D628531.11 CONO

THE RESOURCE MANAGEMENT ACT 1991

SECTION 221 : CONSENT NOTICE

REGARDING:

The subdivision of
Lot 2 DP 142986
and Allotments NE11, SW11,
12 and Part 15
Parish of Mangonui East
Blks VI and X Mangonui SD
North Auckland Registry

PURSUANT to Section 221 and for the purposes of Section 224 of the Resource Management Act 1991, this Consent Notice is issued by the **FAR NORTH DISTRICT COUNCIL** to the effect that conditions described in Schedule 1 below are to be complied with on a continuing basis by the subdividing owner and the subsequent owners after the deposit of the survey plan, and this Notice is to be registered on the new titles, as set out in Schedule 2 herein.

SCHEDULE 1

(1) The olive grove management plan [produced in accordance with condition 2(f)] is to be adhered to by the person responsible for the olive grove management on each new title (as arranged between the allotment owner and the grove management company). A copy of the olive grove management plan shall be given to the purchaser of each new allotment by the consent holder and passed on with any subsequent transfer of the land.

SCHEDULE 2

(1) Condition (1) in Schedule (1) refers to Lots 1 – 4, 18 – 22, 28 – 48 and 50 DP 205071, being contained in Certificates of Title 133B/631 – 133B/661.

SIGNED: P J Killalea

RESOURCE CONSENTS MANAGER for the Far North District Council

DATE: 14th May 2001

SIGNED by

as registered proprietor(s)

in the presence of:

Jenny Taylor

Name

Office Clerk.

Occupation

SCHEDULE 2

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Occupation

OCEAN VIEW OLIVES

Max Beckham
P O Box 562
KAITAIA

PHONE/FAX: (09) 4067 725
MOBILE: (025) 814 961
EMAIL: max.jenny@hyper.net.nz

GROVE MANAGEMENT PLAN

PREPARATION

All ground which is to be planted in olives are deep ripped to 500-600mm deep, rotary hoed, levelled where necessary, power harrowed with packer roller, sown with a rye-clover mixture with a Cambridge Roller seed box method (roll-seed-roll).

SPACING & STAKING

All rows are spaced at 8m x 5m. Stakes either 30x30 Eucalyptus or RS Tanalised pine. All rows are marked with a laser for perfect alignment.

PLANTING

Holes are hand dug into cultivated, newly grassed soil. Trees are planted, and then tied to stake with 25mm poly tube and staples.

FERTILISER

All blocks being planted are soil and leaf tested either by Russell Fransham or a Fertiliser Company Representative. Lime and fertiliser are applied to a two-metre band around each tree. In future years lime, fertiliser, etc will be ground spread over total area (as recommended by consultants).

WEED CONTROL

All weeds are sprayed in a two-metre band from tree with Round-Up. In between rows grass is controlled by mulching bi or tri annually. No hormone sprays to be used and no aerial application. Use low drift nozzles and cone type cover.

PRUNING

Pruning will commence at year two, taking off lower branches and shaping tree as recommended by consultants. Pruning will be done annually or as required.

SELECTION OF TREE VARIETIES

The trees chosen for this development have been carefully selected by studying various varieties in the Far North over the last five years. In the Far North the varieties selected are J5, Leccino, Frantoio and pollinators are Ascalando and Pendelino. A number of these

trees are planted on every block. The pollinators are now not needed because of the three varieties planted, but to maximise yields all J5 varieties are planted with 10% Ascalando pollinators. Leccino variety planted with 10% Pendelino pollinators. There appears to be no advantage planting pollinators with Frantoio. All pollinators selected fruit just as well as our main selection. Any buyer wanting other varieties or pickling type olive will certainly not be discouraged.

SHELTER

Most internal boundaries will be planted with Leyland Cyprus hedging. Hedging will be kept to a manageable height so as not to interfere with neighbouring views.

PEST CONTROL

Rabbits and hares appear to be the olives worst enemy. Night shooting seems the best way to dealing with this. The Calici Virus has been recently released and this should take care of the rabbits. Possums are poisoned with feratox summer and winter over the whole property; this also protects our major planting of native trees.

IRRIGATION

There is no requirement for irrigation of olives but if demand from blocks owners is strong ie. 10 minimum, a bore will be sunk and an irrigation scheme put in place in accordance with Council requirements.

HOUSEHOLD WATER

Tank water collected from house roofs is normal supply but due to enquiries a bore will most likely be drilled down to the aquifer and a scheme put in place.

HARVESTING AND PROCESSING

Year two, three and four olives will be hand picked and processed locally, blending different oils so as to maximise returns for block owners. Year five we should have sufficient olives to purchase our own picking processing press etc.

ALLOTMENT OWNERS ADHERANCE TO MANAGEMENT PLAN

A copy of the Olive Grove Management Plan is to be given to the purchaser of each new allotment by the consent holder and passed on with any subsequent transfer of the land together with the signing of an initial ten year management contract binding owners to annual soil and leaf tests and consultant's six monthly report recommendations implementing such management plan towards success of the whole venture.

There is a "Failure to Perform" clause in the management contract guarding against any owner who may do work on their own Lot not adhering to the Management Plan.

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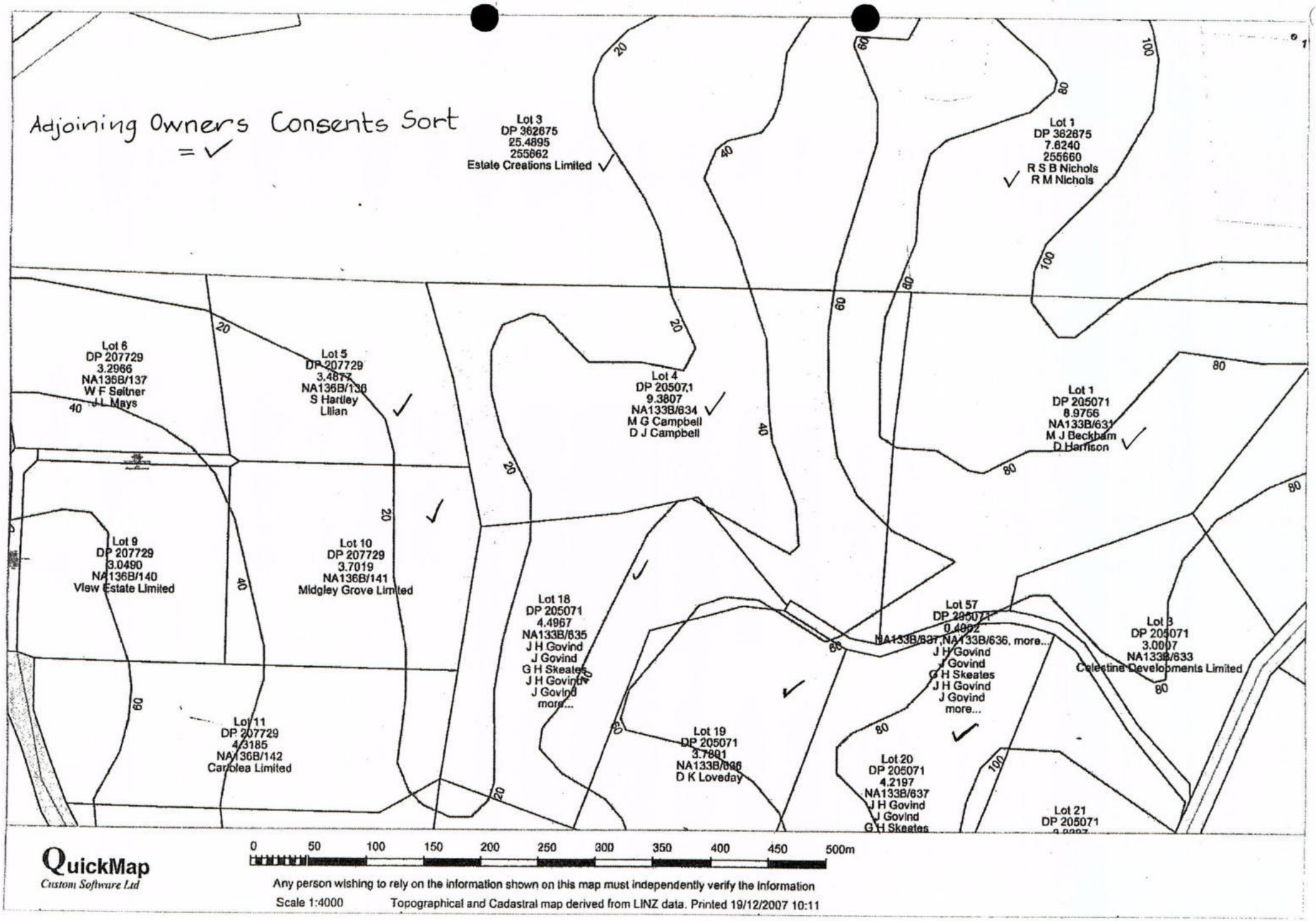
Cadastral Plan / Adjoining Owner's Consents Sort

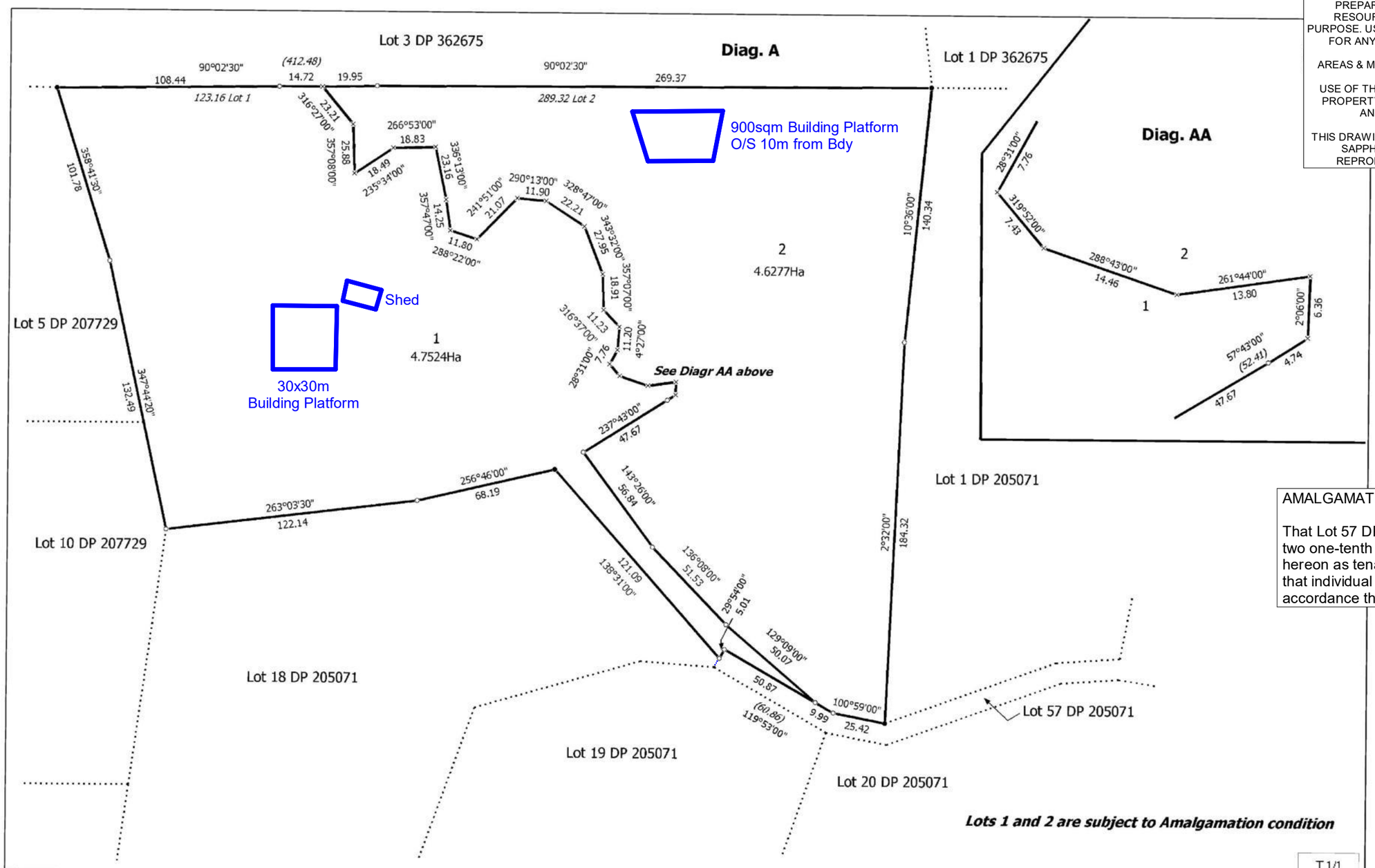

Adjoining Owners Consents Sort
= ✓
Lot 3
DP 362675
25.4895
255662
Estate Creations Limited ✓
Lot 1
DP 362675
7.6240
255660
R S B Nichols
R M Nichols ✓
Lot 6
DP 207729
3.2966
NA136B/137
W F Seltner
J L Mays
Lot 5
DP 207729
3.4877
NA136B/136
S Hartley
Lilian ✓
Lot 4
DP 205071
9.3807
NA133B/634 ✓
M G Campbell
D J Campbell
Lot 1
DP 205071
8.9766
NA133B/631
M J Beckham
D Harrison ✓
Lot 9
DP 207729
3.0490
NA136B/140
View Estate Limited
Lot 10
DP 207729
3.7019
NA136B/141
Midgley Grove Limited ✓
Lot 18
DP 205071
4.4967
NA133B/635
J H Govind
J Govind
G H Skeates
J H Govind
J Govind
more...
Lot 57
DP 205071
0.4902
NA133B/637, NA133B/636, more...
J H Govind
J Govind
G H Skeates
J H Govind
J Govind
more...
Lot 3
DP 205071
3.0007
NA133B/633
Celestine Developments Limited
Lot 11
DP 207729
4.3185
NA136B/142
Carolea Limited
Lot 19
DP 205071
3.7891
NA133B/636
D K Loveday
Lot 20
DP 205071
4.2197
NA133B/637
J H Govind
J Govind
G H Skeates
Lot 21
DP 205071
0 50 100 150 200 250 300 350 400 450 500m
QuickMap
Custom Software Ltd
Any person wishing to rely on the information shown on this map must independently verify the information
Scale 1:4000
Topographical and Cadastral map derived from LINZ data. Printed 19/12/2007 10:11

Attachment 4

THIS PLAN & ACCOMPANYING REPORT(S) HAVE BEEN PREPARED FOR THE PURPOSE OF OBTAINING A RESOURCE CONSENT ONLY AND FOR NO OTHER PURPOSE. USE OF THIS PLAN AND/OR INFORMATION ON IT FOR ANY OTHER PURPOSE IS AT THE USER'S RISK.

AREAS & MEASUREMENTS SUBJECT TO FINAL SURVEY.

USE OF THIS PLAN FOR MARKETTING OR SALE OF THE PROPERTY IS FORBIDDEN UNLESS ACCOMPANIED BY AN APPROVED SUBDIVISION CONSENT.



AMALGAMATION CONDITION (from LT 418515):

That Lot 57 DP 205071 (legal access) be held as to two one-tenth shares by the owners of Lots 1 and 2 hereon as tenants in common in the said shares and that individual Certificates of Title be issues in accordance therewith (Request Reference 755767).

Lots 1 and 2 are subject to Amalgamation condition

T1/1

Land District: North Auckland Digitally Generated Plan Generated on: 18/05/2009 10:47am Page 9 of 9	Lots 1 and 2 Being a Subdivision of Lot 4 DP 205071	Surveyor: Ian Michael Dickey Firm: Country End (Kaitaia) Survey Date: 25/03/2009	Digital Survey Plan LT 418515 Approved on: 18/05/2009

LOCAL AUTHORITY: FAR NORTH DISTRICT COUNCIL

COMPRISED IN: RT 133B/634
TOTAL AREA: 9.3807 HA

PLAN PREPARED FOR: Ocean View Olives Ltd

Sapphire Surveyors Ltd
Surveyors &
Land Development Specialists
Doubtless Bay, NZ
Ph. 09-406-0001
info@sapphiresurveyors.co.nz

Proposed Subdivision of Lot 4 DP 205071 (as per LT 418515) 190d Midgley Rd, Mangonui

Surveyed:			Job Ref 0129S
Drawn:	WW	24/01/2025	
Version:	A		
Status:	Final	24/02/2026	A3 ~ 1:2000
Sheet:	1 of 1		

Digital Survey Plan - LT 418515

Survey Number	LT 418515
Surveyor Reference	Job 171
Surveyor	Ian Michael Dickey
Survey Firm	Country End (Kaitaia)
Surveyor Declaration	I Ian Michael Dickey, being a person entitled to practise as a licensed cadastral surveyor, certify that - (a) The surveys to which this dataset relates are accurate, and were undertaken by me or under my direction in accordance with the Cadastral Survey Act 2002 and the Surveyor-General's Rules for Cadastral Survey 2002/2; (b) This dataset is accurate, and has been created in accordance with that Act and those Rules. Declared on 11/05/2009.

Survey Details

Dataset Description	Lots 1 and 2 Being a Subdivision of Lot 4 DP 205071		
Purpose	LT Subdivision		
Status	Approved as to Survey	**Type**	Survey
Land District	North Auckland	**Survey Class**	Class III Cadastral Survey
Coordinate System	Mount Eden 1949		

Survey Dates

Surveyed Date	25/03/2009	**Certified Date**	11/05/2009
Submitted Date	11/05/2009 15:22:29	**Survey Approval Date**	18/05/2009
Deposit Date			

Referenced Surveys

Survey Number	Land District	Bearing Correction
DP 207729	North Auckland	0°00'00"
DP 362675	North Auckland	0°00'00"
DP 205071	North Auckland	0°00'00"

Territorial Authorities

Far North District

Comprised In

CT NA133B/634

Created Parcels

Parcels	Parcel Intent	Area	CT Reference
Lot 1 Deposited Plan 418515	Fee Simple Title	4.7524 Ha	471251
Lot 2 Deposited Plan 418515	Fee Simple Title	4.6277 Ha	471252
Total Area		9.3801 Ha	

Toitu te Land whenua Information New Zealand

Mark and Observation

Survey Number DP 418515
Coordinate System Mount Eden 1949

From	To	Code	Bearing	Adpt Surv	Distance		Adpt Surv
IT B DP 138817	IS XVI DP 205071	ob2	181°34'10" M		293.81	M	
IS XVI DP 205071	IS 13 DP 418515	ob3	278°13'20" M		70.78	M	
IS 13 DP 418515	IB 12 DP 418515	ob5	261°24'10" M		171.29	M	
IB 12 DP 418515	IS 1 DP 418515	ob7	330°21'40" M		138.18	M	
IS 1 DP 418515	IB 2 DP 418515	ob15	306°12'45" M		170.94	M	
IB 2 DP 418515	IB 3 DP 418515	ob20	347°39'10" M		92.27	M	
IB 3 DP 418515	IT AI DP 205071	ob21	265°33'20" M		97.37	M	
IT AI DP 205071	IT AJ DP 205071	ob22	90°09'30" M		441.18	M	
IT AJ DP 205071	IT B DP 138817	ob27	87°01'20" M		129.54	M	
IB 12 DP 418515	IT AJ DP 205071	ob8	21°19'30" M		324.72	M	
IS XVI DP 205071	IS XI DP 205071	ob4	278°15'00" A	DP 205071	70.78	A	DP 205071
IS XI DP 205071	IB 12 DP 418515	ob28	261°23'00" A	DP 205071	171.31	A	DP 205071
IS 13 DP 418515	IS XI DP 205071	ob6	9°09'00" C		0.04	C	
IS 1 DP 418515	IS 11 DP 418515	ob16	59°47'30" M		48.11	M	
IS 11 DP 418515	IS 10 DP 418515	ob29	309°34'30" M		25.67	M	
IS 10 DP 418515	IB 9 DP 418515	ob31	344°59'40" M		92.03	M	
IB 9 DP 418515	IS 8 DP 418515	ob32	272°05'00" M		44.65	M	
IS 8 DP 418515	IS 7 DP 418515	ob33	336°36'00" M		37.63	M	
IS 7 DP 418515	IS 6 DP 418515	ob34	262°23'00" M		30.15	M	
IS 6 DP 418515	IS 5 DP 418515	ob35	355°58'30" M		18.65	M	
IS 5 DP 418515	IS 4 DP 418515	ob36	290°49'30" M		36.03	M	
IS 4 DP 418515	IB 3 DP 418515	ob38	266°29'30" M		31.25	M	
IT AI DP 205071	IT AK DP 205071	ob23	196°03'30" M		130.60	M	
IT AI DP 205071	PEG 1AI DP 418515	ob24	57°50'00" M		23.70	M	
PEG 1AI DP 418515	PEG 4A DP 418515	ob40	90°02'30" A	DP 205071	108.44	C	
PEG 4A DP 418515	UNMK 20 DP 418515	ob41	90°02'30" A	DP 205071	14.72	C	
UNMK 20 DP 418515	PEG 4B DP 418515	ob63	90°02'30" A	DP 205071	19.95	C	
PEG 4B DP 418515	PEG (1AJ) DP 205071	ob42	90°02'30" A	DP 205071	269.37	C	
PEG (1AJ) DP 205071	IT AJ DP 205071	ob43	147°23'00" M		16.06	M	
IS 4 DP 418515	PEG 4B DP 418515	ob39	84°59'00" M		35.03	M	
IB 12 DP 418515	PEG (XXA) DP 205071	ob9	94°35'00" M		75.72	M	
PEG (XXA) DP 205071	PEG (2AJ) DP 205071	ob44	2°32'00" A	DP 205071	184.32	A	DP 205071
PEG (2AJ) DP 205071	PEG (1AJ) DP 205071	ob45	10°36'00" A	DP 205071	140.34	A	DP 205071
IB 12 DP 418515	PEG XXB DP 418515	ob10	91°22'00" M		50.54	M	
PEG XXB DP 418515	PEG (XXA) DP 205071	ob46	100°59'00" A	DP 205071	25.42	A	DP 205071
IB 12 DP 418515	PEG XXD DP 418515	ob11	355°36'00" M		29.21	M	
PEG XXD DP 418515	PEG XXC DP 418515	ob47	119°53'00" A	DP 205071	50.87	C	

Toitu te Land whenua Information New Zealand

Mark and Observation

Survey Number DP 418515

Coordinate System Mount Eden 1949

From	To	Code	Bearing	Adpt Surv	Distance		Adpt Surv
PEG XXC DP 418515	PEG XXB DP 418515	ob48	119°53'00"	A DP 205071	9.99	C	
IB 12 DP 418515	PEG XXC DP 418515	ob12	84°51'30"	M	42.03	M	
IB 12 DP 418515	PEG XXF DP 418515	ob13	4°54'00"	M	35.51	M	
PEG XXF DP 418515	PEG XXC DP 418515	ob49	129°09'00"	C	50.07	C	
IB 12 DP 418515	PEG 1B DP 418515	ob14	335°44'30"	M	79.55	M	
PEG 1B DP 418515	IS 1 DP 418515	ob50	323°08'30"	M	59.45	M	
PEG 1B DP 418515	PEG XXF DP 418515	ob51	136°08'00"	C	51.53	C	
IS 1 DP 418515	PEG 1A DP 418515	ob17	136°57'00"	M	2.63	M	
PEG 1A DP 418515	PEG 1B DP 418515	ob52	143°26'00"	C	56.84	C	
IS 11 DP 418515	PEG 11A DP 418515	ob30	142°33'00"	M	0.84	M	
PEG 11A DP 418515	PEG 1A DP 418515	ob53	237°43'00"	C	47.67	C	
IS 1 DP 418515	PEG (XXIA) DP 205071	ob18	254°25'00"	M	17.23	M	
PEG (XXIA) DP 205071	IS XXI DP 205071	ob58	156°14'30"	A DP 205071	103.87	A	DP 205071
IS XXI DP 205071	IB 12 DP 418515	ob61	115°21'00"	M	47.69	M	
PEG (XXIA) DP 205071	PEG (XXE) DP 205071	ob59	138°31'00"	A DP 205071	121.09	A	DP 205071
PEG (XXE) DP 205071	PEG XXD DP 418515	ob62	29°54'00"	A DP 205071	5.01	A	DP 205071
PEG (XXIA) DP 205071	PEG (XXIB) DP 205071	ob60	256°46'00"	A DP 205071	68.19	A	DP 205071
PEG (XXIB) DP 205071	PEG (1AL) DP 205071	ob55	263°03'30"	A DP 205071	122.14	A	DP 205071
PEG (1AL) DP 205071	PEG (1AK) DP 205071	ob56	347°44'20"	A DP 205071	132.49	A	DP 205071
PEG (1AK) DP 205071	PEG 1AI DP 418515	ob57	358°41'30"	A DP 205071	101.78	A	DP 205071
PEG 11A DP 418515	UNMK 1 DP 418515	ob54	57°43'00"	C	4.74	C	
UNMK 1 DP 418515	UNMK 2 DP 418515	ob64	2°06'00"	C	6.36	C	
UNMK 2 DP 418515	UNMK 3 DP 418515	ob65	261°44'00"	C	13.80	C	
UNMK 3 DP 418515	UNMK 4 DP 418515	ob66	288°43'00"	C	14.46	C	
UNMK 4 DP 418515	UNMK 5 DP 418515	ob67	319°52'00"	C	7.43	C	
UNMK 5 DP 418515	UNMK 6 DP 418515	ob68	28°31'00"	C	7.76	C	
UNMK 6 DP 418515	UNMK 7 DP 418515	ob69	4°27'00"	C	11.20	C	
UNMK 7 DP 418515	UMNK 8 DP 418515	ob70	316°37'00"	C	11.23	C	
UMNK 8 DP 418515	UNMK 9 DP 418515	ob71	357°07'00"	C	18.91	C	
UNMK 9 DP 418515	UNMK 10 DP 418515	ob72	343°32'00"	C	27.95	C	
UNMK 10 DP 418515	UNMK 11 DP 418515	ob73	328°47'00"	C	22.21	C	
UNMK 11 DP 418515	UNMK 12 DP 418515	ob74	290°13'00"	C	11.90	C	
UNMK 12 DP 418515	UNMK 13 DP 418515	ob75	241°51'00"	C	21.07	C	

Toitu te Land whenua Information New Zealand

Mark and Observation

Survey Number DP 418515

Coordinate System Mount Eden 1949

From	To	Code	Bearing	Adpt Surv	Distance		Adpt Surv
UNMK 13 DP 418515	UNMK 14 DP 418515	ob76	288°22'00"	C	11.80	C	
UNMK 14 DP 418515	UNMK 15 DP 418515	ob77	357°47'00"	C	14.25	C	
UNMK 15 DP 418515	UNMK 16 DP 418515	ob78	336°13'00"	C	23.16	C	
UNMK 16 DP 418515	UNMK 17 DP 418515	ob79	266°53'00"	C	18.83	C	
UNMK 17 DP 418515	UNMK 18 DP 418515	ob80	235°34'00"	C	18.49	C	
UNMK 18 DP 418515	UNMK 19 DP 418515	ob81	357°08'00"	C	25.88	C	
UNMK 19 DP 418515	UNMK 20 DP 418515	ob82	316°27'00"	C	23.21	C	
IT AJ DP 205071	20 RANGIKAPITI	ob26	311°05'45"	M	5,113.01	C	
IT B DP 138817	TARATARA NO 2	ob0	126°15'05"	M	11,222.97	C	
IT B DP 138817	27 KOPUOKAI	ob1	240°30'20"	M	16,020.99	C	
IS 4 DP 418515	PEG 4A DP 418515	ob37	4°18'00"	M	3.09	M	
IB 2 DP 418515	IT AJ DP 205071	ob19	75°55'05"	M	334.42	M	
IT AJ DP 205071	27 KOPUOKAI	ob25	240°17'45"	M	15,905.18	C	

Mark Name	Description
IB 12 DP 418515	Replaces IS XX DP 205071
PEG 1AI DP 418515	OP Reinstated from DP 205071
PEG XXB DP 418515	Position Reinstated DP 205071
PEG XXD DP 418515	Position Reinstated DP 205071

***** End of Report *****

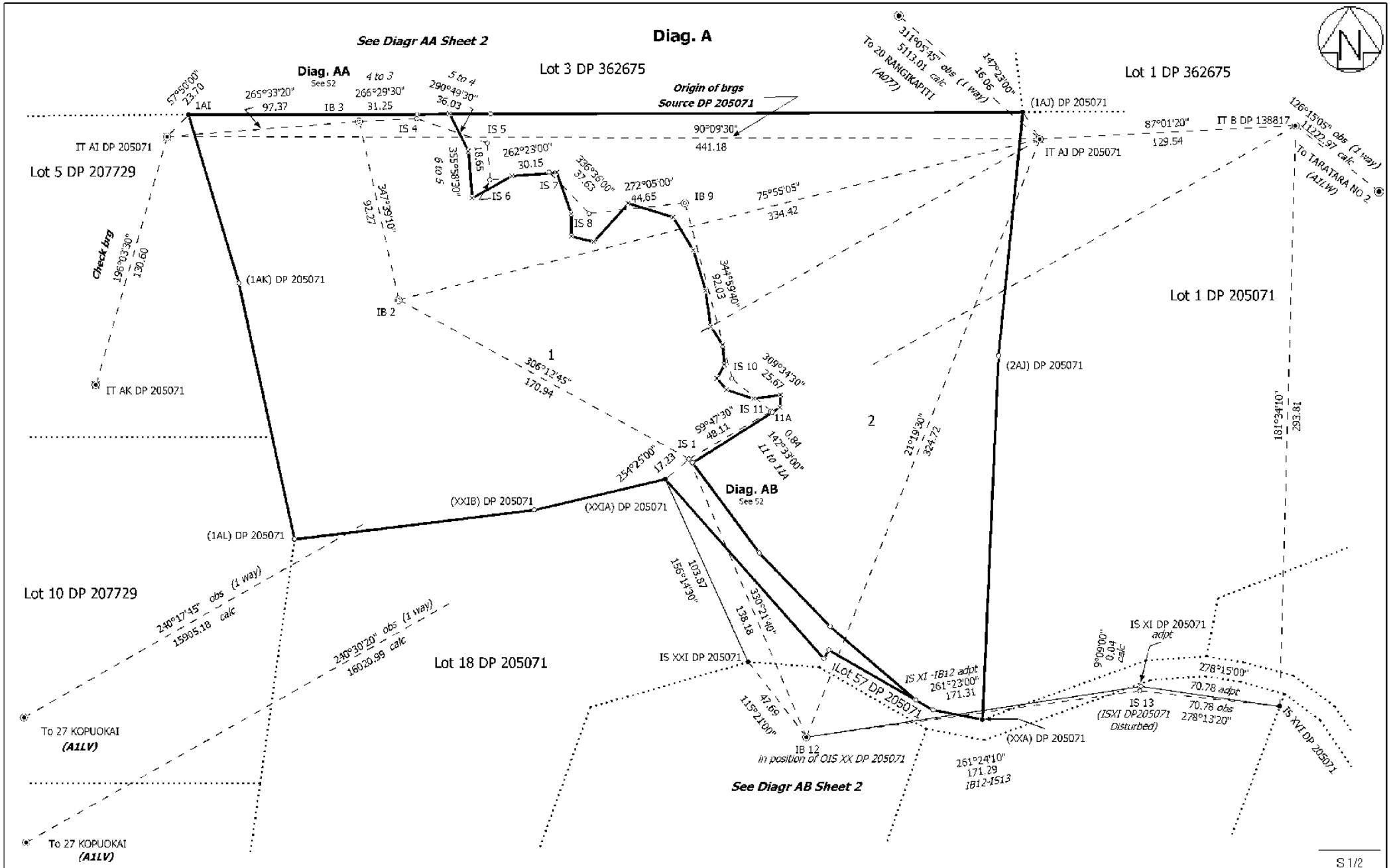
Amalgamation Condition

"That Lot 57 DP 205071 (legal access) be held as to two one-tenth shares by the owners of Lots 1 and Lot 2 hereon as tenants in common in the said shares and that individual Certificates of Title be issued in accordance therewith (Request reference 755767)."

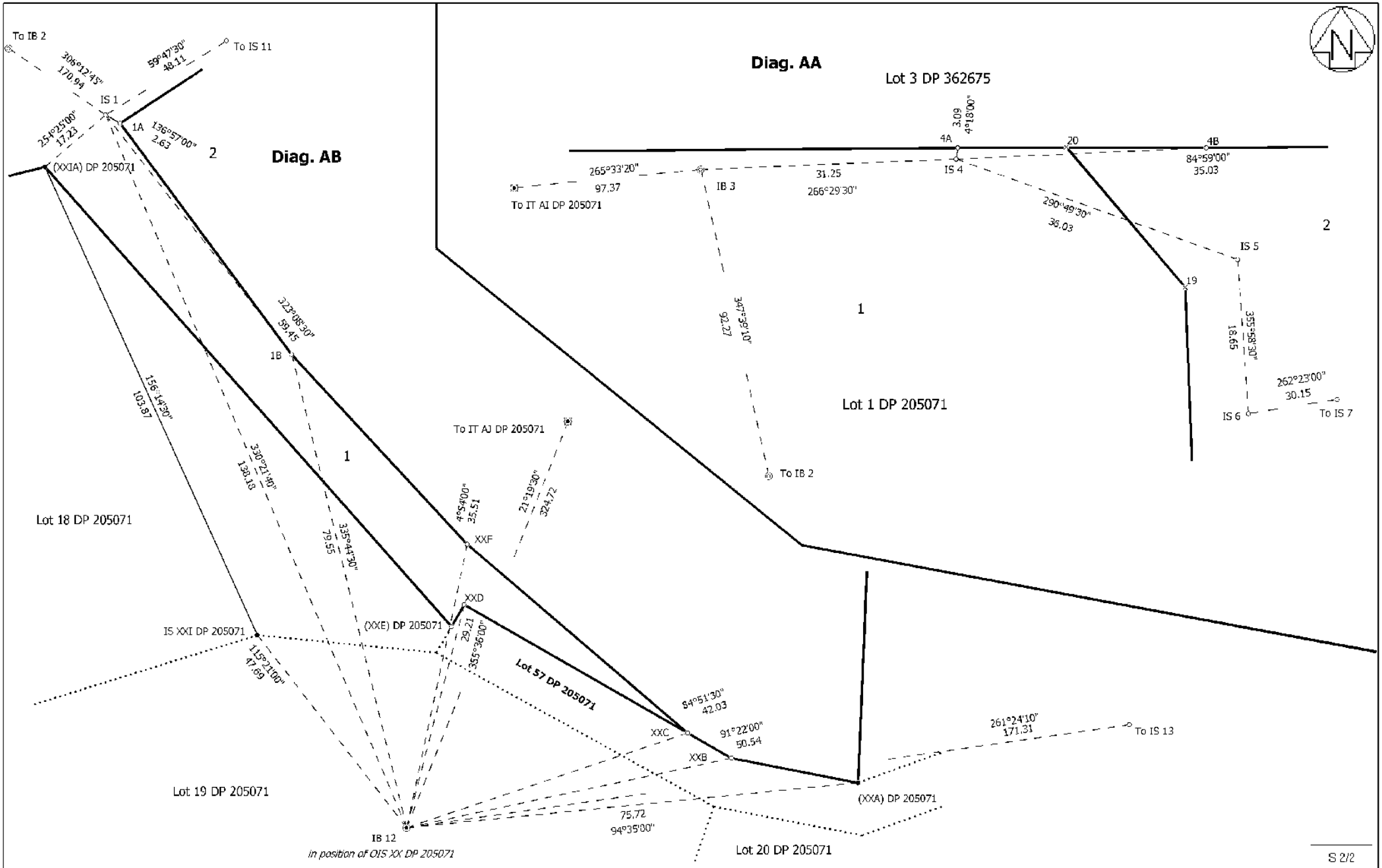
Occupation Note:

For occupation see the field note diagrams on pages 3, 7, 9, 13, 17, & 57.

