

30 June 2026

Document Ref: AKL2024-0159AO | Rev 0

Carrack Capital Limited

Attention: Brandon Morley

Dear Brandon

**RE: BABICH RISE - PRELIMINARY BUILDING PLATFORM
SUITABILITY – STAGES 2 AND 3
8-14, 17-19 BABICH ROAD, HENDERSON**

1.0 INTRODUCTION

CMW Geosciences has prepared this preliminary geotechnical letter to provide information for prospective purchasers of the residential lots within Stages 2 and 3 of the Babich Rise subdivision. The purpose of this letter is to provide a preliminary summary of the anticipated geotechnical considerations applicable to each building platform based on the works completed to date and our knowledge of conditions.

Our expectation is that the Geotechnical Completion Report will certify the residential lots as being suitable for the construction of typical residential dwellings (NZS3604 type structures) founded on shallow foundations subject to:

- design in accordance with the expansive soil provisions of AS 2870 or B1/AS2, or alternatively on foundations designed by a Structural Engineer (SED) and,
- requirements relating to the Specific Design Zones described in Sections 2.1 to 2.6 below, and
- other design parameters as presented in the appended table.

This letter identifies our current expectations of geotechnical considerations and/or specific design requirements associated with the nominated building platform for each lot.

This letter is provided for preliminary information only and is not to be relied upon for engineering design or building consent purposes. Final geotechnical recommendations for each lot will be presented in the Geotechnical Completion Report (GCR), following completion of the civil works, earthworks and geotechnical verification. The information within the GCR will supersede the contents of this letter.

2.0 SUMMARY OF COMPLETED EARTHWORKS

Formation earthworks comprising cut and fill operations, in-ground walls, retaining walls, subsoil drainage and associated civil works are being undertaken under geotechnical observation by CMW Geosciences.

Preliminary geotechnical considerations applicable to each nominated building platform are summarised in Table 1 attached as Appendix 1. These recommendations remain preliminary and are subject to confirmation following completion of all earthworks, receipt of as-built information, review of all construction data and completion of the final Geotechnical Completion Report. The nominated building platforms are indicated on the Terra Consultants drawing attached as Appendix 2.

2.1 Specific Design Zone (Retaining)

Specific Design Zone (SDZ) Retaining will be applied to lots where retaining walls are present. These Specific Design Zones are intended to ensure that future development does not adversely influence the performance of the retaining structures. The delineation of these SDZs is typically a function of the effective retained height of the wall. The final delineation of these zones will be provided in the GCR once as-builts have been issued but is typically applied within 1.5 x the wall height, both above and below a wall.

2.2 Specific Design Zone (Palisade Wall)

Specific Design Zone Palisade Wall will be applied to lots where in-ground (palisade) walls are present to assist with slope stabilisation. These Specific Design Zones are intended to ensure that future development does not adversely influence the performance of the palisade piles. The delineation of these SDZs is a function of the design assumptions for each palisade wall. The final delineation of these zones will be provided in the GCR once as-builts have been issued but typically applies a specific design zone within say a 5m proximity to the piles where earthworks and fill loads are limited to those the piles have been designed to accommodate. It does not preclude building in this zone, but may require extensive additional piling, depending on the proposals.

2.3 Specific Design Zone (Slopes greater than 1V:4H)

Specific Design Zone (Slope) areas are intended to account for potential long-term surficial soil movements (commonly referred to as soil creep) that may occur on and adjacent to steep slopes. Depending on the proximity of proposed buildings to these slopes, foundation systems incorporating leading-edge piles or other specific engineering solutions may be required.

2.4 Specific Design Zone (Sub-fill drains)

Where future building footprints are situated over sub-fill drains foundations may need to consider the interaction with the drains to ensure long term foundation integrity and that the drains are not damaged and remain functional over their design life. Foundations should be detailed to avoid imposing loads directly onto the drains or compromising future access for maintenance where practicable. Softened ground impacts on foundations also needs consideration. Typically, this is only an issue if sub-fill drains are close to finished subgrade for the proposed building.

