landscape and residential amenity values offered by the development (**Objective 4 and Policy 6**).
- The applicant has given effect to the principles of the Treaty of Waitangi (see Section 11 of this report for further explanation) in relation to the proposal (**Objective 5 and Policy 9**).
- The proposal will contribute to a more compact urban form, reducing travel times for residents working in Havelock north and reducing greenhouse gas emissions in the long term (**Objective 8**).
- The proposed development is essentially a proposal to increase the development capacity of the site to enable a residential development and **Objective 6, Policy 2 and Policy 8** are fundamentally enabling of the proposal.

National Policy Statement for Highly Productive Land 2022

Regarding the NPS-HPL, this NPS directs that the Landcare soil maps are applied until such time that more detailed mapping is completed by the regional councils. The property is shown as being in LUC3, as in the below (red circle denotes 55 Brookvale Road, the lighter green being LUC3):



[Subject]

Assessment of Environmental Effects

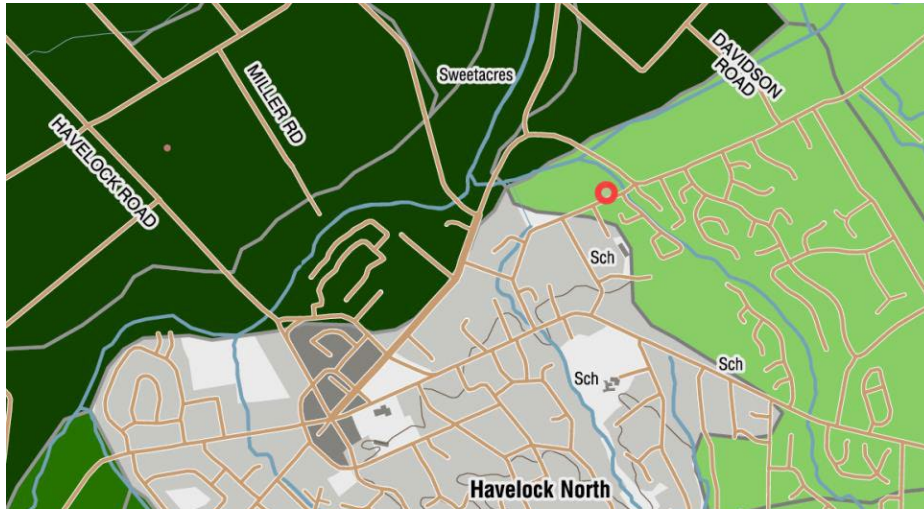


Figure 8: Land use capability mapping

However, the site in question has long passed out of productive uses depending on the underlying soils, and the Soil Assessment attached as Appendix H has concluded that the site in question is no longer highly productive land as:

- The bore log core data applying to the site, as well as information gathered from a desktop assessment, confirms that the underlying soils have undergone significant modification.
- The land in its current state cannot be assigned an LUC classification due to the degree of modification and is not considered highly productive land.

Hastings District Plan

Plains Production Zone

The proposal is consistent with the objectives and policies of the Plains Production Zone as:

- The proposal will not result in any material reduction in the availability of highly productive land in the district as the site is no longer considered highly productive land due to the extensive modification of the underlying soils. Furthermore, the proposal will also be undertaken within the urban limits of Havelock North and will avoid any ad-hoc development into the wider Plains Production Zone (**Outcome PPAO1, Objectives PPO1 and PPO2, Policies PPP1, PPP3, PPP5, PPP7 and PPP11**).



[Subject]

Assessment of Environmental Effects



- The proposal will generally avoid any adverse effects on adjacent land uses given that the proposal is for residential development, and the site is surrounded by existing and future residential development. For this reason, any reverse sensitivity effects will also be avoided (**Outcome PPA03**).
- The proposal will not alter the overall rural character or amenity values of the zone as the site is discrete from any other land zoned Plains Production and does not at present represent the character or amenity values anticipated in the zone. As such the proposal will not alter any planned character or amenity values. Furthermore, the proposed developments landscaped, and densely planted character is as close as any reasonable use of the land will come to achieving the open and low scale rural character anticipated in the zone, and is a significant improvement relative to existing development on the site (a large area of metal hardstand) (**Outcome PPA06, Objective PPO3, Policies PPP13-PPP15**).
- The life supporting capacity of the Heretaunga Plains Unconfined Aquifer system will be sustained as no groundwater take or soakage field is proposed (**Outcome PPA09, Objective PPO9**).

Subdivision and Land Development

The proposal is consistent with the requirements of Part D Subdivision and Land Development of the HDP as:

- **Objective SLDO1** is enabling of subdivision of land consistent with the relevant objectives and policies of the HDP. As demonstrated throughout Section 8.3 of this report the proposal is consistent with the relevant objectives and policies of the HDP and this Objective SLDO1 is fundamentally enabling of the proposal.
- The proposed sites are all adequately sized to provide for the proposed residential activities, and the site cannot be reasonably anticipated to be used for anything other than residential activities in the foreseeable future. Therefore, providing flexibility for other uses is not necessary (**Outcome SLDAO2, Objective SLDO2**).
- The proposed lots are of an appropriate size to allow for generous landscaped areas that will fit well into the surrounding neighbourhood and will contribute to the suburban character and amenity values of the area. Furthermore, the proposal will not give rise to any reverse sensitivity effects (being a residential activity in an established residential neighbourhood) and can be



[Subject]

Assessment of Environmental Effects



adequately serviced with infrastructure connections (**Outcomes SLDAO3, SLDAO4, SLDAO7, SLAO8, SLDAO10 and SLDAO11, Objective SLDO4, Policies SLDP7-SLDP11, SLDP14 and SLDP15**).

- Appropriate access has been provided to the development from Brookvale Road and each site created has safe and efficient access to the internal pedestrian and vehicular networks (**SLDPAO12 and SLDAO13, SLDO4, Policies SLDP10 and SLDP11**).
- The proposal will not give rise to any adverse natural hazard effects for the future residents of the proposed development or adjacent sites as stormwater can be appropriately managed via the proposed stormwater management strategy and mitigation of floodwaters via raised finished floor levels during significant rainfall events (**Outcome SLDAO5 and SLDAO6 and SLDAO8, Objective SLDO3, Policies SLDP4 and SLDP5**).
- The proposal is for the establishment of a residential activity on potentially contaminated land; however the necessary site investigations have been undertaken and as assessed in Section 7 of the Planning Report the proposal will not give rise to any adverse effects on human health. Furthermore, any flooding can be managed with appropriate floor levels for habitable rooms and the proposed stormwater management strategy (**Outcome SLDAO8**).

9.4 Section 104(1)(c)

Council must have regard to any other matter that it considers relevant and reasonably necessary to determine the application.

Housing supply in Hawkes Bay

In this instance, it is considered that there is a significant public interest in the approval of the application. Early 2023 saw unprecedented flooding across the North Island, with the Hawkes Bay region being one of the most significantly impacted parts of the country. This has affected communities across the region, contributing to an existing housing nationwide housing crisis.

The proposal will contribute 35 new dwellings designed to be above any potential flooding of the site. As such, approval of the application will address the shortfall of housing in the region while remaining future proofed from flood events.



[Subject]

Assessment of Environmental Effects



Plan integrity

Council has raised concerns regarding the proposal's effects on 'plan integrity', should approval be granted for a residential development in the Plains Production Zone. I do not consider that there are any effects on plan integrity given the anomalous nature of the underlying zoning and the reality that the site has none of the features that characterise the Plains Production Zone (versatile soils used for primary production outside of urban areas):

- The site has no 'versatile land' as defined in the district plan, containing no LUC 1-3 soils.
- The site is not outside the urban area of Havelock North, being entirely contained by existing and future urban development areas.
- The site has no practicable use for primary production activities, being covered in hardstand surfaces and being surrounded by residential development sensitive to primary production activities.

As such, 'plan integrity' will not be compromised and no precedent will be set allowing for inappropriate development of sites within the Plains Production Zone characterised by the recognised features of the zone. For the avoidance of any doubt, the NPS-HPL contains unambiguous directions to avoid inappropriate development of highly productive land and provides assurance that the integrity of the zone is maintained.

9.5 Section 104D

Section 104D(1) of the RMA creates a gateway test requiring that resource consents for non-complying activities are only granted if the consent authority is satisfied that either:

(a) the adverse effects of the activity on the environment (other than any effect to which section 104(3)(a)(ii) applies) will be minor; or

(b) the application is for an activity that will not be contrary to the objectives and policies of—

(i) the relevant plan, if there is a plan but no proposed plan in respect of the activity; or

(ii) the relevant proposed plan, if there is a proposed plan but no relevant plan in respect of the activity; or

(iii) both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.



[Subject]

Assessment of Environmental Effects



Section 7 of this report has made an assessment of effects on the environment that has concluded that any effects on the environment are minor, and the proposal is consistent with the requirements of section 104D(1)(a).



[Subject]

Assessment of Environmental Effects



10 CONCLUSION

It is requested that draft conditions are shared for review prior to the issuing of the resource consents.

Please contact us should you require further information or clarification in relation to this application.



[Subject]

Assessment of Environmental Effects



Appendix A Records of Title

Attachment B



30 May 2023

[Subject]

Assessment of Environmental Effects



Appendix B Scheme Plan

Attachment B



30 May 2023

[Subject]

Assessment of Environmental Effects



Appendix C Infrastructure Report

Attachment B



30 May 2023

[Subject]

Assessment of Environmental Effects



Appendix D Landscape and Visual Assessment



30 May 2023

[Subject]

Assessment of Environmental Effects



Appendix E **Traffic Assessment**



30 May 2023

[Subject]

Assessment of Environmental Effects



Appendix F Contaminated Land Assessment

Attachment B



30 May 2023

[Subject]

Assessment of Environmental Effects



Appendix G **Urban Design Statement**

Attachment B



30 May 2023

[Subject]

Assessment of Environmental Effects



Appendix H Soil Assessment



30 May 2023

[Subject]

Assessment of Environmental Effects



Appendix I Economic Impact Assessment



30 May 2023

[Subject]

Assessment of Environmental Effects



Appendix J **Masterplan**



30 May 2023

[Subject]

Assessment of Environmental Effects



Appendix K Architectural Drawings



30 May 2023

[Subject]

Assessment of Environmental Effects



Appendix L Landscape Concept



30 May 2023



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy**




R.W. Muir
Registrar-General
of Land

Identifier 46325
Land Registration District Hawkes Bay
Date Issued 22 October 2002
Prior References
HB132/44 HBP1/499

Estate Fee Simple
Area 2.0270 hectares more or less
Legal Description Lot 2 Deposited Plan 311724 and Lot 1
Deposited Plan 8274

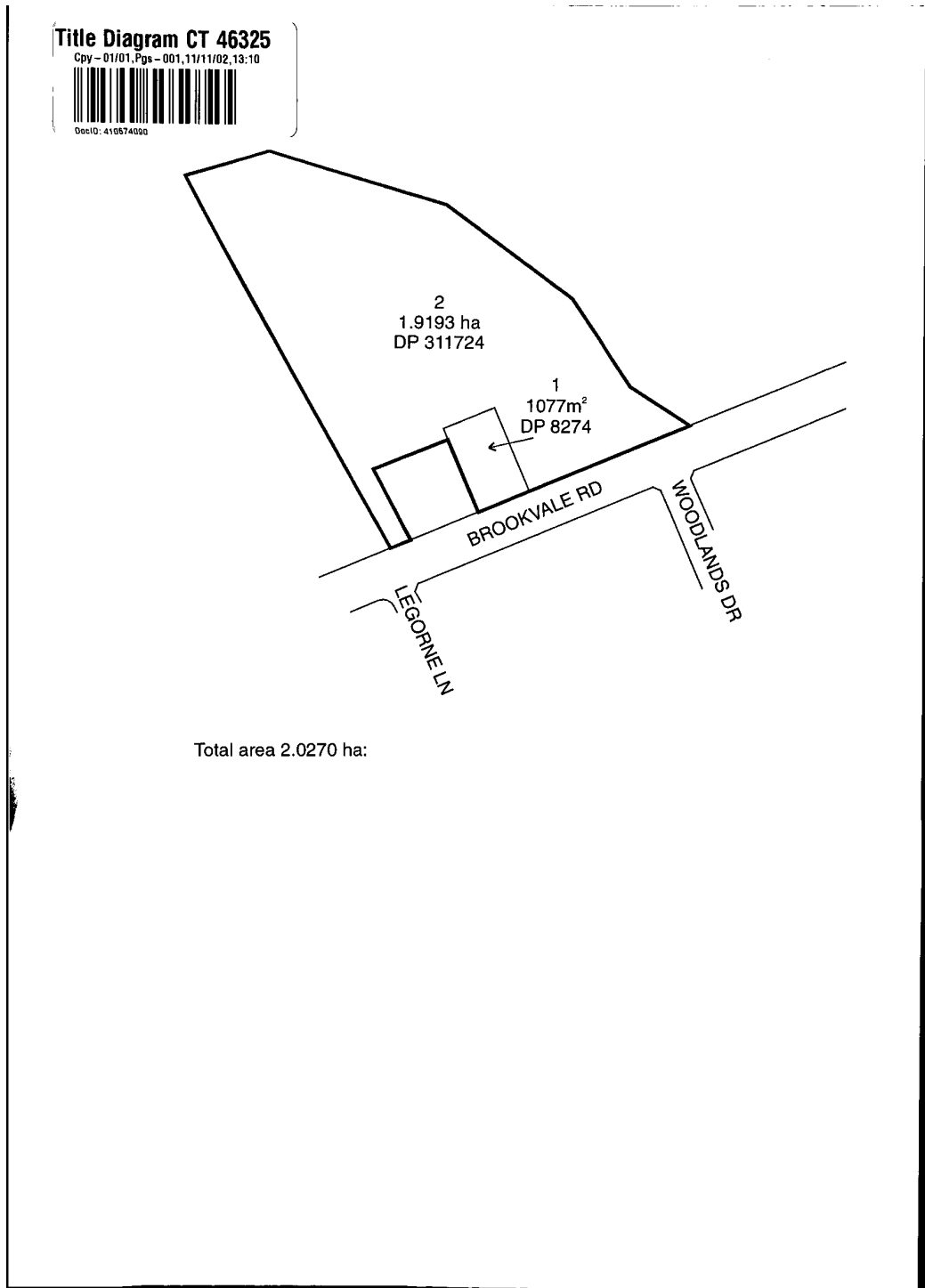
Registered Owners
Oderings Nurseries ChCh Limited

Interests

Subject to Section 241(2) Resource Management Act 1991 (affects DP 311724)
Subject to a right to drain water over part Lot 1 DP 8274 marked A on DP 311724 and over part Lot 2 DP 311724 marked B on DP 311724 created by Easement Instrument 5379491.4 - 22.10.2002 at 9:00 am
The easements created by Easement Instrument 5379491.4 are subject to Section 243 (a) Resource Management Act 1991
Subject to a right of way and a right to drain water (in gross) over part marked A on DP 22042 in favour of Hastings District Council created by Gazette Notice 6341038.3 - 10.3.2005 at 9:00 am
11732267.5 Mortgage to ANZ Bank New Zealand Limited - 29.4.2020 at 11:47 am

Identifier

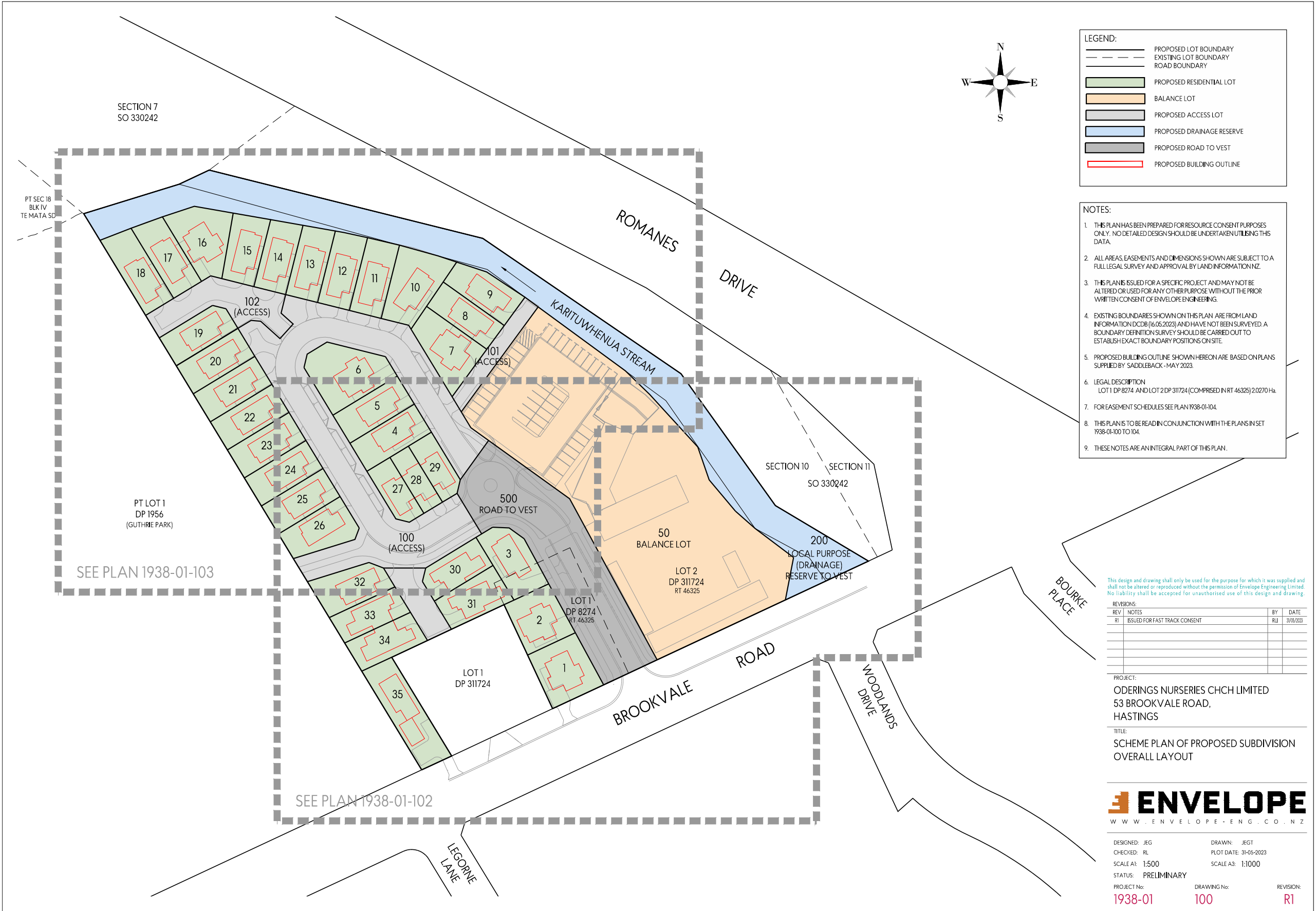
46325

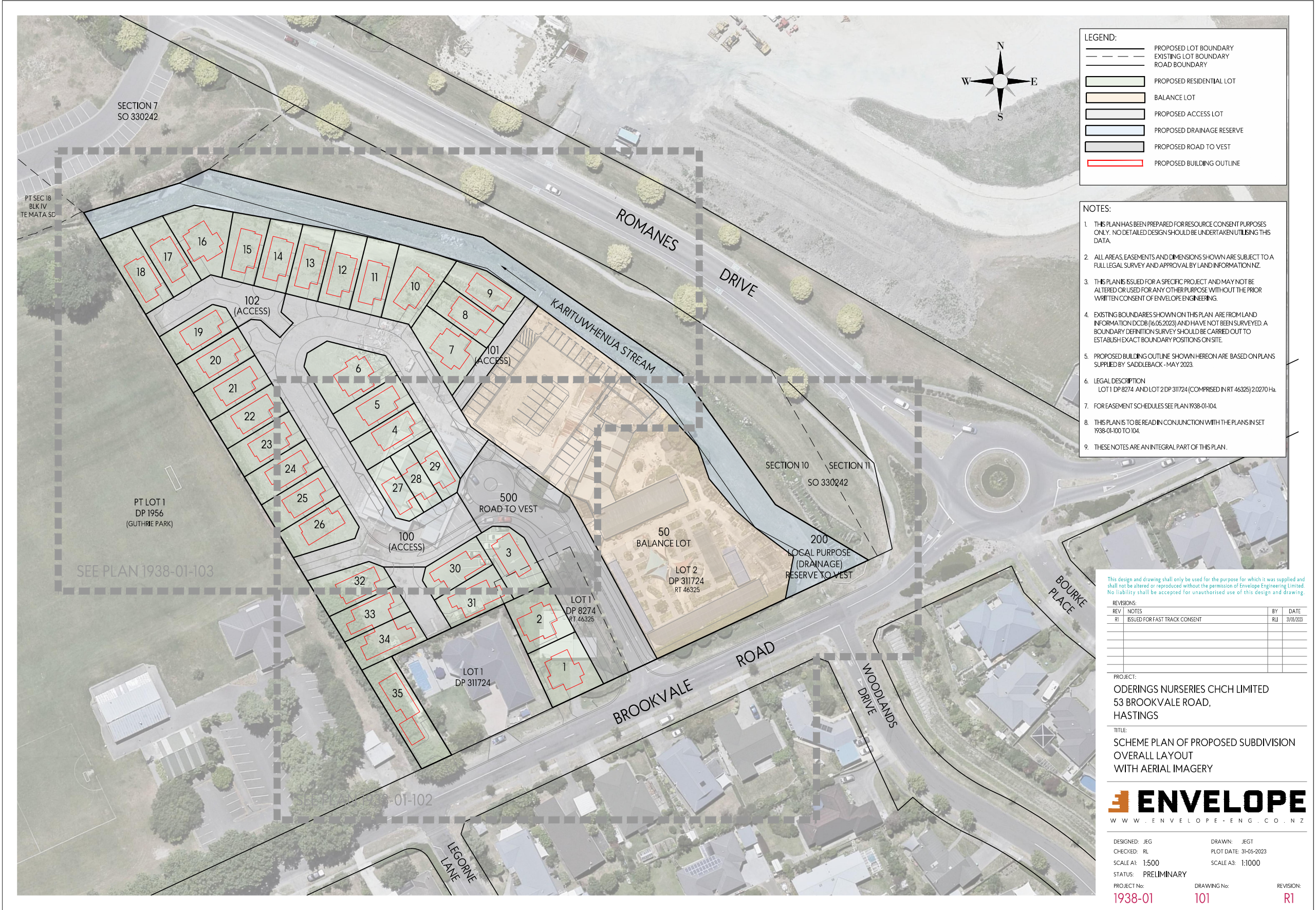


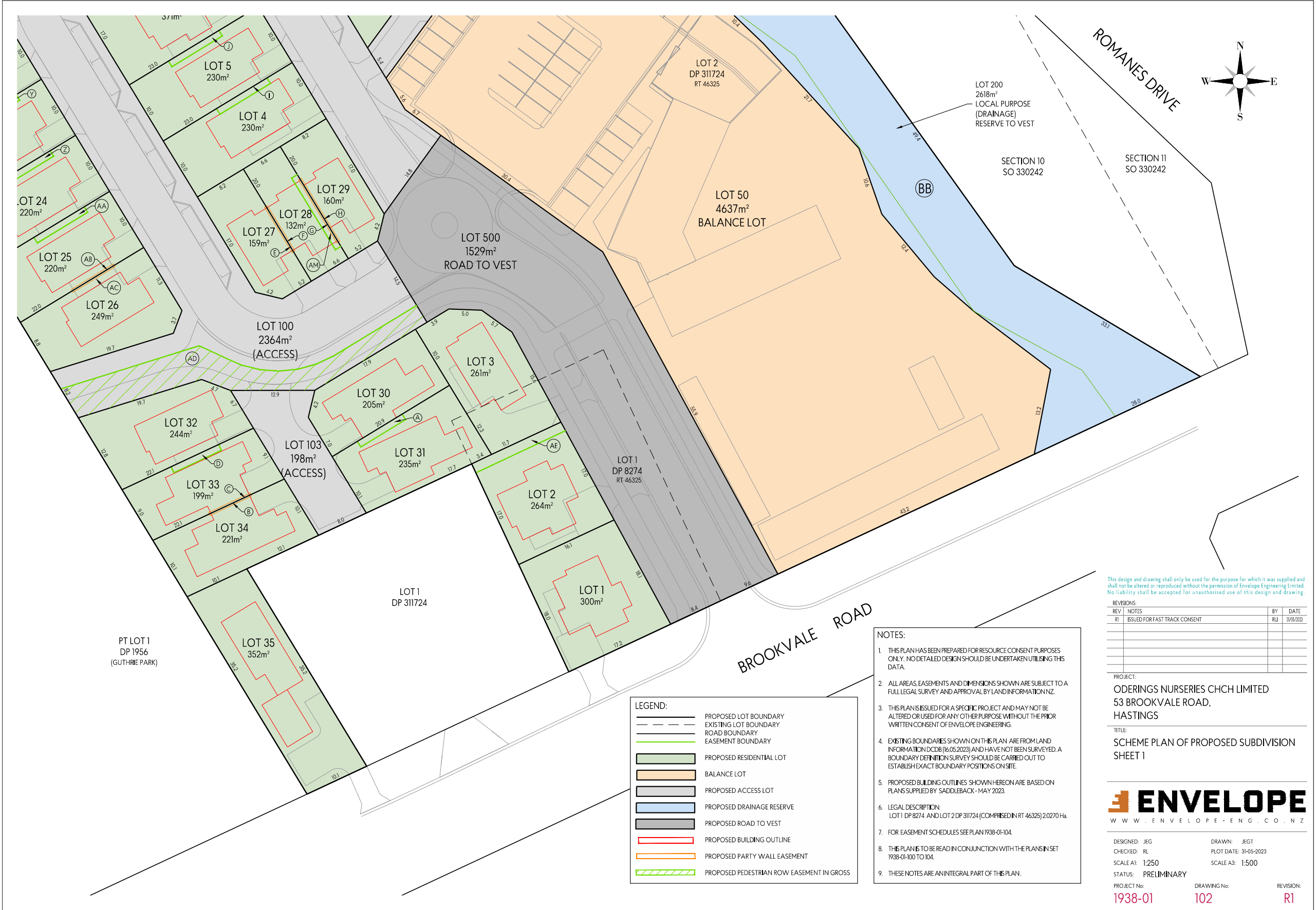
Transaction ID 1088101
Client Reference

Search Copy Dated 30/05/23 3:33 pm, Page 2 of 2
Register Only

Attachment C









MEMORANDUM OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	BENEFITTED LAND (DOMINANT TENEMENT)
RIGHT TO DRAIN WATER AND SEWAGE, RIGHT TO CONVEY WATER, GAS, ELECTRICITY AND TELECOMMUNICATIONS	LOT 100 HEREON	LOT 100 HEREON	LOTS 4 TO 35 HEREON
	LOT 101 HEREON	LOT 101 HEREON	LOTS 7 TO 9 HEREON
	LOT 102 HEREON	LOT 102 HEREON	LOTS 15 TO 19 HEREON
	LOT 103 HEREON	LOT 103 HEREON	LOTS 30 TO 34 HEREON
PARTY WALL	B	LOT 34 HEREON	LOT 33 HEREON
	C	LOT 33 HEREON	LOT 34 HEREON
	E	LOT 27 HEREON	LOT 28 HEREON
	F	LOT 28 HEREON	LOT 27 HEREON
	G		LOT 29 HEREON
	K	LOT 7 HEREON	LOT 8 HEREON
	L	LOT 8 HEREON	LOT 7 HEREON
	S	LOT 16 HEREON	LOT 17 HEREON
	T	LOT 17 HEREON	LOT 16 HEREON
	AB	LOT 25 HEREON	LOT 26 HEREON
MAINTENANCE	AC	LOT 26 HEREON	LOT 25 HEREON
	A	LOT 31 HEREON	LOT 30 HEREON
	D	LOT 33 HEREON	LOT 32 HEREON
	I	LOT 4 HEREON	LOT 5 HEREON
	J	LOT 5 HEREON	LOT 6 HEREON
	M	LOT 8 HEREON	LOT 9 HEREON
	N	LOT 10 HEREON	LOT 11 HEREON
	O	LOT 11 HEREON	LOT 12 HEREON
	P	LOT 12 HEREON	LOT 13 HEREON
	Q	LOT 13 HEREON	LOT 14 HEREON
	R	LOT 14 HEREON	LOT 15 HEREON
	U	LOT 17 HEREON	LOT 18 HEREON
	V	LOT 20 HEREON	LOT 19 HEREON
	W	LOT 21 HEREON	LOT 20 HEREON
	X	LOT 22 HEREON	LOT 21 HEREON
	Y	LOT 23 HEREON	LOT 22 HEREON
	Z	LOT 24 HEREON	LOT 23 HEREON
	AA	LOT 25 HEREON	LOT 24 HEREON
	AM	LOT 28 HEREON	LOT 29 HEREON
RIGHT TO DRAIN WATER	AE	LOT 2 HEREON	LOT 1 DP 311724

MEMORANDUM OF EASEMENTS IN GROSS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	GRANTEE
PEDESTRIAN RIGHT OF WAY	AD	LOT 100 HEREON	HASTINGS DISTRICT COUNCIL
RIGHT TO DRAIN WATER AND SEWAGE, RIGHT TO CONVEY WATER	LOT 100 HEREON	LOT 100 HEREON	
	LOT 101 HEREON	LOT 101 HEREON	
	LOT 102 HEREON	LOT 102 HEREON	
RIGHT TO DRAIN WATER	AF	LOT 12 HEREON	
	AG	LOT 13 HEREON	
	AH	LOT 14 HEREON	
	AI	LOT 15 HEREON	
	AJ	LOT 16 HEREON	
	AK	LOT 17 HEREON	
	AL	LOT 18 HEREON	

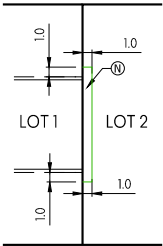
SCHEDULE OF PROPOSED EASEMENTS IN GROSS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	GRANTEE
RIGHT TO CONVEY ELECTRICITY AND TELECOMMUNICATIONS	LOT 100 HEREON	LOT 100 HEREON	UNISON NETWORKS LIMITED
	LOT 101 HEREON	LOT 101 HEREON	
	LOT 102 HEREON	LOT 102 HEREON	
	LOT 103 HEREON	LOT 103 HEREON	
RIGHT TO CONVEY GAS	LOT 100 HEREON	LOT 100 HEREON	POWERCO LIMITED
	LOT 101 HEREON	LOT 101 HEREON	
	LOT 102 HEREON	LOT 102 HEREON	
	LOT 103 HEREON	LOT 103 HEREON	

SCHEDULE OF EXISTING EASEMENTS IN GROSS				
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	GRANTEE	CREATED BY
RIGHT OF WAY AND RIGHT TO DRAIN WATER	BB	LOT 200 HEREON (TBC)	HASTINGS DISTRICT COUNCIL	GN 6341038.3

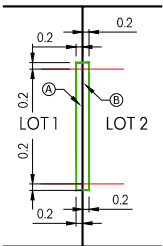
SCHEDULE OF EXISTING EASEMENTS TO BE SURRENDERED				
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	BENEFITTED LAND (DOMINANT TENEMENT)	CREATED BY
RIGHT TO DRAIN WATER	A ON DP 361724	LOT 1 DP 8274	LOT 1 DP 311724	EC 5379491.4
	B ON DP 361724	LOT 1 DP 311724		

INCORPORATED SOCIETY:

ALL THE OWNERS OF LOTS 4 TO 35 SHALL BECOME MEMBERS OF THE INCORPORATED SOCIETY ESTABLISHED FOR THE PURPOSE OF MAINTAINING THE SHARED LANES (LOTS 100 TO 103) AND THE SHARED PRIVATE SERVICES USED BY LOTS 4 TO 35.