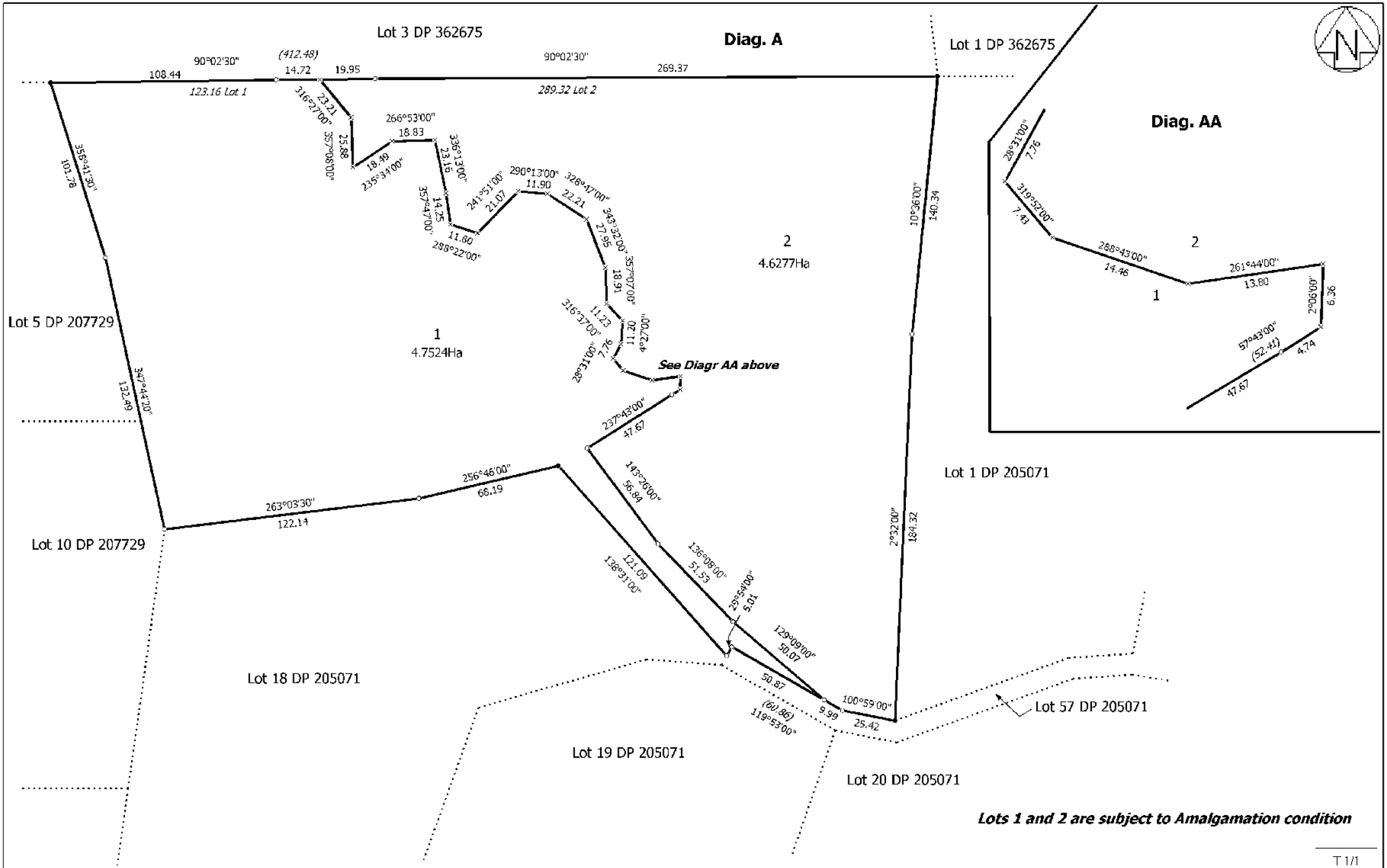
Unless otherwise shown on the above field note diagrams, the new boundary is not fenced.



Land District: North Auckland Digitally Generated Plan Generated on: 18/05/2009 10:47am Page 7 of 9	Lots 1 and 2 Being a Subdivision of Lot 4 DP 205071	Surveyor: Ian Michael Dickey Firm: Country End (Kaitaia) Survey Date: 25/03/2009	Digital Survey Plan LT 418515 Approved on: 18/05/2009



Land District: North Auckland Digitally Generated Plan Generated on: 18/05/2009 10:47am Page 8 of 9	Lots 1 and 2 Being a Subdivision of Lot 4 DP 205071	Surveyor: Ian Michael Dickey Firm: Country End (Kaitaia) Survey Date: 25/03/2009	Digital Survey Plan LT 418515 Approved on: 18/05/2009



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Land District: North Auckland Digitally Generated Plan Generated on: 18/05/2009 10:47am Page 9 of 9	Lots 1 and 2 Being a Subdivision of Lot 4 DP 205071	Surveyor: Ian Michael Dickey Firm: Country End (Kaitaia) Survey Date: 25/03/2009	Digital Survey Plan LT 418515 Approved on: 18/05/2009

Attachment 5

Hawthorn Geddes
engineers & architects ltd

ENGINEERING REPORT FOR RESOURCE CONSENT Rev 2

PREPARED FOR MAX BECKHAM

AT 190D MIDGLEY ROAD, MANGONUI

LOT 4 DP 205071

7 Selwyn Avenue
Whangarei 0110
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ENGINEERING REPORT FOR PROPOSED SUBDIVISION Rev 2

Table of Contents

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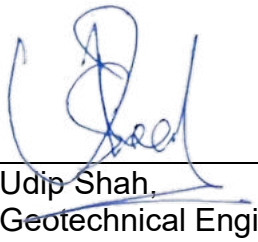

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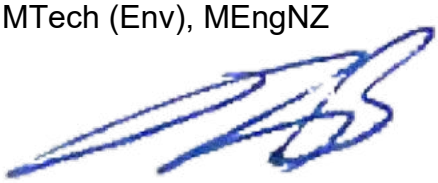

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1. Purpose

The purpose of this report is to present the results of the engineering assessment completed at Lot 4 DP 205071, 190D Midgley Road, Mangonui. This report provides advice for the proposed development on liquefaction damage potential, slope stability, earthworks, on-site wastewater disposal field, and foundation soil conditions.

This report is suitable to support a resource consent application to the Far North District Council (FNDC).

This report replaces the previous version dated 20 May 2025. The only amendment is that the existing dwelling on Lot 1 has been updated to an existing consented boat shed.

2. Executive Summary

This report presents the results of an engineering investigation and assessment completed for the proposed development as described in Section 3 below.

This Executive Summary provides a brief overview of our engineering evaluation for the project and is not intended to replace more detailed information contained elsewhere in this report. A summary of important engineering considerations, our conclusions, and recommendations for the proposed development is as follows:

- **Report Purpose:** to assess the suitability of the subject property for a proposed two-lot subdivision. A building site has been identified within proposed Lots 1 and Lot 2.

- **Geological Unit:** the property is mapped as being underlain by Undifferentiated Tangihua Complex in Northland Allochthon Melange.

- **General Site Topography:** the proposed subdivision is over a ridgeline and associated spurs with a gully traversing along the boundary between proposed Lot 1 and Lot 2.

- **Subsoil Investigation:** Five hand augered boreholes and a test pit were completed on the 24th of February 2025 for lot 2, and five more hand augered boreholes were completed on

the 20th October 2025 for lot 1. The subsoil investigation encountered soils and rock representative of the Undifferentiated Tangihua Complex as mapped by GNS Science.

- **Groundwater:** groundwater transmissions were not encountered within any of the subsoil investigations. No evidence of groundwater transmissions was encountered, and are inferred to be no shallower than 5.0m below ground level during elevated transmission periods.

- **Liquefaction Vulnerability:** not considered vulnerable to liquefaction processes as no sands were encountered during the site subsoil investigation.

- **Static Load Settlement:** Residual soils are not considered susceptible to settlement under the proposed building load.

- **Site Subsoil Class:** Seismic Subsoil Class C, per AS/NZS 1170.5:2004, Amd 2016, Section 3.1.3.1

- **Earthworks:** excavations are expected to be no greater than 3.0m for the formation of a flat building site and the driveway. Fill has significant limitations on where it is able to be used over the property, including where spoil may be placed. Retaining is required to support excavations that are greater than 1.0m high, are unable to be adequately battered, where fill has been used on the driveway where the downslope gradient exceeds 35°, and where fill has been used under the building site.

- **Foundation Options:** shallow or piled foundations are considered appropriate for future residential development within proposed Lot 2, following the completion of the recommended earthworks and retaining. NZS 3604-type foundations are not considered suitable, and specific engineered design is required.

- **Wastewater Disposal Field:** a pressure-compensated dripper irrigation disposal field of some 460m^2 (including a 33% reserve area) is proposed where slopes do not exceed 25°, with an appropriate discharge rate of 3.0mm/day.

- **Stormwater:** stormwater detention control requirements are assessed against the relevant rules of the Far North District Plan. Stormwater disposal from lots shall be to land via a diffuse discharge swale.

3. Purpose

It is proposed to subdivide the subject property into two residential lots (Lot 1 and Lot 2) (Figure A), at 190D Midgley Road, Mangonui, Lot 4 DP 205071. Proposed Lot 2 will have a total area of some 4.6Ha, and Lot 1 will have a total area of some 4.8Ha.

The property does not have a connection to council reticulated wastewater or stormwater networks and therefore will require on-site wastewater disposal and stormwater management.

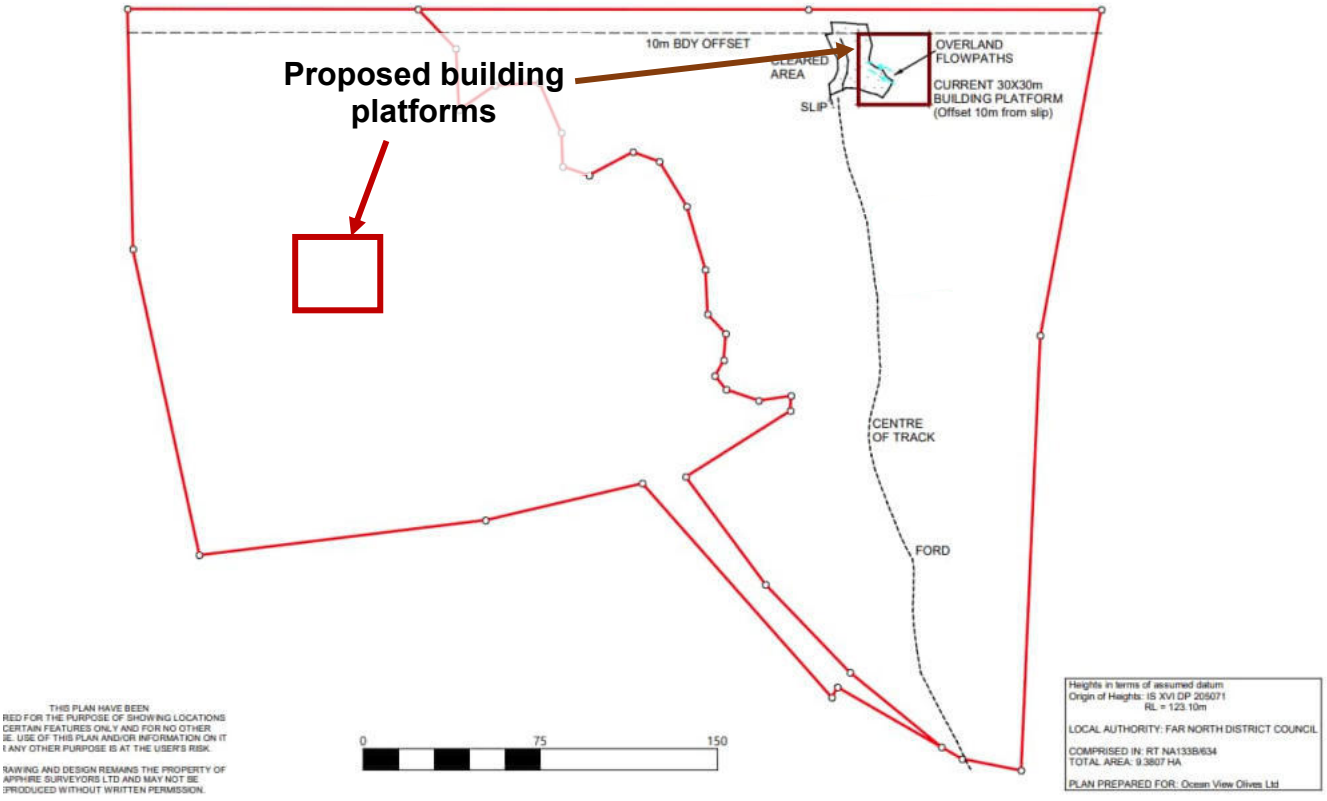

Figure A: Snip of the DRAFT Subdivision Scheme Plan provided by Sapphire Survey Limited, dated 24/01/2025.

4. Site Description

The property is irregular in shape, approximately 9.38Ha in area, located west of Midgley Road, some 400m south of State Highway 10 (SH10), some 700m west of the Oruaiti River and some 3,000m southeast of Mangonui township (Figure B). The site topography of proposed Lot 2 is moderately to steeply sloping, comprising well-established and dense trees and shrubs. There is a stream that traverses from the southeast of the property through to the central northern boundary. Lot 1 is vacant and contains an existing shed. In contrast to Lot 2, Lot 1 has a smaller area of well-established, dense trees and shrubs, which are mainly located along the western and eastern boundaries of the property. A ridge is present through the central portion of the lot, over which the proposed building platform sits. The existing shed sits on a platform to the east, over what appears to be a cut-to-fill operation.

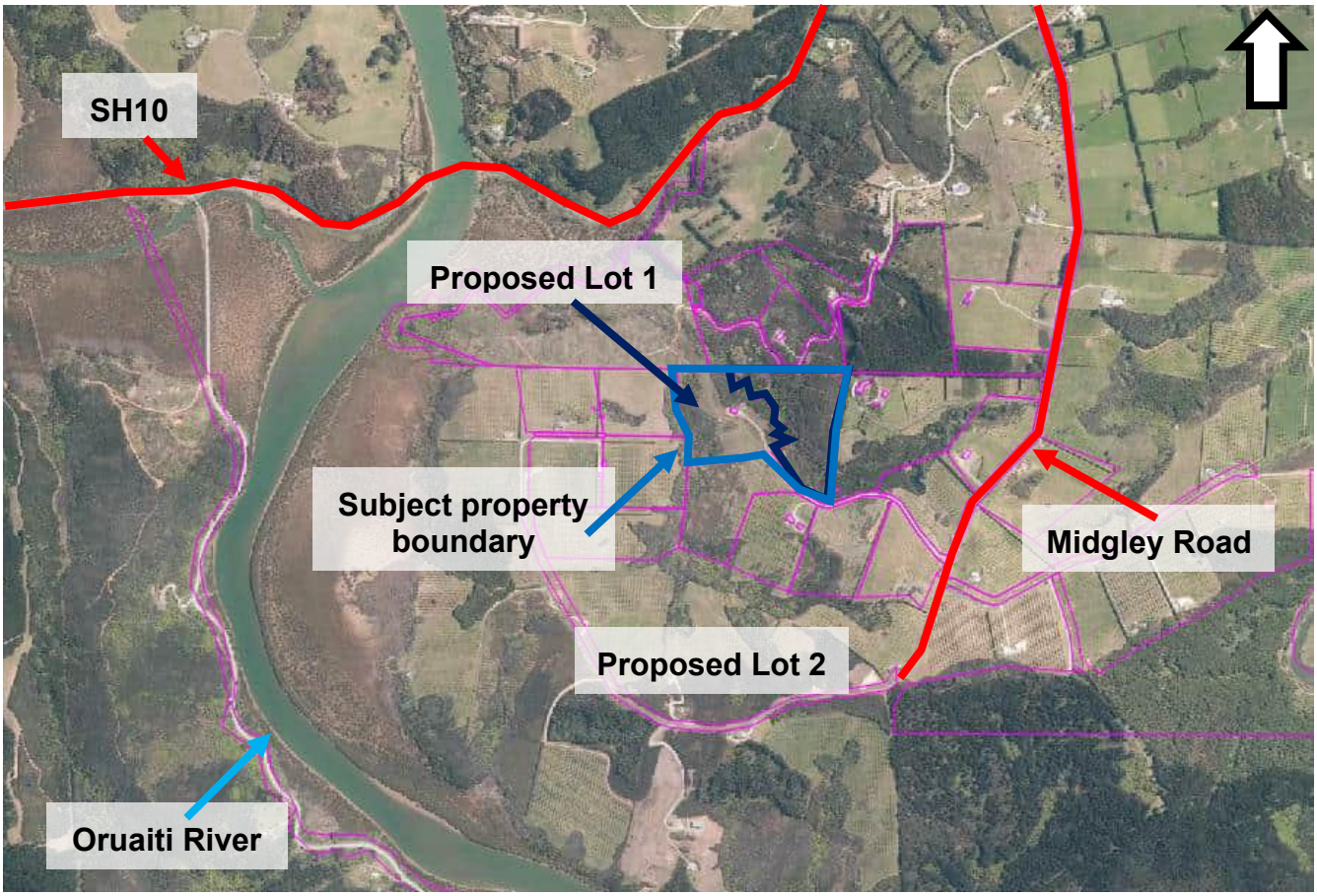

Figure B: Aerial image of the proposed subdivision in relation to its immediate surrounds (source: LINZ Data).

5. Geological Setting

The published geology by GNS Science indicates that the proposed sites are underlain by the Undifferentiated Tangihua Complex (UTC) in Northland Allochthon (Figure C). UTC is typically comprised of basalt pillow lava, with subvolcanic intrusions of basalt, dolerite, and gabbro, with localised siliceous mudstone.

Northwest of the subject property, the published geology suggests the underlying geology is comprised of OIS4-OIS1 (Late Pleistocene to Holocene) estuary, river, and swamp deposits, unconsolidated to poorly consolidated sand, mud and shell deposits (estuarine, lacustrine, swamp, alluvial and colluvial).

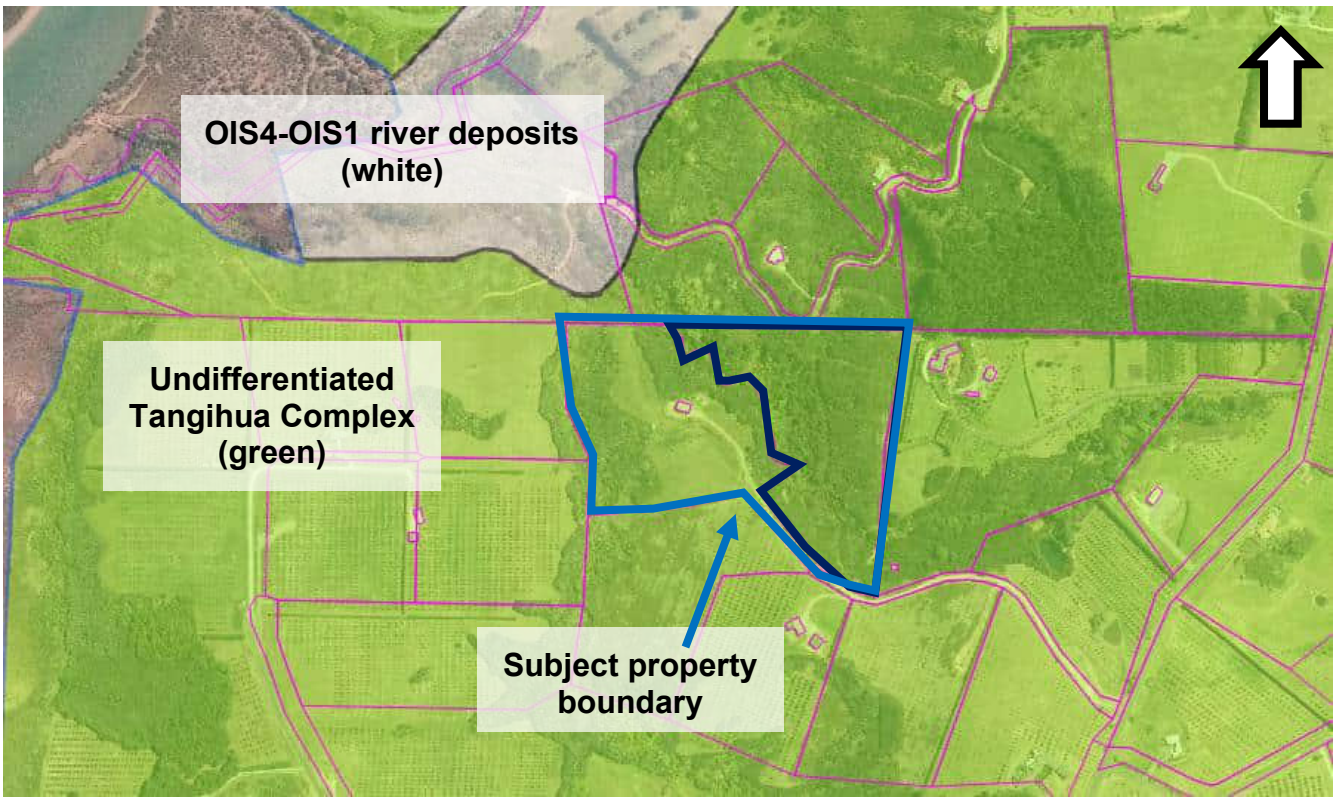

Figure C: Aerial view of the property and its surrounds with the published 250k geological unit overlain (Source: LINZ Data and GNS Science).

6. Geotechnical Investigation

A site-specific subsoil investigation was undertaken on 25 February 2025 for proposed Lot 2, on 20 October 2025 for proposed Lot 1, and on 24 November 2025 following a revised building platform for Lot 2, to determine the quality of the subsoil beneath the proposed building sites and on-site wastewater field. The investigation comprised the following:

- Ten hand augers (HA1 – HA10), seven DCPTs (Dynamic Cone Penetration Tests), and
- Three test pits (TP1-TP3) were excavated by the client with an excavator and logged by Hawthorn Geddes engineers and architects (HGEA).

6.1. Subsoil Investigation (Hand Augered Borehole)

Lot 1

Hand augered boreholes were drilled to depths between 1.0m and 3.0m below ground level (bgl) over the proposed Lot 1. Four DCPTs were completed from the base of HA6, HA7, HA8, and HA10; the results were attained to refusal (≥20 blows/100mm) at a maximum depth of 4.2m bgl. Refusal is inferred to be with the underlying moderately weathered UTC.

The undrained shear strength was measured within the cohesive soils in accordance with the NZGS Guideline for handheld Shear Vane Test. A handheld shear vane was used at nominal 0.3m intervals within all boreholes; the results ranged between 85kPa to 190+kPa.

Groundwater transmissions were not encountered within any of the hand-augered boreholes. Elevated groundwater transmissions are inferred from depths greater than 5.0m bgl; this is based on the absence of wet soils. Normal groundwater transmissions are inferred to be greater than 8.0m deep, due to the property's geomorphology.

Lot 2

Hand augered boreholes (HA1 to HA10) were drilled to depths between1.0m and 2.4m below ground level (bgl). Three DCPTs were completed from the base of HA1, HA3, and HA5, the results were attained to refusal (≥20 blows/100mm OR ≥15 blows/100m is reached three times consecutively) at a maximum depth of 5.1m bgl. Refusal is inferred to be in contact with the underlying moderately weathered UTC.

The undrained shear strengths were measured within the cohesive soils in accordance with the NZGS Guideline for Handheld Shear Vane Test. A handheld shear vane was used at nominal 0.3m intervals within all boreholes; the results ranged between 190kPa and unable to penetrate (UTP). Within the residual soils, the peak shear strengths were typically greater than 200kPa.

During the first subsoil test pit (TP1), which was excavated near the northern boundary of Lot 2, was excavated to a maximum depth of 2.0m bgl was reached, where refusal was encountered. The test pit contained residual UTC soils overlying completely weathered UTC, with refusal encountered over highly weathered UTC. No further test pits were able

to be undertaken due to the presence of dense vegetation. No weak or potential basal shear planes were encountered. On 24 November 2025, a further subsoil investigation was carried out, consisting of two test pits (TP2–TP3) within a proposed building platform that has since been abandoned and was located further south.

Groundwater transmissions were not encountered within any of the hand-augered boreholes. Elevated groundwater transmissions are inferred from depths greater than 5.0m bgl; this is based on the absence of wet soils. Normal groundwater transmissions are inferred to be greater than 8.0m deep, due to the property's geomorphology.

Soils encountered within the hand augered boreholes and test pits were consistent with the published geology by GNS Science of Undifferentiated Tangihua Complex.

Logs of the hand augered boreholes, test pit, and a site plan indicating the hand augered boreholes and test pit locations, are attached to this report.

Each hand augered borehole and test pit is summarised in Table 1 below:

Table 1: Summary of Subsoil Conditions

Hand Augered Borehole / Test Pit	Hand Auger / Test Pit Termination Depth	Scala Penetrometer Termination Depth	Topsoil Depth	Groundwater Depth	Shear Vane Soil Peak Strengths	Scala Penetrometer Raw Data in Natural Ground	Generalised Description
All depths are measured in (m) below the current ground level					min - max		
					kPa	Blows/ 100mm	
HA1	2.2	4.6	0.3	NE	190 – UTP	3 – 16	**Lot 1** **Residual Soil**: brownish red and golden brown silty clay and clayey silts that have moderately plastic to highly plastic. These soils are stiff to very stiff, moist. **Lot 2** **Residual Soil:** reddish brown to golden brown silty clays and clayey silts that have moderate plasticity. These soils are very stiff to hard and range from moist to dry with depth. These soils are considered representative of soils derived from mixed mudstone and basalt. **UTC Rock:** grey or red, fine fabric, weak to moderately strong, ranging from highly to moderately weathered.
HA2	1.9	NM	0.3	NE	UTP	NM	
HA3	2.4	3.4	0.4	NE	85 – UTP	5 – 20	
HA4	1.0	NM	0.2	NE	190+	NM	
HA5	1.9	5.1	0.4	NE	191 – UTP	4 – 17	
HA6	3.0	4.1	NE	NE	88 – 190+	4 – 20	
HA7	3.0	4.2	0.1	NE	95 – 190+	4 – 20	
HA8	3.0	3.8	0.1	NE	102 – 190+	4 – 20	
HA9	1.0	NM	0.1	NE	190+	NM	
HA10	2.0	2.8	0.1	NE	176 – 190+	4 – 20	
TP1	2.0	NM	0.3	NE	170 – 190	NM	
TP2	6.5	NM	NM	NM	196-204+		

Hand Augered Borehole / Test Pit	Hand Auger / Test Pit Termination Depth	Scala Penetrometer Termination Depth	Topsoil Depth	Groundwater Depth	Shear Vane Soil Peak Strengths	Scala Penetrometer Raw Data in Natural Ground	Generalised Description
All depths are measured in (m) below the current ground level					min - max kPa	min - max Blows/ 100mm	
TP3	6.2	NM	NE	NE	160-174	NM	

Table 1 Notes:

NM = not measured, NE = not encountered, UTP = unable to penetrate

6.2. Geological Model

Geological profiles through the proposed building sites are presented below in Figures D and E. The sections show the encountered subsoil depths from hand augered boreholes, test pits, and inferred from DCPT data. It also identifies inferred elevated groundwater transmissions. The locality of this section is identified in the site plan in Appendix A of this report.

The property is underlain by silty clays and clayey silts before transitioning into weak to moderately strong, highly to moderately weathered UTC. The findings of the subsoil investigation are typically consistent with the mapped geology of the area by GNS Science.

Geologic Cross-Section Key							
	Very stiff KVG Soils		Firm KVG Soils		Saprolitic Basalt-Weathered basalt		Waipapa Group

6.2.1. Lot 1

The Lot is underlain by various soils such as silty clay, clayey silt and weathered clay before transitioning into weak to moderately strong, highly weathered UTC. The findings of the

subsoil investigation are typically consistent with the mapped geology of the area by GNS Science.

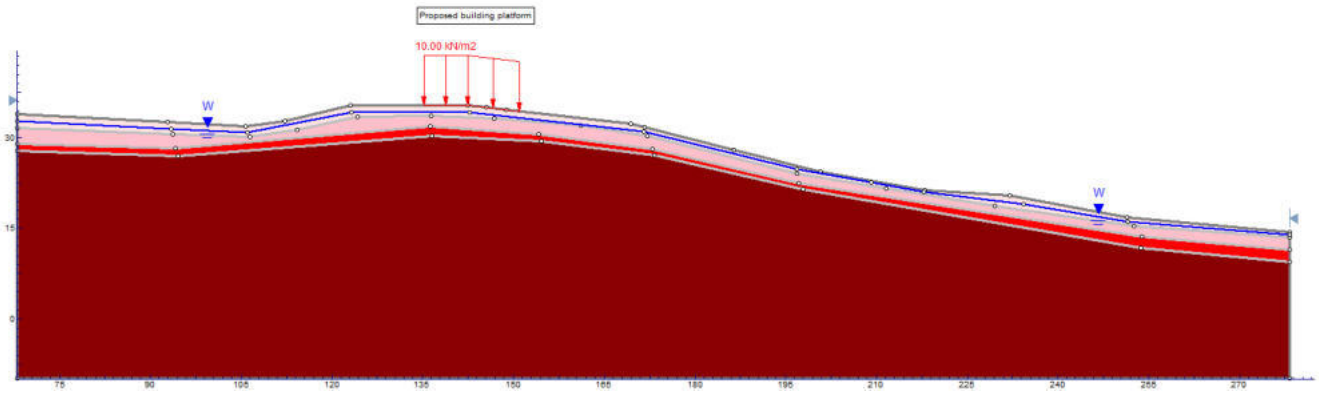

Figure D: Lot 1 geological cross-section c used for slope stability analysis. Conservative elevated groundwater transmissions are illustrated with a blue line. Source (Slide2 input profile).

6.2.2. Lot 2

This Lot is underlain by silty clays and clayey silts before transitioning into weak to moderately strong, highly to moderately weathered UTC. The findings of the subsoil investigation are typically consistent with the mapped geology of the area by GNS Science.

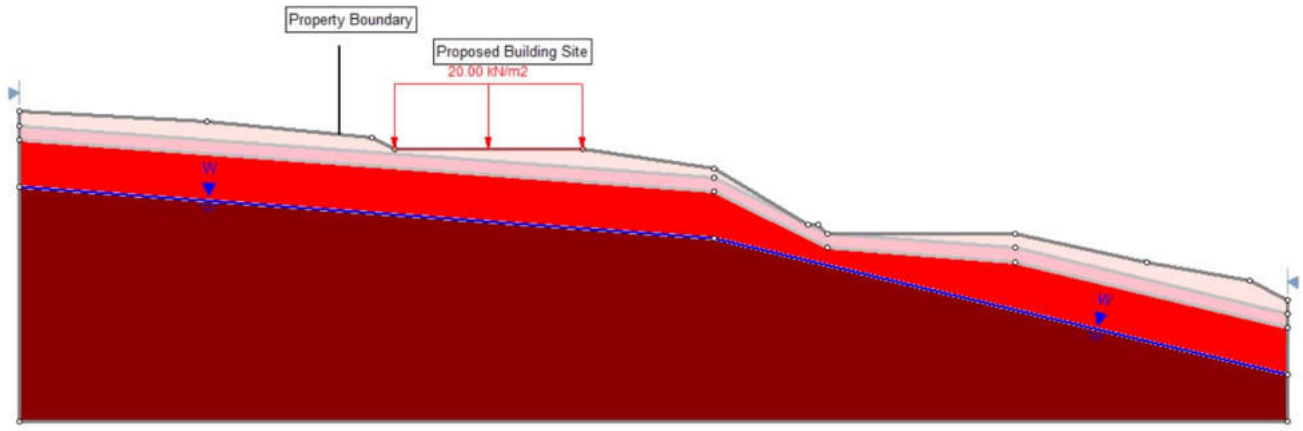

Figure E: Lot 2 geological cross-section A used for slope stability analysis. Conservative elevated groundwater transmissions are illustrated with a blue line. Source (Slide2 input profile).

7. Seismic Subsoil Classification

The results of the investigation indicate the site is Seismic Subsoil Class C, in accordance with AS/NZS 1170.5:2004. This was assessed based on the geological properties measured during our investigation in correlation with AS/NZS 1170.5:2004; (method (d) of the hierarchy for site classification methods, AS/NZS 1170.5:2004, Amd 2014, Section 3.1.3.1).

8. Stability Assessment

Rotational movement is characterised by the detachment and subsequent downslope movement of a mass of soil or rock along a curved or concave failure surface. The triggering mechanism often involves factors such as increased porewater pressure due to heavy rainfall, saturation of the soil matrix, and geological weaknesses, such as the presence of a weak layer or discontinuity within the slope. On the surface, this type of failure manifests as a distinctive concave-shaped head scarp or scar at the uppermost part of the slope, marking the point of initial detachment. Below the head scarp, a displaced slump block forms, featuring an irregular surface morphology. This surface disruption is the result of the non-uniform deposition of material during its downward movement, leading to an observable hummocky or undulating terrain.

Translational slope movement is a type of slope failure where a relatively coherent mass of soil, rock, or debris moves downslope along a nearly planar surface. In simpler terms, it is when a chunk of the hillside breaks away and slides downhill in a fairly flat, sheet-like manner, without much rotation or “tumbling”. This type of movement is typical to occur over a shear plane, whereby there is a notable difference in soil mass and strength.

On a smaller scale, terracettes are evidence of shallow translational movement / planar failure (soil creep/slippage) in the upper 1.0m of soils due to oversaturation, slope oversteepening, and/or soil expansive processes.

8.1. Visual Stability Assessment

A visual stability assessment was undertaken by a Geotechnical Engineer and reviewed by a Chartered Professional Geotechnical Engineer from HGEA. This comprised a detailed site walkover, a review of historical aerial photographs (source: Google Earth and Retro Lens), and a review of available LiDAR data.

8.1.1. Lot 1

The proposed Lot 1 comprises undulating hillside terrain intersected by several gullies, generally sloping towards the northern portion of the property. The site slopes range from gentle to moderately steep, with hillside gradients typically not exceeding approximately 21°. The gullies traverse the site in a south-to-north direction and are bounded by locally steeper slopes of up to approximately 30°.

An existing driveway extends northward from Midgley Road. There is an existing shed on the proposed Lot 1 with an existing unretained cut face formed during previous earthworks.

The cut face is up to approximately 5.0 m in height and is battered at an angle of no steeper than approximately 25°. The cut is located approximately 20 m to 30 m from the proposed building site. At the time of site walkover, the cut face appeared stable, with no visible signs of distress such as slumping or tension cracking.

Figure F: Existing shed and excavation cut face, captured during site walkover (Photo taken on 20th October 2025).

Figure G: A portion of the proposed building platform is situated on the left of the image (Source: HGEA, Dated: 20.10.2025).

8.1.2. Lot 2

The proposed lot 2 is located over a hillside that is typically westward sloping with a stream situated at the base of the gully (Figure H). The stream is located inside the proposed Lot 2 boundary and traverses from the southern property boundary to the north / northwest along the proposed Lot 1 and Lot 2 boundary.

