

From: "Kathryn Drew" <kdrew@bbo.co.nz>
Sent: Thu, 6 Oct 2022 15:03:37 +1300
To: "Tim Wilson" <tim@kineticenvironmental.co.nz>
Cc: "Ciaran Murphy" <ciaran@kotareconsultants.nz>; "Kevin Hill" <kevin.kph@xtra.co.nz>; "Emma Ruttley" <Emma.Ruttley@waipadc.govt.nz>
Subject: External Sender: RE: Te Awa Rise Ltd - Waipa DC further information request
Attachments: Response to s92 Request - District Council.PDF

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Afternoon Tim,

On behalf of Te Awa Rise Ltd please find attached a response to points 1-16 of the Waipa District Council s92 request for SP/0107/22 & LU/0161/22.

Point 17, being the ecological response is still pending and is expected to be completed later next week. In the meantime we would appreciate if the attached could be reviewed by yourself and the wider Council team and confirmed as satisfied/complete.

Any questions, sing out.

Many thanks,

Kathryn



Kathryn Drew LAND DEVELOPMENT MANAGER

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From: Tim Wilson <tim@kineticenvironmental.co.nz>

Sent: Friday, 26 August 2022 4:51 PM

To: Kathryn Drew <kdrew@bbo.co.nz>

Cc: Ciaran Murphy <ciaran@kotareconsultants.nz>; Kevin Hill <kevin.kph@xtra.co.nz>; Emma Ruttley <Emma.Ruttley@waipadc.govt.nz>

Subject: Te Awa Rise Ltd - Waipa DC further information request

Hi Kathryn,

As promised, please see attached s92 request and referenced ecology review by Boffa Miskell.

I'll give you a call on Monday to talk through the letter.

Have a good weekend.

Kind regards,
Tim

Tim Wilson
Senior Planner

027 766 2995

tim@kineticenvironmental.co.nz

KINETIC
ENVIRONMENTAL

Kinetic Environmental Consulting Limited

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PO Box 9413, Hamilton 3240

kineticenvironmental.co.nz

6 October 2022

Application No. SP/0107/22 & LU/0161/22

Tim Wilson
Consultant Planner
Waipa District Council
Private Bag 2402
Te Awamutu 3840

Dear Tim

Response to Request for Further Information under Section 92 RMA

This letter sets out a response to your request for further information in your letter dated 22 August 2022.

Prior to delving into the RFI detail, please note that the following changes have been made to the scheme plan, as a result of engagement with Council staff (Tony Coutts) around the Cambridge Road widening works and in response to the RFI:

- Lot 502 has reduced in size to now only encompass the land on the western side of Lots 13-15. The corresponding pedestrian connection to Road 3 has been relocated southwards to now sit between Lots 15 and 16.
- Lot 601 has increased in size and encompasses all of the land along the western edge of Lots 16-29. This change has been made to facilitate the road widening and provision of the pedestrian path within the new road carriageway along with retaining that Council is working on.
- The only change in lot size, along the western boundary is to Lot 19 which has increased in size from 388m² to 390m².
- Lot 503 has reduced in size to now only encompass the land at the northern end of Lot 54. This means that the land area of Lots 50-54 has increased in size.
- The old Lot 400 has been broken into two reserves, Lot 400 which is solely the stormwater reserve, and Lot 402 which is now a Historic Heritage Reserve that contains the remnant pa features/ditches.
- Lot 504 has been removed. The adjoining lots, Lot 45 and 204 have accordingly increased in size to absorb that land.

These changes are all demonstrated on the updated plan set contained in **Attachment 1**.

1. Accessway Reserves – General

The applicant agrees to vest the pedestrian linkages as local purpose (access) reserves. The scheme plan has been updated to this effect in relation to Lot 502 and 503. A consent condition to this effect is expected to this effect that will also include Lot 501.

2. Lot 504 (proposed local purpose (accessway) reserve)

As a result of the changes in the alignment of the pedestrian connection to Cambridge Road, there is no alignment/access benefits in having an accessway on the northern side of Lot 204. Lot 504 has consequently been removed from the plans.



3. Access for maintenance around pond edge/Superlot 205

Road 5 has been moved 1m to the west. This is not apparent in the scheme plan because the size and shape of the super lot (Lot 205) has been maintained (i.e. the additional land has not been taken from the superlot but from the lots on the western side of Road 5). The boundaries of Lot 205 have been staked on-site and shown to Tim/Eva at the Council site visit, and clearly show the 1m clearance between the edge of the lot and the existing vegetation on the edge of the waterbody.

That 1m of land currently forms part of Lot 400, being land vested in Council. As such, no additional easements for access are proposed. The alternative would be to extend Lot 503 south to the southern edge of Lot 205 if required.

4. Lot 400 (proposed local purpose (stormwater) reserve)

There is no planned re-use of contaminated soils exceeding the adopted human health guideline criteria on Lot 400. As per the earthworks plans filling of approximately 1m is proposed across this lower terrace, or where the swale is located the profile will be at existing ground level, not below existing ground level.

Refer to Plan 1034 – Sheet 06 for the cut/fill levels.

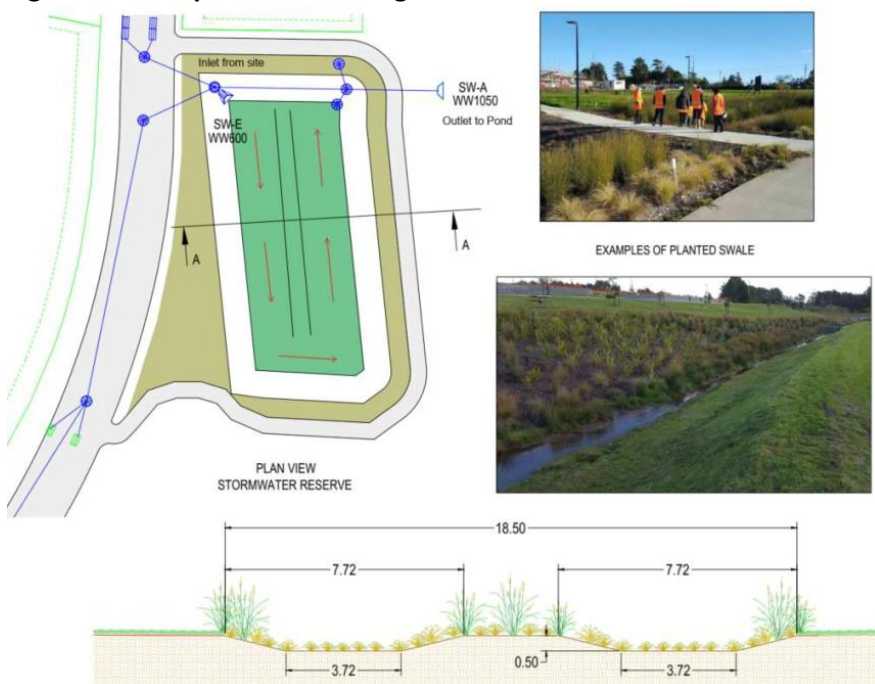
5. Lot 400 (proposed local purpose (stormwater) reserve)

There are no specific plans to manage the contamination, being that it does not require specific management, nor are there any constraints in relation to planting/cap penetration.

6. Lot 400 (proposed local purpose (stormwater) reserve)

The majority of Lot 400 is not proposed to be mown, instead will be planted as per the details in the Te Miro Stormwater Report (Appendix M of the AEE) and the concept plan below. Future detailed design/planting plan will be provided to Council as part of engineering design approval and conditions of consent to this effect are expected. The only portion of Lot 400 that may require mowing is the edges of the walkway. Anything over 1:3 will be planted.

Figure 1: Conceptual Swale Design



7. Walkway 501 and Lot 401

Refer to Plan 1034 – Sheet 10B for the cross-sectional profile of the walkway.

The top of the bank will be the eastern edge of the walkway. Thereafter the design/construction of the pathway including compaction will meet RITS standards to avoid any slippage/erosion issues.

8. Walking and cycling connectivity

A shared path is unable to be provided along the full extend of Cambridge Road, on private land, as the applicant does not own the land within 3796A Cambridge Road (Lot 1 DP 371625). If and when that land is developed the connection will be closed. That being said, we are also aware that Tony Coutts has been exploring the feasibility and practicability of the walkway along the edge of Cambridge Road in light of the road widening proposed on the corner. Those conversations have resulted in wholesale changes to the scheme plan along that western boundary that reflect Council's intentions in relation to the footpath along the edge of Cambridge Road. Please discuss this matter with Tony Coutt's further.

9. Proposed Fencing – General

A revised fencing design plan has been provided in **Attachment 2** to reflect the updated scheme plan changes and to show the location of all fencing types including the Type A fence at 1.1m high. This fencing plan replaces Figure 15 in the AEE.

10. Proposed Fencing – General

The level of visual permeability as a percentage for fence types B and C have been provided in **Attachment 2**, being 50% permeable where not solid.

11. Design Guidelines

The Design Guidelines are to inform individual lot planting, not bulk planting required on the gully slope between the upper and lower terrace. For that space, the applicant expects conditions that require a planting plan to be approve, implemented and thereafter a consent notice requirement to maintain that planting. The approval of a planting plan will provide Council the opportunity to comment/confirm the species in that space. No changes to the Design Guidelines has thus been made.

12. Development Engineering Team

A Building Restriction Zone as per the CMW Geosciences Report has been added to the Subdivision Consent Plan in **Attachment 1**. It is noted that suitable building platforms sit outside of those setbacks.

13. Development Engineering Team.

Refer to Appendix F of the Geotechnical Report which includes a comprehensive s106 Natural Hazards Risk Assessment and thus supersedes Council's table. Tim Wilson has agreed the requirement is satisfied in an email to Kathryn Drew dated 29/8/22.

14. Development Engineering Team.

Refer to **Attachment 3** for a draft Operations and Maintenance Plan for the proposed stormwater swale.



15. Results of consultation with Iwi.

Refer to attached CVA found in **Attachment 4**. Also contains in **Attachment 4** is the signed MOU.

Mana Whenua are supportive of the remnant pa feature to be shown separately as a historic reserve. Further commentary can be found within the CVA. Ongoing Council responsibility for the pa feature would need to be further explored and considered by Council in collaboration with Iwi.

The applicant/mana whenua are also comfortable with a historic reserve been vested in Council in lieu of the land been included in the adjacent stormwater reserve. A historic reserve has accordingly been shown on the updated scheme plan in **Attachment 1**.

16. 23m waterbody setback non-compliance

No direct visual or any specific mitigation is proposed, nor is any considered necessary, other than standard earthworks management to avoid discharging contaminants into the waterbody. The planting that is proposed, is the planting that is already located on the margins of the waterbody.

17. Ecological Assessment

Boffa Miskell has recently peer reviewed the Ecological Impact Assessment prepared by 4Sight Ltd. The Boffa Miskell peer review has formed the basis of Council's further information request for ecology. A revised EIA is being prepared by 4Sight in response to the peer review and will be submitted separately to this correspondence.

Yours sincerely

Bloxam Burnett & Olliver



Kathryn Drew
Land Development Manager
027 251 0009
kdrew@bbo.co.nz



Attachment 1 – Amended Subdivision Plans



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TE AWA RISE

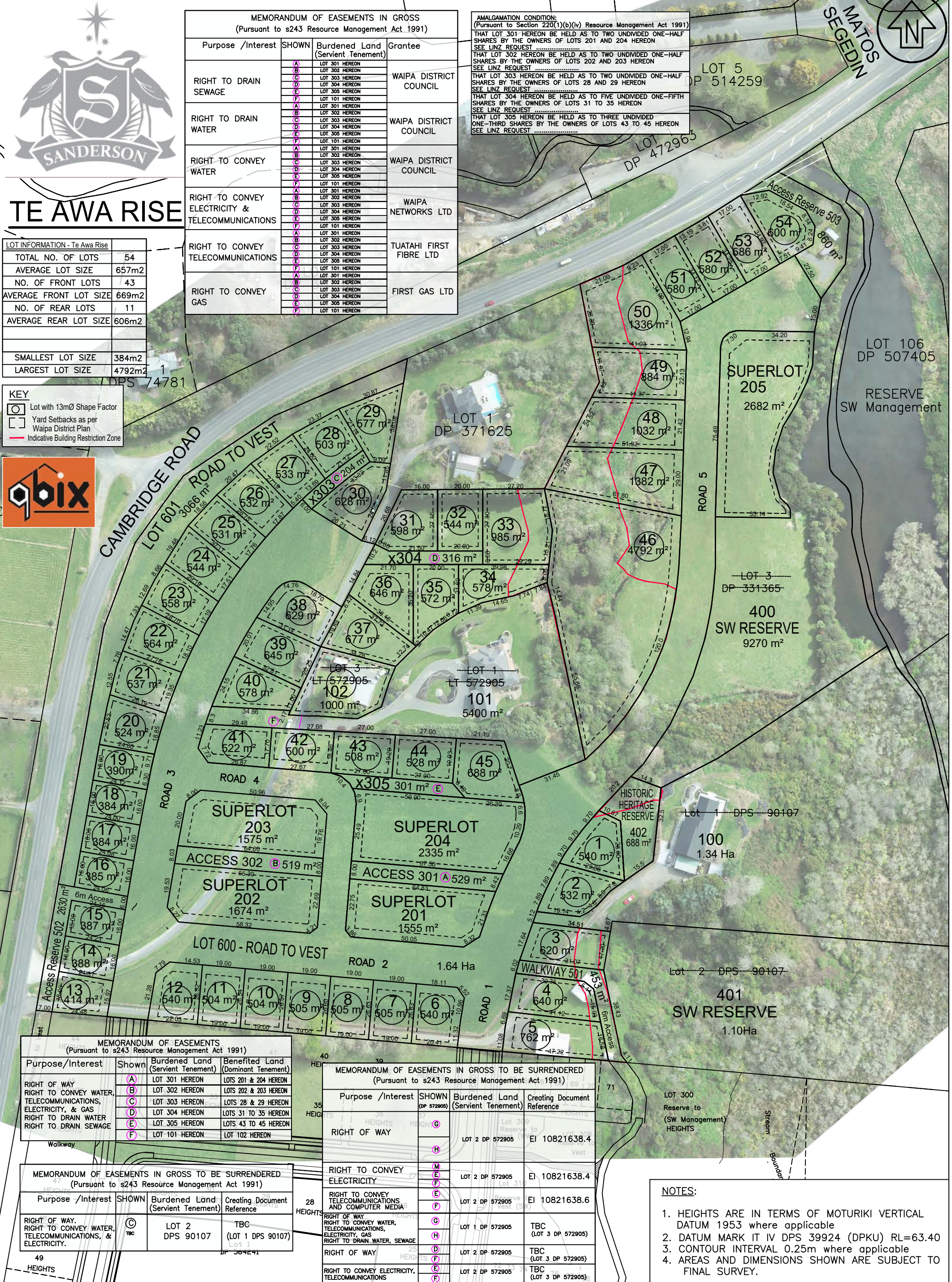
LOT INFORMATION - Te Awa Rise	
TOTAL NO. OF LOTS	54
AVERAGE LOT SIZE	657m ²
NO. OF FRONT LOTS	43
AVERAGE FRONT LOT SIZE	669m ²
NO. OF REAR LOTS	11
AVERAGE REAR LOT SIZE	606m ²
SMALLEST LOT SIZE	384m ²
LARGEST LOT SIZE	4792m ²

KEY	
	Lot with 13mØ Shape Factor
	Yard Setbacks as per Waipa District Plan
	Indicative Building Restriction Zone



MEMORANDUM OF EASEMENTS IN GROSS (Pursuant to s243 Resource Management Act 1991)			
Purpose /Interest	SHOWN	Burdened Land (Servient Tenement)	Grantee
RIGHT TO DRAIN SEWAGE	A	LOT 301 HEREOF	WAIPA DISTRICT COUNCIL
	B	LOT 302 HEREOF	
	C	LOT 303 HEREOF	
	D	LOT 304 HEREOF	
	E	LOT 305 HEREOF	
	F	LOT 101 HEREOF	
RIGHT TO DRAIN WATER	A	LOT 301 HEREOF	WAIPA DISTRICT COUNCIL
	B	LOT 302 HEREOF	
	C	LOT 303 HEREOF	
	D	LOT 304 HEREOF	
	E	LOT 305 HEREOF	
	F	LOT 101 HEREOF	
RIGHT TO CONVEY WATER	A	LOT 301 HEREOF	WAIPA DISTRICT COUNCIL
	B	LOT 302 HEREOF	
	C	LOT 303 HEREOF	
	D	LOT 304 HEREOF	
	E	LOT 305 HEREOF	
	F	LOT 101 HEREOF	
RIGHT TO CONVEY ELECTRICITY & TELECOMMUNICATIONS	A	LOT 301 HEREOF	WAIPA NETWORKS LTD
	B	LOT 302 HEREOF	
	C	LOT 303 HEREOF	
	D	LOT 304 HEREOF	
	E	LOT 305 HEREOF	
	F	LOT 101 HEREOF	
RIGHT TO CONVEY TELECOMMUNICATIONS	A	LOT 301 HEREOF	TUATAHI FIRST FIBRE LTD
	B	LOT 302 HEREOF	
	C	LOT 303 HEREOF	
	D	LOT 304 HEREOF	
	E	LOT 305 HEREOF	
	F	LOT 101 HEREOF	
RIGHT TO CONVEY GAS	A	LOT 301 HEREOF	FIRST GAS LTD
	B	LOT 302 HEREOF	
	C	LOT 303 HEREOF	
	D	LOT 304 HEREOF	
	E	LOT 305 HEREOF	
	F	LOT 101 HEREOF	

AMALGAMATION CONDITION:
(Pursuant to Section 220(1)(b)(iv) Resource Management Act 1991)
 THAT LOT 301 HEREOF BE HELD AS TO TWO UNDIVIDED ONE-HALF SHARES BY THE OWNERS OF LOTS 201 AND 204 HEREOF
 SEE LINZ REQUEST
 THAT LOT 302 HEREOF BE HELD AS TO TWO UNDIVIDED ONE-HALF SHARES BY THE OWNERS OF LOTS 202 AND 203 HEREOF
 SEE LINZ REQUEST
 THAT LOT 303 HEREOF BE HELD AS TO TWO UNDIVIDED ONE-HALF SHARES BY THE OWNERS OF LOTS 28 AND 29 HEREOF
 SEE LINZ REQUEST
 THAT LOT 304 HEREOF BE HELD AS TO FIVE UNDIVIDED ONE-FIFTH SHARES BY THE OWNERS OF LOTS 31 TO 35 HEREOF
 SEE LINZ REQUEST
 THAT LOT 305 HEREOF BE HELD AS TO THREE UNDIVIDED ONE-THIRD SHARES BY THE OWNERS OF LOTS 43 TO 45 HEREOF
 SEE LINZ REQUEST



MEMORANDUM OF EASEMENTS (Pursuant to s243 Resource Management Act 1991)			
Purpose/Interest	Shown	Burdened Land (Servient Tenement)	Benefited Land (Dominant Tenement)
RIGHT OF WAY RIGHT TO CONVEY WATER, TELECOMMUNICATIONS, ELECTRICITY, & GAS RIGHT TO DRAIN WATER RIGHT TO DRAIN SEWAGE	A	LOT 301 HEREOF	LOTS 201 & 204 HEREOF
	B	LOT 302 HEREOF	LOTS 202 & 203 HEREOF
	C	LOT 303 HEREOF	LOTS 28 & 29 HEREOF
	D	LOT 304 HEREOF	LOTS 31 TO 35 HEREOF
	E	LOT 305 HEREOF	LOTS 43 TO 45 HEREOF
	F	LOT 101 HEREOF	LOT 102 HEREOF

MEMORANDUM OF EASEMENTS IN GROSS TO BE SURRENDERED (Pursuant to s243 Resource Management Act 1991)			
Purpose /Interest	SHOWN	Burdened Land (Servient Tenement)	Creating Document Reference
RIGHT OF WAY	G	LOT 2 DP 572905	EI 10821638.4
RIGHT TO CONVEY ELECTRICITY	M	LOT 2 DP 572905	EI 10821638.4
RIGHT TO CONVEY TELECOMMUNICATIONS AND COMPUTER MEDIA	F	LOT 2 DP 572905	EI 10821638.6
RIGHT OF WAY	H	LOT 1 DP 572905	TBC (LOT 3 DP 572905)
RIGHT TO CONVEY WATER, TELECOMMUNICATIONS, ELECTRICITY, GAS RIGHT TO DRAIN WATER, SEWAGE	G	LOT 2 DP 572905	TBC (LOT 3 DP 572905)
RIGHT OF WAY	D	LOT 2 DP 572905	TBC (LOT 3 DP 572905)
RIGHT TO CONVEY ELECTRICITY, TELECOMMUNICATIONS	E	LOT 2 DP 572905	TBC (LOT 3 DP 572905)

MEMORANDUM OF EASEMENTS IN GROSS TO BE SURRENDERED (Pursuant to s243 Resource Management Act 1991)		
Purpose /Interest	SHOWN	Creating Document Reference
RIGHT OF WAY, RIGHT TO CONVEY WATER, TELECOMMUNICATIONS, & ELECTRICITY.	C	TBC (LOT 1 DPS 90107)

- NOTES:**
- HEIGHTS ARE IN TERMS OF MOTURIKI VERTICAL DATUM 1953 where applicable
 - DATUM MARK IT IV DPS 39924 (DPKU) RL=63.40
 - CONTOUR INTERVAL 0.25m where applicable
 - AREAS AND DIMENSIONS SHOWN ARE SUBJECT TO FINAL SURVEY.



SUBDIVISION CONSENT PLAN
 LOTS 1-54, 100-102, 201-205, 301-305, 400-401, 501-503, 600 & 601 BEING A
 SUBDIVISION OF LOTS 1&2 DPS 90107, LOTS 1&2 DP 506796, & LOT 3 DP 331365
 AT 3784, 3794, 3796, 3798, & 3838 CAMBRIDGE ROAD, CAMBRIDGE 3495
 TE AWA RISE LTD

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			1034	04
DATE	MAY 2022		SCALE AT A3	Rev 24
CAD	CPM		1:1500	

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LOT 1
PS 74781

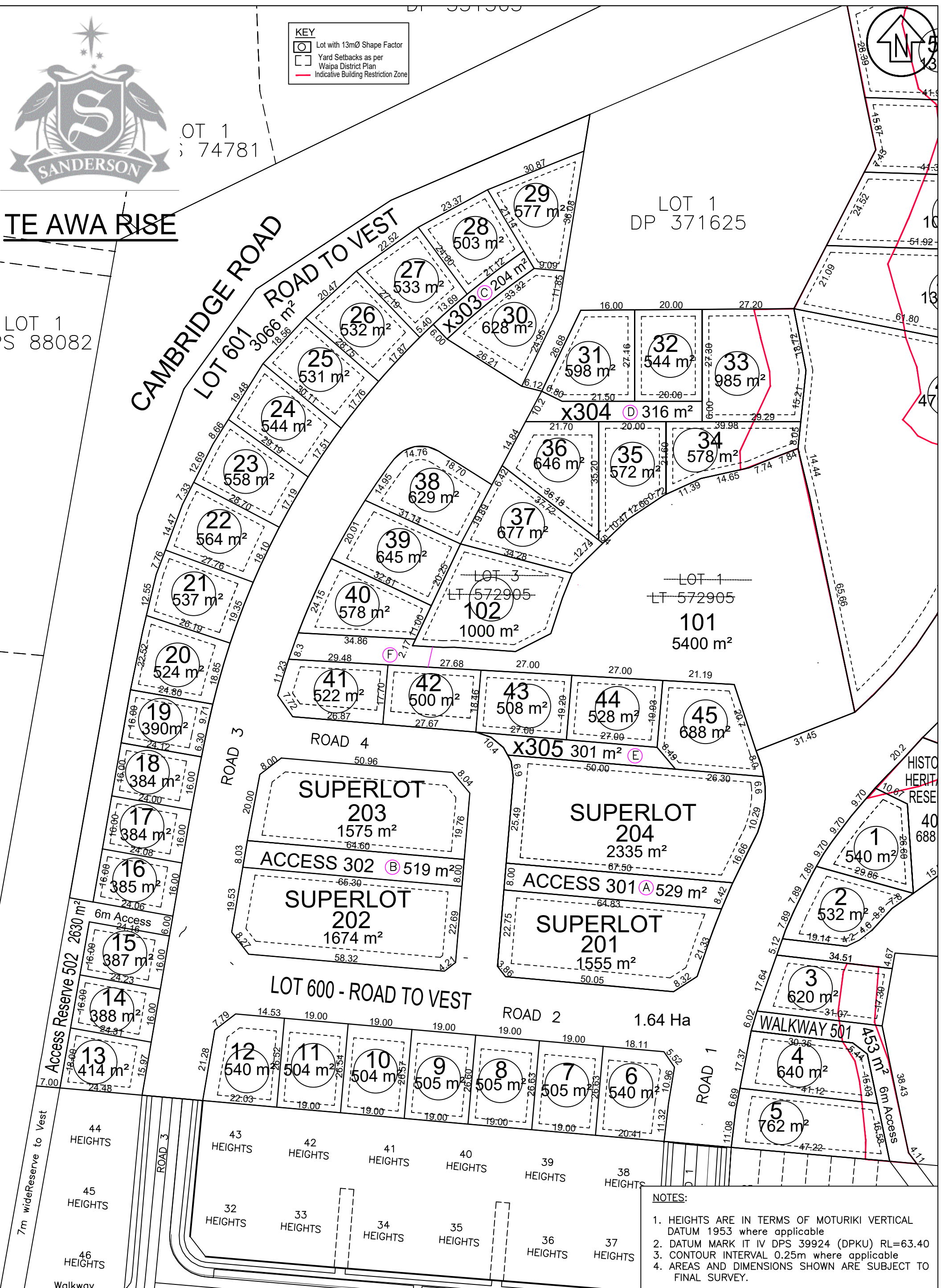
KEY

- Lot with 13mØ Shape Factor
- Yard Setbacks as per Waipa District Plan
- Indicative Building Restriction Zone