MAINTENANCE EASEMENT
TYPICAL DETAIL
NOT TO SCALE



PARTY WALL EASEMENT
TYPICAL DETAIL
NOT TO SCALE

- NOTES:
- THIS PLAN HAS BEEN PREPARED FOR RESOURCE CONSENT PURPOSES ONLY. NO DETAILED DESIGN SHOULD BE UNDERTAKEN UTILISING THIS DATA.
 - ALL AREAS, EASEMENTS AND DIMENSIONS SHOWN ARE SUBJECT TO A FULL LEGAL SURVEY AND APPROVAL BY LAND INFORMATION NZ.
 - THIS PLAN IS ISSUED FOR A SPECIFIC PROJECT AND MAY NOT BE ALTERED OR USED FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF ENVELOPE ENGINEERING.
 - EXISTING BOUNDARIES SHOWN ON THIS PLAN ARE FROM LAND INFORMATION DCDB (16.05.2023) AND HAVE NOT BEEN SURVEYED. A BOUNDARY DEFINITION SURVEY SHOULD BE CARRIED OUT TO ESTABLISH EXACT BOUNDARY POSITIONS ON SITE.
 - PROPOSED BUILDING OUTLINES SHOWN HEREON ARE BASED ON PLANS SUPPLIED BY SADDLEBACK - MAY 2023.
 - LEGAL DESCRIPTION: LOT 1 DP 8274 AND LOT 2 DP 311724 (COMPRISED IN RT 46325) 2.0270 Ha.
 - THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE PLANS IN SET 1938-01-100 TO 104.
 - THESE NOTES ARE AN INTEGRAL PART OF THIS PLAN.

AMALGAMATION CONDITIONS

- LOT 100 (ACCESS) HEREON TO BE HELD TOGETHER AS TO THIRTY ONE UNDIVIDED ONE THIRTY FIRST SHARES BY THE OWNERS OF LOTS 4 TO 35 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORDS OF TITLE TO BE ISSUED IN ACCORDANCE THEREWITH.
- LOT 101 (ACCESS) HEREON TO BE HELD TOGETHER AS TO THREE UNDIVIDED ONE THIRD SHARES BY THE OWNERS OF LOTS 7 TO 9 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORDS OF TITLE TO BE ISSUED IN ACCORDANCE THEREWITH.
- LOT 102 (ACCESS) HEREON TO BE HELD TOGETHER AS TO SIX UNDIVIDED ONE SIXTH SHARES BY THE OWNERS OF LOTS 14 TO 19 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORDS OF TITLE TO BE ISSUED IN ACCORDANCE THEREWITH.
- LOT 103 (ACCESS) HEREON TO BE HELD TOGETHER AS TO FIVE UNDIVIDED ONE FIFTH SHARES BY THE OWNERS OF LOTS 30 TO 34 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORDS OF TITLE TO BE ISSUED IN ACCORDANCE THEREWITH.

This design and drawing shall only be used for the purpose for which it was supplied and shall not be altered or reproduced without the permission of Envelope Engineering Limited. No liability shall be accepted for unauthorised use of this design and drawing.

REVISIONS:		BY	DATE
REV	NOTES		
R1	ISSUED FOR FAST TRACK CONSENT	RJ	30/05/2023

PROJECT:
ODERINGS NURSERIES CHCH LIMITED
53 BROOKVALE ROAD,
HASTINGS

TITLE:
SCHEME PLAN OF PROPOSED SUBDIVISION
EASEMENT SCHEDULES



DESIGNED: JEG
CHECKED: RL
SCALE A1: NTS
STATUS: PRELIMINARY
PROJECT No: 1938-01

DRAWN: JEGT
PLOT DATE: 31-05-2023
SCALE A3: NTS
DRAWING No: 104

REVISION: R1



ENVELOPE ENGINEERING

LAND
STRUCTURE
MANAGE

Civil Design Infrastructure Report


Oderings Development – 55-57 Brookvale Road, Hawkes Bay

Attachment E

DOCUMENT CONTROL RECORD

CLIENT	Jeremy Odering
PROJECT	Oderings Development – 55-57 Brookvale Road, Hawkes Bay
PROJECT NO.	1938-01
DOCUMENT TYPE	Civil Design Report, R001v1-1938-01
DATE ISSUED	29 May 2023
VERSION CONTROL	V2
ADDRESS FOR SERVICE	Envelope Engineering Limited Level 1, 65 Cuba Street, Te Aro, Wellington
CONTACT	Tim Coppelmans, Civil Engineer tim.coppelmans@envelope-eng.co.nz +64 27 812 9559

ISSUE AND REVISION RECORD

DATE OF ISSUE	29 May 2023
STATUS	For Resource Consent
ORIGINATOR	 Tim Coppelmans – Civil Engineer
REVIEWED	 Andrew Jackson – Director, Civil
APPROVED FOR ISSUE	 Alan Blyde – Director



CONTENTS

1.0	INTRODUCTION	1
1.1	Proposed Development	1
2.0	EARTHWORKS.....	2
2.1	Works Description.....	2
2.2	Geotechnical Investigation.....	2
2.3	Contamination Investigation.....	3
2.4	Erosion and Sediment Controls.....	3
3.0	ROADING AND ACCESS	3
3.1	Existing Site Access.....	3
3.2	Proposed Roading & Access	3
3.3	Traffic Assessment Report	4
4.0	STORMWATER	4
4.1	Existing Infrastructure.....	4
4.2	Flooding of the Karitūwhenua Stream	4
4.3	Proposed Flood Mitigation.....	6
4.4	Proposed Infrastructure.....	6
4.5	Stormwater Neutrality	6
4.6	Stormwater Management Strategy	7
4.7	Stormwater Treatment	8
5.0	WASTEWATER	8
5.1	Existing Infrastructure.....	8
5.2	Proposed Infrastructure.....	8
5.3	Wastewater calculations.....	8
5.4	HDC Consultation	9
6.0	WATER SUPPLY	9
6.1	Existing Infrastructure.....	9
6.2	Proposed Infrastructure.....	9
6.3	Proposed Water Demand.....	10
7.0	UTILITIES	10
8.0	LIMITATIONS	10
8.1	General.....	10

APPENDICES

Appendix 1	Architectural Drawings
Appendix 2	Scheme Plans
Appendix 3	Engineering Plans
Appendix 4	Stormwater Calculations
Appendix 5	Topographical Survey Plan
Appendix 6	Hynds Up-flo Filter



1.0 INTRODUCTION

The site is located at 55 & 57 Brookvale Road, Havelock North, Hawkes Bay. The existing comprises two lots, formally described as Lot 1 DP 8274 and Lot 2 DP 311724. They are approximately 2.03ha in combined size.

The site is currently occupied by Oderings Garden Centre and nursery. The garden centre is situated in the south-eastern corner of the site with a car parking area to the west. The remaining area was previously occupied by greenhouses which were demolished in early 2022 leaving the rest of the site as exposed concrete surfaces with a grass berm around the perimeter. The Guthrie Park sports grounds (HDC Open Space) adjoins the western site boundary.

The site has a gentle fall from the south-east to the north-west, with roughly 4.0m of elevation change across the site. The existing Karitūwhenua Stream runs alongside the development site, with the stream alignment running partially within the site boundaries. There is a natural low point in the north-western corner of the site. The site is accessed from Brookvale Road in the south using the existing carriageway access to the nursery. Figure 1 shows the location and extents of the development site.

This report provides calculations and supporting information for a resource consent application with Hastings District Council.



Figure 1. Locality plan with aerial image.

1.1 PROPOSED DEVELOPMENT

The proposed scheme consists of 35 new lots, predominately these will comprise of stand-alone dwellings with the remainder as terraced or semi-detached dwellings. The development consists of a new public access road and roundabout which will provide access to both the new development, and a new open-plan carpark adjacent to the existing Oderings plant nursery. From the roundabout, a new private shared carriageway will provide access to the remaining lots in a looped layout with three smaller shared driveways branching off.



Engineering plans for the proposed development are shown in Appendix 2. Figure 2 shows the proposed development layout.



Figure 2. Proposed 35-lot development layout.

2.0 EARTHWORKS

2.1 WORKS DESCRIPTION

Earthworks are required across the site to facilitate this development, and these are shown on our 200 Series Plans in Appendix 3. The earthworks consist of the following:

- Cuts up to 1.30m and fills of up to 1.00m.
- A total cut volume of 1236m³ and a total fill volume of 1076m³. These volumes are based on the proposed change in surface levels, so may change dependent on the amount of unsuitable material found on site.
- A total earthworks area of 1.44ha.

2.2 GEOTECHNICAL INVESTIGATION

A geotechnical investigation for the proposed development has been undertaken by Initia and a summary of the findings are included below:

- *The site subsoils comprise of clayey silts underlain by silty sandy gravels.*
- *Based on the ground conditions encountered, the key geotechnical hazards are liquefaction and consolidation settlement.*
- *Liquefaction is not expected under Serviceability Limit State Levels of shaking, however Ultimate Limit State levels, non-continuous layers within the subsoil may liquefy.*
- *The upper clayey silts are cohesive and considered not susceptible to liquefaction and the underlying gravels are very dense, thus liquefaction potential is low.*



- Consolidation settlements from the likely building loads are expected to be low.
- Engineered Raft foundations are recommended.
- Flexible services and service connections are recommended.

The geotechnical report has been attached to this report as supporting evidence.

2.3 CONTAMINATION INVESTIGATION

A detailed site investigation for the proposed development has been undertaken by Geosciences Ltd and a summary of the findings are included below:

- Results returned heavy metal concentrations which fell within the naturally occurring soil background range.
- Concentrations of organic compound were detected. Concentrations were assessed to not pose a risk to human health or the receiving environment.
- Due to the detection of organic compounds, the regulation of the MfE National Environment Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES) will apply for the proposed subdivision.
- Soil Quality has been assessed as not posing a risk to the environment, no further considerations pertaining to the contaminated land are necessary.

The geotechnical report has been attached to this report as supporting evidence.

2.4 EROSION AND SEDIMENT CONTROLS

There is a potential for the earthworks to produce pollution from erosion and sediments on-site. Erosion and sediment controls are proposed for the site in accordance with Hawkes Bay Regional Councils Guidelines for Erosion and Sediment Control. The ECSP plan will be submitted to Hastings District Council for approval at the detailed design stage.

As-built information will be provided for the erosion and sediment controls, prior to earthworks commencing.

A final Earthworks and Construction Management Plan will be prepared prior to construction and is offered as a condition of consent.

3.0 ROADING AND ACCESS

3.1 EXISTING SITE ACCESS

There is access to the site from Brookvale Road using the existing garden centre paved accessway. Access to the existing dwelling is through paved vehicle crossings. There is currently no footpath running along the northern boundary of Brookvale Road. There is a concrete footpath on the southern boundary of Brookvale Road.

The existing Karitwhenua stream along the northern and eastern boundaries of the site prevents vehicle access to the site from these boundaries. The site adjoins Guthrie Park on the western boundary which could be used for future access to the site if required.

3.2 PROPOSED ROADING & ACCESS

The existing access to the garden centre will be removed, and a new public road will be created into the development. A new public roundabout is proposed to be located past the garden centre from which a shared privately owned accessway will loop around the north-west area of the site. Further private accessways will branch off the private accessway to provide vehicle access to all new lots. Each new lot will have their own on-site carpark.

A new 43-park carpark is proposed directly to the north of the existing garden centre. The new carpark is to service the existing garden centre and subsequent facilities only.

Roading and access design is shown on our engineering plans in Appendix 3.



New carparking will be created along the new public road as well as along the private shared accessway. New carparks will be marked out with white road marking paint in accordance with NZTA MOTSAM Part 2.

Existing vehicle access to the existing dwelling on site will be removed and a new accessway will be provided from Brookvale Road. A new kerb and channel and new footpath will be created along the northern boundary of Brookvale Road. The new footpath will connect to the existing concrete footpath at Guthrie Park in the west, and to the existing concrete footpath at the Romanes Drive roundabout in the east. The creation of the new footpath will allow safer pedestrian movement from the proposed development to nearby local amenities.

3.3 TRAFFIC ASSESMENT REPORT

A traffic assessment report of the proposed development has been undertaken by East Cape Consulting (ECC). The report (Ref: 22-0082 TAR 220921) has been attached to this report as supporting evidence.

A summary of the findings of the investigation are copied below:

- *The incremental traffic generation from the new residential lots is expected to have a negligible effect on the operation of the surrounding network.*
- *The proposed internal road cross sections are a departure from the District Plan standards but have been shown to appropriately accommodate the needs of light and heavy traffic as well as pedestrians and cyclists.*
- *The individual lots are expected to provide on-lot parking and additional on-street parking is also proposed. The garden centre will have a parking area for 43 vehicles.*

4.0 STORMWATER

4.1 EXISTING INFRASTRUCTURE

The Karituwhenua stream located along and within the eastern and northern boundaries of the site. An existing drainage easement in favour of HDC is currently located along the northern and eastern boundary as shown on our legal plans in Appendix 2. The stream flows from the south-east corner of the site to the north-west, before continuing west through the adjacent Guthrie Park sports grounds. The development site currently has multiple outlets to the existing stream with outlet sizes ranging from 100mm dia. to 300mm dia. which will all be removed.

There is existing 225mm dia. piped stormwater infrastructure along Brookvale Road in the existing road reserve berm. The existing infrastructure has an outlet to the Karituwhenua stream at the south-eastern corner of the site. From GIS records, the development site also has 2 lateral connections to the existing piped network.

4.2 FLOODING OF THE KARITUWHENUA STREAM

Hastings District Council has notified the applicant that the Karituwhenua stream is prone to flooding and that the proposed development must be adequately designed to:

- Ensure new dwellings do not get flooded in heavy rainfall events.
- Prevent any additional discharge downstream to Guthrie Park.

The extents of the flooding of the Karituwhenua stream are shown on the Hawkes Bay Regional Council's Hazard Maps. Flooding extents shown are for a 1 in 50-year flooding event.

HBRC's flood maps provided flood levels in terms of NZGD2000 Hawkes Bay Circuit for the Karituwhenua stream for the for 1 in 50-year event. The section of the stream to the east of the development site has a flood level of 19.00m, while the section of the stream to the north of the development site has a flood level of 18.70m. An accuracy tolerance of 0.20 is shown on the flood maps. We have assumed that this indicates a +/- 200mm accuracy modifier of the flood water level.



Figures 3 & 4 below show the flood extents relative to the site boundaries as well as the flood levels as mentioned above.



Figure 3. Flooding extents shown in blue of Karituwhenua stream - Eastern catchment.



Figure 4. Flooding extents shown in blue of Karituwhenua stream - Northern catchment.

These two flood levels have been converted to the New Zealand Vertical Datum 2016, which provided flood levels of 8.74m for the eastern catchment and 8.44m for the northern catchment.



4.3 PROPOSED FLOOD MITIGATION

The existing flood levels have been overlayed and added to our 3D design model to assess the effects of the 1 in 50year flood over the existing ground surface.

Using the flood levels of 8.74m for the eastern catchment and 8.44m for the northern catchment, the flooding areas shown on the HBRC Hazard maps were combined, and the volume between the flood level and existing ground surface was calculated. This provided a flood volume of **3653m³** across the whole catchment area.

The proposed development intends to fill and raise the northern areas of the site to be above the flooding levels and finished floor levels (FFL's) to be above the flood levels plus a 200mm freeboard (using the 0.20m accuracy tolerance mentioned in 4.2). It is anticipated that by raising the ground here, this would decrease the capacity of the Karituwhenua Stream during flood events. To prevent this from happening, it is proposed to cut existing ground material from above the southern bank of the Karituwhenua Stream at the northern boundary. This will increase the capacity of the stream during flood events and thus offset the earthworks filling of the new lots in the north.

Using the combined existing flood model as mentioned above, the volume between the existing flood level and the proposed finished ground surface was calculated. This provided a flood volume of **3759m³** across the whole catchment area.

With comparison to the existing flood volume of 3653m³ mentioned above, the proposed earthworks design provides an additional **106m³** of flood storage to the stream, this increase in flood storage will result in a minor decrease in downstream flood levels.

Proposed dwellings along the northern boundary that are near the 8.44m flood level will have minimum FFLs of 8.95m, while proposed dwellings along the northern boundary that are near the 8.74m flood level will have minimum FFLs of 9.25m. These FFLs have been chosen as they will provide a 200mm freeboard to compensate for the 0.20m accuracy tolerance from the HBRC flood hazard maps, as well as an additional 300mm as a margin of safety. It is assumed that the finished ground levels around these new dwellings will be around 150-250mm below FFL.

Secondary flow paths through the new development have been designed to overflow north to the existing Karituwhenua Stream in the event of the primary stormwater system failing.

4.4 PROPOSED INFRASTRUCTURE

Roof run-off from each new dwelling will connect into a new stormwater network which runs through the central accessways of the site. The proposed stormwater is a mixture of private and public stormwater. The proposed stormwater outlet will be in the HDC park (Guthrie Park) and will discharge out to a new outlet to the existing Karituwhenua stream. The new outlet will be designed with suitable erosion protection measures which will include reno mattress/gabion baskets and a headwall structure.

Further details of the proposed networks inverts, sizes, grades, materials etc. will be provided during the detailed design stage of the proposed development. The invert of the existing stream at the proposed outlet is approximately RL 6.00m, the new outlet structure will have an invert of approximately RL 7.50m allowing it to be built above the existing water level, significantly above the existing outlet invert at RL 6.44m.

Each lot will have a 100mm uPVC SN16 lateral connection to the proposed stormwater network.

The existing two laterals from the site will be abandoned and capped off at the connection to the existing stormwater culvert.

Refer to Appendix 3 for engineering plans of the proposed stormwater infrastructure.

4.5 STORMWATER NEUTRALITY

As required by the HDC Code of practice, the proposed development must be stormwater neutral, i.e., the post-development stormwater flow must be less than or equal to the pre-development stormwater flow.



For the proposed development site, the existing site conditions already provide a significant coverage of hardstand areas from the previous greenhouses and paved areas. The previous greenhouse structures have previously been removed but the concrete hardstand floors have remained.

With the total site area calculated as 2.027ha, the pre-development impervious areas have been calculated at 1.877ha which makes up 92.6% of the existing site.

The proposed development will have a total impervious area of 1.570ha (includes all new roof and hardstand areas). As the post-development hardstand area will be less than the pre-development, we have determined that the proposed development will not generate lower rates of runoff under all assessed rain events.

Refer to Appendix 4 for stormwater neutrality calculations.

4.6 STORMWATER MANAGEMENT STRATEGY

As the proposed works are located within the vicinity of a HBRC drain, the development is to meet the peak flow requirements set out in HBRC's *Hawkes Bay Waterway Guidelines – Stormwater Management*. The following requirements are to be met:

- Post-development discharge at the development boundary must be no greater than the pre-development flow in a 1 in 2 year and 1 in 10-year ARI (annual Recurrence Interval).
- Post development flows during a 1 in 100-year ARI must be no greater than 80% of the pre-development 1 in 100-year ARI flows.
- Mitigate adverse impacts to the 1 in 50-year and 1 in 100-year ARI rainfall events.
- Piped networks must provide a conveyance for a 1 in 5-year ARI rain event.
- Overland flows must provide conveyance for the 1 in 100-year ARI rain event at the minimum.
- The system is to achieve the best practice to mitigate the impacts of urban development on stormwater quality.

Pre-development and post-development discharge rates have been calculated using the Rational Method. Calculation parameters such as the Run-off coefficients calculated are in accordance with the New Zealand Building Code - E1 Surface Water.

Rainfall data has been obtained from the NIWA HIRDS V4 model for the RCP6.0, for the period 2081-2100 based on the site location. This rainfall data reflects future rainfall events taking climate change into consideration.

Refer to Appendix 4 for the complete stormwater discharge calculations.

A summary of the stormwater calculations from Appendix 4 are shown below:

RAIN EVENT	PRE-DEVELOPMENT FLOWRATE (L/S)	POST-DEVELOPMENT FLOWRATE (L/S)	PRE/POST RATIO (%)
2-year (50% AEP)	129.5	105.2	81.3%
10-year (10% AEP)	230.4	184.7	80.2%
50-year (2% AEP)	352.0	279.6	79.4%
100-year (1% AEP)	414.8	328.4	79.2%

Table 1: Pre-development vs post-development comparison.

A small amount of peak flow attenuation is required to achieve the required 80% of pre-development runoff during the 1% AEP event. This will be achieved by an orifice restricted manhole on the carpark stormwater system. We have calculated that an 88mm orifice will restrict flows sufficiently to achieve the required reduction in flowrate. This stormwater will be stored within the proposed carpark rain gardens, within the carpark stormwater pipes, and by a small amount of surface ponding. There will be less than 100mm depth of localised ponding around the rain gardens at peak rainfall during a 10% AEP event, and up to 175mm depth of ponding during a 1% AEP event.



4.7 STORMWATER TREATMENT

The proposed development, without stormwater treatment, could increase stormwater pollutants exported from the site. Treatment of the runoff within Stormwater Management Devices is proposed to intercept and capture pollutants to ensure the development aligns with the requirements set out in Hawkes Bay Waterway Guidelines Stormwater Management (dated 2009) and HDC's District Plan.

New raingardens are proposed in landscaping areas for stormwater treatment of the northern access lot as well as the new 43-lot carpark at the eastern side of the development. The rain gardens will capture and treat runoff generated using an engineered filter media. Overflows will be provided for stormwater discharge during heavy rainfall events.

A new underground proprietary device is proposed at the northern end of the looped shared accessway. The intention of the device is to treat the stormwater that is collected from new hardstand areas within the development such as roads, paths, driveways etc. A device such as a Hynds Up-Flo Filter (or similar approved) is proposed. Refer to Appendix 6 for details of the Hynds Up-Flo Filter.

All new dwellings shall have non-contaminant yielding roofing to prevent any pollutants from new roofing to entering the new stormwater network.

The proposed rain gardens and underground proprietary devices have been indicatively sized at this stage based on Hawkes Bay Regional design guidance and detailed drawings and specifications of the proposed stormwater treatment devices will be provided at the detailed design stage.

Refer to Appendix 3 for engineering plans of the proposed stormwater infrastructure.

5.0 WASTEWATER

5.1 EXISTING INFRASTRUCTURE

There is an existing DN150mm uPVC wastewater main which runs along Brookvale Road and has existing lateral connections to the development site including the existing dwelling and the garden centre. A larger DN375mm wastewater main runs along Romanes Drive on the other side of the Karituwhenua Stream.

5.2 PROPOSED INFRASTRUCTURE

The existing wastewater laterals coming from Brookvale Road will be retained and continue to service the existing dwelling and garden centre. A new short public network at the entrance to the development will provide gravity connections to new Lot 2.

The rest of the proposed lots will be serviced through a new gravity network that runs to the low point of the development at the north-western corner. A new pump chamber is to be installed near the low point within the proposed accessway, and a new rising main installed through the HDC Reserve land (Guthrie Park). The new rising main will follow the western site boundary and connect into a new manhole where the reserve land meets Brookvale Road and convert back to a gravity connection, which then flows to the existing DN150mm public main.

The development proposes to vest the majority of the new wastewater to HDC upon completion of the development. All works will be designed in accordance with the HDC ECoP and NZS 4404:2010.

Each lot will have a 100mm uPVC SN16 lateral connection to the proposed public gravity wastewater network that runs through the site.

The existing DN375mm public is not considered as a potential connection point as it would require crossing, and hence excavating the Karituwhenua Stream.

Refer to Appendix 3 for engineering plans of the proposed wastewater infrastructure.

5.3 WASTEWATER CALCULATIONS

Wastewater calculations have been prepared in accordance with the HDC ECoP 2020. The peak average dry weather flow (ADWF) was determined based on 250 litres per person per day, dilution/infiltration factor (IF) of 2, a peak factor (PF) of 2.5 and an equivalent population (EP) of 3.5



people per dwelling. The ADWF peak wet weather flow (PWWF) rate for the new development is calculated as follows:

Proposed Wastewater Demand:

ADWF: 250 l/p/day x 35 lots x 3.5 EP = **30.63 kL/day (0.35 L/s)**

PWWF: 30.63 kL/day x 2 (IF) x 2.5 (PF) = **153.1 kL/day (1.77 L/s)**

NUMBER OF LOTS	ADWF (875L/LOT/DAY)	ADWF (L/S)	PEAKING FACTOR (2.0 X 2.5)	PWWF (LITRES/SECOND)
35	30625 l/day	0.35 l/s	5.0	1.77 l/s

Table 2: Wastewater Demand – Proposed Development

5.4 **HDC CONSULTATION**

Previous consultation has been undertaken at a previous stage which concluded that HDC have recognised surcharge issues in the receiving wastewater network. HDC is currently undertaking an investigative report into this issue and will advise on the requirements for this development.

Should wastewater mitigation be required following the outcome of the investigative report, we offer the provision of wastewater mitigation as a condition of consent and will allow to provide mitigation design and supporting calculations at the detailed design stage. Mitigation measures, if required, can be incorporated within the proposed pump design.

HDC have previously accepted that the new rising main can be installed within Guthrie Park along the western boundary of the development site. We are now proposing a different alignment through the development as this will reduce the effects of the development on the users of Guthrie Park. . Should HDC prefer to revert to the Guthrie Park, this request can be accommodated upon discussion.

6.0 **WATER SUPPLY**

6.1 **EXISTING INFRASTRUCTURE**

There is an existing reticulated water supply in the vicinity of the site via a DN100mm asbestos cement (AC) water main running along Brookvale Road. The existing garden centre and existing dwelling along the western boundary have individual tobies and connections to the existing DN100 AC main. There is an existing fire hydrant along the DN100 AC main opposite the existing garden centre. An existing water connection is present at the south-western corner of the site.

There is also an existing DN375mm AC bulk water supply main along Brookvale Road. The bulk water supply main shall not be used for any water supply to the new development.

At the time of publishing this report, HDC is currently finalising a water supply report of surrounding area which may impact the servicing of potable water to the new development. Previous consultation with HDC by previous consultants has indicated that water supply for the proposed development will not be an issue, and we have proceeded on this basis. Should the HDC water report indicate that water supply may be an issue, we recommend detailed modelling of the new water network to confirm if there will be sufficient pressure to service the development and water flow rate for firefighting as required in SNZ/PAS 4509.

6.2 **PROPOSED INFRASTRUCTURE**

It is proposed to retain the existing water connection to the existing garden centre and to keep this water supply separate from the new development.

A new reticulated water main is proposed to connect to the existing DN100 AC water main at two points along Brookvale Road. The new reticulated main will service all new lots with both public and private manifolds coming from the new mains. New lot 35 will be serviced by the existing water



connection at the south-western corner of the site. The new reticulated water layout is shown on our engineering drawings in Appendix 3.

Two new fire hydrants will be installed to meet the minimum spacing requirements as per SNZ/PAS 4509. The provision of a firefighting water supply to a reasonable level for the application area has been limited to the fire building classification FW2 non-sprinkled structures; (Housing includes single family dwellings, and multi-unit dwellings, but excludes multi-storey apartment blocks).

A classification FW2 water scheme is required to provide 750 litres/minute from a maximum of two hydrants with flows and distances within 135 metres and 270 metres respectively. The expected water flow rate must be provided with a minimum residual water pressure of no less than 100kPa.

6.3 PROPOSED WATER DEMAND

The HDC Engineering Code of Practice (ECoP) specifies an average annual daily demand (AADD) of 400 litres per person per day and an equivalent population (EP) of 3.5 per dwelling unit. The HDC ECoP also specifies a Peak Daily Demand factor of 2.0 and a Peak Hourly Demand Factor of 5.0.

The existing garden centre has been excluded from this calculation as this area of the site will retain the existing water supply arrangement.

Water Demand = $400 \text{ L/p/day} \times 3.5 \text{ EP} \times 35 \text{ units} = 49 \text{ kl/day (AADD)}$

Peak Daily Demand = $98 \text{ kl/day (49} \times 2)$

Peak Hourly Demand = $20,420 \text{ L/hour (98} \times 5 \times 1000 / 24)$

Peak Demand in L/s = $5.67 \text{ L/s (20,420} / 60 / 60)$

7.0 UTILITIES

We have contacted Network Utility Operators regarding servicing of the site and await their responses. However, there is existing Telecommunications and Power infrastructure along Brookvale Road, and it is expected that the site can be serviced with minor upgrades to provide underground new service connections to each lot.

