

24 August 2021

**963 MATAKANA ROAD,
MATAKANA**

GEOTECHNICAL COMPLETION REPORT

Cabra Properties Limited
AKL2020-0049AF Rev.0

AKL2020-0049AF		
Date	Revision	Comments
20 August 2021	A	Initial draft for internal review
24 August 2021	0	Final issue to client

	Name	Signature	Position
Prepared by	Jasmine Walden		Project Engineering Geologist
Reviewed by	Gary Tang		Principal Engineering Geologist
Authorised by	Andrew Linton		Principal Geotechnical Engineer, CPEng



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1. INTRODUCTION

In accordance with our instructions, this Geotechnical Completion Report has been prepared for Cabra Properties Limited as part of the documentation to be submitted to Auckland Council following earthworks for the Matakana subdivision development. Construction of this residential subdivision has been undertaken in accordance with the Auckland Council Resource Consent number BUN60360749 dated 16 October 2020. Specific structures constructed during the civil works to create the subdivision include keystone retaining walls.

This report contains our Suitability Statement, specific comments related to items raised in the Resource Consent, relevant test data and the Hutchinson Consulting Engineers as-built plan set as provided in Appendix B.

This report covers the construction period January 2021 to July 2021 and is intended to be used for certification purposes for new lots (listed below) created from existing Pt. Lot 2 DP42253, Lot 1 DP37215 and Lot 1 DP92971 as follows:

- 33 new residential lots numbered 1 to 32 and 35;
- 2 new roads numbered Road 1 and 2 respectively;
- 1 jointly owned access lot (JOAL);

This Development is located off Matakana Road. As can be seen from the as-built plans, 8 of the lots have been affected by filling as part of the earthworks operations to a maximum depth of approximately 1.8m.

2. PROJECT BACKGROUND

The geotechnical investigations and reporting were undertaken by CMW Geosciences as presented in the following reports:

- Geotechnical Investigation Report for 963 Matakana Road, Matakana, referenced AKL2020-0049AB Rev.0, dated 25 May 2020;
- Council Request For Further Information Letter for Keystone Retaining Wall Parameters, referenced AKL2020-0049AC Rev.0, dated 16 December 2020;
- Geotechnical Recommendations Letter for Lots 6,8,9 and 24 Foundation Design, referenced AKL2020-0049AD Rev.0, dated 11 February 2021;
- Geotechnical Letter containing Statement of Professional Opinion for Lots 6, 8, 9 and 24, referenced AKL2020-0049AG.Rev.0, dated 20 July 2021.

3. DESCRIPTION OF EARTHWORKS

Earthworks operations for the Matakana Road development began in early January 2021 with the installation of silt fences and other environmental controls. The stripping of topsoil, mulch and soft shallow overland flow path/channel materials were observed not long after. The first earthworks filling was undertaken along the centre of the southern boundary where the sediment retention pond was formed.

Filling within the south-western portion of the site began in mid-January and this saw the beginning of the main cut to fill to form the sites finished levels. Early February 2021 saw the formation of Road 1 and 2 and the topsoiling of the eastern lots due to minimal earthworks being required across these areas.

In early March 2021 construction of the keystone retaining walls began along with the subdivision's civil works. During the formation of Road 1 at the entrance of the subdivision an undercut was completed to remove vegetation, uncontrolled fill and an old concrete slab. The undercut was backfilled with compacted hardfill. The jointly owned access lot (JOAL) was also formed in conjunction with the two roads.

In late March 2021 the silt pond was decommissioned and backfilled. The construction of the keystone walls and installation of the services continued until their completion in July 2021. The final portion of the site fill was completed in late June 2021 and saw the topsoiling of the remainder of the lots.

4. GEOTECHNICAL QUALITY CONTROL

4.1. Site Observations

During the earthworks site visits were typically undertaken several times each week to assess compliance with NZS 4431 and specific design recommendations and specifications.

Site visits were carried out to observe and confirm compliance relating to:

- Adequate topsoil stripping;
- Fill areas prior to the placement of fill materials to ascertain that all mullock and soft inorganic subsoils had been removed;
- Excavation and backfilling of sewer and stormwater trenches;
- Subgrade ground conditions and hardfill compaction for keystone retaining wall footings;
- Placement and compaction of engineered fills.

4.2. Compaction Control

Compaction of engineered earth fills was controlled by undrained shear strength measured by hand held shear vane calibrated using the NZGS 2001 method and by air voids as defined by NZS4402.

The criteria for undrained shear strength were a minimum single value of 110 kPa and minimum average of any 10 consecutive tests of 140 kPa.

The criteria for air voids were a maximum single value of 12% and maximum average of any 10 consecutive tests of 10%.

Vane shear strength, water content and in situ density tests were carried out on all areas of the engineered filling to at least the frequency recommended by NZS 4431.

These tests showed on occasions that the contractor was struggling to achieve the required compaction standards with the prevailing site and soil conditions, but to the best of our knowledge, all areas of fill were re-worked as necessary. Subsequent testing confirmed compliance with the specification.

5. EVALUATION OF COMPLETED EARTHWORKS

5.1. Natural Hazards

The appended as-built drawings depict the extents of a series of zones that contain limitations intended to ensure that future building and/ or earthworks on the lots is undertaken in a manner that does not lead to buildings being subject to any of the natural hazards described in Section 71(3) of the Building Act, i.e. erosion, falling debris, subsidence, slippage, and inundation. Consideration of the inundation hazard was outside the scope of CMW's brief and has been assessed by others. The applied zones include:

- **Specific Design Zones (retaining)** - intended to protect the retaining walls from overloading at the crest or undermining at the toe that could lead to instability;

Full descriptions of the restrictions associated with each of these zones are presented in the Suitability Statement (Appendix A). Additional information is also provided in some of the following sections.

5.2. Land Stability and Erosion Control

The subdivision scheme layout includes a series of minor batter slopes within lots 1, 2, 13, 14 and 35 where retaining walls are constructed to form level terraces for building platforms. The batters include portions of the residential lots with maximum gradients of 1(v) in 2.5(h) as depicted on the as-built drawings.

On all steep land, including on engineered batter slopes, surface stability can be compromised by indiscriminate disposal of stormwater onto the ground surface and/ or by removal of vegetation.

Building and landscape designers must ensure that all runoff from solid surfaces is directed into the stormwater system. It is also important that care is paid to the disposal of stormwater during construction so that concentrated discharges (e.g. from unconnected spouting) are not directed towards steep ground.

Depths of mulch and topsoil applied to sloping areas should be limited to less than 150mm to minimise the risks of saturation leading to localised slumping on batter faces. Wherever practical on such land, and particularly on steep batters, existing vegetation and grass cover should be well maintained. Any vegetation cleared beyond the immediate area of building platforms for temporary construction purposes should be replanted or replaced as soon as possible. The roots of an established vegetation cover can serve to bind the surface soils while the foliage can reduce rain infiltration and soil saturation, resulting in better resistance to erosion and shallow slumping.

