



LEGEND

- NATURAL INLAND WETLAND AREAS
- PROPOSED BUILDING PLATFORMS
- AVAILABLE AREA FOR WASTEWATER DISPERSAL
- AH1

 2022 - KGA - HAND AUGER BOREHOLE
- SP1

 2022 - KGA - SURFACE SCALA PENETROMETER
- AH1

 2024 - KGA - ASTEWATER HAND AUGER BOREHOLE
- MHK1

 HAND AUGER BOREHOLE
- SITE BOUNDARY
- NEIGHBOURING BOUNDARIES
- PROPOSED LOT BOUNDARIES
- OVERLAND FLOWPATH

NOTES

1. LOCATIONS OF FEATURES AND GROUND INVESTIGATION POINTS ARE APPROXIMATE ONLY.
2. AERIAL IMAGE SOURCED FROM AUCKLAND COUNCIL GEOMAPS WEBSITE.
3. CONTOURS SOURCED FROM AUCKLAND COUNCIL GEOMAPS WEBSITE.
4. PROPOSED LAYOUT SOURCED FROM CONCEPT DEVELOPMENT PLAN BY VAUGHAN CRANG AND KAIPARA COAST, DATED NOVEMBER 2023.

REV	DATE	REVISION DESCRIPTION	BY	CHK	APP
C	AUG-24	RFI AMENDMENTS	TR	TP	YC
B	FEB-24	RFI AMENDMENTS	TR	TP	YC
A	JUL-23	REPORT ISSUE	TR	TP	YC

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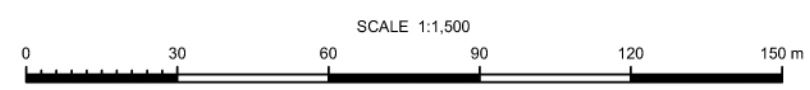
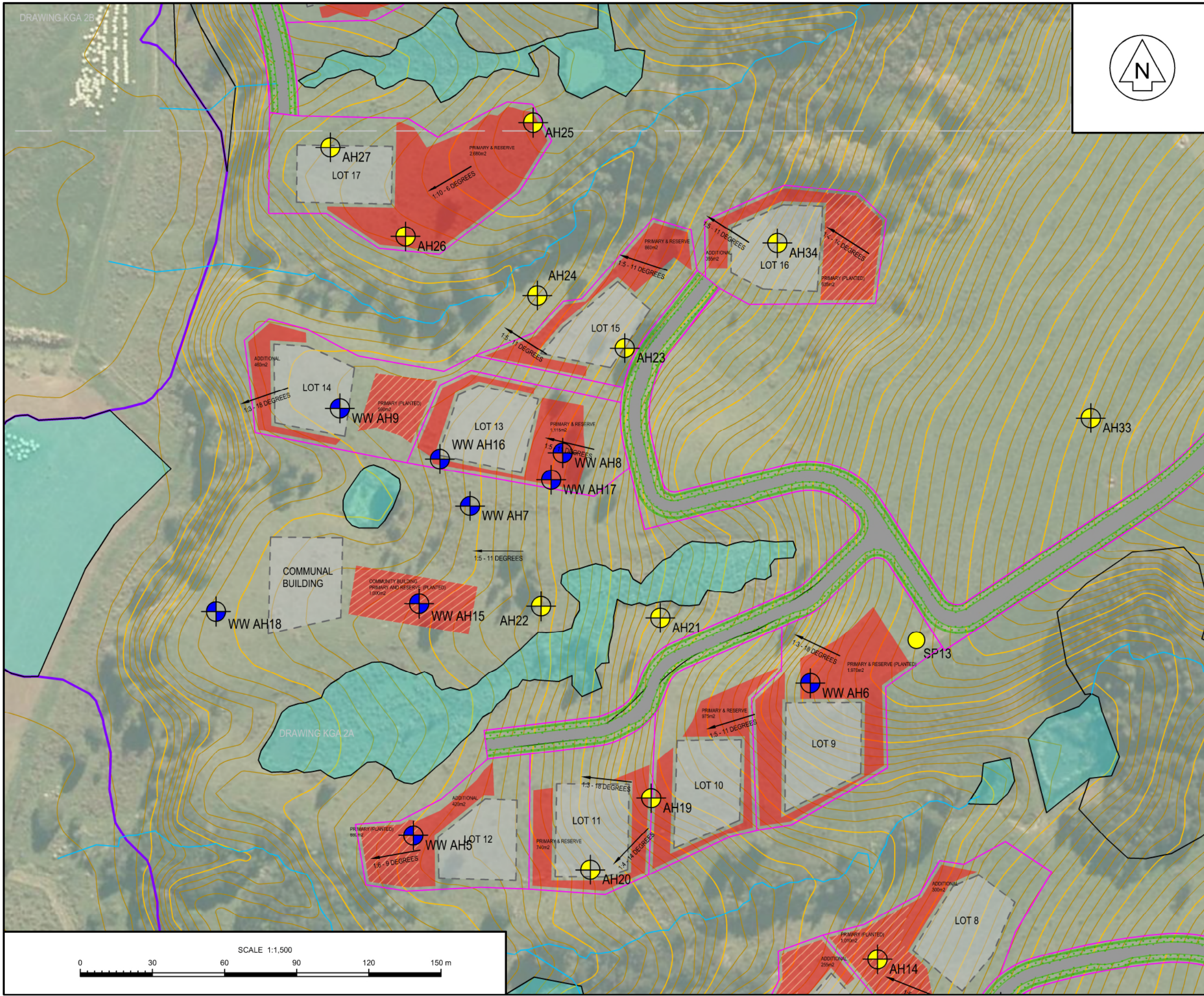
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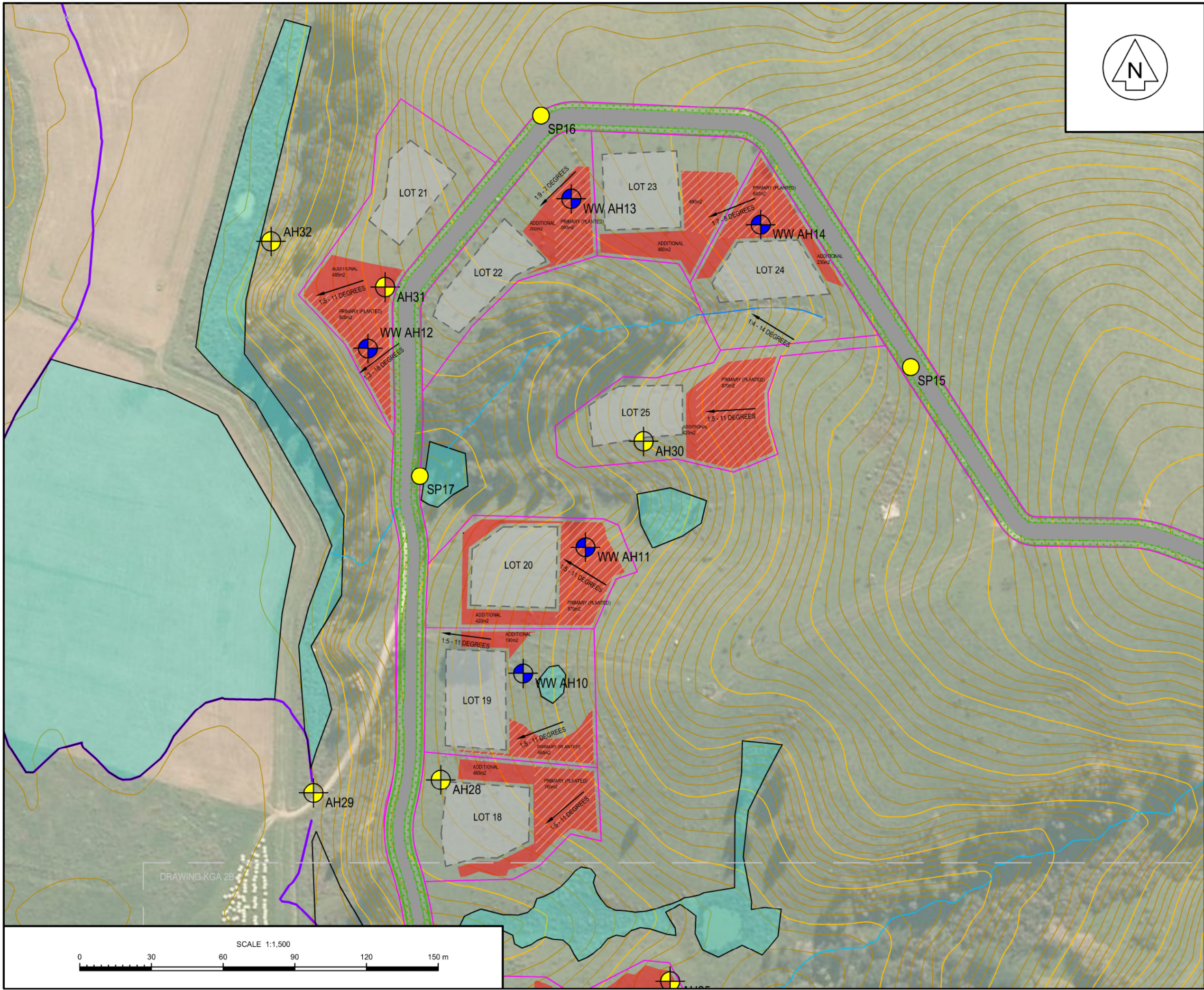
PROJECT TITLE
**RURAL RESIDENTIAL SUBDIVISION
2127 KAIPARA COAST HIGHWAY
MAKARAU**

DRAWING TITLE
**SITE PLAN - LOTS 9 TO 17
WASTEWATER DISPERSAL AREA
SLOPE GRADIENTS**

DESIGNED	TR	DATE	JUL-23	CHECKED	TP	DATE	JUL-23
DRAWN	TR	DATE	JUL-23	APPROVED	YC	DATE	JUL-23

RESOURCE CONSENT		
SCALE	1:1,500	SIZE A3
COORDINATE SYSTEM	NZTM	HEIGHT DATUM AKL 1946
PROJECT NUMBER	K200826	DRAWING NUMBER KGA 2E
		REVISION C





LEGEND

- NATURAL INLAND WETLAND AREAS
- PROPOSED BUILDING PLATFORMS
- AVAILABLE AREA FOR WASTEWATER DISPERSAL
- AH1 2022 - KGA - HAND AUGER BOREHOLE
- SP1 2022 - KGA - SURFACE SCALA PENETROMETER
- AH1 2024 - KGA - WASTEWATER HAND AUGER BOREHOLE
- MHK1 HAND AUGER BOREHOLE
- SITE BOUNDARY
- NEIGHBOURING BOUNDARIES
- PROPOSED LOT BOUNDARIES
- OVERLAND FLOWPATH

NOTES

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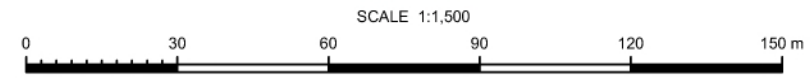
PROJECT TITLE
**RURAL RESIDENTIAL SUBDIVISION
2127 KAIPARA COAST HIGHWAY
MAKARAU**

DRAWING TITLE
**SITE PLAN - LOTS 18 TO 25
WASTEWATER DISPERSAL AREA
SLOPE GRADIENTS**

DESIGNED	TR	DATE	JUL-23	CHECKED	TP	DATE	JUL-23
DRAWN	TR	DATE	JUL-23	APPROVED	YC	DATE	JUL-23

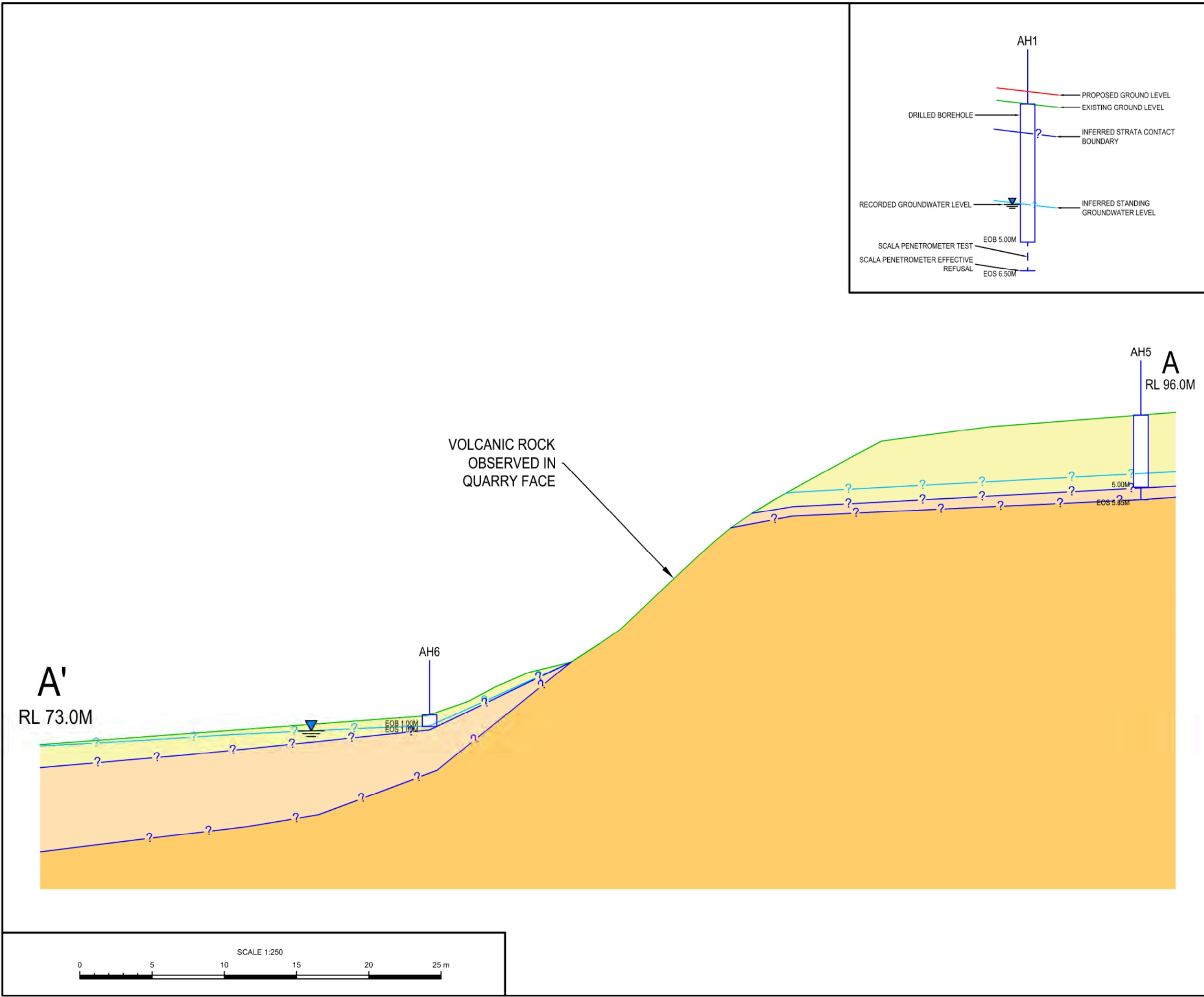
STATUS
RESOURCE CONSENT

SCALE	1:1,500	SIZE	A3
COORDINATE SYSTEM	NZTM	HEIGHT DATUM	AKL 1946
PROJECT NUMBER	K200826	DRAWING NUMBER	KGA 2F
		REVISION	C



DRAWING KGA 2B

DRAWING KGA 2C



LEGEND

- WAITEMATA GROUP SOILS
- WAITEMATA GROUP TRANSITIONAL MATERIAL
- WAITEMATA GROUP ROCK

NOTES

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3. FOR DETAILS OF INDIVIDUAL BOREHOLES REFERENCE SHOULD BE MADE TO THE SPECIFIC BOREHOLE LOG.
4. ANY GEOLOGICAL INTERPRETATION SHOWN ON THE DRAWING IS BASED SOLELY ON AVAILABLE BOREHOLE RECORDS.
5. THE ACTUAL GROUND CONDITIONS MAY VARY FROM THAT SHOWN ON THE INTERPRETED GEOLOGICAL SECTIONS.
6. REFER TO SITE PLAN FOR LOCATION OF GEOLOGICAL SECTION.