It is anticipated that new power and telecoms will be provided in a similar alignment to the new water mains and share a common trench, with adequate spacing between utilities.

8.0 LIMITATIONS

8.1 GENERAL

This report is for the use of Jeremy Odering and Hastings District Council only and should not be used or relied upon by any other person or entity or for any other project.

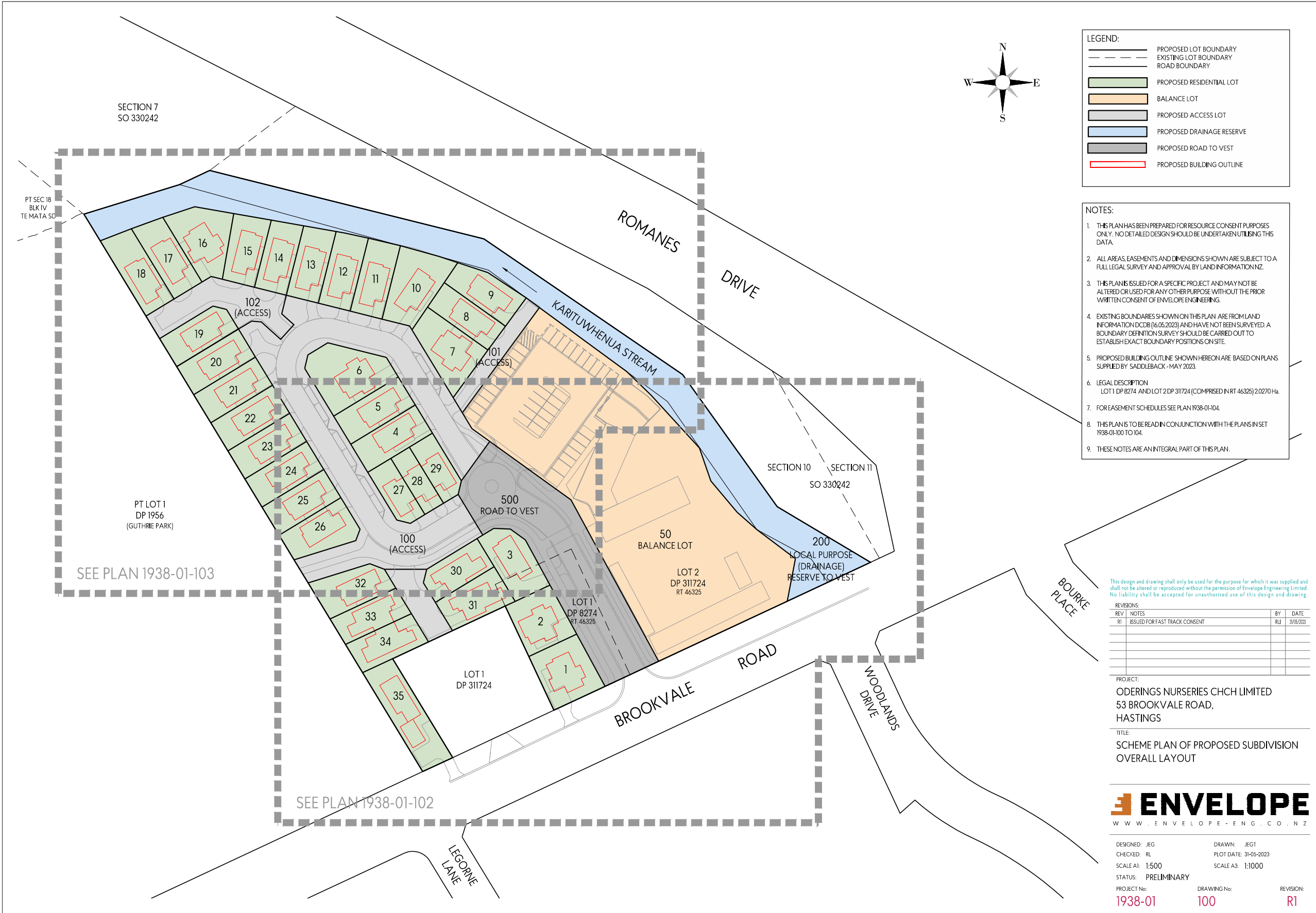
This report has been prepared for the project described to us and its extent is limited to the scope of work agreed between the client and Envelope Engineering Limited. No responsibility is accepted by Envelope Engineering Limited or its directors, servants, agents, staff, or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes.

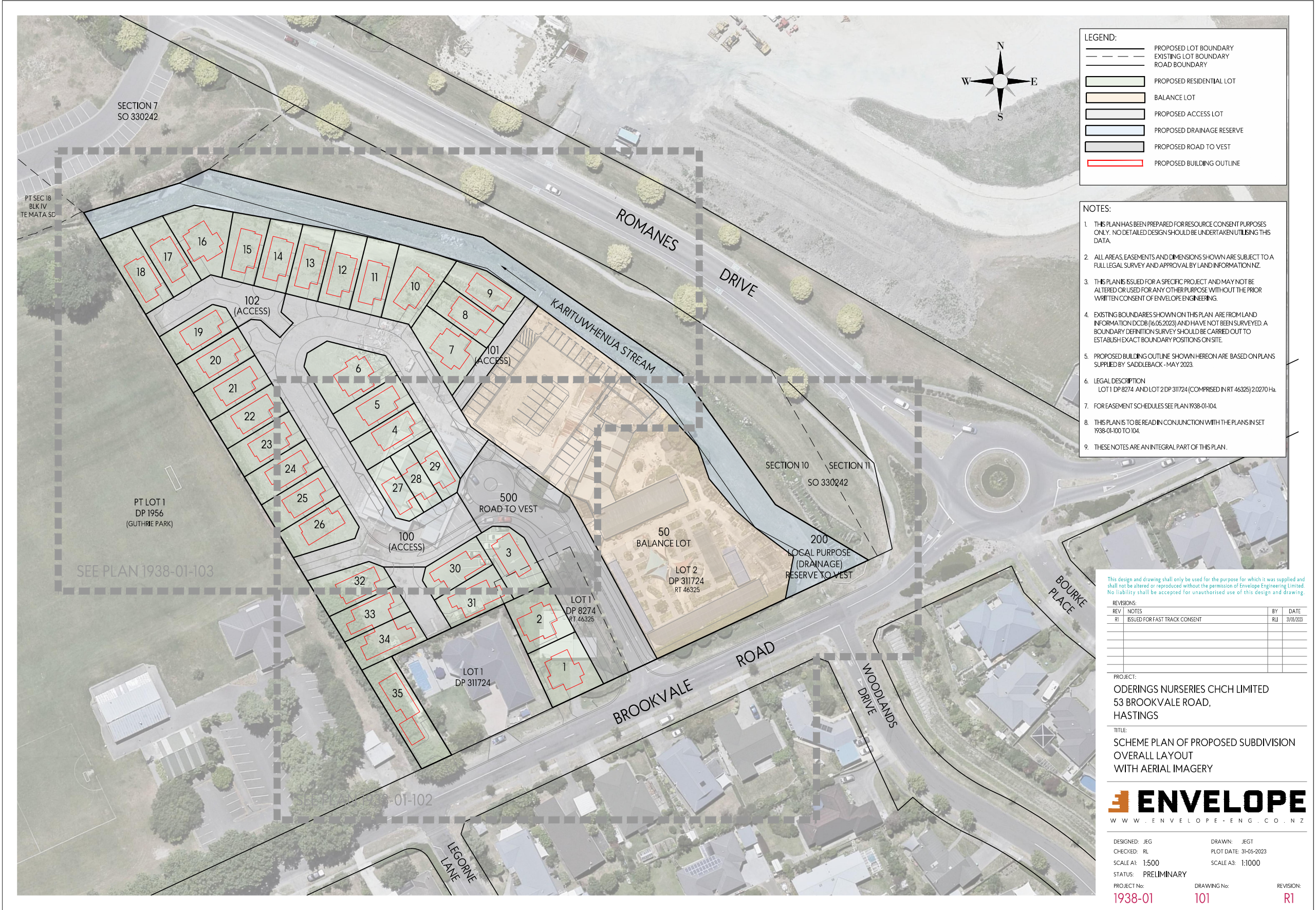


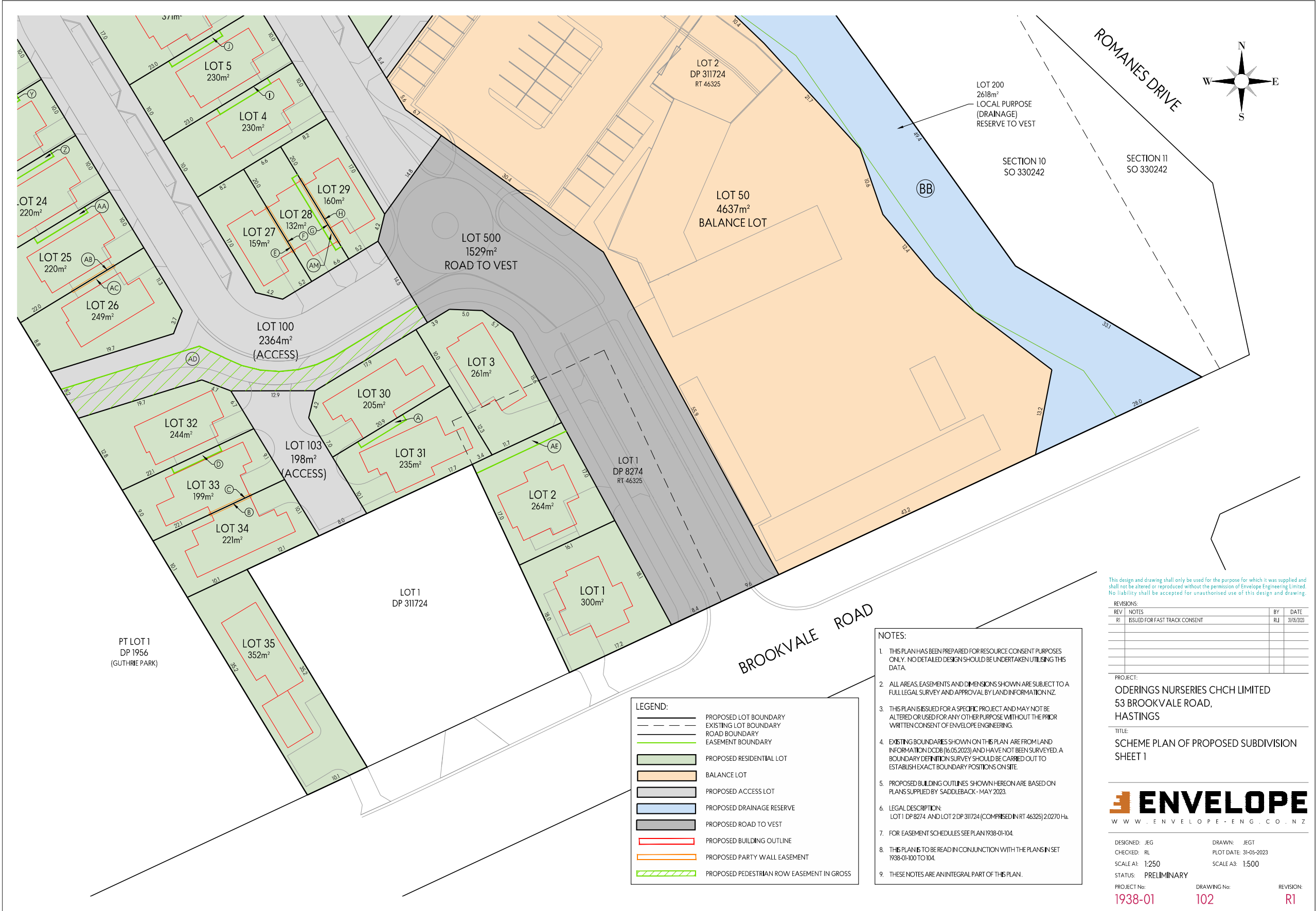
APPENDICES

APPENDIX 1 ARCHITECTURAL DRAWINGS

APPENDIX 2 SCHEME PLANS









MEMORANDUM OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	BENEFITTED LAND (DOMINANT TENEMENT)
RIGHT TO DRAIN WATER AND SEWAGE, RIGHT TO CONVEY WATER, GAS, ELECTRICITY AND TELECOMMUNICATIONS	LOT 100 HEREON	LOT 100 HEREON	LOTS 4 TO 35 HEREON
	LOT 101 HEREON	LOT 101 HEREON	LOTS 7 TO 9 HEREON
	LOT 102 HEREON	LOT 102 HEREON	LOTS 15 TO 19 HEREON
	LOT 103 HEREON	LOT 103 HEREON	LOTS 30 TO 34 HEREON
PARTY WALL	B	LOT 34 HEREON	LOT 33 HEREON
	C	LOT 33 HEREON	LOT 34 HEREON
	E	LOT 27 HEREON	LOT 28 HEREON
	F	LOT 28 HEREON	LOT 27 HEREON
	G		LOT 29 HEREON
	K	LOT 7 HEREON	LOT 8 HEREON
	L	LOT 8 HEREON	LOT 7 HEREON
	S	LOT 16 HEREON	LOT 17 HEREON
	T	LOT 17 HEREON	LOT 16 HEREON
	AB	LOT 25 HEREON	LOT 26 HEREON
MAINTENANCE	AC	LOT 26 HEREON	LOT 25 HEREON
	A	LOT 31 HEREON	LOT 30 HEREON
	D	LOT 33 HEREON	LOT 32 HEREON
	I	LOT 4 HEREON	LOT 5 HEREON
	J	LOT 5 HEREON	LOT 6 HEREON
	M	LOT 8 HEREON	LOT 9 HEREON
	N	LOT 10 HEREON	LOT 11 HEREON
	O	LOT 11 HEREON	LOT 12 HEREON
	P	LOT 12 HEREON	LOT 13 HEREON
	Q	LOT 13 HEREON	LOT 14 HEREON
	R	LOT 14 HEREON	LOT 15 HEREON
	U	LOT 17 HEREON	LOT 18 HEREON
	V	LOT 20 HEREON	LOT 19 HEREON
	W	LOT 21 HEREON	LOT 20 HEREON
	X	LOT 22 HEREON	LOT 21 HEREON
	Y	LOT 23 HEREON	LOT 22 HEREON
	Z	LOT 24 HEREON	LOT 23 HEREON
	AA	LOT 25 HEREON	LOT 24 HEREON
	AM	LOT 28 HEREON	LOT 29 HEREON
RIGHT TO DRAIN WATER	AE	LOT 2 HEREON	LOT 1 DP 311724

MEMORANDUM OF EASEMENTS IN GROSS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	GRANTEE
PEDESTRIAN RIGHT OF WAY	AD	LOT 100 HEREON	HASTINGS DISTRICT COUNCIL
RIGHT TO DRAIN WATER AND SEWAGE, RIGHT TO CONVEY WATER	LOT 100 HEREON	LOT 100 HEREON	
	LOT 101 HEREON	LOT 101 HEREON	
	LOT 102 HEREON	LOT 102 HEREON	
RIGHT TO DRAIN WATER	AF	LOT 12 HEREON	
	AG	LOT 13 HEREON	
	AH	LOT 14 HEREON	
	AI	LOT 15 HEREON	
	AJ	LOT 16 HEREON	
	AK	LOT 17 HEREON	
	AL	LOT 18 HEREON	

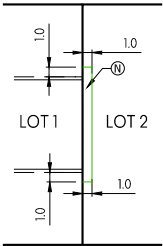
SCHEDULE OF PROPOSED EASEMENTS IN GROSS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	GRANTEE
RIGHT TO CONVEY ELECTRICITY AND TELECOMMUNICATIONS	LOT 100 HEREON	LOT 100 HEREON	UNISON NETWORKS LIMITED
	LOT 101 HEREON	LOT 101 HEREON	
	LOT 102 HEREON	LOT 102 HEREON	
	LOT 103 HEREON	LOT 103 HEREON	
RIGHT TO CONVEY GAS	LOT 100 HEREON	LOT 100 HEREON	POWERCO LIMITED
	LOT 101 HEREON	LOT 101 HEREON	
	LOT 102 HEREON	LOT 102 HEREON	
	LOT 103 HEREON	LOT 103 HEREON	

SCHEDULE OF EXISTING EASEMENTS IN GROSS				
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	GRANTEE	CREATED BY
RIGHT OF WAY AND RIGHT TO DRAIN WATER	BB	LOT 200 HEREON (TBC)	HASTINGS DISTRICT COUNCIL	GN 6341038.3

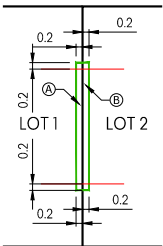
SCHEDULE OF EXISTING EASEMENTS TO BE SURRENDERED				
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	BENEFITTED LAND (DOMINANT TENEMENT)	CREATED BY
RIGHT TO DRAIN WATER	A ON DP 3611724	LOT 1 DP 8274	LOT 1 DP 311724	EC 5379491.4
	B ON DP 3611724	LOT 1 DP 311724		

INCORPORATED SOCIETY:

ALL THE OWNERS OF LOTS 4 TO 35 SHALL BECOME MEMBERS OF THE INCORPORATED SOCIETY ESTABLISHED FOR THE PURPOSE OF MAINTAINING THE SHARED LANES (LOTS 100 TO 103) AND THE SHARED PRIVATE SERVICES USED BY LOTS 4 TO 35.



MAINTENANCE EASEMENT
TYPICAL DETAIL
NOT TO SCALE



PARTY WALL EASEMENT
TYPICAL DETAIL
NOT TO SCALE

- NOTES:
- THIS PLAN HAS BEEN PREPARED FOR RESOURCE CONSENT PURPOSES ONLY. NO DETAILED DESIGN SHOULD BE UNDERTAKEN UTILISING THIS DATA.
 - ALL AREAS, EASEMENTS AND DIMENSIONS SHOWN ARE SUBJECT TO A FULL LEGAL SURVEY AND APPROVAL BY LAND INFORMATION NZ.
 - THIS PLAN IS ISSUED FOR A SPECIFIC PROJECT AND MAY NOT BE ALTERED OR USED FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF ENVELOPE ENGINEERING.
 - EXISTING BOUNDARIES SHOWN ON THIS PLAN ARE FROM LAND INFORMATION DCDB (16.05.2023) AND HAVE NOT BEEN SURVEYED. A BOUNDARY DEFINITION SURVEY SHOULD BE CARRIED OUT TO ESTABLISH EXACT BOUNDARY POSITIONS ON SITE.
 - PROPOSED BUILDING OUTLINES SHOWN HEREON ARE BASED ON PLANS SUPPLIED BY SADDLEBACK - MAY 2023.
 - LEGAL DESCRIPTION: LOT 1 DP 8274 AND LOT 2 DP 311724 (COMPRISED IN RT 46325) 2/02/70 Ha.
 - THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE PLANS IN SET 1938-01-100 TO 104.
 - THESE NOTES ARE AN INTEGRAL PART OF THIS PLAN.

AMALGAMATION CONDITIONS

- LOT 100 (ACCESS) HEREON TO BE HELD TOGETHER AS TO THIRTY ONE UNDIVIDED ONE THIRTY FIRST SHARES BY THE OWNERS OF LOTS 4 TO 35 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORDS OF TITLE TO BE ISSUED IN ACCORDANCE THEREWITH.
- LOT 101 (ACCESS) HEREON TO BE HELD TOGETHER AS TO THREE UNDIVIDED ONE THIRD SHARES BY THE OWNERS OF LOTS 7 TO 9 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORDS OF TITLE TO BE ISSUED IN ACCORDANCE THEREWITH.
- LOT 102 (ACCESS) HEREON TO BE HELD TOGETHER AS TO SIX UNDIVIDED ONE SIXTH SHARES BY THE OWNERS OF LOTS 14 TO 19 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORDS OF TITLE TO BE ISSUED IN ACCORDANCE THEREWITH.
- LOT 103 (ACCESS) HEREON TO BE HELD TOGETHER AS TO FIVE UNDIVIDED ONE FIFTH SHARES BY THE OWNERS OF LOTS 30 TO 34 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORDS OF TITLE TO BE ISSUED IN ACCORDANCE THEREWITH.

This design and drawing shall only be used for the purpose for which it was supplied and shall not be altered or reproduced without the permission of Envelope Engineering Limited. No liability shall be accepted for unauthorised use of this design and drawing.

REVISIONS:		BY	DATE
REV	NOTES		
R1	ISSUED FOR FAST TRACK CONSENT	RL	30/05/2023

PROJECT:
ODERINGS NURSERIES CHCH LIMITED
53 BROOKVALE ROAD,
HASTINGS

TITLE:
SCHEME PLAN OF PROPOSED SUBDIVISION
EASEMENT SCHEDULES



DESIGNED: JEG
CHECKED: RL
SCALE A1: NTS
STATUS: PRELIMINARY
PROJECT No: 1938-01

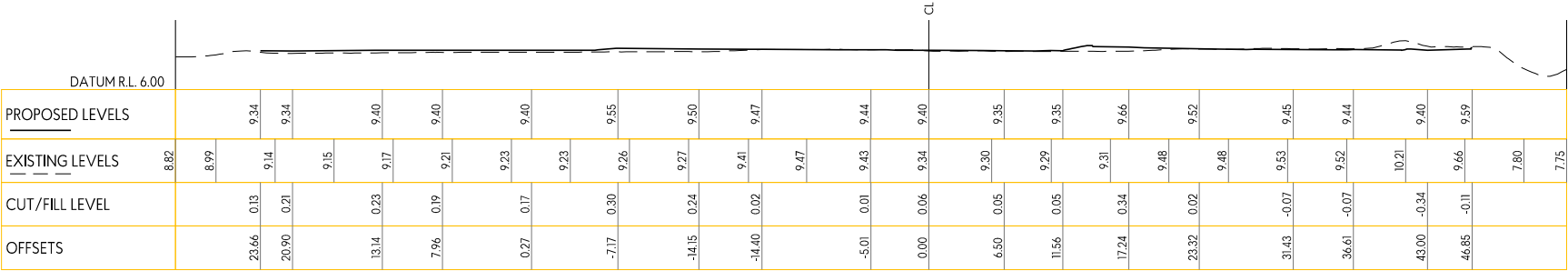
DRAWN: JEGT
PLOT DATE: 31-05-2023
SCALE A3: NTS
REVISION: R1

APPENDIX 3 ENGINEERING PLANS

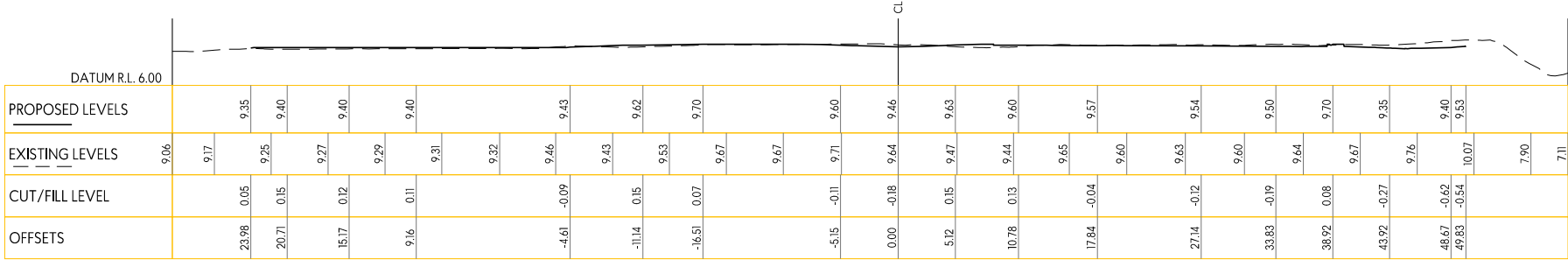




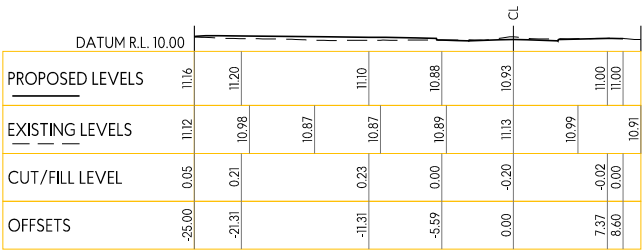




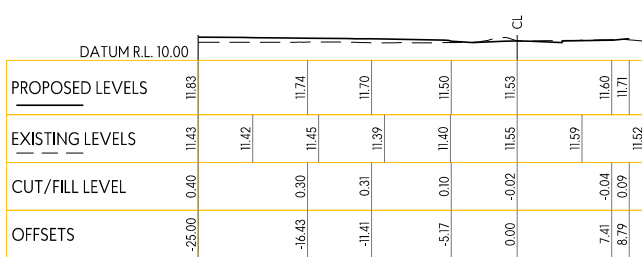
CL THROUGH ACCESSWAYS: CH 110.00



CL THROUGH ACCESSWAYS: CH 100.00



CL THROUGH ACCESSWAYS: CH 40.00



CL THROUGH ACCESSWAYS: CH 20.00

LEGEND:
--- EXISTING GROUND LEVEL
— PROPOSED FINISHED GROUND LEVEL

NOTES:
1. CROSS SECTIONS ARE SHOWN WITH A 2x VERTICAL EXAGGERATION.
2. EXISTING LEVELS SHOWN ARE FROM LINZ LIDAR DATA AND SHOULD BE VERIFIED ON-SITE.
3. LEVELS ARE IN TERMS OF NEW ZEALAND VERTICAL DATUM 2016.

This design and drawing shall only be used for the purpose for which it was supplied and shall not be altered or reproduced without the permission of Envelope Engineering Limited. No liability shall be accepted for unauthorised use of this design and drawing.

REVISIONS:		BY	DATE
REV	NOTES		
RC-1	ISSUED FOR RESOURCE CONSENT	TC	26.05.23

PROJECT:
ODERINGS DEVELOPMENT
55-57 BROOKVALE ROAD
HAVELOCK NORTH, HAWKES BAY

TITLE:
EARTHWORKS PLANS
CROSS SSECTION
SHEET 1 OF 2



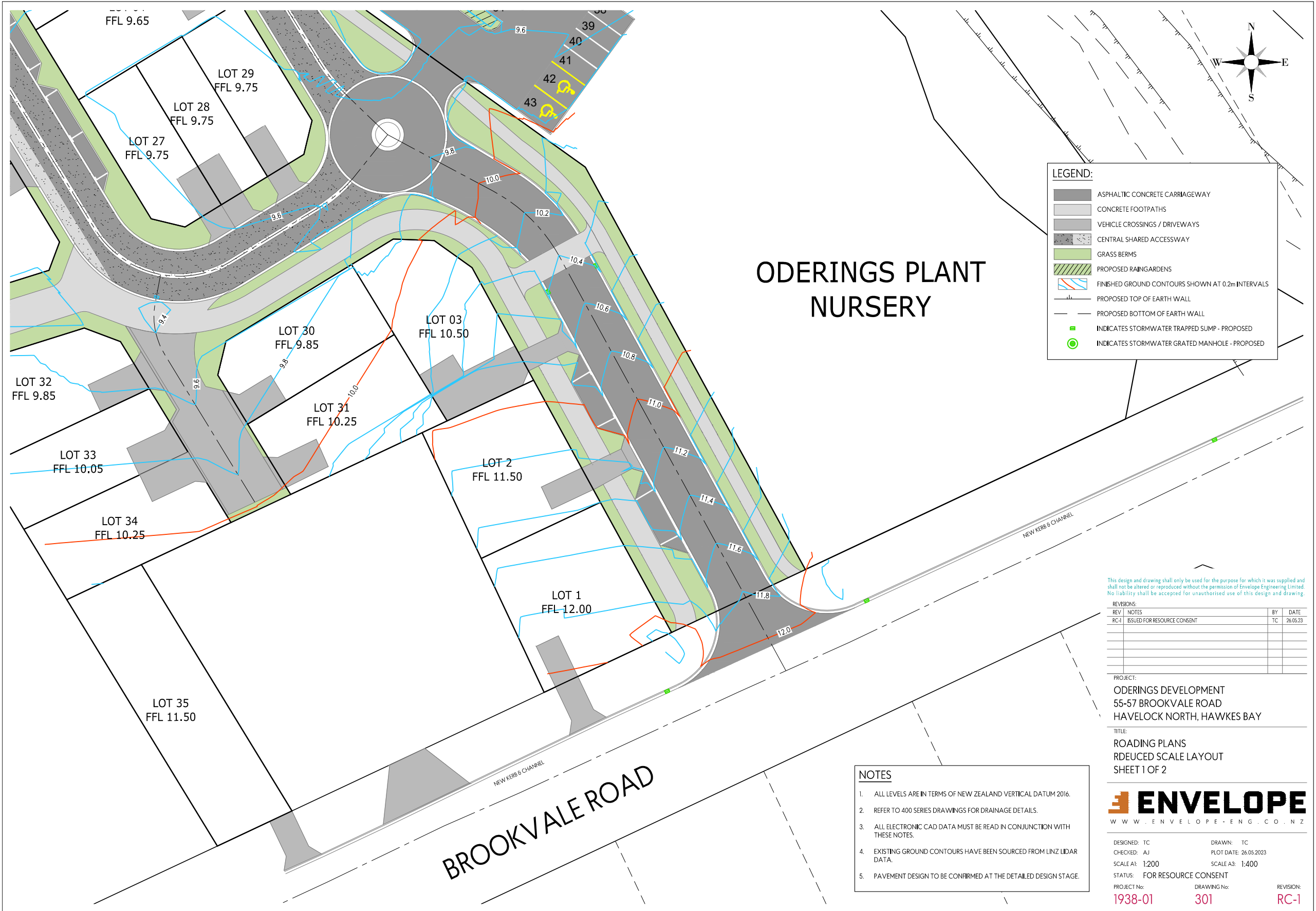
DESIGNED: TC	DRAWN: TC
CHECKED: AJ	PLOT DATE: 26.05.2023
SCALE A1: 1:250	SCALE A3: 1:500
STATUS: FOR RESOURCE CONSENT	
PROJECT No: 1938-01	DRAWING No: 230
	REVISION: RC-1



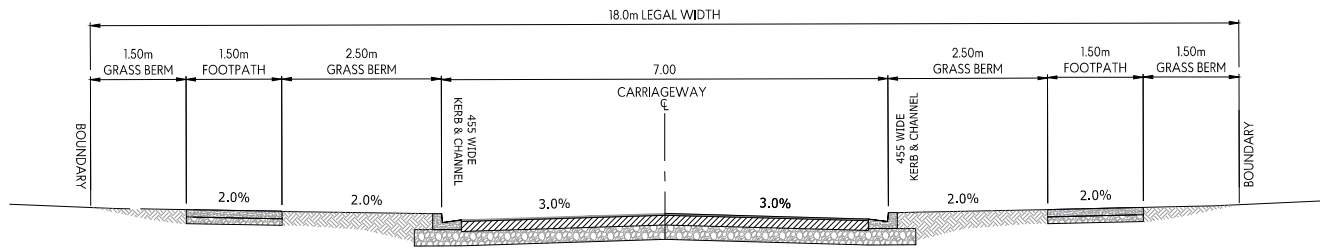
1. CROSS SECTIONS ARE SHOWN WITH A 2x VERTICAL EXAGGERATION.
2. EXISTING LEVELS SHOWN ARE FROM LINZ LIDAR DATA AND SHOULD BE VERIFIED ON-SITE.
3. LEVELS ARE IN TERMS OF NEW ZEALAND VERTICAL DATUM 2016.