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LOT 1
PS 88082

LOT 1
DP 371625



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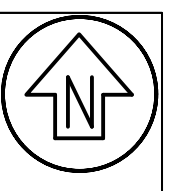
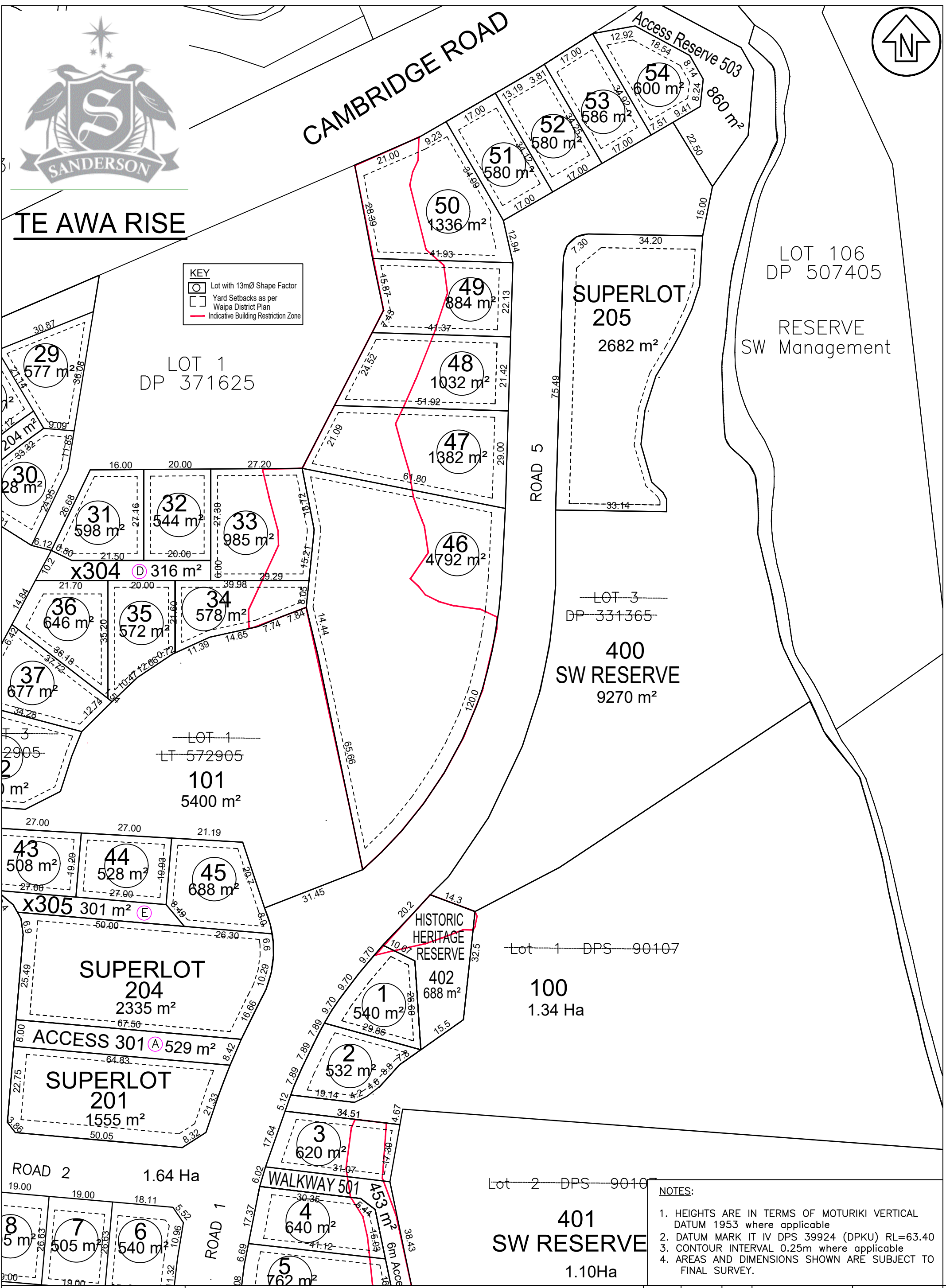
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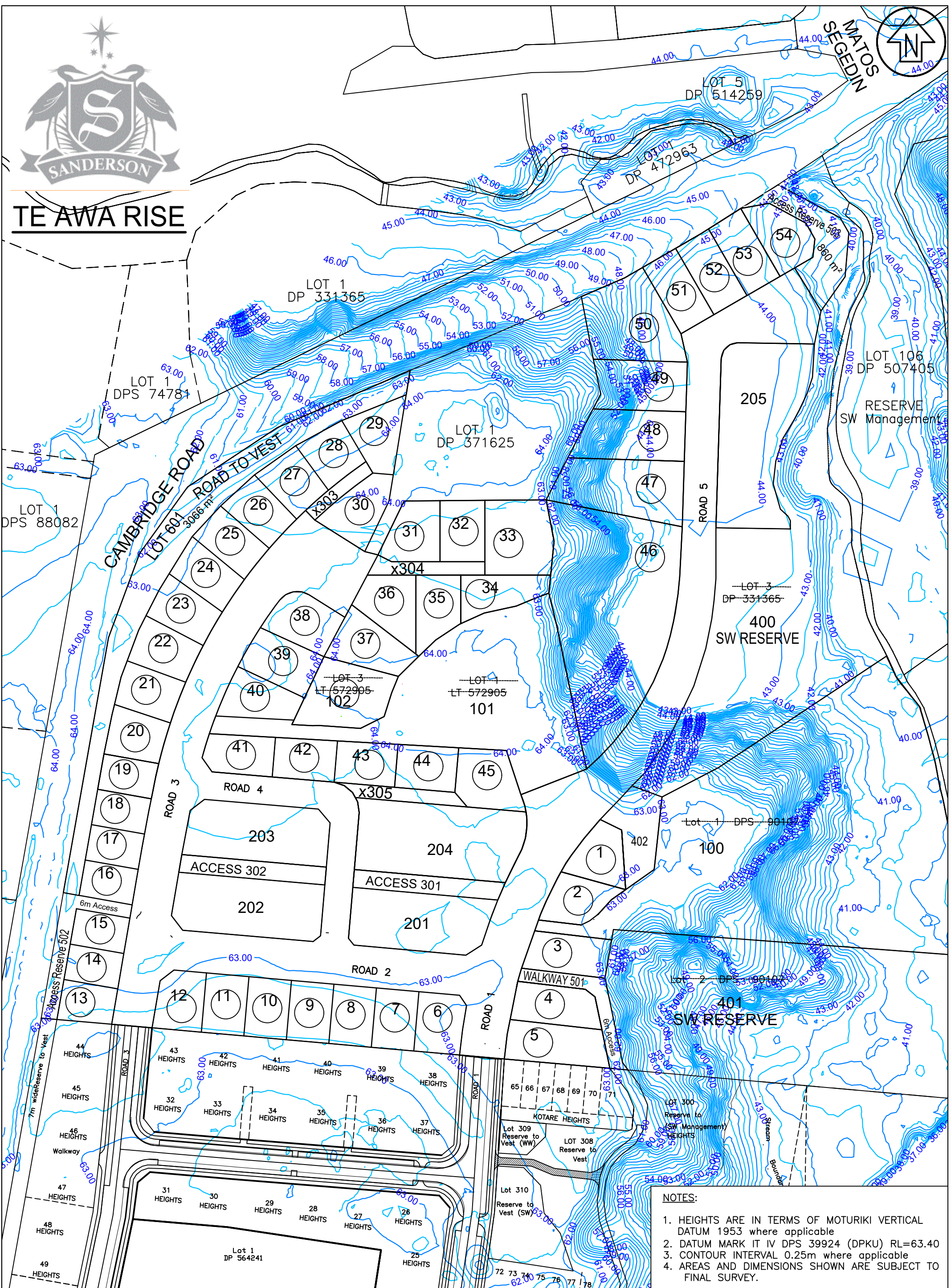
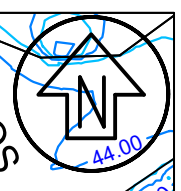
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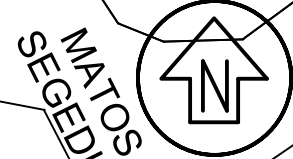


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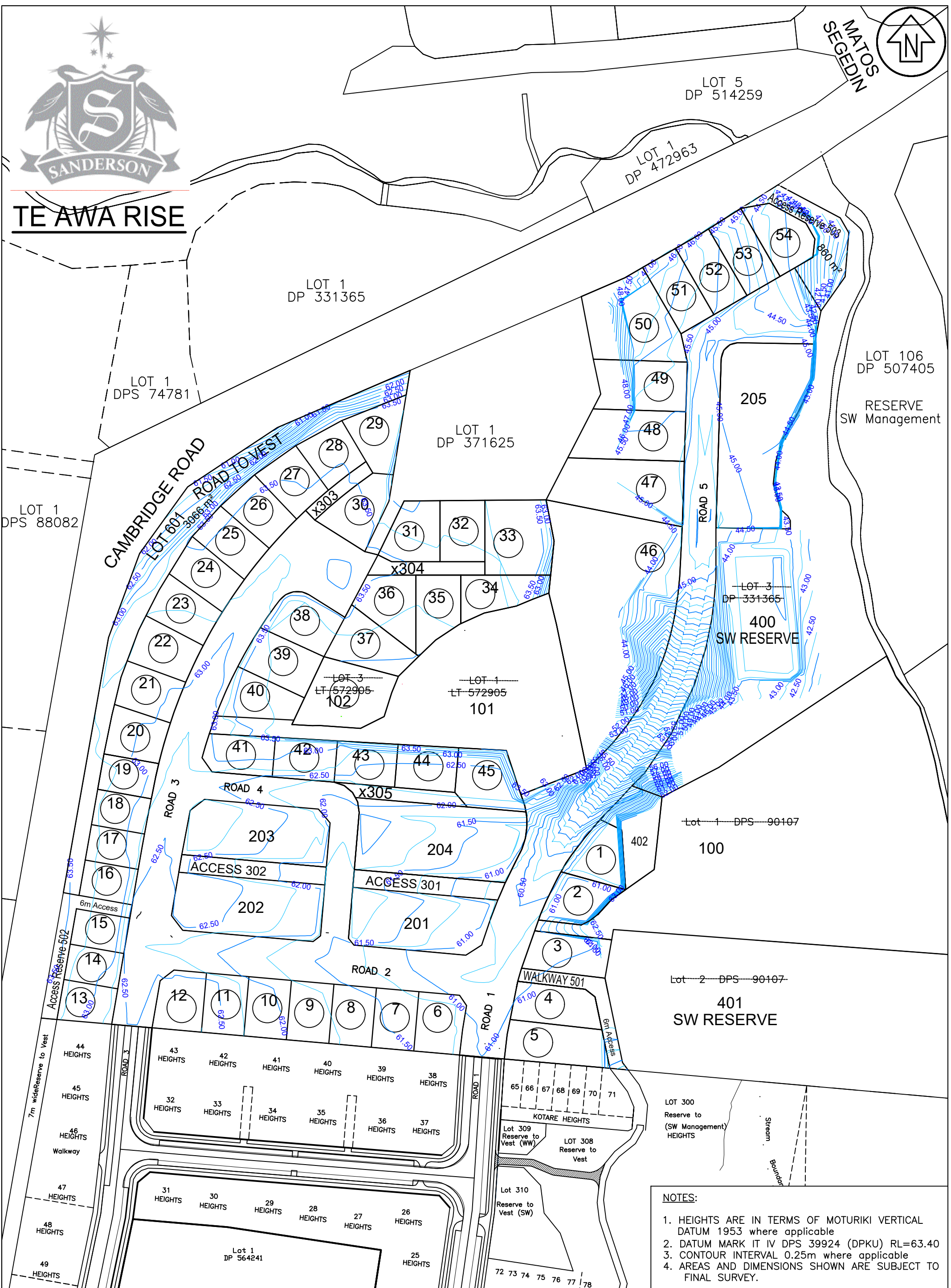
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	FINAL CONTOUR CONCEPT PLAN		REVISION Rev0 Original 22 Sep 2021	JOB 1034	SHEET 05B
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Unit D Victoria Arcade, 75D Victoria Street. Cambridge 3434 NZ		Tel: 07 827 5340	office@kotareconsultants.nz		

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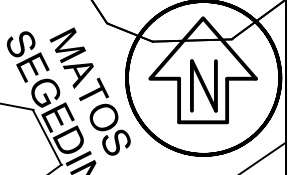
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Fill (+) 0 to +8.9m

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Fill = 25,500m³ Solid

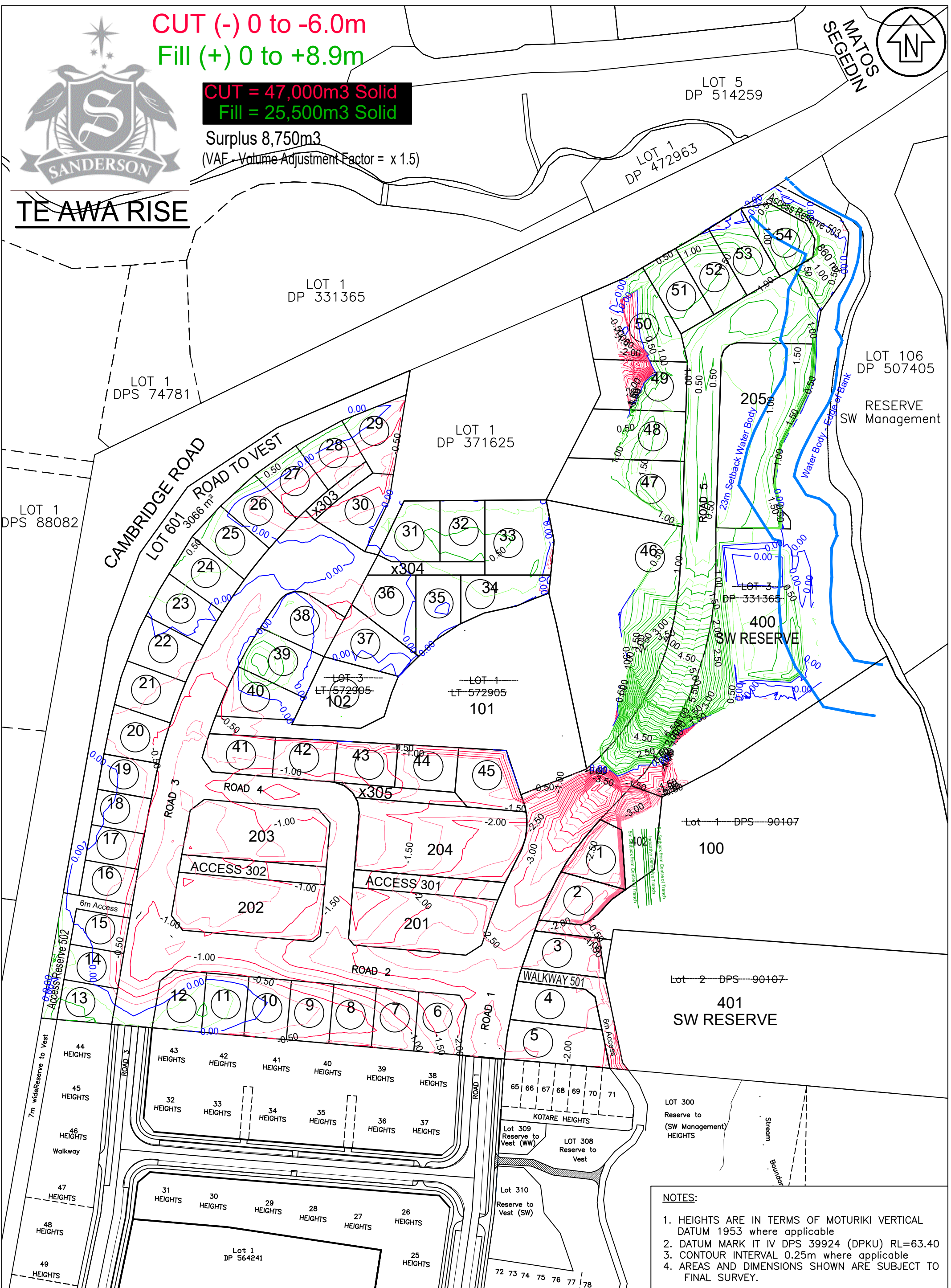
Surplus 8,750m³
 (VAF - Volume Adjustment Factor = x 1.5)



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CUT FILL CONTOUR CONCEPT PLAN
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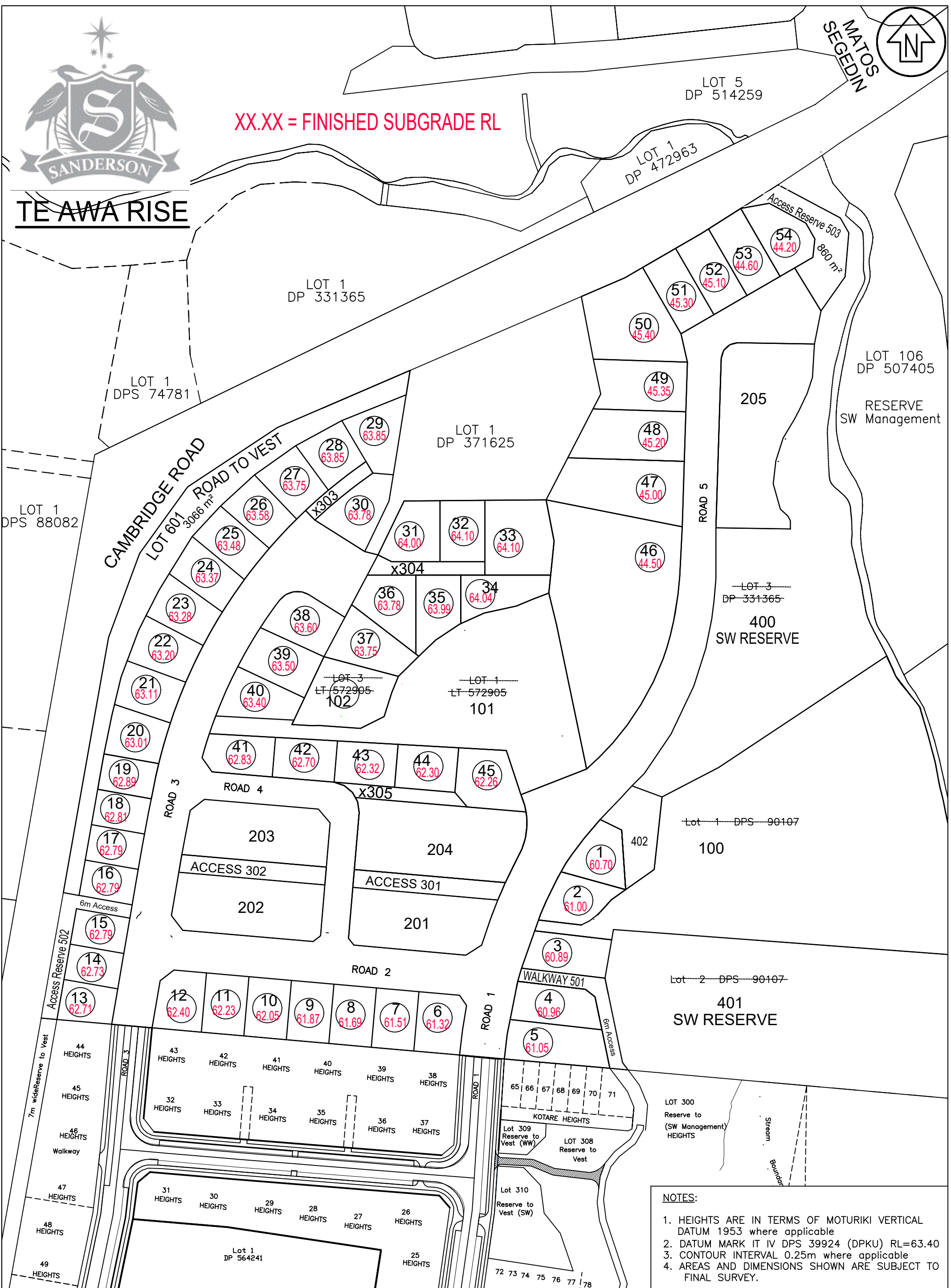
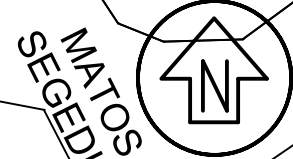
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XX.XX = FINISHED SUBGRADE RL



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FINISHED SUBGRADE LEVEL PLAN

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TE AWA RISE LTD

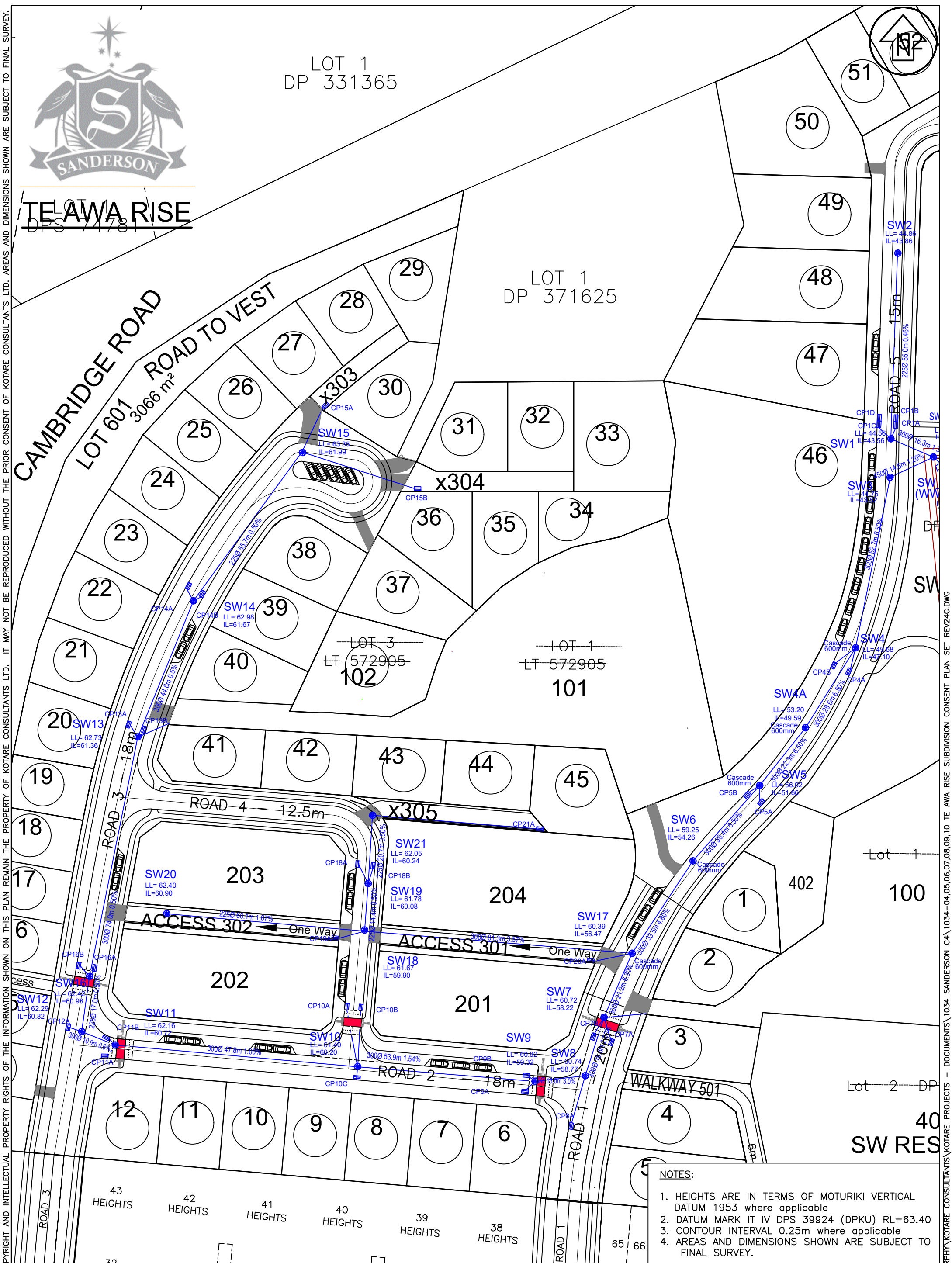
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LOT 1
DP 331365

TE AWA RISE



- NOTES:
1. HEIGHTS ARE IN TERMS OF MOTURIKI VERTICAL DATUM 1953 where applicable
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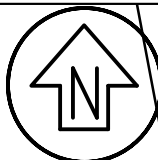
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TE AWA RISE