B	FEB-24	RFI AMENDMENTS	TR	TP	YC
A	SEP-21	REPORT ISSUE	TR	PH	AN
REV	DATE	REVISION DESCRIPTION	BY	CHK	APP

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MAKARAU**

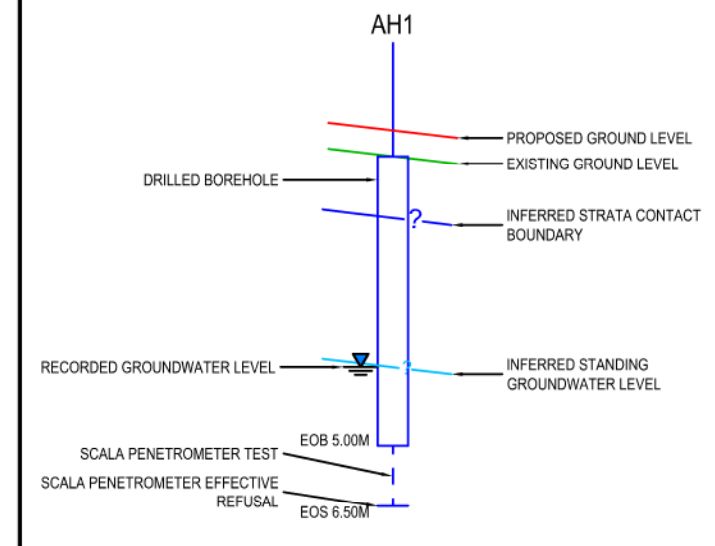
DRAWING TITLE
CROSS-SECTION A-A'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

RESOURCE CONSENT		
SCALE	1:250	SIZE A3
COORDINATE SYSTEM NZTM	HEIGHT DATUM AKL 1946	
PROJECT NUMBER K200826	DRAWING NUMBER KGA 3	REVISION A

LEGEND

- WAITEMATA GROUP SOILS
- WAITEMATA GROUP TRANSITIONAL MATERIAL



NOTES

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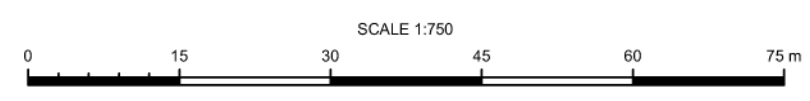
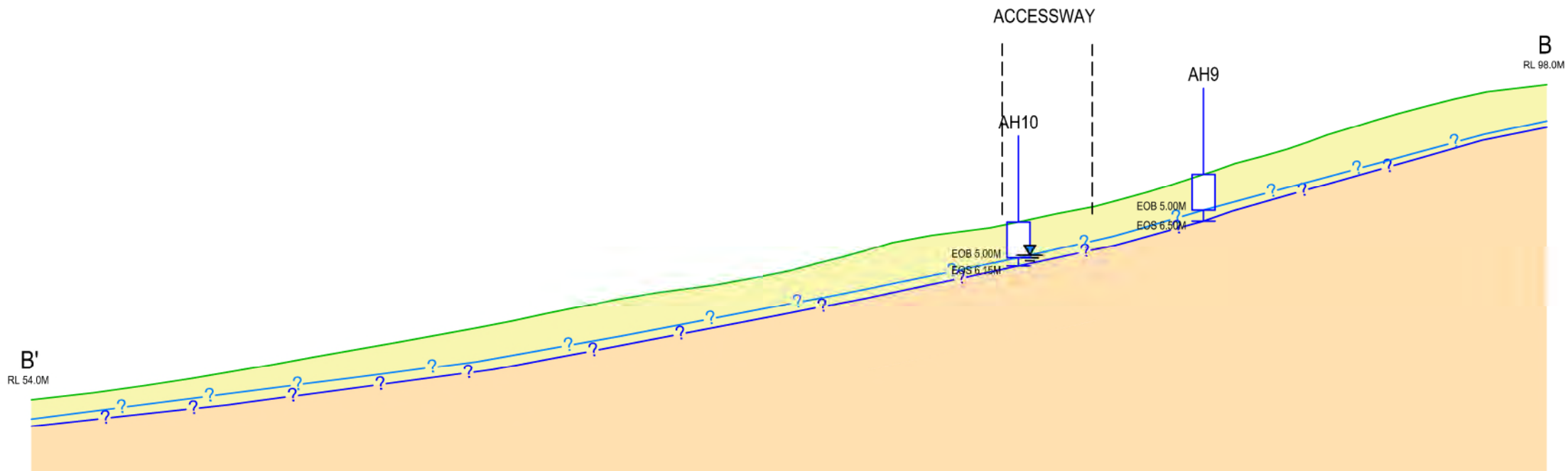
PROJECT TITLE
**RURAL RESIDENTIAL SUBDIVISION
2127 KAIPARA COAST HIGHWAY
MAKARAU**

DRAWING TITLE
CROSS-SECTION B-B'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

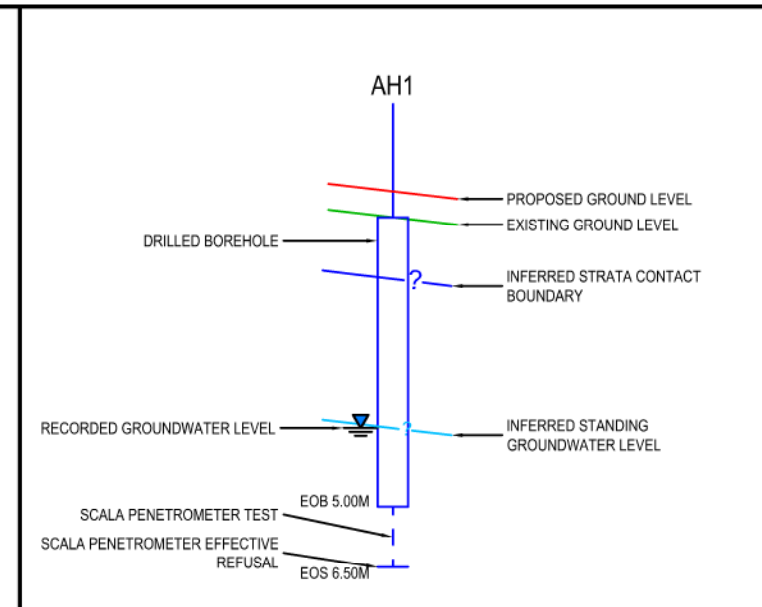
STATUS
RESOURCE CONSENT

SCALE	1:250	SIZE	A3
COORDINATE SYSTEM	NZTM	HEIGHT DATUM	AKL 1946
PROJECT NUMBER	K200826	DRAWING NUMBER	KGA 4
		REVISION	B



LEGEND

- WAITEMATA GROUP SOILS
- WAITEMATA GROUP TRANSITIONAL MATERIAL



NOTES

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REV	DATE	REVISION DESCRIPTION	BY	CHK	APP

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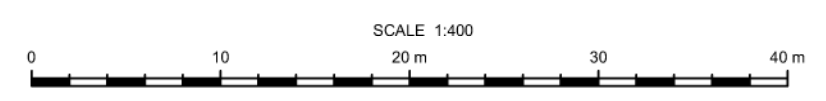
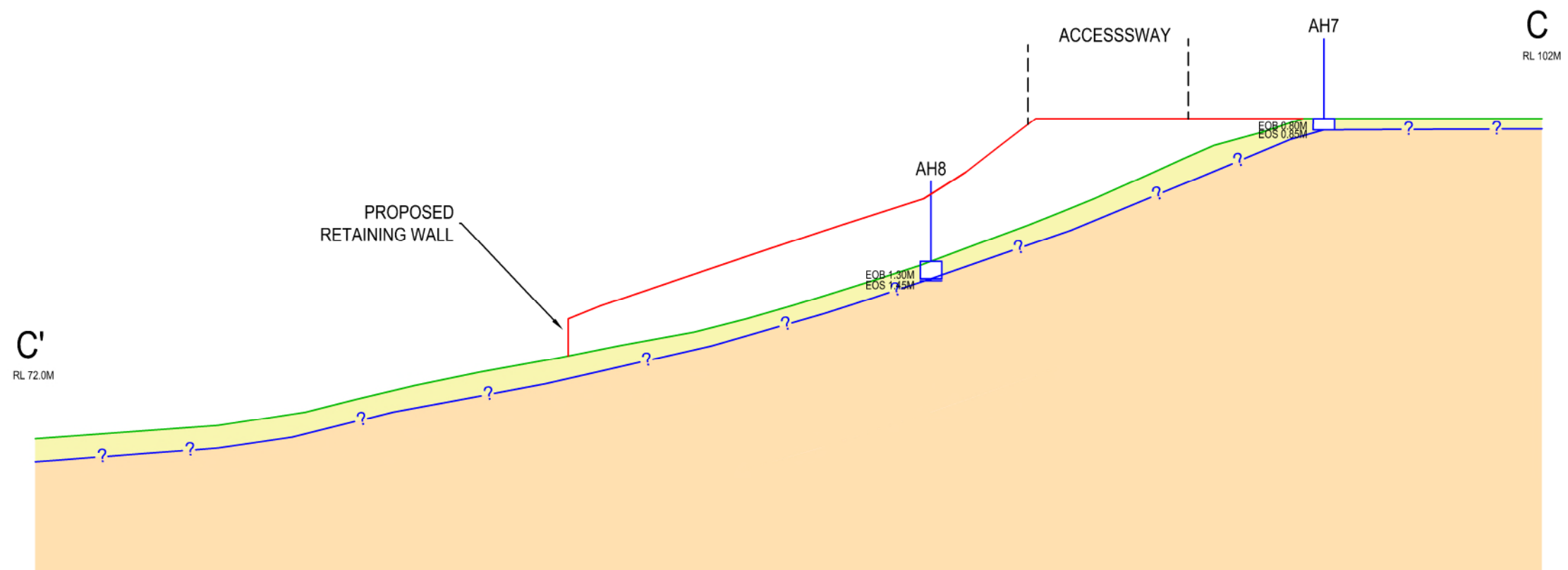
PROJECT TITLE
**RURAL RESIDENTIAL SUBDIVISION
2127 KAIPARA COAST HIGHWAY
MAKARAU**

DRAWING TITLE
CROSS-SECTION C-C'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

STATUS
RESOURCE CONSENT

SCALE	1:400	SIZE	A3
COORDINATE SYSTEM	NZTM	HEIGHT DATUM	AKL 1946
PROJECT NUMBER	K200826	DRAWING NUMBER	KGA 5
		REVISION	B