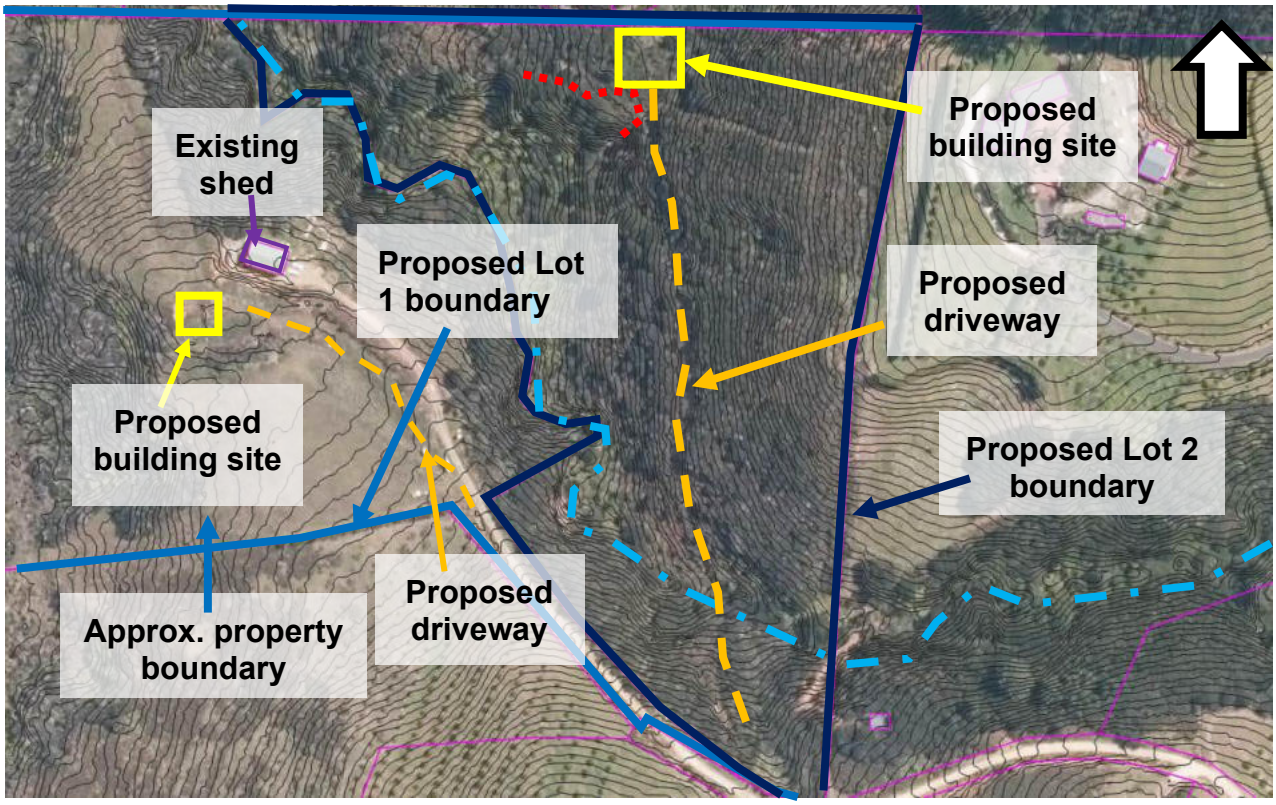

Figure H: Aerial image of proposed Lot 2 with contours at 1.0m intervals (source: LINZ data). The dashed light blue line illustrates the approximate base of the stream. The dotted red line shows the top of the steep slopes.

The proposed Lot 2 building site is situated in the north of the property over a gently sloping area along a ridgeline spur. A stream is situated approximately 60m downslope, and steep slopes are some 10m from the edge of the building site. These steep slopes have been identified in Figure H above, and the area has likely formed from thousands of years of surface water runoff, which has eroded into a small gully. This gully has likely formed from shallow landslides, likely due to oversteepening and water interaction.

The Lot 2 driveway is proposed to extend north from Midgley Road, tracking north down to the stream before traversing up an existing track that has been excavated into the hillside and meets with the proposed building site. The excavations have been formed at near-vertical gradients no greater than 1.5m high, which show signs of expansive processes; however, they show little to no evidence of shallow slope movements. An appropriate location for the driveway with minor retaining has been indicated on the attached site plan in Appendix A.

The hillshade model shown in Figure F below illustrates the surface topography using a digital elevation model (DEM) available from LINZ, to more readily identify any surface movements occurring. Historic rotational and translational landslides are observed over the property where oversteepening has occurred, as close as 10m from the proposed Lot 2 building site. Based on historic aerial imagery, all significant landslides appear to have

occurred at least over 80-years ago, with the last Retrolens image available from 09/04/1948 showing no active movement at that time. No significant global land movements affecting the proposed building site were identified as active during the site walkover.

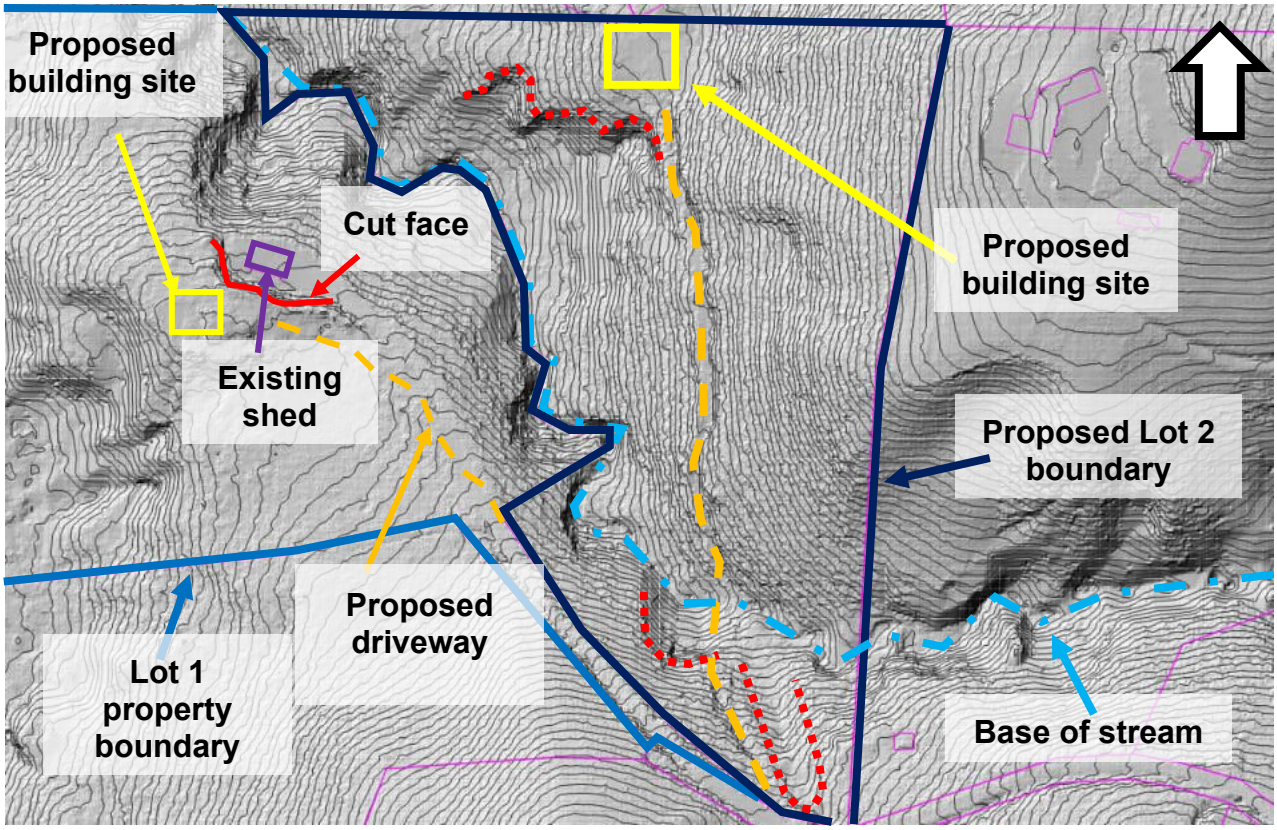

Figure I: Hillshade image of proposed Lot 1 and Lot 2 with contours overlain in 1.0m intervals (source: LINZ data). The dashed orange line illustrates the approximate location of the driveway. The dotted red lines represent the location of steep slopes and the top of historic slips.

Existing excavations to form the track were observed during the site walkover; these were no greater than 1.0m high and originally formed in 2006 (based on Google Earth historic images). The excavations are battered at approximately 45° and show no evidence of slumping or slippage (Figure J). There is evidence of weathering creating cracking within the upper 200mm of the surface, likely as a result of shrink/swell processes.

Figure J: Photo taken of excavations used to make the existing track, which is to become a driveway.

Terracettes were not observed within the property or over nearby properties. It is noted that due to the underlying soils being volcanic in nature, the shrink/swell soil process and the associated shallow soil slippage are not likely to occur.

8.2. Numerical Analysis

A numerical slope stability analysis has been undertaken to determine the Factor of Safety (FoS) against sliding for the proposed building site. The cross-section used for the analysis has been adopted from available LiDAR data; these cross-sections are illustrated in Figure K below.

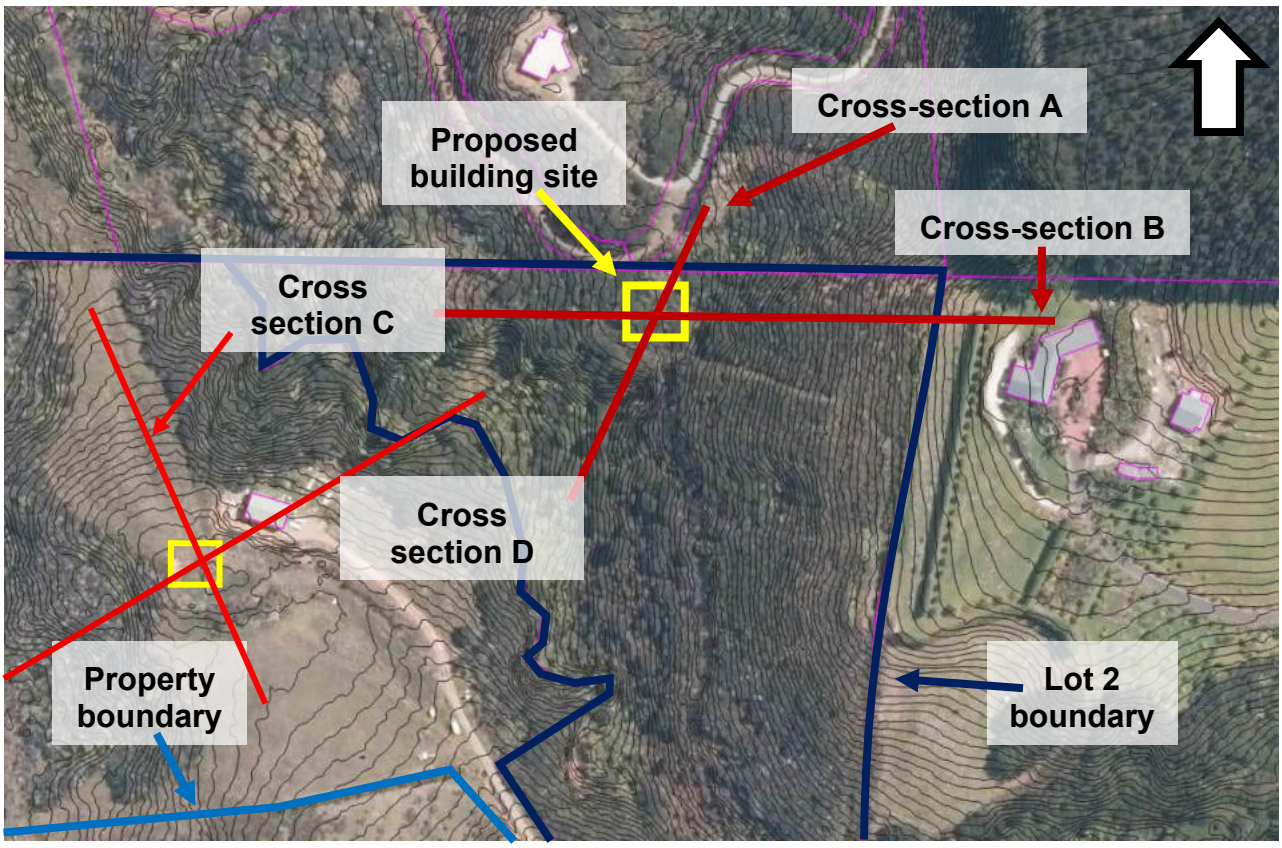

Figure K: Aerial image of the proposed Lot 2 boundary with the stability cross-sections illustrated (source: LINZ data).

Global stability is defined as the large-scale instability of the site where the critical failure plane intercepts the proposed building site. Local stability relates to smaller slippage of localised steep slopes and excavation batters, in relation to the proposed building site.

The numerical analysis presented in this report was completed using RocScience Slide2 and the Morgenstern-Price slope model, to assess the global and local stability of the proposed development through the nominated building site.

To ensure the parameters and methods used are critical representations, a sensitivity analysis was conducted.

Three load cases/slope conditions; these are:

1. Normal groundwater conditions (NGWT),

2. Elevated groundwater conditions (EGWT), and

3. Seismic with normal groundwater conditions (DCLS).

The Mohr-Coulomb (MC) engineering soil parameters of the subsoil conditions were derived from prior experience with UTC soils. A back analysis was not undertaken; however, conservative strength parameters were adopted to account for any defects and/or discontinuities within the rock fabric.

Soil lithology and depth for the forward analysis have been inferred based on site topography and profiles encountered in the subsoil investigation, inferring (post-earthworks) slope conditions. The calibrated MC soil parameters used for this analysis are summarised in Table 2 below:

Table 2: Calibrated Mohr-Coulomb Soil Parameters

Soil Description	Soil Unit Weight (ɣ)	Effective Cohesion (c')	Effective Friction Angle (ϕ')
	kN/m^3	kPa	Degrees
Residual UTC Soil Silty clay, very stiff to hard	18	2	24
Completely Weathered UTC	19	3	28
Highly Weathered UTC	20	5	32
Moderately Weathered UTC	21	8	38

For an IL2 structure, a DCLS level seismic event should be adopted to model a minimum seismicity event in areas with a perceived low seismic potential, such as the subject property. This is recommended within the NZ Bridge Manual (SP/M/022) and adopted for use within residential properties as standard engineering practice.

The analysis criteria adopted herein are based on standard engineering practice. This requires a minimum FoS against sliding of 1.5 to be achieved for normal groundwater conditions, 1.3 for extreme groundwater conditions (undrained) and 1.0 for a DCLS level seismic event.

Peak ground acceleration (PGA) and magnitude for this analysis have been adopted from Table A1, Appendix A of the MBIE/NZGS Earthquake Geotechnical Engineering Practice Module 1, 2021. Input parameters for the liquefaction assessment are summarised in Table 3 below:

Table 3: Liquefaction Assessment Input Parameters

Importance Level	Limit State	Probability of Exceedance (per annum)	PGA	Earthquake Magnitude
2	DCLS	Undefined (>1,500)	0.19	6.5

Initial slope modelling was undertaken to ascertain the most appropriate balance of earthworks, drainage, and slope mitigation required for the proposed development; referred to herein as the 'proposed' slope conditions.

A 30m x 30m building site has been assessed with a 10kPa surcharge load to represent the potential infrastructure constructed over a flat building platform, entirely within excavation. Excavations are not expected to be greater than 3.0m with retaining walls required where excavations exceed 1.0m high and are unable to be adequately battered.

Groundwater has conservatively been modelled at 3.0m bgl for elevated conditions and at 5.0m bgl for normal conditions. Actual groundwater transmissions (elevated and normal) are likely deeper than 5.0m bgl due to an absence of evidence in the upper 3.0m, geology, and the site topography.

Results of our numerical slope stability analysis are presented in Table 4 below:

Table 4: Assessed Critical FoS of Different Conditions

Cross-Section (Lot)	Condition	Existing FoS	Proposed FoS
Lot 2 Cross-Section A Northeast to southwest	Normal Groundwater Transmissions	>1.5	>1.5
	Elevated Groundwater Transmissions	>1.5	>1.5
	Seismic - DCLS	1.31	1.32
Lot 2 Cross-Section B East to west	Normal Groundwater Transmissions	>1.5	>1.5
	Elevated Groundwater Transmissions	1.26	1.45
	Seismic - DCLS	1.12	1.12
Lot 1 Cross-Section C South to North	Normal Groundwater Transmissions	2.10	2.10
	Elevated Groundwater Transmissions	3.18	3.18

	Seismic - DCLS	1.56	1.56
Lot 1 Cross-Section D West to east	Normal Groundwater Transmissions	<1.5	1.78
	Elevated Groundwater Transmissions	<1.3	1.3
	Seismic - DCLS	<1.0	1.17

Table 4 Notes:

- The FoS presented above has been rounded to the nearest two decimal places.

Results of our numerical stability analyses indicate that the FoS against rotational and/or translational failure for existing slopes near and/or beneath the proposed building sites is appropriate for the proposed subdivision, subject to adequate drainage, battering of excavations, setbacks from slopes >35° of ≥10.0m, and retaining where necessary.

Results of our analysis indicate that the western slopes beneath the proposed Lot 1 building site are of marginal slope stability, and in-ground pile-type retaining will be required to ensure slope regression towards the building platform does not occur. Slopes to the east, between the building platform and shed, will require retaining, such as rock buttressing, to protect slopes from erosion and slumping.

Results of the sensitivity analyses indicate that site conditions are sensitive to changes in load, groundwater transmissions, and proximity to slopes greater than 35° without retaining.

The FoS for the proposed building platforms, as described above, is compliant with the current standard engineering practice.

8.2.1. Risk assessment (NPS NH 2025)

A risk assessment has been completed for the natural hazard, land instability, for both proposed lots, in accordance with the NPS-NH 2025 risk framework, which requires risk to be assessed using likelihood (Table 1) and consequence (Table 2), and to consider existing/proposed mitigation measures and residual risk.

Risk has been assessed for the three stability conditions adopted in the numerical modelling:

- NGWL
- EGWL
- DCLS seismic event

8.2.1.1. Initial (pre-mitigation) slope stability risk

Table 5: Initial risk summary

Condition	Likelihood	Consequence	Risk
NGWL	Almost certain	Negligible	Low
EGWL	Possible	Minor	Medium
DCLS seismic	Unlikely	Moderate	Medium

NGWL (Low):
Shallow creep/terracettes are not evident across the site, with the ridgeline formed from volcanic soils, showing no signs of active slope movement. Building platforms are ~10 m from all steep slopes, or shall be retained. The building platform itself is globally stable in the modelled current condition (FoS ~> 1.5 NGWL). Accordingly, the expected consequence to the development under normal groundwater conditions is negligible.

EGWL (Medium):
Under elevated groundwater conditions, the platform remains globally stable (FoS ~>1.3 EGWL). However, excavation and fill batters, in the short term, before vegetation establishment, may be subject to wetting front and local, shallow instability.

DCLS seismic (Medium):
For the platform areas, the modelled FoS is ~1.17+ under DCLS shaking.

8.2.1.2. Residual (post-mitigation) slope stability risk

Residual risk has been assessed assuming the recommended stabilisation protection and water management measures are implemented, noting the NPS-NH requirement to consider mitigation and residual risk.

The relevant recommendations include: earthworks, battering, drainage, in-ground pile-type retaining walls, and steep slope setbacks.

Table 6: Residual risk summary (post-recommended works)

Condition	Likelihood	Consequence	Risk
NGWL	Almost certain	Negligible	Low
EGWL	Possible	Negligible	Low
DCLS seismic	Unlikely	Minor	Low

NGWL (Low)::
The likelihood of minor surficial processes remains, but consequences to the development remain negligible for the reasons above (setback, no amplification expected, and global platform stability).

EGWL (Low):
The recommended earthworks batters, planting, setbacks and retaining directly target the credible EGWL instability mechanism (weathering/erosion and shallow degradation of exposed batters), reducing the likely extent of movement and the repair implications. Controlled stormwater discharge reduces runoff-driven erosion/scour and shallow

instability drivers. Accordingly, while wet periods still occur (likelihood unchanged), the expected consequence for the development is negligible.

DCLS seismic (Low):
Seismic shaking likelihood is unchanged.

9. Liquefaction Assessment

Liquefaction is a phenomenon where saturated low plasticity soils lose strength due to high pore pressure development during earthquake shaking. This generally occurs in loose to medium dense, cohesionless soils such as sand and other river-deposited non-plastic silts, most common in low-lying and coastal areas with associated high groundwater transmissions. Liquefaction of near-surface soils typically results in surface cracking, dislocation, ground deformation, and lateral spreading.

Results of our subsoil investigation found the nominated building sites to be underlain by cohesive silty clay, before transitioning into weathered bedrock, which was inferred from depths of 1.0m bgl. These soils are normally consolidated with no significant sands present within any of the hand-augered boreholes.

Hand augered boreholes, shear vanes, and DCPTs were undertaken in correspondence with a ‘Level B’ calibrated desktop assessment of liquefaction risk, as per the Planning and Engineering Guidance released by EQC, MBIE, and MfE in 2017 (PEG 2017). The assessment was completed to provide a significant reduction in the uncertainty level of liquefaction-related risks. The area was determined to be subject to very low liquefaction risks.

No numerical analysis has been undertaken.

10. Static Settlement

Consolidation settlement is the process of excess porewater pressure dissipation, whereby when a load is applied to a soil structure, the load is initially taken up by the porewater pressure and gradually transferred to the soil structure. This process results in the consolidation of the soil structure over time, referred to as ‘primary consolidation settlement’.

Creep settlement occurs over an extensive period and is the re-adjustment of soil particles under constant load, generally commencing once all excess pore water pressure dissipates (at the end of consolidation settlement), referred to as ‘secondary settlement’.

The nominated building sites are typically underlain by silty clay; these soils are typically very stiff to hard and normally consolidated, with low susceptibility to consolidation under load, such as the proposed infrastructure up to 20kPa.

11. Stormwater

As per section 8.6.5.1.3 of the Far North District Plan, the proposed activity will be a permitted activity in relation to the impervious coverage if the proposed impermeable surface areas are less than 15% of the net site area. The proposed lot sizes are at least 4.6Ha, and therefore it is highly unlikely that the stormwater detention controls will be required (attenuation required only if proposed impervious coverage exceeds 6900m^2 per lot). At the building consent stage, if the proposed impervious coverage exceeds 15% of the net site area, then site specific attenuation design is required.

Stormwater disposal from lots shall be to land via a diffuse discharge swale. The diffuse swale is to be located downslope of the effluent disposal field and is to follow the contours of the land. To disperse the flows at a rate of 1ℓ/s or less per metre length of the swale, it is calculated that a 2m (minimum) length of diffuse swale will be required for every 100m² of unattenuated impervious area on the site, discharging to the diffuse swale.

12. On-site Effluent Field Soil Assessment

An assessment of the near-surface soils was undertaken during our site investigation. Soils on the property have been assessed for on-site effluent disposal in terms of the Proposed Regional Plan (PRP) for Northland 2024 and AS/NZS 1547:2012.

The soils over the site have been identified as Light Clays, or Category 5 in terms of Table 5.2 of AS/NZS 1547:2012 (Table 5 below). We recommend secondary treated effluent be discharged via Pressure Compensated Dripper Irrigation (PCDI) lines, with a design rate of 3mm/day, which is considered appropriate for this soil type. Table 5 below doesn't consider the installation of standard or full water reduction features, which should be assessed at building consent.

Table 5: Summary of Effluent Field Sizing

No of Potential Bedrooms	4
Design Occupancy (Based on Bedrooms)	7
Tank Water Supply	180ℓ/person/day
Total Effluent	1,260ℓ/person/day
Soil Category (AS/NZ 1547:2012)	5
Design Irrigation Rate	3mm/day
Irrigation Area Required	420m²
Reserve Area Required (33%)	140m²

Total Area	560m²

There are limited areas for a discharge and reserve field, with appropriate separation distances from boundaries, over slopes less than 25°, and a setback of a minimum 15m from slopes that are greater than 25° (illustrated in Figure 1, Appendix A of this report). The wastewater disposal field is situated over slopes that have a potential for a high volume of surface water runoff, we recommend installing an impermeable bund upslope of the wastewater disposal field to divert surface water runoff.

The PCDI lines are proposed to be laid along the ground within the well-established bush area. The dripper lines shall be covered in a minimum 0.2m of good quality topsoil / mulch and may be further planted with approved plant species to aid in evapotranspiration. A list of appropriate plant species to plant the wastewater disposal field can be found at:

https://www.nrc.govt.nz/resource-library-summary/publications/waste/septic-tanks-and-sewerage-systems/suitable-plants-for-effluent-disposal-areas/

Table 6: PRP for Northland 2024 C.6.1.3 Permitted Activity Requirements

NRP Permitted Activity Requirement	Proposed Means of Compliance	Requirement Met?
The system is designed in accordance with AS/NZS 1547:2012 'On-site Domestic Wastewater Management'	System to be designed to AS/NZS 1547:2012	✓
The maximum discharge volume of effluent is <3m^3/day	<3m^3 is proposed to be discharged	✓
The disposal field is not over slopes that exceed 25°	All disposal field slopes shall be <25°	✓
Irrigation lines are covered by >100mm of topsoil/mulch / bark	PCDI lines shall be covered in 200mm of topsoil/mulch / bark	✓
Provide a 30% reserve field area	33% reserve area required	✓
The on-site effluent system is maintained and operating effectively at all times	A maintenance agreement for treatment and disposal systems shall be supplied during BC	✓
Discharge does not contaminate any groundwater or surface water supply	The location of the disposal field complies with the permitted activity setback rules	✓

No surface water runoff or ponding of discharged wastewater	Recommended daily irrigation rate will ensure compliance	✓
No offensive / objectionable odour beyond the property boundary	Appropriate setback distances have been maintained	✓

Table 7: PRP for Northland 2024 Table 9 - Exclusion Areas and Setback Distances

Feature	PRP 2024 Requirement	Provided / Proposed	Requirement Met?
Exclusion Areas			
Floodplain	5% annual exceedance probability	No area of the properties is within a floodplain	✓
Horizontal Setback Distances			
Identified stormwater flow path (incl. a formed road with kerb and channel, and water table drain) that is down-slope of the disposal area	5.0m	>5.0m	✓
River / lake / stream / pond / dam / natural wetland	15m	>15m	✓
Coastal marine area	15m	Not relevant	✓
Existing water supply bore	20m	>20m	✓
Property boundary	1.5m	>1.5m	✓
Vertical Setback Distances			
Winter groundwater table	>0.6m	Elevated groundwater transmissions no shallower than 2.0m bgl	✓

13. Recommendations and Conclusions

13.1. Liquefaction

Results of our subsoil investigation found the property to be underlain by cohesive soils, comprising very stiff to hard silty clay overlying normally consolidated, completely to moderately weathered bedrock belonging to the Undifferentiated Tangihua Complex.

A 'Level B' liquefaction assessment was completed to reduce the uncertainty of liquefaction-related risks. Ground damage induced by an earthquake or similar shaking has a >85% likelihood of not occurring at this site. Winter groundwater levels are approximated to be no shallower than 2.0m deep based on an absence of soil evidence; however, they are expected to be much deeper.

This site is considered to have very low liquefaction vulnerability in areas that underwent a subsoil investigation, and liquefaction is considered unlikely to occur in all other areas, as established from PEG 2017.

13.2. Stability

The proposed subdivision comprises two ridgelines separated by a gully that hosts a stream at its base. The proposed Lot 2 building site is situated over the gentle to moderate slopes of the eastern ridgeline, with gradients ranging up to 15°; typically, gradients average 5°. The gully has been historically incised to form gradients up to 45°, and the proposed building site has been suitably setback from these very steep slopes. Lot 1 is positioned over a local spur/knoll above the existing shed site.

The property slopes are assessed to have formed as a result of historic tectonic movement, historic stream incision of the gully, and surface water runoff erosion. Terracettes were not observed within the property or in nearby properties, where slopes exceeded 35° (1V:1.5H) from surface water interactions or stream incisions; shallow slumps were observed.

A suitable building site has been identified on both Lots over existing slopes that are no greater than 15°, situated more than 10.0m from slopes ≥35°. These platforms shall be formed almost entirely within excavations with limitations on filling. The proposed Lot 2 building site has been adequately setback a minimum of 10.0m from slopes exceeding 35°, to isolate from future slippage. Results of our analysis indicate that the western slopes beneath the proposed Lot 1 building site are of marginal slope stability, and in-ground pile-type retaining will be required to ensure slope regression towards the building platform does not occur. Slopes to the east, between the building platform and shed, will require retaining, such as rock buttressing, to protect slopes from erosion and slumping.

In general, the governing load case for the numerical stability analysis undertaken was elevated groundwater conditions.

The stability assessment herein has been undertaken assuming a lightweight, flexible, single-storey type dwelling, found over NZS3604-type shallow foundations. An additional engineering assessment shall be undertaken at the Building Consent stage by a geo-

professional engaged by the future landowner, specific to the proposed development design at that time.

Results of our numerical stability assessment found the FoS against sliding for the proposed building sites to be appropriate to meet the industry standard requirements for normal and elevated groundwater transmissions, and during/following a DCLS level seismic event.

Refer to Figure 01, Appendix A, for the location of the assessed building sites. Please note that the identified building sites in this figure are the ONLY locations that have been assessed for suitability on each of the proposed Lots.

Following our conclusions and recommendations, the proposed building sites are considered unlikely to be subject to future or ongoing erosion/slippage. These are as follows:

- Surface water runoff shall be controlled over the proposed building site and the driveway. Formalised drainage shall be required to divert surface water runoff away from the retaining walls, excavations, and slopes greater than 35°. Any installed surface water drainage shall discharge downslope of the proposed building sites and driveway, over a minimum 10m long diffuse level spreader or a 1m x 1m rock apron to decrease the effect of soil erosion, which can increase the instability of the wider property. All discharge points shall be a minimum of 20m downslope of the building site and driveway.

- No stormwater discharge is to be reliant on soakage due to the nature of the residual soils.

- The driveways need to be formalised and formed to extend off Mangonui Road. Retaining of the driveway may be required where excavations are battered at gradients greater than 1V:2H (27°). If the slope on the downslope side of the driveway exceeds 27° within 3.0 meters of the edge of the "functional" driveway, retaining structures will be required to stabilise the hillside.

- The building sites shall be formed over excavations with no fill placed; all excavations greater than 1.0m high shall be battered at 27° or retained. A building restriction line has been implemented a minimum of 10.0m from slopes greater than 35° to isolate from future slippage and erosion. Where the setback distance from slopes greater than 35° is unable to be met, an in-ground palisade retaining wall shall be required to sufficiently isolate from potential shallow translational landslides. All retaining walls shall be subject to specific engineering design by a suitably qualified geotechnical engineer.

- A debris catch wall may need to be installed, subject to building proximity to slopes that rise above the building site to mitigate against debris inundation from above. Debris will need to be removed for the wall to work in full capacity, following any further shallow landslides.

- The western slope, in-ground palisade wall on the proposed Lot 1 shall be not less than 4.0m deep, and have a design shear capacity of 50kN per meter along the length of the wall; with design considering an equivalent 50KN lateral load at 1.5m below ground level.

- The un-retained batter between the Lot 1 building platform and the existing shed shall be retained.

- All retaining walls on the proposed lots shall be subject to specific engineering assessment and design.

13.3. Static Settlement

Results of our subsoil investigation indicate that the property is underlain by normally consolidated Undifferentiated Tangihua Complex residual soils and rock. We do not consider the nominated building platform subject to settlement.

13.4. Earthworks

Earthworks will be required to form the future building sites and to extend the existing and new driveways. The formation of building platforms shall be within excavations, with limitations on filling. All excavation batters formed shall be formed at appropriate gradients, then covered in coconut matting and planted to prevent weathering and erosion of the soils.

Excavations up to 3.0m are likely to be required. All excavations greater than 1.0m deep shall be battered at 27° (1V:2H) or retained where battering is not achievable. Excavations shall be retained where greater than 3.0m. Locally, excavations may be up to 45° (1V:1H) where not greater than 0.5m deep and more than 3.0m from the edge of the building site. No excavations are to be made into the slope directly beneath a building site, unless retained.

No fill shall be placed anywhere upslope or downslope of a building sites, effluent disposal field, or driveway unless retained or specific engineering design is undertaken. Fill can be applied to the proposed building site up to a maximum thickness of 0.5m, provided that an inground palisade retaining wall is installed downslope of the fill's edge.

Any spoil from the excavations shall be removed from the building sites and may be placed at 0.5m thicknesses over slopes that are <27°, not upslope or downslope of the building site, effluent disposal field, or driveway. If it is unable to be adequately placed over the property, then it shall be removed off-site. Clean stripped topsoil is considered appropriate for use in the formation of the wastewater disposal beds as detailed in Section 14.9 of this report.

Surface drainage along the building sites shall be installed on the western side and shall discharge a minimum 20m downslope of the on-site wastewater fields, driveways, and building sites. A swale shall be installed along the building sites to divert all runoff from the impermeable surfaces; this water shall be collected and disposed of away from the building sites, wastewater disposal field, and driveway. A 1m x 1m rock apron shall be installed at

the discharge point to diminish the effect of soil erosion and inundation OR over a ≥10m long diffuse level spreader.

The driveways will likely require excavations for it to be formalised and formed, these excavations are likely to be no greater than 3.0m deep. Battering of the driveway's excavations shall be at gradients no greater than 27° or retained where this is unable to be achieved. Fill no greater than 0.5m thick, shall only be used where absolutely necessary over the driveway, and it must be retained. If retaining walls are required on the downslope side of the driveway, design shall consider a 12.5kPa load during the design to account for heavy vehicle movements.

All retaining walls are required to support the proposed excavations, where battering is not considered appropriate to isolate from future slope instabilities / erosional processes. All retaining walls greater than 1.0m high proposed over the property, shall be specifically designed by a Geotechnical Chartered Professional Engineer (CPEng).

All earthworks undertaken over the property shall be completed in general accordance with NZS 4431:2022 and shall be subject to engineering specification and supervision.

13.5. Building Site Suitability

Results of our subsoil investigation indicate that the site is underlain by residual soil and rock of the Undifferentiated Tangihua Complex. Undrained shear strengths of the residual soils typically measured greater than 190kPa, with an ultimate geotechnical bearing capacity of 300kPa. These soils are not considered suitable for NZS 3604 type foundations as the cohesive soils are likely moderately expansive and susceptible to minor surface movement.

At the specific design stage of any future development, the geo-professional engaged by the subsequent landowner shall undertake an appropriate assessment of the ground conditions to ascertain the classification of the soil expansivity. This may be undertaken in accordance with Clause 7.5.13.1 "Identification of Expansive Soils" outline in the NZ Building Code B1/AS1 (Amd 19).

Subject to the above, the site is considered suitable for residential development found over either timber pile foundations or over a shallow concrete pad, such as a waffle raft or a conventional concrete slab. Foundations will require specific engineering design and shall be determined during the site specific Building Consent investigation.

13.6. Stormwater

It is highly unlikely that the stormwater detention controls will be required for the subject lots, given the lot sizes. Stormwater disposal from lots shall be to land via a diffuse discharge swale.

13.7. Resource Management Act (RMA) – Section 106(1)

Based on our findings and subject to our recommendations on stability, erosion, and building site suitability, for each of the proposed lots and nominated building sites, the risk of future instability affecting the property is low, and in terms of Section 106(1) of the RMA:

a) the land in respect of which a consent is sought, or any structure on the land, is not, and is not likely to be, subject to material damage by stability and erosion from any source,

b) repealed; and

c) that sufficient provision has been made for stable physical access to each allotment to be created by the subdivision.

13.8. On-site Effluent Disposal

Soils on the property have been assessed for on-site effluent disposal in terms of AS/NZS 1547:2012 and are identified as Light Clays or Category 5.

We have indicated suitable areas for on-site wastewater disposal over each of the proposed residential lots, as indicated on the attached plan in Appendix A. The disposal field location achieves the appropriate setbacks per the PRP for Northland 2024 Section C.6.1.3, Table 9, and a suitable design irrigation rate defined in accordance with AS/NZS 1547:2012.

It is recommended that the disposal field comprises PCDI irrigation lines, pinned at the surface and covered with a further 200mm of good quality topsoil / mulch and planted with approved plant species to aid in evapotranspiration.

The wastewater disposal fields have been positioned such that they are over slopes not typically exceeding 27°. Care should be taken during the building consent stage for all future development to ensure the wastewater disposal fields are appropriately designed for site conditions, including the use of bunds to divert any surface runoff around the field, and positioning the field such that it is isolated from any potential building sites.

The total peak daily volume of wastewater is estimated to be 1,260ℓ/day (1.26m³/day), based on the design occupancy and daily water usage. This volume of effluent is less than the permitted activity threshold as stated in the PRP for Northland 2024. The proposed on-site wastewater disposal fields, therefore, comply with AS/NZS 1547:2012 and the PRP for Northland 2024.

14. Limitation

Recommendations and opinions in this report are based on data from the investigation described herein. The nature and continuity of subsoil conditions away from the boreholes are inferred and it is possible that actual conditions could vary from those assumed. Should subsoil conditions vary from those described in this report, it is essential that Hawthorn Geddes engineers and architects ltd be contacted to confirm the applicability of the recommendations.