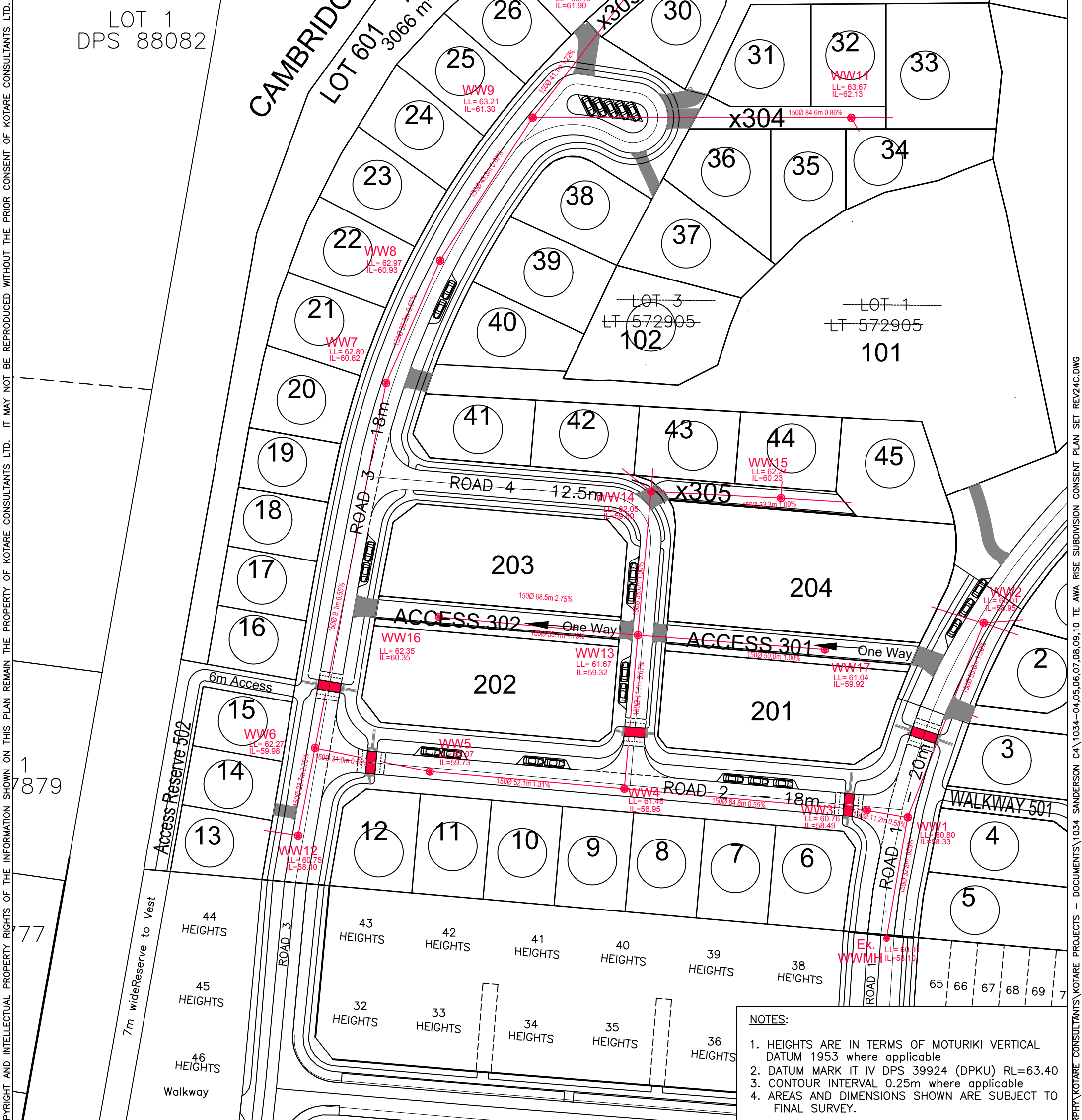


LOT 1
DPS 74781

LOT 1
DP 371625

LOT 1
DPS 88082

CAMBRIDGE ROAD
LOT 601 3066 m²
ROAD TO VEST



- NOTES:**
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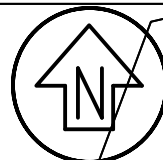
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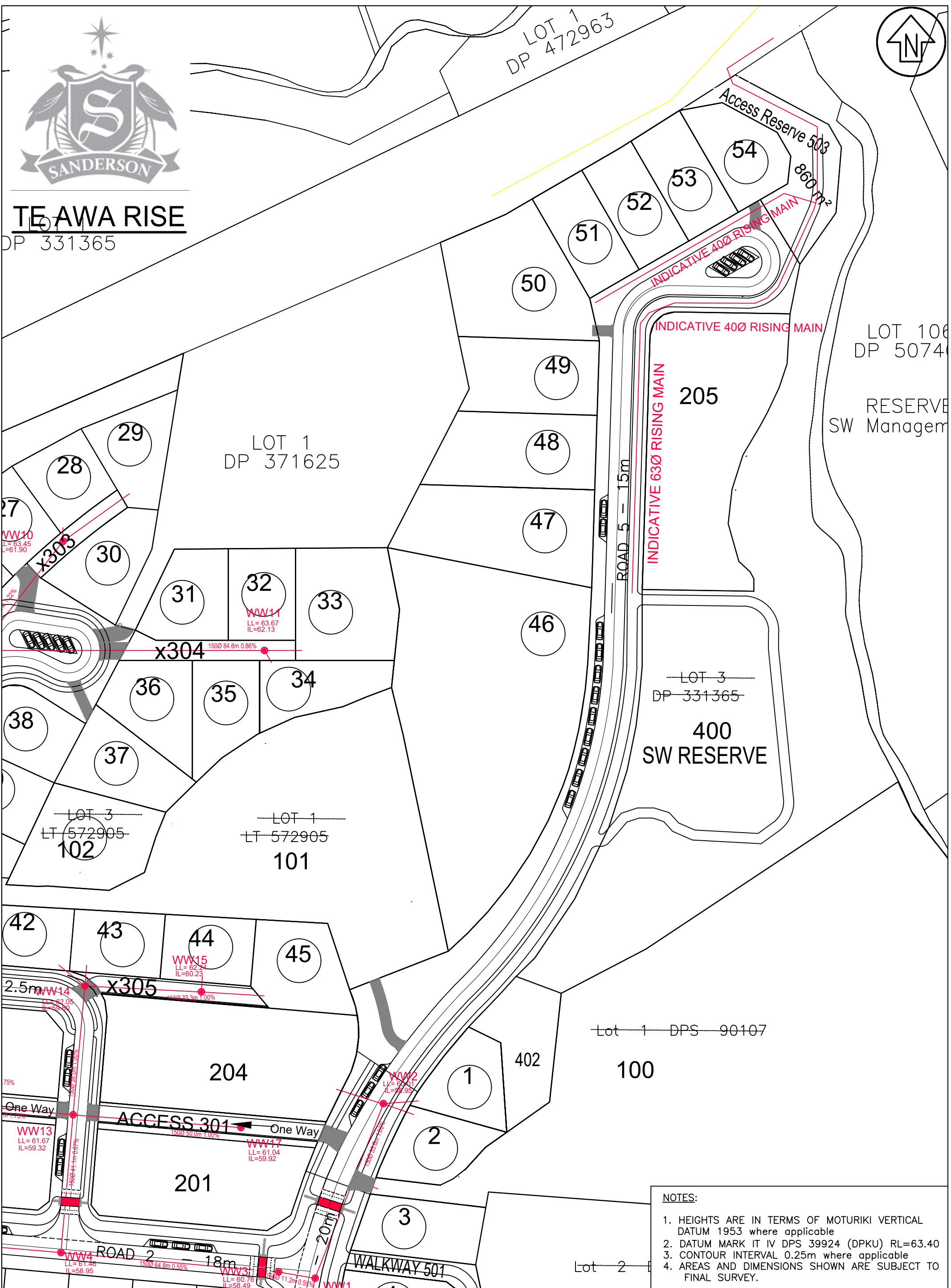


TE AWA RISE

DP 331365



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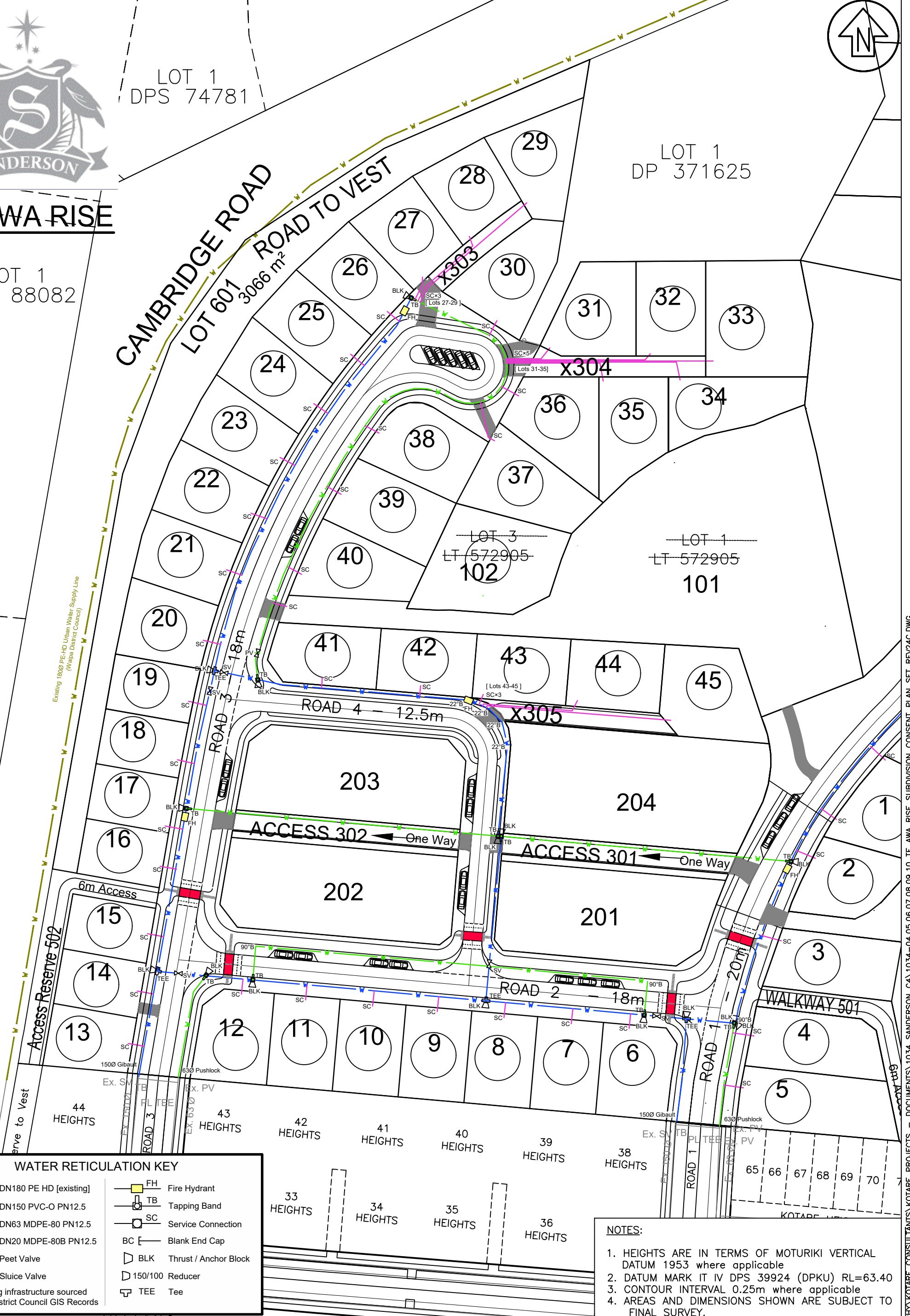
LOT 1
DPS 74781

LOT 1
DP 371625

TE AWA RISE

LOT 1
DPS 88082

CAMBRIDGE ROAD
LOT 601 3066 m²
ROAD TO VEST



WATER RETICULATION KEY	
$\varnothing 180$	DN180 PE HD [existing]
$\varnothing 150$	DN150 PVC-O PN12.5
$\varnothing 63$	DN63 MDPE-80 PN12.5
$\varnothing 20$	DN20 MDPE-80B PN12.5
	PV Peet Valve
	SV Sluice Valve
	FH Fire Hydrant
	TB Tapping Band
	SC Service Connection
	BC Blank End Cap
	BLK Thrust / Anchor Block
	150/100 Reducer
	TEE Tee

NOTE: Existing infrastructure sourced from Waipa District Council GIS Records

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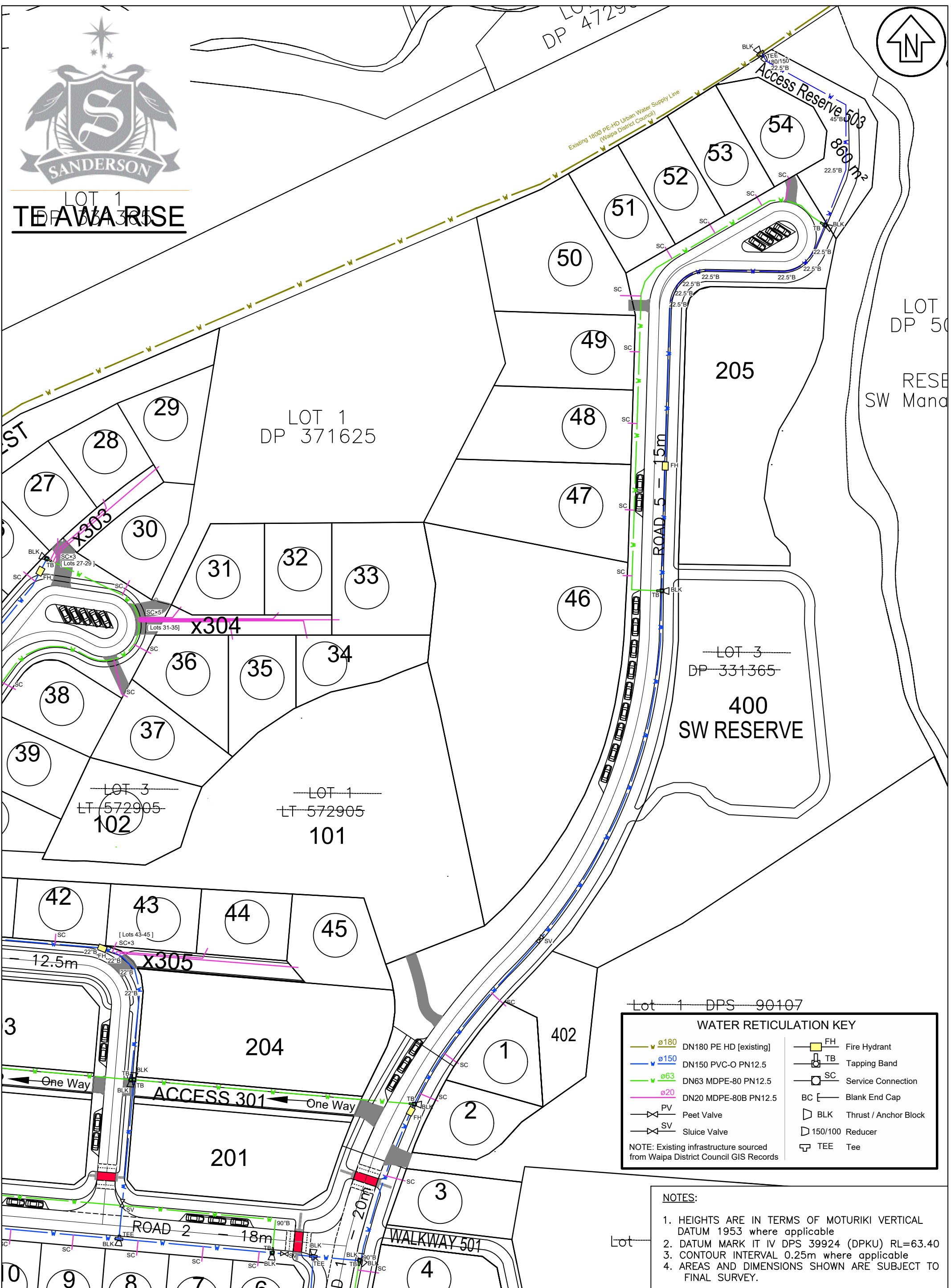
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**LOT 1
TE AWA RISE**



Lot 1 DPS 90107

WATER RETICULATION KEY			
	DN180 PE HD [existing]		FH Fire Hydrant
	DN150 PVC-O PN12.5		TB Tapping Band
	DN63 MDPE-80 PN12.5		SC Service Connection
	DN20 MDPE-80B PN12.5		BC Blank End Cap
	PV Peet Valve		BLK Thrust / Anchor Block
	SV Sluice Valve		150/100 Reducer
	TEE Tee		

NOTE: Existing infrastructure sourced from Waipa District Council GIS Records

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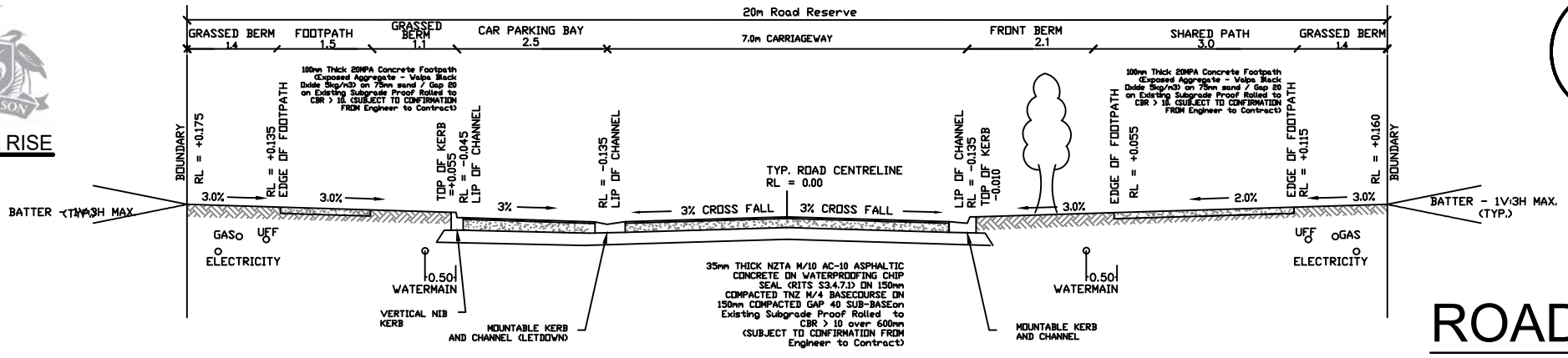
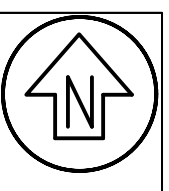
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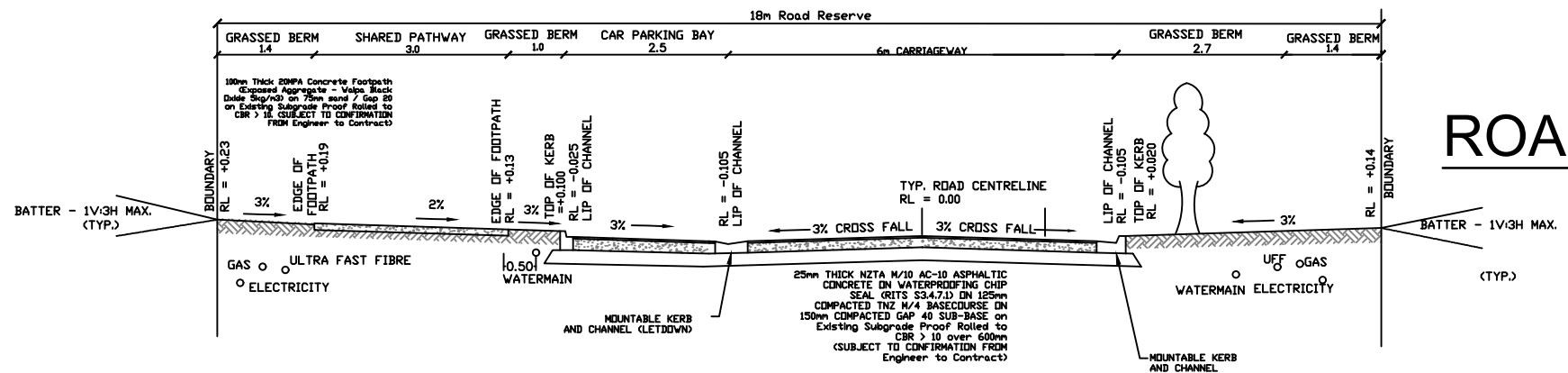


TE AWA RISE



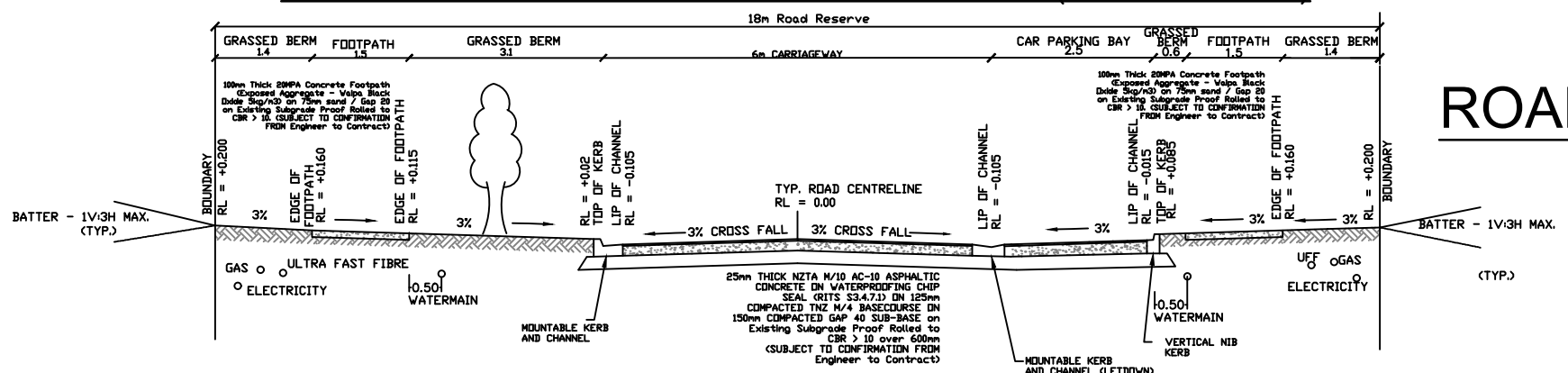
TYPICAL CROSS-SECTION A - A' SINGLE CAR PARKING BAY (20m Road Reserve)

ROAD 1



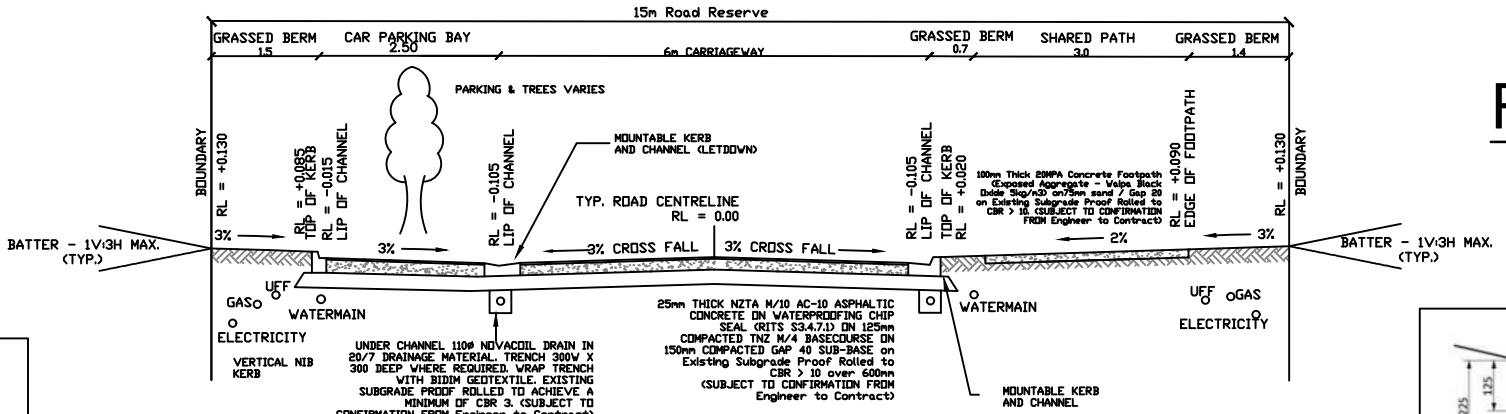
TYPICAL CROSS-SECTION B - B' SINGLE CAR PARKING BAY (18m Road Reserve)

ROAD 2



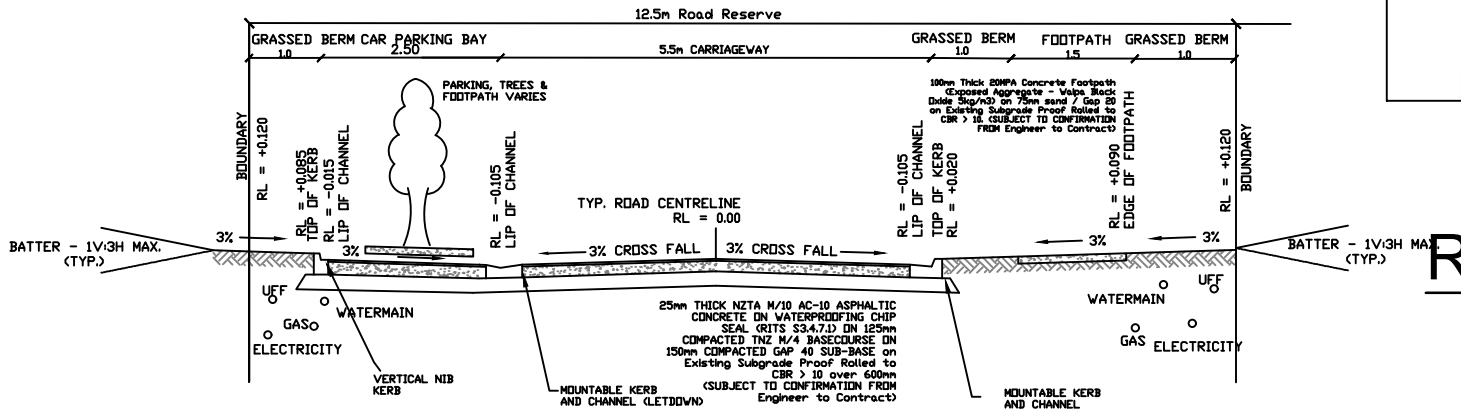
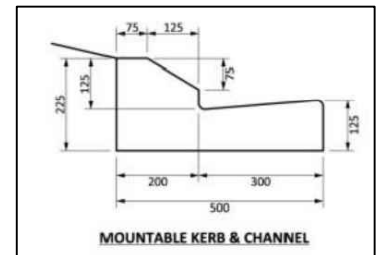
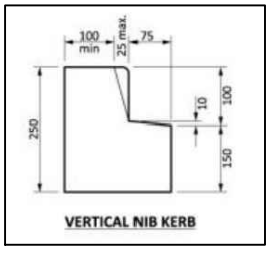
TYPICAL CROSS-SECTION B - B' SINGLE CAR PARKING BAY (18m Road Reserve)

ROAD 3



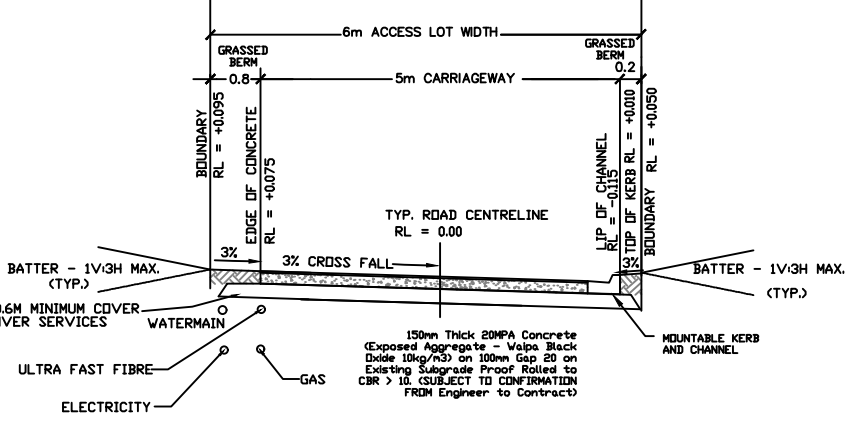
TYPICAL CROSS-SECTION C - C' SINGLE CAR PARKING BAY (15m Road Reserve)

ROAD 5

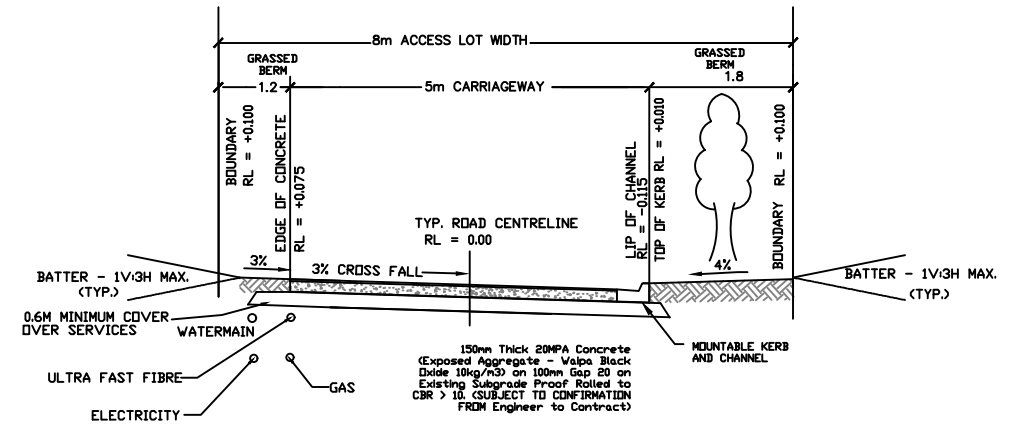


TYPICAL CROSS-SECTION D - D' SINGLE CAR PARKING BAY (12.5m Road Reserve)

ROAD 4



TYPICAL CROSS-SECTION E - E' 6.0M WIDTH



TYPICAL CROSS-SECTION E - E' 8.0M WIDTH

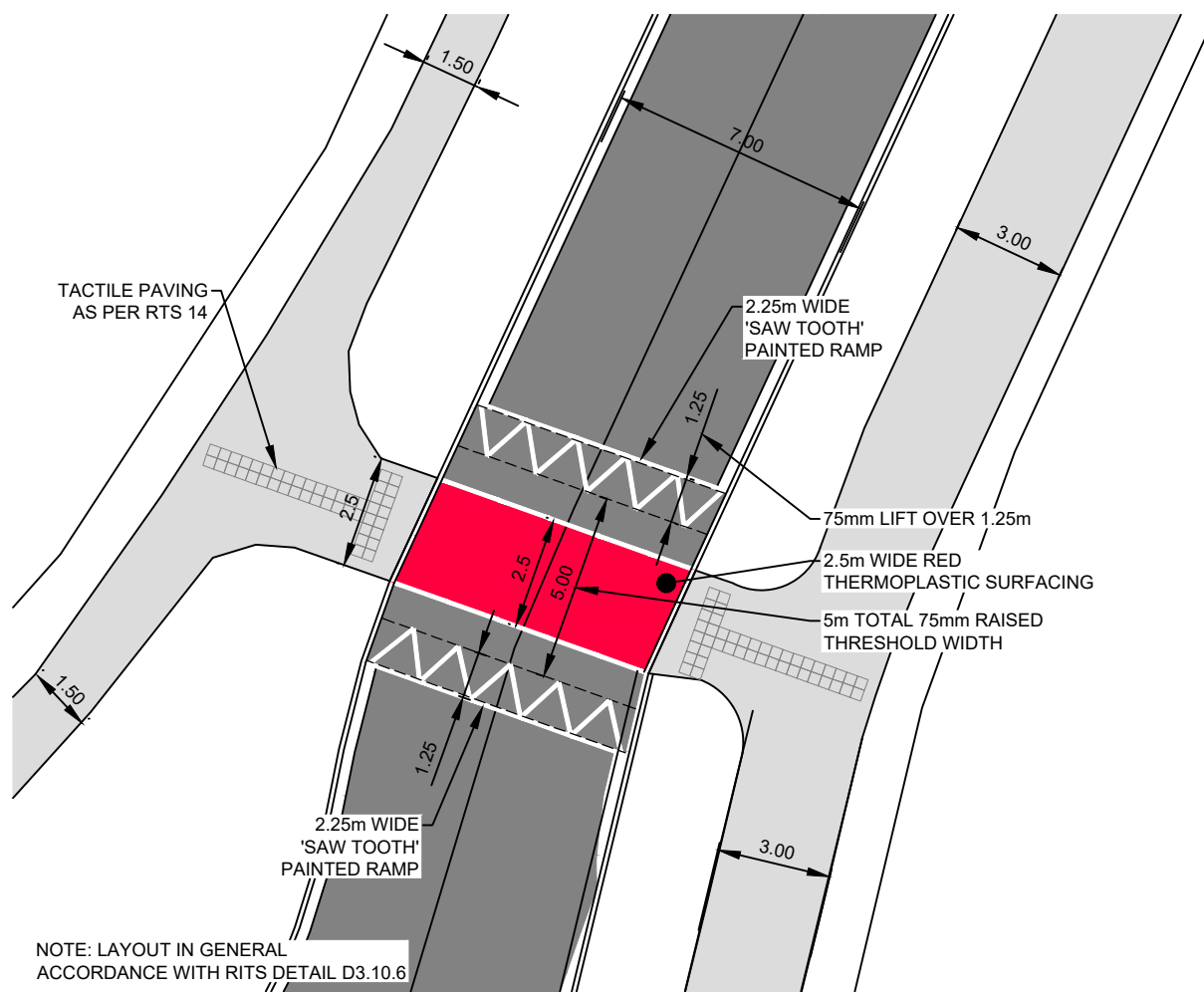
NOTE: AREAS AND DIMENSIONS SHOWN ARE SUBJECT TO FINAL SURVEY.