LEGEND

- COLLUVIUM
- WAITEMATA GROUP SOILS
- WAITEMATA GROUP TRANSITIONAL MATERIAL

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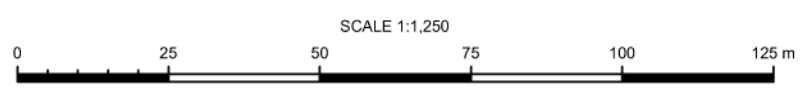
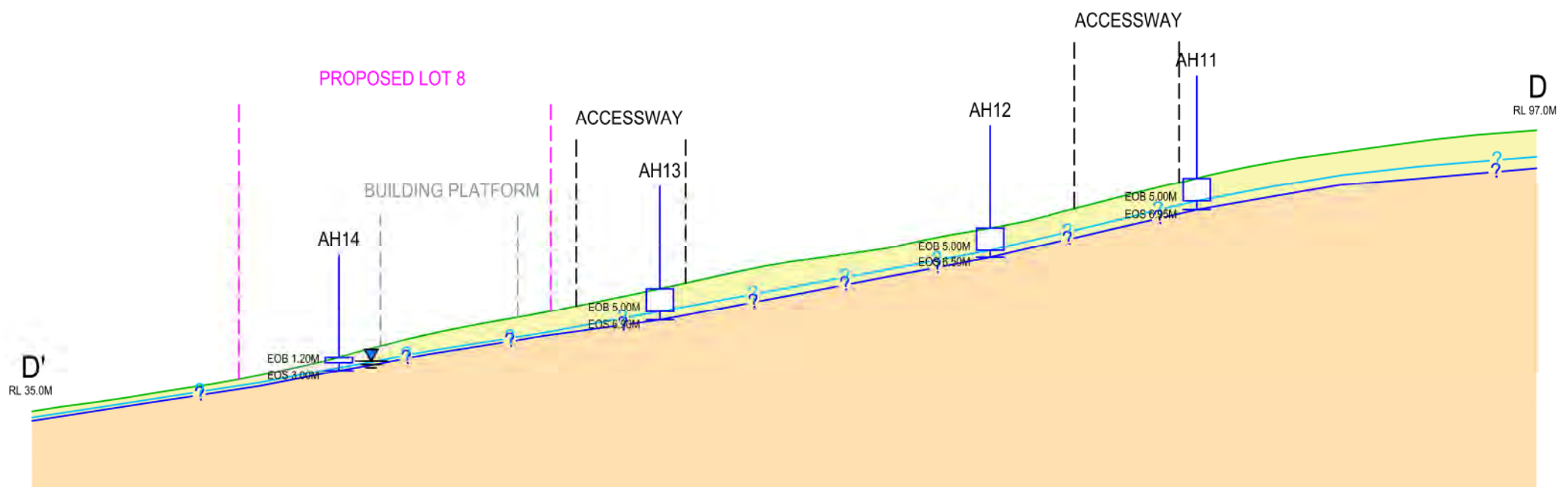
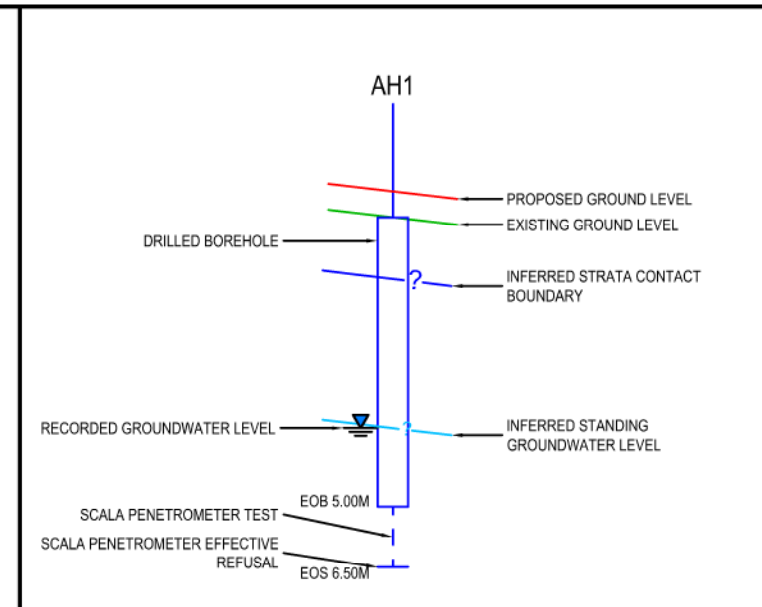
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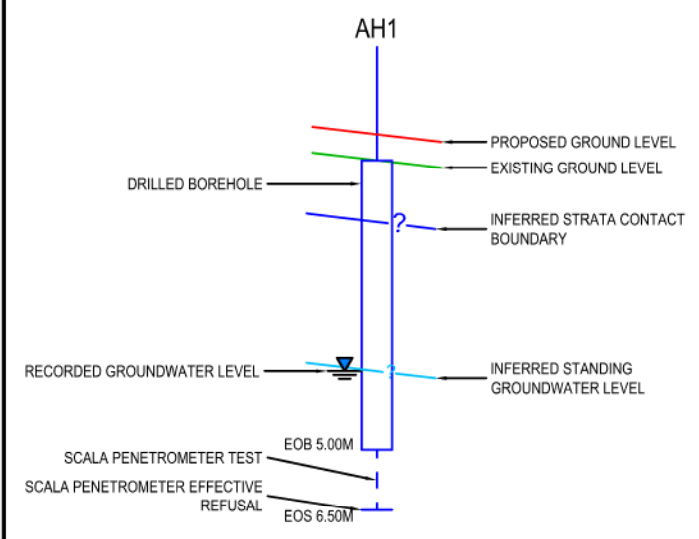
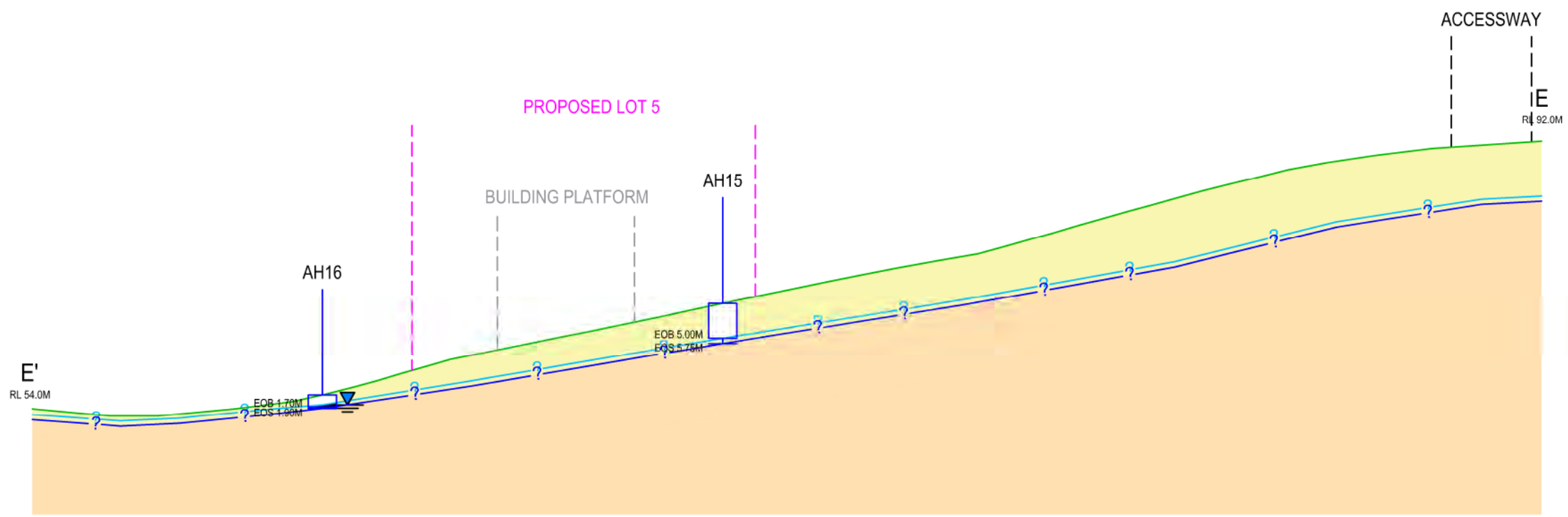
PROJECT TITLE
**RURAL RESIDENTIAL SUBDIVISION
2127 KAIPARA COAST HIGHWAY
MAKARAU**

DRAWING TITLE
CROSS-SECTION D-D'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

RESOURCE CONSENT		
SCALE	1:1,250	SIZE A3
COORDINATE SYSTEM NZTM	HEIGHT DATUM AKL 1946	
PROJECT NUMBER K200826	DRAWING NUMBER KGA 6	REVISION B





LEGEND

	WAITEMATA GROUP SOILS
	WAITEMATA GROUP TRANSITIONAL MATERIAL

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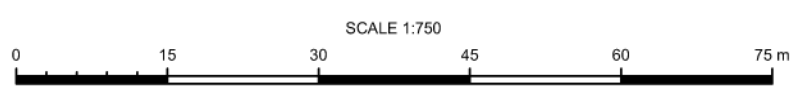
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2127 KAIPARA COAST HIGHWAY
MAKARAU**

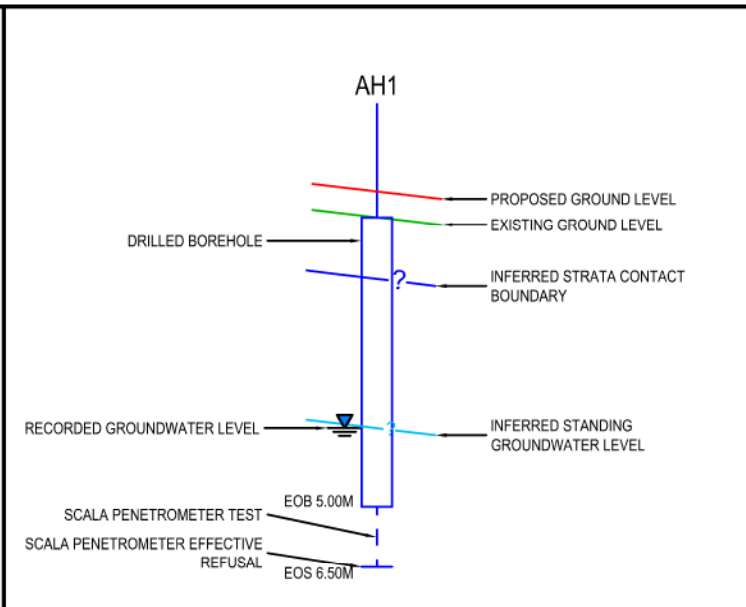
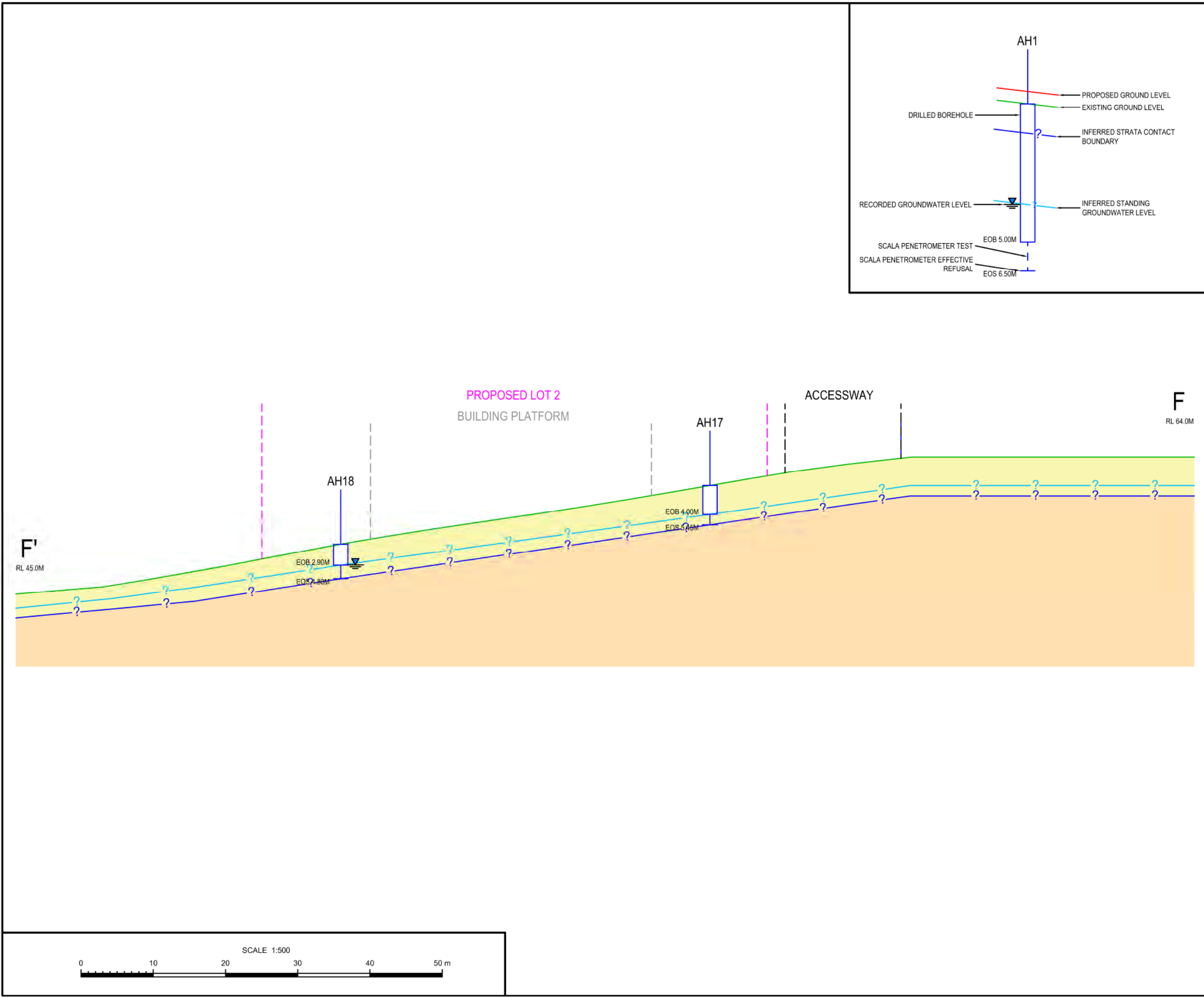
DRAWING TITLE
CROSS-SECTION E-E'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

STATUS
RESOURCE CONSENT

SCALE	1:400	SIZE	A3
COORDINATE SYSTEM	NZTM	HEIGHT DATUM	AKL 1946
PROJECT NUMBER	K200826	DRAWING NUMBER	KGA 7
		REVISION	B





LEGEND

- WAITEMATA GROUP SOILS
- WAITEMATA GROUP TRANSITIONAL MATERIAL

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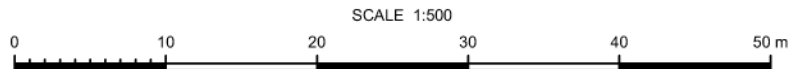
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PROJECT TITLE
**RURAL RESIDENTIAL SUBDIVISION
2127 KAIPARA COAST HIGHWAY
MAKARAU**

DRAWING TITLE
CROSS-SECTION F-F'

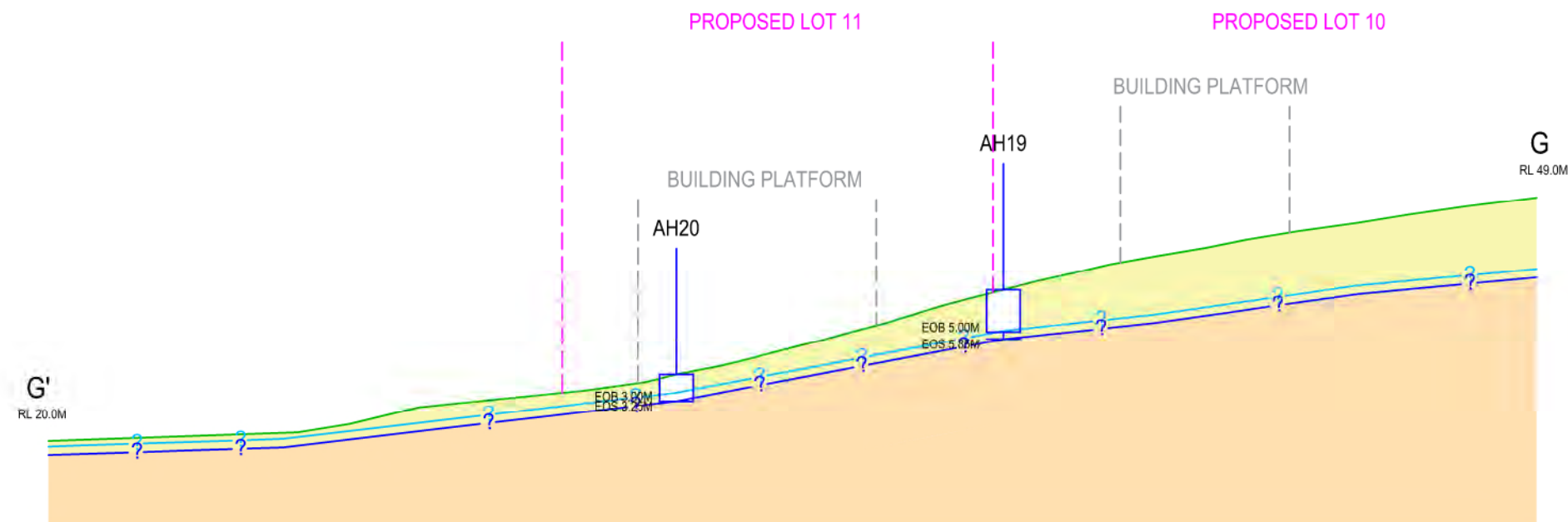
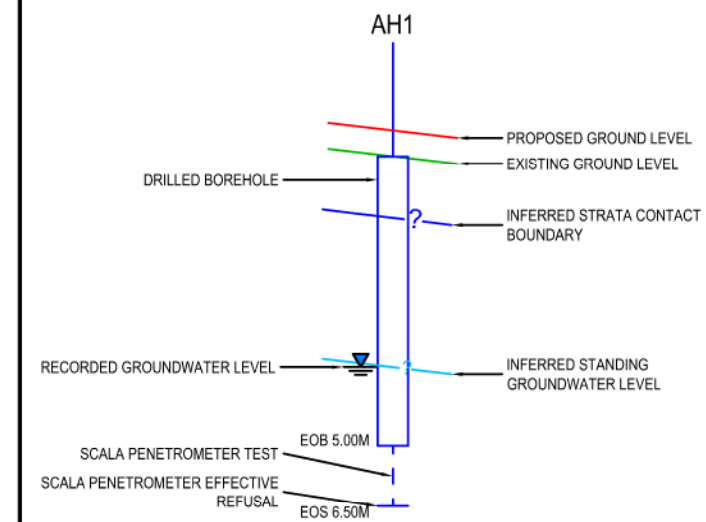
DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