DESIGNED: TC DRAWN: TC
CHECKED: AJ PLOT DATE: 26.05.2023
SCALE A1: 1:250 SCALE A3: 1:500
STATUS: FOR RESOURCE CONSENT
PROJECT No: DRAWING No: REVISION:
1938-01 231 RC-1

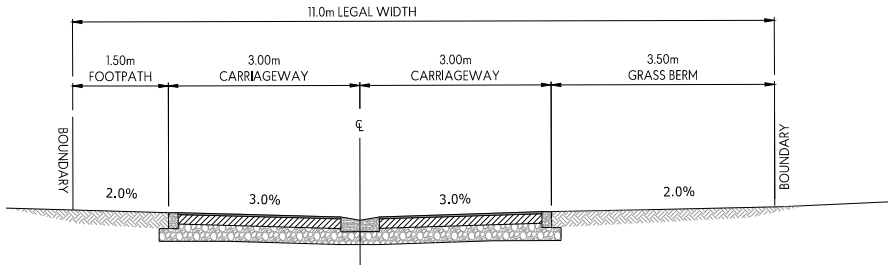




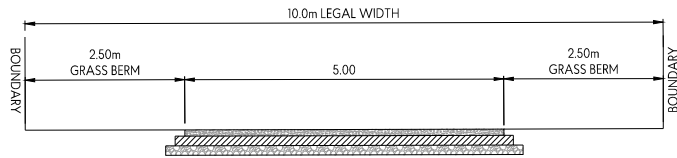




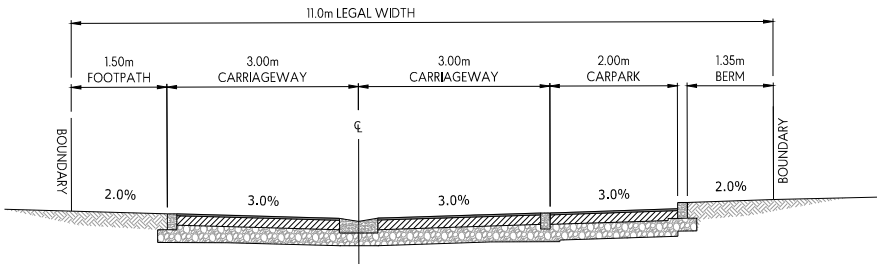
TYPICAL ROAD CROSS SECTION A-A
(18m WIDE CORRIDOR)



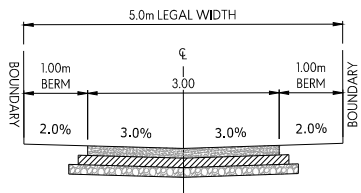
TYPICAL ROAD CROSS SECTION D-D
(11m WIDE CORRIDOR)



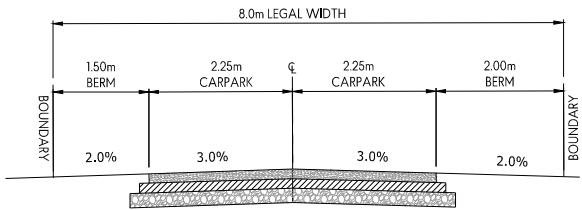
TYPICAL RESERVE CONNECTION CROSS SECTION B-B
(10m WIDE CORRIDOR)



TYPICAL ROAD CROSS SECTION E-E
(11m WIDE CORRIDOR)



TYPICAL ROAD CROSS SECTION C-C
(5m WIDE CORRIDOR)



TYPICAL ROAD CROSS SECTION F-F
(8m WIDE CORRIDOR)

This design and drawing shall only be used for the purpose for which it was supplied and shall not be altered or reproduced without the permission of Envelope Engineering Limited. No liability shall be accepted for unauthorised use of this design and drawing.

REVISIONS:			BY	DATE
REV	NOTES			
RC-1	ISSUED FOR RESOURCE CONSENT		TC	26.05.23

PROJECT:
ODERINGS DEVELOPMENT
55-57 BROOKVALE ROAD
HAVELOCK NORTH, HAWKES BAY

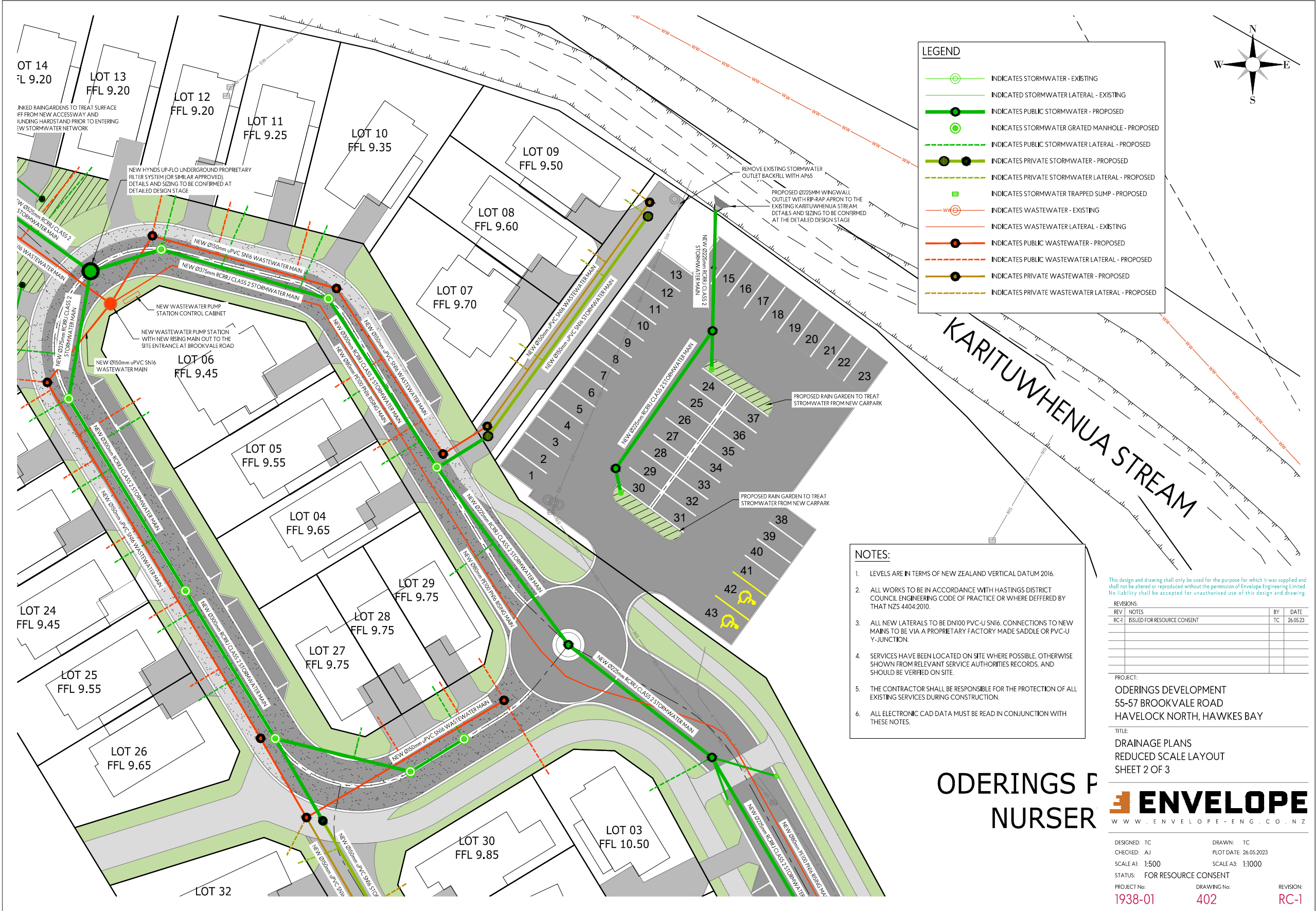
TITLE:
ROADING PLANS
TYPICAL CROSS SECTIONS

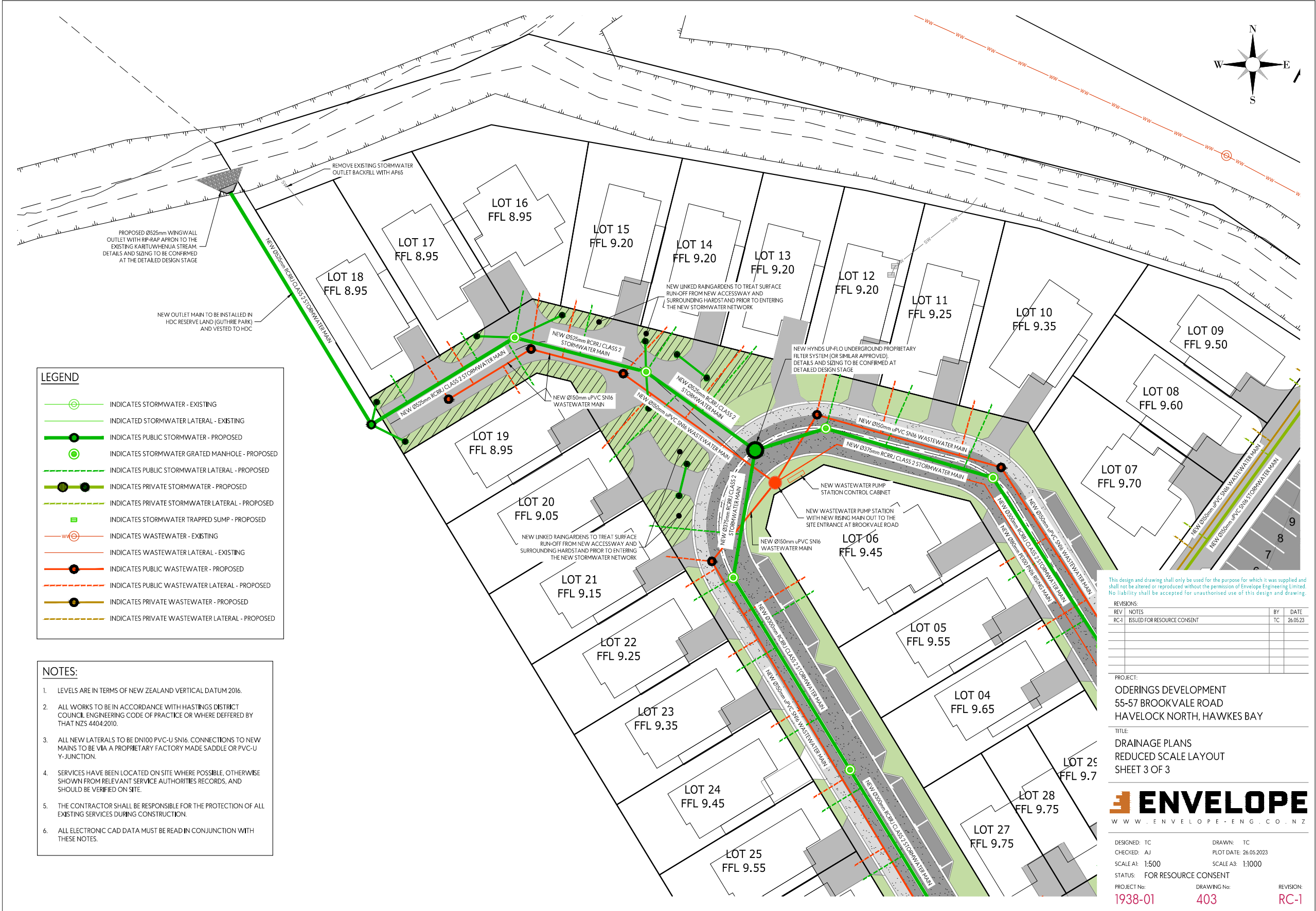


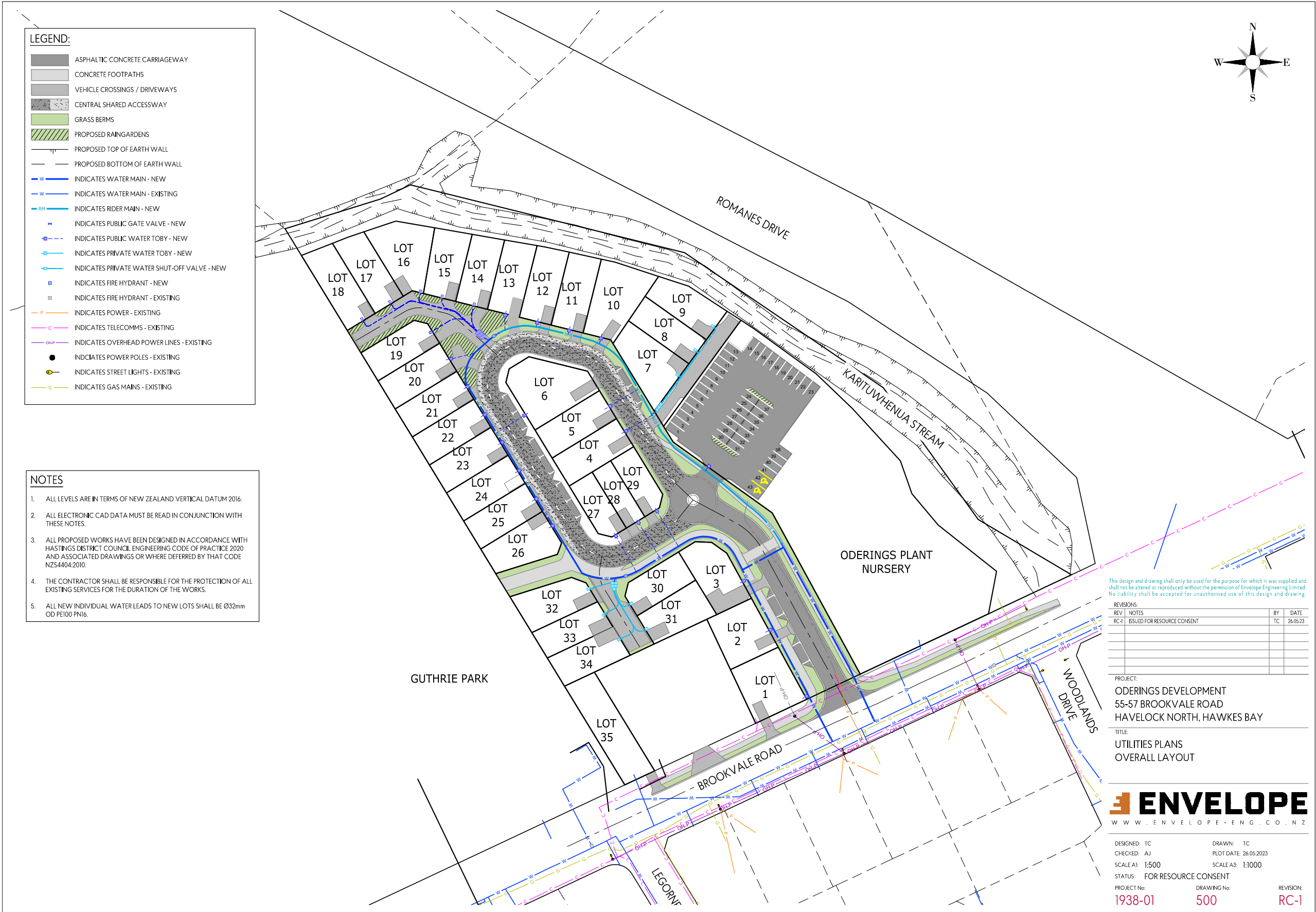
DESIGNED: TC	DRAWN: TC
CHECKED: AJ	PLOT DATE: 26.05.2023
SCALE A1: 1:50	SCALE A3: 1:100
STATUS: FOR RESOURCE CONSENT	
PROJECT No: 1938-01	DRAWING No: 340
	REVISION: RC-1

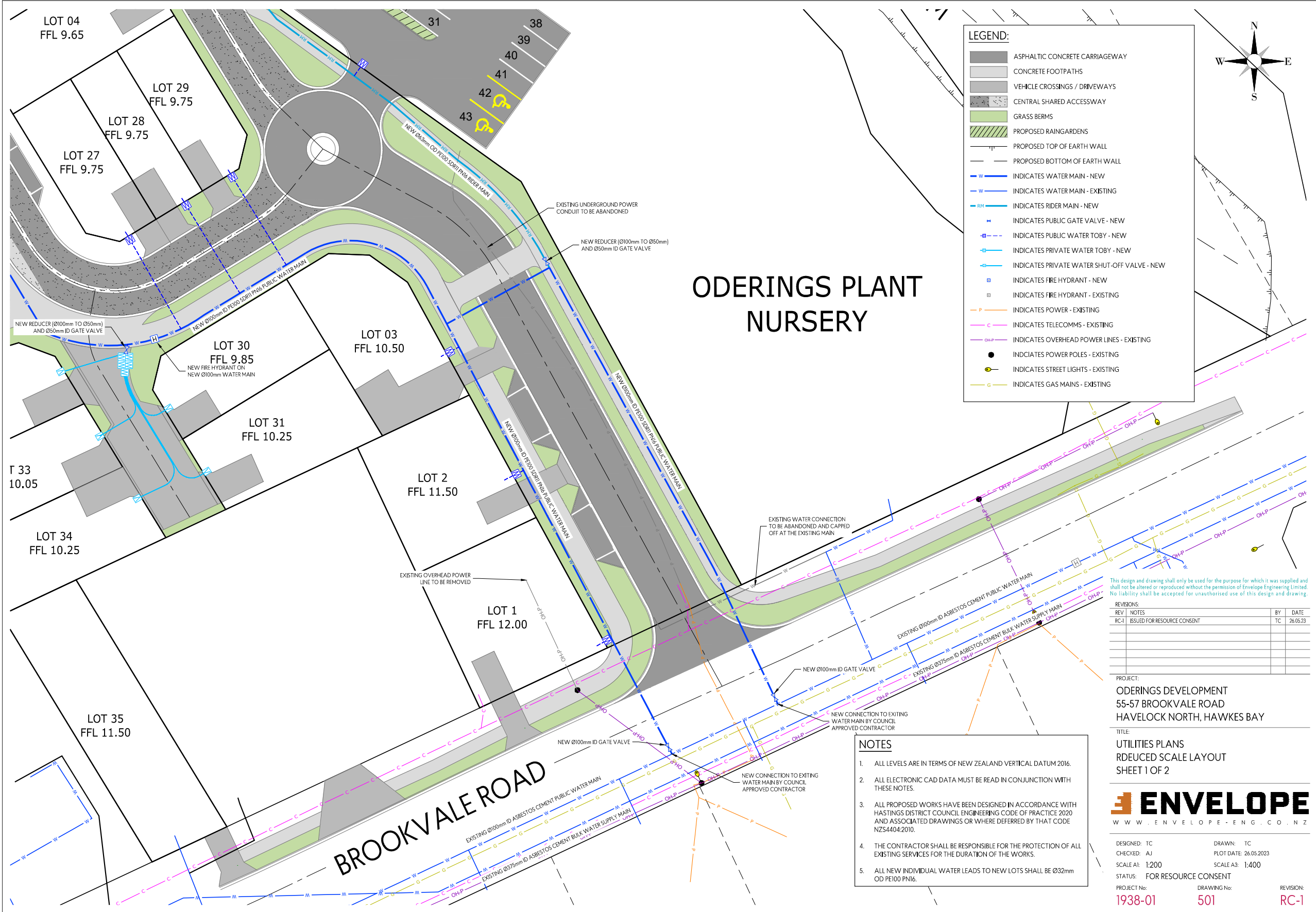














APPENDIX 4 **STORMWATER CALCULATIONS**

Stormwater Attenuation Calculator

55-57 Brookvale Rd26/05/2023



Hydrology - Rational Method

Storm Duration (minutes)	10
Annual Exceedance Probability	50%
Rainfall Intensity (HIRDSv4 RCP 6.0)	41.2
Time of Concentration (Tc)	10

	Pre-Development			Post-Development			Ratio compared to Pre-Dev flow	
	Area (m2)	Runoff Coefficient (c factor)	Flow (l/s)	Area (m2)	Runoff Coefficient (c factor)	Flow (l/s)	Unattenuated	Attenuated
Impervious - not connected to tank	12960	0.85	126.17	9100	0.85	88.59		
Impervious - connected to tank	0	0.85		1400	0.85	13.63		
Pervious - not connected to tank	1440	0.2	3.30	3900	0.2	8.93		
Pervious - connected to tank	0	0.2		0	0.2	0.00		
Total	14400		129.47	14400		111.16	85.9%	81.3%

Tank Design

Tank Inflow (l/s)	
Impervious - connected to tank	13.63
Pervious - connected to tank	0.00
Total Tank Inflow	13.63
Non-Tank Runoff	97.53
Total	111.16

Tank Geometry

Hydraulic Depth (m, max)	0.9
Storage Capacity (l)	35000
Orifice Outlet Diameter (mm)	88
Outlet Area (m2)	0.006082123
Orifice Coefficient	0.62

Horizontal Pipes

Diameter (mm)	600
Length Required (m)	123.8

Tank Simulation

Time (mins)	Inflow (l/s)	Inflow (l/min)	Inflow + Previous Storage	Height	Outflow (l/m)	Outflow (l/s)	Net Storage
0	0	0.00	0.00	0.00	0.00	0.00	0.00
1	1.36	81.78	81.78	0.00	45.96	0.77	35.82
2	2.73	163.56	199.38	0.01	71.76	1.20	127.62
3	4.09	245.34	372.96	0.01	98.14	1.64	274.81

4	5.45	327.11	601.93	0.02	124.68	2.08	477.24
5	6.81	408.89	886.14	0.02	151.28	2.52	734.86
6	8.18	490.67	1225.53	0.03	177.91	2.97	1047.62
7	9.54	572.45	1620.07	0.04	204.55	3.41	1415.52
8	10.90	654.23	2069.75	0.05	231.20	3.85	1838.55
9	12.27	736.01	2574.55	0.07	257.86	4.30	2316.69
10	13.63	817.79	3134.48	0.08	284.52	4.74	2849.96
11	13.63	817.79	3667.74	0.09	307.78	5.13	3359.97
12	13.63	817.79	4177.76	0.11	328.48	5.47	3849.28
13	13.63	817.79	4667.06	0.12	347.18	5.79	4319.88
14	13.63	817.79	5137.67	0.13	364.27	6.07	4773.40
15	13.63	817.79	5591.19	0.14	380.00	6.33	5211.19
16	13.63	817.79	6028.98	0.16	394.60	6.58	5634.38
17	13.63	817.79	6452.16	0.17	408.21	6.80	6043.95
18	13.63	817.79	6861.74	0.18	420.97	7.02	6440.77
19	13.63	817.79	7258.55	0.19	432.97	7.22	6825.58
20	13.63	817.79	7643.37	0.20	444.30	7.41	7199.07
21	12.27	736.01	7935.07	0.20	452.70	7.54	7482.37
22	10.90	654.23	8136.60	0.21	458.41	7.64	7678.19
23	9.54	572.45	8250.64	0.21	461.61	7.69	7789.03
24	8.18	490.67	8279.70	0.21	462.43	7.71	7817.28
25	6.81	408.89	8226.17	0.21	460.93	7.68	7765.24
26	5.45	327.11	8092.36	0.21	457.16	7.62	7635.19
27	4.09	245.34	7880.53	0.20	451.14	7.52	7429.39
28	2.73	163.56	7592.94	0.20	442.83	7.38	7150.11
29	1.36	81.78	7231.89	0.19	432.18	7.20	6799.71
30	0.00	0.00	6799.71	0.17	419.06	6.98	6380.65
31	0.00	0.00	6380.65	0.16	405.95	6.77	5974.70
32	0.00	0.00	5974.70	0.15	392.82	6.55	5581.88
33	0.00	0.00	5581.88	0.14	379.69	6.33	5202.20
34	0.00	0.00	5202.20	0.13	366.55	6.11	4835.65
35	0.00	0.00	4835.65	0.12	353.40	5.89	4482.26
36	0.00	0.00	4482.26	0.12	340.24	5.67	4142.02
37	0.00	0.00	4142.02	0.11	327.07	5.45	3814.95
38	0.00	0.00	3814.95	0.10	313.89	5.23	3501.06
39	0.00	0.00	3501.06	0.09	300.70	5.01	3200.35
40	0.00	0.00	3200.35	0.08	287.50	4.79	2912.86

Peak Runoff- Tank	7.7
Peak Runoff- Non Tank	97.5
Total Peak Runoff	105.2
Pre Dev Peak	129.5

Notes

1. Height within tank assumes storage is directly proportional to stored height. For circular pipes, this is an approximation.

Stormwater Attenuation Calculator

55-57 Brookvale Rd26/05/2023



Hydrology - Rational Method

Storm Duration (minutes)	10
Annual Exceedance Probability	10%
Rainfall Intensity (HIRDSv4 RCP 6.0)	73.3
Time of Concentration (Tc)	10

	Pre-Development			Post-Development			Ratio compared to Pre-Dev flow	
	Area (m2)	Runoff Coefficient (c factor)	Flow (l/s)	Area (m2)	Runoff Coefficient (c factor)	Flow (l/s)	Unattenuated	Attenuated
Impervious - not connected to tank	12960	0.85	224.48	9100	0.85	157.62		
Impervious - connected to tank	0	0.85		1400	0.85	24.25		
Pervious - not connected to tank	1440	0.2	5.87	3900	0.2	15.89		
Pervious - connected to tank	0	0.2		0	0.2	0.00		
Total	14400		230.35	14400		197.76	85.9%	80.2%

Tank Design

Tank Inflow (l/s)	
Impervious - connected to tank	24.25
Pervious - connected to tank	0.00
Total Tank Inflow	24.25
Non-Tank Runoff	173.51
Total	197.76

Tank Geometry

Hydraulic Depth (m, max)	0.9
Storage Capacity (l)	35000
Orifice Outlet Diameter (mm)	88
Outlet Area (m2)	0.006082123
Orifice Coefficient	0.62

Horizontal Pipes

Diameter (mm)	600
Length Required (m)	123.8

Tank Simulation

Time (mins)	Inflow (l/s)	Inflow (l/min)	Inflow + Previous Storage	Height	Outflow (l/m)	Outflow (l/s)	Net Storage
0	0	0.00	0.00	0.00	0.00	0.00	0.00
1	2.42	145.49	145.49	0.00	61.30	1.02	84.19
2	4.85	290.99	375.18	0.01	98.44	1.64	276.75
3	7.27	436.48	713.23	0.02	135.72	2.26	577.51

4	9.70	581.98	1159.49	0.03	173.05	2.88	986.44
5	12.12	727.47	1713.91	0.04	210.39	3.51	1503.52
6	14.55	872.97	2376.49	0.06	247.74	4.13	2128.74
7	16.97	1018.46	3147.21	0.08	285.10	4.75	2862.11
8	19.40	1163.96	4026.06	0.10	322.46	5.37	3703.60
9	21.82	1309.45	5013.06	0.13	359.82	6.00	4653.24
10	24.25	1454.95	6108.18	0.16	397.18	6.62	5711.00
11	24.25	1454.95	7165.94	0.18	430.20	7.17	6735.74
12	24.25	1454.95	8190.69	0.21	459.93	7.67	7730.76
13	24.25	1454.95	9185.70	0.24	487.07	8.12	8698.63
14	24.25	1454.95	10153.58	0.26	512.09	8.53	9641.49
15	24.25	1454.95	11096.44	0.29	535.34	8.92	10561.10
16	24.25	1454.95	12016.05	0.31	557.08	9.28	11458.97
17	24.25	1454.95	12913.92	0.33	577.52	9.63	12336.40
18	24.25	1454.95	13791.35	0.35	596.81	9.95	13194.53
19	24.25	1454.95	14649.48	0.38	615.10	10.25	14034.38
20	24.25	1454.95	15489.33	0.40	632.49	10.54	14856.84
21	21.82	1309.45	16166.29	0.42	646.16	10.77	15520.13
22	19.40	1163.96	16684.09	0.43	656.43	10.94	16027.66
23	16.97	1018.46	17046.13	0.44	663.51	11.06	16382.61
24	14.55	872.97	17255.58	0.44	667.57	11.13	16588.01
25	12.12	727.47	17315.48	0.45	668.73	11.15	16646.75
26	9.70	581.98	17228.73	0.44	667.05	11.12	16561.67
27	7.27	436.48	16998.16	0.44	662.58	11.04	16335.58
28	4.85	290.99	16626.57	0.43	655.29	10.92	15971.28
29	2.42	145.49	16116.77	0.41	645.17	10.75	15471.60
30	0.00	0.00	15471.60	0.40	632.12	10.54	14839.48
31	0.00	0.00	14839.48	0.38	619.08	10.32	14220.40
32	0.00	0.00	14220.40	0.37	606.03	10.10	13614.37
33	0.00	0.00	13614.37	0.35	592.97	9.88	13021.40
34	0.00	0.00	13021.40	0.33	579.91	9.67	12441.49
35	0.00	0.00	12441.49	0.32	566.85	9.45	11874.64
36	0.00	0.00	11874.64	0.31	553.79	9.23	11320.85
37	0.00	0.00	11320.85	0.29	540.72	9.01	10780.12
38	0.00	0.00	10780.12	0.28	527.65	8.79	10252.47
39	0.00	0.00	10252.47	0.26	514.58	8.58	9737.90
40	0.00	0.00	9737.90	0.25	501.50	8.36	9236.40

Peak Runoff- Tank	11.1
Peak Runoff- Non Tank	173.5
Total Peak Runoff	184.7
Pre Dev Peak	230.3

Notes

1. Height within tank assumes storage is directly proportional to stored height. For cicular pipes, this is an approximation.