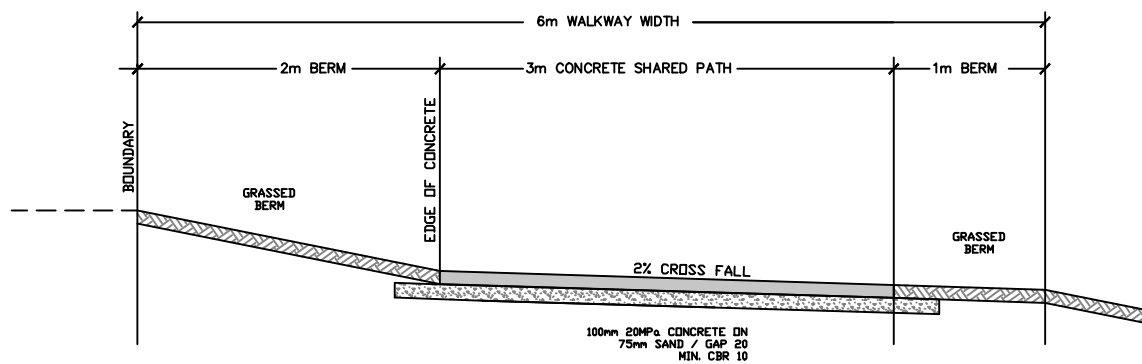
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TYPICAL DETAIL - RAISED PEDESTRIAN THRESHOLD
SCALE 1:200



TYPICAL CROSS-SECTION 3m WIDE SHARED PATH WITHIN 6m CORRIDOR – GULLY LOT 501

NOTE: AREAS AND DIMENSIONS SHOWN ARE SUBJECT TO FINAL SURVEY.



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TOTAL NUMBER OF REPRESENTATIVE
CARPARKS = 38

Note

Representative Concept Only - Detailed Road Layout and Engineering Design to be provided in due course for review and acceptance by Waipa District Council Development Engineering

LOT 1
DP 74781

TE AWA RISE

LOT 1
PS 88082

LOT 1
DP 371625

CAMBRIDGE ROAD
LOT 601
3066 m²

ROAD TO VEST

LOT 3
LT 572905
102

LOT 1
LT 572905
101

ROAD 4 - 12.5m

ROAD 3 - 18m

ROAD 2 - 18m

ROAD 1 - 20m

ACCESS 302 - One Way

ACCESS 301 - One Way

ROAD 1/5 Transition

6m Access

Access Reserve 502

7m wide Reserve to Vest

Walkway

WALKWAY 501

6m Access

44 HEIGHTS
45 HEIGHTS
46 HEIGHTS
43 HEIGHTS
42 HEIGHTS
41 HEIGHTS
40 HEIGHTS
39 HEIGHTS
38 HEIGHTS
32 HEIGHTS
33 HEIGHTS
34 HEIGHTS
35 HEIGHTS
36 HEIGHTS
37 HEIGHTS

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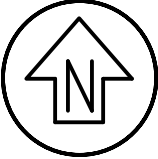
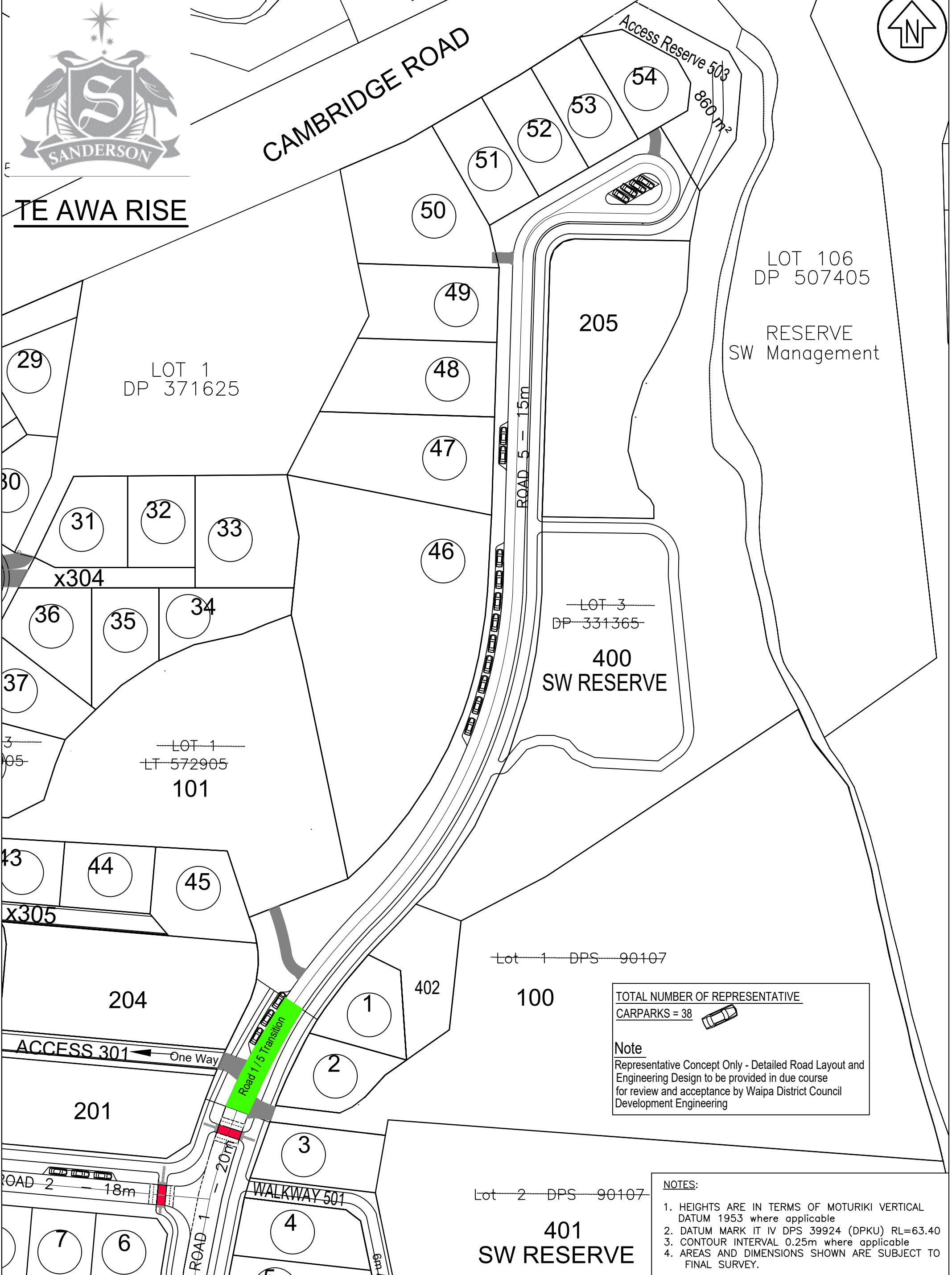
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TE AWA RISE

CAMBRIDGE ROAD



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Attachment 2 – Fencing Details



Driveway & Fencing Plan

- **Compulsory Driveway Locations**
- **Suggested Driveway Locations**
- - - - - **Type A - 1.1m height**
- - - - - **1.2m Type B or C**
- - - - - **1.2m Type C**
To be built by the developer with final design to be confirmed in consultation with council
- - - - - **1.8m Solid sheet metal panel built by developer**

The Awa Rise masterplans are indicative only, based on plans approved by the local council as part of the development approval. They are subject to change without prior notice as the development progresses. Lot areas indicated may differ to final lot areas. Infrastructure including but not limited to footpaths, green spaces, parks, trees and playgrounds are shown for illustrative purposes and may also differ. Last updated 22/06/2022



Attachment 3 – Draft Operations and Maintenance Plan



OMMP

STORMWATER DEVICE OPERATION MAINTENANCE AND MONITORING PLAN

TE AWA RISE, CAMBRIDGE

INTRODUCTION:

The purpose of this Stormwater Device Operation, Maintenance and Visual Inspection Plan (SDOMVP) is to provide guidance and standard procedures for the Te Awa Rise planted swale within the Waipa District Cambridge township. The document is required by WDC to satisfy the requirements of the consent and ensure a consistent SDOMVP across the district for specialist stormwater treatment, attenuation, and discharge locations. The SDOMVP outlines standard visual inspections and maintenance methods and is to be a live document as new devices are accepted into the consent or incorporated into the WDC asset register.

This plan should be updated with images of the stormwater devices once constructed and vegetation established.

This document outlines the following items of submission:

<h1>SECTION 1: CONSENT CONDITIONS</h1> <p>A table summarising how the consent conditions are met.</p>	
<h2>SECTION 2: STORMWATER DEVICE LOCATIONS</h2> <p>Ownership and reporting process</p> <p>The proposed LID and green stormwater infrastructure device maintenance locations.</p>	<h2>SECTION 3: OPERATIONAL GUIDANCE</h2> <p>Template of operational guidance to be provided once design is complete.</p>
<h2>SECTION 4: VISUAL INSPECTION AND MAINTENANCE PLANS</h2> <p>Programmed visual inspections and corrective maintenance</p> <p>Reactive maintenance (heavy rainfall, vandalism, complaints, and spillage of contaminating substances)</p>	<h2>SECTION 5: RECTIFICATION PLAN</h2> <p>Plan of how, when and options for rectification</p>

SECTION 1: CONSENT CONDITIONS

The following section demonstrates how the consent conditions in relation to SDOMVP are met and adhered to for Te Awa Rise:

- **Stormwater outfalls** (to the C4 gully pond)
- **Planted Swales for Treatment**

This document is considered a live document that will be updated as further devices are added to the urban area.

Consent conditions and how the conditions are met through the implementation of this SDOMVP.

Consent	Consent Number	Name
Discharge Permit	XXXXXXX	XXXXXXX
Resource Consent		

Land Use Consent

Clause	Condition	Demonstration of Conditions through OMMP



SECTION 2 – DEVICE MAINTENANCE AND INSPECTION LOCATIONS

This section presents the stormwater device locations (maintenance to be undertaken as documented in Sections 4) that form part of the consent.

MAINTENANCE LOCATIONS

Location Plan is presented in



Figure 1. The key treatment swale is shown in Figure 2.



Figure 1. Overall Site Location

Table 1 Maintenance locations.

No.	Type	Location	Primary Purpose
1	Communal Planted Swale	East of Site adjacent to Pond – lower terrace	Water Quality Treatment for all roads on site and super lots.
2	Minor Planted Swale	East of Site adjacent to Pond – lower terrace	Water Quality Treatment for minor section of cul-de-sac on lower terrace.
3	On lot soakage pits	All private lots (outside super lots)	Treatment and management of primary runoff up to the 10% AEP event
4	Outlets	2 x Outlets from the large and small planted swales to the pond	Conveyance

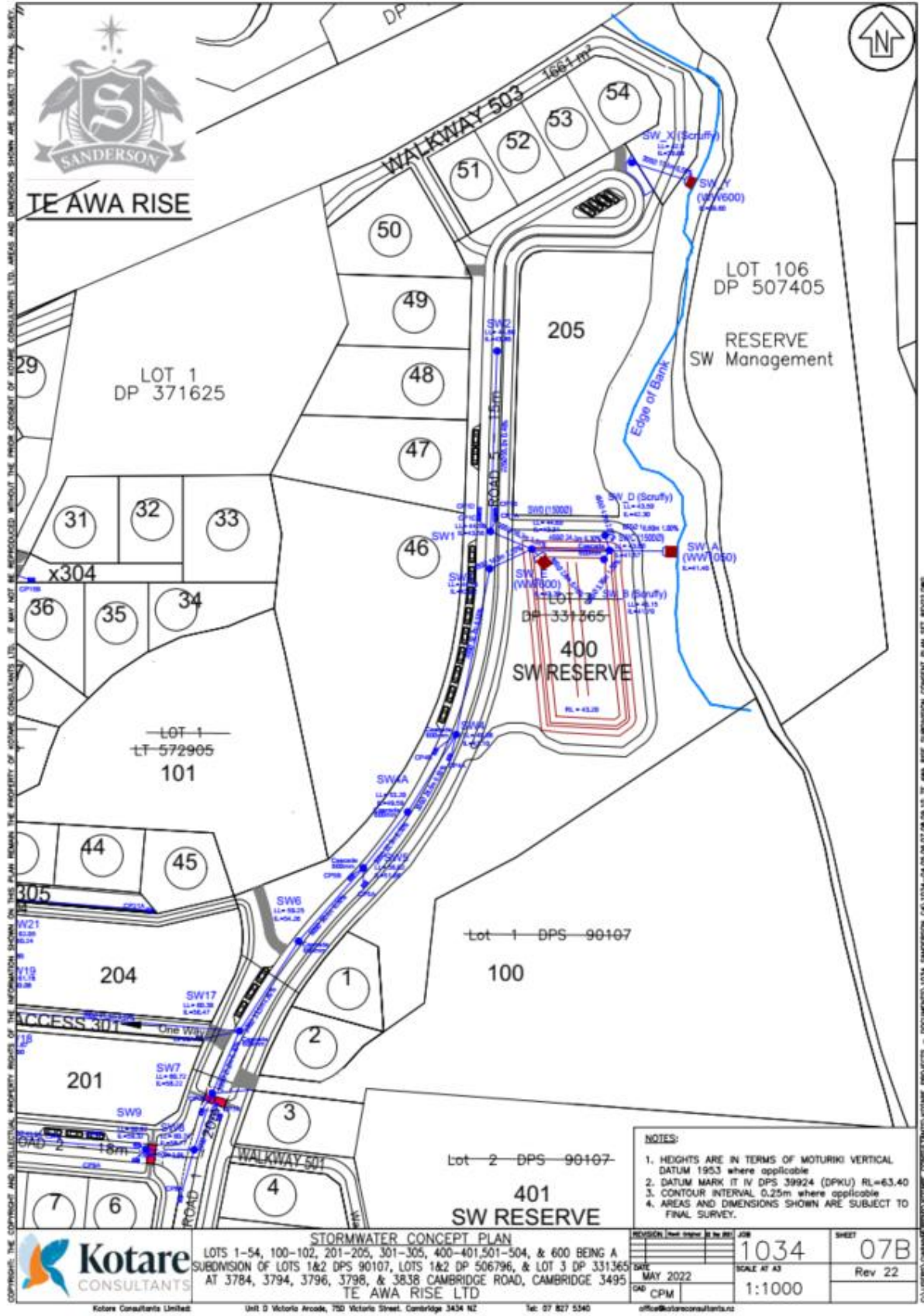


Figure 2. Planted Swale Location (400 sw reserve)

SECTION 3 – OPERATIONAL GUIDANCE



Operational guidance for each asset commissioned by or vested to council shall be provided at the completion of the project. This enables asset managers as well as maintenance and monitoring teams to understand the design criteria, assumptions, and intent of the devices, as well as ensure consistency with the SDOMVP. The following section describes the key operation and criteria for each the stormwater infrastructure

assets that form part of the consent. This has been provided so that operation is understood.

A placeholder for operational criteria has been provided and it is expected that this will be completed (by the applicant) at detailed design/vesting of the device. This is provided in the Appendix B.



TE AWA SWALES

A vegetated swale will treat stormwater runoff and provide stormwater treatment through physical filtration and infiltration. High flows will bypass the swale and discharge direct to the pond. Conventional swale examples are provided to the right and a wet (or wetland) swale is shown above.

The primary function of a swale is to:

- Slow flow and promote infiltration
- Provide retention to prevent flooding in large events
- Convey runoff within a defined channel
- Reduce stormwater pollutants through velocity reduction and contact with dense vegetation
- Provide visual amenity

The swale maintenance area is defined by:

- Length of swale from upper most inlet to outlet.
- Top of bank to top of bank

The Te Awa swale is within the drainage.

A summary and images of the distinguishing features between swale types and pollutant removal mechanisms of the two different swales are presented in Table 2 and 6 and 7.



Table 2. Key operational purposes of a swale

Swale Type	Distinguishing Features	Pollutant Removal Mechanisms
Wet Swale	<ul style="list-style-type: none"> Emergent wetland vegetation Microtopographic pools and shallow areas Seasonal high-water table Wetland soils Will appear soggy and wet 	<ul style="list-style-type: none"> Enhanced gross filtration, sedimentation, and chemical/biological transformations Evapotranspiration and volatilization
Grass or Vegetated Swale	<ul style="list-style-type: none"> Established, dense turf with maintained low grass height OR densely planted with vegetation. Dry when not raining 	<ul style="list-style-type: none"> Filtration, sedimentation (modest) Infiltration, chemical precipitation, microbial degradation, and vegetation uptake

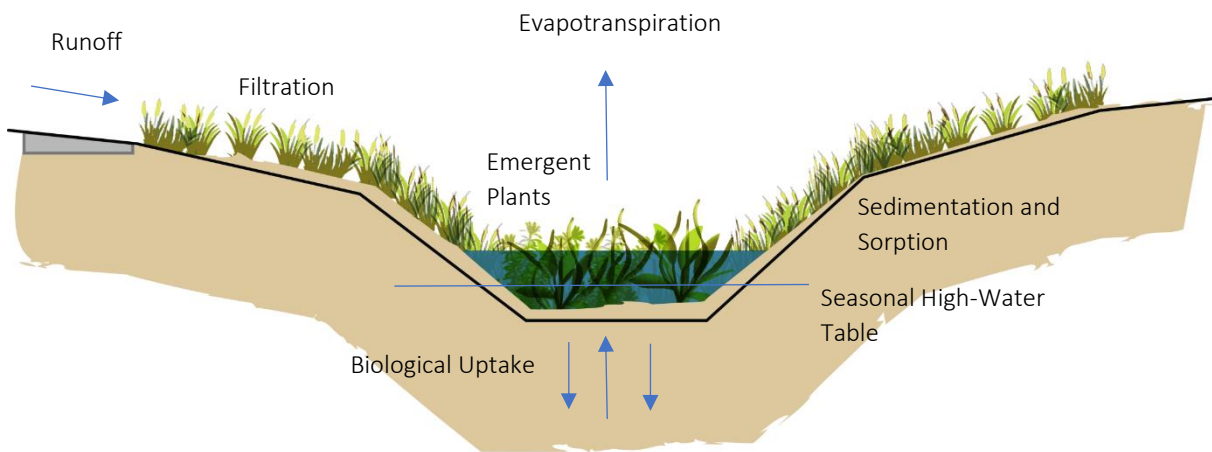


Figure 3 Wet swale

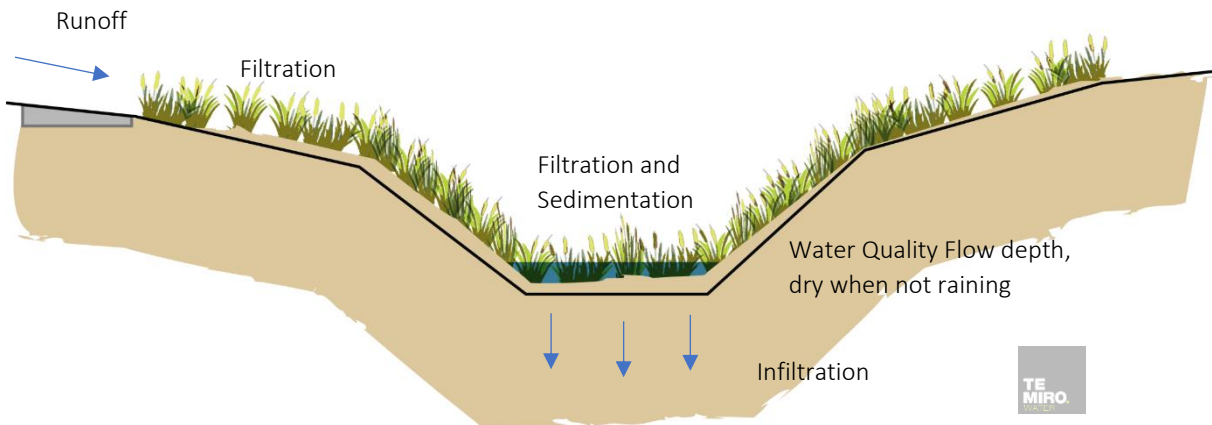


Figure 4 Conventional swale used at Te Awa Rise

The Te Awa Swale comprises the following functional components:

1. **Channel base** – A vegetated earthen channel which conveys low flows along the swale.
2. **Batter** – Designed to contain high flows within the swale. Normally vegetated and with a low slope to assist with mowing and erosion control.
3. **Vegetation** – Vegetation is important for reducing stormwater flow velocities, removal of suspended solids and sediments, and stabilisation of the channel base and batters. In bio-swales, the vegetation is also integral to pollutant removal processes within the filter media and the long-term sustainability of the bio-swale.
4. **Soil** – The use of topsoils along the channel base and batters of the swale facilitates enhanced infiltration of stormwater and maintenance of healthy plant growth.
5. **Flow dispersers**
6. **Outlets**
7. **Inlets**
8. **Maintenance Access around the swale**

SWALE OPERATIONAL CRITERIA

Swale operational criteria is provided for the asset at Te Awa Rise. The information presented in the table are assumptions based on location and topography.

TE AWA RISE DRIVE TREATMENT SWALE

	Objectives	
Purpose	Water Quality	Treatment of runoff from Residential Road area to the west on upper terrace
	Stormwater conveyance	No by-pass is provided – treatment flows only
	Baseflow conveyance	No
	Volume Control	No
Key Operational Criteria	Inlet	Receives flows from stormwater outfall upstream of the swale through network as well.
	Diversion Devices	Yes, via flow splitter in manhole
	Outlets	Outlet via scruffy dome to pipe to headwall adjacent to pond edge with rip rap
	Minor Channel	N/A
	Major Channel	N/A
Planting Operational Philosophy	Minor channel base	Planted
	Minor Channel sides	Planted
	Major channel sides	Planted

Figure 3: Example of Vegetation on side slopes – to be replaced by Te Awa Swale once complete.





SWALE OUTFALL TO POND

A stormwater outfall is where stormwater from the piped network discharges to a natural waterbody. While a stormwater outfall doesn't provide any form of stormwater treatment, it is important to maintain the outfall to prevent stream bed scour and erosion.

Stormwater outfalls may comprise the following functional components:

1. **Outlet** – Conveys stormwater (generally a pipe or box culvert).
2. **Endwall** - An integrated wall located at either end of drainage pipe or a stream crossing structure. A wall built at a pipe outlet is an endwall (A wall built at a pipe inlet is a headwall).
3. **Riprap** - Riprap describes a range of rocky material placed at a pipe outlet to protect from scour and erosion. Rocks used range from 100 – 500 mm generally and are between 2-6 metres (generally). In other cases, alternatives to riprap may be present, including stilling basins or other erosion devices.