RESOURCE CONSENT		
SCALE	1:500	SIZE A3
COORDINATE SYSTEM	NZTM	HEIGHT DATUM AKL 1946
PROJECT NUMBER	K200826	DRAWING NUMBER KGA 8
		REVISION B



LEGEND

- WAITEMATA GROUP SOILS
- WAITEMATA GROUP TRANSITIONAL MATERIAL



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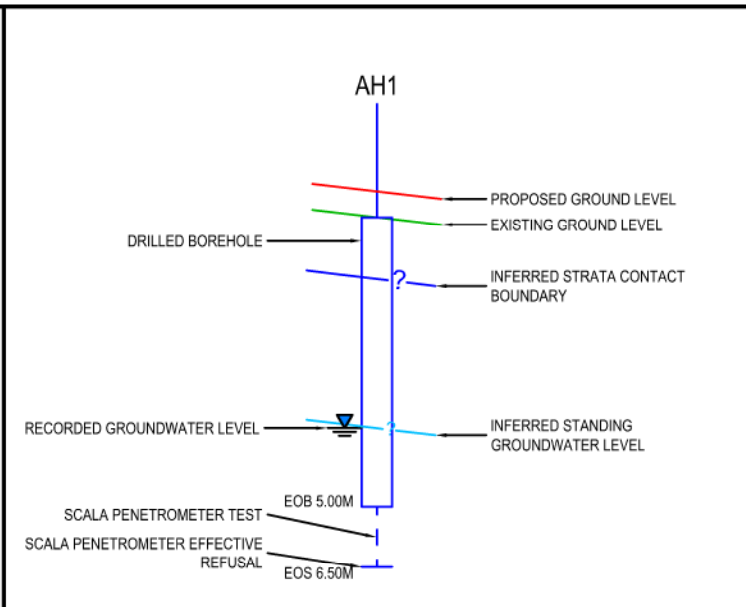
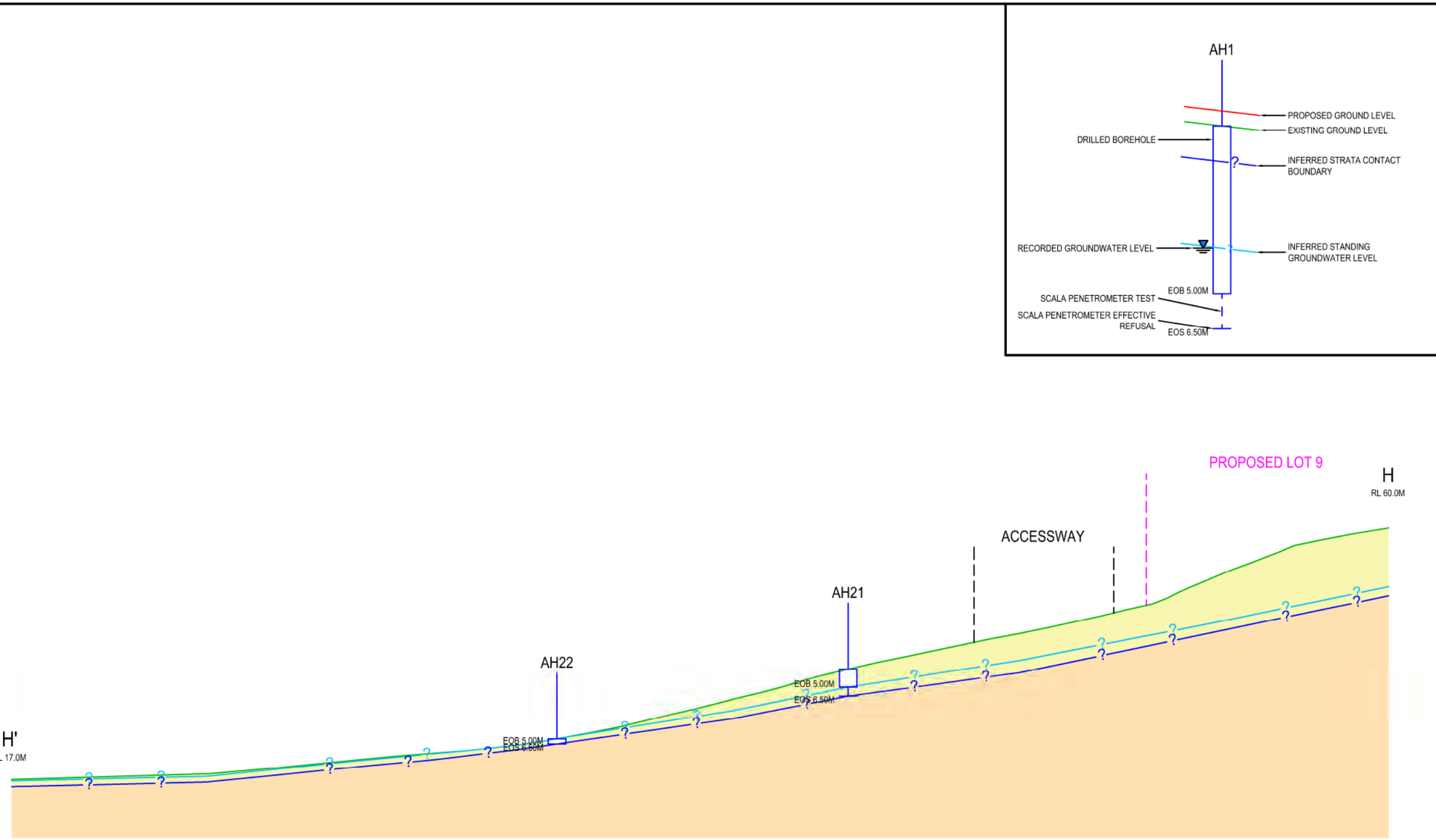
PROJECT TITLE
**RURAL RESIDENTIAL SUBDIVISION
2127 KAIPARA COAST HIGHWAY
MAKARAU**

DRAWING TITLE
CROSS-SECTION G-G'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

RESOURCE CONSENT		
SCALE	1:750	SIZE A3
COORDINATE SYSTEM NZTM	HEIGHT DATUM AKL 1946	
PROJECT NUMBER K200826	DRAWING NUMBER KGA 9	REVISION B





LEGEND

	WAITEMATA GROUP SOILS
	WAITEMATA GROUP TRANSITIONAL MATERIAL

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B	FEB-24	RFI AMENDMENTS	TR	TP	YC
A	SEP-21	REPORT ISSUE	TR	PH	AN
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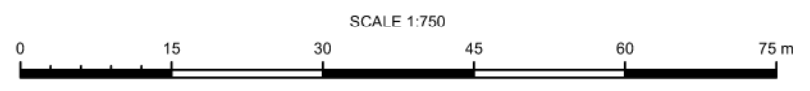
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**RURAL RESIDENTIAL SUBDIVISION
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MAKARAU**

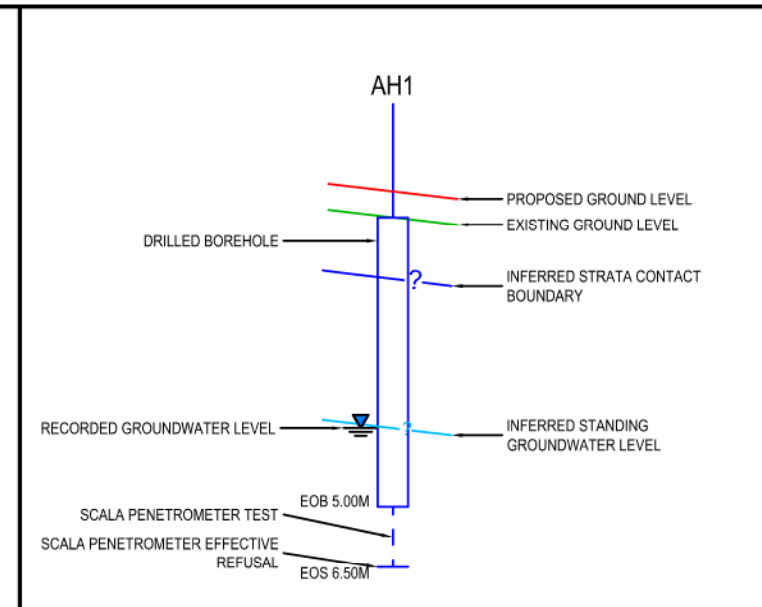
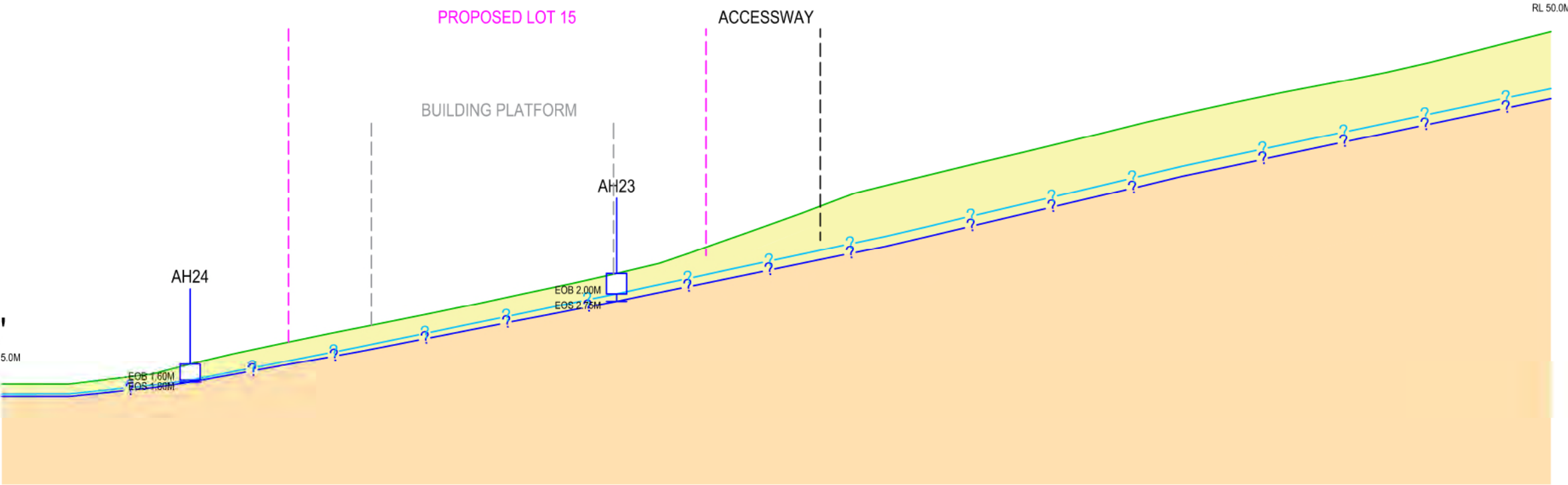
DRAWING TITLE
CROSS-SECTION H-H'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

STATUS
RESOURCE CONSENT

SCALE	1:750	SIZE	A3
COORDINATE SYSTEM	NZTM	HEIGHT DATUM	AKL 1946
PROJECT NUMBER	K200826	DRAWING NUMBER	KGA 10
		REVISION	B





LEGEND

	WAITEMATA GROUP SOILS
	WAITEMATA GROUP TRANSITIONAL MATERIAL

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B	FEB-24	RFI AMENDMENTS	TR	TP	YC
A	SEP-21	REPORT ISSUE	TR	PH	AN
REV	DATE	REVISION DESCRIPTION	BY	CHK	APP

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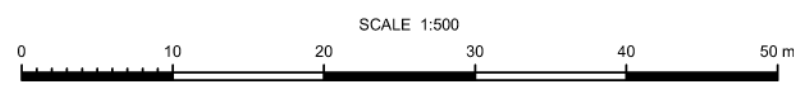
PROJECT TITLE
**RURAL RESIDENTIAL SUBDIVISION
2127 KAIPARA COAST HIGHWAY
MAKARAU**

DRAWING TITLE
CROSS-SECTION I-I'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

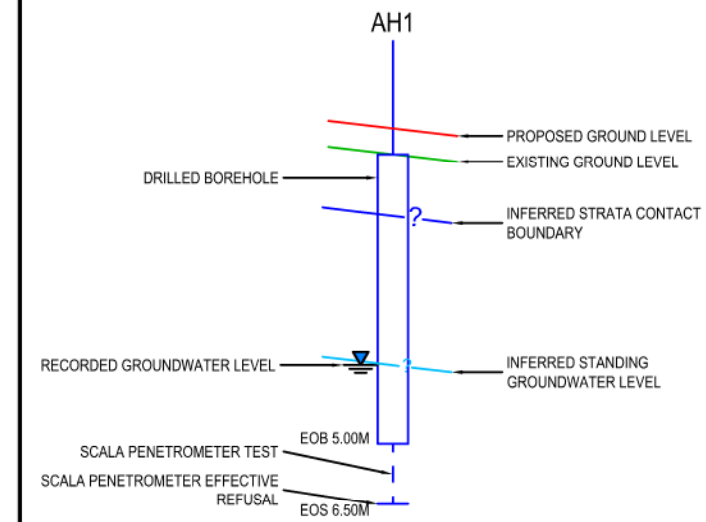
STATUS
RESOURCE CONSENT

SCALE	1:500	SIZE	A3
COORDINATE SYSTEM	NZTM	HEIGHT DATUM	AKL 1946
PROJECT NUMBER	K200826	DRAWING NUMBER	KGA 11
		REVISION	B



LEGEND

- WAITEMATA GROUP SOILS
- WAITEMATA GROUP TRANSITIONAL MATERIAL



NOTES

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A	SEP-21	REPORT ISSUE	TR	PH	AN
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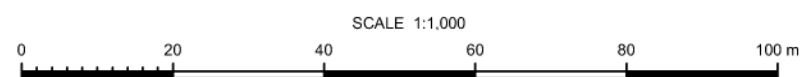
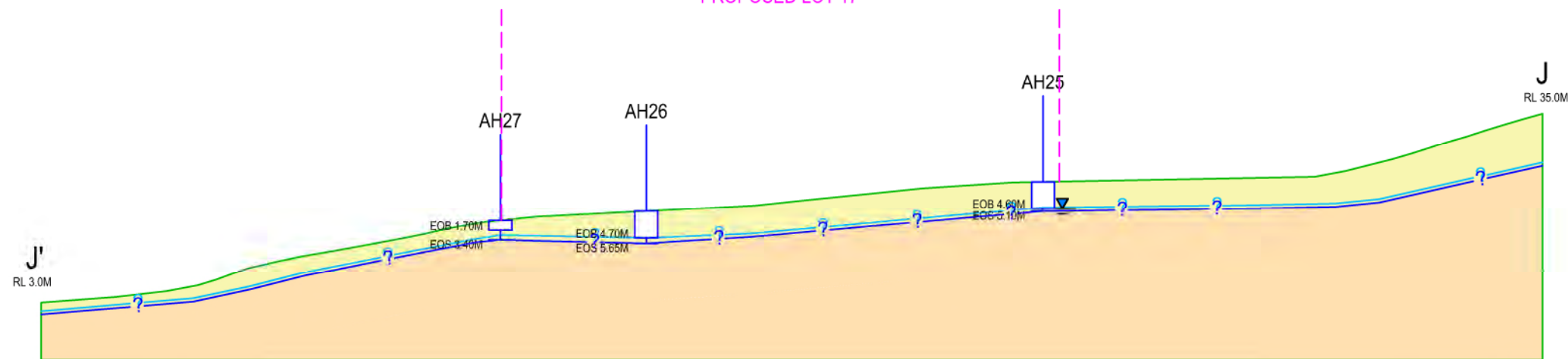
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MAKARAU**