This report has been prepared solely for the benefit of our client Max Beckham and the Far North District Council in relation to the resource consent application for which this report has been prepared.

The comments in it are limited to the purpose stated in this report. No liability is accepted by Hawthorn Geddes engineers & architects ltd in respect of its use by any other person, and any other person who relies upon any matter contained in this report does so entirely at their own risk.

Appendix A. Figures

Appendix A. Figures

THIS DRAWING WAS PRODUCED IN COLOUR. DO NOT USE FOR CONSTRUCTION PURPOSES IF THIS NOTE IS IN BLACK & WHITE

LEGEND

- Polygon
- Proposed Dwelling Lot 1
- Approx. WWF Location
- HA/TP Log
- Approximate Building Site Location
- Test Pits
- Site Boundary

556.5 m²
TP1
HA1
HA2
HA3
HA4
HA5
561.8 m²
Ha10
HA8
Ha9- wwf
Ha7
Ha6
Lot 1
Tpp1
Lot 2
Tpp1

TO BE READ ONLY IN CONJUNCTION WITH ASSOCIATED REPORT

USE WRITTEN DIMENSIONS. DO NOT SCALE FROM DRAWING.

SITE PLAN

SCALE - 1:1176

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CLIENT	**MAX BECKHAM**
PROJECT	**SUBDIVISION SUITABILITY**
DRAWING	**SITE PLAN**

SCALE @ A3	1:1176
Project No.	**13321**
FIGURE No.	**1**
REV	**R0**

Appendix B. Borehole and Test Pit Logs

Hawthorn Geddes engineers & architects ltd

LOG OF HAND AUGER

HA1

CLIENT Max Beckham
PROJECT Max Beckham - BC Geo
PROJECT NUMBER 13321
PROJECT LOCATION 190D Midgley Road, Mangonui
START DATE 24/02/25 **COMPLETED DATE** 24/02/25
COORDINATES 1651627.25E, 6125116.60N **LEVEL** 0.00
DRILLING CONTRACTOR
DRILLING METHOD 50mm Hand Auger
LOGGED BY US
HOLE LOCATION

DEPTH (m)	SCALA (Blows / 100mm)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER	DEPTH (m)
			TS	TOPSOIL; dark blackish brown.	Groundwater Not Encountered	
				0.300		
		SV = 190+ kPa (Geo 3928)		Silty CLAY (CL), with trace rootlets; dark brown. Hard; high plasticity; moist; Residual Undifferentiated Tangihua Complex Soils.		
		SV = 190+ kPa (Geo 3928)				
1		SV = 190+ kPa (Geo 3928)				
		SV = UTP (Geo 3928)				
		SV = UTP (Geo 3928)		1.600		
		SV = UTP (Geo 3928)		Clayey SILT (ML), with trace gravel; golden brown mottled orange. Hard; low plasticity; dry; gravel, fine, angular, highly weathered to slightly weathered, white; Completely Weathered Undifferentiated Tangihua Complex. 1.8m: Grey, yellow, and reddish brown.		
2		SV = UTP (Geo 3928)				
		SV = UTP (Geo 3928)		2.200 EOH: 2.20m 2.2m: EOH: Unable to Penetrate.		
	7					
	5					
	3					
	4					
	6					
	8					
3	8					
	7					
	5					
	6					
	9					
	9					
	10					
	12					
	11					
	13					
4	15					
	13					
	12					
	12					
	16					
	15					
5						

PHOTO / SKETCH

WATER OBSERVATIONS

Date / Time	Water Level (m)	Type	Remarks

REMARKS

SYMBOLS

- Standing Water Level
- Water Out flow
- Water In flow

Hawthorn Geddes engineers & architects ltd

LOG OF HAND AUGER

HA2

CLIENT	Max Beckham	**PROJECT**	Max Beckham - BC Geo
PROJECT NUMBER	13321	**PROJECT LOCATION**	190D Midgley Road, Mangonui
START DATE	24/02/25	**COMPLETED DATE**	24/02/25
COORDINATES	1651632.57E, 6125105.47N	**LEVEL**	0.00
DRILLING CONTRACTOR			
DRILLING METHOD	50mm Hand Auger		
LOGGED BY	WK		
HOLE LOCATION			

DEPTH (m)	SCALA (Blows / 100mm)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER	DEPTH (m)
			TS	TOPSOIL; dark blackish brown.	Groundwater Not Encountered	
				0.300		
		SV = UTP (GEO287)		Silty CLAY (CL), with trace rootlets; dark brown. Hard; high plasticity; moist; Residual Undifferentiated Tangihua Complex Soil.		
		SV = UTP (GEO287)				
		SV = UTP (GEO287)		0.8m: Mottled orange.		
1				1.200		
		SV = UTP (GEO287)		Clayey SILT (ML), with trace gravel; golden brown mottled orange. Hard; low plasticity; dry; gravel, fine, angular to subround, highly weathered to slightly weathered, white; Completely Weathered Undifferentiated Tangihua Complex.		
		SV = UTP (GEO287)		1.800		
		SV = UTP (GEO287)		1.900 Highly weathered; fine fabric; weak; grey. Undifferentiated Tangihua Complex.		
2				EOH: 1.90m		
				1.9m: EOH: Unable to Penetrate.		
3						
4						
5						

PHOTO / SKETCH

WATER OBSERVATIONS

Date / Time	Water Level (m)	Type	Remarks

REMARKS

SYMBOLS

- Standing Water Level
- Water Out flow
- Water In flow

Hawthorn Geddes engineers & architects ltd

LOG OF HAND AUGER

HA3

CLIENT Max Beckham
PROJECT Max Beckham - BC Geo
PROJECT NUMBER 13321
PROJECT LOCATION 190D Midgley Road, Mangonui
START DATE 24/02/25 **COMPLETED DATE** 24/02/25
COORDINATES 1651602.41E, 6125113.16N **LEVEL** 0.00
DRILLING CONTRACTOR
DRILLING METHOD 50mm Hand Auger
LOGGED BY WK
HOLE LOCATION

DEPTH (m)	SCALA (Blows / 100mm)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER	DEPTH (m)
		SV = 85 / 13 kPa (GEO287)		TOPSOIL; dark brown.	Groundwater Not Encountered	
				0.400		
		SV = 221+ kPa (GEO287)		Silty CLAY (CL), with trace rootlets; dark golden brown. Hard; high plasticity; moist; Residual Undifferentiated Tangihua Complex Soils.		
1		SV = UTP (GEO287)				
		SV = UTP (GEO287)		1.300		
		SV = UTP (GEO287)		Clayey SILT (ML), with trace gravel; light golden brown mottled orange. Hard; low plasticity; dry; gravel, fine, angular to subround, highly weathered to unweathered, white; Completely Weathered Undifferentiated Tangihua Complex.		
		SV = UTP (GEO287)				
2		SV = UTP (GEO287)				
		SV = UTP (GEO287)		2.300		
	5	SV = UTP (GEO287)		2.400 Highly weathered; fine fabric; weak; Reddish brown. Undifferentiated Tangihua Complex.		
	9					
	8					
	7			EOH: 2.40m		
	11					
3	16			2.4m: EOH: Unable to Penetrate.		
	12					
	15					
	14					
	20					
4						
5						

PHOTO / SKETCH

WATER OBSERVATIONS

Date / Time	Water Level (m)	Type	Remarks

REMARKS

SYMBOLS

- Standing Water Level
- Water Out flow
- Water In flow

Hawthorn Geddes engineers & architects ltd

LOG OF HAND AUGER

HA4

CLIENT Max Beckham
PROJECT Max Beckham - BC Geo
PROJECT NUMBER 13321
PROJECT LOCATION 190D Midgley Road, Mangonui
START DATE 24/02/25 **COMPLETED DATE** 24/02/25 **COORDINATES** 1651614.92E, 6125100.70N **LEVEL** 0.00
DRILLING CONTRACTOR
DRILLING METHOD 50mm Hand Auger
LOGGED BY US
HOLE LOCATION

DEPTH (m)	SCALA (Blows / 100mm)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER	DEPTH (m)
0		SV = 190+ kPa (Geo 3928)	TS	TOPSOIL; dark blackish brown.	Groundwater Not Encountered	
0.200				Silty CLAY (CL), with trace rootlets; dark golden brown. Hard; high plasticity; moist; Residual Undifferentiated Tangihua Complex Soil.		
		SV = 190+ kPa (Geo 3928)		0.8m: With dark orange mottling.		
1.000		SV = 190+ kPa (Geo 3928)		EOH: 1.00m		
1				1.0m: EOH: Target Depth Reached.		
2						
3						
4						
5						

PHOTO / SKETCH

WATER OBSERVATIONS

Date / Time	Water Level (m)	Type	Remarks

REMARKS

SYMBOLS

- Standing Water Level
- Water Out flow
- Water In flow

Hawthorn Geddes engineers & architects ltd

LOG OF HAND AUGER

HA5

CLIENT Max Beckham
PROJECT Max Beckham - BC Geo
PROJECT NUMBER 13321
PROJECT LOCATION 190D Midgley Road, Mangonui
START DATE 24/02/25 **COMPLETED DATE** 24/02/25
COORDINATES 1651631.04E, 6125095.49N **LEVEL** 0.00
DRILLING CONTRACTOR
DRILLING METHOD 50mm Hand Auger
LOGGED BY US
HOLE LOCATION

DEPTH (m)	SCALA (Blows / 100mm)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER	DEPTH (m)
0		SV = 209 / 71 kPa (GEO287)		TOPSOIL; dark blackish brown.	Groundwater Not Encountered	
				0.400		
		SV = 191 / 65 kPa (GEO287)		Silty CLAY (CL), with trace rootlets; brown. Very stiff; high plasticity; moist; Residual Undifferentiated Tangihua Complex Soil.		
1		SV = UTP (GEO287)		0.9m: Hard.		
		SV = UTP (GEO287)		1.300		
		SV = UTP (GEO287)		Clayey SILT (ML), with trace gravel; light golden brown mottled orange. Hard; low plasticity; dry; gravel, fine, angular to subangular, highly weathered to unweathered, white; Completely Weathered Undifferentiated Tangihua Complex.		
		SV = UTP (GEO287)		1.900 EOH: 1.90m		
2	5 5 6 6 4 4 5 4 6 6 10 13 10 11 11 13 8 8 6 10 10 12 12 15 13 7 8 9 10 14 16 17			1.9m: EOH: Unable to Penetrate.		
3						
4						
5						

PHOTO / SKETCH

WATER OBSERVATIONS

Date / Time	Water Level (m)	Type	Remarks

REMARKS

SYMBOLS

- Standing Water Level
- Water Out flow
- Water In flow

Hawthorn Geddes engineers & architects ltd

LOG OF TEST PIT

TP1

CLIENT	Max Beckham	**PROJECT**	Max Beckham - BC Geo
PROJECT NUMBER	13321	**PROJECT LOCATION**	190D Midgley Road, Mangonui
START DATE	24/02/25	**COMPLETED DATE**	24/02/25
COORDINATES	1651592.72E, 6125113.01N	**LEVEL**	0.00
DRILLING CONTRACTOR			
DRILLING METHOD	6T Excavator		
LOGGED BY	US		
HOLE LOCATION			

DEPTH (m)	SCALA (Blows / 100mm)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER	DEPTH (m)
		SV = 190+ kPa (Geo 3928)	TS	TOPSOIL; dark brown.	Groundwater Not Encountered	
				0.300		
				Silty CLAY (CL), with trace rootlets; light golden brown. Very stiff; high plasticity; moist; Residual Undifferentiated Tangihua Complex Soil.		
		SV = 170 / 27 kPa (Geo 3928)		0.500		
				Clayey SILT (ML), with trace gravel; light golden brown and red with orange mottling. Hard; low plasticity; dry; gravel, fine, angular, highly weathered to unweathered, white; Completely Weathered Undifferentiated Tangihua Complex.		
		SV = 170 / 27 kPa (Geo 3928)		1.000		
1				Highly weathered; fine fabric; weak; dark reddish brown. Undifferentiated Tangihua Complex.		
		SV = 190+ kPa (Geo 3928)		1.2m: Reddish brown.		
		SV = 190+ kPa (Geo 3928)				
				1.9m: Moderately weathered; strong.		
2				2.000 EOH: 2.00m		
				2.0m: EOH: Unable to Penetrate.		

PHOTO / SKETCH

WATER OBSERVATIONS

Date / Time	Water Level (m)	Type	Remarks

REMARKS

SYMBOLS

- Standing Water Level
- Water Out flow
- Water In flow

Hawthorn Geddes engineers & architects ltd

LOG OF HAND AUGER

HA6

CLIENT Max Beckham
PROJECT Max Beckham - BC Geo
PROJECT NUMBER 13321
PROJECT LOCATION 190D Midgley Road, Mangonui
START DATE 20/10/25 **COMPLETED DATE** 20/10/25
COORDINATES **LEVEL** 0.00
DRILLING CONTRACTOR
DRILLING METHOD 50mm Hand Auger
LOGGED BY US
HOLE LOCATION

DEPTH (m)	SCALA (Blows / 100mm)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER	DEPTH (m)
0		SV = 190 / - kPa (Geo 3928)		Silty CLAY; brownish red. Very stiff; high plasticity; moist; Undifferentiated Tangihua Complex in Northland Allochthon .	Groundwater Not Encountered	
		SV = 176 / 27 kPa (Geo 3928)				
1		SV = 176 / 27 kPa (Geo 3928)				
		SV = 163 / 14 kPa (Geo 3928)				
		SV = 163 / 14 kPa (Geo 3928)		1.800		
		SV = 136 / 14 kPa (Geo 3928)		CLAY, with minor silt; brownish red and light yellow. Very stiff; low plasticity; moist; Undifferntiated Tangihua Complex n Northland Allochthon.		
2		SV = 109 / 27 kPa (Geo 3928)				
		SV = 109 / 14 kPa (Geo 3928)				
		SV = 95 / 14 kPa (Geo 3928)		3.000 EOH: 3.00m		
3	4	SV = 88 / 14 kPa (Geo 3928)				
	4					
	4					
	7					
	8					
	7					
	8					
	14					
	15					
4	15					
	20					

PHOTO / SKETCH

WATER OBSERVATIONS

Date / Time	Water Level (m)	Type	Remarks

REMARKS

SYMBOLS

- Standing Water Level
- Water Out flow
- Water In flow

Hawthorn Geddes engineers & architects ltd

LOG OF HAND AUGER

HA7

CLIENT Max Beckham
PROJECT Max Beckham - BC Geo
PROJECT NUMBER 13321
PROJECT LOCATION 190D Midgley Road, Mangonui
START DATE 20/10/25 **COMPLETED DATE** 20/10/25
COORDINATES **LEVEL** 0.00
DRILLING CONTRACTOR
DRILLING METHOD 50mm Hand Auger
LOGGED BY US
HOLE LOCATION

DEPTH (m)	SCALA (Blows / 100mm)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER	DEPTH (m)
			TS	0.100 TOPSOIL; dark brown.		
		SV = 190+ kPa (Geo 3928)		Silty CLAY; brownish red. Very stiff; high plasticity; moist; Undifferentiated Tangihua Complex in Northland Allochthon.		
		SV = 190+ kPa (Geo 3928)				
1		SV = 190+ kPa (Geo 3928)				
		SV = 176 / 27 kPa (Geo 3928)				
		SV = 163 / 14 kPa (Geo 3928)				
		SV = 176 / 27 kPa (Geo 3928)		2.000		
2		SV = 136 / 14 kPa (Geo 3928)		CLAY, with some silt; brownish red. Very stiff; high plasticity; moist; Undifferntiated Tangihua Complex in Northland Allochthon.		
		SV = 109 / 20 kPa (Geo 3928)				
		SV = 102 / 14 kPa (Geo 3928)				
				3.000 EOH: 3.00m		
3	4	SV = 95 / 14 kPa (Geo 3928)				
	4					
	4					
	7					
	8					
	9					
	7					
	8					
	13					
4	14					
	14					
	20					

Groundwater Not Encountered

PHOTO / SKETCH

WATER OBSERVATIONS

Date / Time	Water Level (m)	Type	Remarks

REMARKS

SYMBOLS

- Standing Water Level
- Water Out flow
- Water In flow

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LOG OF HAND AUGER

HA8

CLIENT Max Beckham
PROJECT Max Beckham - BC Geo
PROJECT NUMBER 13321
PROJECT LOCATION 190D Midgley Road, Mangonui
START DATE 20/10/25 **COMPLETED DATE** 20/10/25
COORDINATES **LEVEL** 0.00
DRILLING CONTRACTOR
DRILLING METHOD 50mm Hand Auger
LOGGED BY US
HOLE LOCATION

DEPTH (m)	SCALA (Blows / 100mm)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER	DEPTH (m)
0			TS	0.100 TOPSOIL; dark brown.		
		SV = 190+ kPa (Geo 3928)		Silty CLAY; golden brown. Very stiff; high plasticity; moist; Undifferentiated Tangihua Complex in Northland Allochthon .		
		SV = 190+ kPa (Geo 3928)				
1		SV = 190+ kPa (Geo 3928)				
		SV = 190+ kPa (Geo 3928)				
		SV = 190 / - kPa (Geo 3928)				
		SV = 176 / 27 kPa (Geo 3928)				
2		SV = 176 / 27 kPa (Geo 3928)		2.200		
		SV = 163 / 14 kPa (Geo 3928)		Silty CLAY; golden brown. Very stiff; high plasticity; moist; Undifferntiated Tangihua Complex in Northland Allochthon.		
		SV = 122 / 14 kPa (Geo 3928)				
3	4	SV = 102 / 14 kPa (Geo 3928)		3.000 EOH: 3.00m	Groundwater Not Encountered	
	4					
	4					
	7					
	12					
	12					
	12					
	20					
4						

PHOTO / SKETCH

WATER OBSERVATIONS

Date / Time	Water Level (m)	Type	Remarks

REMARKS

SYMBOLS

- Standing Water Level
- Water Out flow
- Water In flow

Hawthorn Geddes engineers & architects ltd

LOG OF HAND AUGER

HA9

CLIENT Max Beckham
PROJECT Max Beckham - BC Geo
PROJECT NUMBER 13321
PROJECT LOCATION 190D Midgley Road, Mangonui
START DATE 20/10/25 **COMPLETED DATE** 20/10/25
COORDINATES **LEVEL** 0.00
DRILLING CONTRACTOR
DRILLING METHOD 50mm Hand Auger
LOGGED BY US
HOLE LOCATION

DEPTH (m)	SCALA (Blows / 100mm)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER	DEPTH (m)
				TOPSOIL; dark brown.		
				0.100		
		SV = 190+ kPa (Geo 3928)		Silty CLAY; golden brown. Very stiff; moist; Undifferentiated Tangihua Complex in Northland Allochthon.	Groundwater Not Encountered	
		SV = 190+ kPa (Geo 3928)				
		SV = 190+ kPa (Geo 3928)				
				1.000 EOH: 1.00m		

PHOTO / SKETCH

WATER OBSERVATIONS

Date / Time	Water Level (m)	Type	Remarks

REMARKS

SYMBOLS

- Standing Water Level
- Water Out flow
- Water In flow

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LOG OF HAND AUGER

HA10

CLIENT Max Beckham
PROJECT Max Beckham - BC Geo
PROJECT NUMBER 13321
PROJECT LOCATION 190D Midgley Road, Mangonui
START DATE 20/10/25 **COMPLETED DATE** 20/10/25
COORDINATES **LEVEL** 0.00
DRILLING CONTRACTOR
DRILLING METHOD 50mm Hand Auger
LOGGED BY US
HOLE LOCATION

DEPTH (m)	SCALA (Blows / 100mm)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER	DEPTH (m)
				0.100 TOPSOIL; dark brown.	Groundwater Not Encountered	
		SV = 190+ kPa (Geo 3928)		Silty CLAY; brownish red. Very stiff; high plasticity; moist; Undifferentiated Tangihua Complex in Northland Allochthon .		
		SV = 190+ kPa (Geo 3928)				
1		SV = 190+ kPa (Geo 3928)				
		SV = 190+ kPa (Geo 3928)				
		SV = 176 / 20 kPa (Geo 3928)				
		SV = 176 / 14 kPa (Geo 3928)				
2				2.000 EOH: 2.00m		
	4					
	3					
	3					
	7					
	8					
	14					
	13					
	15					
	20					

PHOTO / SKETCH

WATER OBSERVATIONS

Date / Time	Water Level (m)	Type	Remarks

REMARKS

SYMBOLS

- Standing Water Level
- Water Out flow
- Water In flow

Appendix C. Slope Stability Outputs

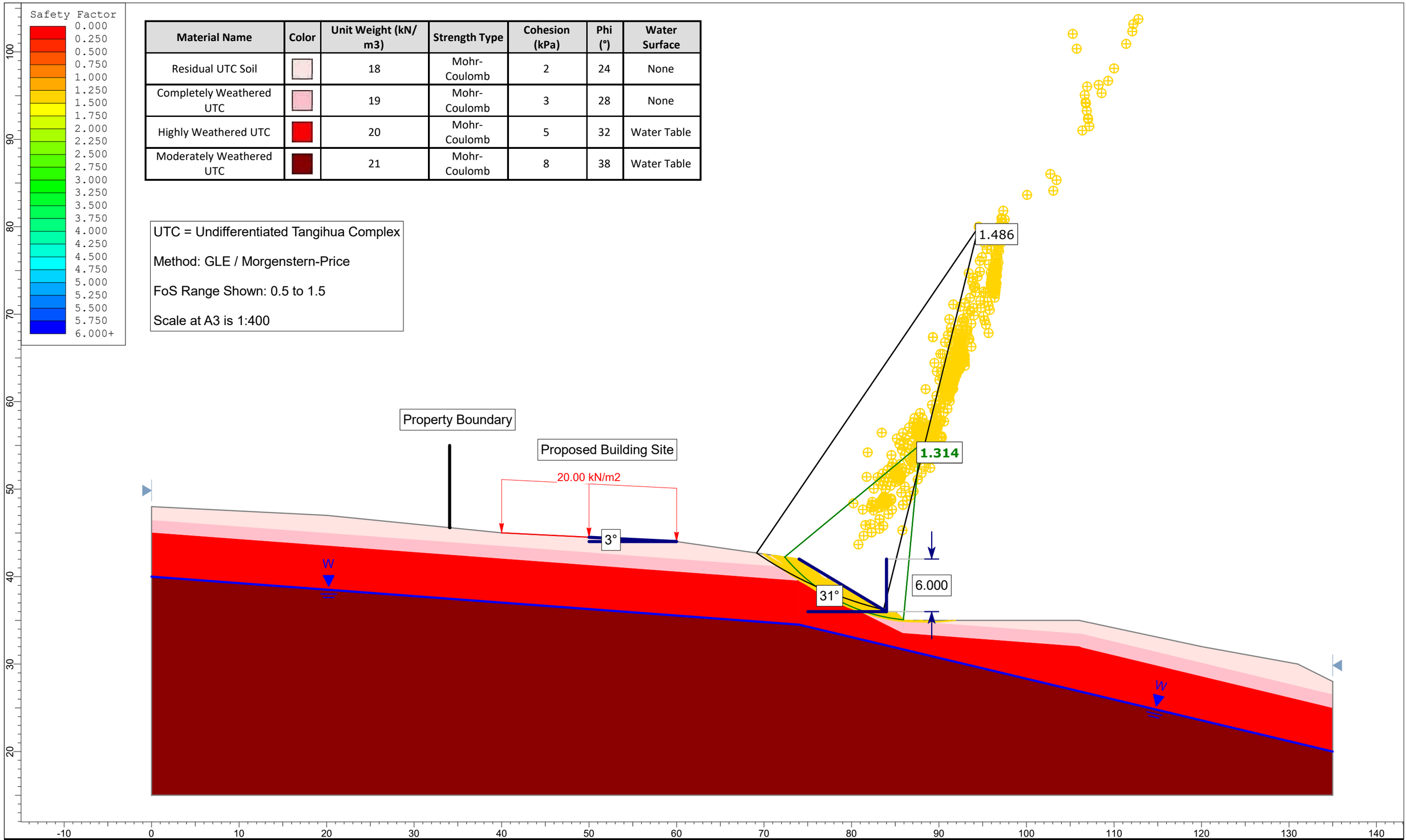
Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	None
Completely Weathered UTC		19	Mohr-Coulomb	3	28	None
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

UTC = Undifferentiated Tangihua Complex

Method: GLE / Morgenstern-Price

FoS Range Shown: 0.5 to 1.5

Scale at A3 is 1:400



Hawthorn Geddes engineers & architects ltd	Project	Slide2 - An Interactive Slope Stability Program	
	Group	Existing Conditions - Cross Section A	Scenario: NGWT
	Drawn By		Company
SLIDEINTERPRET 9.036	Date	27/03/2025, 9:58:10 a.m.	File Name: geo 250327 slide2 13321.slmd

Safety Factor
0.000
0.250
0.500
0.750
1.000
1.250
1.500
1.750
2.000
2.250
2.500
2.750
3.000
3.250
3.500
3.750
4.000
4.250
4.500
4.750
5.000
5.250
5.500
5.750
6.000+

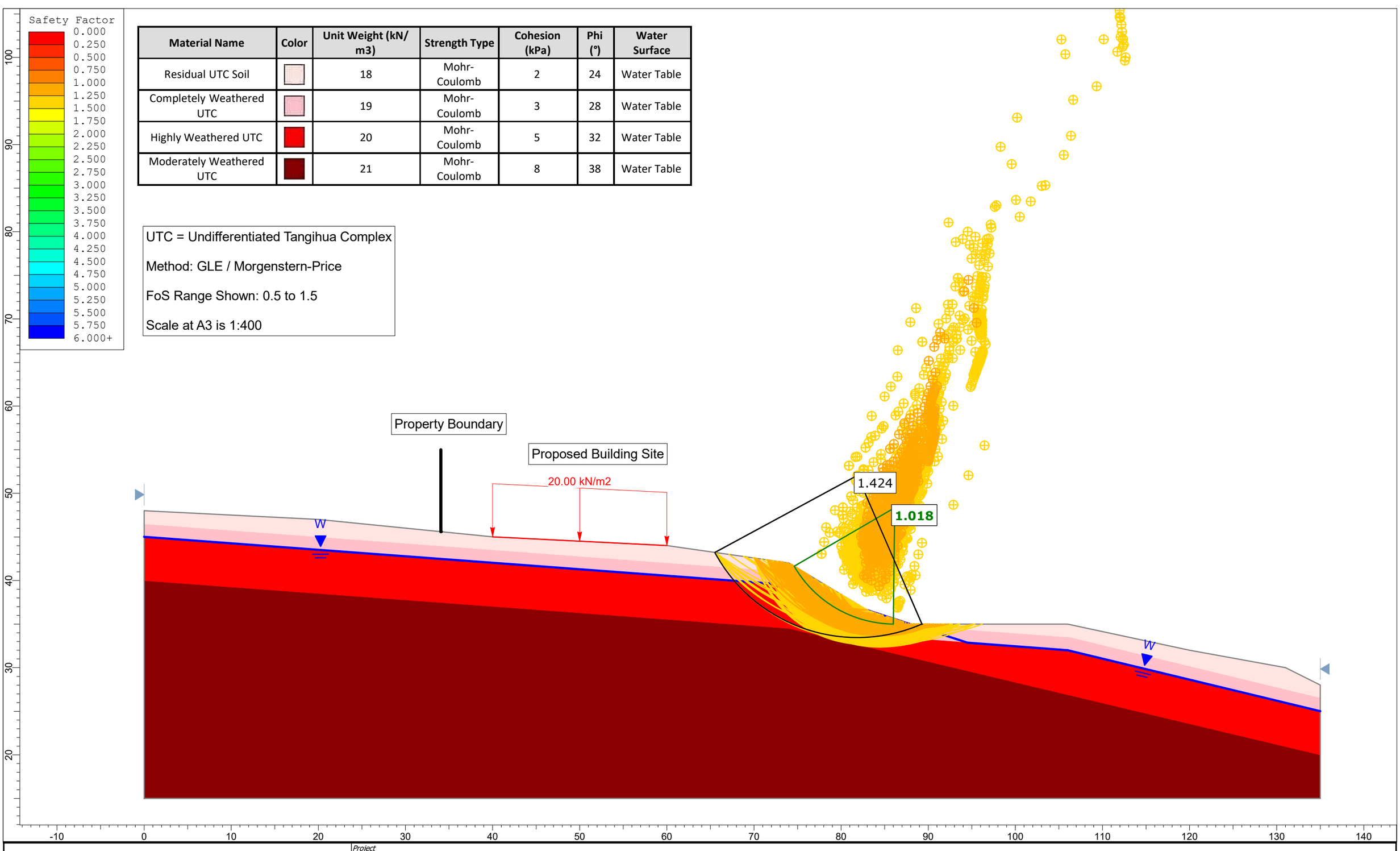
Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	Water Table
Completely Weathered UTC		19	Mohr-Coulomb	3	28	Water Table
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

UTC = Undifferentiated Tangihua Complex

Method: GLE / Morgenstern-Price

FoS Range Shown: 0.5 to 1.5

Scale at A3 is 1:400



Hawthorn Geddes engineers & architects ltd

Project	Slide2 - An Interactive Slope Stability Program		
Group	Existing Conditions - Cross Section A	Scenario	EGWT
Drawn By		Company	
Date	27/03/2025, 9:58:10 a.m.	File Name	geo 250327 slide2 13321.slmd

SLIDEINTERPRET 9.036

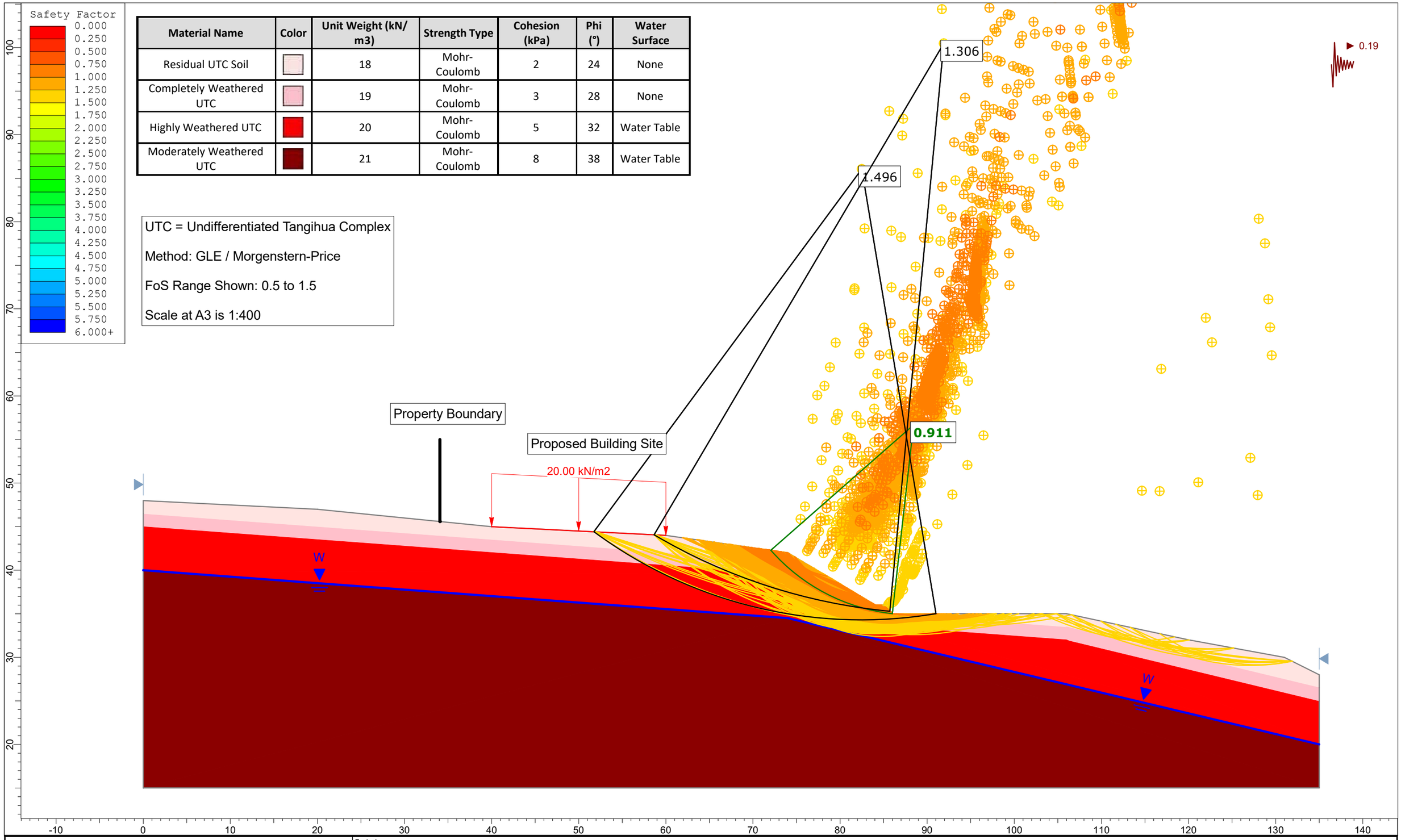
Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	None
Completely Weathered UTC		19	Mohr-Coulomb	3	28	None
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

UTC = Undifferentiated Tangihua Complex

Method: GLE / Morgenstern-Price

FoS Range Shown: 0.5 to 1.5

Scale at A3 is 1:400



Hawthorn Geddes engineers & architects ltd

SLIDEINTERPRET 9.036

Project	Slide2 - An Interactive Slope Stability Program		
Group	Existing Conditions - Cross Section A	Scenario	Seismic - DCLS
Drawn By		Company	
Date	27/03/2025, 9:58:10 a.m.	File Name	geo 250327 slide2 13321.slmd

Safety Factor
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0.250
0.500
0.750
1.000
1.250
1.500
1.750
2.000
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2.750
3.000
3.250
3.500
3.750
4.000
4.250
4.500
4.750
5.000
5.250
5.500
5.750
6.000+

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	None
Completely Weathered UTC		19	Mohr-Coulomb	3	28	None
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

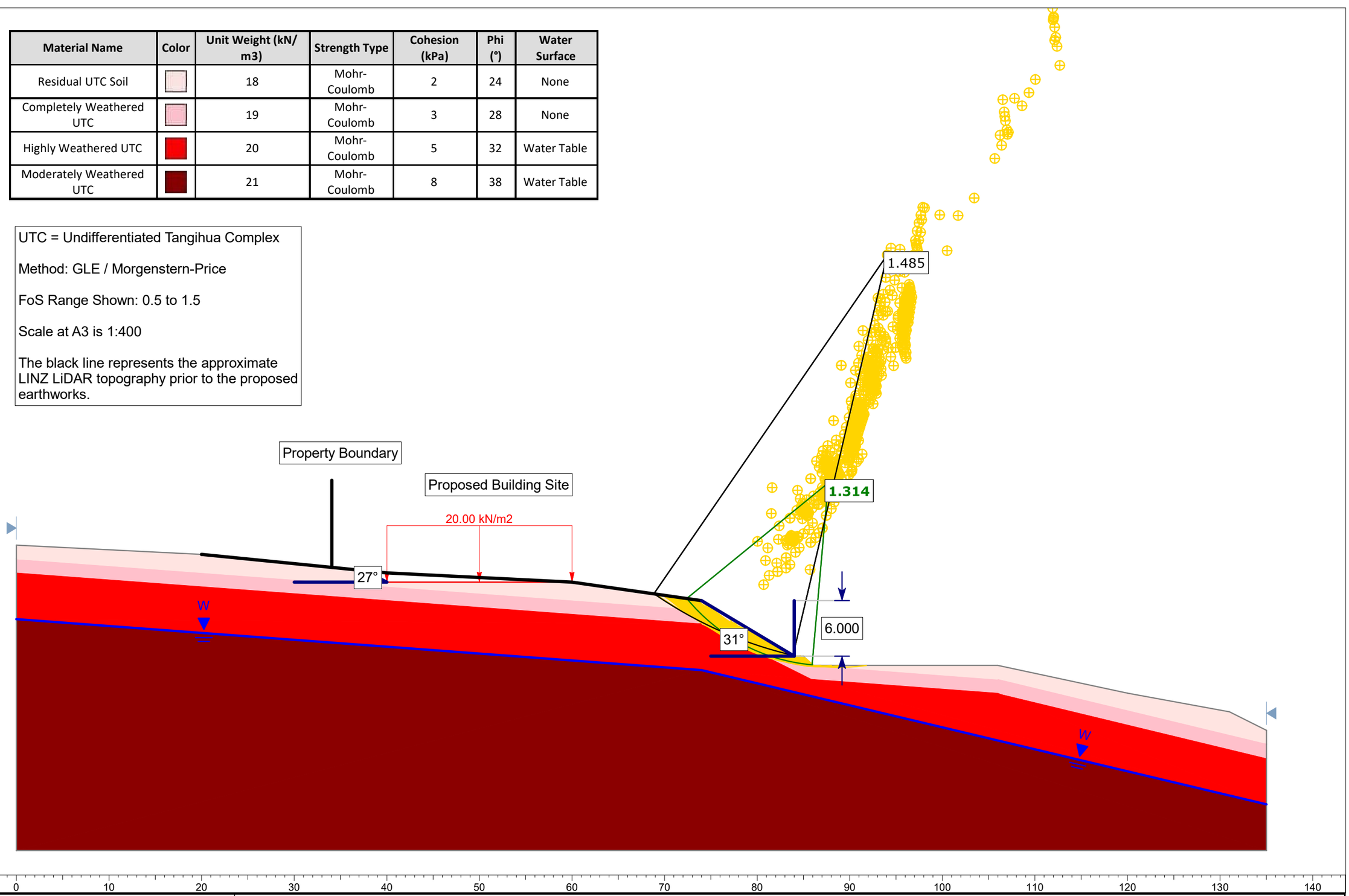
UTC = Undifferentiated Tangihua Complex

Method: GLE / Morgenstern-Price

FoS Range Shown: 0.5 to 1.5

Scale at A3 is 1:400

The black line represents the approximate LINZ LiDAR topography prior to the proposed earthworks.