2.5 Specific Design Zone (Counterfort drains)

Where future building footprints are situated close to counterfort drains foundations may need to consider the alignment of the drains to ensure they are not damaged and remain functional over its design life. Foundations should be detailed to avoid imposing loads directly onto these drains that can contain chimneys of poorly compacted drainage aggregate. Typically, this is an issue if counterfort drains are close to and parallel to strip foundations.

2.6 Services

In all locations, building development located within a 45 degree zone of influence of any wastewater or stormwater service line or manhole will require specific design. These have not been included in the summary table.

2.7 Design of Shallow Foundations

2.7.1 Bearing Capacity

Our expectation is that the finished founding soils will achieve a minimum ultimate bearing capacity of 300 kPa (unfactored). This value is preliminary and remains subject to confirmation within the Geotechnical Completion Report.

2.7.2 Soil Expansiveness Classification

Pending completion of laboratory testing, it is considered prudent that lot purchasers provisionally anticipate AS2870 Class H1 site conditions. Final site classification and associated foundation recommendations will be confirmed within the GCR following completion of testing.

Where foundation designs do not need to consider the above mentioned SDZs, shallow foundations are likely to comprise either waffle-type concrete slab designed for AS2870 Class H1 soil characteristics, or concrete slab-on-grade with perimeter strip footings extending minimum depth of 0.9m to take foundations below influence of the expansive soils.

2.8 Future Building Development

Future dwellings should be designed by suitably qualified professionals in accordance with the recommendations contained within the Geotechnical Completion Report, any applicable Specific Design Zones shown on the subdivision plans, and the requirements of the relevant structural and building standards. Purchasers should ensure their building designer obtains the final GCR before commencing foundation design.

3.0 LIMITATIONS

This report has been prepared for use by our client Carrack Capital Limited to be used for preliminary information only. Upon completion of the development, CMW Geosciences will prepare a Geotechnical Completion Report and accompanying Statement of Professional Opinion. These documents will supersede this preliminary letter and shall constitute the final geotechnical recommendations for the development.

No other warranty, expressed or implied, is made as to the professional advice included in this letter. This letter has not been prepared for the use of parties other than our clients and it may not contain sufficient information for the purposes of other parties or for other uses.

For and on behalf of CMW Geosciences

Prepared by:



Michael Woolford
Senior Engineering Geologist PEngGeol

Reviewed and authorised by:



Richard Knowles
Principal Geotechnical Engineer CPEng

Distribution: 1 electronic copy to Carrack Capital Limited via email
Original held at CMW Geosciences

Attachments:

Attachment 1 - Geotechnical Considerations Summary Table

Attachment 2 – Terra Consultants Overall Plan



ATTACHMENT 1

Preliminary <u>Nominated Building Platform</u> Conditions & Geotechnical Considerations								
Stage No.	Residential Lot Number	Specific Design Zone (slope)	Specific Design Zone (retaining)	Palisade Wall Present in Proximity to Building Platform	Sub-Fill and / or Counterfort Drains Present	Geotechnical Ultimate Bearing Capacity (kPa)	NZS 1170.5 Site (seismic) Class	Preliminary AS2870 Expansive Class
2	1	✓		✓	✓	300	C	H1
2	2	✓		✓	✓	300	C	H1
2	3	✓			✓	300	C	H1
2	4	✓			✓	300	C	H1
2	5	✓			✓	300	C	H1
2	6	✓			✓	300	C	H1
2	7	✓			✓	300	C	H1
2	77	✓			✓	300	C	H1
2	78	✓			✓	300	C	H1
2	79	✓			✓	300	C	H1
2	80				✓	300	C	H1
2	81					300	C	H1
2	82					300	C	H1
2	91					300	C	H1
2	92				✓	300	C	H1
2	93				✓	300	C	H1
2	94				✓	300	C	H1
2	95					300	C	H1
2	96			✓		300	C	H1
2	97					300	C	H1
2	98					300	C	H1