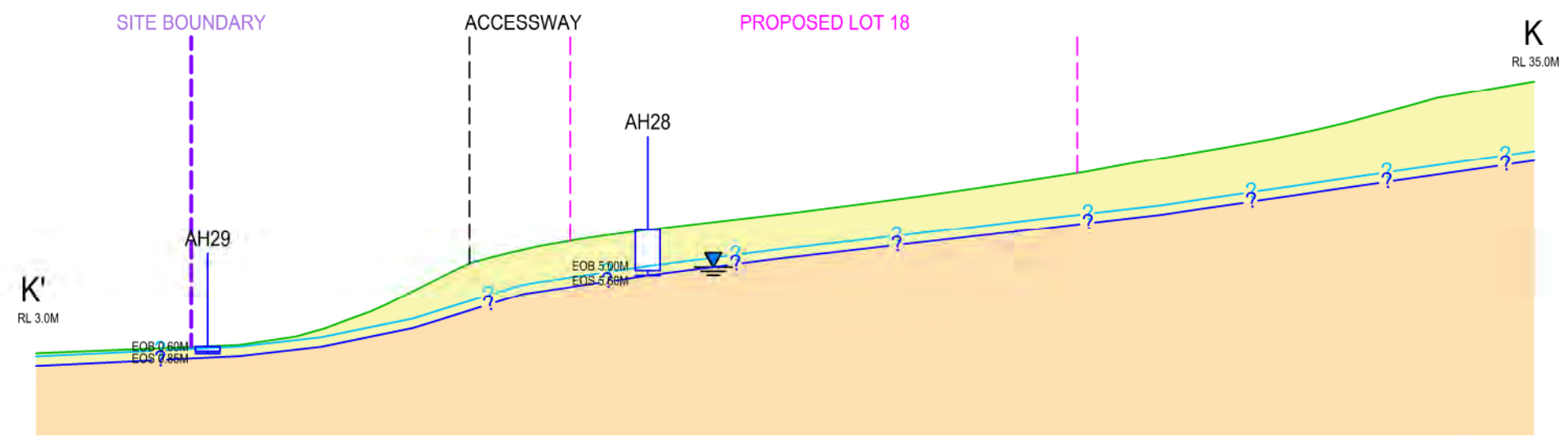
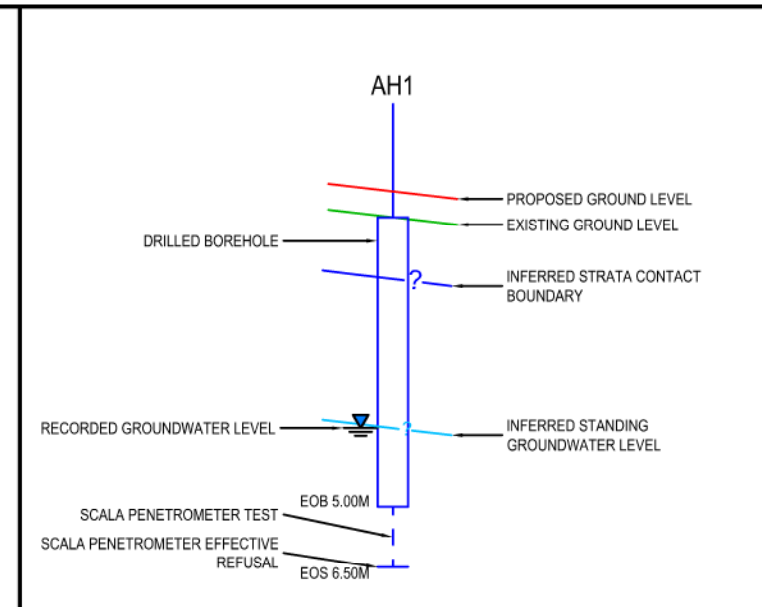
DRAWING TITLE
CROSS-SECTION J-J'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

RESOURCE CONSENT		
SCALE	SIZE	
1:1,000	A3	
COORDINATE SYSTEM	HEIGHT DATUM	
NZTM	AKL 1946	
PROJECT NUMBER	DRAWING NUMBER	REVISION
K200826	KGA 12	B

PROPOSED LOT 17





LEGEND

	WAITEMATA GROUP SOILS
	WAITEMATA GROUP TRANSITIONAL MATERIAL

- NOTES**
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B	FEB-24	RFI AMENDMENTS	TR	TP	YC
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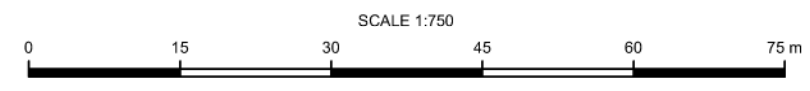
PROJECT TITLE
**RURAL RESIDENTIAL SUBDIVISION
2127 KAIPARA COAST HIGHWAY
MAKARAU**

DRAWING TITLE
CROSS-SECTION K-K'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

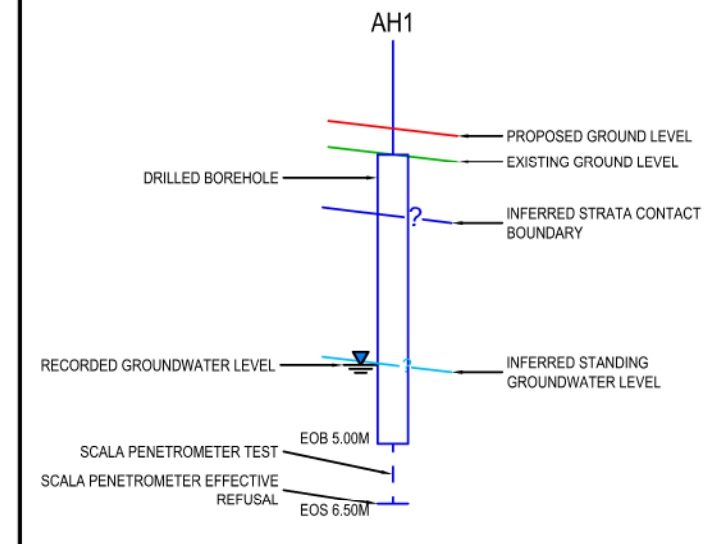
STATUS
RESOURCE CONSENT

SCALE	1:750	SIZE	A3
COORDINATE SYSTEM	NZTM	HEIGHT DATUM	AKL 1946
PROJECT NUMBER	K200826	DRAWING NUMBER	KGA 13
		REVISION	B



LEGEND

- WAITEMATA GROUP SOILS
- WAITEMATA GROUP TRANSITIONAL MATERIAL



NOTES

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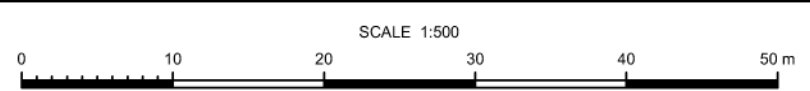
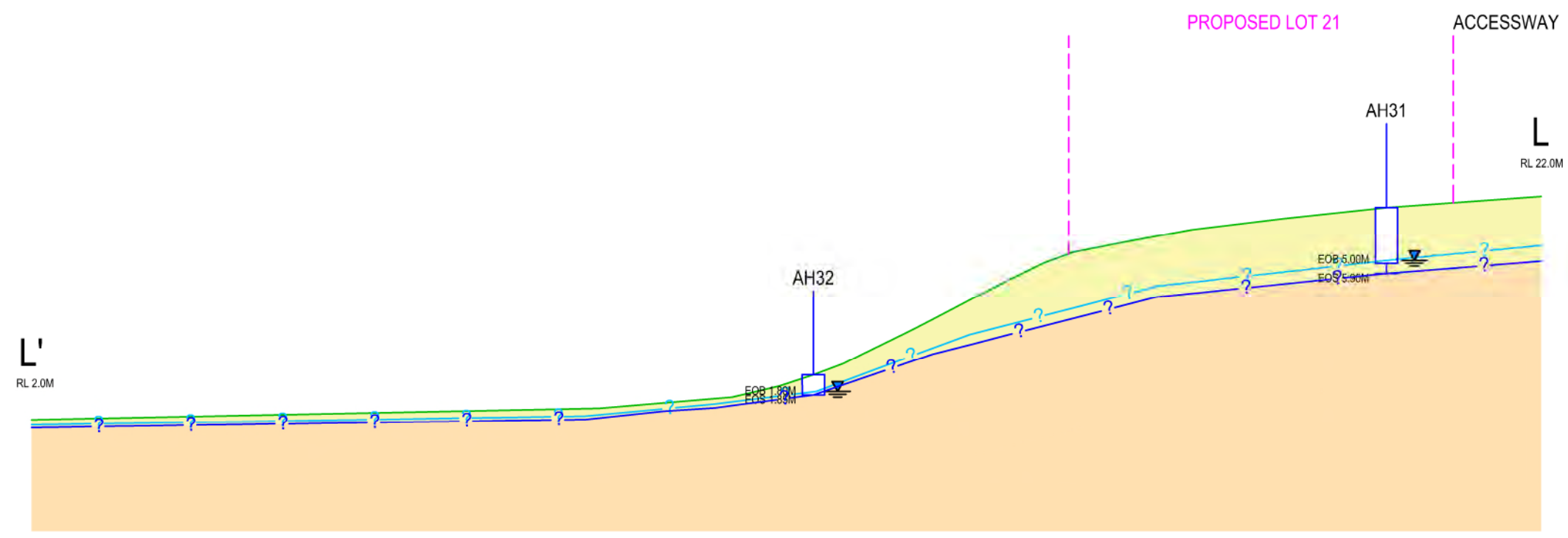
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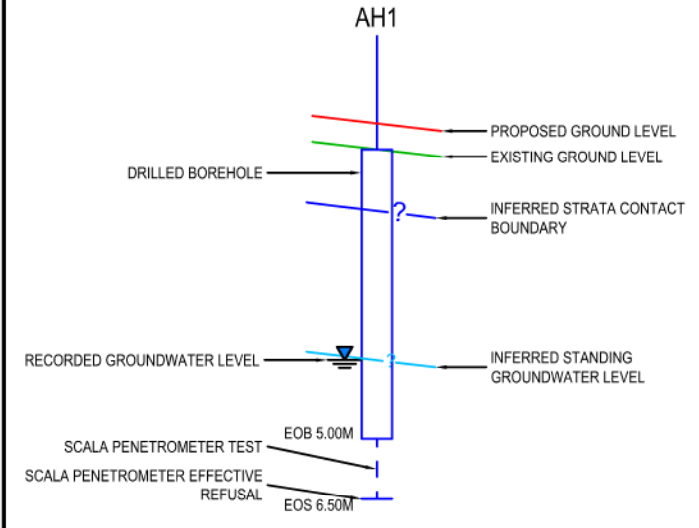
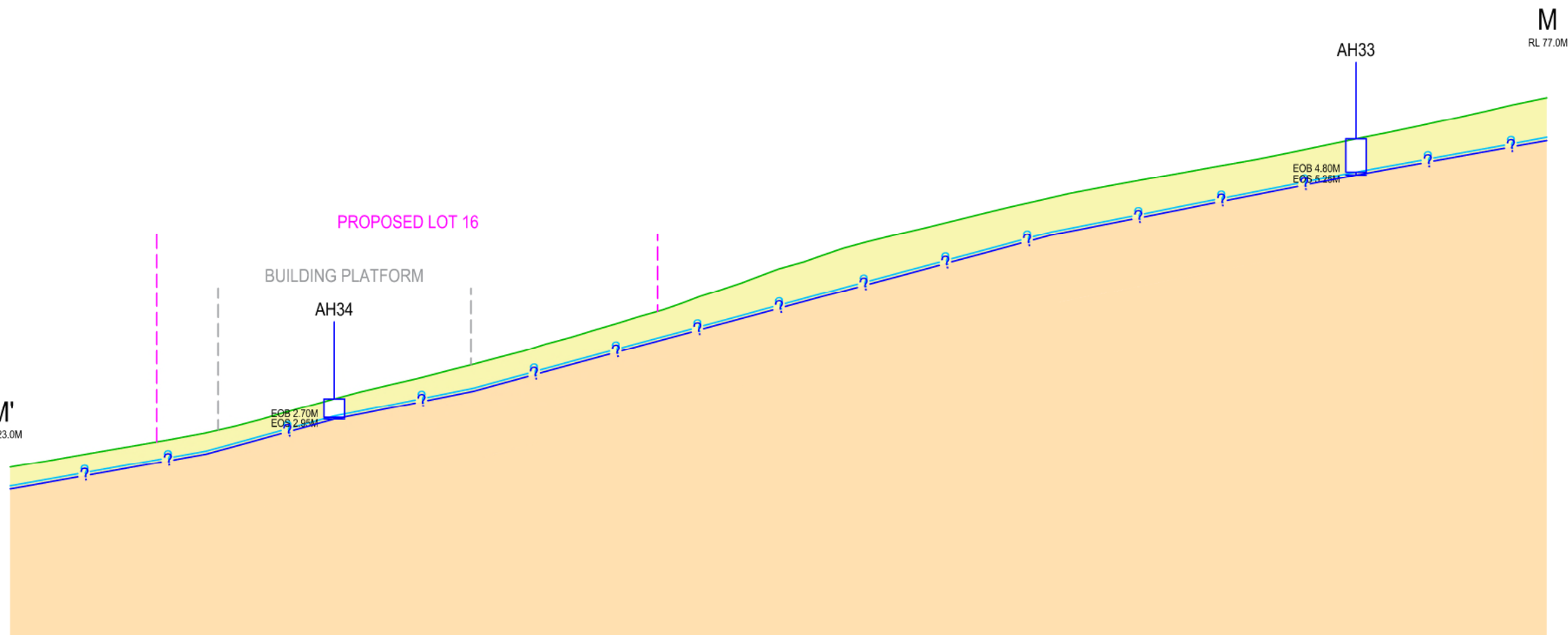
DRAWING TITLE
CROSS-SECTION L-L'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

STATUS
RESOURCE CONSENT

SCALE	1:500	SIZE	A3
COORDINATE SYSTEM	NZTM	HEIGHT DATUM	AKL 1946
PROJECT NUMBER	K200826	DRAWING NUMBER	KGA 14
		REVISION	B