5.3. Retaining Walls

Keystone retaining walls have been constructed in the locations shown on the appended Hutchinson Consulting Engineers Keystone Retaining Wall As-built Plan. These walls reach a maximum height of approximately 1m and were designed by Hutchinson Consulting Engineers, with part of the construction observed by this consultancy. CMW inspected the ground conditions and hardfill compaction for the footings and a copy of the Producer Statement - Construction Review is provided in Appendix E.

Descriptions of the building and earthworks restrictions within the vicinity of these walls (Specific Design Zones – retaining) are contained in the Suitability Statement in Appendix A. Lots containing these zones include Lot 1, 2, 13, 14 and 35 inclusive.

5.4. Fill Induced Settlement

On the basis of the relatively minor magnitude of fill depths on this site, together with the elapsed time since it was placed, we consider that remaining post-construction settlements will be within code limits.

5.5. Service Line Trenches

As part of the civil works, sanitary sewer and stormwater services were trenched throughout the development as shown on the appended Hutchinson Consulting Engineers Stormwater and Wastewater As-built Plans.

The As-built Plans mentioned above illustrate that no services other than lot connections were installed within the subdivisional lots and therefore should not be encountered during building construction. Details for water and wastewater pipes are available in the Watercare COP1 - General Requirements and Procedures.

5.6. Road Subgrades

Penetration resistance testing (DCP) was carried out on the road subgrades during construction and the results of this testing were forwarded to Hutchinson Consulting Engineers for remedial pavement design as necessary.

5.7. Design of Shallow Foundations

5.7.1. Bearing Capacity

Once bulk earthworks and top-soiling of the building platforms had been completed, our staff drilled hand auger boreholes on platforms in natural ground to determine representative finished ground conditions and hence evaluate likely foundation options for future building development. Our assessments of bearing capacity for the design of shallow foundations on each building platform are contained in the appended Suitability Statement.

At current subgrade levels Lots 1 to 5, 7 to 8, 10 to 32 and 35 inclusive have been assessed as having a geotechnical ultimate bearing capacity of 300 kPa within the influence of conventional shallow residential building foundation loads. However, on account of the presence of soft natural subsoils, a geotechnical ultimate bearing capacity of 250 kPa has been assessed for Lots 6 and 9.

If higher geotechnical ultimate bearing capacities are required, further specific site investigation and design of foundations should be carried out prior to Building Consent application.

5.7.2. Foundation Settlements

At the bearing pressures specified above and subject to the design requirements for soil expansiveness provided below, differential settlement of shallow foundations for buildings designed in accordance with NZS 3604 (including the 600mm subfloor fill depth limit) should be within code limits.

5.7.3. Soil Expansiveness Classification

Seasonal shrinking and swelling results in vertical surface ground movement which can cause significant cracking of floor slabs and walls. NZS 3604:2011¹ excludes from the definition of 'good ground', soils with a liquid limit of more than 50% and a linear shrinkage of more than 15% due to their potential to shrink and swell as a result of seasonal fluctuations in water content. For soils exceeding these limits, NZS 3604 has historically referenced AS 2870² for foundation design advice. However the November 2019 update of Acceptable Solution B1/AS1³ provides amendments to NZS 3604 that define a method for testing and classifying the soils and provides foundation designs for specific, simple house configurations across the range of expansive soil conditions.

Nevertheless, there is evidence⁴ indicating that the use of the B1/AS1 method of assessment of expansiveness may be inaccurate.

9 sets of soil tests were carried out on samples taken from likely foundation level on lots within this development. Testing was carried out in accordance with NZS 4402, "Methods of Testing Soils for Civil Engineering Purposes" test 2.2 and 2.6 and were used in conjunction with visual-tactile assessment of the site soils and BRANZ Report SR120A⁵ to determine expansive site classes as defined in AS 2870, "Residential Slabs and Footings – Construction". All test results are enclosed (Appendix D).

The expansive soil hazard is addressed by a combination of appropriate foundation design, careful site preparation and diligent maintenance of plantings near the foundations.

¹ Standards New Zealand (2011) Timber-framed buildings, NZS 3604:2011, NZ Standard

² Standards Australia Limited (2011) *Residential slabs and footings*, AS 2870-2011, Australian Standard, NSW

³ Ministry of Business, Innovation and Employment (2019) *Acceptable Solutions and Verification Methods for NZ Building Code Clause B1 Structure*, B1/AS1, Amendment 19

⁴ Rogers, N., McDougall, N., Twose, G., Teal, J. & Smith, T. (2020) The Shrink Swell Test: A Critical Analysis, *NZ Geomechanics News*, Issue 99, pages 66-80.

⁵ Fraser Thomas Limited (2008) - Addendum Study Report (BRANZ SR120A), Soil Expansivity in the Auckland Region – Final Report

Foundation Design

We have assessed the AS 2870 Site Class for all lots within the development to be as detailed below:

- **M (medium)** – Lots 1 to 4, 12 to 21, 29 to 32 and 35 inclusive;
- **H1 (high)** – Lots 5 to 11 and 22 to 28 inclusive.

Details of foundation options for these Classes are contained in the appended Suitability Statement.

Site Preparation

There have been instances of concrete floors and/ or foundations that have been poured on dry, desiccated subgrades in summer months on expansive soils and have undergone heaving and cracking requiring extensive repairs or re-building once the soil moisture contents have returned to higher levels. In some instances, perimeter foundations have been appropriately treated but floor slabs have been poured on dry ground. Infiltration of moisture via pipe bedding has then occurred.

Foundation contractors need to be made aware of the extreme damage potentially caused by these circumstances and the need to maintain appropriate moisture contents in the footings and building platform subgrade between the time of excavation and the pouring of concrete.

Remedial actions that may be appropriate include platform protection with a hard fill layer, pouring of a blinding layer of concrete in footing bases and soaking of the building platform with sprinklers for an extended period.

Site Maintenance

Landowners must be mindful that either the planting or removal of high-water demand plants where their roots may extend close to footings (i.e. within a lateral distance of 1.5 times the mature tree height) can cause settlement or heave damage.

5.8. Topsoil Depths

Topsoil depths have been checked by drilling of a borehole in the approximate centre of the building platform on each lot. The results are considered indicative for each lot, but may be subject to variations. Topsoil depths are between 50 and 300mm on this development.

Site specific findings are contained in the appended Suitability Statement Summary (Appendix A). However, it is possible that further levelling works have been undertaken since our investigations and accordingly, we strongly recommend that lot purchasers complete their own checks of topsoil depths.

6. CLOSURE

The appended Statement of Professional Opinion is provided to the Auckland Council and Cabra Properties Limited for their purposes alone on the express condition that it will not be relied upon by any other person. It is important that prospective purchasers satisfy themselves as to any specific conditions pertaining to their particular land interest.

Although regular site visits have been undertaken for observation, for providing guidance and instruction and for testing purposes, the geotechnical services scope did not include full time site presence. To this end, our appended Suitability Statement also relies on the Contractors' work practices and assumes that when we have not been present to observe the work, it has been completed to high standards and in accordance with the drawings, instructions and consent conditions provided to them.