STORMWATER OUTFALL OPERATIONAL CRITERIA

Outfall operational criteria is provided for the outfalls to the C4 Pond as follows:

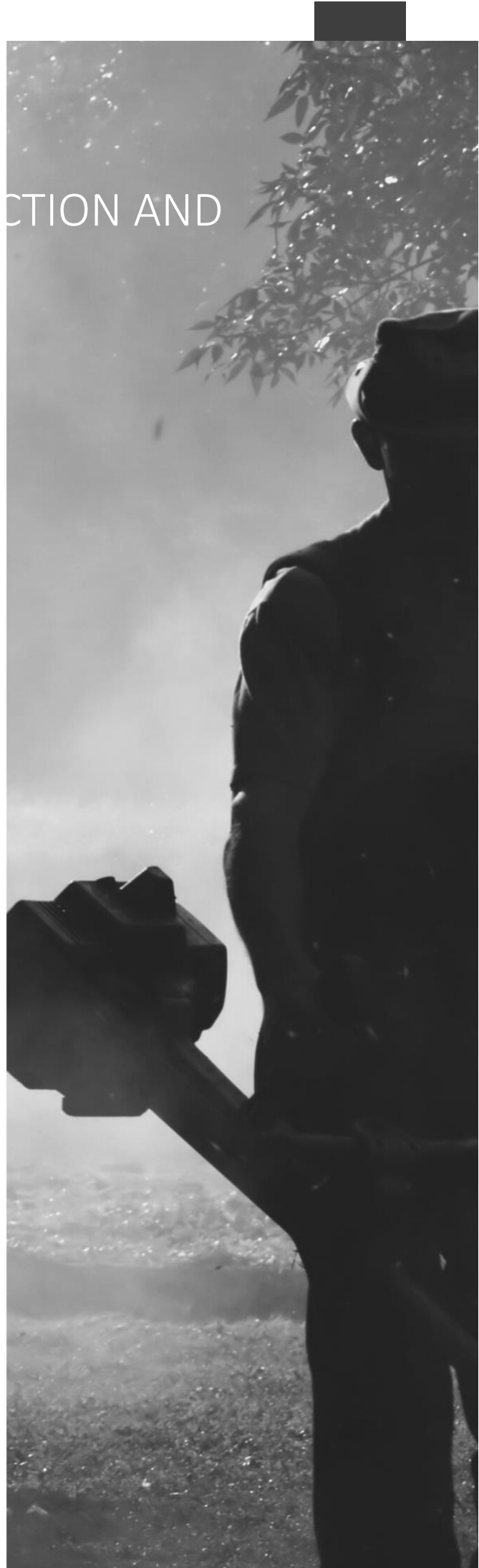
TE AWA RISE STORMWATER OUTFALLS TO C4 GULLY POND

Criteria	Objectives	
Purpose:	Stormwater conveyance	Yes – 2-year ARI to 100yr via scruffy dome inlet
Reserves Associated with the Device:	Local Purpose Reserve	No
	Drainage Reserve	Yes
	Road Reserve	No
	Private Property	No
Key Operational Criteria	Outlets	Yes – 2 x pipe outlets from major and minor swale
	Spillway	Yes – Rip rap Apron

SECTION 4 – VISUAL INSPECTION AND MAINTENANCE PLAN

The following section presents the vegetative swale:

- Visual inspection and corrective maintenance program
- Reactive maintenance plan



PURPOSE

This section of the SDOMVP is intended to provide the operational and maintenance teams with:

- Standard visual inspections, timing and scoring guide.
- Corrective maintenance procedures and checklists.
- Reactive maintenance timing guidance.
- Renewal timing guidance.

Users of this document should have a good understanding of the purpose, function, and operation of low impact design (LID) and vegetated stormwater assets, as well as associated civil infrastructure.

Rectification (trouble shooting) procedures are provided in Section 6.

This document has been separated into:

- **Swale Specific Inspections, Maintenance and Rectification:**
 - Programmed Inspections, Operations and Maintenance,
 - Visual Inspections Scoring
 - Trouble Shooting and Rectification.
- **Stormwater Outfall Specific Inspections, Maintenance and Rectification:**
 - Programmed Inspections, Operations and Maintenance
 - Visual Inspections Scoring
 - Trouble Shooting and Rectification

PROGRAMMED INSPECTIONS AND CORRECTIVE MAINTENANCE

All LID and green stormwater infrastructure assets that are visually inspected must be assigned a condition score. A simple 1 to 5 scoring system based on Water NZ guidelines for visual assessment of utility assets has been adopted for this purpose.

During a visual inspection condition scores should be assigned to the various subcomponents within a site and recorded accordingly on the supplied inspection and maintenance forms (Appendix C). Following completion of the visual inspection, an overall condition score for each site should be estimated by rounding up to the nearest whole number.

If corrective maintenance is to occur, the value can be revised post maintenance. The average of the sub-component scores is found before submission of the completed form to the engineer.





TE AWA SWALES

The device maintenance area is defined by:

- Outlets and inlets devices
- Top of flow channel and wider SW Reserve

SWALE - PROGRAMMED INSPECTIONS AND CORRECTIVE MAINTENANCE ROUTINE

The following table presents the swale programmed inspections and corrective maintenance criteria, pre and post defects period. Refer to Appendix C for checklists and templates.

Device	Maintenance Outcome	Programmed Inspections and Corrective Maintenance: Defects period or up to 70% of the upstream catchment is developed.	Programmed Inspections and Corrective Maintenance after defects period or >70% of the upstream catchment is developed.	Ownership
Swale as a whole	<ul style="list-style-type: none"> Vegetation is clear of sediment (if vegetated) Vegetation is free of oil and grease over easement (if vegetated) Flow is dispersed across the base. Dry swales are dry (during dry weather) Wet swales have water, boggy areas present. No evidence of trampling, bike riding, vandalism or other types of physical damage. 	<p><u>Scheduled visual inspection every 3 months.</u></p> <p>Maintenance outcomes are recorded</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Eroded areas should be locally re-profiled or reinforced, and re-planted if necessary.</p> <p>Sediment should be removed from the base of the swale if it is impeding the free drainage of stormwater. The removal of accumulated sediment may involve removal and re-establishment of vegetation.</p>	<p><u>Scheduled visual inspection every 6 months.</u></p> <p>Maintenance outcomes are recorded</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Eroded areas should be locally re-profiled or reinforced, and re-planted if necessary.</p> <p>Sediment should be removed from the base of the swale if it is impeding the free drainage of stormwater. The removal of accumulated sediment may involve removal and re-establishment of vegetation.</p>	WDC
Maintenance Access	<ul style="list-style-type: none"> Ease of access and safety 	<p><u>Scheduled visual inspection every 3 months.</u></p> <p>Review safety and access</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Access and safety improved if required</p>	<p><u>Scheduled visual inspection every 6 months.</u></p> <p>Review safety and access</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Access and safety improved if required</p>	WDC
Outlet	<ul style="list-style-type: none"> Grate and outlet are clear from debris and rocks that form the base of the swale. Erosion and scour around the base are repaired. No excessive sediment build-up (e.g. more than 20% of pipe opening blocked with sediment). 	<p><u>Scheduled visual inspection every 6 months</u></p> <p>Check to see if blocked</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Clear outlet of accumulated sediment or debris.</p>	<p><u>Scheduled visual inspection every 6 months</u></p> <p>Check to see if blocked.</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Clear outlet of accumulated sediment or debris,</p>	WDC
Inflow Points	<ul style="list-style-type: none"> Inlets are clear from debris, overgrowth and rubbish. No evidence of erosion, blockage, damage or standing water. No excessive sediment build-up (i.e. more than 20% of pipe opening blocked with sediment). If a 'bubble-up inlet pit/pipe' is present – check that it is not holding water. 	<p><u>Scheduled visual every 6 months</u></p> <p>Check to see if blocked</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Clear inlet of accumulated sediment or debris.</p> <p>Eroded areas should be locally re-profiled or reinforced, and re-planted if necessary.</p> <p>Flush bubble-up pit/pipe and clear to allow free flow and draining between rainfall events.</p>	<p><u>Scheduled visual inspection every 6 months</u></p> <p>Check to see if blocked</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Clear inlet of accumulated sediment or debris.</p> <p>Eroded areas should be locally re-profiled or reinforced, and re-planted if necessary.</p> <p>Flush bubble-up pit/pipe and clear to allow free flow and draining between rainfall events.</p>	WDC
Subsurface Drainage	<ul style="list-style-type: none"> No surface ponding or permanently saturated soils in the base of the swale 24 hours after rainfall. <p>Note: the presence of mosquito larvae in isolated pools of water may indicate ponding problems.</p>	<p><u>Scheduled visual every 3 months</u></p> <p>If the swale has sub-surface drainage, check to see if it is blocked.</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Clear blockage or clogging of soakage device</p>	<p><u>Scheduled visual every 6 months</u></p> <p>If the swale has sub-surface drainage, check to see if it is blocked.</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Clear blockages.</p>	
Planting Base	<ul style="list-style-type: none"> Plant establishment Weed control Erosion at toes of the batter 	<p><u>Scheduled visual inspection and maintenance every 1 months.</u></p> <p>Check plant cover and weed</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Replant gaps and water new plants in dry conditions until established</p>	<p><u>Scheduled visual inspection and maintenance every 3 months.</u></p> <p>Check plant cover and weed</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Replant gaps and water new plants in dry conditions until established</p>	WDC
Planting Banks	<ul style="list-style-type: none"> Plant establishment Weed control Erosion at toes of the batter 	<p><u>Scheduled visual inspection and maintenance every 1 months.</u></p> <p>Check plant cover and weed</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Replant gaps and water new plants in dry conditions until established</p>	<p><u>Scheduled visual inspection and maintenance every 3 months.</u></p> <p>Check plant cover and weed</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Replant gaps and water new plants in dry conditions until established</p>	WDC
Grassed Base		<p><u>Scheduled visual inspection and maintenance every 1 months.</u></p> <p>Mow and weed</p> <p>If grassed, mow channel no shorter than 150mm length</p>	<p><u>Scheduled visual inspection and maintenance every 3 months.</u></p> <p>Mow and weed</p> <p>If grassed, mow channel no shorter than 150mm length</p> <p>Use catcher and remove clippings</p>	WDC

Device	Maintenance Outcome	Programmed Inspections and Corrective Maintenance: Defects period or up to 70% of the upstream catchment is developed.	Programmed Inspections and Corrective Maintenance after defects period or >70% of the upstream catchment is developed.	Ownership
		Use catcher and remove clippings		
		<u>Responsive maintenance activities (if required)</u>	<u>Responsive maintenance activities (if required)</u>	
		Re-seed bare patches of grass and water in dry conditions to establish	Re-seed bare patches of grass and water in dry conditions to establish	
Grassed Banks		<u>Scheduled visual inspection and maintenance every 1 months.</u>	<u>Scheduled visual inspection and maintenance every 3 months.</u>	WDC
		Mow and weed	Mow and weed	
		If grassed, mow channel no shorter than 150mm length	If grassed, mow channel no shorter than 150mm length	
		Use catcher and remove clippings	Use catcher and remove clippings	
		<u>Responsive maintenance activities (if required)</u>	<u>Responsive maintenance activities (if required)</u>	
		Re-seed bare patches of grass and water in dry conditions to establish	Re-seed bare patches of grass and water in dry conditions to establish	

SWALE CONDITION SCORING GUIDE

The following table presents the swale visual inspections criteria. Refer to Appendix C for Standard Inspections and Maintenance Checklist which includes the documentation of this criteria

Condition Score	Description
1	<p>Very Good</p> <p>No evidence of bed or bank scour Stable channel banks Ready access for maintenance Channel banks free of trees, weed growth or debris</p>
2	<p>Good</p> <p>Little evidence of bed or bank scour Channel banks showing minor signs of instability Accessible for maintenance Channel and banks free from trees encroaching, with little weed growth or debris Side channel/pipe entries well formed, with minor signs of bank scour</p>
3	<p>Moderate</p> <p>Noticeable bed or bank scour, flow capacity not impeded Some channel bank instability, less than 10% of bank length Reasonable access for maintenance Channel and banks have some trees encroaching, with moderate weed growth or debris Satisfactory side channel/pipe entries, with signs of bed or bank scour</p>
4	<p>Poor</p> <p>Scouring of the channel bed or banks, flow capacity restricted Poor bank stability, up to 20% of banks slumped into channel Poor access for maintenance Channel and banks have trees, weeds and debris impeding flow Poor channel/pipe entries resulting in significant bed or bank scouring</p>
5	<p>Very Poor</p> <p>Major bed or bank scouring evident Unsatisfactory bank stability, greater than 25% of banks slumped into channel Difficult and poor access for maintenance Channel and banks have many encroaching trees and vegetation combined with overgrown weeds and debris Unsatisfactory channel/pipe entries resulting in major scouring Concrete cracked and displaced</p>



STORMWATER OUTFALL

The device maintenance area is defined by:

- Drainage reserve

STORMWATER OUTFALL DEVICE INSPECTIONS AND PROGRAMMED MAINTENANCE

Device	Maintenance Outcome	Programmed Inspections and Corrective Maintenance: Defects period or up to 70% of the upstream catchment is developed.	Programmed Inspections and Corrective Maintenance after defects period or >70% of the upstream catchment is developed.	Ownership
Device as a Whole	<ul style="list-style-type: none"> Clear from debris and free flowing 	<p><u>Scheduled visual inspection every 6 months.</u></p> <p>Maintenance outcomes are recorded</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Debris or blockages should be removed.</p>	<p><u>Scheduled visual inspection every 12 months.</u></p> <p>Maintenance outcomes are recorded</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Debris or blockages should be removed.</p>	WDC
Maintenance Access	<ul style="list-style-type: none"> Safety plan in place Outlet is accessible for maintenance (slopes aren't steep) 	<p><u>Scheduled visual inspection every 6 months.</u></p> <p>Review safety and access</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Access and safety improved if required</p>	<p><u>Scheduled visual inspection every 12 months.</u></p> <p>Review safety and access</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Access and safety improved if required</p>	WDC
Outlet	<ul style="list-style-type: none"> Rip rap placement is intact and hasn't been washed downstream Concrete apron (if present) is intact 	<p><u>Scheduled visual inspection every 6 months</u></p> <p>Visual inspection and remediation.</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Remove debris</p> <p>Replace riprap or cracked headwall</p> <p>Rectify scour areas</p>	<p><u>Scheduled visual inspection every 12 months.</u></p> <p>Visual inspection and remediation.</p> <p><u>Responsive maintenance activities (if required)</u></p> <p>Remove debris</p> <p>Replace riprap or cracked headwall</p> <p>Rectify scour areas</p>	WDC

STORMWATER OUTFALL CONDITION SCORING GUIDE

The following table presents the permeable pavement visual inspections criteria. Refer to Appendix A for Standard Inspections and Maintenance Checklist which includes the documentation of this criteria

<i>Condition Score</i>	Description
1	<p>Very Good</p> <p>Ready access for maintenance Pipes free of debris and silt Water is draining Inlet structure and outlet and overflow structures show no signs of wear and tear</p>
2	<p>Good</p> <p>Accessible for maintenance Pipes have minor areas of debris and silt Water is draining Inlet, outlet and overflow structures show little signs of wear and tear</p>
3	<p>Moderate</p> <p>Reasonable access for maintenance Pipes have some silt or debris. Some stagnant water Satisfactory inlet outlet and overflow structure – some wear and tear</p>
4	<p>Poor</p> <p>Poor access for maintenance Pipes have considerable and debris encroaching Water not draining/stagnant Poor inlet, outlet and overflow structure Major rehabilitation or replacement in short term (structure)</p>
5	<p>Very Poor</p> <p>Difficult and poor access for maintenance Pipes if full of debris and water not draining Unsatisfactory inlet outlet or overflow structures Structures replaced immediately</p>

REACTIVE MAINTENANCE AND VISUAL INSPECTIONS

Reactive visual inspections and maintenance comprises of inspecting and then correcting asset malfunctions and failures on an ‘as required’ basis in response to either:

- service requests and public complaints or
- “one off events” such as a large storm event or a spillage that may impact the integrity of the device.

Reactive maintenance should follow the corrective procedures outlined as part of the:

1. Programmed inspections and corrective maintenance procedure.
2. Follow the rectification process where required

The following table presents reactive maintenance criteria and timing. Refer to Appendix D for Standard Maintenance Checklist.



REACTIVE MAINTENANCE

Device	Maintenance Outcome	When Reactive Maintenance Should Occur	Ownership
Vegetative Swale	Swale is functioning as per operational plan	<p><u>After Significant Rainfall Event (<50 mm):</u> Additional Visual inspection and Maintenance</p> <ol style="list-style-type: none"> 1. Erosion 2. As required and/or following significant rain event 3. Use methods as per regular maintenance. <p><u>After Service Request/Public Complaint</u> Additional Visual inspection and Maintenance</p> <ol style="list-style-type: none"> 1. As required and/or following significant rain event 2. Use methods as per regular maintenance. <p><u>Pollutant Spill – may require specialist</u> Additional Reactive Maintenance</p> <ol style="list-style-type: none"> 1. Engage Specialist <p>Outlet has been altered to prevent further contamination downstream (if required).</p>	WDC
Stormwater Outfalls to Pond x 2	Outfall as per operational plan	<p><u>After Significant Rainfall Event (<120 mm):</u> Additional Visual inspection and Maintenance</p> <ol style="list-style-type: none"> 1. As required and/or following significant rain event 2. Use methods as per regular maintenance. <p><u>After Service Request/Public Complaint</u> Additional Visual inspection and Maintenance</p> <ol style="list-style-type: none"> 1. As required and/or following significant rain event 2. Use methods as per regular maintenance. <p><u>Pollutant Spill – may require specialist</u> Additional Reactive Maintenance</p> <ol style="list-style-type: none"> 1. Engage Specialist 2. Outlet has been altered to prevent further contamination downstream (if required). 	WDC



SECTION 5 – RECTIFICATION PLAN



Rectification covers two aspects:

- Device rectification and renewal
- Catchment rectification

Device rectification is required when there is a problem with the assets ability to treat stormwater that general maintenance activities can not address, such as:

1. Device Design flaws
2. Device Poor construction
3. Mass plant failure
4. Device Water quality or infiltration targets not being met.

Generally addressing problems with green infrastructure at the earliest stage is most cost efficient.

Renewal as an alternative of device rectification should only be considered if 12 months of rectification has not corrected the issues.

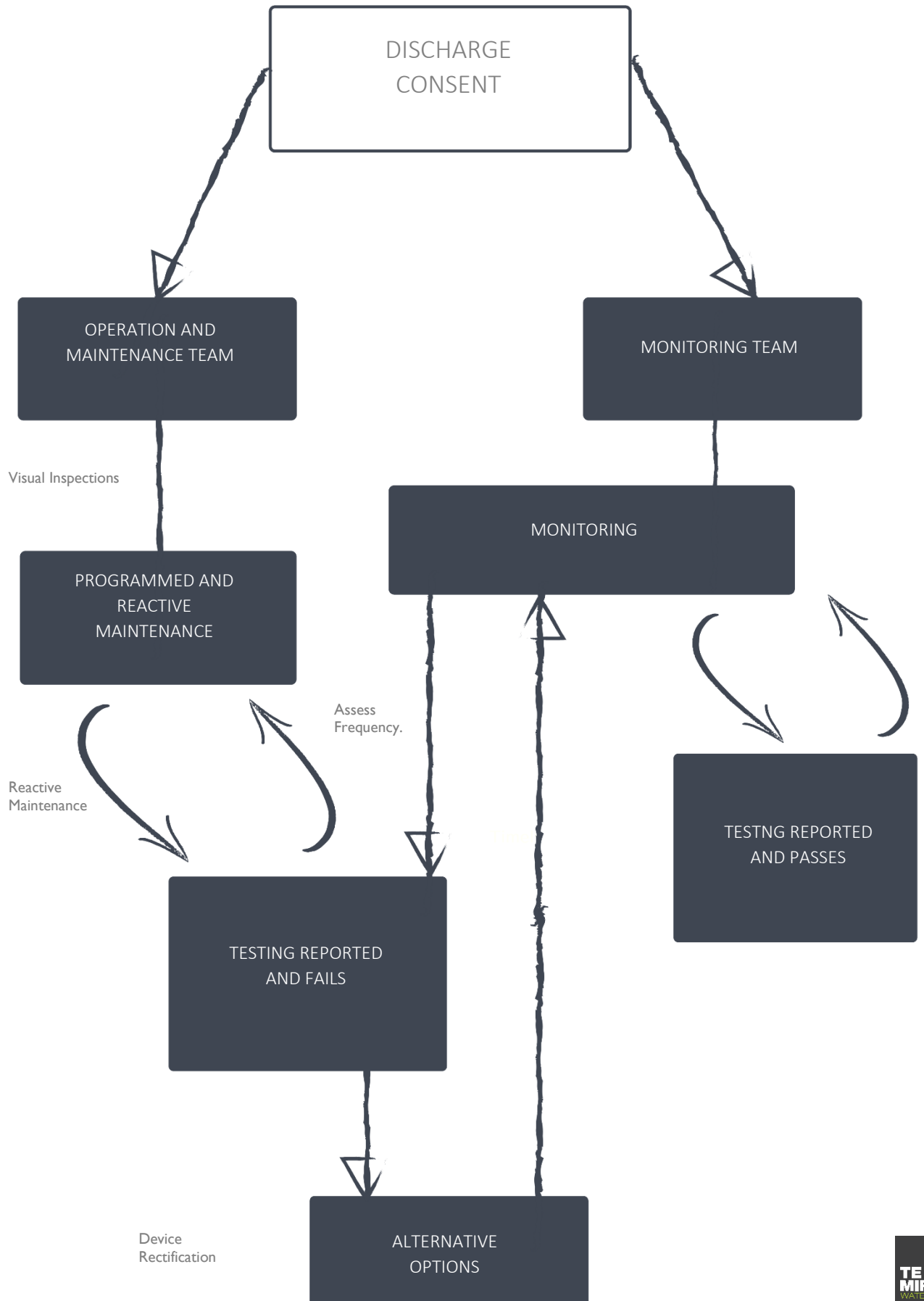
Catchment rectification is required when there is continued problem with monitoring results, that general maintenance activities and device rectification cannot address, such as:

Water quality, groundwater infiltration targets not being met.

Treatment train options are not suitable for the catchment

The process for rectification is presented in the following diagram.

OPERATION, MONITORING AND MAINTENANCE PROCESS





TE AWA SWALES

TYPICAL TROUBLE SHOOTING AND RECTIFICATION OPTIONS OF SWALES

Common stormwater problems are presented visually in the images below



Ponded water or boggy conditions



Excess Sediment (Auckland Council TP10).

TYPICAL TROUBLE SHOOTING AND RECTIFICATION OPTIONS OF SWALES

Problem	Possible Causes	Investigations	Options
Ponded water or boggy conditions	The under-drain is blocked.	Check that the under-drain is free draining.	- Use high-pressure water to flush the under-drain via inspection or access pits and pipes.
	There is no under-drain.	Partially excavate the swale invert to inspect if there is an under-drain.	- Install an under-drain and sand trench.
	Fine sediment is clogging the filter sock over the under-drain.	Check whether the filter cloth around the under-drain is free draining and undertake the following simple dispersibility test to assess whether the soil contains fine clays, which are likely to be clogging the filter cloth. This can be done by: 1. Place soil in a jar of water, shake. 2. If it takes more than about two hours to clear, then the soils consist of fine clays that will block filter cloths.	- Remove the filter cloth from around the under-drain. This will generally require exposure of the pipe. - If there is excessive clay or fine sediments, replace the soil media in the invert. - If clay soils cannot be avoided: o use a layer of gravel or sand to separate the under-drainage and soils, o remove filter fabrics, o ensure good vegetation cover.
	The soil is poorly drained.	Investigate soil quality.	- If the upper soil layer is impermeable, replace the soil media. - Retrofit the swale with under-drainage and sand trench.
	The swale is uneven from sag points caused by poor construction, local erosion, or patches of accumulated sediment	Check for local sag points after rain.	- Fill localised sag points with topsoil or remove excess sediment. Re-grade the swale batters and invert. Re-establish vegetation if required. - If the sag points are caused by erosion, refer to 'Scour of the base or erosion' in this table. - If the sag points are caused by excess sediment, refer to 'Excess sediment' in this table.
	Groundwater is intruding via a raised groundwater level.	Check invert and batters for signs of groundwater intrusion, e.g. diffuse discharge (seeps) or precipitation of minerals (typically iron oxides) at the groundwater-soil surface interface. The investigation may require shallow monitoring wells to be installed adjacent to the swale to understand groundwater.	- Install a sand trench and under-drain within the invert of the swale to drain ponding water. - Install under-drainage sand trenches either side of the vegetation within the swale and under-drain. - Rebuild the swale with an impervious liner in the base, considering where groundwater will discharge.
	Unexpected inflows to the asset	Confirm the presence of and details of any baseflow entering the asset Identify if there is a cross connection.	- Construct a bypass (e.g. low-flow pipe or channel) to divert the baseflows around the asset.
Localised flooding	The asset was incorrectly designed or constructed without adequate grade, so the swale is unable to drain freely via gravity.	Check the invert and profile of the swale, undertaking a survey if needed.	- Re-grade the swale invert
	The swale has been filled in.	Check the as-constructed survey	- Remove fill, re-establish design cross section, and vegetate. - Inform the residents about the functional requirements. - Decommission the swale. Replace with an underground pipe system and stormwater treatment elsewhere in the catchment.
	The swale under-sized in relation to its catchment.	Verify if the swale is adequately sized by: - confirming the upstream catchment area and land use - review swale purpose (WQ or conveyance) - determining if the swale is adequately sized in relation to the design flow rate	- Increase the size (cross-sectional area) of the swale. - Add in pipe.
	Vegetation that is too dense or high has reduced the flow area.	Identify if the vegetation in the swale matches the design channel roughness coefficient (- Remove the vegetation and replace with species that provide the design channel roughness coefficient
	Excess sediment has reduced the flow area.	Refer to 'Excess sediment accumulated in the invert of the swale'.	
	Culverts at driveway cross overs are undersized.	Assess if the culverts are sized correctly by confirming the design flow and verifying the pipe and culvert sizes required to convey the design flow.	- Install a correctly sized culvert
	Coarse debris and litter is blocking culverts at driveway crossovers.	Investigate the source(s) of the debris and litter.	- Retrofit the catchment with litter control mechanisms. - Educate the public to help reduce the volume of litter entering the drainage system.
Excess sediment	Increased or unexpectedly large sediment loads are coming from the catchment due to unforeseen activities or because of poor erosion and sediment control	Investigate upstream catchment activities to identify the sediment source.	- Enforce erosion and sediment control on construction sites within the catchment. - Install additional sediment capture upstream of the asset (e.g. sediment forebays).
Scour of the base	If the batters have eroded, flows may be entering the swale laterally (i.e. run-off is discharging down the batters) and there is no erosion dissipation or surface protection (i.e. vegetation).	Inspect the swale (during rainfall if possible) to determine where lateral inflows are coming from and their velocity. If there is no vegetation, it may be necessary to investigate why. Refer to 'Plant failure' in this table.	- Direct lateral flows to small, reinforced channels that feed down the batters to the swale base. - Re-establish vegetation.
	The asset has poor vegetation cover, which has left the surface susceptible to erosion.	Refer to 'Plant failure' in this table.	
	The soil is inappropriate	Undertake an analysis of the soil to considering: - soil particle size distribution - soil pH - salinity (soluble salts) - organic matter (carbon) - sodium adsorption ratio (SAR) Collect soil samples near the scour at surface and mid-depth (100 mm).	- Seek advice from the soil laboratory for options on how to remediate the soil in order to meet the specifications. In most cases, in-situ remediation of the soil will be possible. If not, remove and replace the soil or cover it (e.g. with hydro mulch, pinned down mulch, or organic matting). - Re-establish the vegetation, using species that can stabilise the soil.
	The batter slopes are too steep.	Determine whether the soils have a suitable structure (see above) to provide the necessary stability for the slope of the batter.	- Flatten out the batters of the swale, ensuring that the overall cross-sectional area of the swale is retained, and hydraulic conveyance checks are undertaken.