LEGEND

- WAITEMATA GROUP SOILS
- WAITEMATA GROUP TRANSITIONAL MATERIAL

NOTES

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B	FEB-24	RFI AMENDMENTS	TR	TP	YC
A	SEP-21	REPORT ISSUE	TR	PH	AN
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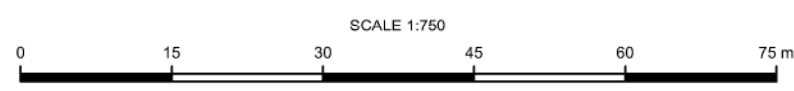
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2127 KAIPARA COAST HIGHWAY
MAKARAU**

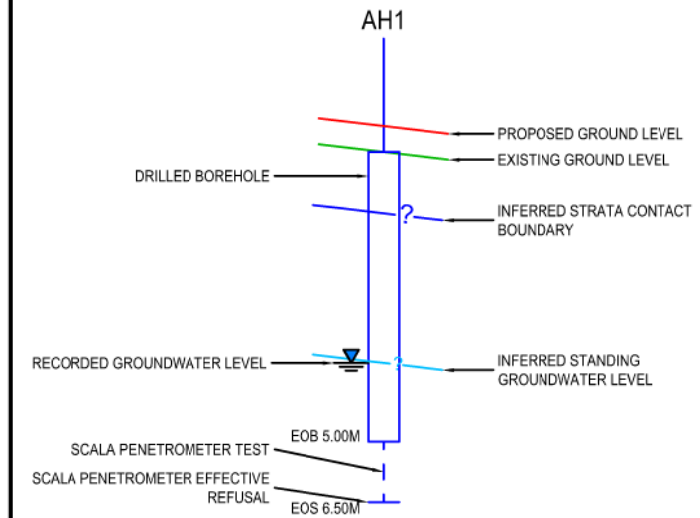
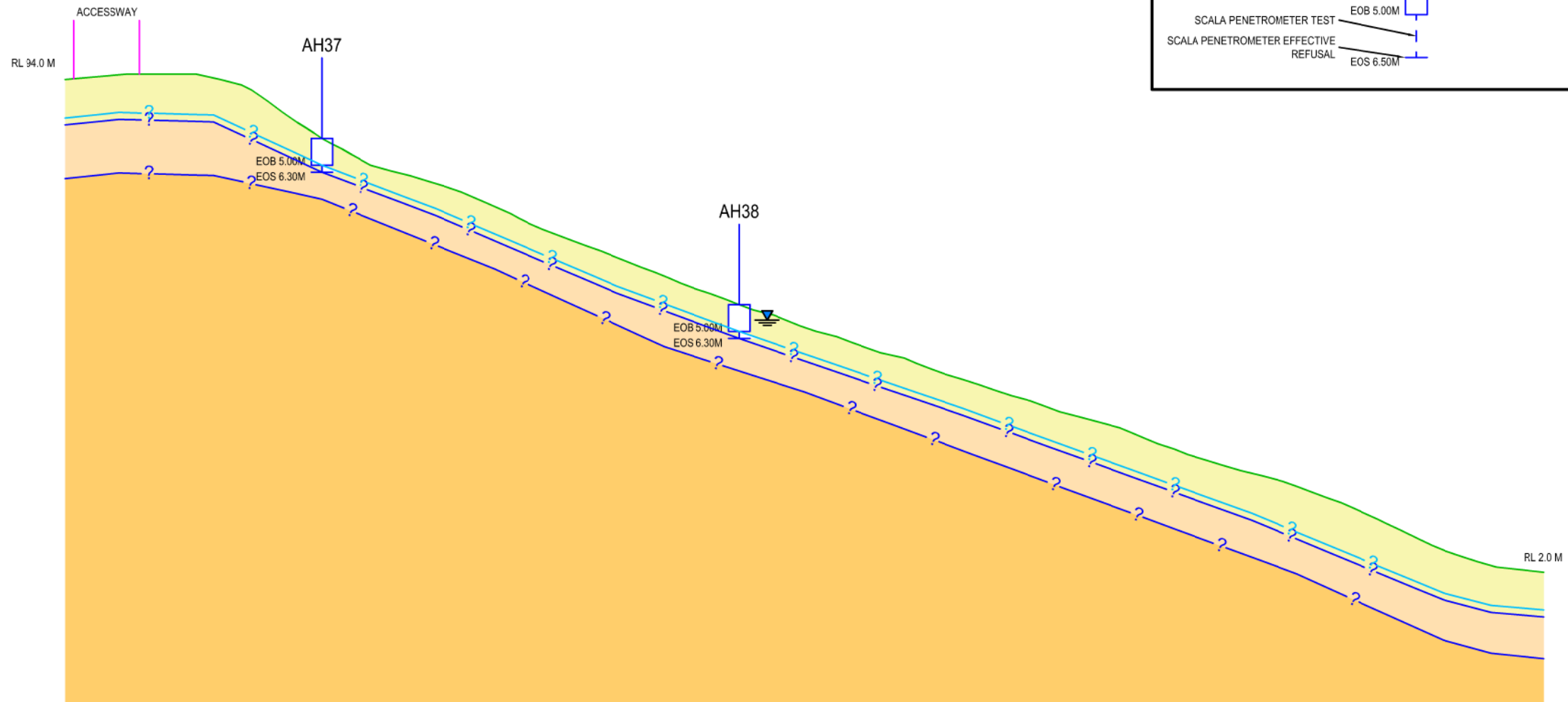
DRAWING TITLE
CROSS-SECTION M-M'

DESIGNED	TR	DATE	SEP-21	CHECKED	PH	DATE	SEP-21
DRAWN	TR	DATE	SEP-21	APPROVED	AN	DATE	SEP-21

STATUS
RESOURCE CONSENT

SCALE	1:750	SIZE	A3
COORDINATE SYSTEM	NZTM	HEIGHT DATUM	AKL 1946
PROJECT NUMBER	K200826	DRAWING NUMBER	KGA 15
		REVISION	B





LEGEND

- WAITEMATA GROUP SOILS
- WAITEMATA GROUP TRANSITIONAL MATERIAL
- WAITEMATA GROUP ROCK

NOTES

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TR	SEP-21	Report Issue	TR	PH	AN
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PROJECT TITLE
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 MAKARAU**

DRAWING TITLE
SECTION N-N'

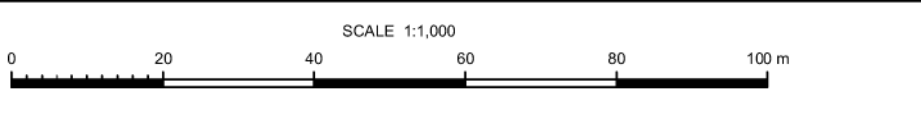
DESIGNED	TR	DATE	DEC-21	CHECKED	PH	DATE	DEC-21
DRAWN	TR	DATE	DEC-21	APPROVED	AN	DATE	DEC-21

STATUS
RESOURCE CONSENT

SCALE
1:1,000 SIZE
A3

COORDINATE SYSTEM
NZTM HEIGHT DATUM
AKL 1946

PROJECT NUMBER
K200826 DRAWING NUMBER
KGA 16 REVISION
A



HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH01

Project: Geotechnical Investigation

Date: 27/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1730631.0, N 5954857.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) (refer notes for details)					Scala Penetrometer (blows / 50mm)					
						50	100	150	200	Values	Depth (m)	Blows				
0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5		TOPSOIL; dark brown. Very soft, wet. [TOPSOIL] 0.2m: Hand Auger was easily pushed to 2.4m, very wet.	Groundwater Not Encountered	TS							2.40	1.0				
													2.45	2.0		
				Clayey SILT; dark brownish orange. Very soft, wet, moderate plasticity. [WAITEMATA GROUP] 0.3m - 1.0m: Unable to take shear vane readings due to very soft material.	WAITEMATA GROUP								2.50	2.0		
															2.55	2.0
															2.60	2.0
															2.65	5.0
															2.70	6.0
															2.75	8.0
															2.80	8.0
															2.85	11.0
															2.90	17.0
															2.95	12.0
															3.00	10.0
										3.05	10.0					
		Sandy (fine to medium) SILT; dark brownish grey, wet, low plasticity. [WAITEMATA GROUP]								47	3.10	15.0				
										37						
		2.4m: Hit Rock.														
		2.4m: End of Hole (target depth 5.0m).														

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ∇ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.: DR4681
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

7A William Pickering Dr
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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH03

Project: Geotechnical Investigation

Date: 27/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1730576.0, N 5954835.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) (refer notes for details)				Scala Penetrometer (blows / 50mm)					
						50	100	150	200	Values	Depth (m)	Blows			
0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5		TOPSOIL intermixed with some clay; dark brown with some orange inclusions. Moist. [TOPSOIL]	Groundwater Not Encountered	TS							2.15	5.0			
													2.20	6.0	
				Silty CLAY; dark orange mottled light grey. Stiff to very stiff, moist to wet, high plasticity. [WAITEMATA GROUP]	WAITEMATA GROUP						105	2.25	10.0		
													39	2.30	10.0
														2.35	7.0
														2.40	10.0
														2.45	10.0
													57	2.50	9.0
													27	2.55	8.0
														2.60	8.0
														2.65	6.0
													220+	2.70	6.0
				Sandy(fine) SILT; dark brownish orange mottled orange. Very stiff, moist, low plasticity, some gravel(fine) inclusions 2-3mm. [WAITEMATA GROUP]	WAITEMATA GROUP							-	2.75	6.0	
														2.80	6.0
														2.85	6.0
													184	2.90	8.0
													57	2.95	8.0
														3.00	6.0
												3.05	5.0		
											UTP	3.10	8.0		
		1.8m: Becomes dark grey. Hard, dry to moist.	WAITEMATA GROUP							-	3.15	8.0			
												3.20	9.0		
												3.25	11.0		
											UTP	3.30	12.0		
												3.35	14.0		
												3.40	13.0		
		2.1m: End of Hole (target depth 5.0m). Hit very dense material.	WAITEMATA GROUP							UTP	3.45	12.0			
												-	3.50	13.0	

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.: DR4681
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH04

Project: Geotechnical Investigation

Date: 27/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1730555.0, N 5954839.0

Ground Level: -

Sheet: 1 of 2

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) (refer notes for details)				Scala Penetrometer (blows / 50mm)							
						50	100	150	200	Values	Depth (m)	Blows					
0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5		TOPSOIL with silty clay inclusions and trace organic inclusions; dark brown mottled brownish orange and black. [TOPSOIL]	Groundwater Not Encountered	TS							5.15	1.0					
													5.20	1.0			
				Clayey SILT; brownish orange mottled orange. Very stiff, dry to moist, low plasticity. [COLLUVIUM?] 0.7m: Becomes dark grey mottled brownish orange with black organic inclusions. 1.1m: Becomes dark brownish orange.	COLLUVIUM?								5.25	2.0			
															5.30	2.0	
																5.35	5.0
																5.40	3.0
																5.45	4.0
														123		5.50	2.0
														35		5.55	4.0
																5.60	4.0
																5.65	5.0
														220+		5.70	3.0
														-		5.75	2.0
																5.80	2.0
													5.85	2.0			
											UTP		5.90	8.0			
											-		5.95	10.0			
													6.00	13.0			
		SILT some clay with trace sand(fine); orange mottled brownish yellow. Very stiff to hard, low to moderate plasticity. [WAITEMATA GROUP]									6.05	10.0					
		SILT with trace sand(fine); light brownish yellow. Hard, moist to wet, low plasticity. [WAITEMATA GROUP]									6.10	10.0					
		2.5m: Becomes dark orange, highly oxidized.									6.15	11.0					
		Sandy(fine) SILT; light brownish yellow. Hard, moist, no to low plasticity. [WAITEMATA GROUP]									6.20	12.0					
		3.3m: Becomes moist to wet.															
		3.5m: Becomes highly oxidized.															
		SILT with some sand(fine); light brownish grey mottled orange. Hard, moist, no to low plasticity. [WAITEMATA GROUP]															
		4.0m: Becomes wet.															
		4.5m: Becomes dark grey with limonitic inclusions.															
		5.1m: End of Hole (target depth 5.0m).															

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ∇ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.: DR4681
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH04

Project: Geotechnical Investigation

Date: 27/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1730555.0, N 5954839.0

Ground Level: -

Sheet: 2 of 2

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) (refer notes for details)					Scala Penetrometer (blows / 50mm)	
						50	100	150	200	Values	Depth (m)	Blows
5.5			Not									
6.0												
6.5												
7.0												
7.5												
8.0												
8.5												
9.0												
9.5												

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.:
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH06

Project: Geotechnical Investigation

Date: 28/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KT

Coordinates: E 1730557.0, N 5954559.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) (refer notes for details)				Scala Penetrometer (blows / 50mm)					
						50	100	150	200	Values	Depth (m)	Blows			
0.0		[TOPSOIL]	Groundwater Not Encountered	Waitemata Group							1.10	0.0			
0.5		SILT; grey mottled orange. Soft, dry, no plasticity. [WAITEMATA GROUP]													
0.8		SILT with some sand (medium to coarse) and some clay; grey. Stiff, moist, low to moderate plasticity. [WAITEMATA GROUP]										81 34			
1.0		Silty CLAY with some sand (fine to medium) and some gravel (fine to medium); brownish grey with white specs. Moist, low to moderate plasticity. [WAITEMATA GROUP]										98 37			
1.1		1.0m: GRAVEL (fine to medium) with some sand (fine to coarse); grey. Very dense, moist, no plasticity. 1.1m: End of Hole. Refusal on rock, very dense material.													