Similarly it assumes that all as-built information and other details provided to the Client and/or CMW by other members of the project team are accurate and correct in all respects.

Appendix A: Statement of Professional Opinion as to the Suitability of Land for Building Development

STATEMENT OF PROFESSIONAL OPINION AS TO THE SUITABILITY OF LAND FOR BUILDING DEVELOPMENT

I, Andrew Linton, of CMW Geosciences (NZ) Limited Partnership, Auckland, hereby confirm that:

1. As a Chartered Professional Engineer experienced in the field of geotechnical engineering, I am a Geo-professional as defined in section 1.2.2 of NZS 4404 and was retained by the Developer as the Geotechnical Engineer of the 963 Matakana Road Development.
2. The extent of preliminary investigations carried out to date are described in the CMW Geosciences Geotechnical Investigation Design Report referenced AKL2020-0049AB Rev.0, dated 25 May 2020. The conclusions and recommendations of that document have been re-evaluated in the preparation of this report. The results of all tests carried out are also appended.
3. In my professional opinion, not to be construed as a guarantee, I consider that:

- (a) The earth fills shown on the appended Hutchinson Consulting Engineers Cut to Fill As-built Plan have been placed in compliance with NZS 4431, the Auckland Council Unitary Plan and related documents.
- (b) The completed earthworks give due regard to land slope and foundation stability considerations on the building platform areas.
- (c) **Specific Design Zone (Retaining) areas** have been applied on Lots 1, 2, 13, 14 and 35 inclusive for the protection of the function of the retaining walls. The retaining walls on this stage of the development were designed with a maximum 22° batter and no toe slope. No building construction and no earthworks (i.e. cuts or fills) should take place that exceed these design limits on the walls unless endorsed by a Chartered Professional Engineer experienced in geomechanics and familiar with the contents of this report who consider the stability implications of the earthworks and/ or building proposals on the retaining walls.
- (d) A geotechnical ultimate bearing capacity of 300 kPa may be assumed for shallow foundation design on the building platforms of Lots 1 to 5, 7 to 8, 10 to 32 and 35 inclusive.

Due to the presence of softer natural subsoils on the building platforms of Lots 6 and 9 a geotechnical ultimate bearing capacity of 250 kPa may be assumed for shallow foundation design on these lots.

If for any reason higher geotechnical bearing capacities are required, further specific site investigation and design of foundations should be carried out prior to Building Consent application.

- (e) The expansive site Class for all lots has been assessed as the following from AS2870:
 - **M (medium)** – Lots 1 to 4, 12 to 21, 29 to 32 and 35 inclusive;
 - **H1 (high)** – Lots 5 to 11 and 22 to 28 inclusive.

We recommend that building designers note on the Building Consent drawings the need to maintain appropriate moisture levels across building subgrades and in footing excavations (as described in Section 5.7.3 of the Geotechnical Completion Report) for reference by foundation contractors.

- (f) Subject to the geotechnical limitations, restrictions and recommendations contained in clauses 3(a), 3(b), 3(c), 3(d) and 3(e) above:

- (i) The filled and natural ground is generally suitable for residential buildings constructed in accordance with NZS 3604 and the requirements of AS2870 for the appropriate expansive soil class.
- (ii) Where shallow foundations are appropriate, design may be carried out in accordance with AS 2870 (soil classifications for lots within this stage are detailed in clause (e) above) or alternately, a specific foundation and structural design may be undertaken by a Chartered Professional Engineer.

4. Road subgrades have been formed with appropriate regard for slope stability and settlement risks.

The following table summarises the conditions on each of the residential lots.

