

# Matipo Avenue Residents Incorporated Society

Incorporated 2015

Andrew Morton  
50 Matipo Avenue  
Rotorua 3015  
22 September 2020

## Summary notes for an oral submission by Andrew Morton in the matter of Proposed Plan Change 2: Pukehangi Heights to the Rotorua District Plan under Part 5, Sub-Part 5 – Streamlined Planning Process and Schedule 1 Part 5 of the Resource Management Act

<b>1. INTRODUCTION .....</b>	<b>2</b>
<b>2. SUBMISSION FOCUS .....</b>	<b>2</b>
2.1 Use of land behind 18 to 36 Matipo Avenue .....	2
2.2 Rotorua Lakes Council proposal to delete round-about control at Pukehangi/Malfroy/Hunt Family intersection.....	2
<b>3. PLAN CHANGE PROPOSAL .....</b>	<b>2</b>
<b>4. SUGGESTED MARIS ALTERNATIVES (OPTIONS) .....</b>	<b>3</b>
4.1 Short (50m) cul-de-sac from Matipo Ave, for an 8-lot subdivision .....	3
4.2 Short cul-de-sac from Matipo Ave, for initial 6-lot (then 8) subdivision. ....	4
4.3 Stormwater.....	5
<b>5. PROS AND CONS OF THE OPTIONS FOR EACH PARTY .....</b>	<b>5</b>
5.1 Option 4.1: Hunt Family .....	5
5.2 Option 4.1: TAGH:.....	5
5.3 Option 4.1: MARIS:.....	6
5.4 Option 4.1: Utuhina Valley Farms .....	6
5.5 Option 4.1: Rotorua Lakes Council .....	6
5.6 Option 4.2: Hunt Family .....	6
5.7 Option 4.2: TAGH.....	6
5.8 Option 4.2: MARIS.....	7
5.9 Option 4.2: Utuhina Valley Farms .....	7
5.10 Option 4.2: Rotorua Lakes Council .....	7
<b>6. ROTORUA LAKES COUNCIL PROPOSAL TO DELETE ROUNDABOUT FROM PC27</b>	
6.1 Too Expensive.....	8
6.2 More Dangerous for Cyclists .....	8
6.3 Insufficient Traffic to Need a Roundabout .....	9
6.4 Requests from MARIS.....	9

## **APPENDICES**

A	Road cross-section .....	10
B	Sh. 1 Plan eight lots .....	11
B	Sh. 2 Subdivision X-Section.....	12
C	Costs/returns for subdivision .....	13
D	Costs new road Hunt Family.....	15
E	Access costs for Great West Road. ....	16
F	Plan; access from six lots subdivision .....	18
G	Roundabout plan.....	19
H	Great West Road – 200m Sealed Section .....	20

### **1. INTRODUCTION**

- Andrew Morton, 50 Matipo Avenue since 2009.
- Employed with Rotorua City Council from 1972 to 1978; for 2 years as Streetworks Engineer for 2 years Deputy City Engineer.
- Consulting Engineer in Rotorua/BoP from 1978 until retirement.

### **2. SUBMISSION FOCUS**

#### **2.1 Use of land behind 18 to 36 Matipo Avenue**

#### **2.2 Rotorua Lakes Council proposal to delete round-about control at Pukehangi/Malfroy/Hunt Family intersection**

### **3. PLAN CHANGE PROPOSAL**

Twin Oaks development included access to the retirement village and provision for the possible development of 20 dwelling units on hillside behind #’s 18-36 Matipo Ave.

Now proposed to have residential subdivision on TAGH property; with 4,000m<sup>2</sup> minimum lot size on hillside.

Cross-section (**Appendix A**) shows that the 20m wide access road from Matipo Ave would make formation of building sites difficult, except for each end.

The 300m access road from Matipo Ave to the upper level of TAGH property would involve significant earthworks and cost around \$350,000 (\$1,167/m); just to provide “connectivity” and access for any TAGH development until access is available through the Hunt Family property.

#### **4. SUGGESTED MARIS ALTERNATIVES (OPTIONS)**

The alternatives or options below refer to heading 2.1, above.

##### **4.1 Short (50m) cul-de-sac from Matipo Ave, for an 8-lot subdivision**

The first option is for an 8-lot subdivision. Each lot will be approximately 2,200m<sup>2</sup> (**PLAN: Appendix B**). A six or seven lot development had been suggested in our earlier submission, prepared by Lorelle Barry of Property Group. The Twin Oaks proposal was for up to 20 dwelling units for the same area; i.e. standard size residential lots.

Estimated development costs and net returns are \$1,316,000 and \$2,809,000 respectively and are shown on **Appendix C**.

MARIS supports provision of walkway/cycleway for “connectivity” but not vehicle “connectivity” between upper levels of Matipo Avenue and TAGH Property (Area A). Also support the full “connectivity” at lower end of Matipo Ave. if the round-about at Malfroy intersection is retained.

Form access to TAGH property through Hunt Family property; with TAGH financial contribution made to Hunt Family for construction of the access. Estimated cost \$715,000 (**Appendix D**).

If TAGH paid all of the estimated roading costs through the Hunt Family property (\$715,000) they would still return over \$2,000,000 from the sale of the 8 lots.

TAGH would also save the construction costs of **\$350,000** for the “link” road from Matipo Ave (adjacent to #36) to the top level of their property. This plan and estimates were given to TAGH, to review, in May 2020.

TAGH would not need to form a construction traffic access from Great West Rd to the top level (estimated cost \$409,000: **Appendix E**).

TAGH would avoid any costs associated with the reconstruction of Matipo Ave, if the carriageway failed due to Matipo Ave being used for all construction traffic associated with TAGH infrastructure development. MARIS is not aware of any reports or assessments refuting our view that there is a potential for failure of the Matipo Ave. carriageway under the increased heavy traffic loading, from subdivision construction traffic. Whether the pavement will, or not, fail under the extra heavy traffic loads is subjective.

MARIS contends that the extra loading from construction traffic going up Matipo Ave will increase the deformation of the pavement and may cause the road surface/base to break-up/fail.

Heavy vehicles descending Matipo Ave have the potential to deform (fail due to horizontal shear) the sealed surface under braking; it is noted that Matipo Ave. has a gradient of 1:7.2 (i.e.13.9%) at its steepest (adjacent to #11, just below the brow of the hill) and is only 7.9m wide at this point.

#### **4.2 Short cul-de-sac from Matipo Ave, for initial 6-lot (then 8) subdivision.**

If TAGH and Hunt Family are unable to reach an agreement to form access for TAGH (Area A), TAGH could still form a short (50m) cul-de-sac as per 4.1 but only develop the first 6 of 8-lot subdivision (**Plan: Appendix F**). From the end of RoW, build an 8m wide access to the upper level of TAGH property (across future lot 7 & 8) at a 1:8 gradient; linking the subdivision to Matipo Ave.

Access designation would be by Right of Way from the 50m cul-de-sac. This would be lifted once access for TAGH subdivision was available through a link from Hunt Family property. Lots 7 & 8 could then be developed for sale.

The Great West Rd. access would need to be constructed, for infrastructure heavy traffic, to develop the top level of the TAGH property.