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.: 1428
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH07

Project: Geotechnical Investigation

Date: 28/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KT

Coordinates: E 1730535.0, N 5954248.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) <small>(refer notes for details)</small>				Scala Penetrometer (blows / 50mm)				
						50	100	150	200	Values	Depth (m)	Blows		
0.0 - 0.1		[TOPSOIL]	Groundwater Not Encountered	TS								0.80	0.0	
0.1 - 0.8		SILT with some gravel(fine to medium) and some sand (medium to coarse); reddish brown. Very dense, dry to moist. [WAITEMATA GROUP]		WAITEMATA GROUP						237+ 51				
0.8 - 0.8		0.8m: End of Hole. Hit rock.									UTP			
0.8 - 4.5														

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water	Shear Vane	Other Comments
▼ Standing Water Level	Corrected as per NZGS Guidelines	Target Depth 5.0m.
▽ Water Level At Time Of Drilling	Vane No.:1428	
↔ Out Flow ▷ In Flow	UTP = Unable To Penetrate	
	+ = Peak Exceeded	
	- = No Result	

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH08

Project: Geotechnical Investigation

Date: 28/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1730506.0, N 5954255.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa)					Scala Penetrometer (blows / 50mm)		
						50	100	150	200	Values	Depth (m)	Blows	
0.0		TOPSOIL; dark brown. Moist. [TOPSOIL]											
0.5		Sandy(fine) SILT; dark brownish orange. Hard, dry, friable, highly weathered. [WAITEMATA GROUP]	Groundwater Not Encountered	TS						UTP			
1.0		SILT some sand(fine); dark brownish orange. Hard, moist, highly weathered [WAITEMATA GROUP] 1.1m: Sand size becomes medium to coarse.		WAITEMATA GROUP						UTP			
1.4		1.4m: End of Hole (target depth 5.0m).								UTP			

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water	Shear Vane	Other Comments
▼ Standing Water Level	Corrected as per NZGS Guidelines	Target Depth 5.0m.
▽ Water Level At Time Of Drilling	Vane No.:DR4681	
↔ Out Flow ▷ In Flow	UTP = Unable To Penetrate	
	+ = Peak Exceeded	
	- = No Result	

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH09

Project: Geotechnical Investigation

Date: 28/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KT

Coordinates: E 1730433.0, N 5954383.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) (refer notes for details)				Scala Penetrometer (blows / 50mm)				
						50	100	150	200	Values	Depth (m)	Blows		
		[TOPSOIL]		TS	TS						5.05	2.0		
		SILT minor clay; brownish orange. Very stiff, dry, no plasticity to low plasticity. [WAITEMATA GROUP]		Waitemata Group	[Graphic Log Symbols]					186	5.10	2.0		
0.5		Clayey SILT; brownish orange. Very stiff, dry, low plasticity. [WAITEMATA GROUP]	Groundwater Not Encountered								34	5.15	1.0	
		0.8m: Becomes dry to moist.										169	5.20	3.0
		Silty CLAY; light grey mottled orange. Stiff, moist, moderate plasticity. [WAITEMATA GROUP]										74	5.25	3.0
1.0		1.4m: Becomes light grey mottled orange, stiff to very stiff.										57	5.30	3.0
		SILT with some clay; light grey mottled orange. Very stiff, moist, low plasticity. [WAITEMATA GROUP]										122	5.35	4.0
1.5		3.0m: Becomes brownish orange.										51	5.40	5.0
		3.4m: Becomes light grey mottled orange.										122	5.45	5.0
2.0		4.7m: Becomes grey mottled orange, stiff to very stiff, moist to wet, low plasticity.										54	5.50	6.0
2.5		5.0m: End of Hole.										118	5.55	5.0
3.0												51	5.60	5.0
3.5												122	5.65	6.0
4.0												54	5.70	7.0
4.5												118	5.75	6.0
												68	5.80	8.0
												118	5.85	7.0
												51	5.90	8.0
												118	5.95	7.0
												54	6.00	9.0
												122	6.05	10.0
										54	6.10	10.0		
									122	6.15	9.0			
									51	6.20	8.0			
									122	6.25	10.0			
									54	6.30	12.0			
									122	6.35	12.0			
									51	6.40	12.0			
									118	6.45	12.0			
									54	6.50	12.0			

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water	Shear Vane	Other Comments
▼ Standing Water Level	Corrected as per NZGS Guidelines	Target Depth 5.0m.
∇ Water Level At Time Of Drilling	Vane No.:1428	
↔ Out Flow ▷ In Flow	UTP = Unable To Penetrate	
	+ = Peak Exceeded	
	- = No Result	

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH10

Project: Geotechnical Investigation

Date: 28/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1730412.0, N 5954398.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) (refer notes for details)				Scala Penetrometer (blows / 50mm)					
						50	100	150	200	Values	Depth (m)	Blows			
0.5		TOPSOIL; dark brown. Very stiff, moist. [TOPSOIL]		TS							5.00	2.0			
		Silty CLAY; dark brownish orange mottled orange. Very stiff, moist, moderate plasticity. [WAITEMATA GROUP]									154	5.05	2.0		
1.0		Clayey SILT; with trace sand(fine); orange mottled light brownish grey. Very stiff, moist, moderate plasticity. Highly oxidized. [WAITEMATA GROUP]								35	5.15	3.0			
											204	5.20	3.0		
												68	5.25	3.0	
													5.30	4.0	
													5.35	4.0	
													5.40	5.0	
													5.45	5.0	
													5.50	5.0	
													5.55	6.0	
													5.60	6.0	
1.5		Clayey SILT; with trace sand(fine); orange mottled light brownish grey. Very stiff, moist, moderate plasticity. Highly oxidized. [WAITEMATA GROUP]									88	5.65	7.0		
													5.70	8.0	
													162	5.75	8.0
													42	5.80	9.0
													5.85	9.0	
													5.90	10.0	
													152	5.95	10.0
													69	6.00	10.0
														6.05	14.0
														6.10	14.0
2.0		SILT some sand(fine); orange mottled light brownish grey. Very stiff, moist, moderate plasticity. [WAITEMATA GROUP]									61	6.15	14.0		
2.5		2.5m: Becomes wet.													
3.0		Clayey SILT with trace sand(fine); light brownish grey with orange inclusions. Very stiff, moist to wet, moderate plasticity. [WAITEMATA GROUP]													
3.5		3.8m: Becomes dark grey.													
4.0		SILT some clay; dark grey. Very stiff to hard, moist, low to moderate plasticity. [WAITEMATA GROUP]													
4.5		5.0m: End of Hole (target depth).													

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water	Shear Vane	Other Comments
▼ Standing Water Level	Corrected as per NZGS Guidelines	Target Depth 5.0m.
▽ Water Level At Time Of Drilling	Vane No.:DR4681	
↔ Out Flow ▷ In Flow	UTP = Unable To Penetrate	
	+ = Peak Exceeded	
	- = No Result	

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH11

Project: Geotechnical Investigation

Date: 30/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1730352.0, N 5954012.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa)				Scala Penetrometer (blows / 50mm)				
						50	100	150	200	Values	Depth (m)	Blows		
0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5		TOPSOIL; dark brown. Very stiff, dry to moist. [TOPSOIL]	Groundwater Not Encountered	WAITEMATA GROUP										
		Clayey SILT; orange mottled brownish orange. Very stiff, moist, moderate plasticity. [WAITEMATA GROUP]												
		SILT with some clay; light brownish grey mottled orange. Very stiff, moist, low to moderate plasticity. [WAITEMATA GROUP]												
		Clayey SILT; light brownish grey with orange streaks. Very stiff, moist, moderate plasticity. [WAITEMATA GROUP]												
		3.8m: Becomes wet.												
		4.1m: Becomes highly oxidized.												
		4.3m: Becomes dark grey.												
		5.0m: End of Hole.												

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water	Shear Vane	Other Comments
▼ Standing Water Level	Corrected as per NZGS Guidelines	Target Depth 5.0m.
∇ Water Level At Time Of Drilling	Vane No.: DR4681	
↙ Out Flow ↘ In Flow	UTP = Unable To Penetrate	
	+ = Peak Exceeded	
	- = No Result	

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH14

Project: Geotechnical Investigation

Date: 30/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KT

Coordinates: E 1730164.0, N 5954041.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) (refer notes for details)				Scala Penetrometer (blows / 50mm)		
						50	100	150	200	Values	Depth (m)	Blows
		[TOPSOIL]		T S							1.20	10.0
		SILT with some clay; brownish grey mottled orange. Very stiff to hard, dry, no to low plasticity. [WAITEMATA GROUP]		Waitemata Group					220	1.25	8.0	
0.5		Silty CLAY; brownish grey mottled orange with some white specs. Hard, dry to moist, low to moderate plasticity. [WAITEMATA GROUP]	Groundwater Not Encountered						37	1.30	8.0	
										233	1.35	4.0
										68	1.40	4.0
										193	1.45	3.0
1.0										74	1.50	2.0
										UTP	1.55	3.0
										-	1.60	3.0
											1.65	3.0
											1.70	4.0
											1.75	3.0
											1.80	4.0
											1.85	4.0
											1.90	5.0
											1.95	6.0
1.5		SILT with some gravel(fine to medium); reddish orange mottled grey with some white specs. Hard, moist, no plasticity. [WAITEMATA GROUP] 1.4m: Possible shear zone, mixture of material within 1.2m - 2.3m								2.00	4.0	
									2.05	4.0		
									2.10	4.0		
									2.15	4.0		
									2.20	2.0		
									2.25	3.0		
									2.30	2.0		
									2.35	3.0		
									2.40	3.0		
									2.45	5.0		
									2.50	3.0		
									2.55	2.0		
									2.60	2.0		
									2.65	2.0		
									2.70	2.0		
									2.75	2.0		
									2.80	2.0		
									2.85	2.0		
									2.90	2.0		
									3.00	0.0		
3.0		3.0m: End of Hole. Refusal.										

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ∇ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.:1428
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH15

Project: Geotechnical Investigation

Date: 30/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1730283.0, N 5953922.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa)				Scala Penetrometer (blows / 50mm)		
						50	100	150	200	Values	Depth (m)	Blows
0.5		TOPSOIL; dark brown, dry to moist. [TOPSOIL]	Groundwater Not Encountered	S							5.00	2.0
		Silty CLAY; orange mottled brownish orange. Hard, dry, moderate to high plasticity. [WAITEMATA GROUP]								237+	5.05	3.0
1.0		0.6m: Becomes moist.								51	5.10	3.0
										5.15	2.0	
										5.20	3.0	
										5.25	4.0	
										5.30	4.0	
										5.35	6.0	
										5.40	5.0	
										5.45	5.0	
										5.50	5.0	
										5.55	6.0	
2.0		2.0m: Becomes light brownish grey.								71	5.60	6.0
										5.65	10.0	
										5.70	10.0	
										5.75	20.0	
3.0		3.0m: Becomes wet and highly oxidized.								139	5.60	6.0
										5.65	10.0	
										5.70	10.0	
										5.75	20.0	
4.0		Silty CLAY; dark brownish grey. Stiff, wet, moderate plasticity. [WAITEMATA GROUP]								145	5.60	6.0
										5.65	10.0	
										5.70	10.0	
										5.75	20.0	
4.5		4.8m: Becomes highly oxidized, orange. 5.0m: End of Hole (target depth 5.0m)								152	5.60	6.0
										5.65	10.0	
										5.70	10.0	
										5.75	20.0	

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water	Shear Vane	Other Comments
▼ Standing Water Level	Corrected as per NZGS Guidelines	Target Depth 5.0m.
∇ Water Level At Time Of Drilling	Vane No.: 1428	
↔ Out Flow ▷ In Flow	UTP = Unable To Penetrate	
	+ = Peak Exceeded	
	- = No Result	

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH17

Project: Geotechnical Investigation

Date: 29/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1730158.0, N 5953838.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa)				Scala Penetrometer (blows / 50mm)					
						50	100	150	200	Values	Depth (m)	Blows			
		TOPSOIL; dark brown. Moist. [TOPSOIL]		TS							4.10	2.0			
		Silty CLAY; orange mottled light grey. Moist, moderate to high plasticity. [WAITEMATA GROUP]	Groundwater Not Encountered	WAITEMATA GROUP						179	4.15	2.0			
0.5						24			4.20	2.0					
									4.25	2.0					
									4.30	2.0					
									4.35	3.0					
									4.40	4.0					
									174	4.45	4.0				
									51	4.50	4.0				
										4.55	5.0				
										4.60	5.0				
									139	4.65	5.0				
									81	4.70	6.0				
										4.75	7.0				
										4.80	7.0				
		SILT some clay; light brownish yellow. Hard, dry to moist, low plasticity. [WAITEMATA GROUP]	Groundwater Not Encountered	WAITEMATA GROUP						220+	4.85	7.0			
													-	4.90	8.0
														4.95	7.0
														5.00	8.0
						1.4m: Becomes highly oxidized.							UTP	5.05	8.0
						1.6m: Becomes moist.							-	5.10	9.0
														5.15	8.0
														5.20	10.0
													204	5.25	10.0
													56	5.30	10.0
										5.35	11.0				
										5.40	12.0				
										5.45	12.0				
		CLayey SILT; dark grey. Very stiff, wet, moderate plasticity. [WAITEMATA GROUP]	Groundwater Not Encountered	WAITEMATA GROUP							155	69			
														154	76
														159	91
														155	79
														150	68
		4.0m: End of Hole (target depth 5.0m). Too difficult to drill.													

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water	Shear Vane	Other Comments
▼ Standing Water Level	Corrected as per NZGS Guidelines	Target Depth 5.0m.
∇ Water Level At Time Of Drilling	Vane No.: DR4681	
↔ Out Flow ▷ In Flow	UTP = Unable To Penetrate	
	+ = Peak Exceeded	
	- = No Result	

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH18

Project: Geotechnical Investigation

Date: 29/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KT

Coordinates: E 1730149.0, N 5953888.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) (refer notes for details)				Scala Penetrometer (blows / 50mm)			
						50	100	150	200	Values	Depth (m)	Blows	
		[TOPSOIL]		TS	TS						2.90	8.0	
		Clayey SILT; brownish orange. Very stiff, dry, low plasticity. [WAITEMATA GROUP]		Waitemata Group						183	3.00	10.0	
0.5											41	3.05	3.0
		CLAY with some silt; orange mottled grey. Very stiff, dry to moist, moderate to high plasticity. [WAITEMATA GROUP]									183	3.10	6.0
											85	3.15	4.0
											68	3.20	3.0
1.0		Silty CLAY; orange mottled grey. Very stiff, dry to moist, moderate plasticity. [WAITEMATA GROUP]									166	3.25	3.0
											74	3.30	3.0
											115	3.35	2.0
		1.5m: Becomes light grey mottled orange.									57	3.40	1.0
											122	3.45	3.0
		Clayey SILT; orange mottled grey. Very stiff, dry to moist, moderate plasticity. [WAITEMATA GROUP]									47	3.50	2.0
											115	3.55	1.0
		SILT with minor clay; light grey mottled orange. Very stiff, moist, low plasticity. [WAITEMATA GROUP]									51	3.60	2.0
											101	3.65	2.0
											51	3.70	2.0
									UTP	3.75	3.0		
		2.7m - 2.8m: Limonitic bands.							-	3.80	2.0		
		SAND(fine to coarse) with some gravel(fine); grey. Very dense, moist, no plasticity. [WAITEMATA GROUP]							-	3.85	2.0		
									-	3.90	3.0		
									-	3.95	3.0		
									-	4.00	3.0		
									-	4.05	2.0		
									-	4.10	2.0		
									-	4.15	2.0		
									-	4.20	1.0		
									-	4.25	2.0		
									-	4.30	2.0		
									-	4.35	2.0		
									-	4.40	2.0		
									-	4.45	3.0		
									-	4.50	3.0		
									-	4.55	3.0		
									-	4.60	3.0		
									-	4.65	3.0		
									-	4.70	2.0		
									-	4.75	5.0		
									-	4.80	4.0		
		2.9m: End of Hole (target depth 5.0m). Tried re drilling after scala and hit refusal on dense material.							-				

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ∇ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.: 1428
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH22

Project: Geotechnical Investigation

Date: 3/05/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: RS

Coordinates: E 1730024.0, N 5954188.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) <small>(refer notes for details)</small>				Scala Penetrometer (blows / 50mm)				
						50	100	150	200	Values	Depth (m)	Blows		
		[TOPSOIL]	Groundwater Not Encountered	TS WAITEMATA GROUP							0.90	20.0		
0.5		Clayey SILT; grey and orange. Very stiff, dry to moist, moderate plasticity, occasional rootlets [WAITEMATA GROUP]									220	-		
1.0		SILT with some tephra; light grey to white. Hard, dry. [WAITEMATA GROUP] 0.9m: End of Hole. Too dense (target depth 5.0m).									237+	-		
1.0										UTP				

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines Vane No.:1428
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH23

Project: Geotechnical Investigation

Date: 3/05/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: RS

Coordinates: E 1730059.0, N 5954295.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa)				Scala Penetrometer (blows / 50mm)				
						50	100	150	200	Values	Depth (m)	Blows		
		[TOPSOIL]		T S							2.05	7.0		
		Clayey SILT to silty CLAY; grey and orange. Very stiff, moist, moderate to high plasticity, occasional rootlets. [WAITEMATA GROUP]	Groundwater Not Encountered	WAITEMATA GROUP							2.10	3.0		
0.5												152	2.15	2.0
												91	2.20	2.0
													2.25	2.0
													2.30	3.0
													2.35	4.0
													2.40	5.0
												88	2.45	9.0
													2.50	9.0
		0.9m - 1.0m: Some oxidation.										152	2.55	12.0
												69	2.60	14.0
													2.65	11.0
										2.70	16.0			
										2.75	20.0			
1.5		SILT some clay; light grey and orange. Very stiff, dry, no plasticity to slightly plastic. Tephra? [WAITEMATA GROUP]								220				
									57					
										237+				
										-				
										UTP				
										-				
2.0		2.0m: End of Hole. Too dense to auger.												