For and on behalf of CMW Geosciences



Andrew Linton

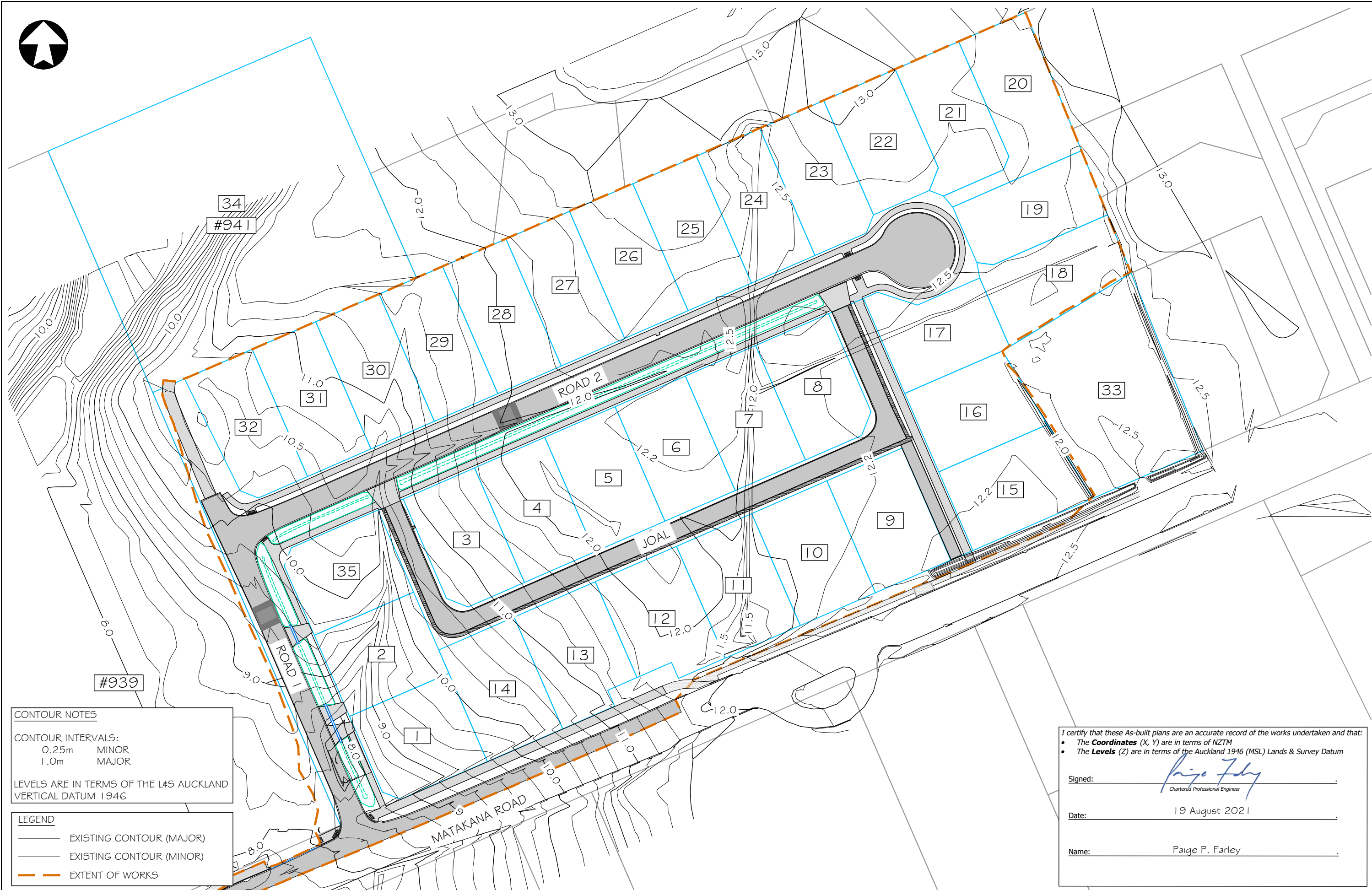
Principal Geotechnical Engineer, CPEng

GCR SUMMARY TABLE				
Condition	Specific Design Zone (retaining)	Geotechnical Ultimate Bearing Capacity (kPa)	AS2870 Expansive Class	Indicative Topsoil Depth (mm)
GCR SOPO Clause	3(c)	3(d)	3(e)	
Lot number				
1	●	300	M	200
2	●	300	M	200
3		300	M	250
4		300	M	200
5		300	H1	150
6		250	H1	150
7		300	H1	250
8		300	H1	200
9		250	H1	150
10		300	H1	150
11		300	H1	250
12		300	M	100
13	●	300	M	200
14	●	300	M	300
15		300	M	300
16		300	M	200
17		300	M	200
18		300	M	200

GCR SUMMARY TABLE				
Condition	Specific Design Zone (retaining)	Geotechnical Ultimate Bearing Capacity (kPa)	AS2870 Expansive Class	Indicative Topsoil Depth (mm)
GCR SOPO Clause	3(c)	3(d)	3(e)	
19		300	M	200
20		300	M	200
21		300	M	200
22		300	M	150
23		300	M	250
24		300	H1	200
25		300	H1	200
26		300	H1	250
27		300	H1	150
28		300	H1	200
29		300	M	100
30		300	M	300
31		300	M	200
32		300	M	200
35	●	300	M	200

Appendix B: Drawings

Title	Reference No.	Date	Revision
As-Built Existing Contour Plan	24488-AB-002	August 2021	0
As-Built Contour Plan	24488-AB-003	August 2021	0
As-Built Cut to Fill Contour Plan	24488-AB-004	August 2021	0
As-Built Stormwater Plan	24488-AB-012	August 2021	0
As-Built Wastewater Plan	24488-AB-013	August 2021	0
As-Built Keystone Retaining Wall Plan	24488-AB-015	August 2021	0
As-Built Retaining Wall Specific Design Zone Plan	24488-AB-016	August 2021	0



CONTOUR NOTES

CONTOUR INTERVALS:
0.25m MINOR
1.0m MAJOR

LEVELS ARE IN TERMS OF THE L&S AUCKLAND
VERTICAL DATUM 1946

LEGEND

- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- EXTENT OF WORKS

I certify that these As-built plans are an accurate record of the works undertaken and that:

- The **Coordinates** (X, Y) are in terms of NZTM
- The **Levels** (Z) are in terms of the Auckland 1946 (MSL) Lands & Survey Datum

Signed: Paige Farley
Chartered Professional Engineer

Date: 19 August 2021

Name: Paige P. Farley



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154 Centway Road, Orewa 0931
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Design	-	-
Drawn	M. SYMONS	AUG 2021
Checked	P. FARLEY	AUG 2021
Approved	I. HUTCHINSON	AUG 2021
Scale	1:1000 @ A3	
Scale vert. exag.		

Project
**CABRA PROPERTIES LIMITED
PROPOSED SUBDIVISION
941, 951 & 963 MATAKANA ROAD
MATAKANA
ASBUILTS**

Title
EXISTING CONTOUR PLAN

Job No.
A3-24488 AB

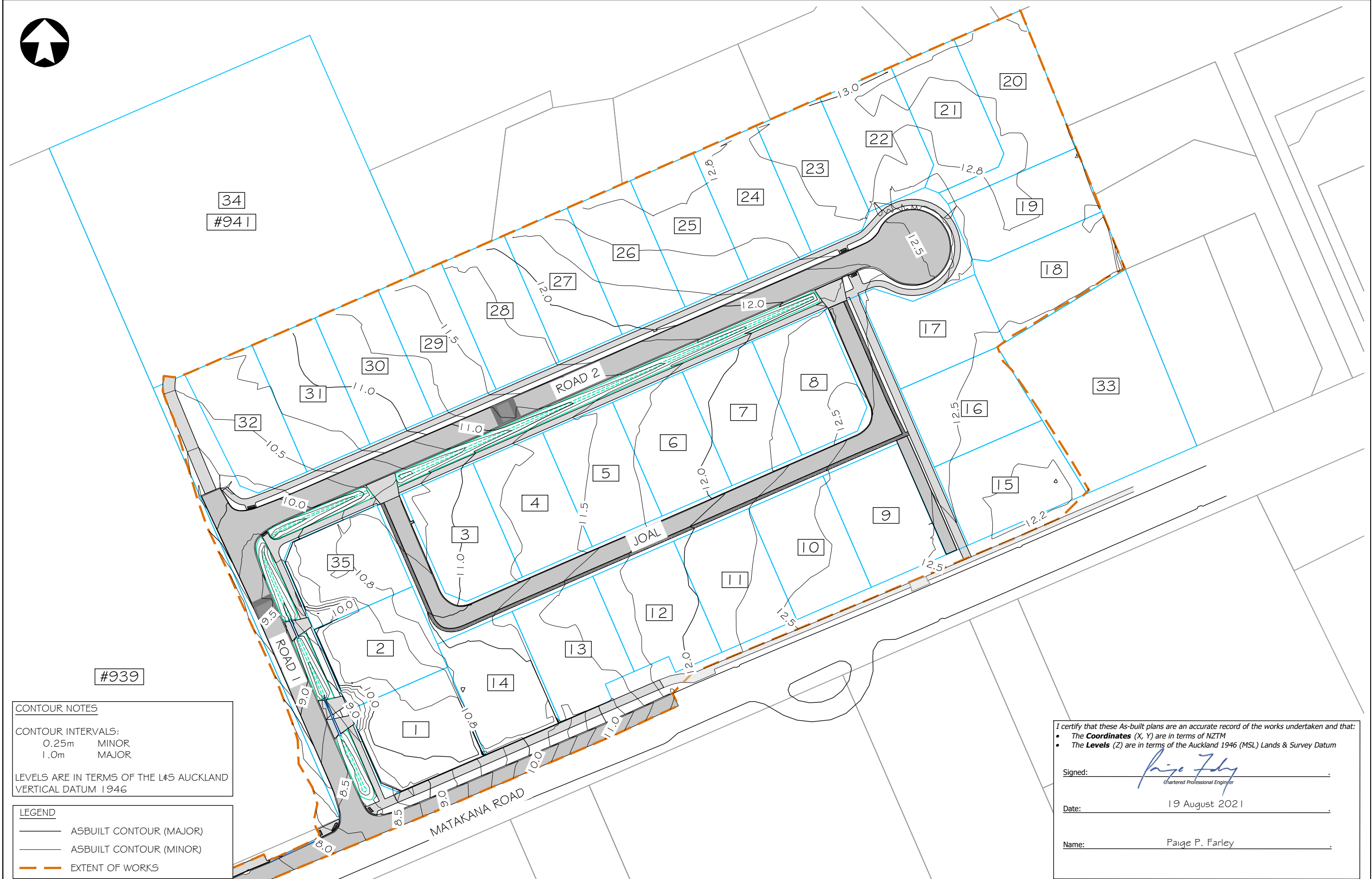
Sheet No.