Hawthorn Geddes engineers & architects ltd

SLIDEINTERPRET 9.036

Project	Slide2 - An Interactive Slope Stability Program		
Group	Proposed Conditions - Cross Section A	Scenario	NGWT
Drawn By		Company	
Date	27/03/2025, 9:58:10 a.m.	File Name	geo 250327 slide2 13321.slmd

Safety Factor
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0.500
0.750
1.000
1.250
1.500
1.750
2.000
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2.750
3.000
3.250
3.500
3.750
4.000
4.250
4.500
4.750
5.000
5.250
5.500
5.750
6.000+

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	Water Table
Completely Weathered UTC		19	Mohr-Coulomb	3	28	Water Table
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

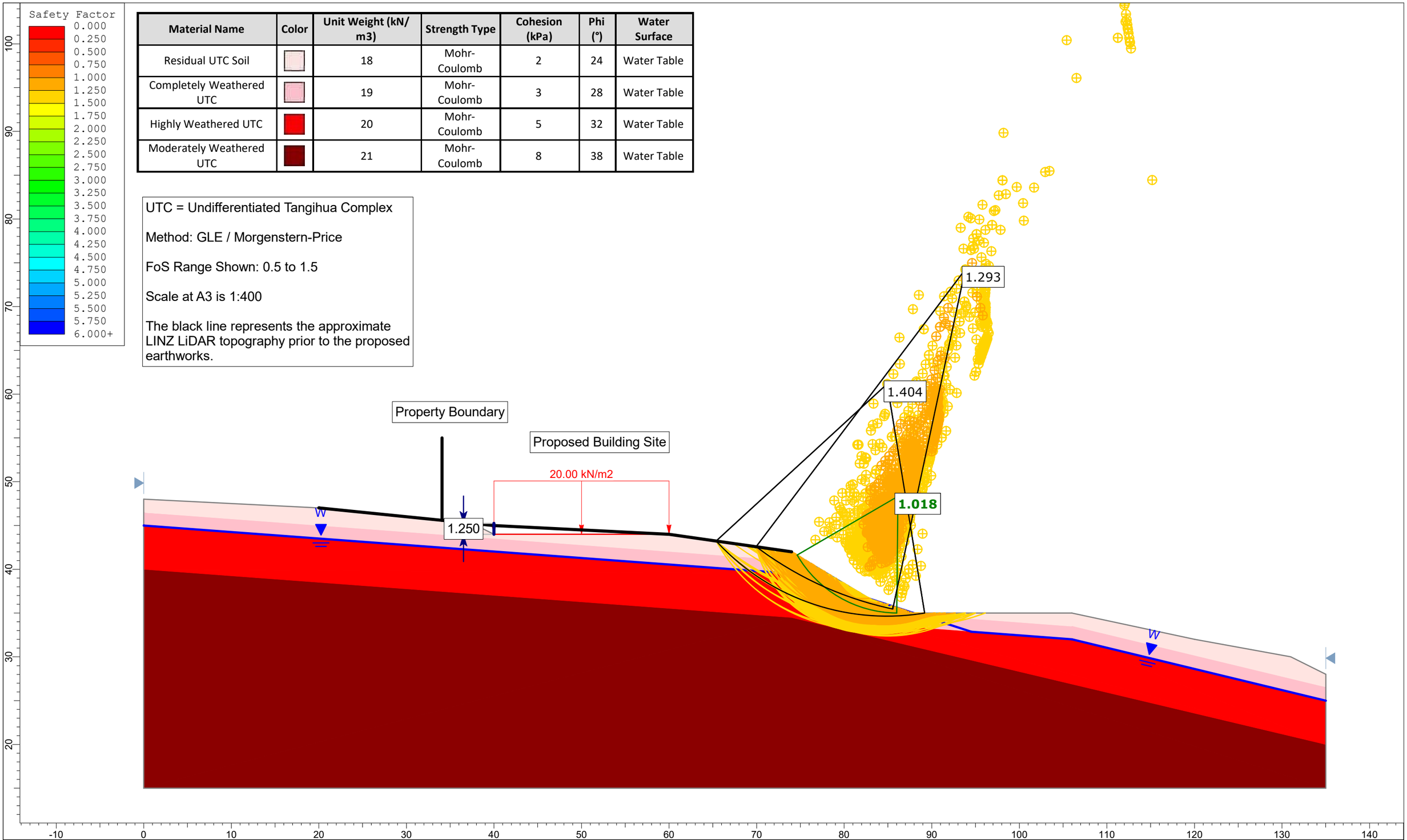
UTC = Undifferentiated Tangihua Complex

Method: GLE / Morgenstern-Price

FoS Range Shown: 0.5 to 1.5

Scale at A3 is 1:400

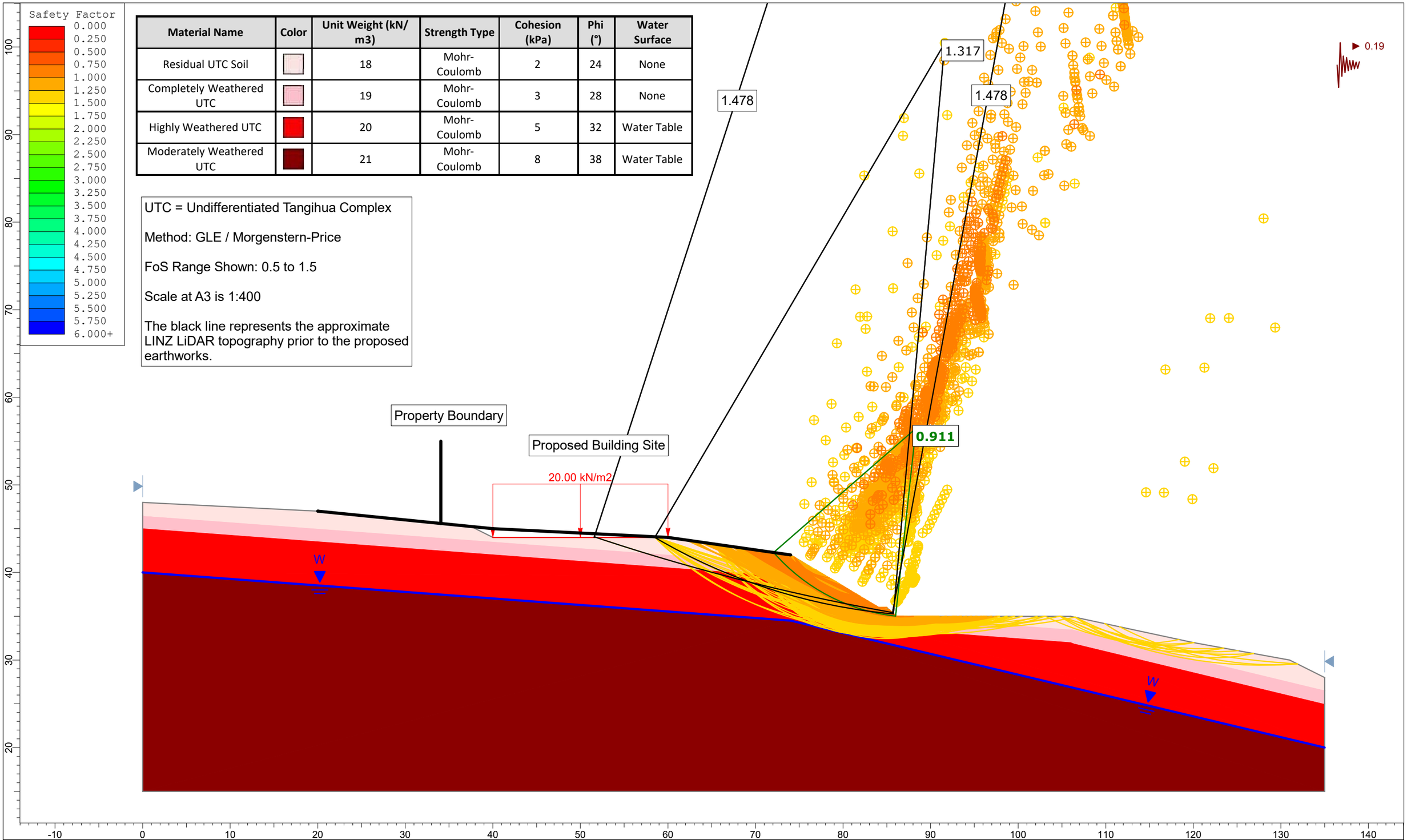
The black line represents the approximate LINZ LiDAR topography prior to the proposed earthworks.



Hawthorn Geddes engineers & architects ltd

Project	Slide2 - An Interactive Slope Stability Program		
Group	Proposed Conditions - Cross Section A	Scenario	EGWT
Drawn By		Company	
Date	27/03/2025, 9:58:10 a.m.	File Name	geo 250327 slide2 13321.slmd

SLIDEINTERPRET 9.036



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	None
Completely Weathered UTC		19	Mohr-Coulomb	3	28	None
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

UTC = Undifferentiated Tangihua Complex

Method: GLE / Morgenstern-Price

FoS Range Shown: 0.5 to 1.5

Scale at A3 is 1:400

The black line represents the approximate LINZ LiDAR topography prior to the proposed earthworks.

Hawthorn Geddes engineers & architects ltd

SLIDEINTERPRET 9.036

Project	Slide2 - An Interactive Slope Stability Program		
Group	Proposed Conditions - Cross Section A	Scenario	Seismic - DCLS
Drawn By		Company	
Date	27/03/2025, 9:58:10 a.m.	File Name	geo 250327 slide2 13321.slmd

Safety Factor
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0.250
0.500
0.750
1.000
1.250
1.500
1.750
2.000
2.250
2.500
2.750
3.000
3.250
3.500
3.750
4.000
4.250
4.500
4.750
5.000
5.250
5.500
5.750
6.000+

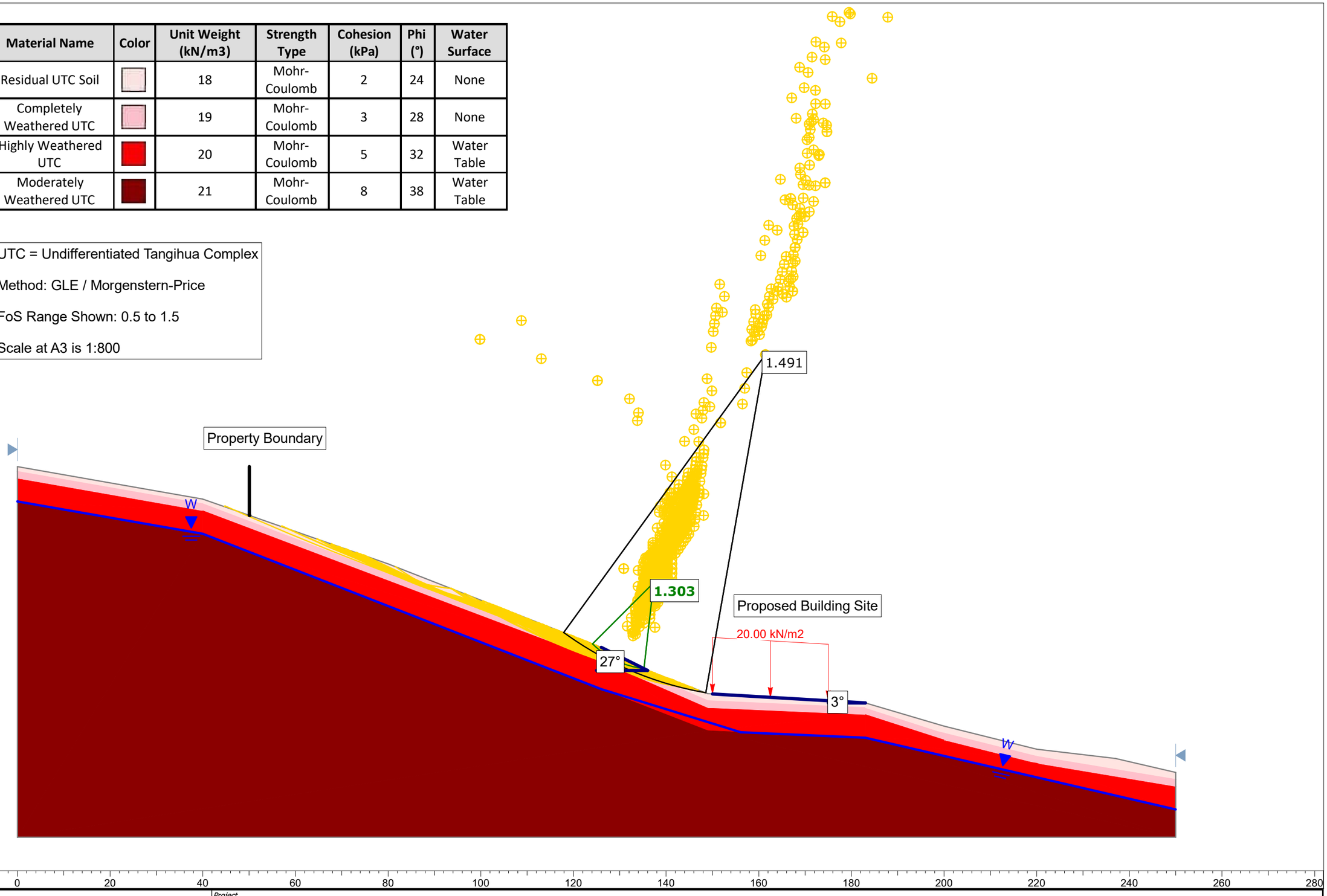
Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	None
Completely Weathered UTC		19	Mohr-Coulomb	3	28	None
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

UTC = Undifferentiated Tangihua Complex

Method: GLE / Morgenstern-Price

FoS Range Shown: 0.5 to 1.5

Scale at A3 is 1:800



-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

20 40 60 80 100 120 140 160 180

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SLIDEINTERPRET 9.036

Project	Slide2 - An Interactive Slope Stability Program		
Group	Existing Conditions - Cross Section B	Scenario	NGWT
Drawn By		Company	
Date	27/03/2025, 9:58:10 a.m.	File Name	geo 250327 slide2 13321.slmd

Safety Factor
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0.250
0.500
0.750
1.000
1.250
1.500
1.750
2.000
2.250
2.500
2.750
3.000
3.250
3.500
3.750
4.000
4.250
4.500
4.750
5.000
5.250
5.500
5.750
6.000+

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	Water Table
Completely Weathered UTC		19	Mohr-Coulomb	3	28	Water Table
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

UTC = Undifferentiated Tangihua Complex

Method: GLE / Morgenstern-Price

FoS Range Shown: 0.5 to 1.5

Scale at A3 is 1:800

1.456

1.252

1.456

Property Boundary

W

Proposed Building Site

20.00 kN/m2

W

180
160
140
120
100
80
60
40
20

-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

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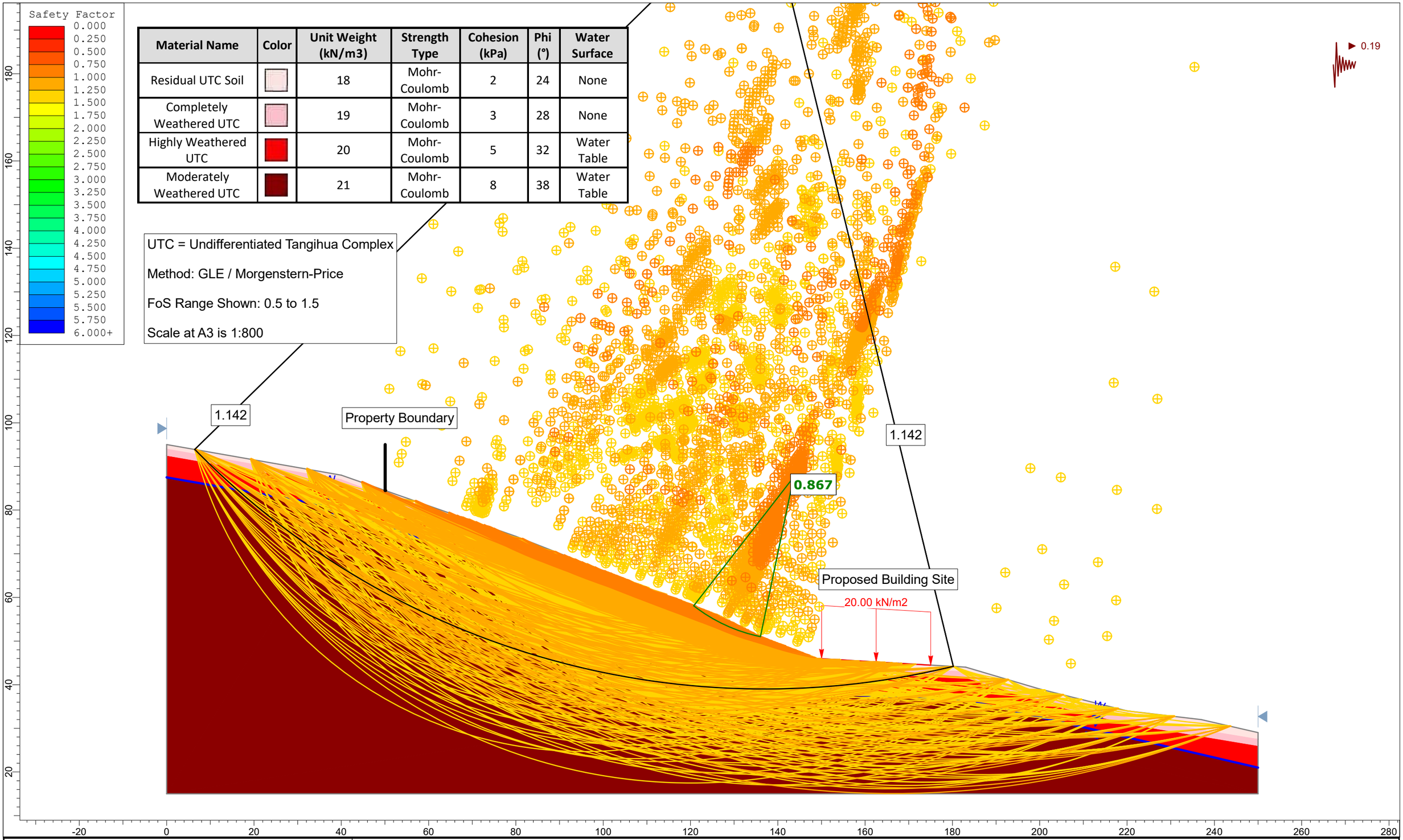
SLIDEINTERPRET 9.036

Project	Slide2 - An Interactive Slope Stability Program		
Group	Existing Conditions - Cross Section B	Scenario	EGWT
Drawn By		Company	
Date	27/03/2025, 9:58:10 a.m.	File Name	geo 250327 slide2 13321.slmd



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	None
Completely Weathered UTC		19	Mohr-Coulomb	3	28	None
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

Hawthorn Geddes engineers & architects ltd

SLIDEINTERPRET 9.036

Project	Slide2 - An Interactive Slope Stability Program		
Group	Existing Conditions - Cross Section B	Scenario	Seismic - DCLS
Drawn By		Company	
Date	27/03/2025, 9:58:10 a.m.	File Name	geo 250327 slide2 13321.slmd

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	None
Completely Weathered UTC		19	Mohr-Coulomb	3	28	None
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Failure Mode	Pile Shear Strength (kN)	Force Orientation
Support 1		Pile/ Micro Pile	Active (Method A)	1.2	Shear	30	Parallel to surface

Safety Factor
0.000
0.250
0.500
0.750
1.000
1.250
1.500
1.750
2.000
2.250
2.500
2.750
3.000
3.250
3.500
3.750
4.000
4.250
4.500
4.750
5.000
5.250
5.500
5.750
6.000+

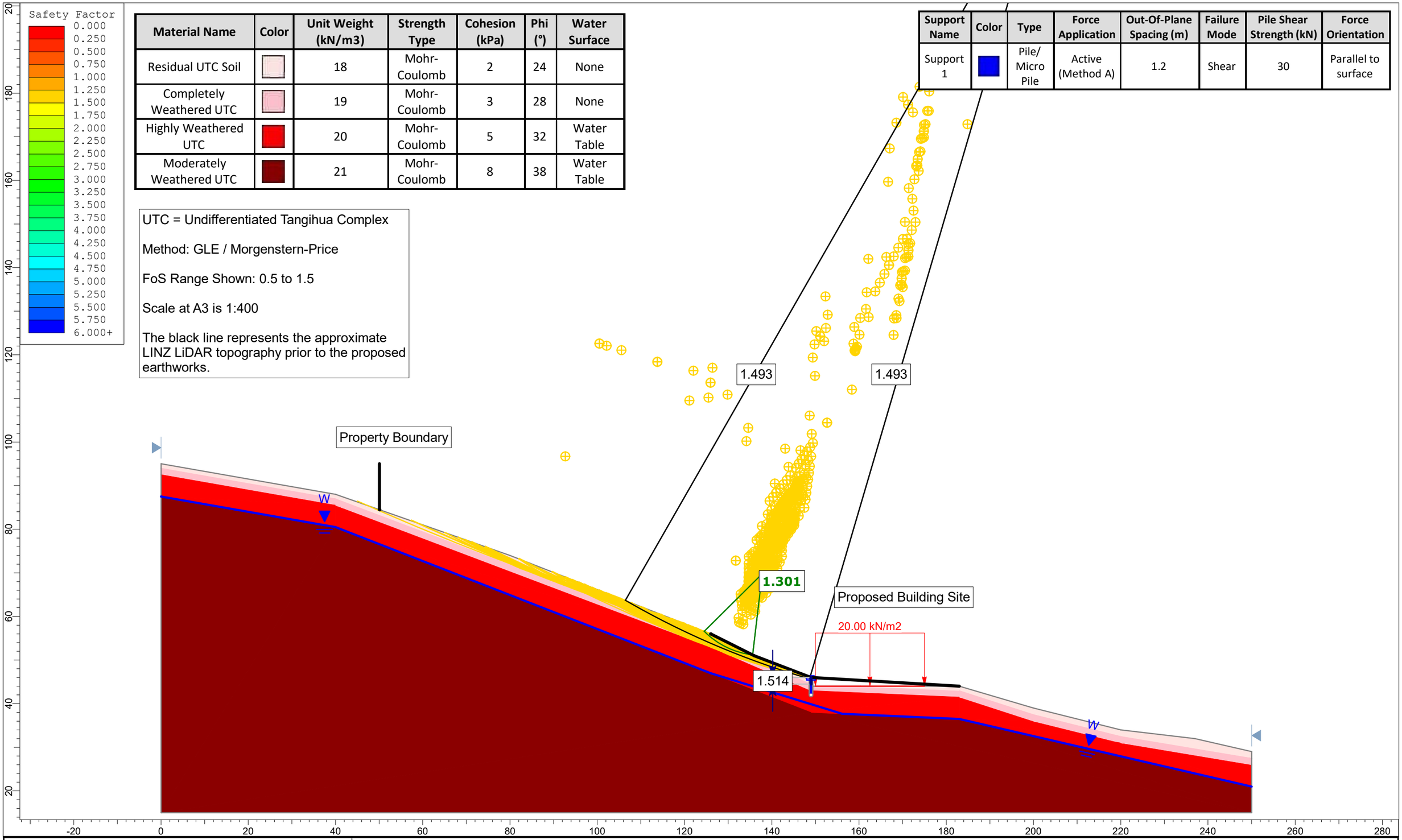
UTC = Undifferentiated Tangihua Complex

Method: GLE / Morgenstern-Price

FoS Range Shown: 0.5 to 1.5

Scale at A3 is 1:400

The black line represents the approximate LINZ LiDAR topography prior to the proposed earthworks.



Hawthorn Geddes engineers & architects ltd

SLIDEINTERPRET 9.036

Project	Slide2 - An Interactive Slope Stability Program		
Group	Proposed Conditions- Cross Section B	Scenario	NGWT
Drawn By		Company	
Date	27/03/2025, 9:58:10 a.m.	File Name	geo 250327 slide2 13321.slmd

Safety Factor
0.000
0.250
0.500
0.750
1.000
1.250
1.500
1.750
2.000
2.250
2.500
2.750
3.000
3.250
3.500
3.750
4.000
4.250
4.500
4.750
5.000
5.250
5.500
5.750
6.000+

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	Water Table
Completely Weathered UTC		19	Mohr-Coulomb	3	28	Water Table
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Failure Mode	Pile Shear Strength (kN)	Force Orientation
Support 1		Pile/ Micro Pile	Active (Method A)	1.2	Shear	30	Parallel to surface

UTC = Undifferentiated Tangihua Complex

Method: GLE / Morgenstern-Price

FoS Range Shown: 0.5 to 1.5

Scale at A3 is 1:400

The black line represents the approximate LINZ LiDAR topography prior to the proposed earthworks.

1.224

1.448

1.448

Property Boundary

W

W

Proposed Building Site

20.00 kN/m2

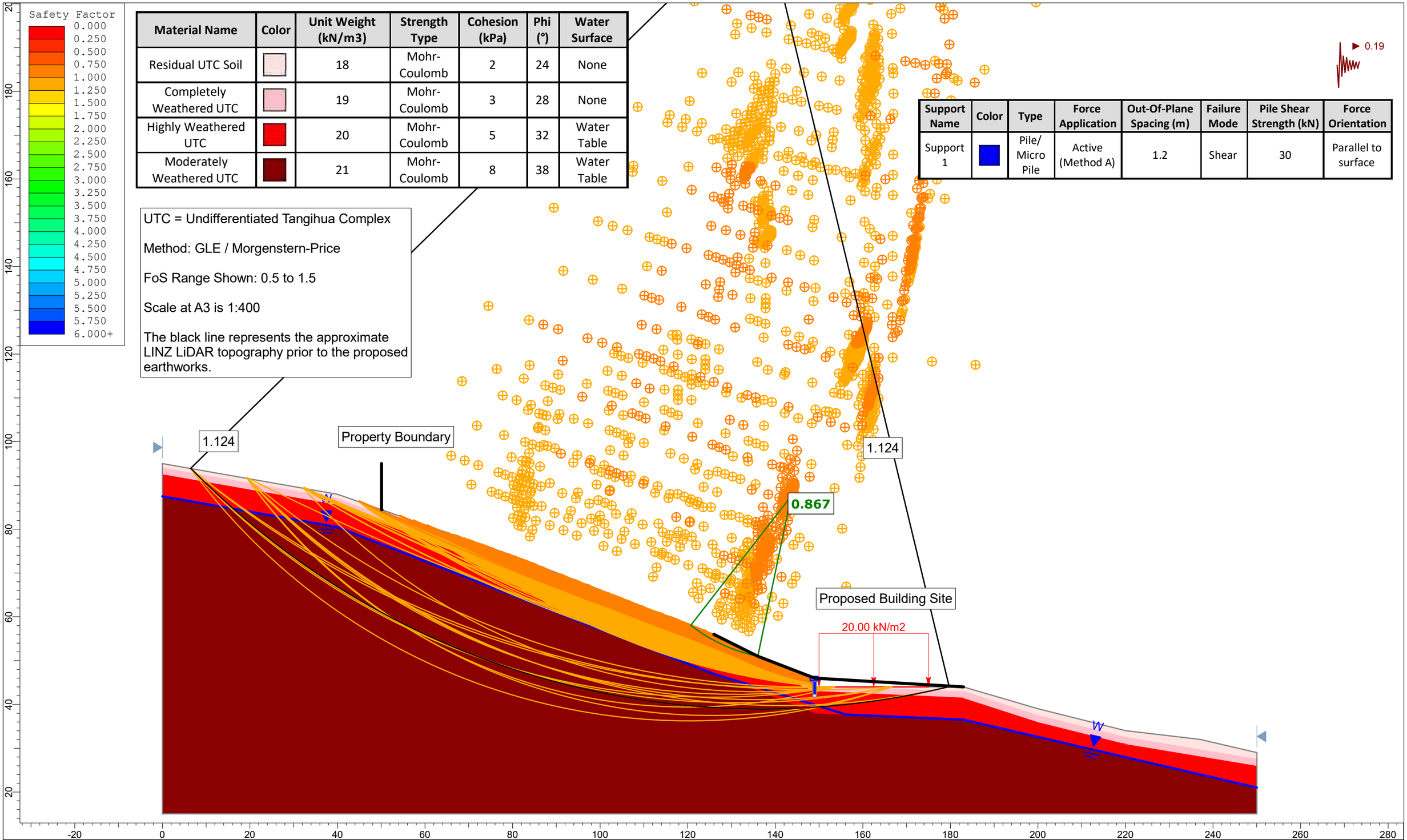
20
40
60
80
100
120
140
160
180
200

-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

Hawthorn Geddes engineers & architects ltd

SLIDEINTERPRET 9.036

Project	Slide2 - An Interactive Slope Stability Program		
Group	Proposed Conditions- Cross Section B	Scenario	EGWT
Drawn By		Company	
Date	27/03/2025, 9:58:10 a.m.	File Name	geo 250327 slide2 13321.slmd



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface
Residual UTC Soil		18	Mohr-Coulomb	2	24	None
Completely Weathered UTC		19	Mohr-Coulomb	3	28	None
Highly Weathered UTC		20	Mohr-Coulomb	5	32	Water Table
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	Water Table

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Failure Mode	Pile Shear Strength (kN)	Force Orientation
Support 1		Pile/ Micro Pile	Active (Method A)	1.2	Shear	30	Parallel to surface

UTC = Undifferentiated Tangihua Complex

Method: GLE / Morgenstern-Price

FoS Range Shown: 0.5 to 1.5

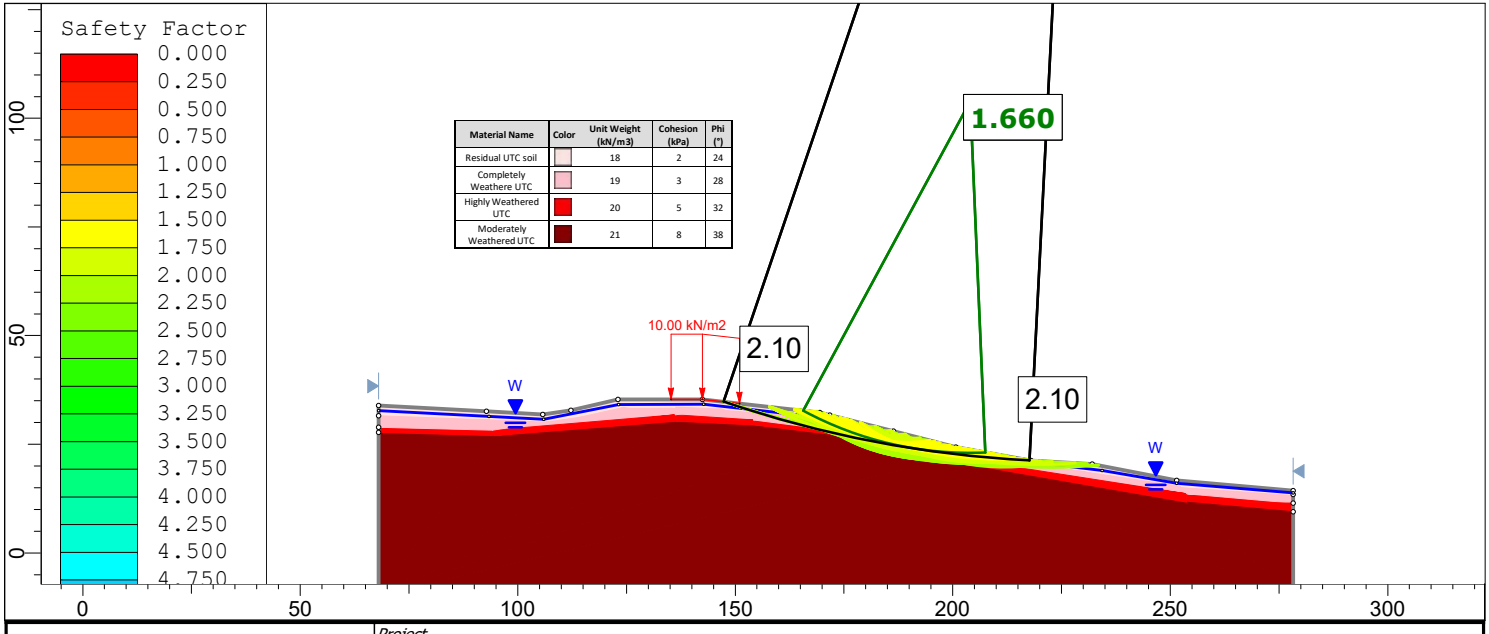
Scale at A3 is 1:400

The black line represents the approximate LINZ LiDAR topography prior to the proposed earthworks.