Mr Norman's submission referenced only 260m of Great West Rd. is sealed. However, a further 230m is sealed (but only 4m wide) for a total of 490m. This sealing finishes at the junction of the access to the Council access to their Water Supply. Estimated costs for 6m wide seal, no kerb & channel for the 200m from end of existing seal to the start of construction up the hillside, is \$106,000. (**Appendix E**)

Sealing this portion would significantly reduce the amount of silt run-off to the Utuhina Stream, compared with the present metalled construction.

### **4.3 Stormwater**

Access can be formed to the upper level of TAGH site (length 420m at a grade of 1:8.33; 12% for the alignment used in estimates) with 6m seal width and kerb & channel one side; estimated costs \$303,000 (Appendix E). This is a flatter grade than the steepest section of Matipo Ave. Twin Oaks accepted this.

These estimates include a sum of \$17,000 for establishment, silt control, etc. and \$70,000 for stormwater works (piping, detention basins, silt control). Silt contamination of water ways can be mitigated with modern construction techniques; e.g. extensive use of run-off detention ponds, earth bunds, hydro-seeding for re-grassing, mulching of exposed earth areas until protecting vegetation is established, haybale and fabric silt barriers.

Approximately 25-30% of the residential subdivision area grades towards the South/Utuhina Stream. Opus plan for stormwater disposal has all of the upper level as one catchment, draining to the North. These stormwater works would comprise part of the stormwater reticulation, runoff control and disposal system for the catchment area graded towards the South/Utuhina Stream.

The estimated total cost for both roading lengths is \$409,000. With deduction of the \$350,000 costs to form the link road from Matipo Ave. to the TAGH upper level (refer section 4.1), the net cost to TAGH would only be \$59,000. This is a small cost against the more than \$2 million net returns from the sale of the 8 lots.

## **5. PROS AND CONS OF THE OPTIONS FOR EACH PARTY**

### **5.1 Option 4.1: Hunt Family**

**Pro** Hunt Family would get a significant contribution to future subdivision costs.

**Con** Early development of the access may not fit with development plans proposed by the Hunt Family.

No vehicle “connectivity” to top of Matipo Ave. which would prevent Hunt Family from developing their top level via Matipo Ave.

### **5.2 Option 4.1: TAGH:**

**Pro** Could return \$2,000,000 (or more) from the 8-lot subdivision.

TAGH would not have costs associated with formation of access from Great West Rd or from Matipo Ave to the top of their property.

TAGH would not be limited to Hunt Family development timeframes.

Con TAGH would lose vehicle “connectivity” to the top of Matipo Ave.

### **5.3 Option 4.1: MARIS:**

Pro Would not have main construction traffic using Matipo Ave.

Vehicle “Connectivity” between Matipo Ave and the TAGH top level would be removed.

Con Construction traffic associated with 8-lot development behind lots 18-36.

### **5.4 Option 4.1: Utuhina Valley Farms**

Pro Objection to use of Great West Rd for TAGH access will be negated.

### **5.5 Option 4.1: Rotorua Lakes Council**

Con Would lose vehicle “connectivity” link to Matipo Ave.

### **5.6 Option 4.2: Hunt Family**

Pro No pressure on Hunt Family to form access to TAGH

Con No contribution towards roading costs from TAGH for Hunt Family

### **5.7 Option 4.2: TAGH**

Pro Allows subdivision on top level, using Matipo Ave., for up to 60 lots.

Net sales income from 6 (& ultimately 8 lots) from hillside subdivision.

TAGH would not have costs associated with access formation on hillside (between reservoir and behind #’s 18-36 Matipo Ave.) or reconstruction of Matipo Ave, if damaged by construction traffic.

No payments to Hunt Family towards roading costs for TAGH access.

Con Loss of vehicle “connectivity” to Matipo Ave once lots 7 & 8 developed.

Construction costs for access from Great West Rd.

60 lot limit for subdivision, until access available through Hunt Family property.

### **5.8 Option 4.2: MARIS**

Pro Limited construction traffic using Matipo Ave.

Ultimately, removal of “connectivity” for development/housing on top level of TAGH property.

Con Construction traffic for cul-de-sac and RoW.

### **5.9 Option 4.2: Utuhina Valley Farms**

Pro 200m widened and sealed section Great West Rd.

Con Great West Rd used for construction vehicle access to TAGH property.

### **5.10 Option 4.2: Rotorua Lakes Council**

Pro Sealing 200m of Great West Rd. with reduced silt contamination in run-off.

Con Loss of vehicle “connectivity”.

Lot sizes on hillside behind 18-36 Matipo Ave would be around 2200 m<sup>2</sup>; not 4000m<sup>2</sup> minimum as per PC2.

## **6. ROTORUA LAKES COUNCIL PROPOSAL TO DELETE ROUNDABOUT FROM PC2**

This section relates to paragraph 2.2 above

RLC has proposed deletion of the roundabout at Malfroy/Pukehangi/Hunt Family access (a proposed new road) in their report for this hearing; having originally promoted the construction of a roundabout; with ancillary proposals to link the new Hunt Family access to Matipo Ave between #'s 6 & 10 and closing the existing intersection of Matipo Ave. and Pukehangi Rd. Thus, all Matipo Ave. traffic (existing and in the future) would be re-directed to the new road formed with the future Hunt Family subdivision.

Three reasons were given for deleting the proposed roundabout:

- (i) Construction of a roundabout would be too expensive
- (ii) A roundabout would be more dangerous, for cyclists, than an intersection with no restriction on Pukehangi Rd. traffic and “stop” sign controls on Malfroy Rd. and Hunt Family new road.

- (iii) Predicted traffic volumes do not warrant construction of a roundabout.

### **6.1 Too Expensive**

The costs to form a roundabout should not take precedence over function and safety. Attached plan (**Appendix G**) is a schematic showing a roundabout formation of similar dimensions to that at the intersection of Ranolf and Devon Streets.

The bulk of the construction that is required would be undertaken and paid for by the subdivider. These works would also include stormwater control, streetlighting, cycleway/footpaths, centre median, roadmarking and signage.

In addition, there would be costs to form the centre circle (10m diameter), centre medians on three approaches, roadmarking of "Give ways" and pedestrian/cycleway crossings and signage.

Some or all of these costs should be the responsibility of the developer; i.e. minimal or no cost to Council.

### **6.2 More Dangerous for Cyclists**

This is a statement with no definition of extent of roundabout works or data.

Formed, shared pathways for pedestrians and cyclists, off the carriageways, with dedicated crossings and refuge spaces within each median at roundabout approaches (as installed at the Otonga Rd and Springfield Rd intersection) provides safety for both pedestrians and cyclists and are used by many.

Westbrook Primary School is 300m from Pukehangi Rd. It would be hazardous for both pedestrians and cyclists, trying to negotiate their way onto or across Pukehangi Rd. with "STOP" controls each side.

Cyclists in Malfroy Rd. going onto or across Pukehangi Rd. are on an uphill incline.

Even cyclists on Pukehangi Rd. would have the hazard of right or left turning traffic exiting or entering either Malfroy Rd. or the new Hunt Family road.

It also noted that the present right turn bay for Pukehangi Rd. traffic going to Malfroy Rd. is only 1.8m wide (as would be a similar new right turn bay for traffic entering the new Hunt Family road). Such bays are usually 3m or more in width.