AB-002

Rev.

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-	ISSUE TO AUCKLAND COUNCIL	-	-	-	AUG 2021
No.	Revision	Drawn	Chk.	Appd.	Date



CONTOUR NOTES

CONTOUR INTERVALS:
0.25m MINOR
1.0m MAJOR

LEVELS ARE IN TERMS OF THE L&S AUCKLAND
VERTICAL DATUM 1946

LEGEND

— ASBUILT CONTOUR (MAJOR)
— ASBUILT CONTOUR (MINOR)
— EXTENT OF WORKS

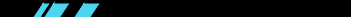
I certify that these As-built plans are an accurate record of the works undertaken and that:

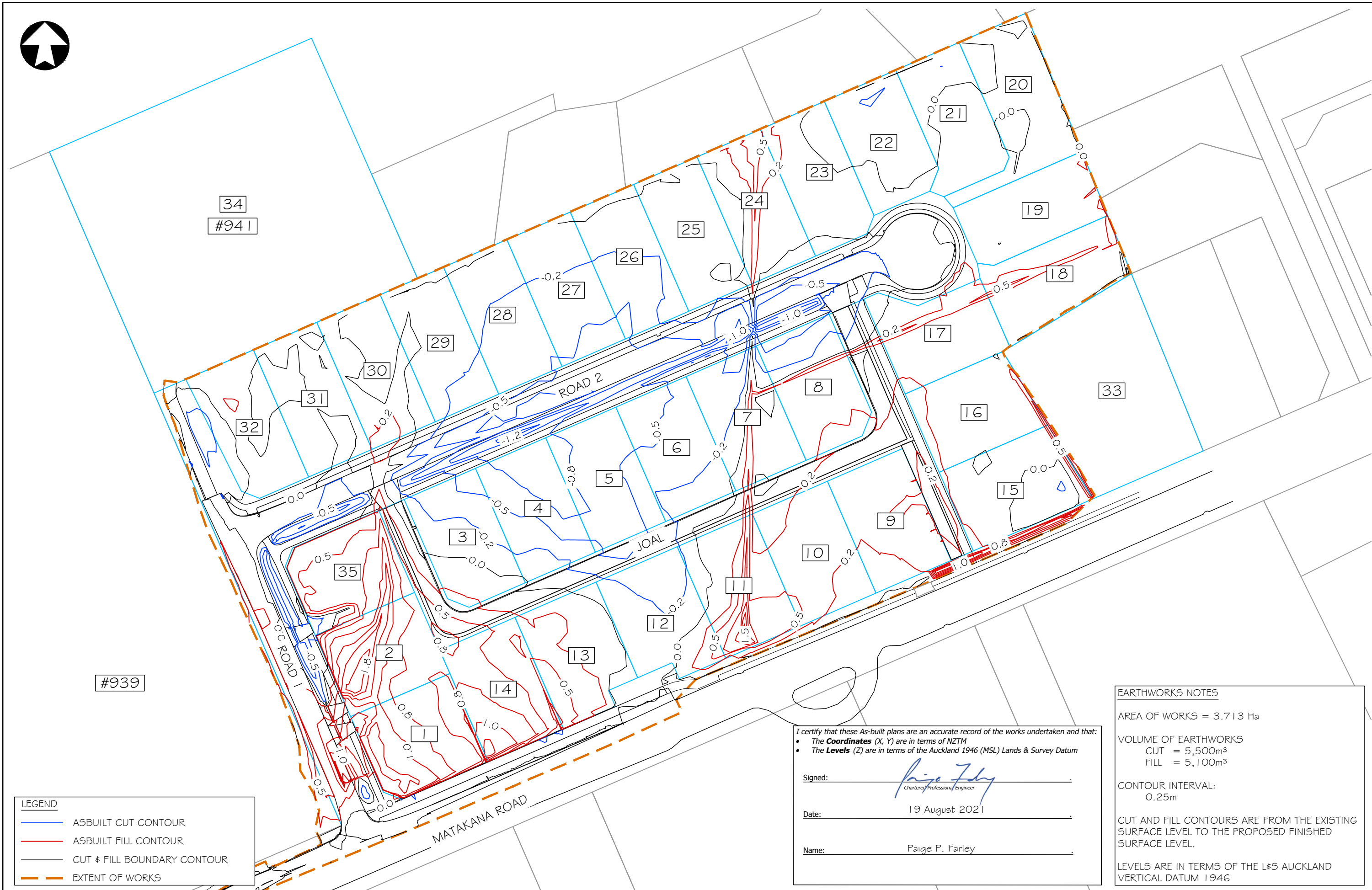
- The **Coordinates** (X, Y) are in terms of NZTM
- The **Levels** (Z) are in terms of the Auckland 1946 (MSL) Lands & Survey Datum

Signed: Paige Farley
Chartered Professional Engineer

Date: 19 August 2021

Name: Paige P. Farley

						 PO Box 150, Orewa 0946 154 Centreway Road, Orewa 0931 Ph: 09 426 5702 www.hc.co.nz	Design	-	-	Project CABRA PROPERTIES LIMITED PROPOSED SUBDIVISION 941, 951 & 963 MATAKANA ROAD MATAKANA ASBUILTS	Title ASBUILT CONTOUR PLAN	Sheet No. AB-003
					Drawn		M. SYMONS	AUG 2021				
					Checked		P. FARLEY	AUG 2021				
					Approved		I. HUTCHINSON	AUG 2021				
-	ISSUE TO AUCKLAND COUNCIL	-	-	-	AUG 2021		Scale	1:1000 @ A3			Job No. A3-24488 AB	Rev. -
No.	Revision	Drawn	Chk.	Appd.	Date		Scale vert. exag.					



LEGEND				
	ASBUILT CUT CONTOUR			
	ASBUILT FILL CONTOUR			
	CUT & FILL BOUNDARY CONTOUR			
	EXTENT OF WORKS			

I certify that these As-built plans are an accurate record of the works undertaken and that:

- The **Coordinates** (X, Y) are in terms of NZTM
- The **Levels** (Z) are in terms of the Auckland 1946 (MSL) Lands & Survey Datum

Signed: 
Chartered Professional Engineer

Date: 19 August 2021

Name: Paige P. Farley

EARTHWORKS NOTES

AREA OF WORKS = 3.713 Ha

VOLUME OF EARTHWORKS
CUT = 5,500m³
FILL = 5,100m³

CONTOUR INTERVAL:
0.25m

CUT AND FILL CONTOURS ARE FROM THE EXISTING SURFACE LEVEL TO THE PROPOSED FINISHED SURFACE LEVEL.