Stormwater Attenuation Calculator

55-57 Brookvale Rd26/05/2023



Hydrology - Rational Method

Storm Duration (minutes)	10
Annual Exceedance Probability	2%
Rainfall Intensity (HIRDSv4 RCP 6.0)	112.0
Time of Concentration (Tc)	10

	Pre-Development			Post-Development			Ratio compared to Pre-Dev flow	
	Area (m2)	Runoff Coefficient (c factor)	Flow (l/s)	Area (m2)	Runoff Coefficient (c factor)	Flow (l/s)	Unattenuated	Attenuated
Impervious - not connected to tank	12960	0.85	342.99	9100	0.85	240.84		
Impervious - connected to tank	0			1400	0.85	37.05		
Pervious - not connected to tank	1440	0.2	8.97	3900	0.2	24.29		
Pervious - connected to tank	0			0	0.2	0.00		
Total	14400		351.96	14400		302.17	85.9%	79.4%

Tank Design

Tank Inflow (l/s)	
Impervious - connected to tank	37.05
Pervious - connected to tank	0.00
Total Tank Inflow	37.05
Non-Tank Runoff	265.12
Total	302.17

Tank Geometry

Hydraulic Depth (m, max)	0.9
Storage Capacity (l)	35000
Orifice Outlet Diameter (mm)	88
Outlet Area (m2)	0.006082123
Orifice Coefficient	0.62

Horizontal Pipes

Diameter (mm)	600
Length Required (m)	123.8

Tank Simulation

Time (mins)	Inflow (l/s)	Inflow (l/min)	Inflow + Previous Storage	Height	Outflow (l/m	Outflow (l/s)	Net Storage
0	0	0.00	0.00	0.00	0.00	0.00	0.00
1	3.71	222.31	222.31	0.01	75.77	1.26	146.54
2	7.41	444.62	591.16	0.02	123.56	2.06	467.60
3	11.12	666.93	1134.53	0.03	171.18	2.85	963.35

4	14.82	889.24	1852.60	0.05	218.74	3.65	1633.86
5	18.53	1111.56	2745.42	0.07	266.28	4.44	2479.13
6	22.23	1333.87	3813.00	0.10	313.81	5.23	3499.19
7	25.94	1556.18	5055.37	0.13	361.34	6.02	4694.03
8	29.64	1778.49	6472.52	0.17	408.86	6.81	6063.66
9	33.35	2000.80	8064.46	0.21	456.38	7.61	7608.09
10	37.05	2223.11	9831.20	0.25	503.89	8.40	9327.30
11	37.05	2223.11	11550.41	0.30	546.18	9.10	11004.24
12	37.05	2223.11	13227.35	0.34	584.48	9.74	12642.86
13	37.05	2223.11	14865.98	0.38	619.63	10.33	14246.35
14	37.05	2223.11	16469.46	0.42	652.19	10.87	15817.27
15	37.05	2223.11	18040.38	0.46	682.59	11.38	17357.79
16	37.05	2223.11	19580.90	0.50	711.13	11.85	18869.77
17	37.05	2223.11	21092.88	0.54	738.08	12.30	20354.80
18	37.05	2223.11	22577.91	0.58	763.62	12.73	21814.29
19	37.05	2223.11	24037.40	0.62	787.91	13.13	23249.49
20	37.05	2223.11	25472.60	0.66	811.09	13.52	24661.50
21	33.35	2000.80	26662.30	0.69	829.82	13.83	25832.48
22	29.64	1778.49	27610.97	0.71	844.45	14.07	26766.52
23	25.94	1556.18	28322.69	0.73	855.27	14.25	27467.43
24	22.23	1333.87	28801.29	0.74	862.46	14.37	27938.83
25	18.53	1111.56	29050.38	0.75	866.19	14.44	28184.20
26	14.82	889.24	29073.44	0.75	866.53	14.44	28206.91
27	11.12	666.93	28873.85	0.74	863.55	14.39	28010.30
28	7.41	444.62	28454.92	0.73	857.26	14.29	27597.66
29	3.71	222.31	27819.97	0.72	847.64	14.13	26972.33
30	0.00	0.00	26972.33	0.69	834.63	13.91	26137.69
31	0.00	0.00	26137.69	0.67	821.62	13.69	25316.08
32	0.00	0.00	25316.08	0.65	808.60	13.48	24507.48
33	0.00	0.00	24507.48	0.63	795.58	13.26	23711.90
34	0.00	0.00	23711.90	0.61	782.56	13.04	22929.34
35	0.00	0.00	22929.34	0.59	769.54	12.83	22159.80
36	0.00	0.00	22159.80	0.57	756.52	12.61	21403.28
37	0.00	0.00	21403.28	0.55	743.49	12.39	20659.79
38	0.00	0.00	20659.79	0.53	730.46	12.17	19929.33
39	0.00	0.00	19929.33	0.51	717.43	11.96	19211.90
40	0.00	0.00	19211.90	0.49	704.40	11.74	18507.50
Peak Runoff- Tank	14.4						
Peak Runoff- Non Tank	265.1						
Total Peak Runoff	279.6						
Pre Dev Peak	352.0						

Notes
1. Height within tank assumes storage is directly proportional to stored height. For cicular pipes, this is an approximation.

Stormwater Attenuation Calculator

55-57 Brookvale Rd26/05/2023



Hydrology - Rational Method

Storm Duration (minutes)	10
Annual Exceedance Probability	1%
Rainfall Intensity (HIRDSv4 RCP 6.0)	132.0
Time of Concentration (Tc)	10

	Pre-Development			Post-Development			Ratio compared to Pre-Dev flow	
	Area (m2)	Runoff Coefficient (c factor)	Flow (l/s)	Area (m2)	Runoff Coefficient (c factor)	Flow (l/s)	Unattenuated	Attenuated
Impervious - not connected to tank	12960	0.85	404.24	9100	0.85	283.84		
Impervious - connected to tank	0			1400	0.85	43.67		
Pervious - not connected to tank	1440	0.2	10.57	3900	0.2	28.62		
Pervious - connected to tank	0			0	0.2	0.00		
Total	14400		414.81	14400		356.13	85.9%	79.2%

Tank Design

Tank Inflow (l/s)	
Impervious - connected to tank	43.67
Pervious - connected to tank	0.00
Total Tank Inflow	43.67
Non-Tank Runoff	312.47
Total	356.13

Tank Geometry

Hydraulic Depth (m, max)	0.9
Storage Capacity (l)	35000
Orifice Outlet Diameter (mm)	88
Outlet Area (m2)	0.006082123
Orifice Coefficient	0.62

Horizontal Pipes

Diameter (mm)	600
Length Required (m)	123.8

Tank Simulation

Time (mins)	Inflow (l/s)	Inflow (l/min)	Inflow + Previous Storage	Height	Outflow (l/m	Outflow (l/s)	Net Storage
0	0	0.00	0.00	0.00	0.00	0.00	0.00
1	4.37	262.01	262.01	0.01	82.26	1.37	179.75
2	8.73	524.02	703.77	0.02	134.82	2.25	568.95
3	13.10	786.03	1354.98	0.03	187.07	3.12	1167.91

4	17.47	1048.04	2215.95	0.06	239.23	3.99	1976.72
5	21.83	1310.05	3286.76	0.08	291.35	4.86	2995.41
6	26.20	1572.06	4567.47	0.12	343.46	5.72	4224.01
7	30.57	1834.07	6058.08	0.16	395.55	6.59	5662.53
8	34.93	2096.08	7758.60	0.20	447.64	7.46	7310.96
9	39.30	2358.08	9669.05	0.25	499.72	8.33	9169.33
10	43.67	2620.09	11789.42	0.30	551.80	9.20	11237.62
11	43.67	2620.09	13857.72	0.36	598.25	9.97	13259.47
12	43.67	2620.09	15879.57	0.41	640.40	10.67	15239.16
13	43.67	2620.09	17859.26	0.46	679.15	11.32	17180.10
14	43.67	2620.09	19800.20	0.51	715.10	11.92	19085.09
15	43.67	2620.09	21705.19	0.56	748.72	12.48	20956.47
16	43.67	2620.09	23576.57	0.61	780.32	13.01	22796.24
17	43.67	2620.09	25416.34	0.65	810.20	13.50	24606.14
18	43.67	2620.09	27226.23	0.70	838.55	13.98	26387.68
19	43.67	2620.09	29007.78	0.75	865.55	14.43	28142.23
20	43.67	2620.09	30762.32	0.79	891.34	14.86	29870.98
21	39.30	2358.08	32229.07	0.83	912.34	15.21	31316.72
22	34.93	2096.08	33412.80	0.86	928.95	15.48	32483.85
23	30.57	1834.07	34317.92	0.88	941.45	15.69	33376.47
24	26.20	1572.06	34948.53	0.90	950.06	15.83	33998.47
25	21.83	1310.05	35308.52	0.91	954.94	15.92	34353.58
26	17.47	1048.04	35401.62	0.91	956.19	15.94	34445.42
27	13.10	786.03	35231.45	0.91	953.89	15.90	34277.56
28	8.73	524.02	34801.58	0.89	948.06	15.80	33853.52
29	4.37	262.01	34115.53	0.88	938.67	15.64	33176.86
30	0.00	0.00	33176.86	0.85	925.66	15.43	32251.20
31	0.00	0.00	32251.20	0.83	912.66	15.21	31338.54
32	0.00	0.00	31338.54	0.81	899.65	14.99	30438.89
33	0.00	0.00	30438.89	0.78	886.64	14.78	29552.25
34	0.00	0.00	29552.25	0.76	873.64	14.56	28678.61
35	0.00	0.00	28678.61	0.74	860.63	14.34	27817.99
36	0.00	0.00	27817.99	0.72	847.61	14.13	26970.37
37	0.00	0.00	26970.37	0.69	834.60	13.91	26135.77
38	0.00	0.00	26135.77	0.67	821.59	13.69	25314.19
39	0.00	0.00	25314.19	0.65	808.57	13.48	24505.62
40	0.00	0.00	24505.62	0.63	795.55	13.26	23710.07

Peak Runoff- Tank	15.9
Peak Runoff- Non Tank	312.5
Total Peak Runoff	328.4
80% Pre Dev Peak	331.8

Notes

1. Height within tank assumes storage is directly proportional to stored height. For circular pipes, this is an approximation.

APPENDIX 5 TOPOGRAPHICAL SURVEY PLAN



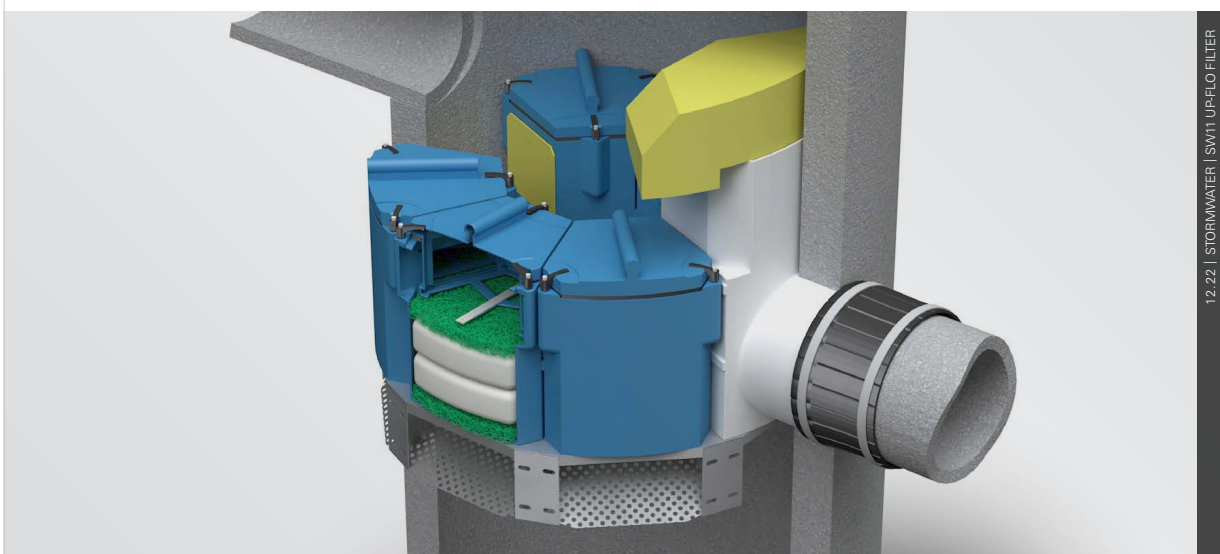
APPENDIX 6 HYNDS UP-FLO FILTER

The Up-Flo® Filter

(Stormwater Treatment)

Technical Guide SW 11

This technical guide is designed for Land Developers, Civil Engineering Consultants, Councils and Installers to assist in the understanding of the Up-Flo® stormwater filter. This includes key design attributes, indicative sizing, hydraulic requirements, and FAQ's



Applications

Small commercial carparks
Large industrial hardstand areas
Residential sub-divisions
Municipal roadways
Retrofit into existing urban catchments
Upstream of wetland or river discharge

Product Attributes

Designed to remove 90% TSS with a mean particle size of 20 microns
Small footprint to maximise land use
Simple and cost-effective maintenance
In-line or off-line configurations
Internally bypasses storms

Approvals/Standards

Auckland Council Approval for Private & Public sites (PDEP)
Christchurch City Council Approved Private & Public treatment device
New Jersey Department of Environmental Protection, NJCAT Program
ARC TP10 approval for removal of greater than 75 percent TSS

We are the supply partner of choice for New Zealand's stormwater management and treatment solutions.

HYNDS
STORMWATER

The Up-Flo® Filter is a stormwater remedial device that incorporates gravitational separation and absorption of fine sediment, nutrients, heavy metals, oils & organics. It offers pre-screening and upward flow path filtration of polluted stormwater to achieve treatment train capabilities in a standalone small footprint device. Each Up-Flo® device consists of a highly configurable array of modules that are supplied as a complete system generally encased in a concrete manhole.



FIG. 1 14 module Up-Flo inside 2.3m dia manhole delivered to site and ready to operate. No assembly required.

Up-Flo Filter Components

The Up-Flo® Filter has no moving parts and requires no external power.

The internal components consist of the following:

- Angled stainless steel screens
- Filter modules
- Bypass Siphon with a floatables baffle
- Outlet module with a drain down port

The filter module houses the media pack which consists of two filter media bags and two layers of flow distributing media comprising:

- C** arbon (granular activated) for filtration
- P** eat (organic, loose, not palletised) for absorption
- Z** eolite (aluminosilicate mineral) for dissolved metals & some Nutrients

Design and Sizing

The Up-Flo® Filter is sized for either a specified catchment area, or a design flow rate to meet a water quality flow (WQF). Each individual filter module has a WQF of up to 1.58 L/s to meet the manufacturer's performance and design requirements (ref: NJCAT, US 2015).

Multiple versions of the Up-Flo Filter can be supplied depending on the available driving head and outlet Depth to Invert (DTI). Please email our nationwide Hynds stormwater Engineering team at hswsupport@hynds.co.nz and they will complete this task for you.

Due to the reduced head of the shallow outlet design (and subsequently lower flow rate); more filter modules are required to treat the equivalent area. The following tables are for indicative use only to represent approximate catchment areas that can be treated based on number of Up-Flo modules.

TABLE 1 Auckland Council PDEP Approved Standard Design
1-6 modules (drawing T7511) 7-10 modules (drawing T7495)

Hynds Sales Code	Manhole dia (m)	Outlet DTI (m)	Total Headloss (mm)	Max WQF (L/s)	Max carpark area based on 10mm/hr rainfall intensity (m ²)
UP-FLO.1CKIT	Ø1.2	1.44	792	1.58	599
UP-FLO.2CKIT	Ø1.2	1.44	792	3.16	1197
UP-FLO.3CKIT	Ø1.2	1.44	792	4.74	1796
UP-FLO.4CKIT	Ø1.2	1.44	792	6.32	2395
UP-FLO.5CKIT	Ø1.2	1.44	792	7.9	2994
UP-FLO.6CKIT	Ø1.2	1.44	792	9.48	3592
UP-FLO.7CKIT	Ø1.8	1.59	842	11.06	4191
UP-FLO.8CKIT	Ø1.8	1.59	842	12.64	4790
UP-FLO.9CKIT	Ø2.0	1.59	842	14.22	5389
UP-FLO.10CKIT	Ø2.0	1.59	842	15.8	5987

TABLE 2 Christchurch City Council Approved Standard Design
1-6 modules (drawing E1000) 7-10 modules (drawing E1001)

Hynds Sales Code	Manhole dia (m)	Outlet DTI (m)	Total Headloss (mm)	Max WQF (L/s)	Max carpark area based on 5mm/hr rainfall intensity (m ²)
UP-FLO.1KIT	Ø1.2	1.44	792	1.58	1197
UP-FLO.2KIT	Ø1.2	1.44	792	3.16	2395
UP-FLO.3KIT	Ø1.2	1.44	792	4.74	3592
UP-FLO.4KIT	Ø1.2	1.44	792	6.32	4790
UP-FLO.5KIT	Ø1.2	1.44	792	7.9	5987
UP-FLO.6KIT	Ø1.2	1.44	792	9.48	7185
UP-FLO.7KIT	Ø1.8	1.59	842	11.06	8382
UP-FLO.8KIT	Ø1.8	1.59	842	12.64	9580
UP-FLO.9KIT	Ø1.8	1.59	842	14.22	10777
UP-FLO.10KIT	Ø1.8	1.59	842	15.8	11975

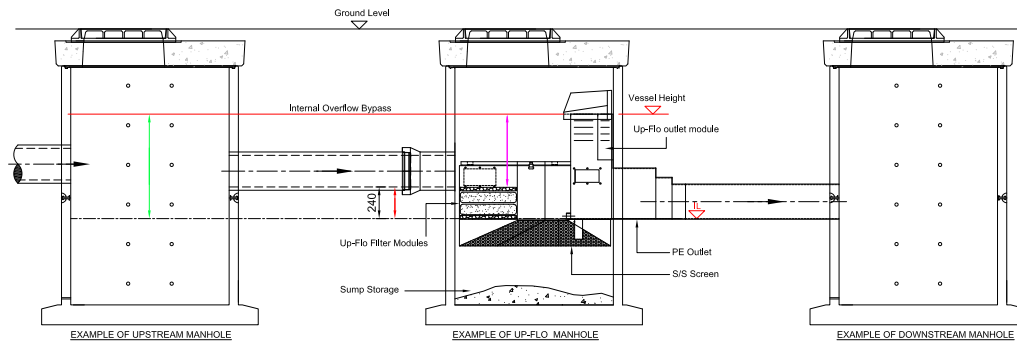
TABLE 3 Low Driving Head Shallow Outlet Design (Drawing E1122)

Hynds Sales Code	Manhole dia (m)	Outlet DTI (m)	Total Headloss (mm)	Max WQF (L/s)	Max carpark area based on 10mm/hr rainfall intensity (m ²)	Max carpark area based on 5mm/hr rainfall intensity (m ²)
UP-FLO.1SKIT	Ø1.2	1.0	500	0.55	209	417
UP-FLO.2SKIT	Ø1.2	1.0	500	1.20	455	910
UP-FLO.3SKIT	Ø1.2	1.0	500	2.10	796	1592
UP-FLO.4SKIT	Ø1.2	1.0	500	2.65	1005	2009
UP-FLO.5SKIT	Ø1.2	1.0	500	3.30	1251	2502
UP-FLO.6SKIT	Ø1.2	1.0	500	4.20	1592	3185

NOTES:

- Rainfall intensities of 5mm/hr and 10mm/hr as provided by Auckland, Wellington and Christchurch City Councils
- Carpark area based only on runoff coefficient value (c value) of asphalt = 0.95
- Calculations above based on accepted rational method equation as an indication of stormwater runoff
- These carpark areas are indicative only, Hynds is not liable for any sizing without supplying a formal Hynds calc sheet
- To size Up-Flo's for areas outside of Auckland and Christchurch please email hsupport@hynds.co.nz
- Larger Up-Flo standard designs for 10 modules + are available upon request
- North Island Up-Flo's supplied in Pinnacle Cast Manholes ex Pokeno
- South Island Up-Flo's supplied in Hyspec Spun Manholes ex Hornby

Example of typical Up-Flo Filter Long Section Whilst Operating



'TOTAL HEAD LOSS' at design flow rate.
This is the distance between UP-FLO Outlet IL and Internal Bypass height.
This should be factored into design when considering upstream surcharge.

'PHYSICAL DROP' or ELEVATION HEAD'
This is the recommended difference between Inlet & Outlet inverts = minimum 240mm, however not always required for retro fit projects

'MINIMUM DRIVING HEAD' required to activate CPZ Media, this is the height above the conveyance slot linking modules. Total depth of media bags is 284mm.

Standard 1 to 6 Module	= 508mm @ 1.58 Ltrs / sec
Shallow 1 to 6 Module	= 306mm @ 1.10 Ltrs / sec
Standard 7 to 10 Module	= 558mm @ 1.58 Ltrs / sec

Hydraulic Parameters

Total head loss = upstream surcharge height above outlet invert during max WQF

Internal bypass height = Total head loss

Multiple inlet pipes = Yes

Maximum online bypass flow rate = 115.0L/s

Recommended 'hydraulic drop' between inlet and outlet = 240mm*

***Please contact Hynds stormwater Engineering team to discuss alternative arrangements as this is not always required.**

Engineered for Performance

Longer filter runs

Higher flow capacities

Resistant to clogging

'Self-cleans' during drain-down period

Media is not submerged between events

Media does not re-release captured materials

Maintenance & Safety-led Design

The ONLY filter with lightweight media bags for easy removal and maintenance

The Up-Flo takes less time to replace the media when compared with floor mounted cartridge filters

Removal of filter bags does not require any lifting apparatus

Refer to quick reference maintenance guide

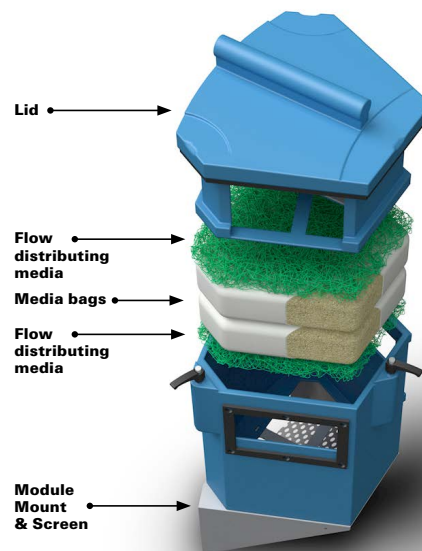


FIG. 2 Up-Flo® Filter Media Filter Module

How it Works

The Up-Flo® Filter comprises a three stage treatment train designed to achieve a high level of stormwater treatment. Coarse sediments are removed through settling. Gross pollutants are captured through screening, and fine particles are trapped through filtration. The function of the Up-Flo® Filter through each stage of a typical storm event is explained below.

Treatment

During a rain event, stormwater runoff enters the chamber via an inlet pipe or overhead grate. Gross pollutants and sediment settle out in the sump. As water fills the chamber, flow is directed upwards through the angled screen into the filter module. Flow is evenly distributed across the media for maximum contact and treatment. Treated flow exits the filter module via a conveyance channel to a common outlet module.

Siphonic Bypass

Flows in excess of the designed filtration capacity are discharged directly to the outlet using a siphonic bypass. The siphonic bypass also acts as a baffle, which prevents the escape of oils, grease, and buoyant pollutants.

Drain-down

In traditional stormwater filters, the treatment media is often continuously submerged in water which may cause the media conditions to change resulting in anaerobic bacterial growth, degradation of the filter media, and the release of harmful leachates. The Up-Flo® Filter has a patented drain-down system to ensure the filter media is not submerged between storm events. As a storm subsides, filtered water drains out of the chamber through the drain-down port at the base of the outlet module. The reverse gravity flow backwashes filter media, ensuring continued high flow rate and removal efficiencies over the duty life of the filter module (between maintenance cycles).

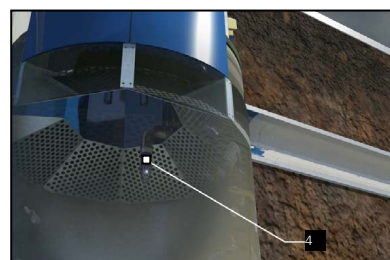
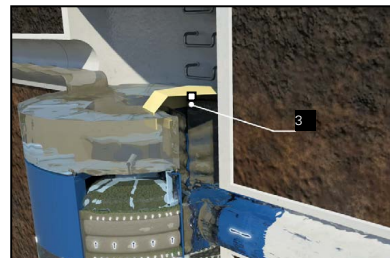


FIG. 3 Key functional stages of an Up-Flo® Filter in operation

Indicative Pollutant Removal Guide

The graph on the right indicates removal ranges based on [Hydro International Up-Flo® Filter with CPZ™ Media Verification Statement](#).

Verification is based on existing performance test data from two different locations with different rainfall characteristics, catchment areas and pollutant loadings. Supporting data were obtained from three independent performance monitoring studies.

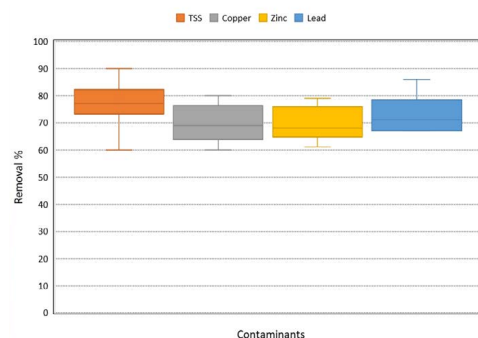


FIG. 4 Box and whisker graph depicting pollutant removal efficiency of the Up-Flo® Filter

Lifting and Handling

All Up-Flo® Filters incorporate Swiftlift lifting anchors for safe lifting and must be used with the correct lifting clutch. Hynds Pipe Systems has designed and manufactured the Up-Flo® Filter with a minimum dynamic factor of 1.2. This dynamic factor requires that all the following conditions are observed when lifting, moving or placing the units:

1. Lifting with mobile plant (*such as an excavator or similar*) where equipment is specifically exempt from the requirements of the PECPR Regulations 1999, subject to the conditions outlined in the New Zealand Gazette, No. 104, September 2015 and
2. Lifting, travelling and placing over rough or uneven ground where anchor failure is not anticipated to cause harm or injury, by adopting procedures such as:
 - a. Transporting the element as close as practical to ground level (300mm recommended)
 - b. Establishing and maintaining exclusion zones
 - c. Transporting only precast concrete elements that are unlikely to topple if they were to hit the ground
 - d. Inspecting lifting anchors both after transportation and before final lifting into place

Refer to “Safe work with precast concrete - Handling, transportation and erection of precast concrete elements” published by Worksafe New Zealand (October 2018)

Shock loads resulting from travelling with suspended Up-Flo® over rough terrain and uneven ground may exceed design, dynamic and safety factors of the lifting systems. It is essential that care is taken during lifting and transporting as additional stresses could result in anchor failure.

SW11 UP-FLO FILTER | STORMWATER | PG 6



FIG. 5 18 module Up-Flo inside a 3.0m dia manhole treating a 6,500m² carpark at Featherston Railway station. Credit SDCL for image.

Frequently Asked Questions

How will the Up-Flo manhole arrive to site?

The Up-Flo manhole should be treated like any other manhole. Manhole installation depth is governed by outlet DTI. The Up-Flo will arrive ready to operate with the filter bags pre-installed. The concrete lid and cast iron cover will be placed on the truck separately.

If excessive fine sediment/clay is present in runoff during construction, or if the site is expected to be unsealed for a prolonged period of time; it is advised to avoid filtering through the Up-Flo. Alternatively, the CPZ filter bags can easily be removed from the modules by the Installer and kept clean and secure until the surface is sealed.

How is the outlet connection achieved?

The Up-Flo's has a stepped PE outlet with three possible diameters (267mm, 318mm and 389mm). It is designed to be cut back to the closest pipe diameter. Recommended connection options include [Flexseal Shear Band Pipe Couplers \(Hynds Technical Guide D10.4\)](#) for concrete & PE pipes, and/or level invert reducers for PVC pipes. Please discuss with your closest Hynds branch.

Can the Up-Flo accept multiple inlet pipes?

Yes, please follow [CPAA guidelines](#) in relation to manhole spacing requirements of inlet pipe penetrations. For Up-Flo's with 2-6 modules and multiple inlets it is recommended to ensure pipes enter above the grey filter modules (435mm above outlet IL) to prevent obstruction to flow path. Alternatively, ensure the Up-Flo is manufactured with modules positioned accordingly to suit pipe orientations during order process by Contractor.

What is the total head loss of the Up-Flo?

Depends on the number of filter modules. The total head loss is the height from the outlet invert to the underside of the bypass baffle, please refer to relevant drawing.

Does the inlet have to be 240mm higher than the outlet?

No, it is not compulsory. The inlet pipe can match the same invert with the outlet pipe if available head allows. The preference is for the inlet pipe to be installed above 240mm to reduce the volume of stormwater untreated during the drain down process after the rain event.