The 70/50 kph speed reduction sign for Pukehangi Rd is 250m to the West of Malfroy Rd. and a lot of vehicles do not slow down to 50 kph by the time they reach Malfroy Rd.

A roundabout would slow traffic to less than 50 kph.

Even with the proposed speed reduction to 50 kph for all of Pukehangi Rd. there is a likelihood of vehicles approaching the intersection at more than 50 kph because of the 1 km length of straight for the Western approach.

At present, even when cycling Eastwards on Pukehangi Rd., past Malfroy Rd. and then moving to the centre to turn right into Matipo Ave. can be hazardous.

### **6.3 Insufficient Traffic to Need a Roundabout.**

Again, no data has been given to justify this. In the original report by Stantec there was, apparently, a justifiable reason to propose the installation of a roundabout for intersection control.

Installation of a roundabout is about more than traffic numbers and it is not clear whether the modelling includes traffic numbers generated by the proposed commercial zone.

Safety should be paramount.

If the roundabout provision is removed, then MARIS withdraws its support for the closure of Matipo Ave and direction of all traffic through the link to the new road on Hunt Family property. It is easier/less hazardous to negotiate a T intersection (present Matipo/Pukehangi intersection) than a cross-roads intersection now proposed.

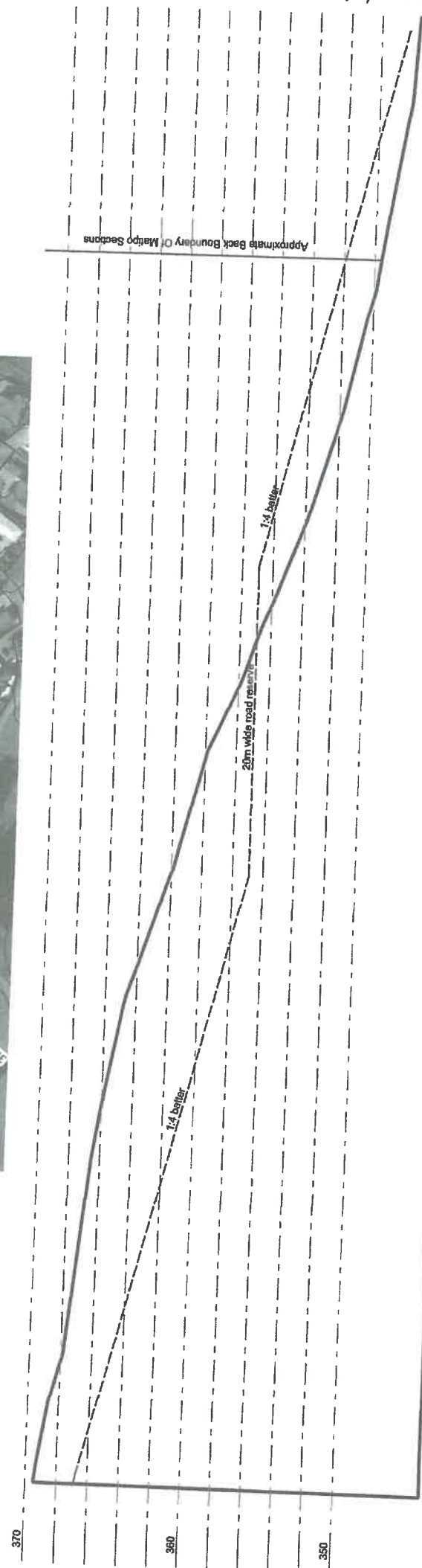
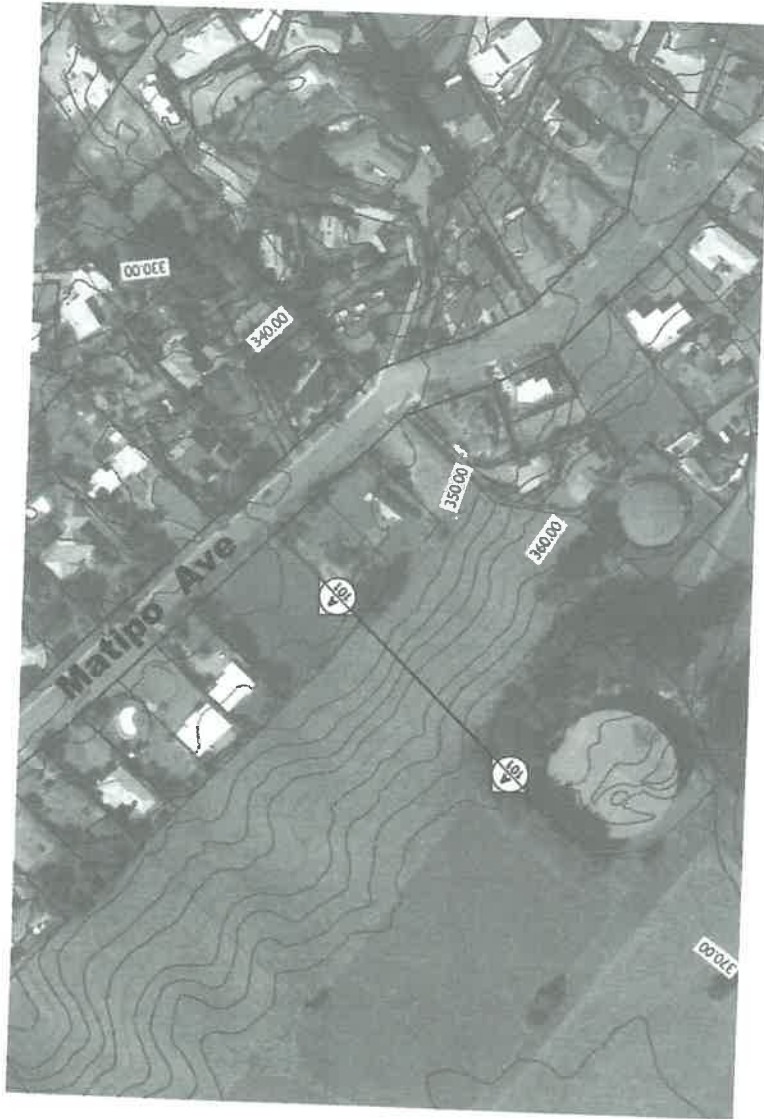
### **6.4 Requests from MARIS**

MARIS requests that:

- (i) the provision of a roundabout at Malfroy Rd/Pukehangi Rd, as originally proposed, be reinstated.
- (ii) the roundabout be installed at the time of the construction of the new Hunt family road; not “sometime” in the future.