Problem	Possible Causes	Investigations	Options
Plant failure	Vehicles or other activities, such as trampling, grazing, walking, bike riding, or vandalism, have damaged the vegetation or the surface and created preferential flow paths.	Refer to 'Plant failure' in this table.	
	The velocities within the swale are too high and there is no energy dissipation, e.g. rock protection or surface protection (vegetation).	Confirm the swale is designed and constructed in accordance with best practice considering: <ul style="list-style-type: none"> - batter slopes - longitudinal slope of swale - configuration of the high-flow bypass - height and density of the vegetation compared to the design channel roughness coefficient - size in relation to the design flow rate - need for energy dissipation and flow distribution. If there is no vegetation, it may be necessary to investigate why. Refer to 'Plant failure' in this table. 	<ul style="list-style-type: none"> - Stabilise the upslope extent of erosion with rocks or filter cloth. - Replace topsoil and plant eroded zones with appropriate plant species. - Modify the swale cross-section to accommodate the design flow rate, which may require re-grading the swale batters and invert, replacing topsoil, and revegetating. - Provide flow control to divert stormwater flows from the swale. - Remove the existing vegetation and replace it with plant species that provide the design channel roughness coefficient. - Provide energy dissipation at the stormwater outfall by installing rock protection or re-configuring the inflow system, e.g. inlet pipes, flow distribution. - Re-configure the high-flow bypass. - Redirect lateral flows to small, rock-lined channels that flow down batters to the swale invert. - Plant additional vegetation to increase the density.
	The vegetation was planted too sparsely or using an incorrect technique.	Review the construction and establishment documentation to identify if the asset was properly constructed.	
	The plants received inadequate water or fertilizer during establishment.	Review the construction and establishment documentation to identify if the asset was properly established.	<ul style="list-style-type: none"> - Apply fertilizer and water as req..
	The wrong depth (>200mm) or type of topsoil was used	Undertake an analysis of the soil to identify if it meets the specifications considering: <ul style="list-style-type: none"> - soil pH - salinity (soluble salts) - organic matter (carbon) - nutrient content - sodium adsorption ratio (SAR) - water holding capacity (field capacity) Collect soil samples at surface and mid-depth (100 mm).	<ul style="list-style-type: none"> - Seek advice from the soil laboratory for options on how to remediate the soil in order to meet the specifications. In most cases, in-situ remediation of the soil will be possible. If not, remove and replace the soil and revegetate.
	The wrong depth or type of mulch was used, or it has washed away.	Identify the depth and type of mulch.	<ul style="list-style-type: none"> - Replace the mulch - If the mulch layer is > 75 mm, remove the excess mulch.
	Inappropriate species were planted.	Identify if the species planted were appropriate for the soil type, climate, and inundation frequency. <p>This may include reviewing the design drawings to identify if the species were planted in accordance with the design and checking whether the correct species were specified in the design.</p>	<ul style="list-style-type: none"> - Re-establish the vegetation with species that are growing well in other parts of the asset or that an ecologist or horticulturist recommends.
	Vehicles or other activities, such as trampling, grazing, walking, bike riding, or vandalism, have damaged the vegetation.	Check for evidence of physical damage, e.g. tyre depressions, trampled vegetation, or parked cars.	<ul style="list-style-type: none"> - Educate residents or use signage to raise awareness of the asset's importance and functional requirements. - Discourage access by using rocks, bollards, or dense species along the edges of the asset. If necessary, install a temporary protective barrier while the vegetation is establishing. - Create a preferable pedestrian route.
	The vegetation was maintained incorrectly.	Look for evidence of mowed or cut vegetation or for evidence of sprayed herbicide.	<ul style="list-style-type: none"> - Provide training for maintenance staff on vegetated stormwater assets. - Install a hard edge between the edge plantings and mown areas to delineate the area to mow.
	The plants are waterlogged.	Check plants for signs of water logging, which include: <ul style="list-style-type: none"> - slow or stunted plant growth - fungal disease, particularly rotting around lower stem - reduced ground or canopy cover - premature senescence, plant death, or composition change - moss or algae growth on the surface Refer to 'Surface ponding or boggy conditions' in this table to identify the cause of the water logging and options.	
The plants are diseased or have been damaged by insects.	Check for symptoms of plant disease or insect damage, which may include: <ul style="list-style-type: none"> - chlorosis or foliage discoloration - browning of the leaves - wilting - powdery mildew or rust (fungal infections) - stunted growth - insect bore holes - callus development - physical leaf damage (portions of the leaf are missing where it has been eaten) - leaf roll 	<ul style="list-style-type: none"> - In most cases, plants can be expected to recover from minor diseases or insect damage without intervention. If the plant damage or loss persists, consider: <ul style="list-style-type: none"> • mitigating disease and insects • selecting plants that are resistant to disease and insects • timing inspection and maintenance activities to align with peak risk times for plant disease or insect damage. 	
Lack of soil moisture due to drought.		<ul style="list-style-type: none"> - Replace the vegetation with drought-tolerant species or establish a temporary irrigation program. 	
Weeds – persistent weed ingress or excessive cover (greater than 20%) that cannot be managed effectively	Weeds are preventing the plants from propagating.	Determine what proportion of plants are weed species and refer to 'Weeds' in this table.	
	Weeds are present/uncontrolled in the catchment. Excess sediment has accumulated. Inspections and maintenance are not undertaken regularly. The soil conditions are favourable for weeds. The fill or mulch is contaminated.	Identify the weed species present and the cause of the weed infestation, including checking upstream waterways and adjoining land areas for the presence of weeds (particularly noting areas directly connected to the asset).	<ul style="list-style-type: none"> - Completely remove the weed species - Weed removal or control strategies will vary according to the biological characteristics of the species, the extent of cover, the location of the asset, and the potential impacts on the desirable vegetation within the basin and the downstream ecosystem.

Problem	Possible Causes	Investigations	Options
<i>via maintenance activities</i>			- Prevent the future ingress of weeds by planting the batters with species that provide dense cover and shade and by increasing the frequency of inspections and maintenance.
	Water is ponding on the surface, or the surface is boggy.	Refer to 'Surface ponding or boggy conditions' in this table.	
	The plant density is insufficient, or the vegetation has died.	Compare the vegetation density design drawings to identify why there is a lack of plant cover.	
<i>Moss or algae growth</i>	The swale is constantly wet.	Refer to 'Surface ponding or boggy conditions' in this table.	
<i>The batters or edge treatments are too steep or provide a trip hazard</i>	The swale was poorly designed. The batters have eroded.	Assess the suitability of the: <ul style="list-style-type: none"> - batter slopes - edge treatments (e.g. concrete revetments, walls) - perimeter vegetation (species used, density, height) <p>Refer to 'Scour of the base or erosion' in this table.</p>	<ul style="list-style-type: none"> - Modify the cross-sectional profile to provide safe batters. Maximum batter slope recommended is 1:4. - Raise the base of the swale to reduce wall heights or batter slopes. This may require the installation of a surcharge system to get flows onto the raised swale surface. - Modify edge treatments (e.g. concrete revetments, curbs). - Replant the perimeter with appropriate plant species, considering density and height. - Decommission the swale and replace with an underground pipe system and stormwater treatment system elsewhere in the catchment.
	The batters have severely eroded.	Refer to 'Scour of the base or erosion' in this table.	
<i>Mosquitoes</i>	There is shallow ponded water.	Check if shallow pools of water remain in the swale more than 48 hours after rain and refer to 'Water logging' and 'Groundwater is intruding via a raised groundwater level' in this table to determine the cause of the ponded water.	



STORMWATER OUTFALL

It is considered that outfall rectification would fall under civil works.

TYPICAL TROUBLE SHOOTING AND RECTIFICATION OPTIONS OF STORMWATER OUTFALL

A catchment rectification toolbox has been provided below, with reference to the device and monitoring locations in

Problem	Possible Causes	Investigations	Options
Unacceptable Public Safety	Public access and potential safety hazards - lack of access control	Complete a public safety risk assessment. Design elements that need to be considered include: - site access and barriers, such as fencing or vegetation.	The outcome of the risk assessment findings and the local site context will guide the response. - Install access control using barriers such as fencing or vegetation.
Excessive Litter	Excessive litter can be caused by: - loads of litter from the catchment are higher than the design mitigated for - public littering - a failed gross pollutant trap upstream	Check for primary sources of litter. This may include the inlet zone (upstream drainage system), directly connected drains, catchment, or adjacent public open space. Any areas of industrial, commercial, retail, or main roads are probably a high source of litter.	- Retrofit upstream drainage system with litter controls, e.g. a gross pollutant or a trash rack. - Incorporate a trash rack with easy access to the inlet zone of the wetland. - Provide litter disposal bins in adjacent public open space. - Undertake an education campaign on litter and its impact on downstream ecosystems.
Scour Around Structures	Riprap or other scour protections was poorly designed. Riprap or other scour protection was poorly constructed, i.e. structures are not keyed in properly. The interaction of concrete, soil, and water can result in soil failures and scour.	Complete a site inspection (during rainfall if possible) to confirm: - the location of the scour - the reason for the scour - where flow is coming from and its velocity Implement a response as soon as practical to avoid further scour or potential failure of the structure.	- Excavate the adjacent areas to the structure in order to provide adequate 'keying in' of the structure to the surrounding soil. - Install a collar around the pipe outlet within the embankment. - Excavate the adjacent areas to the structure and compact the soil into the void. - Raise the surrounds to the structure to avoid inundation. - Remove and re-construct the structure.



APPENDIX A:
DISCHARGE
CONSENT



APPENDIX B: OPERATIONAL TEMPLATES



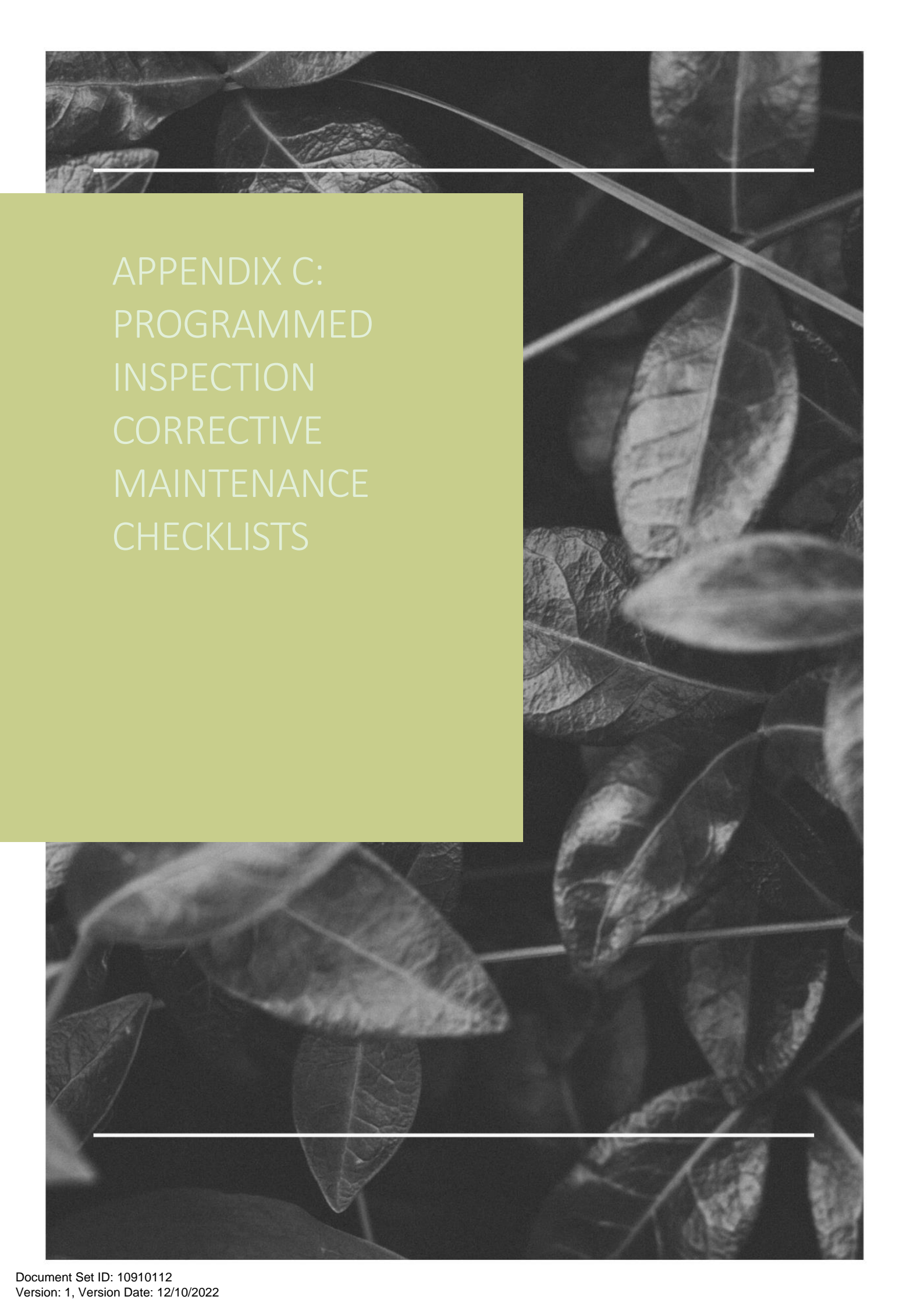
GENERIC OPERATIONAL TEMPLATE

SWALES

Criteria:	Objectives	Associated Documentation
Purpose:	1. Infiltration	
	2. Stormwater Detention	
	3. Water Quality	
	4. Stormwater conveyance	
	5. Baseflow conveyance	
	6. Volume Control	
	7. Other (Please Specify)	
Values:	8. Landscape Values	
	9. Ecological Values	
	10. Cultural Values	
	11. Other (Please Specify)	
Reserves Associated with the Device:	12. Local Purpose Reserve	
	13. Drainage Reserve	
	14. Road Reserve	
	15. Private Property	
	16. Other (Please Specify)	
Key Design Criteria	17. 100-year ARI design storm	
	18. 10-year ARI design storm	
	19. 2-year ARI design storm	
	20. EDV targets	
	21. WQ targets (state time)	
	22. Other (Please Specify)	
Key Operational Criteria	23. Inlet	
	24. Diversion Devices	
	25. Outlets	
	26. Minor Channel	
	27. Major Channel	
	28. Other (Please Specify)	
Hydraulic Operational Philosophy	29. Lag time	
	30. Minor channel ARI	
	31. Major channel ARI	
	32. Other (Please Specify)	
Planting Operational Philosophy	33. Minor channel base	
	34. Minor Channel sides	
	35. Major channel sides	
	36. Other (Please Specify)	
Device Controls	37. Outlet Operation in the event of contamination spillage.	
	38. Other (Please Specify)	
Monitoring Locations	39. Water Quality Monitoring	
	40. Scour Monitoring	
	41. Groundwater Monitoring	
	42. Infiltration Monitoring	

STORMWATER OUTFALLS

Criteria	Objectives	Associated Documentation
Purpose:	1. Stormwater conveyance	
	2. Other (Please Specify)	
Values:	3. Landscape Values	
	4. Ecological Values	
	5. Cultural Values	
	6. Other (Please Specify)	
Reserves Associated with the Device:	7. Local Purpose Reserve	
	8. Drainage Reserve	
	9. Road Reserve	
	10. Private Property	
	11. Other (Please Specify)	
Key Design Criteria	12. 100-year ARI design storm	
	13. 10-year ARI design storm	
	14. 2-year ARI design storm	
	15. EDV targets	
	16. WQ targets (state time)	
	17. Other (Please Specify)	
Key Operational Criteria	18. Outlets	
	19. Spillway	
	20. Other (Please Specify)	
Hydraulic Operational Philosophy	21. Minor ARI	
	22. Major ARI	
	23. Other (Please Specify)	
Device Controls	24. Outlet Operation in the event of contamination spillage.	
	25. Other (Please Specify)	
Monitoring Locations	26. Water Quality Monitoring	
	27. Scour Monitoring	
	28. Groundwater Monitoring	
	29. Infiltration Monitoring	



APPENDIX C:
PROGRAMMED
INSPECTION
CORRECTIVE
MAINTENANCE
CHECKLISTS

SWALE INSPECTION AND MAINTENANCE CHECKLIST

Location	Te Awa Rise
Inspected by	
Asset ID	
Date and time	

IF THE ASSET HAS NOT MET ONE OR MORE PERFORMANCE INDICATORS ON AT LEAST TWO CONSECUTIVE MAINTNANCE INSPECTIONS, INCRESAE THE MAINTENANCE FREQUENCY. REFER TO MAINTENANCE SCHEDULE FOR DETAILED CRTIERIA

Item Inspected	Key Criteria to Check	Inspected and Scoring	Maintenance undertaken and rescore.	Further Action of Comment
Inlet	No evidence of erosion, blockage, damage or standing water. No evidence of excessive sediment build-up (i.e. more than 20% of pipe opening blocked with sediment). If a 'bubble-up inlet pit/pipe' is present – check that it is not holding water			
Outlet	No evidence of erosion, blockage, damage or standing water. Outlet freely draining. No evidence of excessive sediment build-up (e.g. more than 20% of pipe opening blocked with sediment).			
Erosion and scour	No evidence of erosion			
Sediment accumulation	No evidence of sediment accumulated in the base of the swale.			
Surface ponding and boggy conditions	No evidence of surface ponding or permanently saturated soils in the base of the swale 24 hours after rainfall. Note: the presence of mosquito larvae in isolated pools of water may indicate ponding problems.			
Physical damage	No evidence of trampling, bike riding, vandalism or other types of physical damage.			
Vegetation cover	Turf or vegetation covers at least 90% of the swale's surface. Plants			

	healthy, free from disease and vigorously growing.			
Weeds	Less than 10% of the swale surface area and batters covered in weeds.			
Litter	Swale surface and batters free of litter (i.e. less than 1-piece litter per 4m ²).			
Pests	No damage by pest animals and insects			
TOTAL COMBINED SCORE				

STORMWATER OUTLET AND CULVERT INSPECTION AND MAINTENANCE CHECKLIST

Location	
Inspected by	
Asset ID	
Date and time	

IF THE ASSET HAS NOT MET ONE OR MORE PERFORMANCE INDICATORS ON AT LEAST TWO CONSECUTIVE MAINTNANCE INSPECTIONS, INCREASE THE MAINTENACE FREQUENCY. REFER TO MAINTENANCE SCHEDULE FOR DETAILED CRTIERIA

Item Inspected	Key Criteria to Check	Inspected and Scoring	Maintenance undertaken and rescore.	Further Action of Comment
Debris	Free of Debris			
Erosion Protections	Clean and intact			
Pipes	Clean and intact			
Safety and Maintenance Access	Safe for maintenance			
TOTAL COMBINED SCORE				



Attachment 4 – Cultural Values Assessment & MOU



NGAATI
KOROKII-
KAHUKURA AND
NGAATI HAUAA

Cultural Values
Assessment for Te Awa
Rise Ltd – Proposed
Subdivision Cambridge
Road, Leamington



Prepared by Iron Sand
Consulting Limited August 2022

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Attachment 2 – Discovery Protocol 0

Executive Summary

Te Awa Rise Ltd are proposing to create a residential development in an area identified by Waipa District Council for future growth. No cultural impact assessment was prepared for the future growth area (Growth Cell C4) as part of Council's structure plan process. The location of the subject site is central to both the rohe of Ngaati Hauaa, and the rohe of Ngaati Korokii-Kahukura. The development, if accepted will directly impact on cultural values and heritage sites associated with Ngaati Hauaa and Ngaati Korokii-Kahukura. Various levels of engagement have been carried out with Mana Whenua and Te Awa Rise Ltd representation. This cultural values assessment, and a redesign of the lots are tangible outcomes of that engagement.

The proposed development consists of 54 residential lots, five super lots (for future compact residential development), two roads, five access lots and two reserves for stormwater management, and four reserves to vest for recreation and pedestrian purposes. Various maps and concepts have been provided by the applicant and are included in the report.

The proposed area of development is a cultural landscape with existing features that are evident of its past as an occupational and horticultural hub. The features include: a paa, ditch, terraces and (food storage or housing) pits, borrow pits, and modified soils.

The outcomes being sought by Ngaati Hauaa and Ngaati Korokii-Kahukura is a cultural values based response to the direct and potential impact of activities proposed for the residential development. The following cultural values have been considered for impact: Rangatiratanga, Kaitiakitanga, Mauri, Taonga and Tikanga.¹ Ngaati Hauaa and Ngaati Korokii-Kahukura aspirations and objectives have been analysed to identify outcomes to avoid impact.

Outcomes sought to assist in avoiding impacts on cultural values include:

- Protect, promote and preserve features of the cultural landscape.
- Promote to the public, the relationship Ngaati Hauaa and Ngaati Korokii-Kahukura have with natural and physical resources in their rohe.
- Te Awa Rise Ltd agree to a partnership that recognises and provides for the protection of kaitiakitanga, ancestral land, waterways, taonga, and waahi tapu within the proposed development. (see Attachment 1)
- Te Awa Rise Ltd and Waipa District Council agree to partner with Ngaati Hauaa and Ngaati Korokii-Kahukura to protect and maintain the Māori cultural heritage features at the subject site including the paa, terraces, ditches, food storage pits and borrow pits to provide educational and amenity opportunities in the same vein as that expressed at S19.6.3.1 in growth cells C1, C2 and C3 of the structure plan.²
- Preserve (by backfilling) the borrow pit located in the area of Lots 39 and 40, after topsoil stripping and investigation by the archaeologist and lwi monitors.

¹ Hirini Matunga, The Resource Management Act 1991 and Māori perspectives, Centre for Māori Studies and Research, 1994, cited in Durie, 'Mana atua', pp.23-4. <https://knowledgeauckland.org.nz/media/1105/tr2018-008-cultural-values-assessments-literature-review.pdf> retrieved 03.01.2022

² <https://www.waipadc.govt.nz/repository/libraries/id:26zg4o7s1cxbyk7hfo7/hierarchy/our-council/waipadistrictplan/variations/documents/plan-change-7/S19%20-%20Cambridge%20Structure%20Plans%20-%2014%20March%202019%20-%20FINAL.pdf>

- Apply to Lots 35 and 36 the same process (above) to preserve the borrow pit in the same location. (It is noted and accepted however that the pit is shallow and may be destroyed when the topsoil is removed).
- Ensure the geotechnical completion report and private covenants state rib raft foundations only are allowed on lots 35 and 36, and 39 and 40, and should be reflected in each of the titles for the 4 Lots.
- Provide funding for Cultural Heritage and Environmental initiatives led by Ngaati Hauaa and Ngaati Korokii-Kahukura.
- Ensure Ngaati Hauaa and Ngaati Korokii-Kahukura have input to how developer contributions are used to reflect the cultural landscape through road materials, colours and design, and promotion of Te Aranga Design principles within the development.
- Promote the importance of Māori cultural values and heritage by incorporating indigenous placemaking in the design plans e.g. landscaping, pou, signage, art developed and designed with Ngaati Hauaa and Ngaati Korokii-Kahukura.
- Develop and implement best practice stormwater management and methods to avoid direct discharge to rivers and streams.
- Develop and implement best practice dust particle management and methods to avoid air pollution, and nuisance to existing residence.
- Incorporate provision for mana whenua cultural monitors to be onsite during earthworks (especially where topsoil is being removed) in the condition of consent for the construction methodology.
- Incorporate provision for cultural inductions to be provided by mana whenua for onsite workers and contractors in the condition of consent for the construction methodology.
- Ensure the attached discovery protocol is implemented as a condition of consent (see attachment 2 of this document).
- Ensure archaeological authorities for the subject site are developed and implemented in partnership with Ngaati Hauaa and Ngaati Korokii-Kahukura.

This Cultural Values Assessment is intended for use only by Te Awa Rise Limited, Waipa District Council, and Waikato Regional Council for consent applications associated with this project. Further use of the report requires written consent from Ngaati Hauaa and Ngaati Korokii-Kahukura.

Purpose

The purpose of the Cultural values Assessment is to ensure the cultural values, issues and interests of Ngaati Hauaa and Ngaati Korokii-Kahukura are articulated, acknowledged and understood by Te Awa Rise Ltd, Waipa District Council, and Waikato Regional Council in response to the proposed residential development on Cambridge Road, Leamington.

This cultural values assessment (CVA) has been prepared by Iron Sand Consulting Limited on behalf of Ngaati Hauaa and Ngaati Korokii-Kahukura for Te Awa Rise Ltd.

Te Awa Rise Ltd have commissioned the CVA in order to better understand the potential impacts their proposed activities will have on Ngaati Hauaa and Ngaati Korokii-Kahukura cultural values.

This is not an exhaustive account of Ngaati Hauaa mana motuhake or Ngaati Korokii-Kahukura mana motuhake, rather it is an attempt to highlight and articulate connections the iwi have to Leamington (and the subject area), and the potential impact the development proposal will have on their values.

Methodology

The following sources of information and processes were used to provide insights and content to the CVA:

- Ngāti Haua Deed of Settlement (2012)
- Ngāti Koroki Kahukura Deed of Settlement (2012)
- Iwi reports and planning documents including Ngaati Hauaa and Ngaati Korokii-Kahukura CVAs and Cultural Impact Assessments (CIAs).³
- Supplementary background Information supported by Ngaati Hauaa.
- Supplementary background Information supported by Ngaati Korokii-Kahukura.
- Archsite – NZAA site record forms.
- Project information provided by Sanderson
- An analysis of Aspirations, Policies and objectives shared in iwi planning documents.
- Discussions with the Engagement group (Sanderson, Ngaati Hauaa & Ngaati Korokii-Kahukura representatives)
- Site visits to 3784, 3794, 3796, 3798 and 3838 Cambridge Road, Leamington.
- Review and Input from Ngaati Hauaa and Ngaati Korokii-Kahukura representatives
- Ngaati Hauaa and Ngaati Korokii-Kahukura background and connection to Te Oko Horoi (including Leamington) confirmed by Ngaati Hauaa and Ngaati Korokii-Kahukura representatives.

Legislative Context

Te Tiriti o Waitangi

Ngaati Hauaa and Ngaati Korokii-Kahukura are mana whenua in Cambridge and Leamington.

Te Awa Rise Ltd are the applicants for a subdivision at 3784, 3794, 3796, 3798 and 3838 Cambridge Road, Cambridge. The applicants are represented by their planning agents at BBO, and developers from Sanderson Group.

Treaty principles considered in this cultural values assessment of resource management issues include iwi/hapū self-regulation, partnership, options, participation and active protection.

³ - Te Rautaki Tāmata Ao Turoa o Hauā. *Ngāti Hauā Environmental Management Plan 2018*

<https://ngatihauaiwitrust.co.nz/publications/trust-documents/> retrieved 03.02.2022.