Preliminary <u>Nominated Building Platform</u> Conditions & Geotechnical Considerations								
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3	99	✓				300	C	H1
3	100	✓				300	C	H1
3	101					300	C	H1
3	102		✓			300	C	H1
3	103					300	C	H1
3	104					300	C	H1
3	105					300	C	H1
3	106					300	C	H1
2	107					300	C	H1
3	108					300	C	H1
3	109					300	C	H1
3	110					300	C	H1
3	111					300	C	H1
3	112		✓			300	C	H1
3	113		✓			300	C	H1
3	114		✓			300	C	H1
3	115		✓			300	C	H1
3	116		✓			300	C	H1
3	117	✓				300	C	H1
3	118	✓				300	C	H1

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3	119	✓				300	C	H1
3	120	✓		✓		300	C	H1
3	121					300	C	H1
3	122					300	C	H1
3	123					300	C	H1
3	124					300	C	H1
3	125					300	C	H1
3	126					300	C	H1
3	128			✓		300	C	H1
3	129			✓		300	C	H1
3	130			✓		300	C	H1
3	131					300	C	H1
3	132					300	C	H1
3	133					300	C	H1
3	134					300	C	H1
3	135					300	C	H1
3	136					300	C	H1
3	137					300	C	H1
3	139					300	C	H1
3	140		✓			300	C	H1

ATTACHMENT 2

ATTACHMENT 1

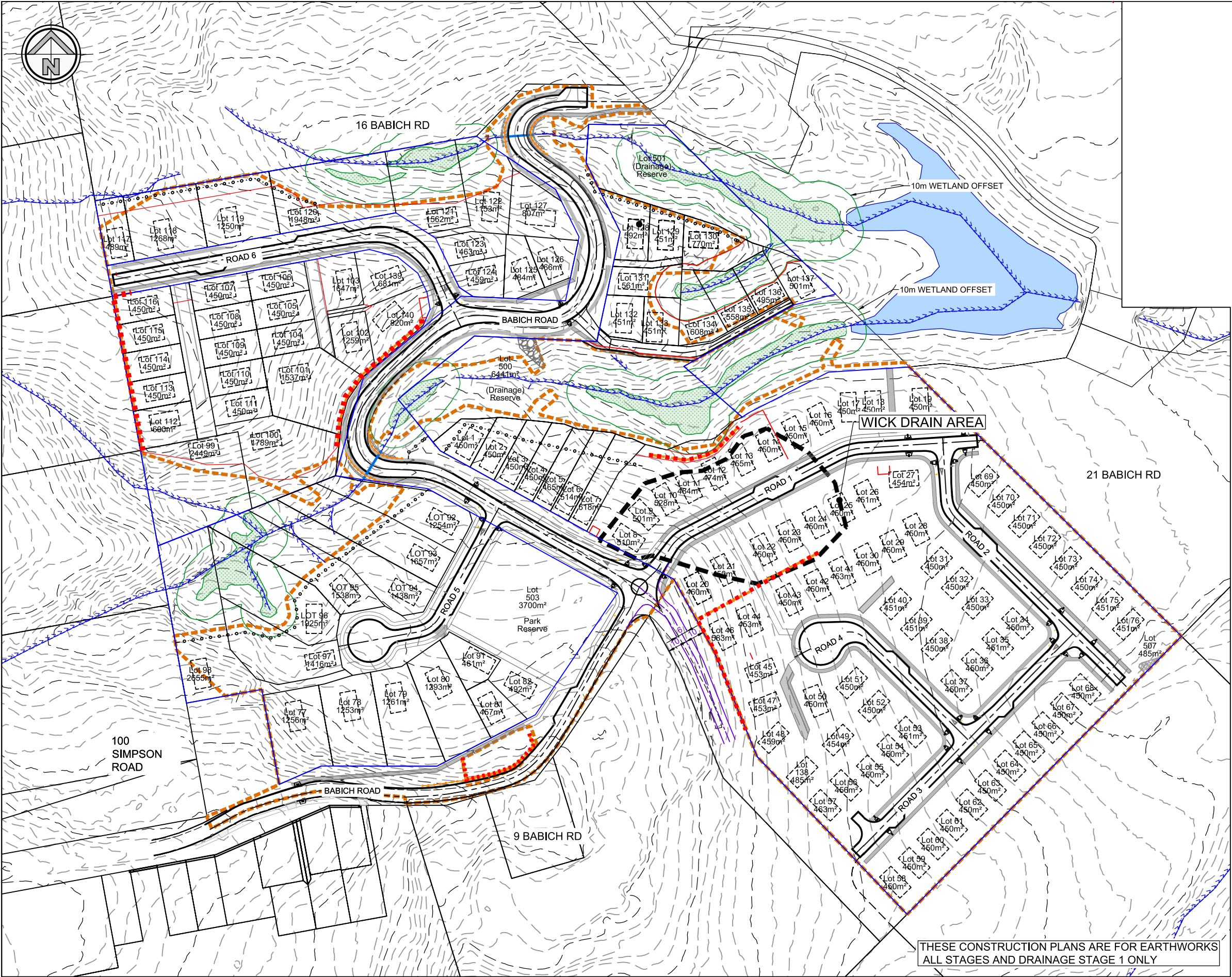
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2	6	✓			✓	300	C	H1
2	7	✓			✓	300	C	H1
2	77	✓			✓	300	C	H1
2	78	✓			✓	300	C	H1
2	79	✓			✓	300	C	H1
2	80				✓	300	C	H1
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2	82					300	C	H1
2	91					300	C	H1
2	92				✓	300	C	H1
2	93				✓	300	C	H1
2	94				✓	300	C	H1
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2	96			✓		300	C	H1
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3	105					300	C	H1
3	106					300	C	H1
2	107					300	C	H1
3	108					300	C	H1
3	109					300	C	H1
3	110					300	C	H1
3	111					300	C	H1
3	112		✓			300	C	H1
3	113		✓			300	C	H1
3	114		✓			300	C	H1
3	115		✓			300	C	H1
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3	123					300	C	H1
3	124					300	C	H1
3	125					300	C	H1
3	126					300	C	H1
3	128			✓		300	C	H1
3	129			✓		300	C	H1
3	130			✓		300	C	H1
3	131					300	C	H1
3	132					300	C	H1
3	133					300	C	H1
3	134					300	C	H1
3	135					300	C	H1
3	136					300	C	H1
3	137					300	C	H1
3	139					300	C	H1
3	140		✓			300	C	H1