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.:1428
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH24

Project: Geotechnical Investigation

Date: 3/05/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: RS

Coordinates: E 1730022.0, N 5954317.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa)					Scala Penetrometer (blows / 50mm)			
						50	100	150	200	Values	Depth (m)	Blows		
0.0		[TOPSOIL]												
0.0 - 0.5		Clayey SILT; orange mottled light grey. Very stiff, dry to moist, moderate plasticity. Rootlets up to 5.0m. [WAITEMATA GROUP]	Groundwater Not Encountered	T S WAITEMATA GROUP						UTP	1.60	4.0		
0.5 - 0.65												-	1.65	7.0
0.65 - 0.75													1.70	8.0
0.75 - 0.85													1.75	12.0
0.85 - 1.0												UTP	1.80	20.0
1.0 - 1.1		SILT some clay; dark orange. Very stiff, dry to moist, low to moderate plasticity. [WAITEMATA GROUP]												
1.1 - 1.2		Clayey SILT; grey mottled orange. Very stiff, dry to moist, low to moderate plasticity. [WAITEMATA GROUP]												
1.2 - 1.3		SILT some clay; grey mottled orange, dark orange pink and purple with white specs. Very stiff, dry, low plasticity. [WAITEMATA GROUP]								UTP				
1.3 - 1.4										-				
1.4 - 1.5		SILT some clay to minor clay; light whitish grey mottled grey and dark orange. Clasts of cemented SILT, coarse sand to fine gravel. [WAITEMATA GROUP]								UTP				
1.5 - 1.6										-				
1.6 - 1.65		1.6m: End of Hole. Too dense.												

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.: 1428
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- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH25

Project: Geotechnical Investigation

Date: 3/05/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: RS

Coordinates: E 1730021.0, N 5954389.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa)				Scala Penetrometer (blows / 50mm)		
						50	100	150	200	Values	Depth (m)	Blows
		[TOPSOIL]		TS	TS						4.60	3.0
		SILT; orange. Very stiff, dry no plasticity. Tephra present. [WAITEMATA GROUP]								UTP	4.65	6.0
0.5		0.3m: Becomes light grey, white friable.								-	4.70	6.0
		SILT some clay; orange mottled grey. Very stiff, dry, slightly plastic. [WAITEMATA GROUP]								237+	4.75	6.0
		0.8m: Becomes grey mottled orange.								-	4.80	4.0
1.0										UTP	4.85	6.0
		Clayey SILT; grey mottled orange. Very stiff, dry, moderate plasticity. [WAITEMATA GROUP]								-	4.90	10.0
1.5										237+	4.95	11.0
										-	5.00	12.0
2.0										UTP	5.05	10.0
										-	5.10	20.0
2.5		2.5m: Becomes moist.								203		
		SILT some clay with trace sand(fine); grey mottled orange. Very stiff, dry to moist, moderate plasticity. [WAITEMATA GROUP]								132		
3.0										193		
										127		
3.5		Clayey SILT; grey. Very stiff, moist, moderate to highly plastic. Weakly cemented clasts. [WAITEMATA GROUP]								149		
										103		
4.0		SILT with some clay; brownish grey mottled orange. Very stiff, moist, moderate plasticity. [WAITEMATA GROUP]								135		
										117		
4.5		4.2m: Highly oxidised.								152		
		SILT; grey. Hard, moist, no plasticity. [WAITEMATA GROUP]								74		
		4.6m: End of Hole. Too dense to auger (target depth).								196		
										106		
										237+		
										-		
										UTP		
										-		

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ∇ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.:1428
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH27

Project: Geotechnical Investigation

Date: 3/05/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: RS

Coordinates: E 1729936.0, N 5954378.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa)				Scala Penetrometer (blows / 50mm)				
						50	100	150	200	Values	Depth (m)	Blows		
		[TOPSOIL]			TS					162	1.70	5.0		
		SILT with minor clay; light orange and light grey with some white(tephra?). [WAITEMATA GROUP]	Groundwater Not Encountered	WAITEMATA GROUP	[Graphic Log Symbols]					54	1.75	6.0		
0.5												UTP	1.80	6.0
												-	1.85	5.0
												-	1.90	6.0
		CLAY with some silt; orange. Very stiff, dry, moderate plasticity. [WAITEMATA GROUP]										-	1.95	6.0
		0.9m: Becomes mottled orange and dark orange.										-	2.00	4.0
		1.1m: Becomes light grey mottled orange.										-	2.05	6.0
1.0												-	2.10	4.0
												-	2.15	3.0
												-	2.20	4.0
												-	2.25	4.0
												237+	2.30	4.0
												-	2.35	4.0
												-	2.40	4.0
												-	2.45	4.0
												-	2.50	4.0
												-	2.55	4.0
									UTP	2.60	6.0			
1.5									-	2.65	6.0			
		SILT with minor clay; light orange mottled light grey. Stiff to very stiff, dry. [WAITEMATA GROUP]							-	2.70	10.0			
									-	2.75	10.0			
		1.7m: End of Hole. (target depth 5.0m). Too difficult to drill.							-	2.80	10.0			
									-	2.85	10.0			
									-	2.90	5.0			
									-	2.95	6.0			
									-	3.00	5.0			
									-	3.05	5.0			
									-	3.10	5.0			
									-	3.15	7.0			
									-	3.20	10.0			
									-	3.25	12.0			
									-	3.30	13.0			
									-	3.35	17.0			
									-	3.40	11.0			

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water	Shear Vane	Other Comments
▼ Standing Water Level	Corrected as per NZGS Guidelines	Target Depth 5.0m.
▽ Water Level At Time Of Drilling	Vane No.:	
↔ Out Flow ▷ In Flow	UTP = Unable To Penetrate	
	+ = Peak Exceeded	
	- = No Result	

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH29

Project: Geotechnical Investigation

Date: 29/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1729871.0, N 5954467.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa)				Scala Penetrometer (blows / 50mm)		
						50	100	150	200	Values	Depth (m)	Blows
0.5		TOPSOIL; dark brown, moist. [TOPSOIL]	Indwater Not Encount	T S WAITEMATA GROUP							0.60	4.0
		Clayey SILT; brownish grey. Very stiff, moist, low to moderate plasticity. [WAITEMATA GROUP]							132		0.65	5.0
		0.6m: End of Hole. Hit rock, checked three other locations in the surrounding area to confirm results.								57	0.70	12.0
											0.75	10.0
											0.80	15.0
											0.85	0.0
										UTP		

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.: DR4681
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH30

Project: Geotechnical Investigation

Date: 30/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1730009.0, N 5954614.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa)				Scala Penetrometer (blows / 50mm)				
						50	100	150	200	Values	Depth (m)	Blows		
		[TOPSOIL]		TS	TS						4.90	4.0		
0.5		Clayey SILT; brownish orange. Very stiff, dry, low plasticity. [WAITEMATA GROUP]		WAITEMATA GROUP	[Graphic Log Symbols]					189	4.95	5.0		
											30	5.00	6.0	
												5.05	10.0	
												5.10	10.0	
												5.15	11.0	
												5.20	13.0	
												5.25	13.0	
												5.30	12.0	
1.0		Silty CLAY; light grey mottled orange. Very stiff, dry to moist, low to moderate plasticity. [WAITEMATA GROUP]										183		
												101		
		Clayey SILT; light grey mottled orange. Stiff to very stiff, dry, low plasticity. [WAITEMATA GROUP]										155		
												74		
1.5		SILT with some clay; light grey mottled orange. Very stiff, dry, no plasticity to low plasticity. [WAITEMATA GROUP]										223		
												85		
2.0		Silty CLAY; light grey with some mottled orange. Very stiff, dry to moist, low to moderate plasticity. [WAITEMATA GROUP]								237+				
		SILT with some clay; light grey with some mottled orange. Hard, dry to moist, low plasticity. [WAITEMATA GROUP]								-				
2.5										237+				
										-				
										199				
										105				
										186				
		Clayey SILT; grey. Very stiff, dry to moist, low plasticity. [WAITEMATA GROUP]								68				
3.0										237+				
										-				
										216				
										98				
3.5										223				
										71				
										237+				
4.0										-				
										237+				
										-				
4.5										237+				
										-				
										237+				
										-				
		5.0m: End of Hole (target depth 5.0m).								237+				

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ∇ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.: 1428
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH31

Project: Geotechnical Investigation

Date: 30/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1729901.0, N 5954679.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) (refer notes for details)				Scala Penetrometer (blows / 50mm)			
						50	100	150	200	Values	Depth (m)	Blows	
0.5		TOPSOIL; dark brown. Very stiff to hard, moist. [TOPSOIL]	Groundwater Not Encountered	WAITEMATA GROUP	[Graphic Log Symbols]						5.10	4.0	
		Clayey SILT; orange mottled brownish orange. Very stiff, dry to moist, moderate plasticity. [WAITEMATA GROUP]									220+	5.15	6.0
1.0		1.5m: Becomes dry to moist.									5.20	4.0	
											5.25	2.0	
											5.30	3.0	
											5.35	5.0	
											5.40	5.0	
											5.45	6.0	
											5.50	7.0	
											5.55	7.0	
											5.60	6.0	
											5.65	7.0	
2.0		SILT with some clay; light brownish grey mottled orange. Very stiff, dry to moist, moderate plasticity. [WAITEMATA GROUP]									5.70	8.0	
											5.75	10.0	
											5.80	12.0	
											5.85	10.0	
											5.90	13.0	
											5.95	18.0	
											6.00	15.0	
3.0		Clayey SILT; orange mottled light grey. Very stiff, moist, moderate to high plasticity. [WAITEMATA GROUP]											
4.0		SILT with some clay and trace sand(medium); light brownish yellow with some orange streaks. Very stiff, moist, low plasticity. [WAITEMATA GROUP]											
4.5		3.2m: Becomes dry.											
5.0		3.9m: Becomes dark grey.											
5.0		4.7m: Becomes wet.											
5.0		5.0m: End of Hole (target depth 5.0m).											

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water	Shear Vane	Other Comments
▼ Standing Water Level	Corrected as per NZGS Guidelines	Target Depth 5.0m.
∇ Water Level At Time Of Drilling	Vane No.: DR4681	
↔ Out Flow ▷ In Flow	UTP = Unable To Penetrate	
	+ = Peak Exceeded	
	- = No Result	

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Produced with Core-GS

HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH32

Project: Geotechnical Investigation

Date: 29/04/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: E 1729854.0, N 5954698.0

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa) (refer notes for details)				Scala Penetrometer (blows / 50mm)				
						50	100	150	200	Values	Depth (m)	Blows		
		TOPSOIL; dark brown, moist. [TOPSOIL]									1.85	0.0		
0.5		SILT some clay; dark brownish grey with some orange inclusions. Very stiff, moist, moderate plasticity. Small shiny specs with cleavage. [WAITEMATA GROUP]	Groundwater Not Encountered	WAITEMATA GROUP						206				
												76		
												208		
												85		
												220+		
1.0										-				
										220+				
										-				
1.5		Silty CLAY; dark brownish grey mottled dark orange. Very stiff, moist high plasticity. [WAITEMATA GROUP]								193				
										52				
		1.8m: End of Hole (target depth 5.0m). Hit rock.								UTP				
										-				
2.0														
2.5														
3.0														
3.5														
4.0														
4.5														

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water

- ▼ Standing Water Level
- ▽ Water Level At Time Of Drilling
- ↔ Out Flow ▷ In Flow

Shear Vane

- Corrected as per NZGS Guidelines
- Vane No.: DR4681
- UTP = Unable To Penetrate
- + = Peak Exceeded
- = No Result

Other Comments

Target Depth 5.0m.

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HAND AUGER LOG

Job No.: K200826

Client: Goodland Developments Limited

Hole No.: AH34

Project: Geotechnical Investigation

Date: 22/09/2021

Location: 2127 Kaipara Coast Highway, Kakanui

Logged By: KD

Coordinates: ,

Ground Level: -

Sheet: 1 of 1

Depth (m)	RL	Subsurface Conditions	Groundwater	Geological Unit	Graphic Log	Vane Shear Strength (kPa)				Scala Penetrometer (blows / 50mm)			
						50	100	150	200	Values	Depth (m)	Blows	
		[TOPSOIL]		TS	TS						2.80	4.0	
		Silty CLAY; dark grey and orange. Stiff to very stiff, moist, moderate plasticity. [WAITEMATA GROUP SOILS]		WAITEMATA GROUP SOILS	[Graphic Log Symbols]					99	2.85	20.0	
0.5		0.5m: Some rootlets present.									56		
											150		
1.0											78		
											125		
		SILT some clay and minor sand(Coarse); grey (The sand is dark orange highly weathered). Very stiff, moist to wet, low plasticity. [WAITEMATA GROUP SOILS]									64		
1.5		1.4m: Becomes wet (slight water seepage). Some dark grey intermixed. 1.5m: No more sand present.									157		
											17		
											106		
											31		
2.0		1.8m - 2.5m: Limonitic inclusions.							UTP				
									-				
		SILT trace clay; grey with dark orange mottled. Very stiff to hard, moist, no plasticity. [WAITEMATA GROUP SOILS]							231+				
									58				
2.5		2.5m: Becomes dark brownish grey. The strength has become hard. 2.6m: Becomes dark grey with small white specs and trace gravel(Fine to coarse).	22/09/2021						160				
									33				
									UTP				
									-				
3.0		2.8m: End of Hole (Target depth 5.0m).											
3.5													
4.0													
4.5													

Notes & Abbreviations

Soils logged in accordance with 'The guidelines for the classification and description of soil and rock for engineering purposes' December 2005, NZGS

Water	Shear Vane	Other Comments
▼ Standing Water Level	Corrected as per NZGS Guidelines	Target Depth 5.0m.
▽ Water Level At Time Of Drilling	Vane No.:522	
↔ Out Flow ▷ In Flow	UTP = Unable To Penetrate	
	+ = Peak Exceeded	
	- = No Result	

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