Section A-A

1:251

**SHEET 101**

A	11.05.15	For Client Approval
REV	date	reason

ALL DIMENSIONS TO BE MARKED ON SITE  
 ALL CONSTRUCTION TO COMPLY WITH THE NZ STANDARD NZS 3604,  
 NZBC AND LOCAL AUTHORITY RULES

**7<sup>d</sup> architecture**  
ph: 07 348 3907 [ec.dave@7architecture.com](mailto:ec.dave@7architecture.com)

ph: 07 348 3907 e: [devo@7cardtech.com.au](mailto:devo@7cardtech.com.au)  
ph: 027 508 1758 7d Muspo ave, Rotunua 3015



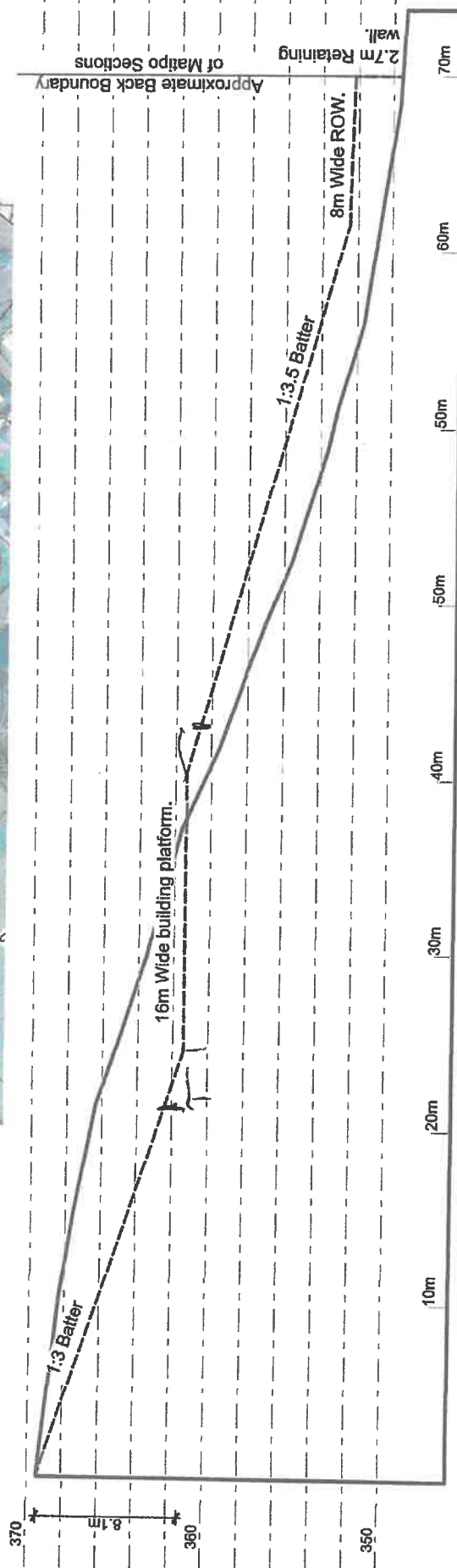
### Potential Subdivision Plan

A	18 JUL 20	For Client Approval
new	date	revision

ALL DRAWINGS TO BE REVERSED ON SITE  
 ALL CONSTRUCTION TO COMPLY WITH THE NZ STANDARD, NZS 3804,  
 NZBC AND LOCAL AUTHORITY RULES

**ZD Architecture Ltd.**  
ph: 07 348 3957 e: [enquiries@zdararchitecture.com.au](mailto:enquiries@zdararchitecture.com.au)  
www: 027 300 1172 1109 Fenton Street Brisbane





## Appendix B

Section A-A

1:250

SHEETS

101

id	date	reason
A	13.04.20	Client Approved

ALL DIMENSIONS TO BE VERIFIED ON SITE  
ALL CONSTRUCTION TO COMPLY WITH THE

**ZD** Architecture Ltd.  
ph: 87 348 3807 e: dave@zdarbushka.co.nz  
ph: 027 504 1734, 1108 Enderby Street, Rotorua

# POTENTIAL 8 LOT SUBDIVISION FOR TAGH

# APPENDIX C

## GST EXCLUSIVE

ITEM	DESCRIPTION	UNIT	QUANTITY		RATE	AMOUNT
1	Establishment	LS	1	\$	12,000.00	\$ 12,000.00
2	Stormwater control					
2.1	Detention pond for 2.15 Ha area on reserve	LS	1	\$	6,000.00	\$ 6,000.00
2.2	Silt /runoff control	LS	1	\$	3,000.00	\$ 3,000.00
3	Earthworks					
3.1	Strip topsoil to stockpile; 150 depth (1.35 bulking factor) for 2.15 Ha (21,500m2)	m3	4350	\$	5.70	\$ 24,795.00
3.2	Bulk earthworks; cut volume to fill & compact	m3	22500	\$	6.30	\$ 141,750.00
3.3	Replace topsoil; 150mm comp'd depth; 12,500 m2 e/w area(21,500 m2 less 9000 m2 c/w & build platforms)	m3	1875	\$	5.70	\$ 10,687.50
3.4	Grade & hydro-seed earthworks area	m2	12500	\$	1.25	\$ 15,625.00
3.5	Dust control	LS	1	\$	1,000.00	\$ 1,000.00
4	Concrete works					
4.1	Standard kerb & channel	m	350	\$	40.00	\$ 14,000.00
4.2	Mountable kerb & channel	m	260	\$	43.00	\$ 11,180.00
4.3	Footpath 1500 x 100mm	m2	70	\$	44.00	\$ 3,080.00
4.4	Private driveways 4.0m x 150mm - lot 1-8; 180 m2 ea	m2	1440	\$	63.00	\$ 90,720.00
5	Carriageway construction					
5.1	Trim & compact subgrade	m2	2350	\$	1.00	\$ 2,350.00
5.2	200mm GAP 40 basecourse; supply,grade, compact and prepare for 1 coat seal & 25mm hotmix	m2	2350	\$	24.50	\$ 57,575.00
5.3	Seal coats; G4 1st & 25 mm hotmix top coat	m2	2350	\$	32.00	\$ 75,200.00
6	Retaining Walls					
6.1	2m high for RoW; timber poles & rails	m2	480	\$	200.00	\$ 96,000.00
6.2	1.2 - 1.3 high for private driveways	m2	450	\$	150.00	\$ 67,500.00
7	Sewer					
7.1	150 diam uPVC sewer main	m	290	\$	80.00	\$ 23,200.00
7.2	1050 diam SSMH's - average 2m	each	4	\$	1,900.00	\$ 7,600.00
7.3	SSMH stubs & online junctions; marker stakes	each	8	\$	100.00	\$ 800.00
7.4	Connection to existing SSMH in Matipo Ave	LS	1	\$	200.00	\$ 200.00
8	Water supply					
8.1	100 diam Upvc 'E' main	m	200	\$	40.00	\$ 8,000.00
8.2	40 diam 'E' rider main	m	70	\$	20.00	\$ 1,400.00
8.3	Connections, valve box etc	each	8	\$	350.00	\$ 2,800.00
8.4	Connect to existing main, SV, cover etc	each	1	\$	500.00	\$ 500.00
8.5	90 bend & anchor	each	1	\$	300.00	\$ 300.00
8.6	Fire hydrants complete	each	2	\$	375.00	\$ 750.00
8.7	100 diam end cap & anchor	each	1	\$	150.00	\$ 150.00
8.8	40 diam GV complete for rider main	each	1	\$	100.00	\$ 100.00
8.9	40 diam end cap & anchor	each	1	\$	40.00	\$ 40.00
8.1	Booster pump for water supply pressure	LS	1	\$	10,000.00	\$ 10,000.00