ATTACHMENT 2



- LEGEND:**
- EXISTING ROAD
 - EXISTING OVERLAND FLOW PATH
 - PROPOSED RETAINING WALL
 - PROPOSED PALISADE WALL
 - EXISTING MAJOR CONTOUR
 - EXISTING MINOR CONTOUR
 - PROPOSED MAJOR CONTOUR
 - PROPOSED MINOR CONTOUR
 - WETLAND AND 10m OFFSET
 - EXTENTS OF EARTHWORKS
 - MINOR EARTHWORKS AND STOCKPILE AREA (OUTSIDE BULK EARTHWORKS AREA)
 - PALISADE RETAINING WALL

1:1000 @ A1
1:2000 @ A3

HEIGHT DATUM IS IN TERMS OF AUCKLAND VERTICAL DATUM 1946 (MSL). ORIGIN: RM8 DP 404605 RL 81.10

ISSUE	DATE	REVISION	CHKD	DRWN	NAME	DATE	CONSULTANT
A	17/10/25	FOR CONSTRUCTION	SS	GT	SURVEYED	TERRA 01/05/24	
B	06/02/26	FOR CONSTRUCTION	GT	JS	DESIGNED	SS 02/07/25	
C	27/02/26	FOR CONSTRUCTION	GT	SS	DRAWN	SS 02/07/25	
					TRACED		
					CHECKED	GT 02/07/25	

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CLIENT
CARRACK CAPITAL LIMITED

PROJECT / LOCATION
**8-14, 17-19 BABICH ROAD,
HENDERSON VALLEY, AUCKLAND**

DRAWING TITLE
OVERALL PLAN

STAGE		
FOR CONSTRUCTION		
PROJECT NUMBER	210506	SCALE A1:1:1000 A3:1:2000
DWG NUMBER	FC-200	REVISION C