- Cultural Impact Assessment prepared for Fonterra Hautapu by Boffa Miskell on behalf of Ngāti Hauā Iwi Trust 2018.

https://www.waikatoregion.govt.nz/assets/WRC/WRC-2019/Resource-consents/APP139736-Appendix-Q-Cultural_Impact_Assessments.pdf retrieved 03.15.2022.

- Ngaati Korokii-Kahukura Mahere Rautaki 2020-2050 available only on request.

Local Government Act 2002 (LGA)

The purpose of the LGA is to provide for democratic and effective local government that recognises the diversity of communities...

Most relevant to this report is Section 4 Treaty of Waitangi (the Treaty) – this section refers to Crown’s responsibility to take into account the principles of the Treaty and to maintain and improve opportunities for Māori to contribute to local government decision-making processes. Parts 2 and 6 provide principles and requirements to facilitate the participation; including ss77(1)(a), 77(1)(b) and 77(1)(c) – A local authority must, in the course of the decision-making process, - seek to identify all reasonably practicable options for the achievement of the objective of a decision; and assess the options in terms of their advantages and disadvantages: and if any of the options identified under paragraph (a) involves a significant decision in relation to land or a body of water, take into account the relationship of Māori and their culture and traditions with their ancestral land, water sites, waahi tapu, valued flora and fauna, and other taonga.

Resource Management Act 1991 (RMA)

The purpose of the RMA is to promote the sustainable management of natural and physical resources.

The following sections of the RMA are considered to be most relevant for Ngaati Hauaa and Ngaati Korokii-Kahukura in regard to the subdivision proposal in Leamington:

- ss5(1) and 5(2) – The purpose of the RMA is to promote the sustainable management of natural and physical resources; by sustaining the potential of natural and physical resources (excluding minerals) for future generations.
- ss6(a), 6(b), 6(c),6(e) and 6(f) – all persons exercising functions and powers under the RMA... shall recognise and provide for the following: the preservation of the natural character of...wetlands, lakes and rivers; the protection of outstanding natural features and landscapes...; the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna; the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga; the protection of historic heritage...
- ss7(a), 7(b), 7(c) and 7(f) – Persons exercising functions and powers under the RMA... shall have particular regard to: kaitiakitanga; the efficient use and development of natural and physical resources; the maintenance and enhancement of amenity values; maintenance and enhancement of the quality of the environment.
- Section 8 – All persons exercising functions and powers under the RMA ...shall take into account the principles of Te Tiriti o Waitangi (the Treaty of Waitangi).

Waikato Raupatu Settlement Act 1995 (WRSA)

In the WRSA the Crown acknowledged that its representatives and advisers acted unjustly and in breach of the Treaty of Waitangi in its dealings with the Kingitanga and Waikato, occupying and

confiscating Waikato land, and unfairly labelling Waikato as rebels.⁴ Ngaati Hauaa and Ngaati Korokii-Kahukura suffered under the Raupatu confiscations that followed the Waikato War of 1863-1864. Significant sites, lands and paa were confiscated throughout the Waikato, including in Leamington.

Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 (WTRCSA)

Under the WTRCSA the Crown acknowledged that by occupying and confiscating Waikato land it unjustly, and in breach of the Treaty of Waitangi, denied the hapū of Waikato (including Ngāti Hauā and Ngāti Korokī) their rights and interests in, and mana whakahaere over the Waikato River.

Acknowledgements include:

- Unjustly occupying and confiscating Waikato land.
- denying Ngaati Koroki their rights and interests in, and mana whakahaere over the Waikato River.
- for Waikato-Tainui their relationship with, and respect for, the Waikato River gives rise to their responsibilities to protect the mana and mauri of the river and to exercise their mana whakahaere in accordance with their long established tikanga; and
- the deterioration of the health of the Waikato River, while under the authority of the Crown, has been a source of distress for the people of Waikato-Tainui; and the Crown respects the deeply felt obligation of Waikato-Tainui to protect te mana o te awa.

Ngāti Hauā Claims Settlement Act 2014 (NHCSA)

The purpose of the NHCSA is to record the acknowledgements and apology given by the Crown to Ngāti Hauā in the deed of settlement; and to give effect to provisions of the deed that settles non-raupatu historical claims of Ngāti Hauā.

In summary the acknowledgements include (but are in no way exhaustive):

Crown did not consult with Ngāti Hauā about the introduction of the native land laws. The laws were inconsistent with tikanga and caused fragmentation of the traditional collective land system that was in place. The laws also caused alienation of the people from their ancestral lands. The cumulative effects of the native land laws and Crown purchases under those laws left Ngāti Hauā virtually landless and undermined their economic, social and cultural development.⁵

Ngāti Korokī-Kahukura Claims Settlement Act 2014 (NKKCSA)

The purpose of the NKKCSA is to record the acknowledgements and apology given by the Crown to Ngāti Korokī-Kahukura in the deed of settlement; and to give effect to provisions of the deed that settles non-raupatu historical claims of Ngāti Korokī-Kahukura. The acknowledgements include:

⁴ <https://www.legislation.govt.nz/act/public/2014/0074/latest/whole.html#DLM5540906> retrieved 03.15.2022

⁵ <https://www.legislation.govt.nz/act/public/2014/0075/latest/whole.html#DLM5657923> retrieved 03.15.2022

In summary the acknowledgements include (but are in no way exhaustive):

Crown did not consult with Ngāti Korokī-Kahukura about the introduction of the native land laws. The laws were inconsistent with tikanga and caused fragmentation of the traditional collective land system that was in place. The laws also caused alienation of the people from their ancestral lands. The cumulative effects of the native land laws and Crown purchases under those laws left Ngāti Korokī-Kahukura virtually landless and undermined their economic, social and cultural development.⁶

Project Background

The proposed project is for subdivision and land use consents for a residential development at 3784, 3794, 3796, 3798 and 3838 Cambridge Road, Leamington. The consents include the following:

- Subdivision to create 54 residential lots, five super lots (for future compact residential development), two roads, five access lots and two reserves for stormwater management, and four reserves to vest for recreation and pedestrian purposes.
- Easements for access, and infrastructure. As well as new consent notices for those superseded by the proposed development outcomes.
- Roading, access arrangements and traffic generation for the site is based on an internal road hierarchy with one principal connector, two connecting (collector type) roads, and a narrow 12.5m wide road reserve (with a 5.5m carriageway) to service the compact housing lots. The principal road (Road 1) will also transition to become (Road 5) the main access route to the lower northern lots of the site.

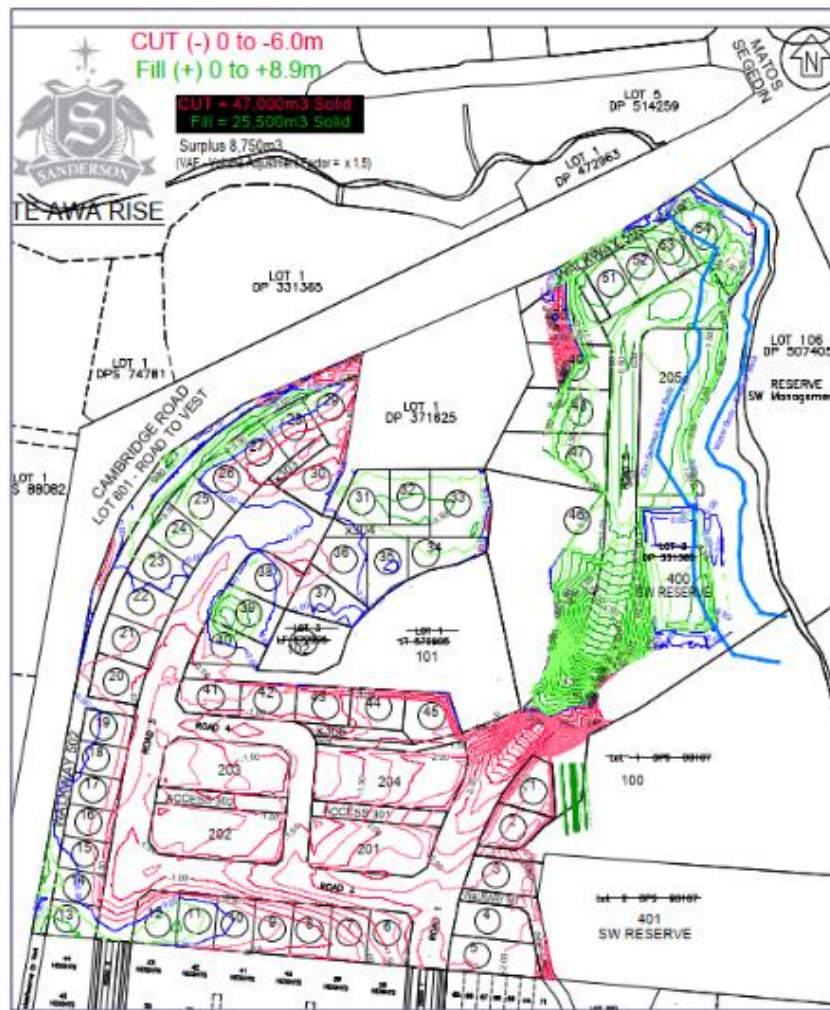
Infrastructure - In general, the proposal locates infrastructure in the proposed road reserves, access lots and reserves that are to be vested in Council. Proposed connections are to existing services except for a new stormwater management system.

Earthworks – The proposed earthworks are aimed to commence in the October 2022 construction season. The proposal is for earthworks to extend across the entire site area for the purpose of cutting the upper terrace to backfill the lower terrace for engineering on Road 5 (see Fig 1. Below). The earthworks methodology is described in the Assessment of Environment Effects (AEE). The AEE also notes earthworks will result in surplus cut material being removed from the site.

Design guidelines and fencing – Covenants and design guidelines are proposed to guide fencing and design of the individual lots. The purpose is to control a consistency in the quality of houses that will be constructed on the proposed lots.

⁶ <https://www.legislation.govt.nz/act/public/2014/0074/latest/whole.html#DLM5540906> retrieved 03.15.2022

Figure 1. Cut to Fill Earthworks Plan Source: Sanderson AEE



Cultural Context

Ngāti Hauā Area of Interest

The rohe of Ngaati Hauaa spans Te Aroha, southeast along the Kaimai Range to Te Weraiti; southwest to Maungatautari; northwest to Te Rapa, eastward to Mangateparu and then back to Te Aroha.

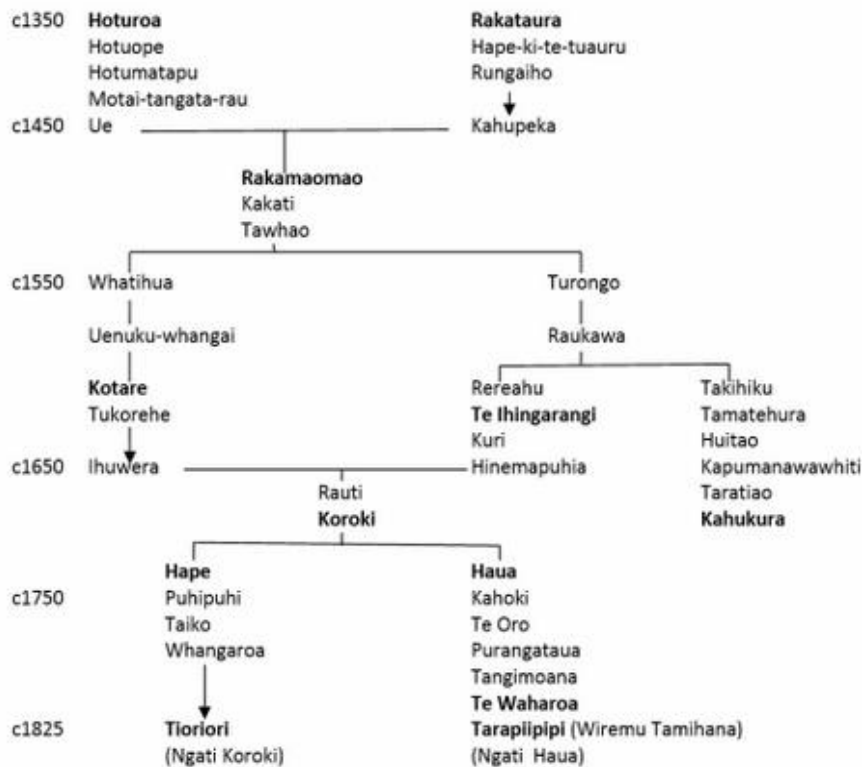
In the heart of the Ngaati Hauaa rohe are their five marae: Rukumoana, Kai a Te Mata, Waimakariri, Raungaiti, Te Iti o Hauaa.

Ngāti Korokī-Kahukura Area of Interest

The rohe of Ngaati Korokii-Kahukura spans Southern Hamilton City, following the Waikato River to the northern end of Lake Arapuni, inland to western Te Awamutu and through again to southern Hamilton City encompassing Mount Maungatautari.

On the flanks of Maungatautari are the two Ngaati Korokii-Kahukura marae, Poohara and Maungatautari.

Whakapapa



Ngaati Hauaa, Ngaati Korokii and Ngaati Kahukura descend from common ancestors of the Tainui waka.

Korokii a descendant of Hoturoa, the captain of the Tainui waka had two sons Hauaa and Hape. Hauaa is the eponymous ancestor of Ngaati Hauaa; and Hape is the eponymous ancestor of Ngaati Korokii. Kahukura also a descendent of Hoturoa is the eponymous ancestor of Ngaati Kahukura. Ngaati Korokii - Kahukura descend from marriages between Ngaati Korokii and Ngaati Kahukura.⁷

Maungatautari – Maungatautari is a Tuupuna maunga for Ngaati Hauaa and Ngaati Korokii-Kahukura. Maungatautari is a living taonga, whose forests, birdlife, flora, and fauna have sheltered and provided sustenance to the iwi for centuries. Ngaati Korokii-Kahukura regard the maunga as a symbol of mana for the iwi.

Waikato – Waikato is an awa tuupuna (ancestral river) to both Ngaati Hauaa and Ngaati Korokii-Kahukura. The awa provides physical and spiritual sustenance to all iwi who affiliate with the awa. The awa has its own mauri and spiritual integrity. The spiritual and cultural well-being of the iwi is inherently linked to the well-being of the awa tuupuna. Ngaati Hauaa regard the awa as a source of

⁷Ngati Korokii-Kahukura whakapapa by Rahui Papa <http://www.korokikahukura.co.nz/whakapapa.html> retrieved 03.12.2022.

mana, and an indicator of their own mauri, identity, and wellbeing.⁸

Leamington

Hautapu and Te Miro are located to the north of Leamington, with Maungakawa and Kaarapiro to the (north and south respectively) east, Rotoorangi and Pukekura are south of Leamington, and Kaipaki is to the west. Waikato River forms Leamington's northern boundary, with tributaries flowing across the area. Leamington is located within Te Oko Horoi and is central to Ngaati Korokii-Kahukura, and Ngaati Hauaa rohe.

The area is significant for many reasons including for its many paa, gardens/horticultural sites, kaainga and waahi tapu. Remnants and information from these activities are considered to be significant to Ngaati Hauaa and Ngaati Korokii-Kahukura. These sites provide further context to Ngaati Hauaa and Ngaati Korokii-Kahukura occupation, historical accounts, events, tuupuna who were associated with the events, mātauranga and tikanga that was developed during these occupations and developed as a result of their tuupuna adapting to the environment.

Te Oko Horoi is within an area of high cultural significance to Ngaati Hauaa with notable sites in the area that include Tikapu, Horotiu Paa and the paa of Taowhakaio.⁹

Ngaati Korokii and Ngaati Kahukura had their homes near the present township of Cambridge at the Karaapiro Stream. Korokii along with his allies conquered the Ngaati Kauwhata and Ngaati Raukawa under Taowhakaio taking control of the Maungatautari region and the stretch of the Waikato River from Arapuni northward to Te Parapara.¹⁰

⁸ Cultural Impact Assessment prepared for Fonterra Hautapu by Boffa Miskell on behalf of Ngāti Hauā Iwi Trust 2018. https://www.waikatoregion.govt.nz/assets/WRC/WRC-2019/Resource-consents/APP139736-Appendix_Q-Cultural_Impact_Assessments.pdf retrieved 03.15.2022

⁹ <https://ngatihauaiwitrust.co.nz/publications/trust-documents/> Retrieved 13.08.2022.

¹⁰ <http://www.korokikahukura.co.nz/ng257ti-koroki-kahukura.html> Ngāti Korokī-Kahukura Website Kōrero by Papa, R retrieved 13.08.2022

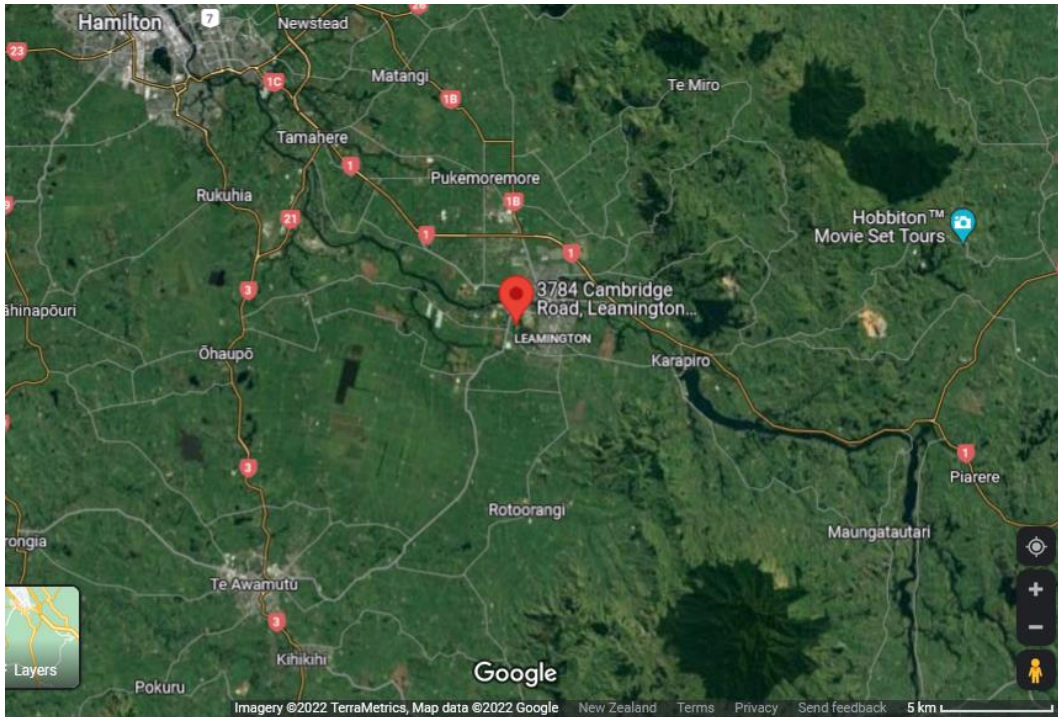


Figure 2. Site area in reference to cultural landmarks (Te Miro, Karaapiro, Rotoorangi, Maungatautari and Pukekawa)
Source: Google maps¹¹

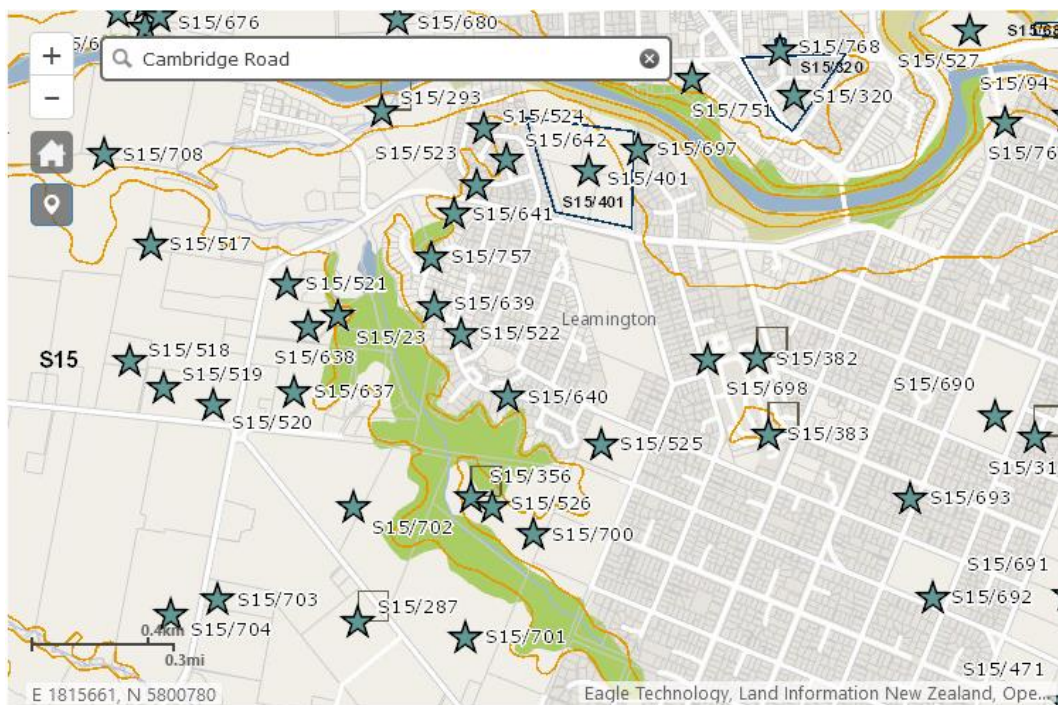


Figure 3. Cultural landscape depicted by archaeological sites in and around the subject area. Source: NZ Archaeological Association database Archsite

Figure 3 above shows recorded archaeological sites (paa, gardens, borrow pits, food storage pits and terraces) identified in and around the subject area and is shown here as an example of the rich

¹¹ <https://www.google.com/maps/place/3784+Cambridge+Road,+Leamington,+Cambridge+3495/@-37.9030098,175.3149882,35485m/data=!3m1!1e3!4m5!3m4!1s0x6d6cfd43184ca9ad:0xacc75c275611e77f!8m2!3d-37.9030141!4d175.4550639>

Māori gardening heritage that features in Te Oko Horoi more than in any other area of New Zealand. Soil, sand and gravel from Leamington and its surrounds have long been used by Māori; to modify soils for horticultural conditions that are ideal for growing vegetables or tubers such as Riwai, Kumara, Taro, and Uwhi. The mātauranga associated with these technologies and soil types is significant and was developed over centuries. Ngaati Hauaa and Ngaati Korokii-Kahukura continue to cultivate these foods with modern technologies in their rohe. More and more Ngaati Hauaa and Ngaati Korokii-Kahukura are referring back to mātauranga to learn from and adopt some of the earlier methods that may provide better environmental outcomes and contribute to food sovereignty for their iwi

In recent developments in the Cambridge and Leamington areas, Ngaati Hauaa and Ngaati Korokii-Kahukura have worked alongside state-owned enterprises and government agencies to reconnect the iwi with their ancestral lands. Some of the visible examples around the project area includes the naming of the bridges Te Ara Noa, Te Ara o Te Waharoa and Te Koo Utu. Te Ara Noa is reference to a path that has been made safe in contrast to a tapu path used only by tohunga to ensure prosperity for Ngaa Maara o Kirikiriroa that was seen by Harry Wilson. The name Te Ara o Te Waharoa is derived from a nearby gathering place with multiple paths from Maungakawa to the awa. And, Te Koo utu which refers to the many borrow pits in the area.

“Te Koopu Maania o Kirikiriroa me oona maara kai”

(Translation: Across the belly of Kirikiriroa (Te Oko Horoi to Ngaaruawaahia) its gardens burst with the fullness of good things).

Kiingi Taawhiao (circa 1860)

Cultural Values Overview

Cultural Values

Ngaati Hauaa and Ngaati Korokii-Kahukura objectives relating to air, land and water are identified below. Alongside the outcomes they are seeking to protect and enhance the health and wellbeing of natural and cultural resources in their rohe. The outcomes are proposed to avoid impact on cultural values for present and future generations. Rangatiratanga, Kaitiakitanga, Mauri, Taonga and Tikanga are the cultural values identified to be most relevant to the proposed development.

In this document the cultural values have the following meanings:

Rangatiratanga – Ngaati Hauaa and Ngaati Korokii-Kahukura are participants in decision-making to ensure decisions made in respect of their ancestral land, waterways, taaonga and waahi tapu align with their responsibilities and obligations as kaitiaki. Rangatiratanga includes capacity and capability building to support their roles as decision-makers.

Kaitiakitanga - Ngaati Hauaa and Ngaati Korokii-Kahukura obligations and responsibilities to protect and manage natural and cultural resources in a manner that is sustainable for current and future generations. This includes advocating for holistic and restorative approaches required to avoid and reduce risk to the abilities taonga have to regenerate.

Mauri - The life essence or spiritual force in all things animate and inanimate. Ngaati Hauaa and Ngaati Korokii-Kahukura are responsible for managing natural resources in a manner that protects

the mauri of taonga. Mauri is also used in maatauranga as an indicator to provide insights to the health and well-being of taonga.

Taonga – Those things that are valued by Ngaati Hauaa and Ngaati Korokii-Kahukura (and so require a high level of respect) including: waahi tapu, rivers, streams, mahinga kai, taonga raranga, animals and plants, air and minerals.

Tikanga - Are guides to moral behaviour. Tikanga includes wairuatanga, manaakitanga, rangatiratanga and manawhenua.¹²

Air, Land and Water

Through whakapapa and *ahi kaa roa* Ngaati Hauaa and Ngaati Korokii-Kahukura are connected to their rohe (plural) and everything within its bounds, including in Leamington. Each iwi has a collective responsibility to all living things within their rohe. Ngaati Hauaa and Ngaati Korokii-Kahukura are *kaitiaki*, responsible for protecting the whenua's ability to produce materials of nature, *te mana o te whenua*. The same responsibilities also apply to water, and air. Cultural values are impacted when the ability of these elements to produce such materials is compromised. It should also be noted that Ngaati Hauaa and Ngaati Korokii-Kahukura are residents and ratepayers in their rohe and frequently use Leamington facilities including roads, water supplies, marae, kohanga, kura etc.

Activities and Issues

Ngaati Hauaa and Ngaati Korokii-Kahukura have identified the following are activities and issues associated with the proposed residential development by Te Awa Rise Ltd in Leamington:

Earthworks or land disturbance is proposed for the majority of the project area. This activity will expose, modify and destroy horticulture and occupation sites that are significant (for reasons mentioned above) to Ngaati Hauaa and Ngaati Korokii-Kahukura. The applicants have responded to iwi concerns regarding destruction of paa ditches by proposed works with a redesign of lots so that the ditches will be protected in a stormwater reserve.

An earthworks methodology is described in the AEE and does not provide for Māori cultural implications, or conditions around these. Modified conditions of consent are suggested to bridge this gap in the recommendations section of this document.

The AEE mentions surplus cut material will be removed from site, it is the preference of Ngaati Hauaa and Ngaati Korokii-Kahukura that the material remains onsite, and is potentially used to back fill some of the borrow pits for preservation and protection (unless the material is contaminated).

Water - In general, the proposal locates infrastructure in road reserves, access lots and reserves that are proposed to be vested in Council. Ngaati Hauaa and Ngaati Korokii-Kahukura have cultural appropriateness (inappropriateness) concerns relating to the potential for wastewater to be directed across the paa and horticulture sites. Clarification around wastewater routes is required.