7	Stormwater works					
7.1	Standard cesspits	each	4	\$ 1,200.00	\$	4,800.00
7.2	225 diam CP leads	m	168	\$ 70.00	\$	11,760.00
7.3	300 diam s/w mains	m	290	\$ 100.00	\$	29,000.00
7.4	SWMH's	each	5	\$ 1,850.00	\$	9,250.00
7.5	100 diam connections	each	8	\$ 50.00	\$	400.00
7.6	300 diam main outfalls to detention pond	each	2	\$ 400.00	\$	800.00
7.7	3 m3 detention tanks for each driveway	each	8	\$ 1,500.00	\$	12,000.00
8	Building platform formation					
8.1	Initial Geotech test & report	LS	1	\$ 15,000.00	\$	15,000.00
8.2	Testing & Certification after earthworks	LS	1	\$ 20,000.00	\$	20,000.00
8.3	Undercut & backfill 1m x 4500 m2 - cut meas.	m3	6750	\$ 5.00	\$	33,750.00
9	Power & fibre & gas reticulation; street light (\$4500)	lot	8	\$ 5,850.00	\$	51,300.00
				Sub-total	\$	876,362.50
10	Engineering, Planning & Survey fees					
10.1	Setting out - 2% value of works	LS			\$	17,527.25
10.2	Design & get RLC consent for works (plan appro); 7.5%	LS			\$	65,727.19
10.3	EBOP Earthworks consent	LS			\$	5,000.00
10.4	Planning & Survey fees	LS			\$	12,000.00
				sub-total	\$	100,254.44
11	Contingencies					
11.1	Undercut unsuitable cut to fill material	m3	5000	\$ 6.30	\$	31,500.00
11.2	Roadmarking at Matipo Ave intersection; signage	LS			\$	500.00
11.3	General contingency - 10%				\$	87,636.25
11.4	RLC Fees & Reserve Contrib. @ 5% (if no land given)				\$	220,000.00
				<b>TOTAL</b>	\$	1,316,253
				per lot	\$	164,532

#### SECTION RETURNS

8 lots (\$600,000 - \$650,000); ave \$625,000	#	8	\$ 625,000	\$	5,000,000
Less Land agent fees @ 2.5%				\$	125,000
Less GST @ 15%				\$	750,000
			sub-total	\$	4,125,000
Less development costs				\$	1,316,253
			RETURNS	\$	2,808,747
Extra cost (included) to form drives & building platforms			\$ 238,970.00	\$	29,871 per lot

**NEW ROAD (11m & 8.5m) THROUGH HUNT FAMILY PROPERTY****MALFROY RD TO TAGH PROPERTY (580 METRES) GST EXCL**

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
1	Establishment	LS	1	\$ 15,000.00	\$ 15,000.00
2	Stormwater control				
2.1	Earthworks over 2 Ha area	LS	1	\$ 15,000.00	\$ 15,000.00
2.2	20 m3 Detention ponds for each cesspit outlet	each	7	\$ 500.00	\$ 3,500.00
3	Earthworks				
3.1	Strip topsoil to stockpile; 200 depth (1.35 bulking factor) for 2 Ha (20,000m2)	m3	5400	\$ 5.70	\$ 30,780.00
3.2	Bulk earthworks; cut volume to fill & compact	m3	30000	\$ 6.30	\$ 189,000.00
3.3	Replace topsoil; 150mm comp'd depth; 20,000 m2 e/w area less 6000 m2 c/w area.	m3	2100	\$ 5.70	\$ 11,970.00
3.4	Grade & seed 13,000 m2 earthworks area	m2	13000	\$ 0.20	\$ 2,600.00
4	Concrete works; c/w only (no roundabouts or footpaths)				
4.1	Standard kerb & channel	m	1130	\$ 40.00	\$ 45,200.00
5	Carriageway construction				
5.1	Trim & compact subgrade	m2	5800	\$ 1.00	\$ 5,800.00
5.2	200mm GAP 40 basecourse; supply,grade, compact and prepare for 2 coat seal (2160 m3 truck measure)	m2	5800	\$ 24.50	\$ 142,100.00
5.3	Two coat seal; G3 & G5	m2	5800	\$ 15.00	\$ 87,000.00
6	Stormwater works				
6.1	Standard cesspits	each	14	\$ 1,950.00	\$ 27,300.00
6.2	225 diam CP leads; to the 7 x 20 m3 detention ponds	m	168	\$ 150.00	\$ 25,200.00
6.3	Insitu concrete outfalls for each detention pond	each	7	\$ 300.00	\$ 2,100.00
				Sub-total	\$ 602,550.00
7	Engineering fees				
7.1	Setting out - 2% value of works	LS			\$ 12,051.00
7.2	Design & get RLC consent for works (plan appro); 7.5%	LS			\$ 45,191.25
7.3	EBOP Earthworks consent	LS			\$ 5,000.00
8	Contingencies				
8.1	Undercut unsuitable cut to fill material	m3	5000	\$ 6.30	\$ 31,500.00
8.2	Roadmarking at Pukehangi Rd intersection; signage	LS			\$ 500.00
8.3	Fence - 7 wire P & B each side of new road	m	1160	\$ 16.00	\$ 18,560.00
				<b>TOTAL</b>	\$ 715,352
				per metre	\$ 1,233



## MARIS - TAGH

## CONSTRUCTION ESTIMATES FOR ACCESS FROM GREAT WEST ROAD

**A. GREAT WEST ROAD EXTENSION**  
**275M LENGTH; 10M FORMATION WIDTH; 8M SEAL WIDTH**

UNIT	DESCRIPTION	AMOUNT
1	Establishment, silt control, signage, Health & Safety	12000
2	Retaining walls 300 m2 @ \$200/m2	60000
3	Strip topsoil to stockpile, 500m2 @\$1/m2	500
4	Cut to fill; 3000m3@ \$6/m3	18000
5	Trim subgrade; 2200m2 @ \$1/m2	2200
6	Kerb & channel; 550m @\$40/m	22000
7	Metal basecourse; 2200 m2 @ \$24/m2	52800
8	2 coat chip seal; 2200 m2 @ \$15/m2	33000
9	Stormwater control	15000
10	Restoration & grassing; fences	2000
	sub-total	217500
	Design & supervision @ 10%	21750
	Contingency 10%	21750
	<b>TOTAL</b>	<b>261000</b>

**B. ACCESS FORMATION ON HILLSIDE**  
**420M LENGTH; 7M FORMATION WIDTH, 6.25m CONC**

1	Establishment (in Part A) & silt control	5000
2	Fences, stock control	1000
3	Strip topsoil to stockpile, 6000 m2 @ \$1.25/m2	7500
4	Cut to fill; 12,000m3 @ \$6/m3	72000
5	Trim subgrade; 2940 m2 @ \$1/m2	2940
6	Kerb & channel; 420 m @ \$40/m	16800
7	Metal basecourse; 270 m3 @\$55	14850
8	150 mm concrete plus rinf'g: 2625 m2@\$62/m2	162750
9	Stormwater lines, cesspits & outfall	60000
10	Restoration & grassing	5000
11	New fence each side of access; 800 m @ \$16/m	12800
	sub-total	360640
	Design & supervision @ 10%	36064
	Contingency 10%	36000
	TOTAL	432704
	TOTAL A & B	693700