Does the Up-Flo filter need to be commissioned?

No. Because the CPZ filter bags, mataala screens and drain down valve is pre-installed there is no need for commissioning by any agent. The Up-Flo filter is designed to treat hardstand runoff only, post construction phase. If the Up-Flo is subject to prolonged construction phase sediment runoff (fine clays etc) filter performance is likely to be compromised. It is the Installers responsibility to ensure this does not happen, not Hynds.

How often do the filter bags need to be replaced?

The acceptable industry standard is every 12-18 months with a 3-6 monthly visual inspection. For heavily trafficked commercial & industrial sites 6 monthly filter bag replacement should be considered as best practice.

What is the maximum online flow rate?

The yellow internal bypass hood is designed to convey up to 115.0L/s. For any storm flows approaching this figure it is recommended the Up-Flo is positioned offline with an upstream weir diversion.

In

E

SW11 UP-FLO FILTER | STORMWATER | PG 8

Branches Nationwide Support Office & Technical Services 0800 93 7473

Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, users of Hynds product or information within this document must make their own assessment of suitability for their particular application. Product dimensions are nominal only, and should be verified if critical to a particular installation. No warranty is either expressed, implied, or statutory made by Hynds unless expressly stated in any sale and purchase agreement entered into between Hynds and the user.

hynds.co.nz
0800 93 7473



Attachment E

55-57 BROOKVALE ROAD

Landscape and Visual Effects Assessment

Prepared for
Oderings Nurseries Ltd

25 May 2023



Attachment F



Project Name: 55-57 Brookvale Road

Report Title: Landscape and Visual Effects Assessment

Prepared for: Oderings Nurseries Ltd.

Prepared by: Narrative Landscape Ltd.

Status: Draft

Issue Date: 25 May 2023



Contents

INTRODUCTION	4
METHODOLOGY	4
PROPOSAL	5
PLANNING FRAMEWORK	7
EXISTING LANDSCAPE	14
LANDSCAPE EFFECTS	16
VISUAL EFFECTS	17
CONCLUSION.....	22
APPENDIX 1: EFFECTS SCALE	23
Figure 1: Location Map.....	5
Figure 2: Landscape Master Plan (Drawing: LMP 01 – Source: Oderings Landscaping).....	5
Figure 3: Planning Map Extract (Hastings District Council Online Mapping).....	7
Figure 4: Historic Aerial 1990's (Source: Retro Lens)	8
Figure 5: HPUDS Extract (Final HPUDS Map 2017 Overview).....	8
Figure 6: Brooklands Estate Master Plan	9
Figure 7: Drone photograph of Brooklands Estate (yellow) and the OUV site (red)	9
Figure 8: Statistics NZ – Urban Rural 2023 (Generalised)	10
Figure 9: Pg 18 of the Hastings Residential Intensification Design Guide 2020.....	12
Figure 10: Site Plan including lot sizes	13
Figure 11: Aerial Image Comparison (Glass Houses Removed)	15
Figure 12: View across Guthrie Park from Napier Road (Viewpoint A of Attachment 1)	15
Figure 13: View of application site from Romanes Dr and Brookvale Rd	16
Figure 14: View toward Te Mata Peak from Napier Road gateway to Havelock North.....	19
Figure 15: View toward Te Mata Peak from Crosses Road gateway to Havelock North ...	19
Figure 16: Outdoor Living Space (53 Brookvale Road) and existing Cypress Hedgerow ...	21
Figure 17: Road frontage of 60, 58 and 56 Brookvale Road.....	21
Figure 18: James Wattie Retirement Village, Te Aute Road.....	22



Introduction

Narrative Landscape have been engaged by Oderings Nurseries Ltd (the 'Applicant') to prepare a landscape and visual effects assessment (LVA) for a proposed 35 lot subdivision and comprehensive medium density residential (MDR) development at their site along Brookvale Road. As part of the LVA, Narrative Landscape has worked alongside the wider project team to ensure that the development is suitably designed and mitigated.

A key reason for the inclusion of a LVA as part of the consent application is because the application site is positioned on an isolated patch of rural zoning within the Havelock North urban footprint. A portion of the following LVA will specifically address this zoning discrepancy and how the proposed development is considered to be consistent with the existing landscape character of the locality.

Methodology

This assessment has been based on guidance from the NZ Landscape Assessment Guidelines¹, with the intention to determine the nature of effects and identify the degree of those effects (based on a 7-point scale, Refer: **Appendix 1**). The methodology for this assessment includes:

- Preliminary desktop research and collation of relevant base information;
- Undertaking a site visit (9/01/2023) to collect photographs and document the surrounding site character (Note: I am very familiar with the site, having driven past the site on my way to work for over 9 years, as my previous employers office is approximately 600m away on Te Mata Road);
- Review of the relevant Hastings District Plan Provisions;
- Identification of representative viewpoints and preparation of a Viewpoint Location Document;
- Ongoing liaison with the wider project team;
- Identification of potentially affected parties;
- Recommendations to mitigate potential adverse effects;
- Assessment of landscape (and visual) effects.

¹ Te Tangi a te Manu Aotearoa NZ Landscape Assessment Guidelines (Final Draft), approved NZILA Tuia Pita Ora 5/05/2021.



Proposal

The proposal is to develop 35 townhouses on the applicants existing property (the ‘Site’), located at 55-57 Brookvale Road, Havelock North (Figure 1). The existing garden centre (since 1997) and café (consented in 2022) will remain, with the balance of the site (including the carpark and access road) proposed to be upgraded for use by 34 internal townhouses. The proposed layout is demonstrated by the landscape master plan (Figure 2). There is also one townhouse taking direct access from Brookvale Road.



Figure 1: Location Map



Figure 2: Master Plan (Drawing: LMP 01 – Source: Oderings Landscaping)



A full description of the proposed development is included within the AEE prepared by Saddleback. In relation to potential landscape effects the following components are considered to be relevant:

- 35 residential allotments;
- 35 townhouses with 4 different typologies (Ref: Saddleback Drawing Package);
 - Type A (5) - two storey, 110m²
 - Type B (22) - two storey, 99m²
 - Type C (3) - two storey, 67m²
 - Type D (5) – single storey, 110m²
- Additional allotments for access (i.e. access to Guthrie Park, parking and three-waters services)
- Landscaping Plans for the entire development (Ref: Oderings Landscape Drawing Package²);
 - Detailed planting plans and plant schedule (mix of native and exotic plants)
 - Feature Trees throughout the development
 - Varied fence typologies

The proposal (Oderings Urban Village - **OUV**) intends to provide a Medium Density Residential environment which promotes a positive relationship with the adjacent public realm, passive surveillance and the implementation of high quality urban design and landscaping. One of the key aspects, in relation to limiting potential landscape and visual amenity effects, is the implementation of on-site landscaping (particular the site boundary treatment) so that the OUV complements the existing character of the surrounding area. The landscape design intent for the OUV aims to achieve the following outcomes;

- Include finishes and materials that provide a high level of quality, amenity, and interest.
- Highlight the former land use and existing Oderings site by utilising nursery stock throughout the development. Provide vegetation throughout that softens and integrates the new residences within the broader established neighbourhood and ensure the development gives back to the community.
- Provide a streetscape layout and design that encourages a slow speed environment that is safe and welcoming for pedestrians and cyclists and promotes shared use.
- Incorporate innovative stormwater detention and treatment within the development.

² Designed by Landscape Architect, Nicky Adams



It is also noted that the landscape architect who has prepared the site planting plans has stated³;

Mixture of natives and exotics to create interest and diversity while attracting birds, tying in with the surrounding landscaping and the Hastings District Council design guide 2020. Use of mid height hedges gives structure and privacy while allowing for passive surveillance onto street and park.

Planning Framework

District Plan Zoning Context

The proposed OUV is located within the Plains Production Zone (PPZ) of the Hastings District Plan. Surrounding most of the site is the Open Space 1 Zoning which includes the Karitwheenua Stream and Guthrie Park, while there is the Havelock North General Residential Zone located to the south and east of the site, and also a large area of Deferred Residential Zone to the north (Figure 3). Due to the zoning, the proposal is considered as a **non-complying activity** (Rule SLD25), as result of the District Plan performance standards which include; only allowing one residential dwelling per site (Rule PP38), and requiring a 12ha minimum subdivision balance area within the PPZ (30.1.6A – 10.A). A key reason for this non-complying activity status within the PPZ is to protect the rural productive land of our district from inappropriate development, however the site of the proposed OUV is no longer considered representative of the zoning or its productive capability, with a discussion around the zoning context is addressed in greater detail below.



Figure 3: Planning Map Extract (Hastings District Council Online Mapping)

³ On the 'Landscape Plant List' page of each planting section prepared by Nicky Adams.



In relation to key provisions which are relevant to landscape character, there are two of particular note within the District Plan. These are;

- PPO1 - To ensure that the versatile land across the Plains Production Zone is not fragmented or compromised by building and development
- PPP7 - Establish defined urban limits to prevent ad hoc urban development into the Plains Production Zone.

The site is no longer considered to be versatile productive land, having had buildings located across much of the site for the past two decades. When the property was purchased by Oderings, the zoning made sense, as the property was directly adjacent to rural horticulture activities (Figure 4). However, not long after Oderings purchase of the site the transition to a more urban setting began. This started with the development of the Arataki Structure Plan area (to the south-east), followed by the creation of the Romanes Drive connection between Napier Road and Brookvale Road, which is positioned along the northern edge of the site, partly adjacent to the Karituwhenua Stream.



Figure 4: Historic Aerial 1990's (Source: Retro Lens)

Fast-forward to 2017, and the Heretaunga Plains Urban Development Strategy (HPUDS) had identified the land north of the OUV as being within an urban growth area (referred to as 'Brookvale Road/Romanes Drive') that is adjacent to two other growth areas on the north-east extent of Havelock North (Figure 5).

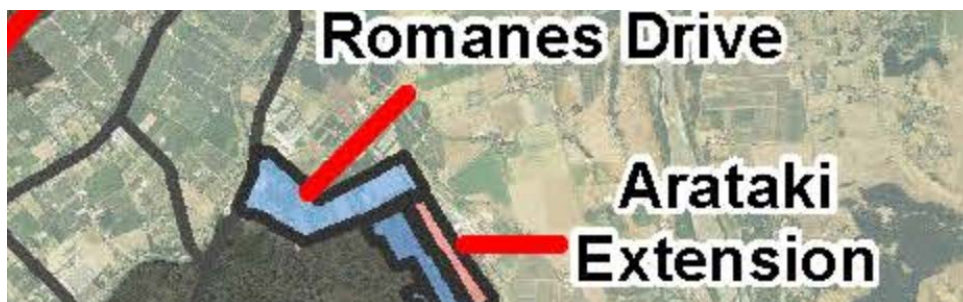


Figure 5: HPUDS Extract (Final HPUDS Map 2017 Overview)



Development of these urban growth areas are underway, with Brooklands Estate currently under construction directly across Romanes Drive from the OUV application site (Figure 6 & Figure 7). It is also worth noting that HDC publicly notified 'Plan Change 5 – Right Homes, Right Place' near the end or 2022⁴ in response to a suite of urban design and residential intensification initiatives from Central Government. PC5 represents a transition to medium density housing within the District Plan General Residential Zone (where there is nearby access to public amenities), and this is relevant to the OUV application as it will enable a higher density of residential dwellings to be constructed in the vicinity.



Figure 6: Brooklands Estate Master Plan



Figure 7: Drone photograph of Brooklands Estate (yellow) and the OUV site (red)

⁴ Further Submissions closed on 11 April 2023



The application site now represents an isolated patch of PPZ which is surrounded by urban development (Ref: Figure 7 above) and has already been fragmentation from the wider areas of versatile land. The description of the PPZ in relation to this property is therefore an anomaly as⁵; “The Plains Production Zone surrounds the urban areas of Hastings, Havelock North and Flaxmere...”, however the OUV (identified as PPZ) is located within the identified urban footprint of Havelock north. The district Plan also acknowledges that⁶ [my emphasis];

*The Heretaunga Plains Urban Development Strategy (2010) has identified the importance of the Plains versatile soils to the community. **It has recommended that clear urban boundaries be established to prevent the creep of activities onto the versatile soils.** The Regional Policy Statement requires through policy, that District Plans shall identify urban limits within which urban activities can occur sufficient to cater for anticipated population and household growth to 2045.*

Additionally, it has been identified by the Statistics NZ ‘2023 Urban/Rural’ dataset⁷ that the Havelock North urban boundary sits well beyond the OUV site (Figure 8), and is closely aligned with the outer extent of residential and future residential zoning within the Operative District Plan. The intention of highlighting this context is simply to illustrate that the OUV has an urban context in relation to the planning framework, as well as the landscape character of the site (addressed under the Landscape Context section below).



Figure 8: Statistics NZ – Urban Rural 2023 (Generalised)

⁵ Hastings District Plan 6.2.1

⁶ Hastings District Plan PPP7 Explanation

⁷ <https://datafinder.stats.govt.nz/layer/111198-urban-rural-2023-generalised/>



In relation to the District Plan mapping, it is noted that that OUV site has:

- No notable trees;
- No identified archaeological sites or identified wāhi taonga sites of significance;
- No landscape overlays;
- Direct adjacent to a large public park;
- A distance of 1.5km from the heart of Havelock North village; and
- Proximity to Te Mata School (Primary), Havelock North Intermediate & Havelock North High School and the Cherry Grove Childcare Centre (Napier Road).

The purpose of reviewing the District Plan is to assist in framing the landscape assessment, so that relevant matters can then be addressed by the planning expert. I am advised that the Regional Policy Statement provides a pathway for consideration of the OUV through Policy POL UD4.2. While the PPZ provisions are not pertinent when considering this application, in relation to landscape and visual amenity outcomes, the District Plan does identify development provisions which this application could usefully be assessed against. The potential guidance in relation to landscape outcomes (and urban design outcomes) is outlined in the section below.

Hastings Residential Intensification Design Guide

The Hastings Residential Intensification Design Guide, published by HDC in 2020, provides an excellent structure for the development of medium density residential housing in the district and has the following vision statement⁸:

Our vision is to have well-designed and sustainable housing developments that build a sense of community, use land efficiently and protect our productive land for future generations. We want to encourage housing providers in our district to marry good design with a variety of residential intensification types to create high quality, high amenity housing options at a range of price points for our community.

This design guide focuses on providing six overarching design principles, including; looks good (aesthetics), fits well (sensitivity to context), works well (functional), feels good (safe and warm), connects well (connected), and sustainability (enduring). There is also a list of assessment criteria specifically for Comprehensive Residential Development (CRD)⁹ that includes; Site Context, Streetscape Amenity, Relationship of Development to the Parent Site, Building Form/Performance/Appearance, Visual Quality, Internal Configuration, On-site Parking, and Orientation/Passive Solar energy.

⁸ Hastings Residential Intensification Design Guide 2020 – Section 1.2, Pg 3.

⁹ Hastings Residential Intensification Design Guide 2020 – Section 1.9, Pg 10. (CRD = 3 or more houses)



In relation to the type of development being proposed by the OUV, the 'Greenfield – Comprehensive Residential Development' is included within Section 3.4 of the Design Guide. Reference is made to the possible boundary treatment adjacent to a public reserve or communal space (Figure 9), and the identified Relevant Key Design Elements include;

- **2.1** - Changes in dwelling height (a mix of single and two storey buildings), materials and detailing can create interest and increase distinction between dwellings.
- **2.2** - The front door directly addresses the street and is clearly visible.
- **2.3** - Variations in roof form create interest and can 'breakup' the mass of multi-unit developments.
- **2.4** - Create a positive relationship between the building and public spaces by having windows looking out.
- **2.5** - Incorporate landscape elements, including trees where possible.
- **2.6** - Windows overlooking the street provide for passive surveillance.
- **2.7** - Outdoor living space is located to the rear of the dwelling, refer to plan view top left.
- **2.8** - The garage is pushed back to reduce its visual impact while allowing for an additional on-site car park.
- **2.9** - Storage areas are screened from the street by fencing or planting.
- **2.10** - Investigate the use of permeable driveway surfaces to reduce site runoff, such as gobi blocks or permeable pavers.
- **2.11** - Low maintenance, sustainable materials reduce long term running costs such as Abobo Eco-timber cladding.

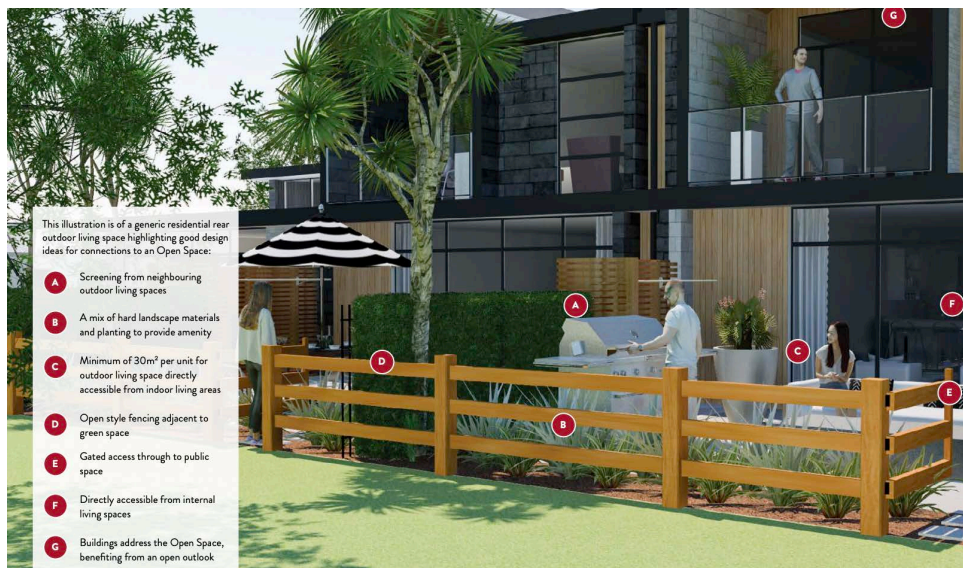


Figure 9: Pg 18 of the Hastings Residential Intensification Design Guide 2020



It is recognised that the Hastings District Council has adopted a definition of Medium Density Housing¹⁰ to be densities of more than 250m² and less than 350m² gross area of land per unit, also noting that;

“Higher densities of around 150m² in terraced housing or apartment formats may however be appropriate in or near CBDs and other locations with special amenity value”¹¹.

This density consideration is in line with the proposed OUV, which has an average density of 335m² when considering the developable area (e.g. excluding the Oderings Garden Centre, the garden centre access/carpark, and the stream boundary). This area calculation is illustrated on below (Figure 10).



Figure 10: Site Plan including lot sizes

The Hastings Residential Design Guide Comprehensive Residential Development assessment criteria are considered to be suitable basis for considering potential landscape and visual amenity effects of the proposal, with further consideration of the specific ‘Key Design Elements’ identified for Greenfield CRD.

¹⁰ Hastings Medium Density Housing Strategy (2013) – Section 1.3, Pg 3.
¹¹ Hastings Medium Density Housing Strategy (2013) – Section 1.3, Pg 3, Footnote 2.



Existing Landscape

Context

Havelock North is an isolated residential suburb of the Hastings District, nestled into the foothills of the iconic Te Mata Peak at the south-eastern border of the Heretaunga Plains. The surrounding landscape of rolling hills and horticultural farmland (orchard/vineyards) contributes to the general pleasantness of the wider setting. The fertile farmland to the north-west of the village, in conjunction with Te Karamū Stream, has protected the identity of the village area from blending with other residential suburbs.

The distinctive residential character of Havelock North includes an extensively vegetated natural environment (e.g. tree lined streets, landscaped gardens and an extensive public recreation network) and is recognised by the District Plan with two residential sub-zones. The 'Havelock North Character Residential Zone' consists of the more elevated and undulating areas, being generally south-east of the Middle Road – Te Mata Road divide, while the 'Havelock North General Residential Zone' represents the flatter land to the north-west of the Middle Road – Te Mata Road divide. These sub-zones have been created in response to the existing topography, architectural style, landscaping and subdivision patterns.

The area around the application site has seen continued demand for residential development over the past few decades, with a brief account included in the Planning Framework section above. This northward progression of the urban extent is an important aspect of the existing landscape setting, as the current zoning of the OUV site is essentially at odds to the surrounding development pattern.

Site Description

The application site itself has been operated a garden centre retail site (which will remain) and a commercial nursery since its purchase in 1997. The plant propagation component of the operation is now located at the Applicant's Allen Rd property in Pakowhai. Until a few years ago there were extensive buildings/glasshouses located at the Brookvale road property, however these have now been cleared as they became surplus to requirements (Figure 11). A map of the site and surrounding area is included within the Viewpoint Location Document (Attachment 1).



Figure 11: Aerial Image Comparison (Glass Houses Removed)

Guthrie Park¹² is located adjacent to the western boundary of the application site and includes the clubrooms of both the Havelock North Football Club and the Havelock North Bridge Club, along with a purpose built BMX track and a series of sports fields used for cricket/football (summer/winter).

The park (Figure 12) is a well-used recreational space that offers public amenities (e.g. playground, toilets, and chlorine removed water station), and has extensive boundary/stream planting (primarily established exotic trees) on what is generally flat topography (the exception being stream corridors). The Napier Rd and Romanes Dr roundabout, which is adjacent to Guthrie Park, currently acts as the gateway to Havelock North when coming from the north (Clive/Napier).



Figure 12: View across Guthrie Park from Napier Road (Viewpoint A of Attachment 1)

The Karituwhenua Stream is located along the length of the north-eastern site boundary and provides separation between the site and Romanes Drive. This stream is joined by the Crombie Drain at the northern tip of the site and then passes through the middle of Guthrie Park, where it joins the Tekahika Stream at the western edge of Guthrie Park before entering Te Karamū Stream just beyond Napier Road.

¹² Within this assessment 'Guthrie Park' is collectively referring to the public park space which includes both the Guthrie Park and Romanes Drive park areas.



Further to the north-east (Refer to Figure 6 & Figure 7 above) is the Brooklands Estate residential development which is currently under construction, while south of Brookvale Road is an typical example of the Havelock North general residential zone housing typology. A row of Plane trees (*Platanus* spp.) dominates the Brookvale Rd edge of Guthrie Park, while an avenue of Linden (*Tilia* spp.) trees welcomes people along Romanes Dr (Figure 13). It is also noted that the site and surrounding environment is reasonably well lit at night time (i.e. toilets in the park, bridge club security lights, Oderings building lights, street lights, and occasionally flood lights for sports trainings).



Figure 13: View of application site from the Romanes Dr and Brookvale Rd Roundabout (Viewpoint G)

Landscape Effects

*“A landscape effect is an outcome for a landscape value. While effects are consequences of changes to the physical environment, they are the outcomes for a landscape’s values that are derived from each of its physical, associative, and perceptual dimensions. Change itself is not an effect: landscapes change constantly. It is the implications of change for a landscape’s values that is the effect”*¹³

In relation to the proposed OUV, the key landscape issue is considered to be the tension between creating a high-quality residential environment and the current underlying rural zoning (Plains Production). The inclusion of medium density housing on the application site is considered to be an appropriate urban design response due to the context of surrounding Havelock North general residential zone development, immediately adjacent open space facilities and proximity to wider residential amenities (village centre, dairy, schools, library etc.).

In relation to the physical and associational components of the landscape, the existing urban setting and flat topography of the site will readily accommodate the proposed development, resulting in little alteration to the anticipated character of the wider area. Overall, the potential adverse effect on landscape character from the nearby public road network, Guthrie Park, and surrounding residential properties is considered to be **Very Low**.

¹³ Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines. Page 135, 6.01-6.03.



The only exception to the above overall conclusion is 53 Brookvale Road, which is surrounded by the OUV application site (as historically it was part of the Oderings landholding). In relation to landscape effects, the proposed OUV has the potential to influence their existing level of amenity, as afforded to them by the Plains Production Zone (e.g. no residential neighbours present during evenings or public holidays and larger building setbacks than provided by the PPZ). The presence of additional residential occupation adjacent to the boundary of 53 Brookvale Rd¹⁴ is not considered unsuitable, however it is acknowledged that it is unexpected because of the existing zoning. Due to the framework provided by the existing zoning, the potential adverse landscape effect on 53 Brookvale Road is considered to be **Low-Moderate**.

It is noted that the proposal will also result in positive landscape effects. The development of this site for residential purposes will complement the expanding urban form in this section of Havelock North and will provide for positive social outcomes, such as passive surveillance of Guthrie Park and the Romanes Drive pedestrian/cycle pathways.

Visual effects

*"A visual effect is a kind of landscape effect. It is a consequence for landscape values as experienced in views. Visual effects are a subset of landscape effects. A visual assessment is one method to help understand landscape effects."*¹⁵

The visual catchment is relatively confined due to the flat nature of the surrounding land and is essentially restricted to Guthrie Park and the adjacent road network, being Romanes Dr and the adjacent section of Brookvale Rd. The viewing audience of this catchment consists primarily of vehicle traffic along Romanes Drive and Brookvale Road (transient), along with users of the Guthrie Park facilities (BMX Bike track, Sports Grounds/Football Club, Bridge Club), and limited viewing opportunities from nearby private residential properties (static).

The Viewpoint Location Document (**Attachment 1**) identifies 18 viewpoint locations (A-R) within the vicinity of the proposed OUV that are considered to be representative of the proposal setting. Generally, the sensitivity of the surrounding viewing audience is considered to be low, as vehicles on the surrounding road network are in transit and there is an extensive amount of existing street trees to filter views toward the proposed OUV, while users of Guthrie park are typically focused on their respective activities and the addition of residential dwelling is not considered to compromised their experience.

¹⁴ 53 Brookvale Road is a 1200m² residentially sized section that is also within the Plains Production Zone

¹⁵ Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines. Page 135, 6.08.



Napier Road and Brookvale Road (Viewpoints A-G)

There is a view across Guthrie Park from along Napier Rd (Viewpoint A), however the proposed OUV will be well screened by the existing vegetation within the park. There may be a glimpse of the build form, however the view is not going to be appreciable altered.

Along Brookvale Road there will be chances to obtain a view of the proposed OUV development, with most of these views being buffered by the existing row of street trees along the southern edge of the park. A glimpse opens up near the southwest corner of Guthrie Park (Viewpoint B) however this is at a distance of over 300m and the proposed dwellings will not alter the existing visual quality of the scene.

From the rest of the street views along Brookvale Rd (Viewpoints C-G) the existing park/street trees, Football Clubrooms, Bridge Clubrooms, existing dwelling at 53 Brookvale Rd and retained Oderings Garden Centre will all assist with visually absorbing the proposed OUV. It is acknowledged that the row of Cypress trees, along with a few other established trees within the OUV site will need to be removed, however the proposed planting plans for the site reintroduce an array of additional trees across the site (e.g. compare the Viewpoint G Photo and Viewpoint G Visualisation within Attachment 1).

Overall, the potential adverse visual effect from these roads is considered to range between **Very Low and Low** (depending on proximity and view orientation).

Romanes Drive (Viewpoints H-K)

The views along Romanes Dr are experienced within an avenue of vibrant Linden trees. When travelling north along this road (Viewpoint H) the existing Oderings Garden Centre and street trees soften views toward the proposed OUV. Views to the south, from closer to the garden centre, retain the distant visibility of Te Mata Peak (Viewpoint I).

There is a portion of Romanes Dr where the proposed OUV buildings will obscure the view toward the Peak (Viewpoints J & K). However, this is only a temporarily interrupted view, as further back along Romanes Drive the views remain unobstructed. It is also noted that from the Napier Rd and Romanes Drive roundabout (which is a key gateway to this side of Havelock North), the OUV will not compromise the existing view (Figure 14). This is also true from the nearby Crosses Road gateway (Figure 15).

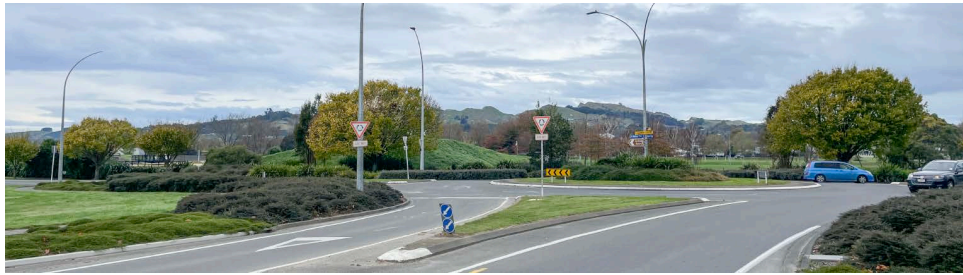


Figure 14: View toward Te Mata Peak (across Guthrie Park) from the Napier Road gateway to Havelock North



Figure 15: View toward Te Mata Peak from the Crosses Road gateway to Havelock North

From the majority of viewpoints along Romanes Dr, the potential adverse visual effects will be **Very Low to Low**, however there are limited locations (e.g. Viewpoints J & K – Refer to the Visualisations for these viewpoints) where there will be a **Low-Moderate** visual effect. This level of effect is somewhat mitigated by the building setback afforded by the Karituwhenua Stream, as well as the temporary nature of the view as either motorists or pedestrians pass through the Romanes Dr corridor.

Guthrie Park (Viewpoints L-R)

There are a variety of viewpoints that can be obtained from within Guthrie Park. From the carpark/entrance to the BMX track, there is now an open view across the now cleared Oderings site (Viewpoint L & M), which recently contained the nursery sheds and a hedge along the boundary with the football field. Elevated views toward the site can be obtained from the constructed BMX track (Viewpoints N & O) and there are a few other internal representative views (Viewpoints P, Q & R).

The inclusion of dwellings which front the football fields is considered to have a positive effect on the amenity of the park, as this will promote activation of the shared boundary (Viewpoint Q Visualisation), allow for passive surveillance and present a higher quality urban edge (as opposed to the previous commercial nursery).



The potential adverse visual effects on Guthrie Park users are considered range from **Very Low** to **Low**, despite the potential proximity of some locations. This is because the park users are typically focused on their recreation activity and will therefore have a reduced sensitivity to adjacent built form. The existing internal site trees assist with visual integration of the proposed OUV and the proposed landscaping will promote boundary hedges and a series of trees throughout the OUV to break up the extent of built form.