¹² Hirini Matunga, The Resource Management Act 1991 and Māori perspectives, Centre for Māori Studies and Research, 1994, cited in Gooder, C 2018 <https://knowledgeauckland.org.nz/media/1105/tr2018-008-cultural-values-assessments-literature-review.pdf> retrieved 03.12.2022.

There is also concern around leaching into waterways from soil erosion and runoff. This includes concern around the location of stormwater management reserves, and a superlot that are adjacent to waterways. It is noted that the proposed activities are planned to be undertaken in the drier summer months of the year under an Erosion and Sediment Control Plan that will be developed in accordance with Waikato Regional Council's best practice methods.

Air - Dust from earthworks and traffic movements used in creating the residential development could potentially cause issue through distraction and visual impairment to road users on Cambridge Road and to local residents (including iwi members). There is also the potential for dust particles to effect air quality. Air (Te Ararangi) like whenua and wai, is a living taonga whose mauri needs to be protected. Air needs to be filtered (potentially through planting trees) and the quality needs to be monitored to ensure it is optimal. The AEE states best practice dust management will be implemented over the site for the duration of earthworks.

Amenity and Design – The AEE acknowledges physical works for the project will change the characteristics of the site from a rural state to a residential environment. The AEE also mentions the proposal is consistent with the district plan and the direction of the structure plan with regard to character and amenity. Neither of the plans appear to have considered the cultural heritage and landscape features in the site area. The structure plan does however identify Waipa District Council's commitment to *work alongside mana whenua to promote of Te Aranga Design Principles and facilitate outcomes that respond to the intrinsic Māori cultural values of Cambridge and the wider district.*¹³ Ngaati Hauaa and Ngaati Korokii-Kahukura consider there are design elements that can be incorporated into residential developments to provide context to modified areas to ensure the cultural landscape can remain visible.

Guiding Aspirations and Responsibilities

The following Ngaati Hauaa and Ngaati Korokii-Kahukura aspirations and responsibilities have been identified as those that are most relevant to avoid potential impact from proposed activities.

Ngaati Hauaa aspirations

- Mahinga kai
- Sustain Ngaati Hauaa tikanga and kawa.
- Reconnecting to maunga, waahi tapu and kooawa.
- Establish Nurseries, maara kai and plantations for rongoa.
- Maintain maatauranga
- Work in partnership with western science.

Ngaati Hauaa responsibilities as kaitiaki:

- Restore the mauri of our taiao.
- Swim in, drink from and gather food from our rivers and streams.
- Provide for the cultural, social and economic wellbeing of our people.
- Revitalise our traditional knowledge and practices.

¹³ S19.1.7.1 <https://www.waipadc.govt.nz/repository/libraries/id:26zg4o7s1cxbyk7hfo7/hierarchy/our-council/waipadistrictplan/variations/documents/plan-change-7/S19%20-%20Cambridge%20Structure%20Plans%20-%2014%20March%202019%20-%20FINAL.pdf>

- Build the capability of our future kaitiaki.
- Map cultural sites.
- Preserve and protect our taonga.¹⁴

Ngaati Korokii-Kahukura Nga Uara (values):

- Ko te oranga o te maunga, te awa, me te whenua; ko te oranga o te iwi: *the health of the mountain, waterways and land is the health of the people.*
- Kia noho whakaruruhau, kia akiaki (*to protect and advocate*)
- Kia tuutuki ngaa take Tiriti (*to address Treaty issues*)
- Kia tau in ngaa wero (*to resolve challenges*)
- Ka noho kaitiaki maa te mauri, maa te taha wairua, maa naa taonga, maa ngaa koorero kua tuku iho: *Guardians of the life essence, the spiritual aspects, all resources, and the history of the past. Guardians of the intellectual property of Ngaati Korokii-Kahukura*
- Riro whenua atu, hoki whenua mai (*As land was taken so should land be returned*) *Na Ta Robert Mahuta.*
- Kia mahi ngaatahi ki ngaa iwi, ki ngaa roopu katoa (*to work collaboratively with all people, organisations and groups*).¹⁵

Table 1 (below) considers cultural values, obligations and objectives with proposed activities to provide outcomes to avoid impact on those values.

Values	Guiding Aspirations & Objectives	Outcomes (being sought)
Impact		
Rangatiratanga - Ngaati Hauaa and Ngaati Korokii-Kahukura participate in decision-making to ensure decisions made in respect of their ancestral land, waterways, taonga and waahi tapu align with their responsibilities and obligations as kaitiaki. Rangatiratanga includes capacity and capability building to support their roles as decision-makers.	Kia mahi ngaa tahi ki ngaa iwi, ki ngaa roopuu katoa. Kia whai mahi te tangata. Provide for cultural, social and economic well-being of our people. Sustain Ngaati Hauaa tikanga and kawa.	Te Awa Rise Ltd agree to a partnership approach with Ngaati Hauaa and Ngaati Korokii-Kahukura that recognises and provides for the protection of kaitiakitanga, ancestral land, waterways, taonga, and waahi tapu within the proposed development. Te Awa Rise Ltd and Waipa District Council agree to partner with Ngaati Hauaa and Ngaati Korokii-Kahukura to protect and maintain the Māori cultural heritage features at the subject site including the paa, terraces, ditches, food storage pits and borrow pits to provide educational and amenity opportunities in the same vein
Impact - Ngaati Hauaa and Ngaati Korokii-Kahukura have a duty as mana whenua to work with parties to ensure decisions made in response to proposed developments to provide good outcomes for all things effected by the development.	Kia tuutuki ngaa take Tiriti. Riro whenua atu, hoki whenua mai Ka noho kaitiaki maa te mauri, maa te taha wairua, maa ngaa taonga, maa ngaa koorero kua tuku iho.	

¹⁴ Te Rautaki Tāmata Ao Turoa o Hauā. *Ngāti Hauā Environmental Management Plan 2018* <https://ngatihauaiwitrust.co.nz/publications/trust-documents/> retrieved 03.02.2022.

¹⁵ Ngaati Korokii-Kahukura Mahere Rautaki 2020-2050 available subject to request.

		<p>to that expressed at S19.6.3.1 in growth cells C1, C2 and C3 of the structure plan.</p> <p>Indigenous placemaking: landscaping, pou, signage, art is developed and designed with Ngaati Hauaa and Ngaati Korokii-Kahukura.</p>
<p>Kaitiakitanga - Ngaati Hauaa and Ngaati Korokii-Kahukura have obligations and responsibilities to protect and manage natural resources in a manner that is sustainable for current and future generations. This includes advocating for holistic and restorative approaches required to avoid and reduce risk to taonga, and to their ability to regenerate.</p>	<p>Reconnecting to maunga, waahi tapu and kooawa.</p> <p>Ko te oranga o te maunga, te awa, me te whenua: ko te oranga o te iwi.</p> <p>Build capacity within kaitiaki and the capacity of our future kaitiaki.</p> <p>Map cultural sites.</p>	<p>Funding for Cultural Heritage and Environmental initiatives led by Ngaati Hauaa and Ngaati Korokii-Kahukura.</p> <p>Input to how developer contributions are used to reflect the cultural landscape (through road materials, colours and design)(WDC).</p> <p>Implement best practice stormwater management and methods to avoid direct discharge to rivers and streams.</p> <p>Implement best practice dust particle management and methods to avoid air pollution, and nuisance to existing residence.</p>
<p>Impact- Earthworks will reduce the amount of whenua that has the ability to generate plants (trees and grasses) causing loss of habitat for living things and a loss of natural materials (including soils) used for cultural gardening techniques. Loss of natural materials has the potential to impact traditional knowledge and practices. Earthworks for the proposed development are intended to destroy features that identify previous occupations of the project area by the iwi.</p> <p>Stormwater run-off from the development has the potential to impact the mauri of the whenua and waterways.</p> <p>Dust particles generated in creating the development have the ability to impact air</p>	<p>Revitalise our traditional knowledge and practices.</p> <p>Appropriate stormwater management.</p> <p>Restore mauri of our taiao.</p> <p>Kia noho whakaruruhau, kia akiaki</p>	

<p>quality (the mauri of Te Ararangi).</p>		
<p>Mauri - Is the life essence or spiritual force in all things animate and inanimate. Ngaati Hauaa and Ngaati Korokii-Kahukura are responsible for managing natural resources in a manner that protects the mauri of taonga. Mauri is also used in maatauranga as an indicator to provide insights to the health and well-being of taonga.</p>	<p>Ko te oranga o te maunga, te awa, me te whenua; Ko te oranga o te iwi.</p> <p>Mana whenua are learning, researching, monitoring and protecting taonga in line with their values.</p>	<p>Planting and other methods are implemented to reduce the effects of dust particles in the air.</p> <p>Protect, promote and preserve features of the cultural landscape.</p>
<p>Impact – potential impacts from earthworks, stormwater and dust to whenua, wai and hau / Te Ararangi are listed (above) in kaitiakitanga. These activities have the potential to impact the mauri of each of these elements effectively reducing or diminishing the mana of the kaitiaki. Negative visual impacts also impact the mauri of taonga, in this case as it relates to the destruction of the borrow pits and their connection to the paa, which is part of a wider cultural landscape dominated by horticultural practices.</p>		
<p>Taonga - Those things that are valued by Ngaati Hauaa and Ngaati Korokii-Kahukura (and so require a high level of respect) including: whenua, waahi tapu, rivers, streams, mahinga kai, taonga, raranga, animals and plants, air and minerals.</p>	<p>Swim in, drink from and gather food from our rivers and streams.</p>	<p>Protect and preserve taonga by avoiding the destruction or contamination of ancestral land, waterways, taaonga, and waahi tapu.</p> <p>Promote the importance of Māori cultural values and heritage through art and design.</p>
<p>Impact – Whenua, hau / Te Ararangi and wai are living taonga, the potential impacts on these taonga from the proposal are mentioned (above) under kaitiakitanga.</p>		

<p>Tikanga - Are guides to moral behaviour. Tikanga includes wairuatanga, manaakitanga, rangatiratanga and manawhenua.¹⁶</p>	<p>Kia tau in ngaa wero.</p> <p>Sustain Ngaati Hauaa tikanga and kawa.</p>	<p>Cultural monitors onsite during earthworks (especially where topsoil is being removed).</p>
<p>Impact - Ngaati Hauaa and Ngaati Korokii-Kahukura have a duty as mana whenua to ensure the appropriate cultural responses to the development activities are undertaken to provide protection for all taonga effected by the activities.</p>		<p>Cultural Inductions for onsite workers and contractors.</p> <p>Any accidental discovery protocol (or archaeological authorities) are developed and implemented in partnership with Ngaati Hauaa and Ngaati Korokii-Kahukura.</p>

Table 1. Alignment of Ngaati Hauaa and Ngaati Korokii-Kahukura values, aspirations & objectives, and outcomes.

Recommendations

The following are recommendations for Te Awa Rise Ltd, and relevant Local and Territorial Authorities to avoid impact to cultural values regarding the proposed residential development at 3784, 3794, 3796, 3798 and 3838 Cambridge Road, Leamington:

- Protect, promote and preserve features of the cultural landscape.
- Promote to the public, the relationship Ngaati Hauaa and Ngaati Korokii-Kahukura have with natural and physical resources in their rohe.
- Te Awa Rise Ltd agree to a partnership that recognises and provides for the protection of kaitiakitanga, ancestral land, waterways, taonga, and waahi tapu within the proposed development.
- Te Awa Rise Ltd and Waipa District Council agree to partner with Ngaati Hauaa and Ngaati Korokii-Kahukura to protect and maintain the Māori cultural heritage features at the subject site including the paa, terraces, ditches, food storage pits and borrow pits to provide educational and amenity opportunities in the same vein as that expressed at S19.6.3.1 in growth cells C1, C2 and C3 of the structure plan.¹⁷
- Preserve (by backfilling) the borrow pit located in the area of Lots 39 and 40, after topsoil stripping and investigation by the archaeologist and lwi monitors.
- Apply to Lots 35 and 36 the same process (above) to preserve the borrow pit in the same location. (It is noted and accepted however that the pit is shallow and may be destroyed when the topsoil is removed).

¹⁶ Hirini Matunga, The Resource Management Act 1991 and Māori perspectives, Centre for Māori Studies and Research, 1994, cited in Gooder, C 2018 <https://knowledgeauckland.org.nz/media/1105/tr2018-008-cultural-values-assessments-literature-review.pdf> retrieved 03.12.2022.

¹⁷ <https://www.waipadc.govt.nz/repository/libraries/id:26gz4o7s1cxbyk7hfo7/hierarchy/our-council/waipadistrictplan/variations/documents/plan-change-7/S19%20-%20Cambridge%20Structure%20Plans%20-%2014%20March%202019%20-%20FINAL.pdf>

- Ensure the geotechnical completion report and private covenants state rib raft foundations only are allowed on lots 35 and 36, and 39 and 40, and should be reflected in each of the titles for the 4 Lots.
- Provide funding for Cultural Heritage and Environmental initiatives led by Ngaati Hauaa and Ngaati Korokii-Kahukura.
- Ensure Ngaati Hauaa and Ngaati Korokii-Kahukura have input to how developer contributions are used to reflect the cultural landscape through road materials, colours and design, and promotion of Te Aranga Design principles within the development.
- Promote the importance of Māori cultural values and heritage by incorporating indigenous placemaking in the design plans e.g. landscaping, pou, signage, art developed and designed with Ngaati Hauaa and Ngaati Korokii-Kahukura.
- Develop and implement as a condition of consent best practice stormwater management and methods to avoid direct discharge to rivers and streams.
- Develop and implement as a condition of consent best practice dust particle management and methods to avoid air pollution, and nuisance to existing residence.
- Incorporate provision for mana whenua cultural monitors to be onsite during earthworks (especially where topsoil is being removed) in the condition of consent for the construction methodology.
- Incorporate provision for cultural inductions to be provided by mana whenua for onsite workers and contractors in the condition of consent for the construction methodology.
- Ensure the attached discovery protocol is implemented as a condition of consent.
- Ensure archaeological authorities for the subject site are developed, and implemented as a condition of consent in partnership with Ngaati Hauaa and Ngaati Korokii-Kahukura.

Attachment 1 - Partnership Agreement for the protection of
Kaitiakitanga, Ancestral land, Waterways, Taaonga, and Waahi Tapu.

Ngāti Koroki Kahukura Trust



MEMORANDUM OF UNDERSTANDING

Te Awa Rise Ltd

Ngāti Koroki Kahukura Trust

Ngāti Hauā Iwi Trust

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MG *JB.*
[Signature]

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Dated

2022

Parties

Te Awa Rise Ltd (TAR)

NGĀTI KOROKI KAHUKURA through the Ngāti Koroki Kahukura Trust ('**NKKT**')

NGĀTI HAUĀ, through Ngāti Hauā Iwi Trust ('**NHIT**')

1 Background

- 1.1 TAR is a private limited liability Company that is purchasing three sites, being 3794, 3798 and 3838 Cambridge Road. These sites are located to southeast of Cambridge Road, north of the Kotare Park development off Silverwood Lane. The sites are also located within the C4 Growth Cell as established by the Waipa 2050 Growth Strategy.
- 1.2 TAR proposes to develop the site into a residential subdivision which is scheduled to commence construction in 2022-23, subject to the approval of appropriate resource consents. Herein referred to as the 'Project'.
- 1.3 Ngāti Koroki Kahukura and Ngāti Hauā are the mana whenua of the area on which the TAR subdivision will be located.
- 1.4 Ngāti Koroki Kahukura is represented by the Ngāti Koroki Kahukura Trust (NKKT) and Ngāti Hauā is represented by the Ngāti Hauā Iwi Trust. (NHIT).

2 Purpose of this document

- 2.1 The parties have decided to formalise their discussions by way of this Memorandum of Understanding (**MOU**) to recognise and enhance the positive and effective relationship which has been achieved between the parties through an open and frank dialogue.
- 2.2 The intent of this MOU is to record the agreements to date between TAR and NKKT and NHIT in relation to the Project and to assist TAR to proceed with the successful completion of the Project's design and construction.
- 2.3 This MOU also outlines the protocols for collaborative actions and works agreed between the parties.

3 Relationship with other agreements

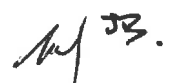
- 3.1 The purpose of this MOU between TAR and NKKT and NHIT is to deal with specific issues with the Project.

4 General

- 4.1 This MOU is intended to remain operational until the completion of the Project scheduled to occur in late 2023. Completion of the Project means when titles for the new lots have been issued.
- 4.2 This MOU and any appendices to it can be amended at any time with the agreement of all parties.

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- 4.3 This MOU is not intended to be, and is not, legally binding on the parties.
- 4.4 The parties acknowledge that TAR has statutory responsibilities, and duties under the Resource Management Act 1991 (RMA). While the parties have committed to work together constructively and in good faith in relation to this agreement, it is recognised and agreed that this agreement will in no way affect TAR ability to perform those statutory responsibilities, and duties.
- 4.5 The parties acknowledge that, ultimately, the conditions on the Project will be determined by the appropriate consent authorities under the relevant statutory processes.

5 Principles of this MOU

- 5.1 The principles that underpin this MOU are:
- 5.1.1 NKKT and NHIT will have active input into decision making with issues involving the Project within our rohe (district).
- 5.1.2 TAR will assist where possible, practicable, reasonable and affordable with respect to Project related matters with the capacity and capability building for NKKT and NHIT.
- 5.1.3 The parties are committed to establish and maintain a sustainable and culturally safe engagement process.
- 5.1.4 To ensure an on-going and meaningful relationship and co-operation the parties agree to do the following:
- a. Consider, investigate, and resolve issues as they arise in a manner that maintains the integrity, professionalism, and statutory accountabilities of the other party.
 - b. Act in good faith in meeting their responsibilities under this agreement and in resolving differences of opinion.

6 Legislative context

- 6.1 As well as the RMA considerations and other statutory obligations the Project must also give consideration to the following Legislation;
- a. Waikato Tainui Raupatu Claims Settlement Act 1995
 - b. Waikato Tainui Raupatu Claims River Settlement Act 2010
 - c. Ngāti Koroki Kahukura Claims Settlement Act (2014)
 - d. Ngāti Hauā Claims Settlement Act (2014)
- 6.2 The Waikato Tainui Environment Plan (2013) has been notified with Local Body and Regional Councils. Similarly, the Ngāti Hauā Environmental Management Plan (2018) has been notified. This Project is therefore required to consider both Management Plans.

7 Project background

- 7.1 The Project is for the construction of a residential subdivision and the associated roads, services and earthworks. The subdivision will create approximately 54 residential lots, five larger lots for compact housing, a roading network that will vest in Council and a number of stormwater reserves that will also vest in Council.



- 7.2 Following any statutory or other resource management processes, further design modifications may be required to meet consent conditions and funding constraints, as well as detailed design to enable the construction of the subdivision.

8 TAR engagement with NKKT and NHIT

- 8.1 The parties have been in consultation via email and undertook a site visit in May 2022. Since then, two further site visits and a meeting has occurred in preparation and development of the CVA and MOU.

- 8.2 The parties have actively been engaged in the writing of this MOU.

- 8.3 In particular, TAR have consulted NKKT and NHIT about:

- a. The effects of the Project on the following archaeological sites:

- i Pa site and associated defensive trenches (S15/23)
- ii Borrow pit complexes S15/521 and S15/638

- 8.4 The parties agree that:

- a. Cultural monitoring shall occur and extends to all earthworks adjacent to the Pa Site, any archaeological investigation, and all works associated with the road construction between the upper and lower terrace.
- b. Cultural induction including a karakia must occur prior to any works at the very outset of the Project.
- c. That cultural recognition for the pa site and defensive trenches will be provided for as set out in section 9.2.
- d. That TAR will preserve the borrow pits located in Lots 35 and 36, and Lots 39 and 40 as per the process set out in the accompanying Cultural Values Assessment and 9.3,9.4 and 9.5 below.
- e. TAR will engage with NKKT and NHIT about all measures to avoid, remedy or mitigate the adverse effects, from the construction and operation of the Project, on the environment and about any other measures to be included in the Project to enhance the environment.
- f. TAR will advise NKKT and NHIT of opportunities to tender for part(s) of the construction of the Project.
- g. TAR have two roads that will require naming. NKKT and NHIT would like to collaborate with TAR in the naming of these roads. It is accepted that the above is subject to Waipā District Council standard naming procedure. It is also noted that Road 1 and Road 3 will be named as part of the adjoining Kotare Park development.
- h. That the Ngāti Hauā Mahi Trust eco-nursery have the opportunity to tender for, and price any planting requirements for the subdivision.
- i. TAR will work together with NKK and NH on the landscape design for the subdivision, stormwater reserve, and the defensive ditch area.



- j. TAR will support NKK and NH in discussions with Council to achieve outcomes that identify and reflect mana whenua cultural heritage in the C4 Growth cell. Including, pou/ art /sculptures at the Cambridge Road/Kaipaki Road roundabout, beautification opportunities for the stream that runs adjacent to the proposed development site (potential foot and bike bridge), and a mana whenua cultural heritage trail with story boards,

Best Practice Guidelines

- k. The best available practices will apply to all construction and earthwork activities.

9 Archaeological and Heritage Sites

- 9.1 Prior to submitting an application for 'Authority to modify or destroy an Archaeological site', to Heritage New Zealand, TAR will confirm with NKKT and NHIT the Archaeologist responsible for managing this Project.
- 9.2 TAR have redesigned the proposed lots in the residential development to avoid destruction and modification of the defensive ditches, whilst still providing access to the Messenger property (lot 100 in the plans), and necessary roading connections between the upper and lower terraces. The ditches will now become part of the stormwater reserve (lot 400). TAR will engage with NKKT and NHIT about the appropriate technique to mark and record the history of the identified pa site (S15/23). This may include a commemorative plaque and/or signage or other similar technique. The location of any physical feature will also be determined through discussions between the parties.
- 9.3 TAR have agreed to preserve (by backfilling) the borrow pit located in the area of Lots 39 and 40, after topsoil stripping and investigation by the archaeologist and Iwi monitors. And,
- 9.4 To apply to Lots 35 and 36 the same process (above) to preserve the borrow pit in the same location. (It is noted and accepted however that the pit is shallow and may be destroyed when the topsoil is removed). And,
- 9.5 to ensure the geotechnical completion report and private covenants state rib raft foundations only are allowed on lots 35 and 36, and 39 and 40, This will also be reflected in each of the titles for the 4 Lots.
- 9.6 If any wording is proposed, NKKT and NHIT will provide TAR with the information that is to be included.
- 9.7 In the event of any discovery of additional archaeological sites, kōiwi or taonga during construction of the Project, the procedures set out in "Discovery Protocols" as an attachment to the Cultural Values Assessment will be followed.
- 9.8 Provision for cultural monitors to be included in the construction methodology as a condition of consent is agreed to by TAR, NHIT and NKKT.
- 9.9 Provision for cultural inductions to be included in the construction methodology as a condition of consent is agreed to be TAR, NHIT and NKKT.
- 9.10 TAR recognises that Waikato-Tainui are duly registered as Temporary Custodians of Taonga tūturu found within the Waikato rohe and/or deemed to be of Waikato origin. Therefore, any discovered taonga will immediately be provided to NKKT, NHIT on behalf of Waikato-Tainui, until ownership is determined.

- 9.11 TAR will ensure appropriate transport of taonga is provided to the designated storage location to ensure the protection of the taonga. (Ongoing storage requirements is covered as a requirement by the Ministry of Culture and Heritage).

10 Landscaping

- 10.1 TAR will make extensive use of indigenous plants in landscaping the Project where possible.
- 10.2 Plants used in the landscaping will be eco-sourced where available. .
- 10.3 TAR have agreed to work with NKK and NH on the landscape design for the subdivision, stormwater reserve and defensive ditch.

11 Stormwater

- 11.1 During construction, TAR will manage, treat and dispose of stormwater from the construction site using agreed methods listed within the Erosion and Sediment Plan approved by Waikato Regional Council.

12 Conflicts and dispute resolution

- 12.1 Where a conflict arises between the parties that is unable to be resolved at the operational level, then:
- a. The conflict shall be elevated to any senior management as agreed between the parties; and if senior management are unable to resolve the conflict within a reasonable period, as agreed by the parties, then the parties may appoint a mutually agreed mediator with the intention to resolve disagreement.

Execution
Signed for and on behalf of
TE AWA RISE LTD



Te Awa Rise Ltd
Jared Baronian on behalf of Te Awa Rise Ltd

Date: 12 / 09 / 2022

Signed for and on behalf of the
NGĀTI KOROKI KAHUKURA TRUST



Karaitiana Tamatea
Co-Chair Ngāti Koroki Kahukura Trust

Date: 13/09/2022

Signed for and on behalf of the
NGĀTI HAUĀ IWI TRUST



Mokoro Gillett
Chair: Ngāti Hauā Iwi Trust

Date: 16/9/22

Attachment 2 – Discovery Protocol

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M. S.B.
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Discovery Protocol – Te Awa Rise Ltd Development Cambridge Road, Leamington

Where, during works for the residential development any Taonga tuuturu, archaeological feature, artefact or human remains are accidentally discovered or are suspected to have been discovered, the following protocol shall be followed:

1. Te Awa Rise Ltd shall:

- (i) immediately cease all works within 20m of the discovery.
- (ii) secure/tape off the discovery area (including a buffer area) to ensure sensitive material remains undisturbed.
- (iii) advise Mana Whenua in the first instance if the discovery relates to taonga tuuturu, an archaeological site, or kōiwi (or human remains), and
- (iv) advise New Zealand Police if the discovery is kōiwi or human remains, and
- (v) advise Heritage New Zealand Pouhere Taonga Trust if the discovery is an archaeological site, or kōiwi (or human remains).
- (vi) attend and enable the site to be inspected by the relevant authorities outlined in 3-5 (above).

2. Work may recommence if Mana Whenua, and Heritage New Zealand Pouhere Taonga Trust provides a statement in writing to the Waipa District Council, that appropriate action has been undertaken in relation to any Taonga tuuturu or Māori cultural heritage material, and archaeological site respectively. The Waipa District Council shall advise Te Awa Rise Ltd on written receipt from Mana Whenua, and Heritage New Zealand that work can recommence.

Meanings and contact details

In this document **Taonga Tuuturu** has the same meaning as used in the Protected Objects Act 1975:

taonga tūturu means an object that—

- (a) relates to Māori culture, history, or society; and
- (b) was, or appears to have been, —
 - (i) manufactured or modified in New Zealand by Māori; or
 - (ii) brought into New Zealand by Māori; or
 - (iii) used by Māori; and
 - (iv) is more than 50 years old

In this document **Mana Whenua** refers to Ngaati Hauaa and Ngaati Korokii-Kahukura.

Mana Whenua	Contact Person/s	Contact email address
Ngaati Hauaa	Lisa Gardiner	Ngatihauaiwitrust.co.nz
	Person 2	
Ngaati Korokii-Kahukura	Poto Davies	poto@puawai.com
	Beth Tauroa	b.tauroa1@gmail.com