Potential Subdivision Plan

1:1000



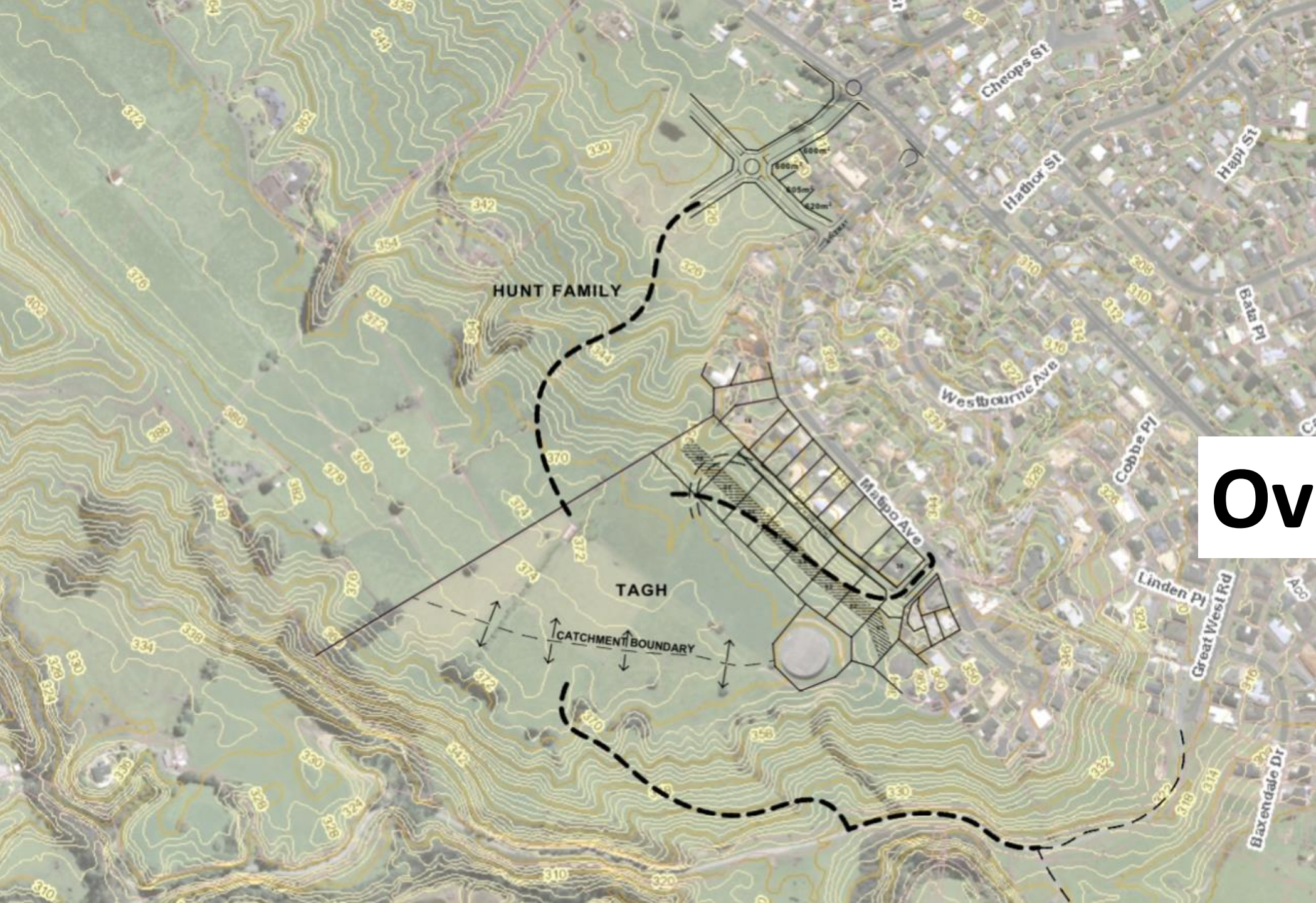
**Matipo Avenue Residents Incorporated Society**