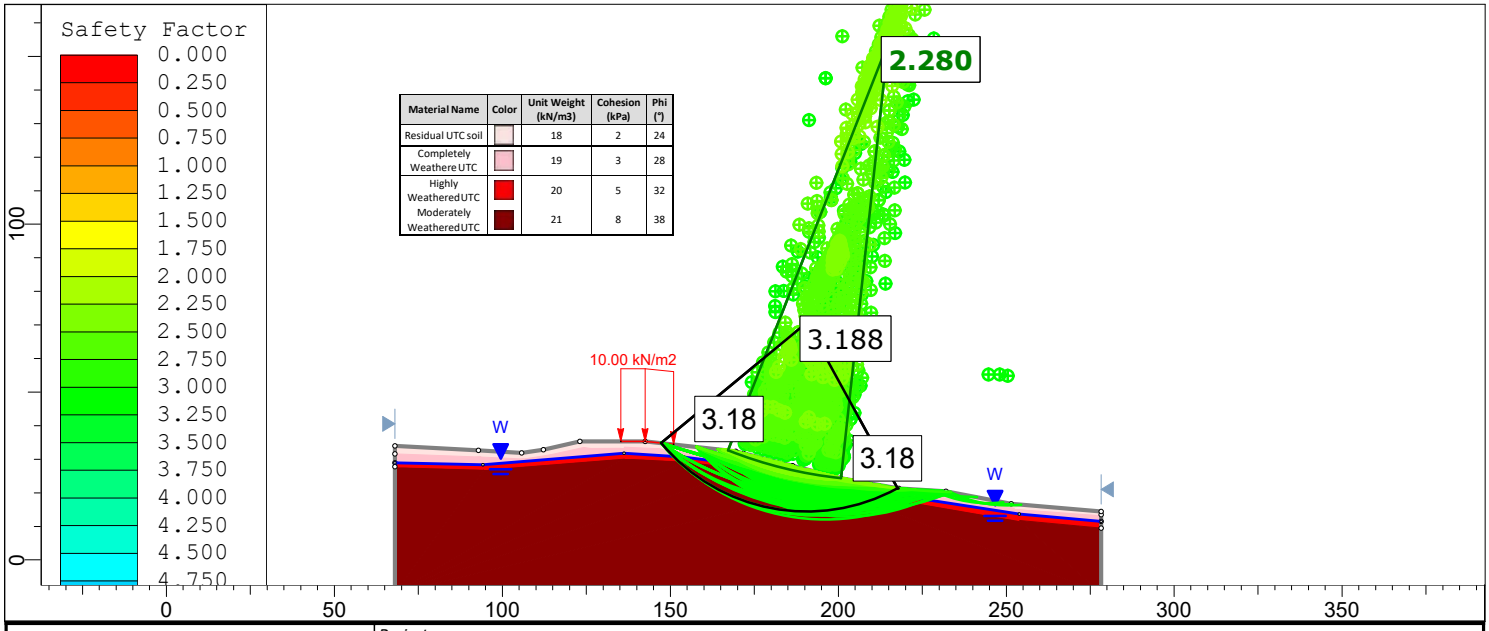
Hawthorn Geddes engineers & architects ltd

SLIDEINTERPRET 9.036

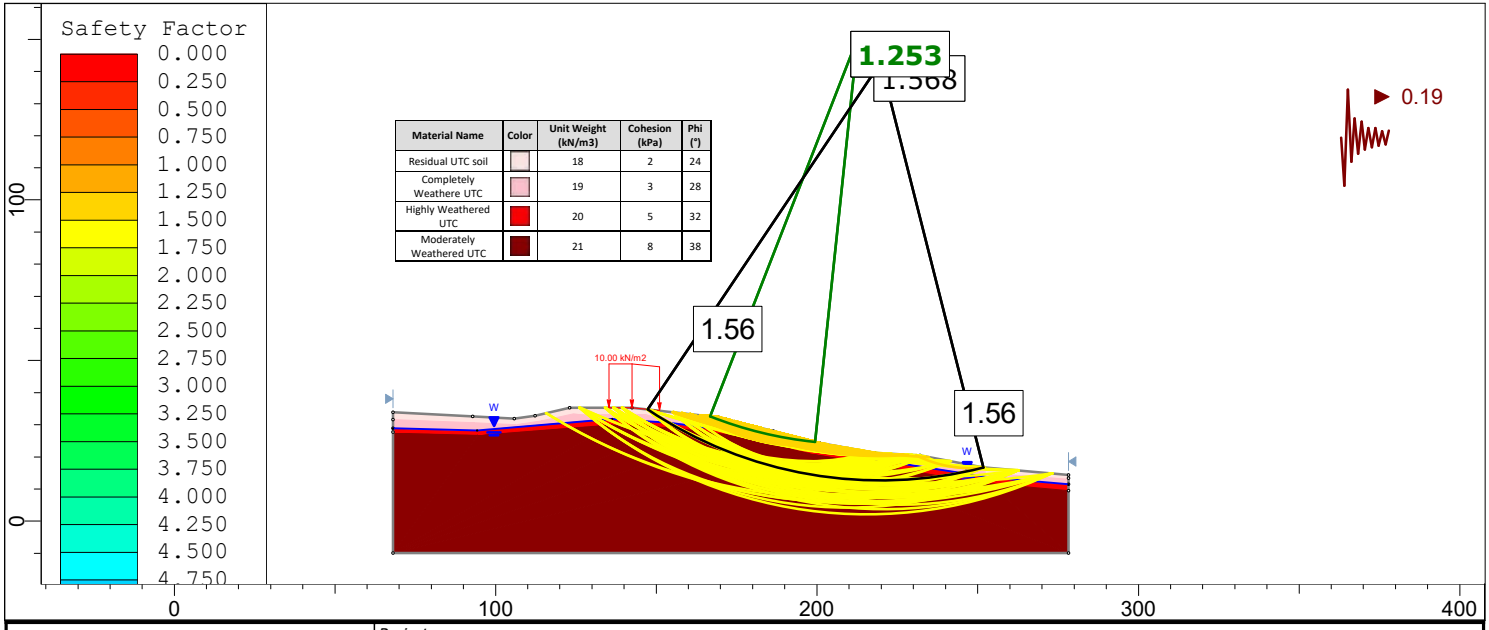
Project	Slide2 - An Interactive Slope Stability Program		
Group	Proposed Conditions- Cross Section B	Scenario	Seismic - DCLS
Drawn By		Company	
Date	27/03/2025, 9:58:10 a.m.	File Name	geo 250327 slide2 13321.slmd



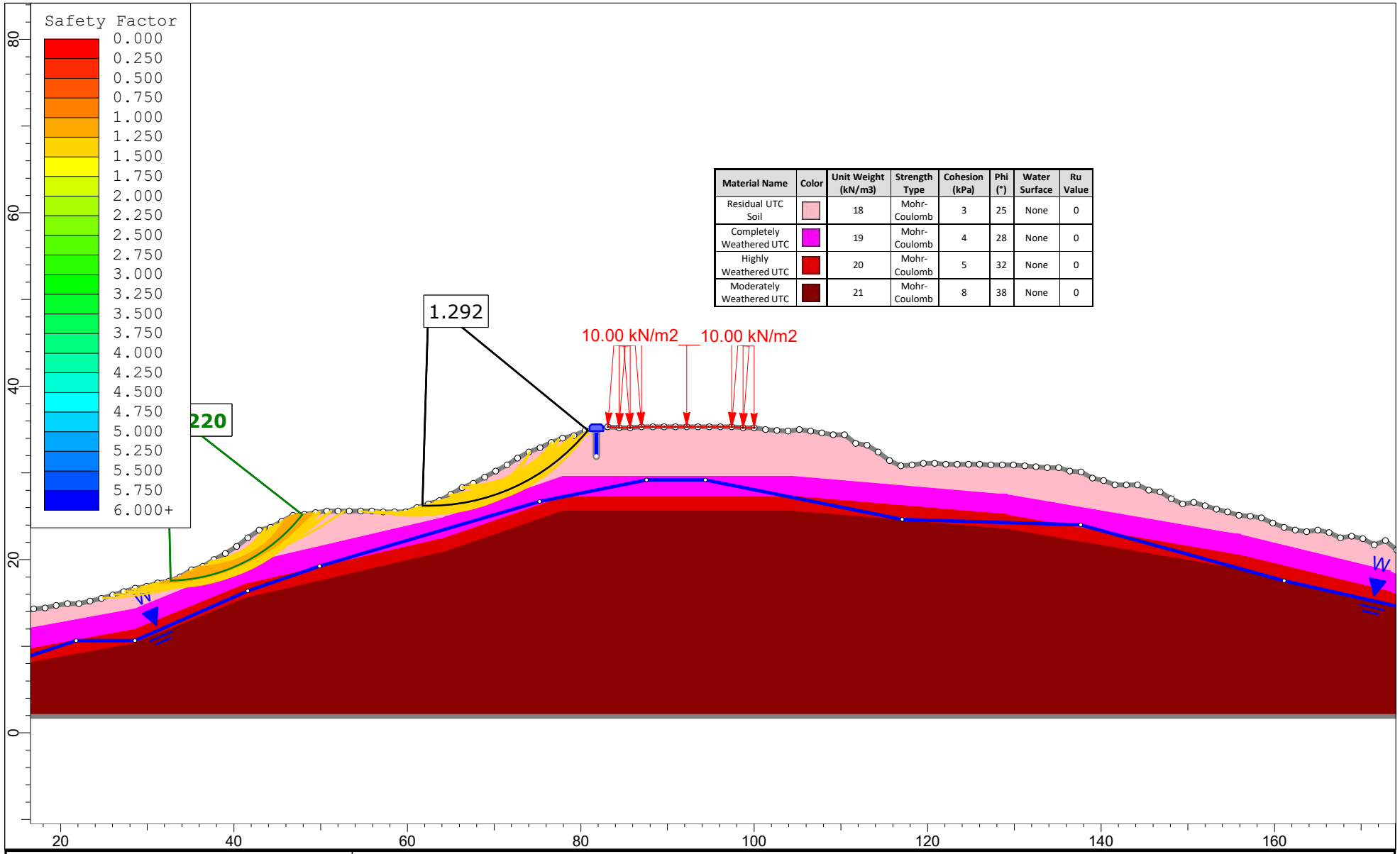
Hawthorn Geddes engineers & architects ltd	*Project*	Slide2 - An Interactive Slope Stability Program	
	Group Group 1	*Scenario* EGWT	
	Drawn By	*Company*	
SLIDEINTERPRET 9.029	*Date* 10/11/2025, 9:56:48 a.m.	*File Name* geo 251110 slide 2 13321 (Lot1).slmd	



Hawthorn Geddes engineers & architects ltd	*Project*	Slide2 - An Interactive Slope Stability Program	
	Group Group 1		*Scenario* NGWT
	Drawn By		*Company*
SLIDEINTERPRET 9.029	*Date* 10/11/2025, 9:56:48 a.m.		*File Name* geo 251110 slide 2 13321 (Lot1).slmd



Hawthorn Geddes engineers & architects ltd	*Project*	Slide2 - An Interactive Slope Stability Program	
	Group Group 1		*Scenario* DCLS- Seismic
	Drawn By		*Company*
SLIDEINTERPRET 9.029	*Date* 10/11/2025, 9:56:48 a.m.		*File Name* geo 251110 slide 2 13321 (Lot1).slmd

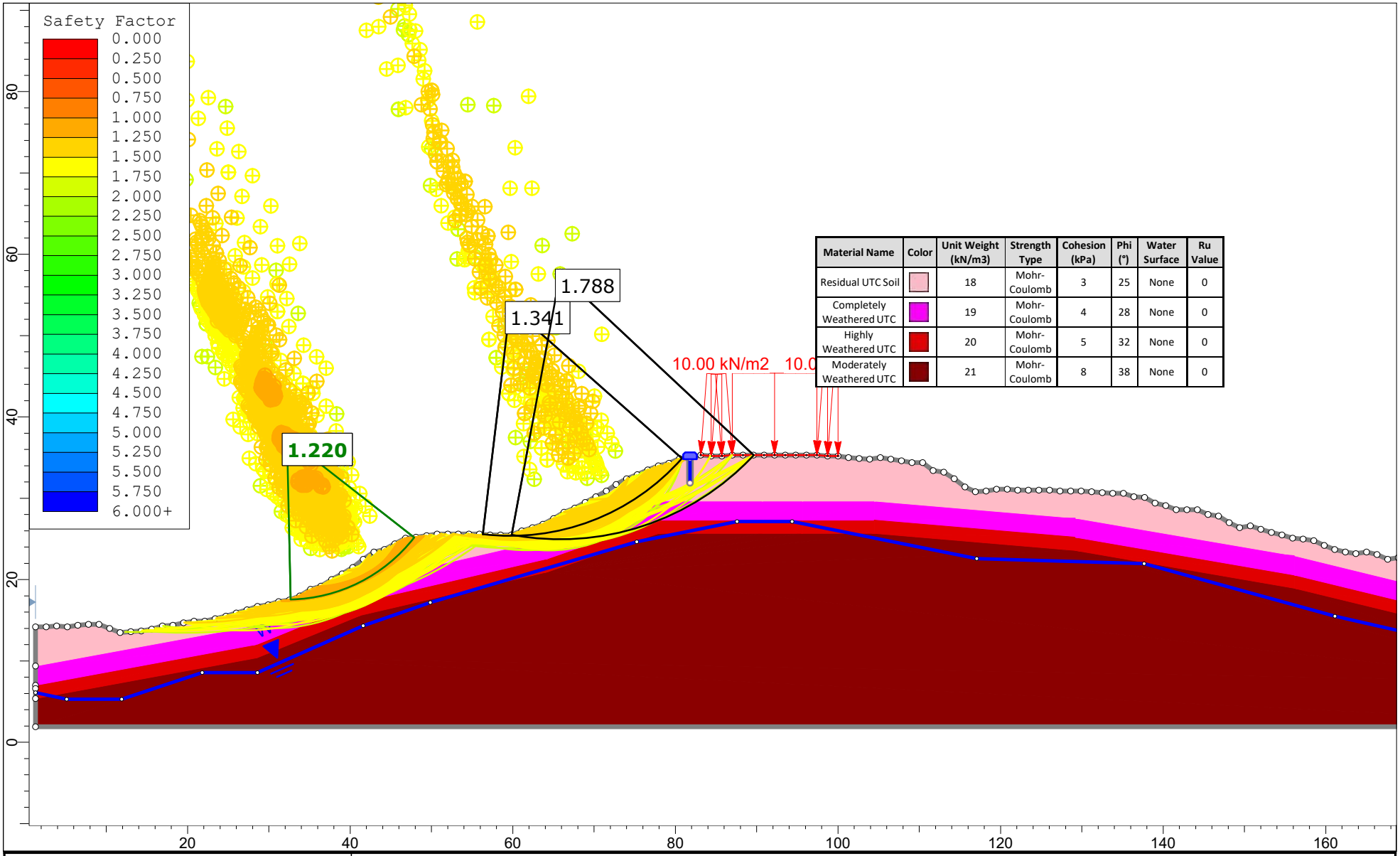


Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Ru Value
Residual UTC Soil		18	Mohr-Coulomb	3	25	None	0
Completely Weathered UTC		19	Mohr-Coulomb	4	28	None	0
Highly Weathered UTC		20	Mohr-Coulomb	5	32	None	0
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	None	0

Hawthorn Geddes engineers & architects ltd

SLIDEINTERPRET 9.040

Project	Slide2 - An Interactive Slope Stability Program		
Group	Proposed Conditions Cross Section C	*Scenario*	EGWT
Drawn By		*Company*	
Date	11/12/2025, 12:09:40 p.m.	*File Name*	geo 251211 slide2 13321 (Revised lot 1).slmd

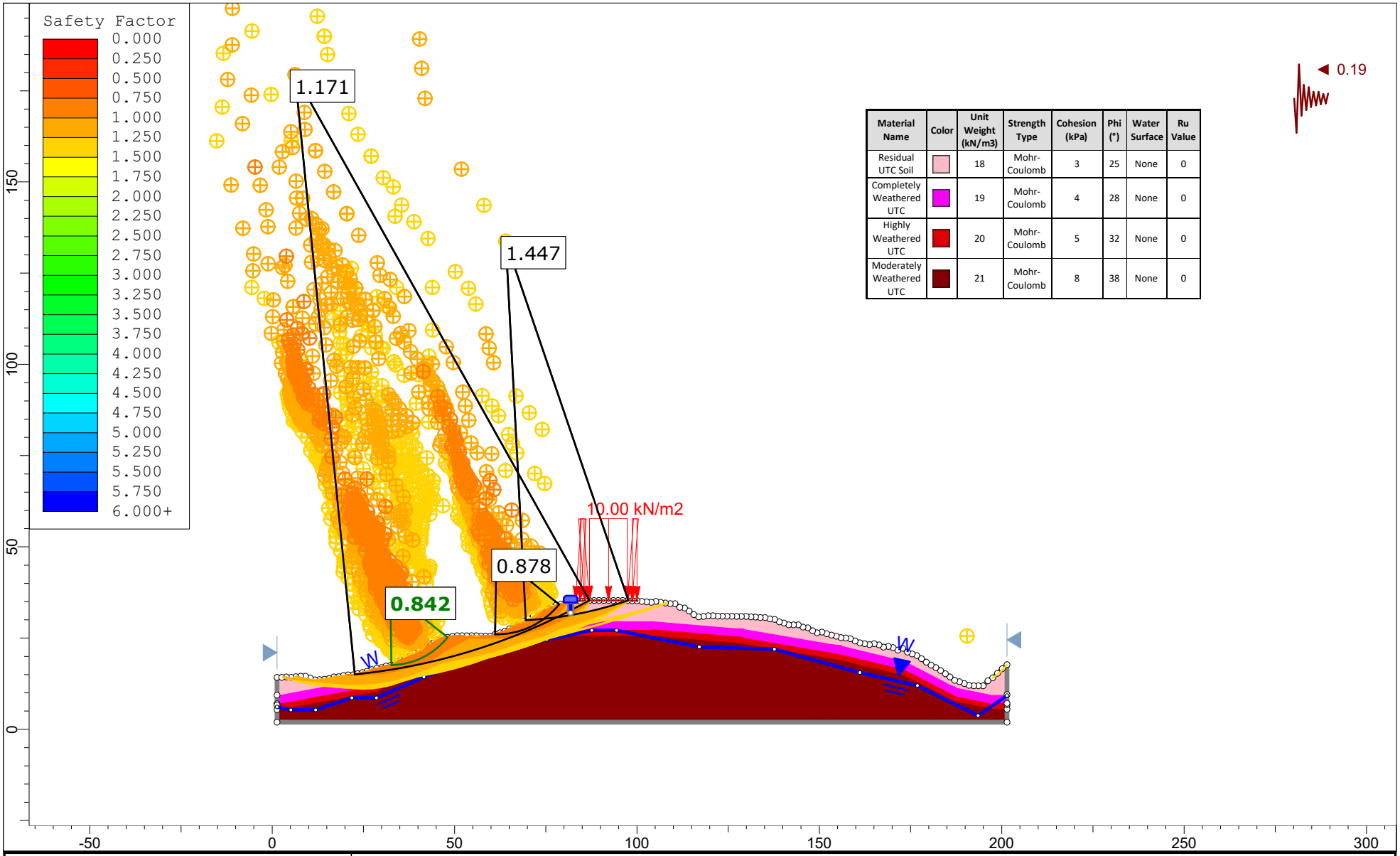


Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Ru Value
Residual UTC Soil		18	Mohr-Coulomb	3	25	None	0
Completely Weathered UTC		19	Mohr-Coulomb	4	28	None	0
Highly Weathered UTC		20	Mohr-Coulomb	5	32	None	0
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	None	0

Hawthorn Geddes engineers & architects ltd

SLIDEINTERPRET 9.040

Project	Slide2 - An Interactive Slope Stability Program		
Group	Proposed Conditions Cross Section C	*Scenario*	NGWT
Drawn By		*Company*	
Date	11/12/2025, 12:09:40 p.m.	*File Name*	geo 251211 slide2 13321 (Revised lot 1).slmd

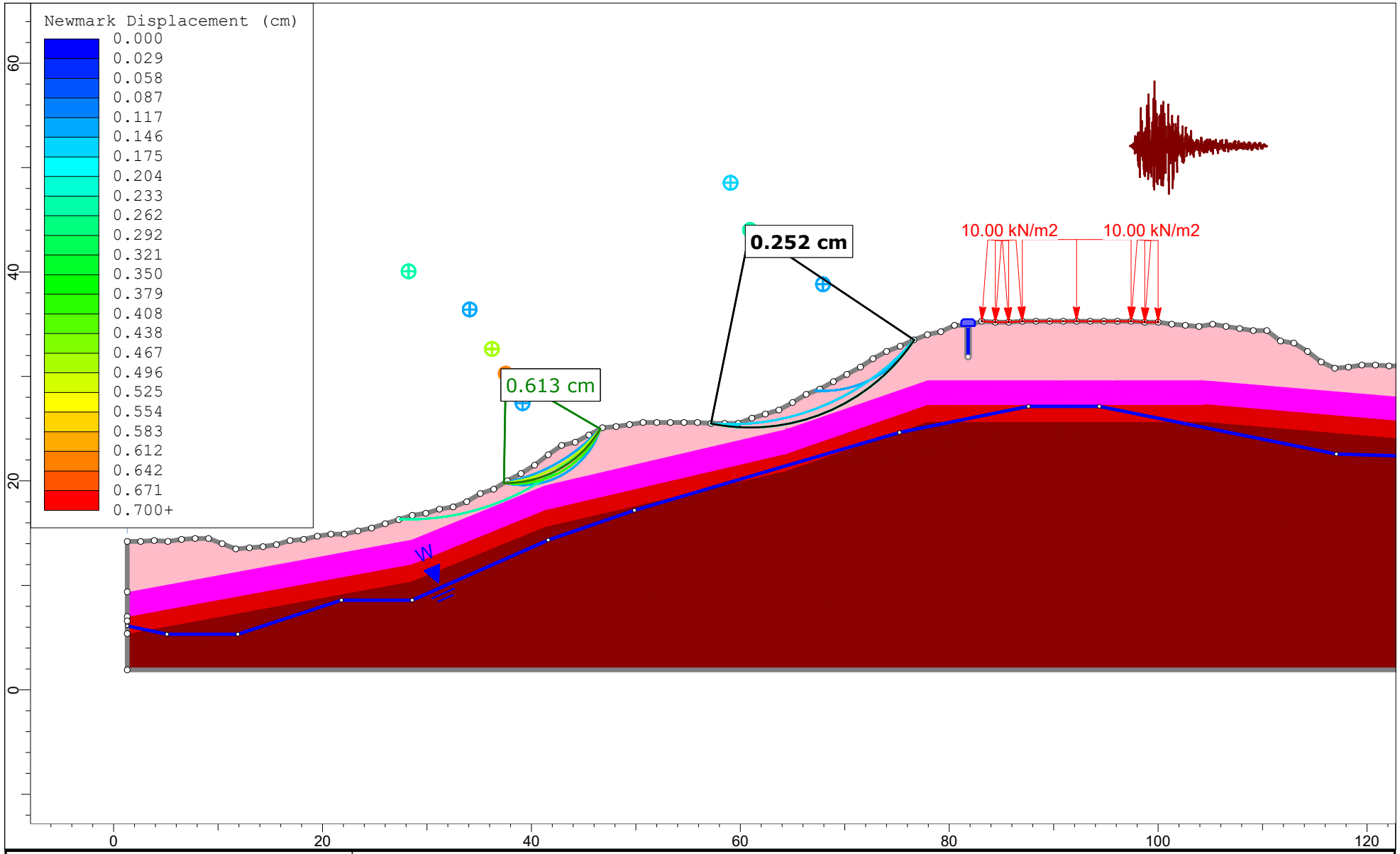


Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Ru Value
Residual UTC Soil		18	Mohr-Coulomb	3	25	None	0
Completely Weathered UTC		19	Mohr-Coulomb	4	28	None	0
Highly Weathered UTC		20	Mohr-Coulomb	5	32	None	0
Moderately Weathered UTC		21	Mohr-Coulomb	8	38	None	0

Hawthorn Geddes engineers & architects ltd

SLIDEINTERPRET 9.040

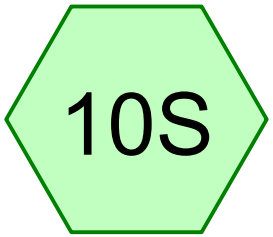
Project	Slide2 - An Interactive Slope Stability Program		
Group	Proposed Conditions Cross Section C	Scenario	Seismic - DCLS
Drawn By		Company	
Date	11/12/2025, 12:09:40 p.m.	File Name	geo 251211 slide2 13321 (Revised lot 1).slmd



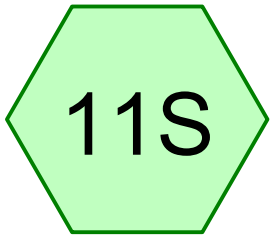
Hawthorn Geddes engineers & architects ltd	*Project*	Slide2 - An Interactive Slope Stability Program	
	Group	Proposed Conditions Cross Section C	*Scenario* Kobe - Newmark
	Drawn By		*Company*
	Date	11/12/2025, 12:09:40 p.m.	*File Name* geo 251211 slide2 13321 (Revised lot 1).slmd

SLIDEINTERPRET 9.040

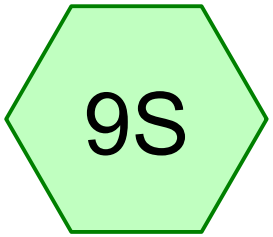
Appendix D. HydroCAD Report



pre-dev

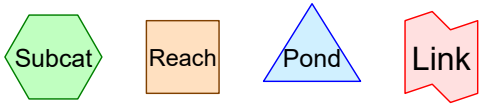


post-dev



Impervious Area
(100m2)

weighted CN
assessment



Routing Diagram for Diffuse discharge
Prepared by Hawthorn Geddes Eng & Arch Ltd, Printed 21/02/2025

Summary for Subcatchment 9S: Impervious Area (100m2)

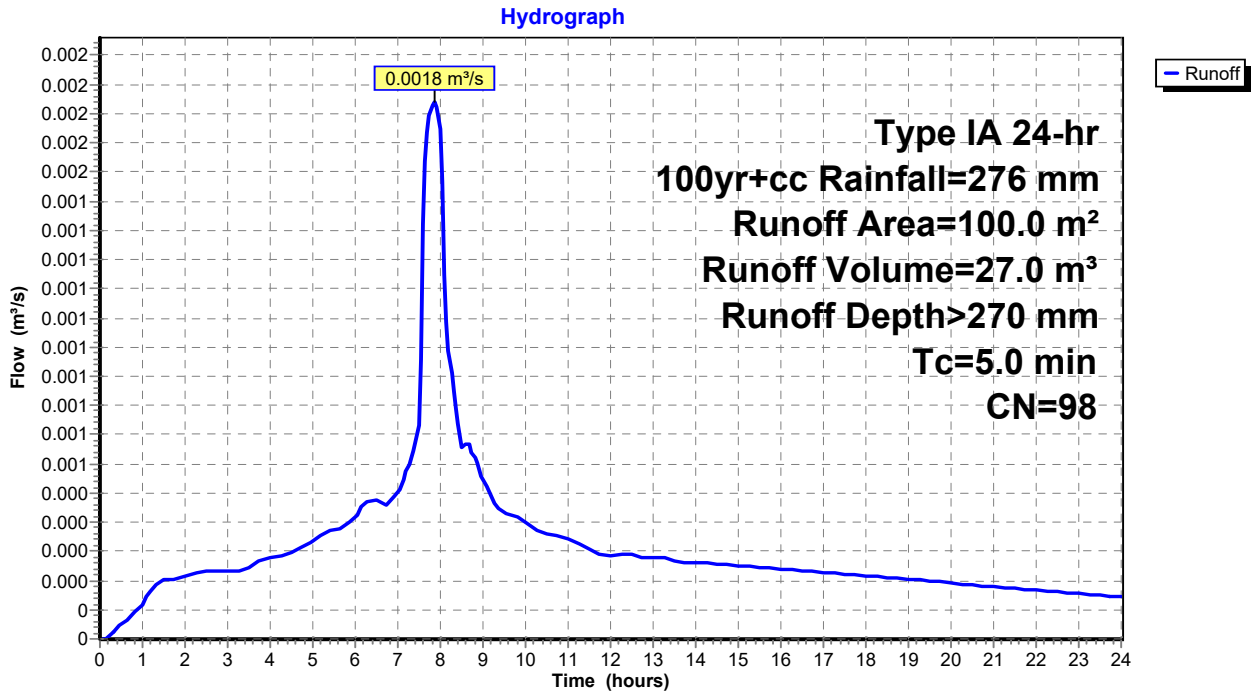
Runoff = 0.0018 m³/s @ 7.85 hrs, Volume= 27.0 m³, Depth> 270 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100yr+cc Rainfall=276 mm

	Area (m²)	CN	Description
*	100.0	98	impervious
	100.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
5.0					**Direct Entry,**

Subcatchment 9S: Impervious Area (100m2)



In reply please quote: Job No:13321

Hawthorn Geddes
engineers & architects ltd

8th July 2025

Attention: Max Beckham
Via email: maxbeckham1947@gmail.com

STREAM HYDROLOGICAL ASSESSMENT AND SUITABILITY OF RIGHT OF WAY FOR 190D MIDGELY ROAD, MANGONUI

Purpose

The purpose of this report is to provide an assessment of stream hydrology to inform the design of the culvert crossing on the proposed driveway (presently a ford), and to assess the suitability of the existing access from Midgley Road to 190D Midgely Road, Mangonui (Lot 4 DP 205071) for subdividing into 2 lots.

General

The access to the proposed site includes a stream that traverses the proposed driveway; therefore, a culvert crossing is proposed across the stream to provide driveway access to the site.

The access to the proposed (Lot 4 DP 205071) site from Midgley Road is provided via an existing private accessway a jointly owned access lot (57 DP 205071), an assessment has been undertaken to confirm that the existing right-of-way complies with the relevant requirements of the Far North District Council (FNDC) engineering standards.

Hydrological assessment

The contributing catchment to the driveway crossing location covers 31.8 hectares, approximated to be category HSG D with a Curve Number (CN) of 74. A 1200 mm diameter culvert is proposed to convey stream flows beneath the driveway from the shared private access from Midgley Road. During major rainfall events, when the culvert reaches full capacity, the crossing will function as a spillway.

Based on the HydroCAD analysis, three design rainfall events were evaluated: the 2-year, 50-year, and 100-year storm events with Type IA distribution over a 24-hour period.

For the 2-year event with 96 mm of rainfall, the peak inflow reached 0.65 m³/s with a corresponding water elevation of 0.6 m, fully conveyed through the culvert without any surcharge. During the 50-year event (204 mm rainfall), the inflow increased to 2.7 m³/s, raising the water level to 1.5 m, still conveyed entirely by the culvert. Under the 100-year storm (263 mm rainfall), the inflow is

3.8m³/s, and the peak water level reached headup to 2.23m above the culvert invert, which exceeded the culvert's capacity, triggering flow over the secondary overflow structure, a spillway(driveway), which discharges at 0.13 m³/s. This pattern continued over the 100 years with a 20% climate change scenario, where inflow at 3.8m³/s peaked with the driveway conveying weir 0.38 m³/s of that flow at a peak elevation of 2.25 m. See the attached HydroCAD report.

An additional analysis was conducted modelling a blocked culvert scenario under a 100-year rainfall event. In this case, all flow was directed over the spillway (weir insignificant upstream storage), resulting in a peak water level of 2.4 meters above the culvert inlet level. The attached HydroCAD report and the figure refers.

Private accessway

The existing private access currently serves 4 lots located on Lot 57 DP 205071, connecting to Midgley Road. Under the previously issued (now lapsed) consent RC-2080526-RMASUB dated 29 August 2008 (subdivision of Lot 4 DP 205071), the accessway was required to provide a 5.0-meter-wide metalled carriageway within a 7.5-meter legal width, in accordance with the Far North District Council (FNDC) Engineering Standards applicable at the time. It is understood that these construction requirements have been fully implemented.

Under the updated 2023 FNDC Engineering Standards, private accessways serving up to 5 lots must provide a 4.5-meter-wide carriageway within a 6-meter legal width. The existing accessway formation is confirmed to meet both the historical consent conditions and the current FNDC standards. The previously completed works remain compliant and appropriate for the intended use. Minor improvements, including localised road surface stabilisation and vegetation clearance, are recommended to enhance vehicular accessibility and safety.

Figure 1: Existing private access way to Midgely Road

Conclusion

To convey catchment flows at the proposed driveway stream crossing requires a 1200mm diameter culvert with flows over the driveway weir over the 100-year rainfall event. The driveway weir is to be formed in concrete to avoid scour.

The existing private accessway from Midgley Road complies with both the historical and current FNDC Engineering Standard, and the access is suitable for the proposed subdivision.

Limitation

This report has been prepared solely for the benefit of our client Max Beckham and the Far North District Council in relation to the resource consent application for which this report has been prepared. The comments in it are limited to the purpose stated in this report. No liability is accepted by Hawthorn Geddes engineers & architects ltd in respect of its use by any other person, and any other person who relies upon any matter contained in this report does so entirely at their own risk.

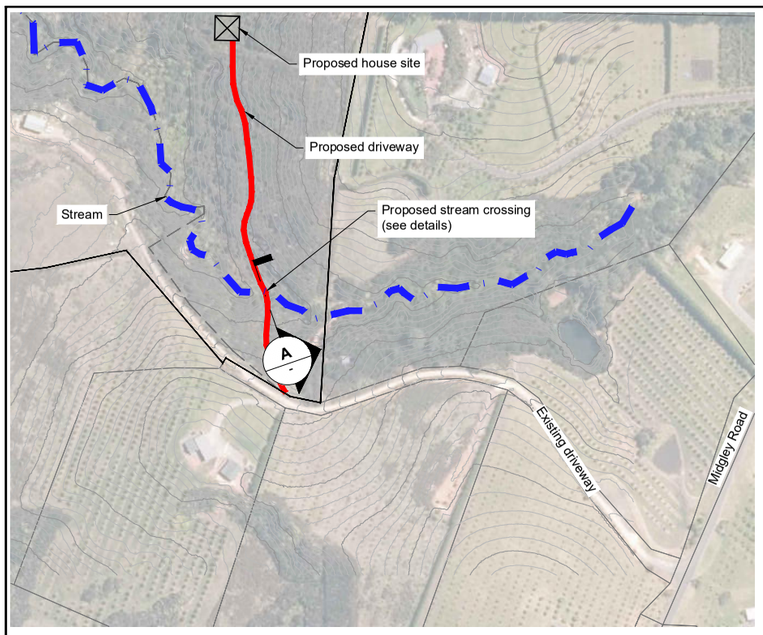
Yours faithfully,

James Blackburn
Hawthorn Geddes
engineers & architects ltd

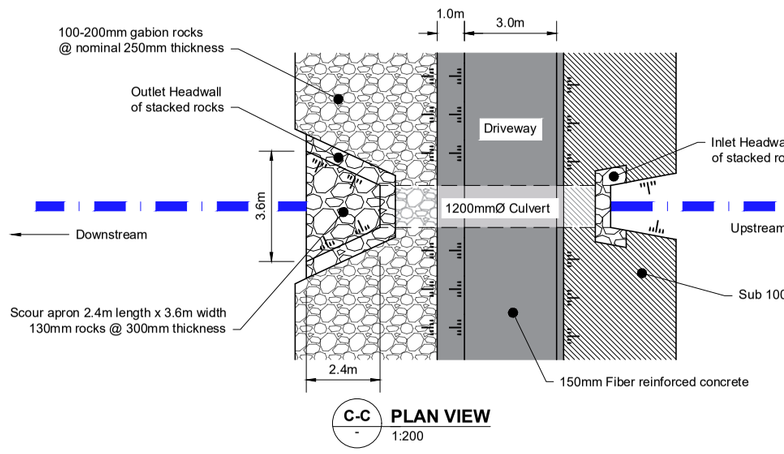
Report prepared by: Aavril Jose

Encl: HydroCAD Report (5 x A4 pages)
Typical stream cross section (1 x A3 pages)

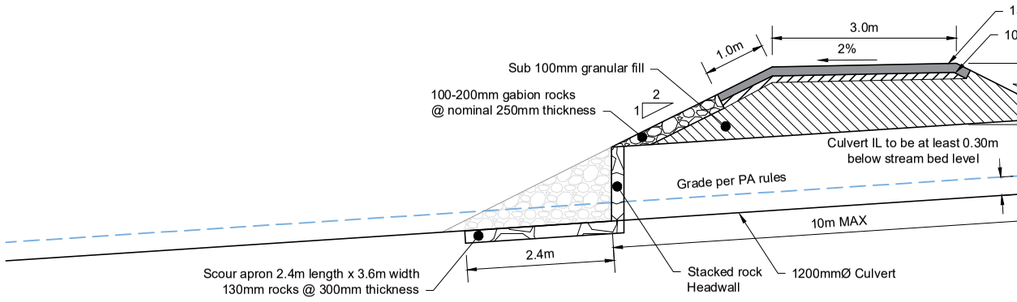
Cc: neil.mumby@cablebayconsulting.co.nz



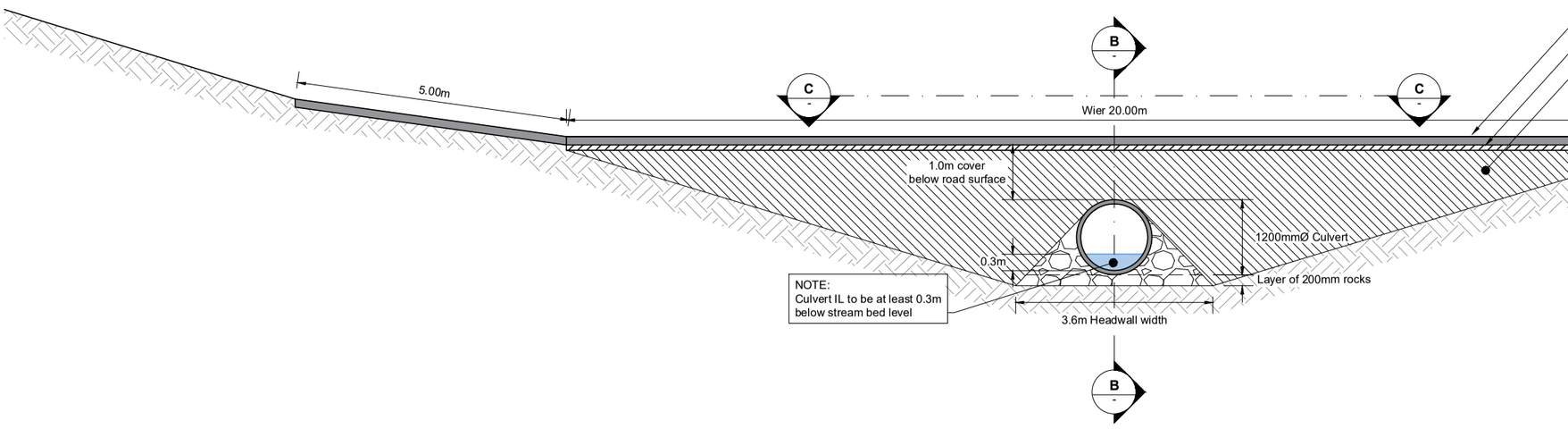
LOCALITY PLAN
1:5000



C-C **PLAN VIEW**
1:200



B-B **CROSS SECTION**
1:100



A **TYPICAL CROSS SECTION**
1:100

THIS FIGURE IS TO BE READ ONLY IN CONJUNCTION WITH ASSOCIATED REPORT

USE WRITTEN DIMENSIONS. DO NOT SCALE FROM DRAWING.