LEVELS ARE IN TERMS OF THE L&S AUCKLAND VERTICAL DATUM 1946

No.	Revision	Drawn	Chk.	Appd.	Date
-	ISSUE TO AUCKLAND COUNCIL	-	-	-	AUG 2021



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Design	-	-
Drawn	M. SYMONS	AUG 2021
Checked	P. FARLEY	AUG 2021
Approved	I. HUTCHINSON	AUG 2021
Scale	1:1000 @ A3	
Scale vert. exag.		

Project
**CABRA PROPERTIES LIMITED
PROPOSED SUBDIVISION
941, 951 & 963 MATAKANA ROAD
MATAKANA
ASBUILTS**

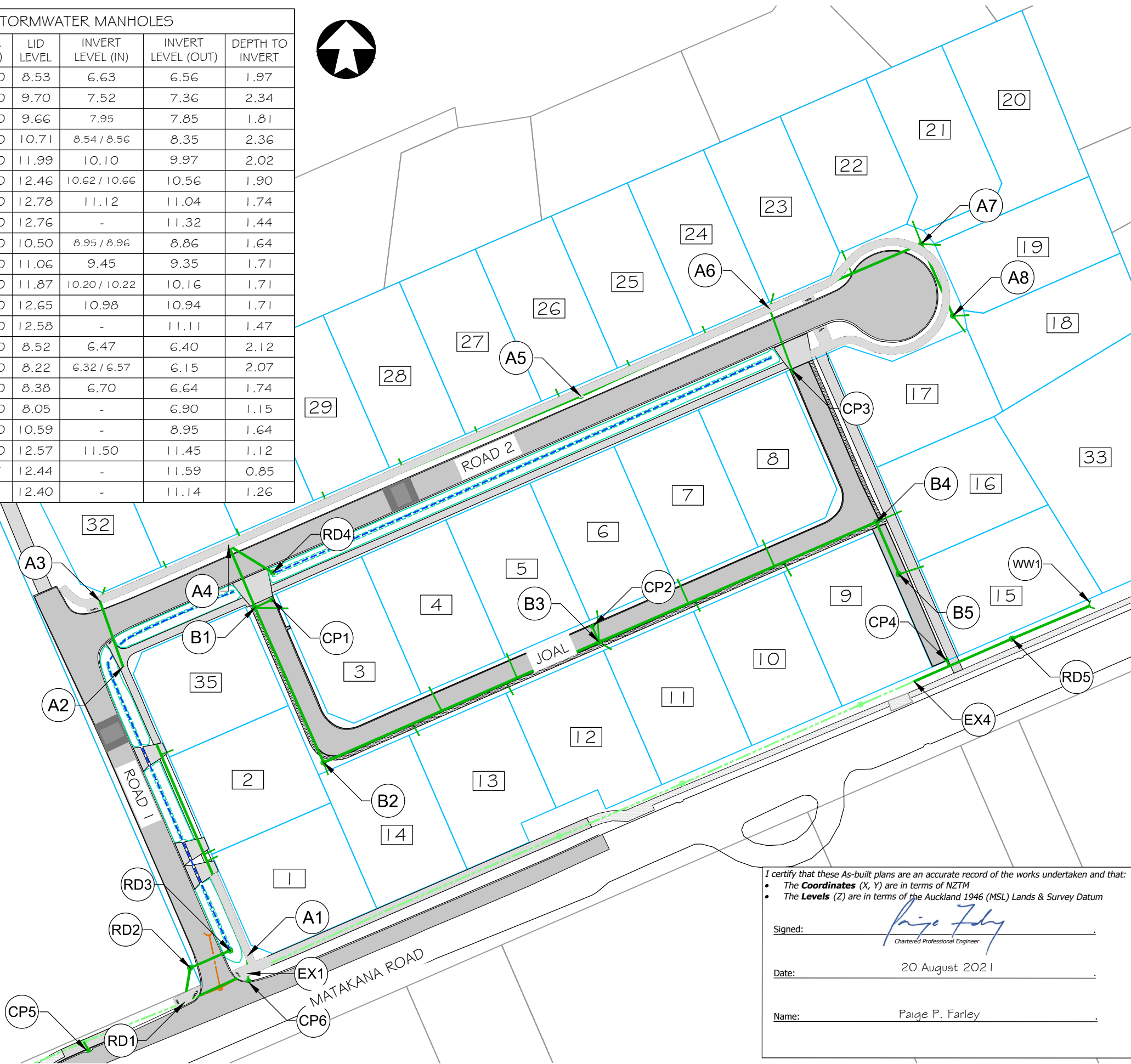
Title
ASBUILT CUT TO FILL CONTOUR PLAN

Job No.
A3-24488 AB

Sheet No.
AB-004

Rev.
-

ASBUILT STORMWATER MANHOLES						
MANHOLE ID	COORDINATES	DIA. (mm)	LID LEVEL	INVERT LEVEL (IN)	INVERT LEVEL (OUT)	DEPTH TO INVERT
A1	1753741.53 mE 5975334.81 mN	1650	8.53	6.63	6.56	1.97
A2	1753711.46 mE 5975404.43 mN	1650	9.70	7.52	7.36	2.34
A3	1753705.90 mE 5975420.28 mN	1650	9.66	7.95	7.85	1.81
A4	1753736.93 mE 5975433.72 mN	1050	10.71	8.54 / 8.56	8.35	2.36
A5	1753821.83 mE 5975469.70 mN	1050	11.99	10.10	9.97	2.02
A6	1753867.40 mE 5975490.76 mN	1050	12.46	10.62 / 10.66	10.56	1.90
A7	1753904.01 mE 5975506.43 mN	1050	12.78	11.12	11.04	1.74
A8	1753911.61 mE 5975489.09 mN	1050	12.76	-	11.32	1.44
B1	1753743.28 mE 5975418.71 mN	1050	10.50	8.95 / 8.96	8.86	1.64
B2	1753759.82 mE 5975381.36 mN	1050	11.06	9.45	9.35	1.71
B3	1753826.26 mE 5975410.43 mN	1050	11.87	10.20 / 10.22	10.16	1.71
B4	1753893.16 mE 5975439.37 mN	1050	12.65	10.98	10.94	1.71
B5	1753898.56 mE 5975426.78 mN	1050	12.58	-	11.11	1.47
EX1	1753741.52 mE 5975330.48 mN	1800	8.52	6.47	6.40	2.12
RD1	1753726.26 mE 5975323.53 mN	1500	8.22	6.32 / 6.57	6.15	2.07
RD2	1753731.83 mE 5975331.83 mN	1050	8.38	6.70	6.64	1.74
RD3	1753737.25 mE 5975336.03 mN	1050	8.05	-	6.90	1.15
RD4	1753747.55 mE 5975427.15 mN	1050	10.59	-	8.95	1.64
RD5	1753925.85 mE 5975411.21 mN	1050	12.57	11.50	11.45	1.12
WW1	1753944.58 mE 5975419.14 mN	300 - 675	12.44	-	11.59	0.85
EX4	1753902.22 mE 5975400.93 mN	PIPE INLET	12.40	-	11.14	1.26