53 Brookvale Road

A viewpoint photograph has not been collected from within the grounds of 53 Brookvale Road as this is a private residence, however I am aware that Oderings have had a discussion about the proposal with the landowners. In relation to potential visual effects, this is the most affected location due to the proximity (e.g. the three internal boundaries are all adjacent to proposed residential development).

The character of the streetscape is not considered to alter significantly (Viewpoint D), as there is already an existing dwelling located to the east of this property (owned by Oderings), there will only be one additional section (to the west) adjacent to the Brookvale Rd frontage, and the Garden Centre will remain. The proposed OUV dwellings located adjacent to the northern boundary of this property are both single storey ('Type B' – Ref: Figure 2) and will have limited visibility behind the fence line. The 'Type A' dwellings located to the east of this site boundary are a two storey design, however the elevations facing 53 Brookvale Rd have intentionally limited windows on the First Floor to avoid the appearance of overlooking.

The initial concept had proposed a 'Bespoke' two storey dwelling on Lot 35 (located west of 53 Brookvale Rd). However, the potential height of a 2 storey building was identified by the client as being too dominant on the neighbours outdoor living space of the 53 Brookvale Road residence (e.g their lawn, pool and patio area - Figure 16). The final proposal has addressed this issue by including a single story typology that matches the dwellings for proposed lots 31 and 34. The potential adverse visual effect on this property (53 Brookvale road) are considered to be **Low-Moderate**. One small potential benefit is that the existing cypress hedge row will need to be removed to enable the OUV and this will open up significantly more afternoon sunlight to 53 Brookvale Rd.

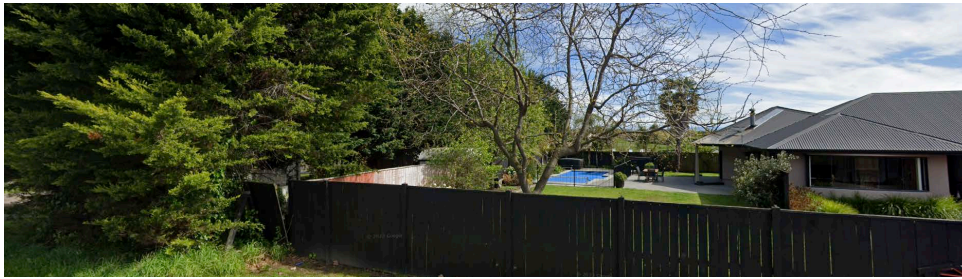


Figure 16: Outdoor Living Space (53 Brookvale Road) and existing Cypress Hedgerow (to be removed).

Other Brookvale Road

The surrounding residential properties were also considered in relation to potential visual effects. In particular, the houses at 56, 58 and 60 Brookvale Rd (Figure 17) were identified due to the proximity (directly across the road) to the upgraded OUV and garden centre entrance. However, review of these properties reveals that there are very limited views from the dwellings toward the road. Essentially, an internal garage accounts for half of the dwelling frontage and then frontage planting assists in adding a degree of privacy. The outdoor living space for these dwellings is located around the back of the house (away from the road). The potential adverse effect on these properties is considered to be **Very Low**, with a negligible effect on other nearby properties.



Figure 17: Road frontage of 60, 58 and 56 Brookvale Road

Viewpoint Discussion

At this stage in the assessment it is important to reiterated that both landscape and visual effects are being assessed in the context of the existing Plains Production Zone. The level of potential adverse effect outlined in the sections above relates to the effect over and above what would have been provided for by the PPZ. If the site had already been transitioned to the Havelock North General Residential Zone, then the proposed OUV would likely have not included a Landscape Assessment, as the proposed built form and urban design would be considered consistent with the outcomes of that residential zoning and the Hastings Residential Intensification Design Guide.



It is also worth acknowledging a recent similar example of built development, such as the James Wattie Retirement Village (JWRV). The JWRV is located at the southwestern edge of the Havelock North urban extent (between Te Aute Road and Te Karamū Stream - Figure 18) and is also located within the PPZ (with a greater density and scale of built form than the adjacent existing residential areas).



Figure 18: James Wattie Retirement Village, Te Aute Road, southwestern edge of Havelock North Village

Conclusion

The proposed Oderings Urban Village development will present as a high-quality medium density residential development. This proposal will complement the land existing land use pattern of the surrounding residential area, while also providing an excellent location for the inclusion of a higher density living environment, due to the proximity to the open space amenities associated with Guthrie Park.

The potential adverse landscape effects are **Very Low** on the majority of locations, with the exception being on the adjacent property of 53 Brookvale Rd which is **Low-Moderate**. The potential adverse visual effects are **Very Low** or **Low** for most locations considered, with a limited area along Romanes Drive and the adjacent property (53 Brookvale Road) being a **Low-Moderate** effect.

The proposal will appear as a prominent change to the setting (e.g. it is a noticeable change), however the development will not degrade the existing landscape character value associated with the Havelock North residential character zone. The scale of built form is considered appropriate in this location and, in conjunction with the retained garden centre, will have an overall positive effect on the wider landscape setting (particularly when compared to the former commercial nursery activity). It is also considered to be generally in keeping with the key design elements of the Hastings Medium Density Residential Design Guide and the extensive planting associated with the development will further assist with anchoring the development to the site.

Joshua Hunt - Registered NZILA Landscape Architect



Appendix 1: Effects Scale

The following table outlines the scale of effects used within this assessment. Rather than duplication of this table for both Landscape Effects and Visual Amenity Effects, the conjunction 'or' has been used within the table to provide for either of these two effect assessment categories. It is noted that while the primary consideration is typically in relation to negative effects of a proposal, effects can also be neutral or positive.

Very High	Total loss/modification of key elements / features / characteristics, i.e. amounts to a fundamental change of landscape character or visual amenity.	Significant Effect
High	Major loss/modification or loss of most key elements / features / characteristics, i.e. substantial change to the pre- development landscape character or visual amenity.	Significant Effect
High-Moderate	Loss/modification of several key elements / features / characteristics of the baseline, i.e. the pre-development landscape character or visual amenity remains evident but is distinctly changed.	More than Minor Effect
Moderate	Partial loss/modification to key elements / features / characteristics of the baseline, i.e. new elements may be prominent but not necessarily uncharacteristic within the receiving landscape or views.	More than Minor Effect
Low-Moderate	Minor loss/modification to one or more key elements / features / characteristics, i.e. new elements are not prominent or uncharacteristic within the receiving landscape or views.	Minor Effect
Low	No material loss/modification to key elements / features / characteristics. i.e. modification or change is not uncharacteristic and integrates seamlessly within the receiving landscape or views.	Less than Minor Effect
Very Low	Little or no loss/modification to key elements / features / characteristics of the baseline, i.e. approximating a 'no change' situation that is barely discernible.	Less than Minor Effect

ODERINGS URBAN VILLAGE
Landscape and Visual Effects Assessment

Prepared for
Oderings Nurseries Ltd.

May 2023

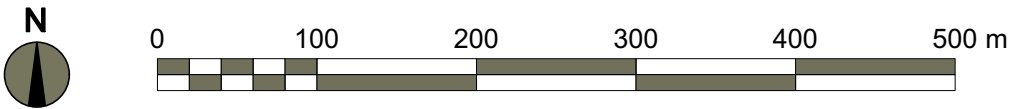
VIEWPOINT LOCATION MAP - SHEET 01

- Viewpoint A: 133 Napier Road - SHEET 02
- Viewpoint B: 15 Brokvale Road - SHEET 03
- Viewpoint C: Brookvale Roadx Guthrie Road - SHEET 04
- Viewpoint D: Brookvale Road x Legome Lane - SHEET 05
- Viewpoint E: Brookvale Road (Site Entrance) - SHEET 06
- Viewpoint F: Brookvale Road x Woodlands Drive - SHEET 07
- Viewpoint G: Brookvale Road x Bourke Place - SHEET 08
- Viewpoint H: Brookvale Road x Romanes Drive - SHEET 09
- Viewpoint I: Romanes Drive - SHEET 10
- Viewpoint J: Romanes Drive - SHEET 11
- Viewpoint K: Romanes Drive Pathway - SHEET 12
- Viewpoint L: BMX Track Entrance - SHEET 13
- Viewpoint M: Water Refill Station - SHEET 14
- Viewpoint N: Eastern End of BMX Track - SHEET 15
- Viewpoint O: Western End of BMX Track - SHEET 16
- Viewpoint P: Guthrie Park Bridge - SHEET 17
- Viewpoint Q: Guthrie Park Sports Fields (East View) - SHEET 18
- Viewpoint R: Guthrie Park Sports Field (West View) - SHEET 19

- VISUALISATION Viewpoint G - SHEET 20
- VISUALISATION Viewpoint J - SHEET 21
- VISUALISATION Viewpoint K - SHEET 22
- VISUALISATION Viewpoint L - SHEET 23
- VISUALISATION Viewpoint Q - SHEET 24



ATTACHMENT 1 - VIEWPOINT LOCATION DOCUMENT



Viewpoint Locations

- A 133 Napier Road
- B 15 Brookvale Road
- C Brookvale Road x Guthrie Road
- D Brookvale Road x Legome Lane
- E Brookvale Road (Site Entrance)
- F Brookvale Road x Woodlands Drive
- G Brookvale Rd X Bourke Place
- H Brookvale Road x Romanes Drive
- I Romanes Drive
- J Romanes Drive
- K Romanes Drive Pathway
- L BMX Track Entrance
- M Water Refill Station
- N Eastern End of BMX Track
- O Western End of BMX Track
- P Guthrie Park Bridge
- Q Guthrie Park Sports Fileds (East View)
- R Guthrie Park Sports Fields (West View)



Oderings Urban Village

Viewpoint Location Map

Sheet 01

Print at A3	
Scale	1:50,000
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



[+ Return to Map](#)

Photo Details

Date: 9/01/2023
Time: 3:40 PM
Latitude: 39° 39' 36.72" S
Longitude: 176° 53' 5.682" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm



Oderings Urban Village

Viewpoint A
133 Napier Road

Sheet 02

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz

Attachment F

ITEM 2

PAGE 149



[+ Return to Map](#)

Photo Details

Date: 9/01/2023
Time: 3:36 PM
Latitude: 39° 39' 46.2" S
Longitude: 176° 53' 11.25" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm

 **ODERINGS**
GARDEN CENTRES

 **Narrative**
LANDSCAPE

Oderings Urban Village

Viewpoint B
15 Brookvale Road

Sheet 03

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



[+ Return to Map](#)

Photo Details

Date: 9/01/2023

Tlme: 3:16 PM

Latitude: 39° 39' 43.788" S

Longitude: 176° 53' 17.142" E

Camera: Canon 6D

FoV: 74° (24mm Lens)

Reading Distance: 232mm

 ODERINGS
GARDEN CENTRES

 Narrative
LANDSCAPE

Oderings Urban Village

Viewpoint C
Brookvale Road x Guthrie Road

Sheet 04

Print at A3

Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



[+ Return to Map](#)

Photo Details

Date: 9/01/2023
Time: 3:18 PM
Latitude: 39° 39' 42.318" S
Longitude: 176° 53' 22.308" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm



Oderings Urban Village

Viewpoint D
Brookvale Road x Legome Lane

Sheet 05

Print at A3

Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz

Attachment F

ITEM 2

PAGE 152



[+ Return to Map](#)

Photo Details

Date: 9/01/2023
Time: 3:19 PM
Latitude: 39° 39' 41.064" S
Longitude: 176° 53' 25.542" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm



Oderings Urban Village

Viewpoint E
Brookvale Road (Site Entrance)

Sheet 06

Print at A3

Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz

Attachment F

ITEM 2

PAGE 153



[+ Return to Map](#)

Photo Details

Date: 9/01/2023
Time: 3:19 PM
Latitude: 39° 39' 40.338" S
Longitude: 176° 53' 27.624" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm



Oderings Urban Village

Viewpoint F
Brookvale Road x Woodlands Drive

Sheet 07

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz

Attachment F

ITEM 2

PAGE 154



➕ Return to Map

Photo Details

Date: 9/01/2023
Time: 3:21 PM
Latitude: 39° 39' 39.33" S
Longitude: 176° 53' 29.76" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm

Click the button below
to switch between the
photograph and visualisation.

Viewpoint G
Visualisation

ODERINGS
GARDEN CENTRES

Narrative
LANDSCAPE

Oderings Urban Village

Viewpoint G
Brookvale Rd X Bourke Place

Sheet 08

Print at A3

Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



[+ Return to Map](#)

Photo Details

Date: 9/01/2023
Time: 3:23 PM
Latitude: 39° 39' 37.998" S
Longitude: 176° 53' 27.858" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm



Oderings Urban Village

Viewpoint H
Brookvale Road x Romanes Drive

Sheet 09

Print at A3

Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



[+ Return to Map](#)

Photo Details

Date: 9/01/2023
Time: 3:24 PM
Latitude: 39° 39' 36.312" S
Longitude: 176° 53' 25.14" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm



Oderings Urban Village

Viewpoint I
Romanes Drive

Sheet 10

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz

Attachment F

ITEM 2

PAGE 157



➕ Return to Map

Photo Details

Date: 9/01/2023

Tlme: 3:26 PM

Latitude: 39° 39' 34.512" S

Longitude: 176° 53' 21.324" E

Camera: Canon 6D

FoV: 74° (24mm Lens)

Reading Distance: 232mm

Click the button below to switch between the photograph and visualisation.

Viewpoint J
Visualisation

ODERINGS
GARDEN CENTRES

Narrative
LANDSCAPE

Oderings Urban Village

Viewpoint J
Romanes Drive

Sheet 11

Print at A3

Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz

josh@narrativelandscape.co.nz

Attachment F

ITEM 2

PAGE 158



➕ Return to Map

Photo Details

Date: 9/01/2023

Tlme: 3:28 PM

Latitude: 39° 39' 35.07" S

Longitude: 176° 53' 20.202" E

Camera: Canon 6D

FoV: 74° (24mm Lens)

Reading Distance: 232mm

Click the button below
to switch between the
photograph and visualisation.

Viewpoint K
Visualisation

ODERINGS
GARDEN CENTRES

Narrative
LANDSCAPE

Oderings Urban Village

Viewpoint K
Romanes Drive Pathway

Sheet 12

Print at A3

Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz

josh@narrativelandscape.co.nz



➕ Return to Map

Photo Details

Date: 9/01/2023

Time: 3:06 PM

Latitude: 39° 39' 34.626" S

Longitude: 176° 53' 18.594" E

Camera: Canon 6D

FoV: 74° (24mm Lens)

Reading Distance: 232mm

Click the button below to switch between the photograph and visualisation.

Viewpoint L
Visualisation



Oderings Garden Centres



Narrative Landscape

Oderings Urban Village

Viewpoint L
BMX Track Entrance

Sheet 13

Print at A3

Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz

josh@narrativelandscape.co.nz



[+ Return to Map](#)

Photo Details

Date: 9/01/2023
Time: 3:32 PM
Latitude: 39° 39' 35.634" S
Longitude: 176° 53' 17.004" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm



Oderings Urban Village

Viewpoint M
Water Refill Station

Sheet 14

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz

Attachment F

ITEM 2

PAGE 161



[+ Return to Map](#)

Photo Details

Date: 9/01/2023
Time: 3:08 PM
Latitude: 39° 39' 35.982" S
Longitude: 176° 53' 15.216" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm



Oderings Urban Village

Viewpoint N
Eastern End of BMX Track

Sheet 15

Print at A3

Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



[+ Return to Map](#)

Photo Details

Date: 9/01/2023
Time: 3:10 PM
Latitude: 39° 39' 33.702" S
Longitude: 176° 53' 12.366" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm



Oderings Urban Village

Viewpoint O
Western End of BMX Track

Sheet 16

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz

Attachment F

ITEM 2

PAGE 163



➕ Return to Map

Photo Details

Date: 9/01/2023
Time: 3:12 PM
Latitude: 39° 39' 37.308" S
Longitude: 176° 53' 12.714" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm



Oderings Urban Village

Viewpoint P
Guthrie Park Bridge

Sheet 17

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



⊕ Return to Map

Photo Details

Date: 9/01/2023
Time: 3:13 PM
Latitude: 39° 39' 39.33" S
Longitude: 176° 53' 13.74" E
Camera: Canon 6D
FoV: 74° (24mm Lens)
Reading Distance: 232mm

Click the button below
to switch between the
photograph and visualisation.

Viewpoint Q
Visualisation

ODERINGS
GARDEN CENTRES

Narrative
LANDSCAPE

Oderings Urban Village

Viewpoint Q
Guthrie Park Sports Fields (East View)

Sheet 18

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



[+ Return to Map](#)

Photo Details

Date: 9/01/2023

Time: 3:13 PM

Latitude: 39° 39' 39.318" S

Longitude: 176° 53' 13.788" E

Camera: Canon 6D

FoV: 74° (24mm Lens)

Reading Distance: 232mm

 ODERINGS
GARDEN CENTRES

 Narrative
LANDSCAPE

Oderings Urban Village

Viewpoint R
Guthrie Park Sports Fields (West View)

Sheet 19

Print at A3

Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz

josh@narrativelandscape.co.nz



➕ Return to Map

Click the button below to switch between the photograph and visualisation.

Viewpoint G
Photograph

ODERINGS
GARDEN CENTRES

Narrative
LANDSCAPE

Oderings Urban Village

Viewpoint G
Visualisation

Sheet 20

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



➕ Return to Map

Click the button below
to switch between the
photograph and visualisation.

Viewpoint J
Photograph

ODERINGS
GARDEN CENTRES

Narrative
LANDSCAPE

Oderings Urban Village

Viewpoint J
Visualisation

Sheet 21

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



⊕ Return to Map

Click the button below
to switch between the
photograph and visualisation.

Viewpoint K
Photograph

ODERINGS
GARDEN CENTRES

Narrative
LANDSCAPE

Oderings Urban Village

Viewpoint K
Visualisation

Sheet 22

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



⊕ Return to Map

Click the button below
to switch between the
photograph and visualisation.

Viewpoint L
Photograph

ODERINGS
GARDEN CENTRES

Narrative
LANDSCAPE

Oderings Urban Village

Viewpoint L
Visualisation

Sheet 23

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



[+ Return to Map](#)

Click the button below
to switch between the
photograph and visualisation.

Viewpoint Q
Photograph

ODERINGS
GARDEN CENTRES

Narrative
LANDSCAPE

Oderings Urban Village

Viewpoint Q
Visualisation

Sheet 24

Print at A3	
Scale	N/A
Date	15/05/23
Job No.	2301
Drawn	JH

www.narrativelandscape.co.nz
josh@narrativelandscape.co.nz



East Cape Consulting Limited

14 Duart Road
Havelock North
Hastings 4130

Joe Gray

Saddleback Planning Limited

100 Federal Street
Auckland CBD 1010

30 May 2023

Issued via email: joe@saddleback.nz

Dear Joe

ODERINGS RESIDENTIAL DEVELOPMENT, 57 BROOKVALE ROAD, HAVELOCK NORTH

East Cape Consulting (ECC) has been engaged by Oderings Garden Centres Limited to prepare a Transportation Assessment Report (TAR) for the proposed redevelopment of their existing site at 57 Brookvale Road, Havelock North.

This report describes the site location and existing transport environment. It then assesses the additional travel demand generated by the redevelopment assesses the ability of the network to accommodate that demand.

Overall, it is concluded that the proposed layout can meet the transport needs of the activities, and integrate appropriately with the existing and planned networks in the area.

1. Site Location

Oderings is located at 57 Brookvale Road, approximately 1.5km north-east of the Havelock North town centre. The site is on the northern side of Brookvale Road, on the corner of the Romanes Drive/Brookvale Road roundabout. The site location and surrounding area are shown as Figure 1 and Figure 2 below.



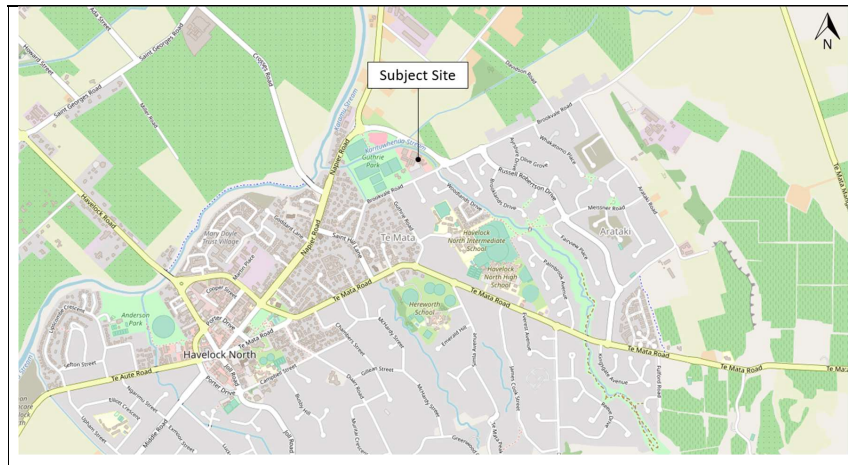


Figure 1 – Site Location (Base Map Source: Open Street Maps)



Figure 2 – Aerial View (Base Map Source: HDC IntraMaps)

The site has an area of approximately 2 Hectares (ha). It is surrounded by Guthrie Park on its north and west sides. Guthrie Park provides public open space, sports fields, and a bike track. There is an established residential area to the south and emerging residential (within the Brookvale Structure Plan area) to the east. Vehicle access is taken from Brookvale Road.

The site is zoned Plains Production Zone (PPZ) by the Hastings District Council (HDC) Operative District Plan (ODP). It is surrounded by a combination of Open Space, Residential and Deferred Residential Zones. The zoning context is shown as Figure 3.



Figure 3 – ODP Zoning (Base Map Source: HDC IntraMaps)

2. Existing Transport Network

2.1 Road Hierarchy

The site is surrounded by Romanes Drive to the east and Brookvale Road to the south.

Romanes Drive is classified as primary collector in the HDC ODP road hierarchy. Its role is to provide a strategically important link between areas of activity within a community. It provides a connection between the north-eastern areas of Havelock North and the State Highway network, via Napier Road.

Brookvale Road is classified as a secondary collector road. Its role is to provide local connectivity and be a locally preferred route. Brookvale Road provides an east-west connection between north-eastern areas of Havelock North and the town centre.

2.2 Existing Road Network

Brookvale Road is formed to a width of approximately 7m along the site frontage. It provides one traffic lane in each direction separated by a painted centreline. The southern side has an urban treatment including a footpath and kerb and channel. The northern (site) side of the road has a grass berm only as shown in Figure 4.



Figure 4 – Brookvale Road Looking West (Site On Right)

Side road intersections including those with Woodlands Drive and Legorne Lane are either Give Way controlled or unmarked priority intersections, through which Brookvale Road has priority.

Brookvale Road is generally straight and flat in this area and operates with a 50km/h posted speed limit. On-street parking is unrestricted on both sides of the road.

Romanes Drive is sealed to a width of approximately 12m. It provides one traffic lane in each direction and has on-road cycle lanes on both sides of the road. There is also an off-road path on the western side. The posted speed limit is 50km/h. The existing road frontages are shown as Figure 5.

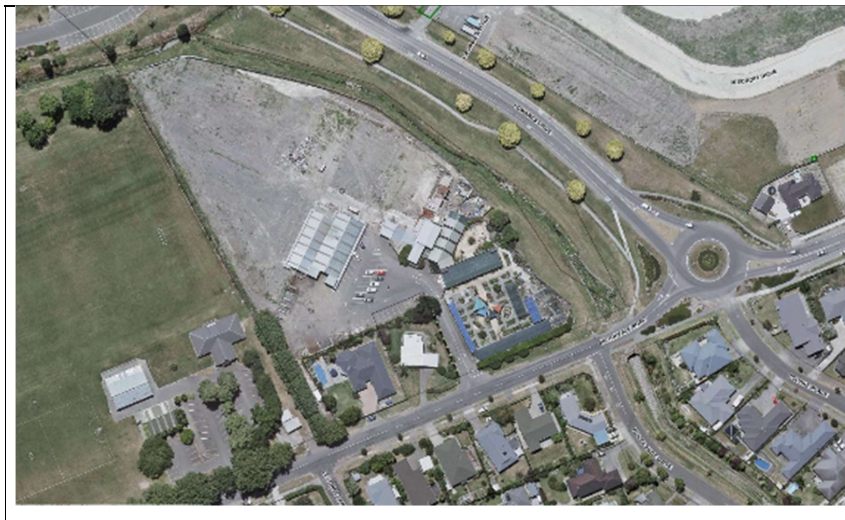


Figure 5 – Site and Road Frontages (Base Map Source: HDC IntraMaps)

Brookvale Road meets Romanes Drive and Bourke Place at a four-leg roundabout. This roundabout provides a single circulating carriageway of approximately 8m around a 20m diameter roundabout island.

Figure 5 also shows the existing site access, which is on Brookvale Road approximately 100m west of the roundabout and 60m west of the Woodlands Drive intersection. The access is marked as a Give Way intersection and provides one entry and one exit lane. No access is provided to Romanes Drive.

2.3 Walking and Cycling

Walking and cycling catchments of up to 20 minutes around the subject site are shown as Figure 6 and Figure 7 below.

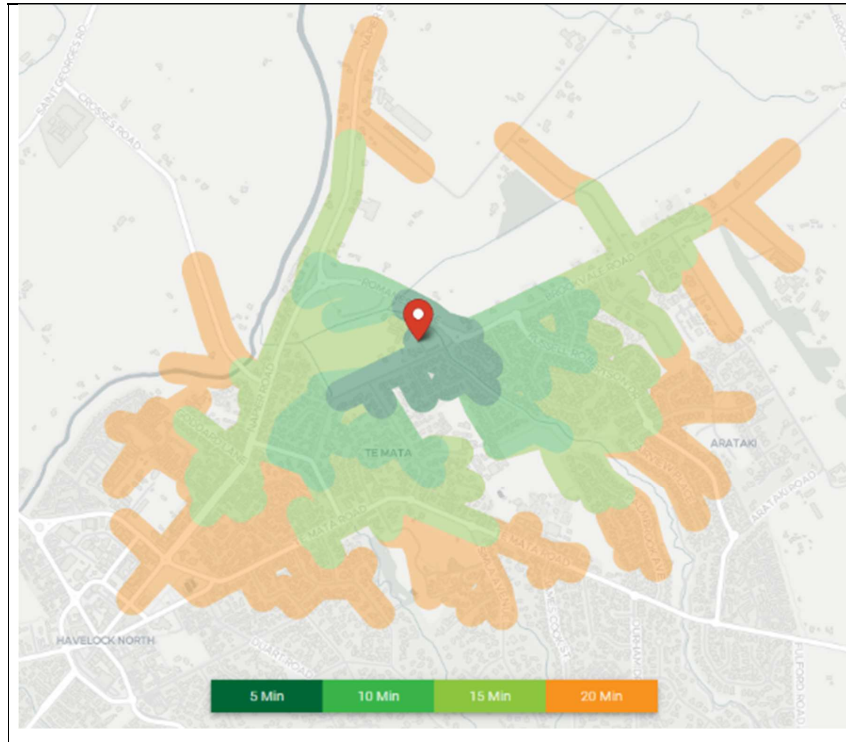


Figure 6 – Walking Catchment (Source: Targomo)

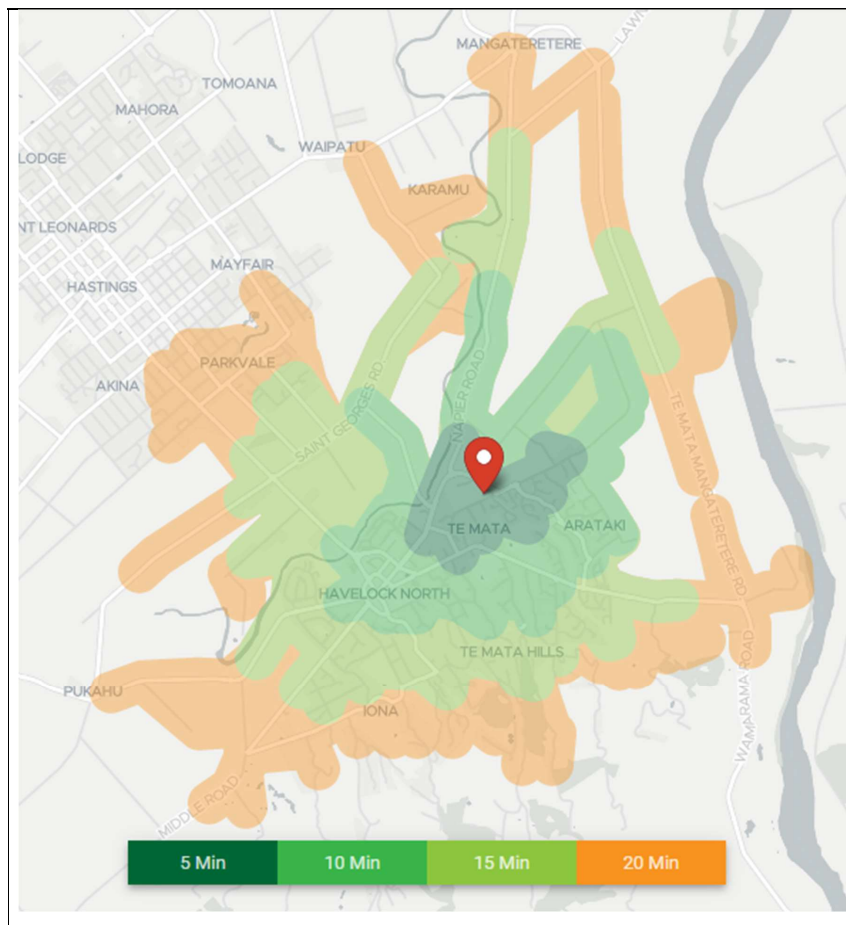


Figure 7 – Cycling Catchment (Source: Targomo)

The 20-minute walking catchment extends to the eastern edge of the town centre and captures a range of local destinations and facilities. These include open space areas, primary, intermediate, and secondary schools, churches and local shops. The 20-minute cycle catchment covers all of Havelock North and the southern part of Hastings.