Hawthorn Geddes
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Whangarei 0110
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hg@hgcs.co.nz
Unit 21a, The Grange
Warkworth 0910
Phone: 09 283 3428
www.hawthorngeddes.co.nz

CLIENT **MAX BECKHAM**

PROJECT **SUBDIVISION SUITABILITY**
190D MIDGLEY ROAD, MANGONU

DRAWING **TYPICAL STREAM CROSS SECTI**

Summary for Pond 14P: culvert 1200

Inflow Area = 313,800.0 m², 0.00% Impervious, Inflow Depth > 36 mm for 2yrs event
Inflow = 0.6522 m³/s @ 8.03 hrs, Volume= 11,396.6 m³
Outflow = 0.6522 m³/s @ 8.03 hrs, Volume= 11,396.6 m³, Atten= 0%, Lag= 0.0 min
Primary = 0.6522 m³/s @ 8.03 hrs, Volume= 11,396.6 m³
Secondary = 0.0000 m³/s @ 0.00 hrs, Volume= 0.0 m³

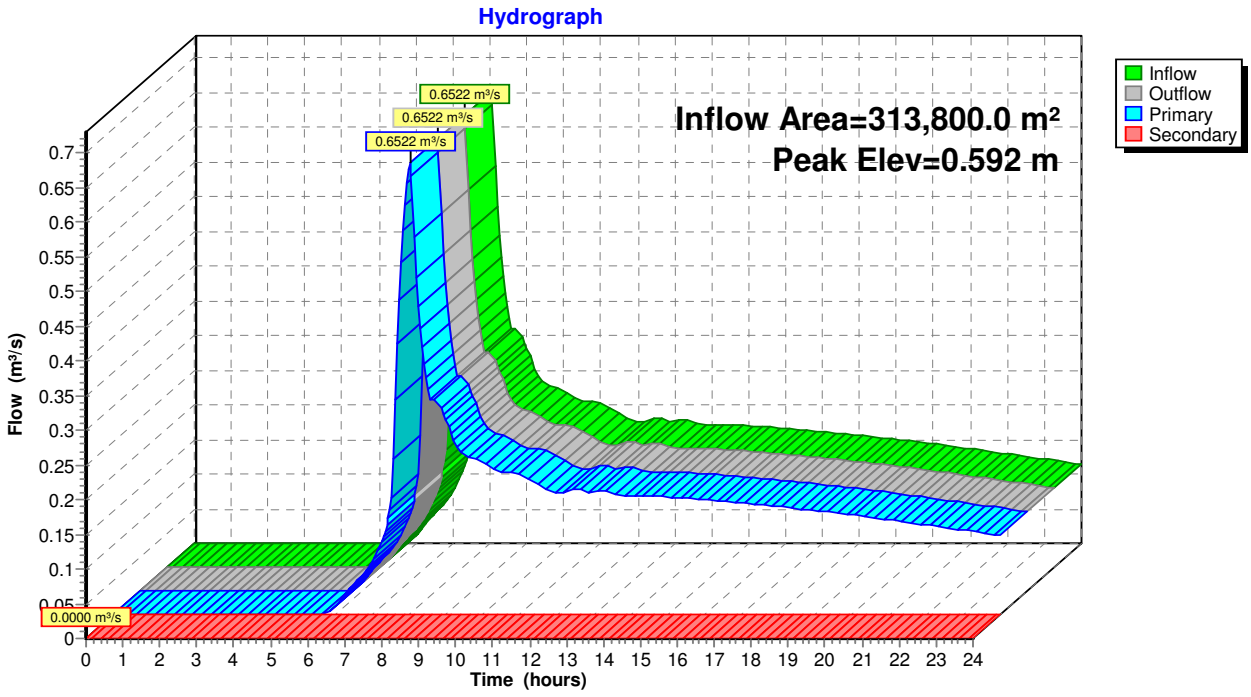
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.592 m @ 8.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**1,200 mm Round Culvert** L= 10.00 m Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.100 m S= 0.0100 m/m Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.131 m²
#2	Secondary	2.200 m	**20.00 m long x 3.00 m breadth Broad-Crested Rectangular Weir** Head (meters) 0.061 0.122 0.183 0.244 0.305 0.366 0.427 0.488 Coef. (Metric) 1.37 1.41 1.49 1.48 1.48 1.48 1.47 1.46

Primary OutFlow Max=0.6474 m³/s @ 8.03 hrs HW=0.590 m (Free Discharge)
└**1=Culvert** (Barrel Controls 0.6474 m³/s @ 1.71 m/s)

Secondary OutFlow Max=0.0000 m³/s @ 0.00 hrs HW=0.000 m (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0000 m³/s)

Pond 14P: culvert 1200



Summary for Pond 14P: culvert 1200

Inflow Area = 313,800.0 m², 0.00% Impervious, Inflow Depth > 125 mm for 50yrs event
Inflow = 2.7201 m³/s @ 7.99 hrs, Volume= 39,344.3 m³
Outflow = 2.7201 m³/s @ 7.99 hrs, Volume= 39,344.3 m³, Atten= 0%, Lag= 0.0 min
Primary = 2.7201 m³/s @ 7.99 hrs, Volume= 39,344.3 m³
Secondary = 0.0000 m³/s @ 0.00 hrs, Volume= 0.0 m³

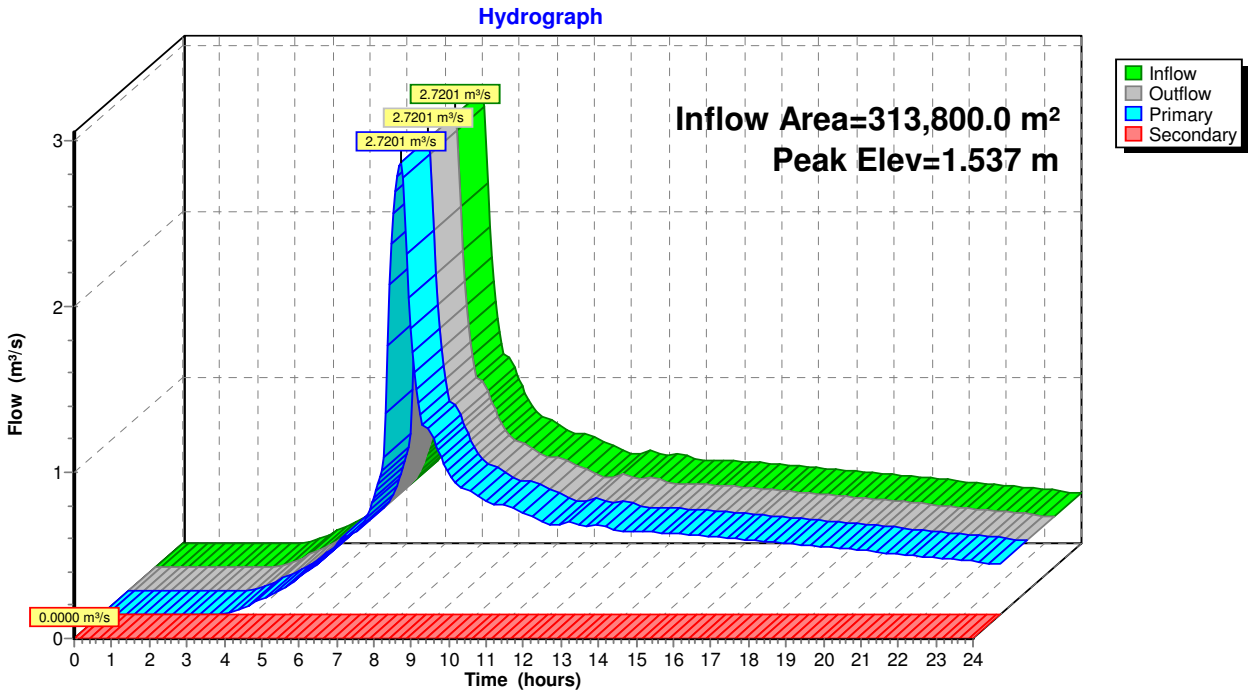
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.537 m @ 7.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**1,200 mm Round Culvert** L= 10.00 m Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.100 m S= 0.0100 m/m Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.131 m²
#2	Secondary	2.200 m	**20.00 m long x 3.00 m breadth Broad-Crested Rectangular Weir** Head (meters) 0.061 0.122 0.183 0.244 0.305 0.366 0.427 0.488 Coef. (Metric) 1.37 1.41 1.49 1.48 1.48 1.48 1.47 1.46

Primary OutFlow Max=2.7171 m³/s @ 7.99 hrs HW=1.535 m (Free Discharge)
└**1=Culvert** (Barrel Controls 2.7171 m³/s @ 2.44 m/s)

Secondary OutFlow Max=0.0000 m³/s @ 0.00 hrs HW=0.000 m (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0000 m³/s)

Pond 14P: culvert 1200



Summary for Pond 14P: culvert 1200

Inflow Area = 313,800.0 m², 0.00% Impervious, Inflow Depth > 179 mm for 100yr event
Inflow = 3.9777 m³/s @ 7.98 hrs, Volume= 56,209.9 m³
Outflow = 3.9777 m³/s @ 7.98 hrs, Volume= 56,209.9 m³, Atten= 0%, Lag= 0.0 min
Primary = 3.8364 m³/s @ 7.98 hrs, Volume= 56,135.7 m³
Secondary = 0.1412 m³/s @ 7.98 hrs, Volume= 74.1 m³

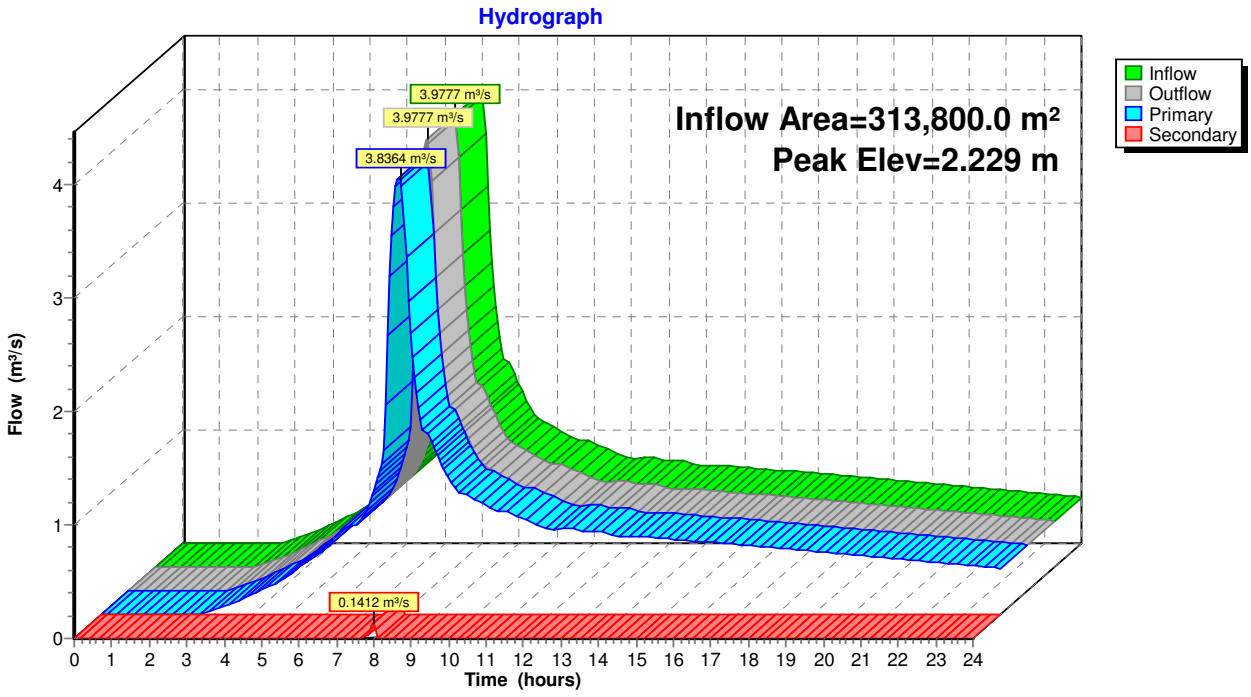
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 2.229 m @ 7.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**1,200 mm Round Culvert** L= 10.00 m Ke= 0.500 Inlet / Outlet Invert= 0.000 m / -0.100 m S= 0.0100 m/m Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.131 m²
#2	Secondary	2.200 m	**20.00 m long x 3.00 m breadth Broad-Crested Rectangular Weir** Head (meters) 0.061 0.122 0.183 0.244 0.305 0.366 0.427 0.488 Coef. (Metric) 1.37 1.41 1.49 1.48 1.48 1.48 1.47 1.46

Primary OutFlow Max=3.8350 m³/s @ 7.98 hrs HW=2.228 m (Free Discharge)
└**1=Culvert** (Inlet Controls 3.8350 m³/s @ 3.39 m/s)

Secondary OutFlow Max=0.1278 m³/s @ 7.98 hrs HW=2.228 m (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.1278 m³/s @ 0.23 m/s)

Pond 14P: culvert 1200



Attachment 6

PROPOSED DISTRICT PLAN – DEVELOPMENT CONTROL CHECK S.86B OF THE RMA 1991

Beckham - 190D Midgely Road

Rule	Assessment
Hazardous Substances HS-R2, R5, R6, R9	The site does not contain, nor are any hazardous substance facilities proposed.
Heritage Area Overlays HA-R1 to R14 inclusive. HA S1 & S2	N/A as none apply to the application site.
Historic Heritage Rules and Schedule 2. Rules HH R1-R9 Inclusive.	N/A as the site does not have any identified (scheduled) historic heritage values.
Notable Trees NT R1 – R9 inclusive and NT S1 & S2	N/A – no notable trees present on the site.
Sites and Areas of Significance to Māori SASM R1 – R7 inclusive.	The PDP does not list any site or area of significance to Māori as being present on the site.
Ecosystems and Indigenous Biodiversity – IB-R1 to R5	No indigenous vegetation clearance is proposed.
Subdivision SUB R6, R13, R14, R15, R17.	The site contains no Heritage Resources, Scheduled Sites of Significance to Māori or a Scheduled Significant Natural Area in the PDP. No Environmental Benefit subdivision is proposed.
Activities on the Surface of Water ASW R1 – R4 inclusive.	Structures associated with river crossings are specifically provided for as a permitted activity under R3.
Earthworks EW R12 & EW R13 and EWS3 & EWS5	EW-R12 and associated EW-S3 relate to the requirement to abide by Accidental Discovery Protocol if carrying out earthworks and artefacts are discovered. EW-R13 and associated EW-S5 refer to operating under appropriate Erosion and Sediment Control measures. These are addressed in the earthworks methodology.
Signage – SIGN R9 & R10 and S1 to S6 Inclusive.	N/A – No heritage resources are present on the site and signage does not form part of this application.

Attachment 7

OPERATIVE DISTRICT PLAN – DEVELOPMENT CONTROL CHECK

193D Midgley Road, Mangonui

Chapter / Rule	Compliance Statement
Chapter 12.1 - Landscapes and Natural Features	Does not apply as there is no landscape or natural feature overlay applying to the site.
Chapter 12.2 Indigenous Flora and Fauna	Does not apply as there is no clearance of indigenous vegetation proposed that exceeds permitted activity standards.
Chapters 12.5, (5A) and (5B) Heritage	Does not apply as the site does not contain any heritage sites, notable trees, sites of cultural significance to Māori that are scheduled in the ODP. There are also no recorded archaeological sites as shown on the NZAA Database on the subject site.
Chapter 12.7 Waterbodies	Does not apply as the subdivision does not include any buildings or other impermeable surfaces, nor on-site wastewater system, breaching the setback requirements specified in this chapter. Moreover stream crossings are provided for as a permitted activity under Rule 12.7.6.1.2
Chapter 12.8 Hazardous Substances	Does not apply as the activity being applied for is not a hazardous substances facility.
Chapter 12.9 Renewable Energy	Does not apply as the activity does not involve renewable energy.
13.6.5 Legal Road Frontage	The lot has adequate legal frontage as shown on plan of subdivision.
13.6.8 Subdivision Consent before work commences	All necessary calculations and assessment of effects have been provided so that this subdivision consent application is deemed to include consent to excavate and fill land for access and building platforms. No vegetation clearance in excess of the permitted activity standards is proposed.
13.7.2 Allotment size	**Discretionary Resource Consent** as lot sizes exceeding four hectares in size are provided for under Rule 13.7.2.(i) (1).
13.7.2.2 Allotment Dimensions	**Discretionary Resource Consent** as Lot 2 does not contain a square 30 metre by 30 metre building platform of 900m^2. Lot 2 contains a trapezoidal building platform containing 900m^2.
13.7.2.3 Amalgamation of Land	N/A
13.7.2.4 Lots Divided by Zone Boundaries	N/A
13.7.2.5 Outstanding Landscape, Outstanding Landscape Feature Or Outstanding Natural Feature	N/A as the ODP does not list any of these items on the site.
13.7.2.6 Access, Utilities, Roads, Reserves	N/A
13.7.2.7 Savings as to previous proposals	N/A

13.7.2.8 Proximity To Top Energy Transmission Lines	N/A
13.7.2.9 Proximity To The National Grid	N/A
13.7.3.1 Property Access	Complies - and as addressed under the Chapter 15 assessment below. See engineering report for further assessment.
13.7.3.2 Natural And Other Hazards	Complies – see attached engineering report on s.106 matters.
13.7.3.3 Water Supply	Complies - Water supply will be via roof catchment and also used for firefighting
13.7.3.4 Stormwater Disposal	Complies – an engineering report from a Chartered Professional Engineer has been supplied.
13.7.3.5 Sanitary Sewage Disposal	Complies - a report from a Chartered Professional Engineer has been supplied.
13.7.3.6 Energy Supply	Complies - see correspondence from Top Energy confirming connections available.
13.7.3.7 Telecommunications	Complies - See correspondence from the telecommunications provider confirming connections are available, albeit wireless will be utilised because of cost.
13.7.3.8 Easements For Any Purpose	N/A none proposed.
13.7.3.9 Preservation Of Heritage Resources, Vegetation, Fauna And Landscape, And Land Set Aside For Conservation Purposes	N/ A as there are no listed items present.
13.7.3.10 Access To Reserves And Waterways	N/A
13.7.3.11 Land Use Compatibility	Conditions of consent are provided to address this issue.
13.7.3.12 Proximity To Airports	N/A
Chapter 14 Financial Contributions	No esplanade reserve or strip is offered is as part of this subdivision.
Chapter 15.1.6A.1 & 15.1.6A.2 & 15.1.6A.2.1 – Traffic Movements	The rules in Chapter 15.1.6A.1 & 15.16A.2 are clear that they are to be applied in conjunction with the Traffic Intensity Factor (“TIF”) Tables in Appendix 3A. These only apply to land use activities so are not relevant to the proposed subdivision.
15.1.6B - Parking Requirements	As above, these rules apply to land use activities and not subdivision.
Rule 15.1.6C.1.1 to 15.1.6C.1.11 inclusive. Access	Complies – please refer to attached engineering report. Access works can be formed to Council’s “Engineering Standards and Guidelines” (June 2004 – Revised 2009).

190D Midgley Road

Far North District Council Rule 13.10 Assessment Criteria Assessment

Criterion	Assessment
Allotment size and dimensions	The proposed subdivision complies with the minimum discretionary lot size of four hectares but Lot 2 provides a trapezoidal building platform of 900m^2 that follows the flatter contours in this area.
Natural and Other Hazards	These issues have been assessed in the supplied engineering report that has specific comment on s.106 matters and the effects are considered minor.
Water Supply	This issue has been assessed in the supplied engineering report. Potable water will be via roof supply and adequate capacity for firefighting purposes can be conditioned on the subdivision consent. The effects are considered minor.
Stormwater Disposal	This issue has been assessed in the supplied engineering report and the effects are considered minor.
Sanitary Sewage Disposal	This issue has been assessed in the supplied engineering report and the effects are considered minor.
Energy Supply	Please refer to the correspondence from Top Energy in Attachment 13 confirming availability of supply.
Top Energy Transmission Lines	There are no transmission lines adversely affected by this proposal
Telecommunications	Please refer to the correspondence from Chorus in Attachment 13 confirming availability of supply.
Easements for any purpose	Please refer to the scheme plan prepared by a licensed surveyor. No easements are required.
Provision for Access	Please refer to the attached engineering report and scheme plan.
Effect of earthworks and utilities	Earthworks will be minimal with this proposed subdivision as accessways largely exist, albeit they are not yet to FNDC standards. This can be a condition of consent.
Building Locations	Building platforms are clear of ridgelines and any sensitive environmental areas. Access to Lot 2 will cross a small stream / ford, but crossings of this nature are specifically anticipated in the ODP.
Preservation of Heritage Resources, Vegetation, Fauna and Landscape and land set aside for conservation purposes	The subject site does not contain any listed heritage, vegetation, fauna or landscape values.
Soil	The site contains a combination of Class 4 and Class 6 soils only.
Access to Waterbodies	No streams with an average width of three metres or more exist on the site so there is no requirement for public access.

Land Use Incompatibility	The Applicant is offering a consent notice on reverse sensitivity matters to address this issue.
Proximity to Airports	There are no airports in proximity.
Natural character of the coastal environment	The site is removed from, and barely visible from the coastal environment.
Energy efficiency and renewable energy development / use	Building platforms have been sited to be north facing and facilitate environmentally sensitive designs.
National Grid Corridor	The subject site is not affected by the National Grid Corridor.

Attachment 8

Operative District Plan – Relevant Assessment Criteria

Beckham - 190D Midgley Road

Discretionary Subdivision Consent Assessment Criteria

In considering whether or not to grant consent or impose conditions on applications for discretionary (subdivision) activities, the Council will have regard to s104, s105 and s106 of the Act, the objectives and policies of the Plan and to the assessment criteria set out below.

Note: Attention is drawn to the need to also refer to ***Chapter 15.1*** for rules relating to property access.

13.10.1 ALLOTMENT SIZES AND DIMENSIONS

(a) Whether the allotment is of sufficient area and dimensions to provide for the intended purpose or land use, having regard to the relevant zone standards and any District wide rules for land uses.

(b) Whether the proposed allotment sizes and dimensions are sufficient for operational and maintenance requirements.

(c) The relationship of the proposed allotments and their compatibility with the pattern of the adjoining subdivision and land use activities, and access arrangements.

(d) Whether the cumulative and long term implications of proposed subdivisions are sustainable in terms of preservation of the rural and coastal environments.

13.10.2 NATURAL AND OTHER HAZARDS

In assessing any subdivision, and for the purposes of s106 of the Act, the Council will have regard to:

(a) Any information held by the Council or the Northland Regional Council regarding natural hazards, contaminated sites or other hazards.

(b) Information obtained by suitably qualified experts, whose investigations are supplied for subdivision applications.

(c) Potential adverse effects on other land that may be caused by the subdivision or anticipated land use activities.

(d) In relation to inundation from any source, the Council shall have regard to the following factors:

  (i) the effects of any proposed filling being undertaken to avoid inundation and the consequential effects on the natural drainage pattern and adjoining land;

  (ii) flood plain management measures proposed;

  (iii) the proposed coastal protection mechanisms / techniques / measures and their environmental effects;

  (iv) any proposed boundary drainage to protect surrounding properties;

  (v) the adequacy of existing outfalls and any need for upgrading;

  (vi) any need for retention basins to regulate the rate and volume of surface run-off.

(e) In relation to erosion, falling debris or slippage, the need for ongoing conditions aimed at avoiding, remedying or mitigating future potential adverse effects, and any need for registration of consent notices on the allotment's Certificate of Title, pursuant to ***Rule 13.6.7***.

(f) In relation to subsidence, the provision of suitability certificates, such as NZS 4431, or if not appropriate, the setting of ongoing conditions, with consent notices registered on the Certificates of Title, pursuant to ***Rule 13.6.7***.

(g) In relation to contaminated sites, any soil tests establishing suitability, and methods to avoid, mitigate or remedy the effects, including removal to approved disposal points.

(h) In relation to land filling and excavation operations, the following factors:

  (i) the effects on surrounding properties in terms of dust nuisance, visual detraction, or the potential height of buildings on filled land;

  (ii) any adverse impacts on the natural pattern of surface drainage both on and outside the site;

  (iii) the type of, and placement of, fill material in terms of its potential for contamination of land or water, or potential subsidence;

  (iv) mitigation, or avoidance, of adverse effects caused by filtration affecting neighbouring properties;

  (v) remedies necessary during emergencies;

  (vi) the rules contained in ***Section 12.3*** relating to filling and excavation of land;

  (vii) the impact of filling or excavation on heritage values, ecological values, cultural values, surface water quality, and access along waterways;

  (viii) any beneficial effects in terms of waterway enhancement.

Attention is drawn to Northland Regional Council's natural hazards information and to s106 of the Resource Management Act 1991 which allows a consent authority to refuse subdivision consent in certain circumstances.

13.10.3 WATER SUPPLY

(a) Where there is no reticulated water supply available for connection, whether it would be appropriate to allow a private restricted flow rural-type water supply system; such supply being always available and complying with *"Drinking Water Standards of New Zealand" (1995)*.

(b) Whether the provisions of the *"Engineering Standards and Guidelines 2004 – Revised March 2009"* (to be used in conjunction with NZS 4404:2004) have been met in respect of fire fighting water supply requirements.

(c) Whether the provisions of the Council's *"Engineering Standards and Guidelines" (2004) - Revised March 2009* (to be used in conjunction with NZS 4404:2004) have been met in respect of installation of all necessary water supply pipe lines, and ancillary equipment necessary for the subdivision, including extensions to existing supply systems, and including mains, sub-mains, service and fire hydrants.

(d) Whether the existing water supply systems, to which the connection will be made, have sufficient capacity to service the subdivision.

(e) Whether it may be necessary to provide new reservoirs, pumping stations and rising mains, or increased pipe sizes leading to the subdivision in existing streets, or providing new wells and new pumping units.

(f) Whether there is a need for a local purpose reserve to be set aside and vested in the Council as a site for any public water supply utility required to be provided.

13.10.4 STORMWATER DISPOSAL

(a) Whether the application complies with any regional rules relating to any water or discharge permits required under the Act, and with any resource consent issued to the District Council in relation to any urban drainage area stormwater management plan or similar plan.

(b) Whether the application complies with the provisions of the Council's *"Engineering Standards and Guidelines" (2004) - Revised March 2009* (to be used in conjunction with NZS 4404:2004).

(c) Whether the application complies with the Far North District Council Strategic Plan - Drainage.

(d) The degree to which Low Impact Design principles have been used to reduce site impermeability and to retain natural permeable areas.

(e) The adequacy of the proposed means of disposing of collected stormwater from the roof of all potential or existing buildings and from all impervious surfaces.

(f) The adequacy of any proposed means for screening out litter, the capture of chemical spillages, the containment of contamination from roads and paved areas, and of siltation.

(g) The practicality of retaining open natural waterway systems for stormwater disposal in preference to piped or canal systems and adverse effects on existing waterways.

(h) Whether there is sufficient capacity available in the Council's outfall stormwater system to cater for increased run-off from the proposed allotments.

(i) Where an existing outfall is not capable of accepting increased run-off, the adequacy of proposals and solutions for disposing of run-off.

(j) The necessity to provide on-site retention basins to contain surface run-off where the capacity of the outfall is incapable of accepting flows, and where the outfall has limited capacity, any need to restrict the rate of discharge from the subdivision to the same rate of discharge that existed on the land before the subdivision takes place.

(k) Any adverse effects of the proposed subdivision on drainage to, or from, adjoining properties and mitigation measures proposed to control any adverse effects.

(l) In accordance with sustainable management practices, the importance of disposing of stormwater by way of gravity pipe lines. However, where topography dictates that this is not possible, the adequacy of proposed pumping stations put forward as a satisfactory alternative.

(m) The extent to which it is proposed to fill contrary to the natural fall of the country to obtain gravity outfall; the practicality of obtaining easements through adjoining owners' land to other outfall systems; and whether filling or pumping may constitute a satisfactory alternative.

(n) For stormwater pipes and open waterway systems, the provision of appropriate easements in favour of either the registered user or in the case of the Council, easements in gross, to be shown on the survey plan for the subdivision, including private connections passing over other land protected by easements in favour of the user.

(o) Where an easement is defined as a line, being the centre line of a pipe already laid, the effect of any alteration of its size and the need to create a new easement.

(p) For any stormwater outfall pipeline through a reserve, the prior consent of the Council, and the need for an appropriate easement.

(q) The need for and extent of any financial contributions to achieve the above matters.

(r) The need for a local purpose reserve to be set aside and vested in the Council as a site for any public utility required to be provided.

13.10.5 SANITARY SEWAGE DISPOSAL

(a) Whether the capacity, availability, and accessibility of the reticulated system is adequate to serve the proposed subdivision.

(b) Whether the application includes the installation of all new reticulation, and complies with the provisions of the Council's *"Engineering Standards and Guidelines" (2004) - Revised March 2009* (to be used in conjunction with NZS 4404:2004).

(c) Whether the existing sanitary sewage disposal system, to which the outfall will be connected, has sufficient capacity to service the subdivision.

(d) Whether a reticulated system with a gravity outfall is provided, and where it is impracticable to do so, whether it is feasible to provide alternative individual pump connections (with private rising mains), or new pumping stations, complete pressure, or vacuum systems.

Note: Council consent to install private rising mains within legal roads will be required, under the Local Government Act.

(e) Where a reticulated system is not available, or a connection is impractical, whether a suitable sewage treatment or other disposal systems is provided in accordance with regional rules or a discharge system in accordance with regional rules or a discharge permit issued by the Northland Regional Council.

(f) Where a reticulated system is not immediately available but is likely to be in the near future, whether a temporary system is appropriate.

Note: Consent notices may be registered against Certificates of Title pursuant to ***Rule 13.6.7*** requiring individual allotments to connect with the system when it does become available.

(g) Whether provision has been made by the applicant for monitoring mechanisms to ensure contaminants are not discharged into the environment from a suitable sewage treatment or other disposal system, together with any consent notices to ensure compliance.

(h) Whether there is a need for, and the extent of, any development contributions to achieve the above matters.

(i) Whether there is a need for a local purpose reserve to be set aside and vested in the Council as a site for any public sewage utility for sanitary disposal purposes required to be provided.

(j) Whether the subdivision represents the best practical option in respect of the provision that is made for the disposal of sewage and waste water.

13.10.6 ENERGY SUPPLY

(a) Where the subdivision involves the construction of new roads or formed rights of way, whether an extended reticulation system will be installed (at the subdivider's cost), having regard to the provisions of the Council's *"Engineering Standards and Guidelines 2004 – Revised March 2009 (*to be used in conjunction with NZS 4404:2004). The application for subdivision consent should also indicate how lots are to be reticulated.

(b) Whether the proposed reticulated system to be installed by the subdivider is adequate for the likely development.

(c) Where the proposed system will serve other land that is not part of the subdivision, whether the network operator is providing sufficient capacity as initially installed and the cost of such provision.

Note: Upgrading or cost sharing will be solely a matter for the network operator.

(d) Where a gas supply is proposed, whether the gas network operator is responsible for the installation of all pipelines and their future maintenance, in line with the provisions of the Council's *"Engineering Standards and Guidelines" (2004)- Revised March 2009 (*to be used in conjunction with NZS 4404:2004).

(e) Whether there is a need for a local purpose reserve to be set aside as a site for any public utility required to be provided.

(f) Whether there will be potential adverse effects of the proposed reticulation system on amenity values.

(g) Whether the subdivision design, location of building platforms and proposed electricity supply has had adequate regard to the future adoption of appropriate renewable energy initiatives and technologies.

13.10.7 TOP ENERGY TRANSMISSION LINES

Where it is proposed to subdivide land to create new allotments within an area measured 20m of either side of the centre point of an electrical transmission line designed to operate at or above 50 kV, particular regard shall be had to the following matters:

(a) The extent to which the subdivision design mitigates the effects of the lines through the location of roads and reserves under the route of the line.

(b) The ability to carry out maintenance and inspection of transmission lines to avoid risk of injury and/or property damage.

(c) The outcomes of consultation with the affected utility operator.

(d) The subdivision design, location of building platforms, location of any proposed tree planting, extent and nature of earthworks.

13.10.8 TELECOMMUNICATIONS

(a) Where the subdivision involves construction of new roads or formed rights of way, whether an extended reticulation system has been installed (at the subdivider's cost), having regard to the Council's "*Engineering Standards and Guidelines 2004 – Revised March 2009* (to be used in conjunction with NZS 4404:2004) and "The National Environmental Standard for Telecommunication Facilities 2008".

(b) Where the proposed system will serve other land which is not part of the subdivision, whether the network operator is providing sufficient capacity as initially installed, and the cost of such provision.

(c) Whether the proposed reticulation system will have potential adverse effects on amenity values.

Note: Upgrading or cost-sharing will be solely a matter for the network operator.

13.10.9 EASEMENTS FOR ANY PURPOSE

Whether there is a need for an easement for any of the following purposes:

(a) Easements in gross where a service or access is required by the Council.

(b) Easements in respect of other parties in favour of nominated allotments or adjoining Certificates of Title.

(c) Service easements, whether in gross or private purposes, with sufficient width to permit maintenance, repair or replacement. Centre line easements shall apply when the line is privately owned and unlikely to require upgrading.

(d) Easements for any of the following purposes:

(i) private ways, whether mutual or not;

(ii) stormwater, sanitary sewer, water supply, electric power, gas reticulation;

(iii) telecommunications;

(iv) party walls and floors/ceilings.

(v) any other network utilities.

(e) Easements in gross in favour of the Council adjoining banks of rivers, streams, lakes, wetlands or the coastal marine area not subject to an esplanade reserve or strip.

(f) Stormwater easements passing through esplanade reserves where drainage will be to the adjoining lake or river.

13.10.10 PROVISION OF ACCESS

(a) Whether provision for access to and within the subdivision, including private roads, has been made in a manner that will avoid, remedy or mitigate adverse effects on the environment, including but not limited to traffic effects, including effects on existing roads, visual effects, effects on vegetation and habitats, and natural character.

13.10.11 EFFECT OF EARTHWORKS AND UTILITIES

(a) Whether the effects of earthworks and the provision of services to the subdivision will have an adverse effect on the environment and whether these effects can be avoided, remedied or mitigated.

13.10.12 BUILDING LOCATIONS

(a) Whether the subdivision provides physically suitable building sites.

(b) Whether or not development on an allotment should be restricted to parts of the site.