**Incorporated 2015**

**Maps for the Proposed Plan Change 2: Pukehangi Heights**

**Andrew Morton**

**22 September 2020**

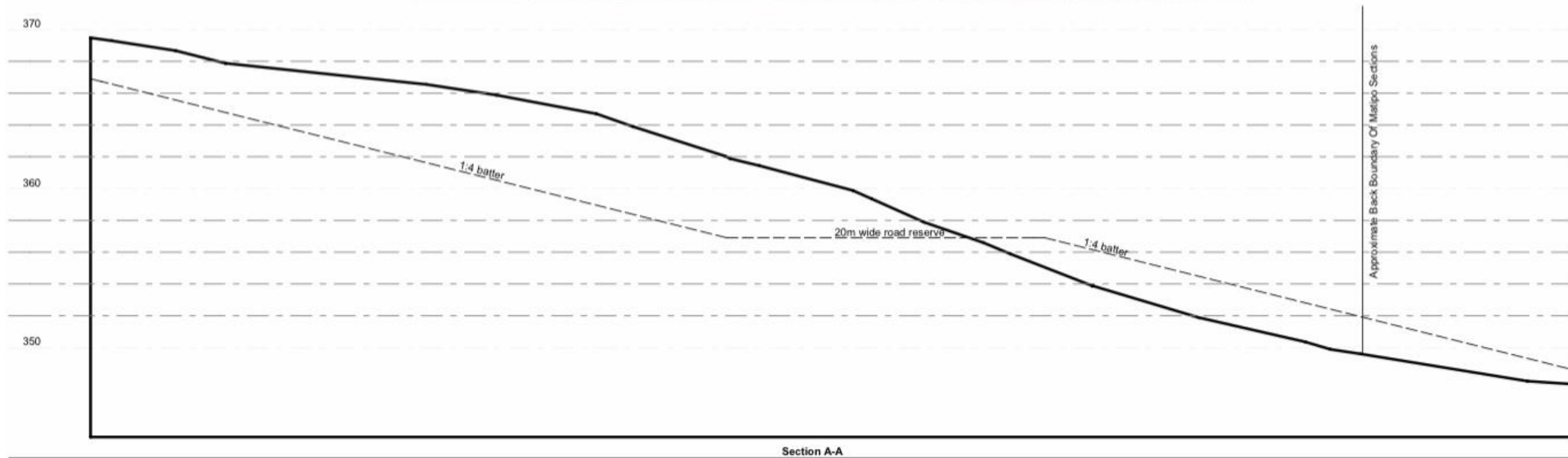


# Overview





# Appendix A







# Appendix B

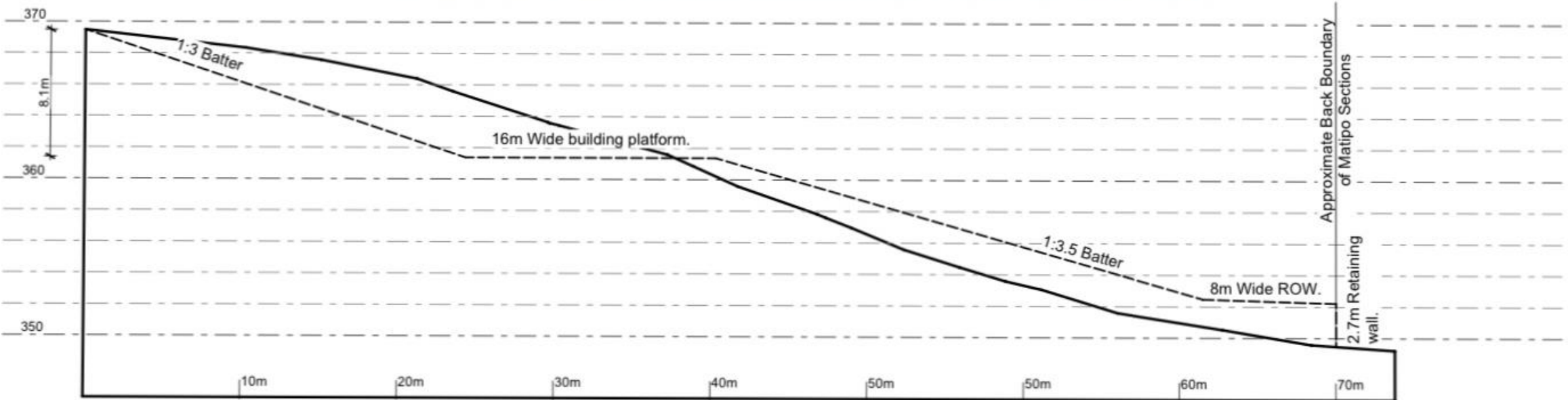
## Sheet 1





# Appendix B

## Sheet 2







## Appendix F

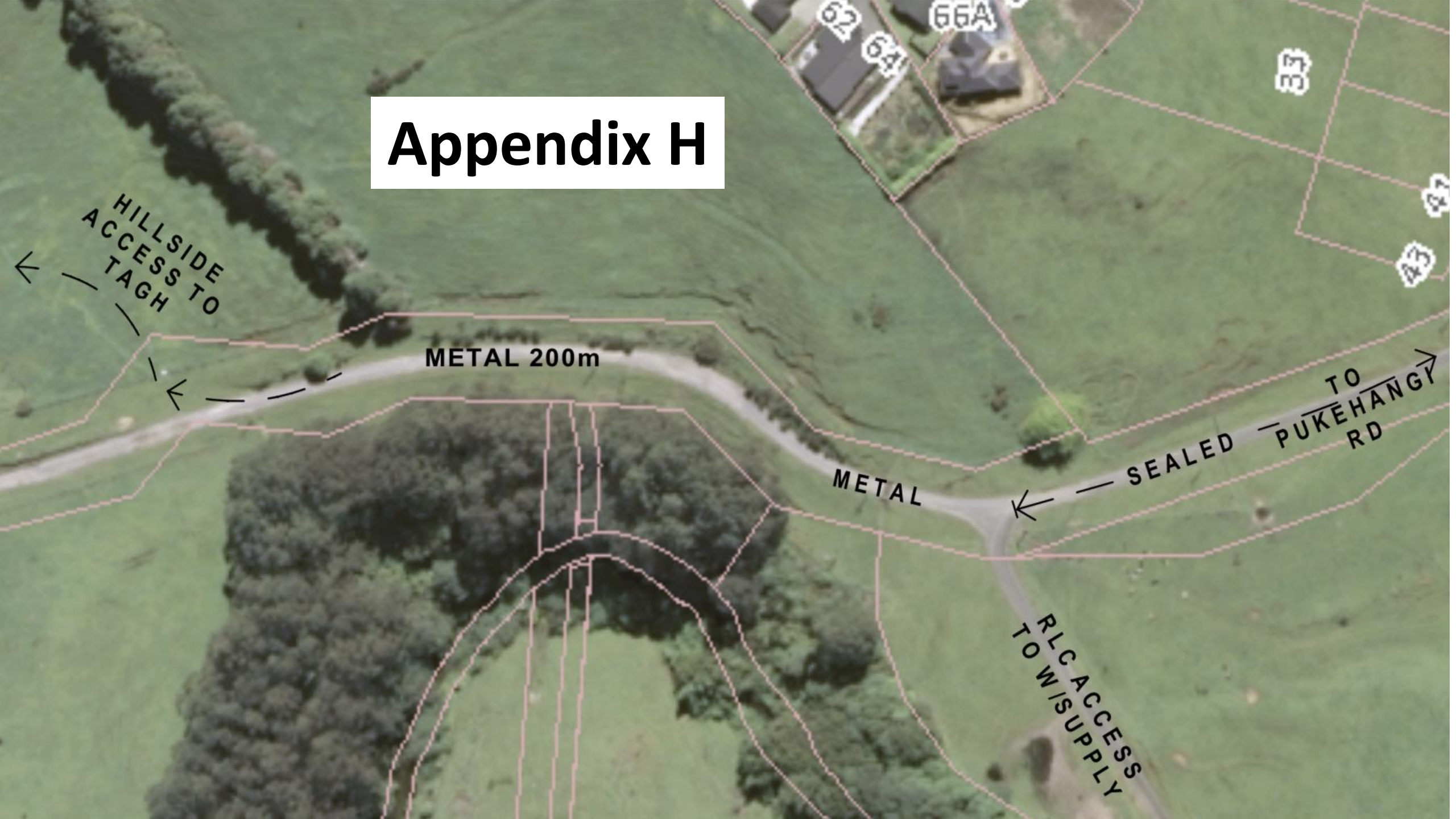




## Appendix G



# Appendix H



HILLSIDE  
ACCESS TO  
TAGH

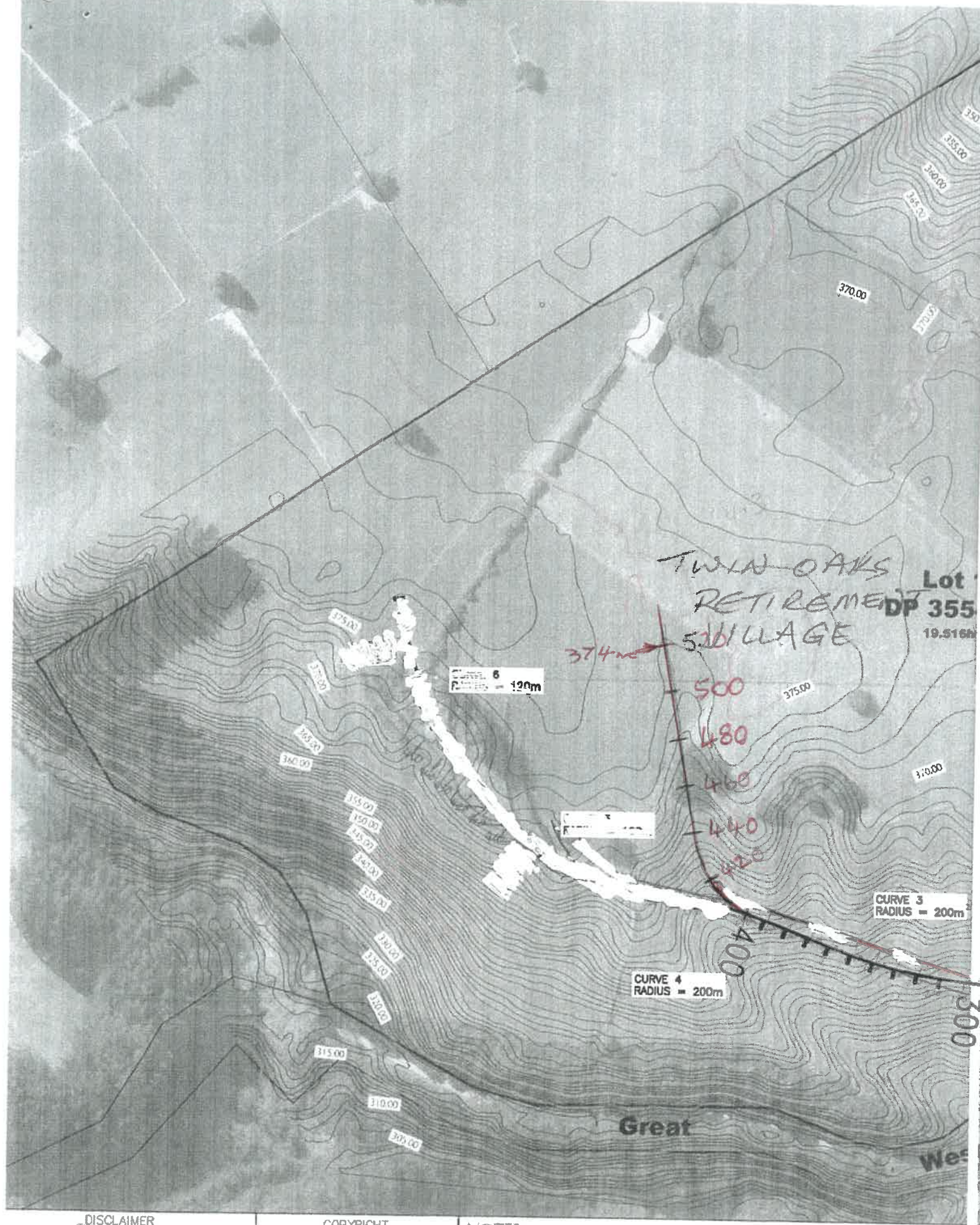
METAL 200m

METAL

SEALED TO  
PUKEHANGY  
RD

RLC ACCESS  
TO W/SUPPLY





**DISCLAIMER**  
Services shown on this plan are indicative only. The Rotorua District Council accepts no responsibility for the accuracy of the detail and location. The contractor shall suit with all appropriate authorities for services information prior to excavation.

**COPYRIGHT**  
This design and drawing is the COPYRIGHT of the ROTORUA DISTRICT COUNCIL, and shall not be reproduced without written permission.  