A footpath is provided on the southern side of Brookvale Road. A path is also provided on the northern side, beyond Guthrie Park. Surrounding roads have footpaths on one or both sides.

The on-road cycle lanes and the off-road path on Romanes Drive are part of the 'i-Way City Routes'. These connect north to other routes on Napier Road and Crosses Road.

2.4 Public Transport

The nearest existing bus stops to the site are on Te Mata Road, approximately 750m or a 10 minute walk from the site.

The 11 (Commuter Express (Havelock North to Napier and vice versa) and 21 (Hastings and Havelock North Loop) services call at these stops.

3. Traffic Volumes

3.1 Daily Volumes

The Mobileroad website, which sources information from Council road maintenance databases, gives the following daily traffic volumes, in vehicles per day (vpd), for roads in the area:

■ Romanes Drive	4,525 vpd
■ Brookvale Road (west of Romanes Drive)	2,529 vpd
■ Bourke Place	60 vpd
■ Woodlands Drive	201 vpd
■ Legorne Lane	178 vpd

3.2 Intersection Turning Movements

ECC arranged manual turning movement counts at the Romanes Drive/Brookvale Road/Bourke Place roundabout on Thursday 3 March 2022. The surveyed volumes were seasonally adjusted using the factors in Waka Kotahi Research Report 453 (RR453) to represent the fifth busiest week of the year.

The surveys were conducted for a 90-minute period during the morning (AM), 7:30am-9:00am and evening (PM), 4:00-5:30pm peak periods. These periods were selected based on review of tube count data from the area. The AM and PM peak hour movements at the intersection are summarised below as Figure 8.

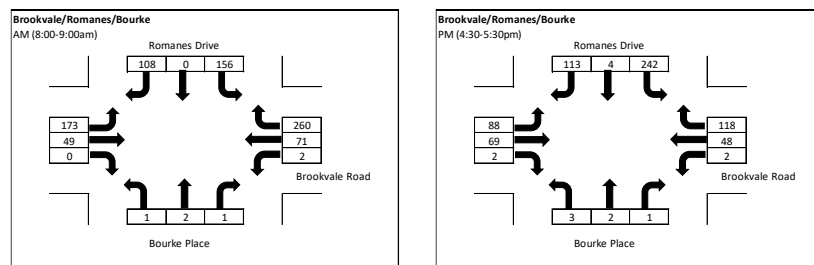


Figure 8 – Intersection Volumes (All Vehicles)

The surveys showed that:

- The roundabout volume is 823 vph during the AM peak and 692 vph during the PM peak;

- Heavy commercial vehicles (HCV) make up 2.8% of the AM peak volume and 0.7% of the PM peak volume.
- The volume along the Brookvale Road site frontage is 402 vph in the AM peak and 323 vph in the PM peak.
- The directional distribution slightly favours eastbound movement in the AM (55%) and westbound movement in the PM (51%).

4. Road Safety

The road safety history of the area was reviewed using the Waka Kotahi Crash Analysis System (CAS). The search covered the Brookvale Road and Romanes Drive frontages of the site and the following intersections:

- Romanes Drive/Brookvale Road roundabout;
- Brookvale Road/Woodlands Drive.
- Brookvale Road/Legorne Lane;
- The Oderings access.

Data was extracted for the five-year period 2018 to 2022 inclusive, as well as any available data from 2023.

One crash was reported. This occurred midway along the Romanes Drive frontage of the site and was associated with construction work on the opposite side of the road. The crash did not result in injury.

Overall, the road safety history does not indicate any underlying issues with the road network in this area.

5. Planned Future Transport Network

5.1 Brookvale Structure Plan

Land on the opposite side of Romanes Drive is part of the Brookvale Structure Plan (BSP). The intended future land use pattern and transport network in this area are shown below as Figure 9.

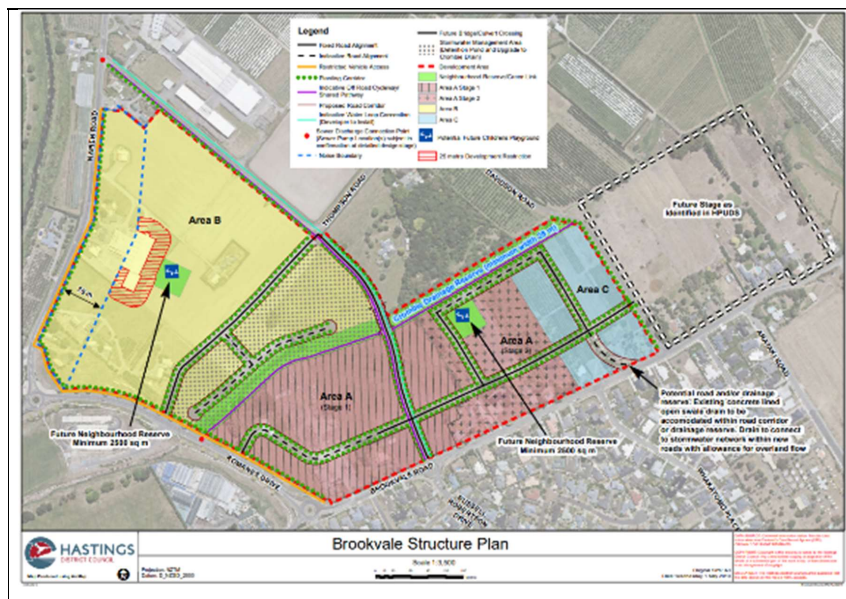


Figure 9 – Brookvale Structure Plan (Source: HDC)

The planned land use is staged residential development with a supporting network of open space. The transport network that will support the BSP includes:

- An extension of Russell Robertson Drive to Thompson Road;
- Two new local road corridors connecting from Romanes Drive to the east; and
- Intersection upgrades at Napier Road/Thompson Road and Thompson Road/Russell Robertson Drive.

Walking and cycling paths are included on the new transport corridors and through the central Crombie drainage reserve.

5.2 Future Traffic Volumes & Intersection Performance

The Transportation Assessment Report¹ prepared for the BSP was provided to ECC by HDC. This report assessed the traffic generating potential of the overall BSP and assigned those trips to the surrounding network. The expected additional movements at the Romanes Drive/Brookvale Road roundabout are shown below as Figure 10.

¹ Brookvale Residential Development, Proposed Subdivision, Havelock North. Traffic Structure Plan Investigations, TDG, February 2018

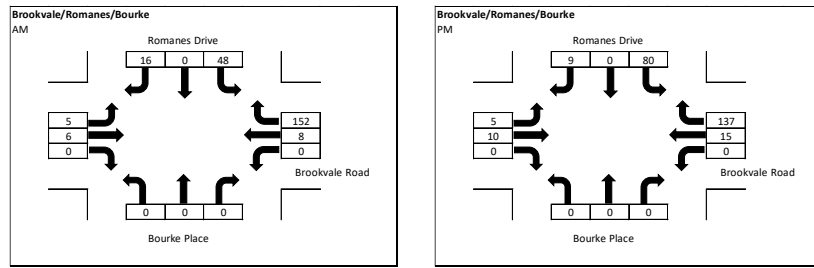


Figure 10 – BSP Generated Movements (All Vehicles)

The assessment expected that the BSP would:

- Add 235 vph to the roundabout during the peak, an increase of 29% (compared to the volumes surveyed by ECC);
- Add 256 vpd to the roundabout during the PM peak, an increase of 37% on the surveyed volumes.
- Add 35-39 vph to the volume on the Brookvale Road frontage of the site at peak times.

The assessment modelled the operation of the existing roundabout in SIDRA software and concluded that it could accommodate the increased traffic movements. This assessment used base volumes collected in 2017, combined with the volumes presented above as Figure 9.

ECC repeated this analysis, replacing the 2017 base volumes with the more recent 2021 surveyed volumes presented as Figure 7. The modelling, outputs of which are included in Attachment 1, showed that the roundabout is expected to operate at Level of Service (LOS) A, during both peak hours. This confirms the conclusion of the Structure Plan assessment in relation to this intersection.

6. Proposed Development

6.1 Land Uses

The proposed redevelopment of Oderings will retain the garden centre and replace the existing nursery areas with 35 residential lots. In total, 4,850m² of the site will be retained for commercial use and 14,250m² will be converted to residential use. The proposed layout is shown as Figure 11.



Figure 11 – Proposed Development (Prepared by Saddleback)

6.2 Access and Parking

Two lots (Lot 1 and Lot 35) are proposed to have direct property access to Brookvale Road. All other lots and the existing garden centre will be accessed via the existing entry road which will be reconfigured.

The garden centre will have a central parking area with 40 parking spaces, including two accessible spaces. This carpark and the residential lots will be accessed via the existing access road, which is proposed to have a roundabout at the carpark access. The loop road beyond the roundabout is proposed to be private and provide access to housing only.

Walking routes are provided throughout the site to provide access to the individual lots and the garden centre, and link with the existing paths on Romanes Drive and in Guthrie Park. The planned routes and path types are shown as Figure 12. The paths shown in dark green are intended to be public whilst the shared space generally north of the roundabout is proposed to be private.



Figure 12 – Walking Routes (Prepared by Saddleback)

A footpath is also proposed along half of the site frontage, from the western boundary to the access road.

6.3 Road Cross Sections

The existing access is proposed to be formed as an 18m wide corridor, with a 7m wide carriageway and paths on both sides.

The private loop road is proposed to operate as a shared space with a single carriageway width of 6m. Additional width is provided in some areas to provide a total of eight parallel indented on-street parking spaces around the loop.

A 4.5m and 7m wide shared access driveway typology is proposed to serve lots 14-19 and lots 30-34 respectively. This cross-section will accommodate vehicle, pedestrian and cycle access, it also provides for vehicle manoeuvring space in a shared environment.

A similar cross-section with 3m wide accessway, widening to 5m where to allow for passing manoeuvres, is proposed to serve the three lots (Lots 7-9) near the garden centre car park.

6.4 Loading and Servicing

The site has been designed to accommodate:

- An 11.5m large rigid truck circulating around the residential area. This represents a furniture removal/delivery truck, which will occasionally visit the site. It is noted that a rubbish collection vehicle, which will regularly visit the site, is typically smaller;
- An 8m medium rigid truck, 11.5m large rigid truck and B-train have all been tracked entering and exiting the garden centre loading area;
- A B99² vehicle turning around at the roundabout; and
- A B85³ vehicle accessing individual residential lots.

The swept paths of these vehicles are included as Attachment 1. Based on these plans, all areas have been appropriately designed to accommodate the expected vehicles.

7. Trip Generation

According to RR453, the 50th percentile trip generation rates for garden centres are:

- 14.1 vph/100m² of gross floor area (GFA) at peak times; and
- 82.2 vpd/100m² of GFA over the day.

The existing GFA of the garden centre (that is to be retained) is approximately 500m² and on this basis it is estimated to generate:

- 71 vph at peak times; and
- 411 vpd over the course of the day.

It is likely that the peak of the garden centre activity will occur at the weekend whereas residential activities typically peak on weekdays. Conservatively, these two peaks have been combined.

The residential lots have been assessed as generating 0.9 vph/household during the peak hours of the day and 8.2 vpd/household over the course of the day (the 85th percentile outer suburban residential rate from RR453). The resulting total trip generation from the proposed development is summarised in Table 1.

Land Use	Size	Units	Peak Hour		Daily	
			Rate	Trips (vph)	Rate	Trips (vpd)
Garden Centre	500	m ² GFA	14.1	71	82.2	411
Residential	35	Lots	0.9	32	8.2	287
TOTAL	-	-	-	103	-	699

Table 1 – Traffic Generation Estimate

In total, the proposed development is expected to generate 699 vpd (IN+OUT) including 103 vph (IN+OUT) during the peak hours of the day.

² Defined by AS/NZS2890.1-2004 Off-street car parking

³ Defined by AS/NZS2890.1-2004 Off-street car parking

This analysis is particularly conservative in relation to the peak hour estimate. Residential activities typically peak during the morning and evening commuter peaks (around 8-9am and 4-5pm). At these times, the garden centre can reasonably be expected to be operating below its own peak, which is more likely to occur around the middle of the day.

The above trip generation assessment will produce a robust assessment of driveway and network effects.

8. Trip Distribution

Figure 13 presents the expected internal distribution and the expected daily volume on each section of internal road. This is based on how many lots rely on each section of road, either for direct access or as a route to and from Brookvale Road.

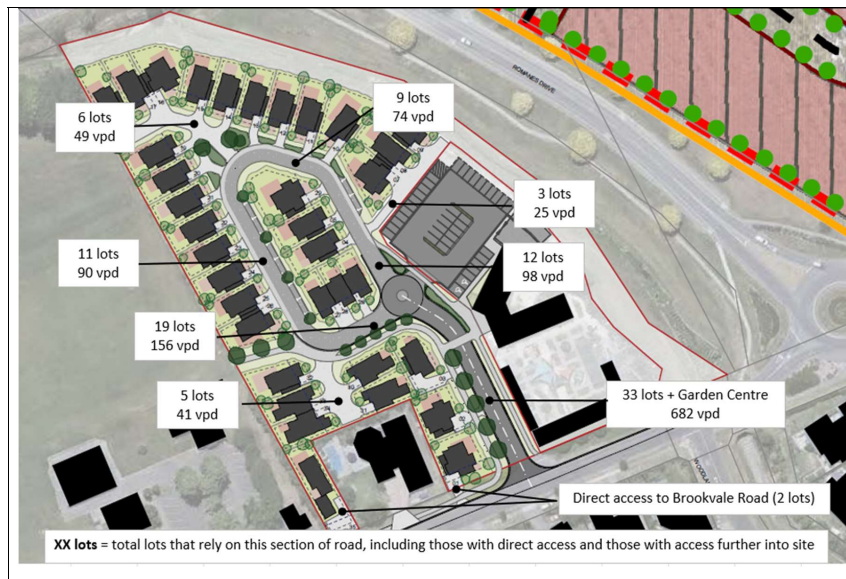


Figure 13 – Internal Distribution and Number of Lots Served⁴

Figure 13 shows that the shared access driveways accommodate 3-6 lots each. The loop road (6m wide) serves up to 19 lots on any one section, carrying up to 156 vpd. The entry road which serves the garden centre and 33 residential lots carries 682 vpd. The remaining two lots generate movements directly onto Brookvale Road.

New trips (generated by the residential lots) have been distributed to the surrounding network using the existing movement patterns in the area. The existing trip generation of Oderings (the garden centre and nursery functions) is already captured in the existing traffic surveys so no additional allowances are required. Conservatively, no reductions have been made for the parts of the Oderings activities that are being replaced by residential activities.

⁴ Lots 10, 14, 15, 16, 17 and 18 are assumed to rely evenly on the two sides of the loop road (i.e. 50% of their traffic movements use each side).

The expected distribution of new residential trips at the site driveway and through the Brookvale Road/Romanes Drive roundabout for the AM and PM weekday peaks are shown as Figure 14 and Figure 15.

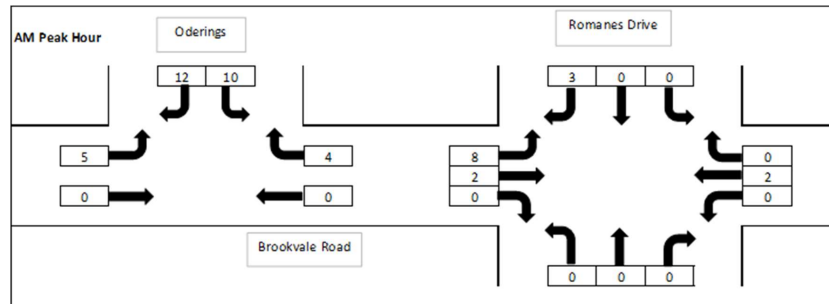


Figure 14 – Development Generated Intersection Movements (AM Peak)

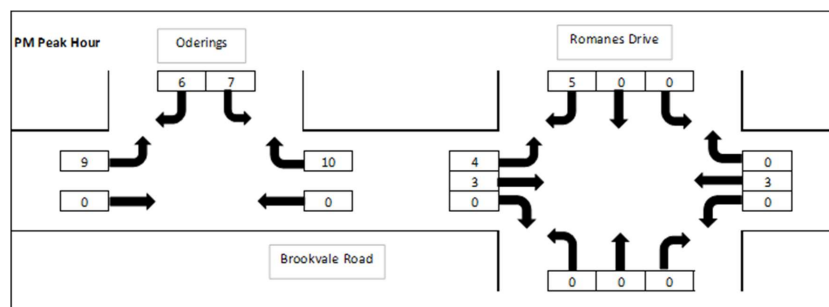


Figure 15 – Development Generated Intersection Movements (PM Peak)

9. Assessment of Effects

9.1 Network Effects

The residential activities are expected to add an additional 35 vph to the network at peak times of the day. Approximately half of these are expected to travel to and from the east, using the Brookvale Road/Romanes Drive roundabout.

This roundabout was modelled in SIDRA intersection analysis software using the expected volumes post-development of the Brookvale Structure Plan (BSP) area as a starting point. These future base volumes were estimated by adding the ECC survey data from 2022 to the increments estimated in the BSP assessment. The addition volumes from the Oderings development were then added to these.

The SIDRA analysis, which is included at Attachment 2, shows that the roundabout operates with LOS A or B for all movements, and LOS A overall.

Beyond this intersection, and to the west on Brookvale Road the incremental volumes distribute to multiple routes and are unlikely to have any noticeable effect on the operation of the network.

9.2 Walking and Cycling Effects

The proposed site layout appropriately provides for walking and cycling with a combination of public dedicated paths and private shared spaces. Crossing treatments are provided near the garden centre entrance and across the carpark entry.

The shared space environment starts north and west of the internal roundabout so it will be important (as is proposed) to provide a clear visual distinction between these two environments.

The site layout provides a high degree of permeability, creating connections between the established garden centre, the future residential community, Guthrie Park and Brookvale Road. Externally, a footpath is proposed on the section of Brookvale Road between the western boundary and the site access road. It is recommended that this be extended east to complete a link to Romanes Drive (shown in Figure 4 and 5).

Overall, the proposed development layout appropriately provides for internal and external walking and cycling movement.

9.3 Parking

According to RR453, a garden centre with a GFA of 500m² would typically generate parking demand for between 16 and 30 vehicles at the 50th and 85th percentile levels. The proposed parking area includes 40 parking spaces and is therefore able to accommodate the expected level of demand.

Each of the residential lots is expected to have appropriate size to accommodate on site parking if desired, noting that there is no longer a minimum requirement in the ODP.

Eight on-street parking spaces are also proposed on the internal road network. This equates to a rate of one space per 4.4 dwellings, which is an appropriate level of parking supply for visitor parking in a residential setting.

Overall, the proposed development has an appropriate level of parking to support its likely parking demands on site, without potential reliance on off-site areas.

9.4 Road Safety

Other than two lots that front Brookvale Road, the proposed residential development will take access from a single established vehicle access to Brookvale Road. This access can provide appropriate sight distance in both directions and has no evident safety issues, based on its historic performance.

The internal transport network has been designed to create a low-speed environment for vehicles, with the minimum practical footprint provided for vehicle manoeuvring. Changes in surface treatments indicate an increasingly pedestrianised environment as users move further into the site and transition from the commercial garden centre environment to the residential and recreational environment at the rear and side of the site.

The horizontal alignment of the internal roads and use of a mini roundabout at the garden centre carpark also limit vehicle operating speeds.

Pedestrian crossings treatments are provided at two locations and a high degree of permeability for pedestrians and cyclists is provided throughout the site.

Overall, the design and its transport provisions are assessed as appropriately and safely accommodating the new residential demands.

10. DISTRICT PLAN COMPLIANCE

The following table sets out the compliance of the proposed residential development against the relevant rules of the HDC District Plan, Section 26.1. The garden centre has not been assessed as it is an existing activity.

Rule	Requirement	Compliance
26.1.6A	Access	
1	Access to Property	
a	Every owner or occupier shall provide a legal, safe and effective vehicular access to any activity undertaken on a site, and required parking or loading areas from an existing, formed legal road, to enable vehicles to enter the site, except where the site has Designated Retail Frontage (see Appendix 30) or where the site is within the Flaxmere Commercial Zone.	Complies. Safe and effective vehicle access is provided to accommodate all expected vehicle types, including rigid trucks up to 11.5m long.
b	There shall be a maximum of one vehicle crossing per property within the Residential Zone. Where a property is bordered by 2 or more the vehicle access to the property shall be from the lower category road. The category of the road will be determined by its Road Hierarchy status in Appendix 69 or traffic volumes when hierarchy status is equal.	Complies. Site is not in the Residential Zone. Site has two road frontages and takes access from the lower category road only.
c	The minimum legal widths for private access are contained in Table 26.1.6.1-1 below. Private access to properties shall allow the safe passage from the edge of the road to the legal boundary of the lot for a single site or household unit. For two or more sites or household units or for any Right of Way, formation of the access to the activity undertaken on the site is required in compliance with Table 26.1.6.1-1.	Does not comply. See Discussion below this Table.
2	Distance of Vehicle Accesses from Road Intersections	
b	In the Plains Production Zone: Vehicle access to any property shall be sited a minimum of 100 metres from an intersection of a State Highway.	Complies. There are no State Highway Intersections within 100m.
26.1.6B	Safe Sightline Distances	
1	Intersections shall be located to ensure that Safe Sightline Distances are maintained. Note: For vehicle accesses fronting a Local, Collector or Arterial Route (as defined in the Roading Hierarchy in Appendix 69) compliance with Austroads Standards is deemed an acceptable means of compliance. The minimum sight distance required for 50km/h roads is 90m.	Complies. At least 90m can be achieved in both directions from the existing access.
26.1.6C	Loading	
a	(i) Every owner or occupier who proposes to construct or substantially alter, reconstruct or add to a building on any site, or change the activity carried out on the site shall provide a Loading Space. The Loading Space shall provide for the suitable or efficient accommodation of any loading or fuelling of vehicles which are likely to arise from the use of any building or activity carried out on	N/A There is no loading requirement for residential activities.

	the site, except where a service lane is designated or provided, or where the site has Designated Retail Frontage (see Appendix 30). Separate Loading Spaces shall be provided for each occupier of the site if there are more than one. The Loading Space shall be additional to the parking required in Table 26.1.6.1-4.	
	(ii) Every Loading Space, together with access, shall be designed so that it is not necessary to reverse vehicles either on to or off the street. The Loading Space shall not be stacked or located within vehicle manoeuvring areas.	
	(iii) The provision of a Loading Space in respect of any site may be made as part of the side and/or rear yard space, but not as part of the front yard space of that site.	
	(iv) The method of loading shall ensure that the footpath or access to adjacent properties shall remain clear at all times and ensure traffic safety is maintained on the roads.	
b	Design of Loading Spaces	
	The design of Loading Spaces and the layout adopted will depend on the area and shape of the land available, the purpose for which loading is required, and the functional design of the building. The layout shall be of sufficient size to accommodate the following design vehicles: (i) Activities requiring loading facilities or servicing from heavy vehicles: A "Single Unit Bus / Truck" as defined in the "Austroads Design Vehicles and Turning Path Templates Guide" AP-G34-13, Austroads, 2013 - refer to Appendix 73 for the dimensions of this vehicle. (iii) The following minimum dimensions are provided as a means of compliance: Retail activities, offices, manufacturing premises and similar must have a minimum length of 8.5 metres and a minimum width of 3 metres.	N/A No loading requirement for residential activities.
26.1.6D	Parking	
3	Parking Spaces for People with Disabilities	No requirement for residential lots. The Garden Centre parking area provides two accessible spaces, which meets the requirement for a parking area with 21-50 spaces.
5	Design and Construction of Parking Areas	
a	<u>Vehicle Dimensions:</u> All parking spaces and access and manoeuvring areas, including ramps shall be of a sufficient size and suitable layout to accommodate a passenger vehicle" as defined in the "Austroads Design Vehicles and Turning Path Templates Guide" AP-G34-13, Austroads, 2013 - refer to Appendix 72 for the dimensions of this vehicle.	Complies. Appropriate design vehicle tested.
c	(b) <u>Parking Spaces for Residential Activities.</u> Parking spaces for Residential Activities in any Residential zone shall have minimum internal dimension of 3.0m width and 5.0m length. (c) <u>General Design and Construction Details</u> All public and required parking areas, and any outdoor display areas (such as car, caravan or boat sales yards) shall comply with the following general requirements:	Complies. Site is not in a Residential zone but each lot includes a 3.0m wide by 5.5m long car parking bay. Compliance expected.

	(i) Parking areas in any Commercial or Industrial Zone shall be formed and sealed with an all-weather surface.	
	(ii) Parking areas shall be designed and constructed to ensure that stormwater runoff from the parking area does not adversely affect adjoining property.	
	(iii) Parking areas, together with access and turning space, shall be designed to ensure that vehicles negotiate the parking area at a safe speed and are not required to reverse either on to or off a street, provided that this requirement shall not apply in any Residential Zone where a single accessway serves not more than two residential buildings. Vehicles using the parking area shall only enter or leave the site by the accessway.	
	(iv) Where a public or non-residential parking area is within or adjoins a Residential Zone, a 1.8 metre high, fully enclosed screen shall be erected or a landscape strip of a minimum width of 5 metres adjoining the boundary or the Residential Zone shall be provided. These requirements may be reduced or waived with the consent of the adjoining neighbour.	
	(v) A reservoir space shall be provided within public car parks to prevent vehicles queuing on the street.	
	(vi) Provision shall be made for the illumination of access drives and pedestrian areas within public car parks. Such illumination is to be directed away from adjoining residentially zoned sites.	
	(vii) Non-residential parking spaces required to be sealed by standard 26.1.6.D.5(c)(i) shall be marked out and where there is a separate requirement for staff parking such spaces shall be clearly identified.	
26.1.7A	ACCESS	
1	Vehicle Standing Bay (a) Residential Zones. In all Residential Zones, a 5m long Vehicle Standing Bay shall be located within the Vehicle Access to all garages and carports and notional garage spaces.	Can comply. Site is not in a Residential Zone but all lots are shown with driveway standing bays 3.0m wide and 5.5m long.
26.1.7B	INFRASTRUCTURE TO SUPPORT ALTERNATIVE TRANSPORT MODES	
1	Bicycle Spaces Where on-site car parking is required provision shall also be made for purpose built bicycle stands on site. These shall be provided at a rate of 1 bicycle stand per 5 carpark spaces that are required except for supermarkets where the ratio shall be 1 bicycle stand per 20 carpark spaces that are required. The bicycle stands shall meet the following requirements: (a) They shall be securely attached to a wall or the ground and shall support the bicycle frame. (b) Each cycle stand shall be adequately spaced to allow a cyclist to manoeuvre and attach a bicycle to the stand. (c) They shall allow the bicycle to be secured. (d) They shall be visible and signposted.	N/A No requirement for residential activities.

Table 2 – District Plan Assessment (Proposed Residential Lots)

Table 2 shows that the proposed development can comply with the relevant Rules of the ODP, other than in relation to private access widths.

The proposal includes a range of road typologies including an 18m wide corridor for the main entry road, reducing to 11m on the loop road, and further reducing when serving only a limited number of lots.

The swept path analysis described at Section 6.4 confirms that the proposed layout is functional and can accommodate the needs of rubbish collection vehicles, occasional heavy vehicle demands such as removalists, and light vehicles moving around the site and to/from individual properties. The layout also provides for areas of on-street parking for visitors a ratio of 1 per 4.4 dwellings.

The site design includes a range of dedicated paths and shared spaces for walking and cycling and can appropriately accommodate the needs of these modes. Other road corridor functions including utility services are addressed in other parts of the Application.

Overall, it is concluded that whilst the proposed road cross-sections are a departure from the typical ODP standards, they can appropriately accommodate the needs of the new residential lots, combined with the established garden centre.

11. Conclusions

Oderings proposes to redevelop their site at 57 Brookvale Road, Havelock North. The proposed development will retain the garden centre and replace the existing nursery areas with 35 residential lots. In total 4,850m² of the site will be retained for commercial use and 14,250m² will be converted to residential use.

A network of internal roads and paths will accommodate walking, cycling and vehicle demands including rubbish collection and servicing of the garden centre. These are designed to connect the development with Guthrie Park to the west and the garden centre to the east and provide for easy walking/cycling access between them.

The road and path network is proposed to be public as far as the garden centre and the east-west pedestrian connection to Guthrie Park, and private from that point on.

Two residential lots will have direct access to Brookvale Road and the remainder will share the existing, reconfigured, access road with the garden centre.

The incremental traffic generation from the new residential lots is expected to have a negligible effect on the operation of the surrounding road network, which has been assessed including planned development in the adjacent Brookvale Structure Plan area.



A footpath is proposed on the northern side of Brookvale Road, between the western boundary of the site and the new access road, to connect the existing and proposed activities with the broader walking and cycling network in Havelock North. It is recommended that this path be extended east to provide a continuous link with Romanes Drive.

The proposed internal road cross-sections are a departure from the District Plan standards but have been shown to appropriately accommodate the needs of light and heavy vehicles, as well as pedestrians and cyclists.

The individual lots are expected to provide on-lot parking and additional on-street parking is also proposed on the internal road network. The garden centre will have a parking area for 40 vehicles including two accessible parking spaces near the entry. These provisions are expected to accommodate the parking demands generated by the activity on the site without overspill parking effects.

Overall, it is assessed that the proposed development layout is appropriate for its traffic and parking needs, and it can be accommodated by the existing, and future planned, transport network in the area.

Yours sincerely,

Anna Wilkins (CMEngNZ)  Principal Engineer East Cape Consulting Limited	George Eivers (CMEngNZ, CPEng, IntPE)  Principal Engineer / Director East Cape Consulting Limited
---	--

Attachment 1a – Vehicle Swept Paths (Prepared by Development Nous)

Attachment 1b – Loading Swept Paths (Prepared by Development Nous)

Attachment 2 – SIDRA Summaries