(c) Where a proposed subdivision may be subject to inundation, whether the establishment of minimum floor heights for buildings is necessary in order to avoid or mitigate damage.

(d) Whether the subdivision design in respect of the orientation and dimensions of new allotments created facilitates the siting and design of buildings able to take advantage of passive solar gain (e.g. through a northerly aspect on an east/west axis).

Note: Attention is also drawn to the Visual Amenity rules applying in the General Coastal, South Kerikeri Inlet and Coastal Living Zones and in Outstanding Landscapes (see ***Chapter 10*** and ***Section 11.1***).

13.10.13 PRESERVATION AND ENHANCEMENT OF HERITAGE RESOURCES, VEGETATION, FAUNA AND LANDSCAPE, AND LAND SET ASIDE FOR CONSERVATION PURPOSES

(a) Whether any vegetation, habitats of indigenous fauna, heritage resources and landscape features are of sufficient value in terms of the objectives and policies in ***Chapter 12*** of the Plan, that they should be protected.

(b) Whether the means (physical and/or legal) by which ongoing preservation of the resource, area or feature will be achieved is adequate.

(c) Where there are Sites of Cultural Significance to Maori, (refer to ***Appendix 1F*** and the ***Resource Maps***), whether it is appropriate to require their protection by physical or legal means and/or to provide for access to the site over the land to be subdivided.

(d) Where a reserve is to be set aside and vested in the Council, whether the value of the reserve land is offset against the assessment of any financial contribution.

(e) Whether any measures are proposed to protect known high density kiwi habitats from predation by dogs, cats, rats, mustelids, pigs, and other animal pests.

(f) Whether the subdivision would have an adverse effect on the ability to protect listed historic buildings, places or objects and their setting or surrounds; and the protection of listed notable trees.

(g) Whether the subdivision will result in the permanent protection and/or enhancement of heritage resources, areas of significant indigenous vegetation and significant habitats of indigenous fauna, outstanding landscapes, outstanding landscape features or outstanding natural features.

(h) Whether the subdivision will result in the significant enhancement of biodiversity values through planting of native flora (preferably those species that naturally grow in the area) and ongoing management (including pest animal and plant control, fencing and replacement of failed plantings, stream enhancement and waterway protection).

Note: There are many ways in which preservation/protection can be achieved, and the appropriate means will vary according to the circumstance. In some cases physical means (e.g. fencing) may be appropriate. In other cases, a legal means will be preferred instead of (or as well as) physical means. Mechanisms other than a Consent Notice which may be acceptable include:

(i) a Maori reservation under s338 and s340 of Te Ture Whenua Maori (Maori Land) Act;

(ii) a conservation covenant with the Department of Conservation or the Council;

(iii) an open space covenant with the Queen Elizabeth II National Trust;

(iv) a heritage covenant with the Heritage New Zealand Pouhere Taonga;

(v) a reserve under the Reserves Act.

13.10.14 SOIL

(a) The extent to which any subdivision will contribute to or affect the ability to safeguard the life supporting capability of soil.

(b) The degree to which the life supporting capacity of the soil may be adversely affected by the subdivision and the degree to which any soils classified as I, II or III in the NZ Land Resource Inventory Worksheets are adversely affected by the subdivision.

13.10.15 ACCESS TO WATERBODIES

(a) Whether the subdivision provides public access to and along the coastal marine area or to and along banks of lakes or rivers, and whether that access is appropriate, given the nature of the land subject to the subdivision application, and the sensitivity of the waterbody to environmental effects resulting from the use of that access by the public.

13.10.16 LAND USE INCOMPATIBILITY

(a) The degree to which the proposed allotments take into account adverse effects arising from incompatible land use activities (including but not limited to noise, vibration, smell, smoke, dust and spray) resulting from an existing land use adjacent to the proposed subdivision.

13.10.17 PROXIMITY TO AIRPORTS

(a) The degree to which the proposal takes into account reverse sensitivity - adverse effects arising from incompatible land use activities arising from being in proximity to an airport (including, but not limited to, the hours of operation, flight paths, noise, vibration, glare and visual intrusion).

13.10.18 NATURAL CHARACTER OF THE COASTAL ENVIRONMENT

(a) The degree to which the proposal takes into account the preservation and/or enhancement of the natural character of the coastal environment.

13.10.19 ENERGY EFFICIENCY AND RENEWABLE ENERGY DEVELOPMENT/USE

The extent to which the application promotes energy efficiency and renewable energy development and use through the following initiatives:

(a) ability to develop energy efficient buildings and structures (e.g. by providing a north-facing site with the ability to place a building on an east/west axis);

(b) reduced travel distances and car usage by designing a layout with as many links to adjacent sites and surrounding roads as practicable;

(c) encouragement of pedestrian and cycle use by designing a layout that allows easy direct access to and from, shops, schools, work places, reserves and other amenities;

(d) access to alternative transport facilities;

(e) domestic or community renewable electricity generation;

(f) solar street lighting.

13.10.20 NATIONAL GRID CORRIDOR

Where it is proposed to have development within the National Grid Corridor particular regard shall be had to the following matters:

(a) Whether the design and construction of the subdivision allows for earthworks, buildings and structures to comply with the safe distance requirements of the New Zealand Electrical Code of Practice for Safe Distances (NZECP 34:2001);

(b) Provision for the ongoing operation, maintenance and planned upgrade of the National Grid.

Where an application is made for development within the National Grid Corridor as a non complying activity, Transpower New Zealand Limited will be considered an affected party in accordance with the Act.

Attachment 9

Fourth Schedule Assessment under Resource Management Act 1991

Compliance Check for Information Required

Beckham – 190D Midgely Road

Clause 2 Information Required in all applications	
(1) An application for a resource consent for an activity must include the following:	
(a) a description of the activity: .	Refer paragraphs 2.1 to 2.9 of this Planning Report.
(b) an assessment of the actual or potential effect on the environment of the activity:	Refer to paragraphs 4.1 to 4.16 of this Planning Report.

(b) a description of the site at which the activity is to occur:	Refer to paragraphs 1.5 to 1.15 of this Planning Report.
(c) the full name and address of each owner or occupier of the site:	This information is contained in the Form 9 attached to the application.
(d) a description of any other activities that are part of the proposal to which the application relates:	The application is for subdivision involving an irregularly shaped building platform. Works requiring access and building platform construction are envisaged.
(e) a description of any other resource consents required for the proposal to which the application relates:	Consent is being sought for subdivision, pursuant to the Far North Operative District Plan.
(f) an assessment of the activity against the matters set out in Part 2:	Refer to paragraphs 7.0 to 7.5 of this Planning Report.
(g) an assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b), including matters in Clause (2): *(2) The assessment under subclause (1)(g) must include an assessment of the activity against—* *(a). any relevant objectives, policies, or rules in a document; and* *(b) any relevant requirements, conditions, or permissions in any rules in a document; and* *(c) any other relevant requirements in a document (for example, in a national environmental standard or other regulations).* *(3) An application must also include an assessment of the activity's effects on the environment that—* *(a) includes the information required by clause 6; and* *(b) addresses the matters specified in clause 7; and* *(c)includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.*	Refer to paragraphs 5.0 to 6.7 of this Planning Report.

Clause 3. Additional Information Required in Some Applications	
An application must also include any of the following that apply:	
a. *if any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1)):*	Refer to paragraphs 4.11 to 4.16
b. *if the application is affected by section 124 or 165ZH(1)(c) (which relate to existing resource consents), an assessment of the value of the investment of the existing consent holder (for the purposes of section 104(2A)):*	There is no existing resource consent. Not applicable.
c. *if the activity is to occur in an area within the scope of a planning document prepared by a customary marine title group under section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011, an assessment of the activity against any resource management matters set out in that planning document (for the purposes of section 104(2B)).*	The site is not within an area subject to a customary marine title group. Not applicable.

Clause 4 Additional Information required in application for subdivision consent	
An application for a subdivision consent must also include information that adequately defines the following:	
(a) the position of all new boundaries: *(b) the areas of all new allotments, unless the subdivision involves a cross lease, company lease, or unit plan:* *(c) the locations and areas of new reserves to be created, including any esplanade reserves and esplanade strips:* *(d) the locations and areas of any existing esplanade reserves, esplanade strips, and access strips:* *(e) the locations and areas of any part of the bed of a river or lake to be vested in a territorial authority* *under section 237A:* *(f) the locations and areas of any land within the coastal marine area (which is to become part of the common marine and coastal area under section 237A):* *(g) the locations and areas of land to be set aside as new roads.*	Refer to Scheme Plan in Attachment 4 .

Clause 6: Information required in assessment of environmental effects	
(1) An assessment of the activity's effects on the environment must include the following information:	
(a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:	Refer to paragraphs 4.1 to 4.16 of this planning report. The activity will not result in any significant adverse effect on the environment.
(b) an assessment of the actual or potential effect on the environment of the activity:	Refer to paragraphs 4.1 to 4.16 of this planning report.
(c) if the activity includes the use of hazardous installations, an assessment of any risks to the environment that are likely to arise from such use:	Not applicable as the application does not involve hazardous installations.
(d) if the activity includes the discharge of any contaminant, a description of—	The subdivision does not involve any discharge of contaminant.

(i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and *(ii) any possible alternative methods of discharge, including discharge into any other receiving environment:*	
(e) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect:	Refer to paragraph 3.1 of this planning report.
(f) identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted:	Refer to paragraphs 8.0 to 8.6 of this planning report. No affected persons have been identified.
g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved:	No monitoring is required as the scale and significance of the effects do not warrant it.
(h) if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).	No protected customary right is affected.

Clause 7: Matters that must be addressed by assessment of environmental effects	
(1) An assessment of the activity's effects on the environment must address the following matters:	
(a) any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects:	Refer to paragraphs 4.1 to 4.16 of this planning report and to the assessment of objectives and policies in Sections 5.17 to 5.23.
(b) any physical effect on the locality, including any landscape and visual effects:	Refer to paragraphs 4.1 to 4.16. The site has no high or outstanding landscape or natural character values.
(c) any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:	Refer to paragraphs 4.1 to 4.16. The subdivision has no effect on ecosystems or habitat.
(d) any effect on natural and physical resources having aesthetic, recreational, scientific, historical,	Refer to paragraphs 4.1 to 4.16. The site has no apparent aesthetic, recreational, scientific, spiritual or cultural values that will be adversely affected by the act of subdividing.
spiritual, or cultural value, or other special value, for present or future generations:	
(e) any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants:	The subdivision will not result in the discharge of contaminants, nor any unreasonable emission of noise.
(f) any risk to the neighbourhood, the wider community, or the environment through natural hazards or hazardous installations.	The supplied engineering report addressed natural hazard matters. The proposal does not involve hazardous installations.

Attachment 10

Northland Regional Policy Statement – Objectives and Policies

Objective 3.6 - Economic activities – reverse sensitivity and sterilisation

The viability of land and activities important for Northland's economy is protected from the negative impacts of new subdivision, use and development, with particular emphasis on either:

(a) Reverse sensitivity for existing:

(i) Primary production activities;

(ii) Industrial and commercial activities;

(iii) Mining; or*

(iv) Existing and planned regionally significant infrastructure; or

(b) Sterilisation of:

(i) Land with regionally significant mineral resources; or

(ii) Land which is likely to be used for regionally significant infrastructure.

**Includes aggregates and other minerals.*

Objective 3.13 - Natural Hazard Risk

The risks and impacts of natural hazard events (including the influence of climate change) on people, communities, property, natural systems, infrastructure and our regional economy are minimised by:

(a) Increasing our understanding of natural hazards, including the potential influence of climate change on natural hazard events;

(b) Becoming better prepared for the consequences of natural hazard events;

(c) Avoiding inappropriate new development in 10 and 100 year flood hazard areas and coastal hazard areas;

(d) Not compromising the effectiveness of existing defences (natural and man-made);

(e) Enabling appropriate hazard mitigation measures to be created to protect existing vulnerable development; and

(f) Promoting long-term strategies that reduce the risk of natural hazards impacting on people and communities.

(g) Recognising that in justified circumstances, critical infrastructure may have to be located in natural hazard-prone areas.

5.1.3 Policy – Avoiding the adverse effects of new use(s) and development

Avoid the adverse effects, including reverse sensitivity effects of new subdivision, use and development, particularly residential development on the following:

(a) Primary production activities in primary production zones (including within the coastal marine area);

(b) Commercial and industrial activities in commercial and industrial zones;

(c) The operation, maintenance or upgrading of existing or planned[13] regionally significant infrastructure[14]; and

(d) The use and development of regionally significant mineral resources[15].

7.1.1 Policy – General risk management approach

Subdivision, use and development of land will be managed to minimise the risks from natural hazards by:

(a) Seeking to use the best available information, including formal risk management techniques in areas potentially affected by natural hazards;

(b) Minimising any increase in vulnerability due to residual risk;

(c) Aligning with emergency management approaches (especially risk reduction);

(d) Ensuring that natural hazard risk to vehicular access routes and building platforms for proposed new lots is considered when assessing subdivision proposals; and

(e) Exercising a degree of caution that reflects the level of uncertainty as to the likelihood or consequences of a natural hazard event.

Attachment 11

Operative District Plan - Subdivision Objectives and Policies

Objectives

13.3.1 To provide for the subdivision of land in such a way as will be consistent with the purpose of the various zones in the Plan, and will promote the sustainable management of the natural and physical resources of the District, including airports and roads and the social, economic and cultural well being of people and communities.

13.3.2 To ensure that subdivision of land is appropriate and is carried out in a manner that does not compromise the life-supporting capacity of air, water, soil or ecosystems, and that any actual or potential adverse effects on the environment which result directly from subdivision, including reverse sensitivity effects and the creation or acceleration of natural hazards, are avoided, remedied or mitigated.

13.3.3 To ensure that the subdivision of land does not jeopardise the protection of outstanding landscapes or natural features in the coastal environment.

13.3.4 To ensure that subdivision does not adversely affect scheduled heritage resources through alienation of the resource from its immediate setting/context.

13.3.5 To ensure that all new subdivisions provide a reticulated water supply and/or on-site water storage and include storm water management sufficient to meet the needs of the activities that will establish all year round.

13.3.6 To encourage innovative development and integrated management of effects between subdivision and land use which results in superior outcomes to more traditional forms of subdivision, use and development, for example the protection, enhancement and restoration of areas and features which have particular value or may have been compromised by past land management practices.

13.3.7 To ensure the relationship between Maori and their ancestral lands, water, sites, wahi tapu and other taonga is recognised and provided for.

13.3.8 To ensure that all new subdivision provides an electricity supply sufficient to meet the needs of the activities that will establish on the new lots created.

13.3.9 To ensure, to the greatest extent possible, that all new subdivision supports energy efficient design through appropriate site layout and orientation in order to maximise the ability to provide light, heating, ventilation and cooling through passive design strategies for any buildings developed on the site(s).

13.3.10 To ensure that the design of all new subdivision promotes efficient provision of infrastructure, including access to alternative transport options, communications and local services.

13.3.11 To ensure that the operation, maintenance, development and upgrading of the existing National Grid is not compromised by incompatible subdivision and land use activities.

Policies

13.4.1 That the sizes, dimensions and distribution of allotments created through the subdivision process be determined with regard to the potential effects including cumulative effects, of the use of those allotments on:

(a) natural character, particularly of the coastal environment;

(b) ecological values;

(c) landscape values;

(d) amenity values;

(e) cultural values;

(f) heritage values; and

(g) existing land uses.

13.4.2 That standards be imposed upon the subdivision of land to require safe and effective vehicular and pedestrian access to new properties.

13.4.3 That natural and other hazards be taken into account in the design and location of any subdivision.

13.4.4 That in any subdivision where provision is made for connection to utility services, the potential adverse visual impacts of these services are avoided.

13.4.5 That access to, and servicing of, the new allotments be provided for in such a way as will avoid, remedy or mitigate any adverse effects on neighbouring property, public roads (including State Highways), and the natural and physical resources of the site caused by silt runoff, traffic, excavation and filling and removal of vegetation.

13.4.6 That any subdivision proposal provides for the protection, restoration and enhancement of heritage resources, areas of significant indigenous vegetation and significant habitats of indigenous fauna, threatened species, the natural character of the coastal environment and riparian margins, and outstanding landscapes and natural features where appropriate.

13.4.7 That the need for a financial contribution be considered only where the subdivision would:

(a) result in increased demands on car parking associated with non-residential activities; or

(b) result in increased demand for esplanade areas; or

(c) involve adverse effects on riparian areas; or

(d) depend on the assimilative capacity of the environment external to the site.

13.4.8 That the provision of water storage be taken into account in the design of any subdivision.

13.4.9 That bonus development donor and recipient areas be provided for so as to minimise the adverse effects of subdivision on Outstanding Landscapes and areas of significant indigenous flora and significant habitats of fauna.

13.4.10 The Council will recognise that subdivision within the Conservation Zone that results in a net conservation gain is generally appropriate.

13.4.11 That subdivision recognises and provides for the relationship of Maori and their culture and traditions, with their ancestral lands, water, sites, waahi tapu and other taonga and shall take into account the principles of the Treaty of Waitangi.

13.4.12 That more intensive, innovative development and subdivision which recognises specific site characteristics is provided for through the management plan rule where this will result in superior environmental outcomes.

13.4.13 Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the applicable zone in regards to s6 matters. In addition subdivision, use and development shall avoid adverse effects as far as practicable by using techniques including:

(a) clustering or grouping development within areas where there is the least impact on natural character and its elements such as indigenous vegetation, landforms, rivers, streams and wetlands, and coherent natural patterns;

(b) minimising the visual impact of buildings, development, and associated vegetation clearance and earthworks, particularly as seen from public land and the coastal marine area;

(c) providing for, through siting of buildings and development and design of subdivisions, legal public right of access to and use of the foreshore and any esplanade areas;

(d) through siting of buildings and development, design of subdivisions, and provision of access that recognise and provide for the relationship of Maori with their culture, traditions and taonga including concepts of mauri, tapu, mana, wehi and karakia and the important contribution Maori culture makes to the character of the District (refer ***Chapter 2*** and in particular ***Section 2.5*** and Council's *"Tangata Whenua Values and Perspectives" (2004)*;

(e) providing planting of indigenous vegetation in a way that links existing habitats of indigenous fauna and provides the opportunity for the extension, enhancement or creation of habitats for indigenous fauna, including mechanisms to exclude pests;

(f) protecting historic heritage through the siting of buildings and development and design of subdivisions.

(g) achieving hydraulic neutrality and ensuring that natural hazards will not be exacerbated or induced through the siting and design of buildings and development.

13.4.14 That the objectives and policies of the applicable environment and zone and relevant parts of ***Part 3*** of the Plan will be taken into account when considering the intensity, design and layout of any subdivision.

13.4.15 That conditions be imposed upon the design of subdivision of land to require that the layout and orientation of all new lots and building platforms created include, as appropriate, provisions for achieving the following:

(a) development of energy efficient buildings and structures;

(b) reduced travel distances and private car usage;

(c) encouragement of pedestrian and cycle use;

(d) access to alternative transport facilities;

(e) domestic or community renewable electricity generation and renewable energy use.

13.4.16 When considering proposals for subdivision and development within an existing National Grid Corridor the following will be taken into account:

(a) the extent to which the proposal may restrict or inhibit the operation, access, maintenance, upgrading of transmission lines or support structures;

(b) any potential cumulative effects that may restrict the operation, access, maintenance, upgrade of transmission lines or support structures; and

(c) whether the proposal involves the establishment or intensification of a sensitive activity in the vicinity of an existing National Grid line.

Note 1: Structures and activities located near transmission lines must comply with the safe distance requirements in the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP34:2001). Compliance with this plan does not ensure compliance with NZECP34:2001.

Note 2: Vegetation to be planted within, or adjacent to, the National Grid Corridor should be selected and/or managed to ensure that it will not result in that vegetation breaching the Electricity (Hazards from Trees) Regulations 2003.

Operative District Plan – Rural Production Zone Objectives & Policies

Objectives

8.3.1 To promote the sustainable management of natural and physical resources of the rural environment.

8.3.2 To ensure that the life supporting capacity of soils is not compromised by inappropriate subdivision, use or development.

8.3.3 To avoid, remedy or mitigate the adverse and cumulative effects of activities on the rural environment.

8.3.4 To protect areas of significant indigenous vegetation and significant habitats of indigenous fauna.

8.3.5 To protect outstanding natural features and landscapes.

8.3.6 To avoid actual and potential conflicts between land use activities in the rural environment.

8.3.7 To promote the maintenance and enhancement of amenity values of the rural environment to a level that is consistent with the productive intent of the zone.

8.3.8 To facilitate the sustainable management of natural and physical resources in an integrated way to achieve superior outcomes to more traditional forms of subdivision, use and development through management plans and integrated development.

8.3.9 To enable rural production activities to be undertaken in the rural environment.

8.3.10 To enable the activities compatible with the amenity values of rural areas and rural production activities to establish in the rural environment.

Policies

8.4.1 That activities which will contribute to the sustainable management of the natural and physical resources of the rural environment are enabled to locate in that environment.

8.4.2 That activities be allowed to establish within the rural environment to the extent that any adverse effects of these activities are able to be avoided, remedied or mitigated and as a result the life supporting capacity of soils and ecosystems is safeguarded and rural productive activities are able to continue.

8.4.3 That any new infrastructure for development in rural areas be designed and operated in a way that safeguards the life supporting capacity of air, water, soil and ecosystems while protecting areas of significant indigenous vegetation and significant habitats of indigenous fauna, outstanding natural features and landscapes.

8.4.4 That development which will maintain or enhance the amenity value of the rural environment and outstanding natural features and outstanding landscapes be enabled to locate in the rural environment.

8.4.5 That plan provisions encourage the avoidance of adverse effects from incompatible land uses, particularly new developments adversely affecting existing land-uses (including by constraining the existing land-uses on account of sensitivity by the new use to adverse affects from the existing use – i.e. reverse sensitivity).

8.4.6 That areas of significant indigenous vegetation and significant habitats of indigenous fauna habitat be protected as an integral part of managing the use, development and protection of the natural and physical resources of the rural environment.

8.4.7 That Plan provisions encourage the efficient use and development of natural and physical resources, including consideration of demands upon infrastructure.

8.4.8 That, when considering subdivision, use and development in the rural environment, the Council will have particular regard to ensuring that its intensity, scale and type is controlled to ensure that adverse effects on habitats (including freshwater habitats), outstanding natural features and landscapes on the amenity value of the rural environment, and where appropriate on natural character of the coastal environment, are avoided, remedied or mitigated. Consideration will further be given to the functional need for the activity to be within rural environment and the potential cumulative effects of non-farming activities.

Attachment 12

Proposed District Plan – Objectives and Policies

Objectives – Rural Production Zone

RPROZ-O1 - The Rural Production zone is managed to ensure its availability for primary production activities and its long-term protection for current and future generations.
RPROZ-O2 - The Rural Production zone is used for primary production activities, ancillary activities that support primary production and other compatible activities that have a functional need to be in a rural environment.
RPROZ-O3 - Land use and subdivision in the Rural Production zone:

a. protects highly productive land from sterilisation and enables it to be used for more productive forms of primary production;
b. protects primary production activities from reverse sensitivity effects that may constrain their effective and efficient operation;
c. does not compromise the use of land for farming activities, particularly on highly productive land;
d. does not exacerbate any natural hazards; and
e. is able to be serviced by on-site infrastructure.

RPROZ-O4 - The rural character and amenity associated with a rural working environment is maintained.

Policies Rural Production Zone
RPROZ-P1 - Enable primary production activities, provided they internalise adverse effects onsite where practicable, while recognising that typical adverse effects associated with primary production should be anticipated and accepted within the Rural Production zone.
RPROZ-P2 - Ensure the Rural Production zone provides for activities that require a rural location by:

a. enabling primary production activities as the predominant land use;
b. enabling a range of compatible activities that support primary production activities, including ancillary activities, rural produce manufacturing, rural produce retail, visitor accommodation and home businesses.

RPROZ-P3 - Manage the establishment, design and location of new sensitive activities and other non-productive activities in the Rural Production zone to avoid where possible, or otherwise mitigate, reverse sensitivity effects on primary production activities.
RPROZ-P4 Land use and subdivision activities are undertaken in a manner that maintains or enhances the rural character and amenity of the Rural Production zone, which includes:

a. a predominance of primary production activities;
b. low density development with generally low site coverage of buildings or structures;
c. typical adverse effects such as odour, noise and dust associated with a rural working environment; and
d. a diverse range of rural environments, rural character and amenity values throughout the district.

RPROZ-P5 - Avoid land use that:

a. is incompatible with the purpose, character and amenity of the Rural Production zone;
b. does not have a functional need to locate in the Rural Production zone and is more appropriately located in another zone;
c. would result in the loss of productive capacity of highly productive land;
d. would exacerbate natural hazards; and
e. cannot provide appropriate on-site infrastructure.

RPROZ-P6 - Avoid subdivision that:

a. results in the loss of highly productive land for use by farming activities;
b. fragments land into parcel sizes that are no longer able to support farming activities, taking into account:
    i. the type of farming proposed; and
    ii. whether smaller land parcels can support more productive forms of farming due to the presence of highly productive land.
c. provides for rural lifestyle living unless there is an environmental benefit.

RPROZ-P7 - Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application:

a. whether the proposal will increase production potential in the zone;
b. whether the activity relies on the productive nature of the soil;
c. consistency with the scale and character of the rural environment;
d. location, scale and design of buildings or structures;
e. for subdivision or non-primary production activities:
    i. scale and compatibility with rural activities;
    ii. potential reverse sensitivity effects on primary production activities and existing infrastructure;
    iii. the potential for loss of highly productive land, land sterilisation or fragmentation
f. at zone interfaces:
    i. any setbacks, fencing, screening or landscaping required to address potential conflicts;
    ii. the extent to which adverse effects on adjoining or surrounding sites are mitigated and internalised within the site as far as practicable;
g. the capacity of the site to cater for on-site infrastructure associated with the proposed activity, including whether the site has access to a water source such as an irrigation network supply, dam or aquifer;
h. the adequacy of roading infrastructure to service the proposed activity;
i. Any adverse effects on historic heritage and cultural values, natural features and landscapes or indigenous biodiversity;
j. Any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.

Objectives – Subdivision

SUB-O1
Subdivision results in the efficient use of land, which:

a. achieves the objectives of each relevant zone, overlays and district wide provisions;
b. contributes to the local character and sense of place;
c. avoids reverse sensitivity issues that would prevent or adversely affect activities already established on land from continuing to operate;
d. avoids land use patterns which would prevent land from achieving the objectives and policies of the zone in which it is located;
e. does not increase risk from natural hazards or risks are mitigates and existing risks reduced; and
f. manages adverse effects on the environment.

SUB-O2
Subdivision provides for the:

a. Protection of highly productive land; and
b. Protection, restoration or enhancement of Outstanding Natural Features, Outstanding Natural Landscapes, Natural Character of the Coastal Environment, Areas of High Natural Character, Outstanding Natural Character, wetland, lake and river margins, Significant Natural Areas, Sites and Areas of Significance to Māori, and Historic Heritage.

SUB-O3
Infrastructure is planned to service the proposed subdivision and development where:

a. there is existing infrastructure connection, infrastructure should provided in an integrated, efficient, coordinated and future-proofed manner at the time of subdivision; and
b. where no existing connection is available infrastructure should be planned and consideration be given to connections with the wider infrastructure network.

SUB-O4
Subdivision is accessible, connected, and integrated with the surrounding environment and provides for:

a. public open spaces;
b. esplanade where land adjoins the coastal marine area; and
c. esplanade where land adjoins other qualifying waterbodies.

Subdivision - Policies

SUB-P1
Enable boundary adjustments that:

a. do not alter:
    i. the degree of non compliance with District Plan rules and standards;
    ii. the number and location of any access; and
    iii. the number of certificates of title; and
b. are in accordance with the minimum lot sizes of the zone and comply with access, infrastructure and esplanade provisions.

SUB-P2
Enable subdivision for the purpose of public works, infrastructure, reserves or access.
SUB-P3
Provide for subdivision where it results in allotments that:

a. are consistent with the purpose, characteristics and qualities of the zone;
b. comply with the minimum allotment sizes for each zone;
c. have an adequate size and appropriate shape to contain a building platform; and
d. have legal and physical access.

SUB-P4

Manage subdivision of land as detailed in the district wide, natural environment values, historical an cultural values and hazard and risks sections of the plan

SUB-P5

Manage subdivision design and layout in the General Residential, Mixed Use and Settlement zone to provide for safe, connected and accessible environments by:

a. minimising vehicle crossings that could affect the safety and efficiency of the current and future transport network;
b. avoid cul-de-sac development unless the site or the topography prevents future public access and connections;
c. providing for development that encourages social interaction, neighbourhood cohesion, a sense of place and is well connected to public spaces;
d. contributing to a well connected transport network that safeguards future roading connections; and
e. maximising accessibility, connectivity by creating walkways, cycleways and an interconnected transport network.

SUB-P6

Require infrastructure to be provided in an integrated and comprehensive manner by:

a. demonstrating that the subdivision will be appropriately serviced and integrated with existing and planned infrastructure if available; and
b. ensuring that the infrastructure is provided is in accordance the purpose, characteristics and qualities of the zone.

SUB- P7

Require the vesting of esplanade reserves when subdividing land adjoining the coast or other qualifying waterbodies.

SUB-P8

Avoid rural lifestyle subdivision in the Rural Production zone unless the subdivision:

a. will protect a qualifying SNA in perpetuity and result in the SNA being added to the District Plan SNA schedule; and
b. will not result in the loss of versatile soils for primary production activities.

SUB-P9

Avoid subdivision rural lifestyle subdivision in the Rural Production zone and Rural residential subdivision in the Rural Lifestyle zone unless the development achieves the environmental outcomes required in the management plan subdivision rule.

SUB-P10

To protect amenity and character by avoiding the subdivision of minor residential units from principal residential units where resultant allotments do not comply with minimum allotment size and residential density.

SUB-P11

Manage subdivision to address the effects of the activity requiring resource consent including (but not limited to) consideration of the following matters where relevant to the application:

a. consistency with the scale, density, design and character of the environment and purpose of the zone;
b. the location, scale and design of buildings and structures;

c. the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity; or the capacity of the site to cater for on-site infrastructure associated with the proposed activity;
d. managing natural hazards;
e. Any adverse effects on areas with historic heritage and cultural values, natural features and landscapes, natural character or indigenous biodiversity values; and
f. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.

Objectives - Natural Hazards

NH-O1
The risks from natural hazards to people, infrastructure and property are managed, including taking into account the likely long-term effects of climate change, to ensure the health, safety and resilience of communities.
NH-O2
Land use and subdivision does not increase the risk from natural hazards or risks are mitigated, and existing risks are reduced where there are practicable opportunities to do so.
NH-O3
New infrastructure is located outside of identified natural hazard areas unless:
it has a functional or operational need to be located in that area;
it is designed to maintain its integrity and function, as far as practicable during a natural hazard event; and
adverse effects resulting from that location on other people, property and the environment are mitigated.
NH-O4
Natural defences, such as natural systems and features, and existing structural mitigation assets are protected to maintain their functionality and integrity and used in preference to new structural mitigation assets to manage natural hazard risk.

Policies - Natural Hazards

NH-P2
Manage land use and subdivision so that natural hazard risk is not increased or is mitigated, giving consideration to the following:

a. the nature, frequency and scale of the natural hazard;
b. not increasing natural hazard risk to other people, property, infrastructure and the environment beyond the site;
c. the location of building platforms and vehicle access;
d. the use of the site, including by vulnerable activities;
e. the location and types of buildings or structures, their design to mitigate the effects and risks of natural hazards, and the ability to adapt to long term changes in natural hazards;
f. earthworks, including excavation and fill;
g. location and design of infrastructure;
h. activities that involve the use and storage of hazardous substances;
i. aligning with emergency management approaches and requirements;

j. whether mitigation results in transference of natural hazard risk to other locations or exacerbates the natural hazard; and
k. reduction of risk relating to existing activities.

NH-P3 Take a precautionary approach to the management of natural hazard risk associated with land use and subdivision.

NH – P5 Require an assessment of risk prior to land use and subdivision in areas that are subject to identified natural hazards, including consideration of the following:

a. the nature, frequency and scale of the natural hazard;
b. the temporary or permanent nature of any adverse effect;
c. the type of activity being undertaken and its vulnerability to an event, including the effects of climate change;
d. the consequences of a natural hazard event in relation to the activity;
e. any potential to increase existing risk or creation of a new risk to people, property, infrastructure and the environment within and beyond the site and how this will be mitigated;
f. the design, location and construction of buildings, structures and infrastructure to manage and mitigate the effects and risk of natural hazards including the ability to respond and adapt to changing hazards;
g. the subdivision/site layout and management, including ability to access and exit the site during a natural hazard event; and .
h. the use of natural features and natural buffers to manage adverse effects.

NH – P6 Manage land use and subdivision in river flood hazard areas to protect the subject site and its development, and other property, by requiring:

a. subdivision applications to identify building platforms that will not be subject to inundation and material damage (including erosion) in a 1 in 100 year flood event;
b. a minimum freeboard for all buildings designed to accommodate vulnerable activities of at least 500mm above the 1 in 100 year flood event and at least 300mm above the 1 in 100 year flood event for other new buildings;
c. commercial and industrial buildings to be constructed so they will not be subject to material damage in a 1 in 100 year flood event;
d. buildings within a 1 in 10 Year River Flood Hazard Area to be designed to avoid material damage in a 1 in 100 year flood event;
e. storage and containment of hazardous substances so that the integrity of the storage method will not be compromised in a 1 in 100 year flood event;
f. earthworks (other than earthworks associated with flood control works) do not divert flood flow onto surrounding properties and do not reduce flood plain storage capacity within a 1 in 10 Year River Flood Hazard area;
g. the capacity and function of overland flow paths to convey stormwater flows safely and without causing damage to property or the environment is retained, unless sufficient capacity is provided by an alternative method; and
h. the provision of safe vehicle access within the site

NH P8 - Locate and design subdivision and land use to avoid land susceptible to land instability, or if this is not practicable, mitigate risks and effects to people, buildings, structures, property and the environment.

Attachment 13

From: **Chorus Property Development Do Not Reply** npdnoreply@chorus.co.nz
Subject: Chorus 11130279 : We can service your development
Date: 10 February 2025 at 2:22 PM
To: npdnoreply@chorus.co.nz

Hi

Development address: Lot: 4, Deposited Plan: 205071, North Auckland

This email is to confirm that Chorus can provide our fibre network to your development. An indicative cost for the work we would need to do (noting that this excludes costs for any work you may be required to do inside the site boundary) is presented in the below notes:

A high level estimate to extend our fibre network to your development is in excess of $200,000 Incl. GST, as this would need to come approx. 2220m from 10 Midgley Road.

?Please note: The communications technology available to serve customers in our rural areas is rapidly changing. Copper is no longer the only option for customers, and is in some cases, not the best option. New Zealand runs on fibre, and the UFB roll-out has gone past 87 per cent of Kiwis. We would like to extend fibre further to enable more Kiwis to receive the best technology available. We will not be investing in extending the copper network further.

If you would like this formalised into a quote, then please log in to your account and let us know. If you need to amend the connection numbers or provide updated plans, you can also do that via your account.

Chorus New Property Development Team

Please do not reply to this email as this inbox is not monitored. For any follow up queries please visit www.chorus.co.nz/develop-with-chorus or log in to your account. If you do not yet have an account with us, you will need to create an account to view your job progress and documentation.

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7 February 2025

Neil Mumby
Cable Bay Consulting Ltd

Email: neil.mumby@cablebayconsulting.co.nz

To Whom It May Concern:

RE: PROPOSED SUBDIVISION
Beckham – 190d Midgely Road, Mangonui. Lot 4 DP 205071.

Thank you for your recent correspondence with attached proposed subdivision scheme plans.

Top Energy's requirement for this subdivision is nil
Costs to make power available could be provided after application and an on-site survey have been completed.
Link to application: Top Energy | Top Energy

In order to get a letter from Top Energy upon completion of your subdivision, a copy of the resource consent decision must be provided.

Yours sincerely

Aaron Birt
Planning and Design
T: 09 407 0685
E: aaron.birt@topenergy.co.nz

Attachment 14