**SCALE** 1:1500 (ORIGINAL DRAWING SIZE A2)  
**FIELDWORK**  
**DRAWN** G. DAVIDSON 04.02.2013  
**DESIGNED** 03.2013  
**CHECKED** 03.2013

**NOTES:**  
1. Contour interval is 1.0m  
2. Aerial photography flown March 2011  
3. Contours derived from LIDAR data 2006  
300.00 Major contour  
Minor contour

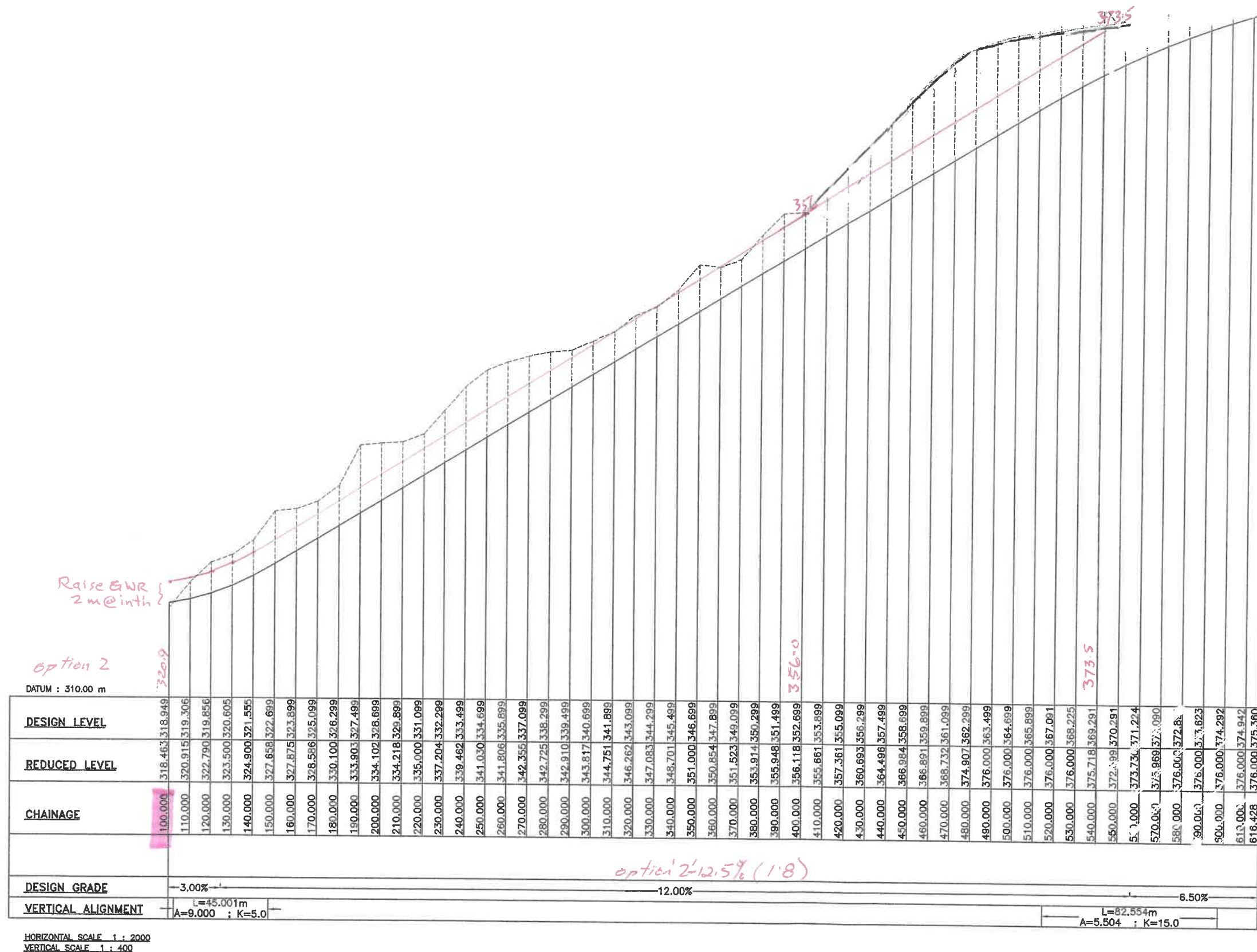
**NOT FOR CONSTRUCTION**  
**OPTION 2 (RED LINE)**  
400-500

**GREAT WEST ROAD ROTORUA**  
**LOT 1 DP 355447 CONTOUR PLAN**

**ROTORUA DISTRICT COUNCIL**  
INFRASTRUCTURE SERVICES  
PRIVATE 360 3026  
ROTORUA 3016  
Telephone 07 348 4199 Facsimile 07 348 4198  
**DESTINATION ROTORUA**  
**DRAWING No. 13858-001**



ORIGINAL SHEET SIZE A3 (420x297) 0 5 10 20 30 40 50 100 mm



DATE : 11/05/15

# WESTERN ACCESS TO MATIPO HEIGHTS

FILE REFERENCE : \\VSLTD\IP150504\PRINTS.DWG\Profile

OPTION 2 (RED LINE)

SCALE : AS SHOWN (A3)

SHEET : 1/1

ORIGINAL SHEET SIZE A3 (420x297)  
100 mm  
50  
40  
30  
20  
10  
0