ASBUILT STORMWATER PIPELINES				
SW LINE	DIA. (mm)	MATERIAL	LENGTH (m)	GRAD E (%)
EX1 - A1	600	RCRRJ	4.33	3.70
A1 - A2	600	RCRRJ	75.83	0.96
A2 - A3	600	RCRRJ	16.80	1.96
A3 - A4	525	RCRRJ	33.82	1.18
A4 - A5	375	RCRRJ	92.21	1.55
A5 - A6	375	RCRRJ	50.21	0.92
A6 - A7	300	RCRRJ	39.82	1.05
A7 - A8	300	RCRRJ	18.94	1.06
A4 - B1	375	RCRRJ	16.30	1.84
B1 - B2	375	RCRRJ	40.84	0.95
B2 - B3	375	RCRRJ	72.52	0.98
B3 - B4	300	RCRRJ	72.90	1.02
B4 - B5	300	RCRRJ	13.70	0.95
RD1 - RD2	375	RCRRJ	8.42	0.83
RD2 - RD3	375	RCRRJ	10.47	1.91
RD1 - EX1	750	RCRRJ	16.77	0.48
A4 - RD4	300	RCRRJ	12.49	3.12
B1 - CP1	225	RCRRJ	4.17	-
B3 - CP2	225	RCRRJ	3.81	-
A6 - CP3	225	RCRRJ	15.71	-
EX4 - RD5	450	RCRRJ	25.77	1.20
RD5 - WW1	450	RCRRJ	20.34	0.44

ASBUILT STORMWATER CATCHPITS			
CATCHPIT ID	COORDINATES	SIZE (mm)	LID LEVEL
CP1	1753747.16 mE 5975420.50 mN	675 x 450	10.57
CP2	1753824.71 mE 5975414.02 mN	675 x 450	11.77
CP3	1753873.17 mE 5975475.70 mN	675 x 450	12.17
CP4	1753909.92 mE 5975406.42 mN	450 x 450	12.22
CP5	1753703.44 mE 5975311.71 mN	675 x 450	7.52
CP6	1753741.67 mE 5975328.66 mN	675 x 450	8.31

- NOTE:
- ALL PIPES ARE REINFORCED CONCRETE UNLESS STATED OTHERWISE ON PLAN.
 - ALL PIPES HAVE 100 mm MINIMUM DEPTH OF H2 TYPE BEDDING.
 - ALL CATCH PIT LEADS ARE 225 mm Ø RCRRJ.

LEGEND	
	EXISTING STORMWATER PIPE
	ASBUILT STORMWATER PIPE
	ASBUILT SWALE SUBSOIL DRAINCOIL
	STORMWATER PIPE TO BE REMOVED
	ASBUILT STORMWATER MANHOLE ID

I certify that these As-built plans are an accurate record of the works undertaken and that:

- The **Coordinates** (X, Y) are in terms of NZTM
- The **Levels** (Z) are in terms of the Auckland 1946 (MSL) Lands & Survey Datum

Signed:
Chartered Professional Engineer

Date: 20 August 2021

Name: Paige P. Farley

						Design	-	-	Project CABRA PROPERTIES LIMITED PROPOSED SUBDIVISION 941, 951 & 963 MATAKANA ROAD MATAKANA ASBUILTS		Title ASBUILT STORMWATER PLAN		Sheet No. AB-012
PO Box 150, Orewa 0946 154 Centreway Road, Orewa 0931 Ph: 09 426 5702 www.hc.co.nz						Drawn	M. SYMONS	AUG 2021					
						Checked	P. FARLEY	AUG 2021					
						Approved	I. HUTCHINSON	AUG 2021					
						Scale	1:1000 @ A3						
						Scale vert. exag.							
- ISSUE TO AUCKLAND COUNCIL													
No.	Revision	Drawn	Chk.	Appd.	Date							Job No. A3-24488 AB	Rev. -



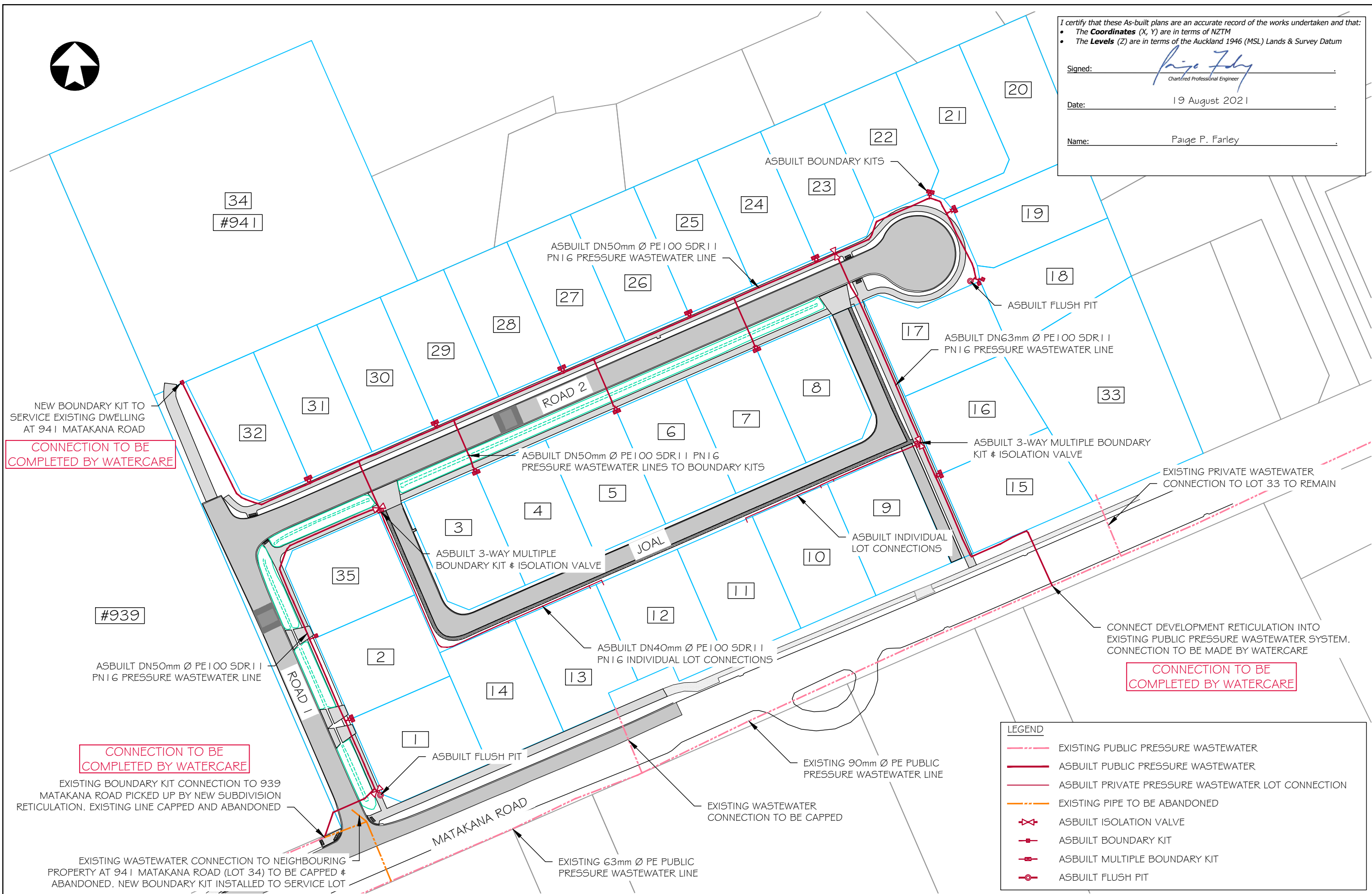
I certify that these As-built plans are an accurate record of the works undertaken and that:

- The **Coordinates** (X, Y) are in terms of NZTM
- The **Levels** (Z) are in terms of the Auckland 1946 (MSL) Lands & Survey Datum

Signed: Paige Farley
Chartered Professional Engineer

Date: 19 August 2021

Name: Paige P. Farley



LEGEND	
	EXISTING PUBLIC PRESSURE WASTEWATER
	ASBUILT PUBLIC PRESSURE WASTEWATER
	ASBUILT PRIVATE PRESSURE WASTEWATER LOT CONNECTION
	EXISTING PIPE TO BE ABANDONED
	ASBUILT ISOLATION VALVE
	ASBUILT BOUNDARY KIT
	ASBUILT MULTIPLE BOUNDARY KIT
	ASBUILT FLUSH PIT

No.	Revision	Drawn	Chk.	Appd.	Date
-	ISSUE TO AUCKLAND COUNCIL	-	-	-	AUG 2021

Hutchinson
CONSULTING ENGINEERS

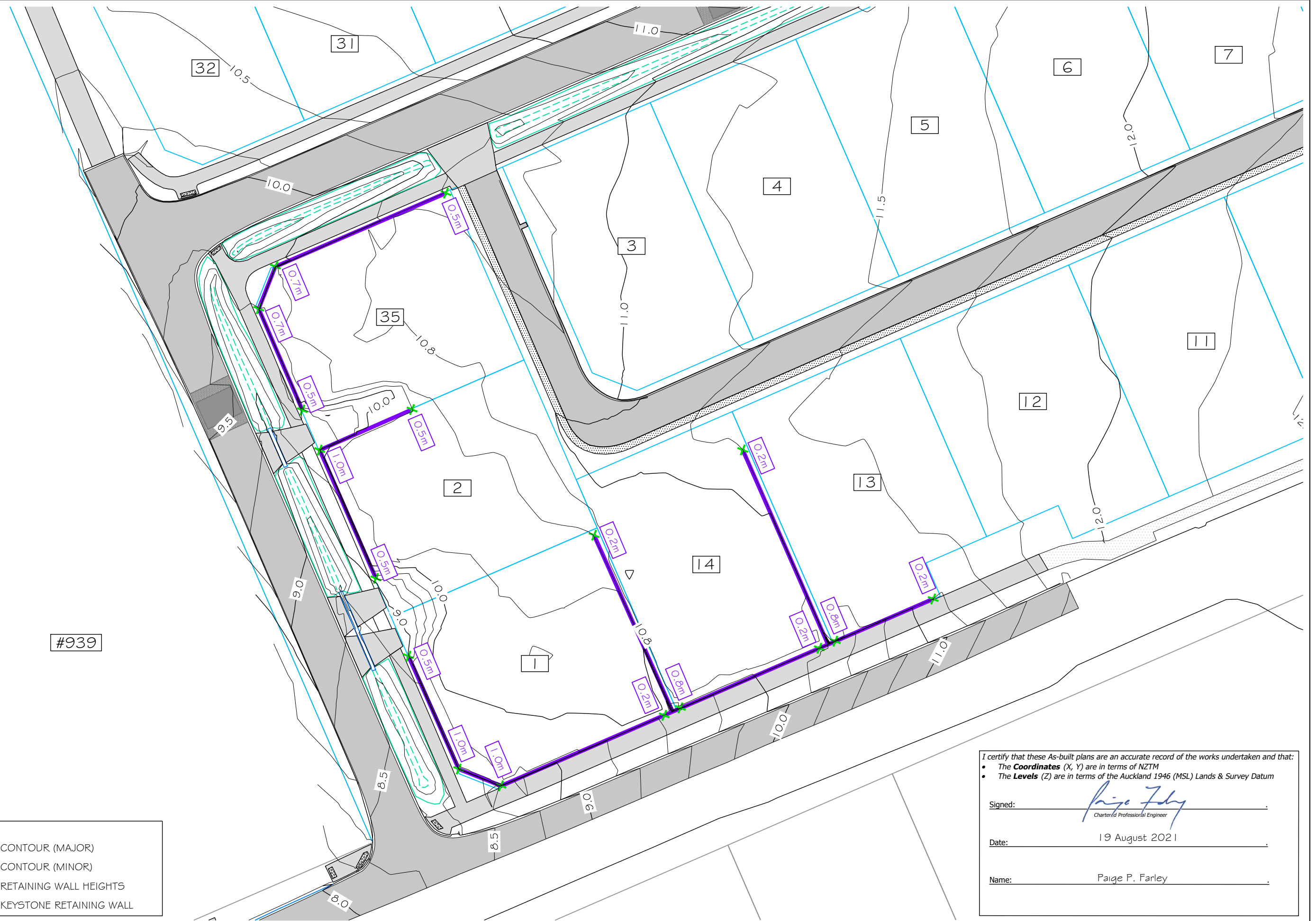
PO Box 150, Orewa 0946
154 Centreway Road, Orewa 0931
Ph: 09 426 5702 www.hc.co.nz

Design	-	-
Drawn	M. SYMONS	AUG 2021
Checked	P. FARLEY	AUG 2021
Approved	I. HUTCHINSON	AUG 2021
Scale	1:1000 @ A3	
Scale vert. exag.		

Project	CABRA PROPERTIES LIMITED PROPOSED SUBDIVISION 941, 951 & 963 MATAKANA ROAD MATAKANA ASBUILTS
---------	--

Title	ASBUILT WASTEWATER PLAN
Job No.	A3-24488 AB

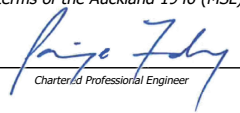
Sheet No.	AB-013
Rev.	-



LEGEND					
ASBUILT CONTOUR (MAJOR)					
ASBUILT CONTOUR (MINOR)					
ASBUILT RETAINING WALL HEIGHTS					
ASBUILT KEYSTONE RETAINING WALL					

I certify that these As-built plans are an accurate record of the works undertaken and that:

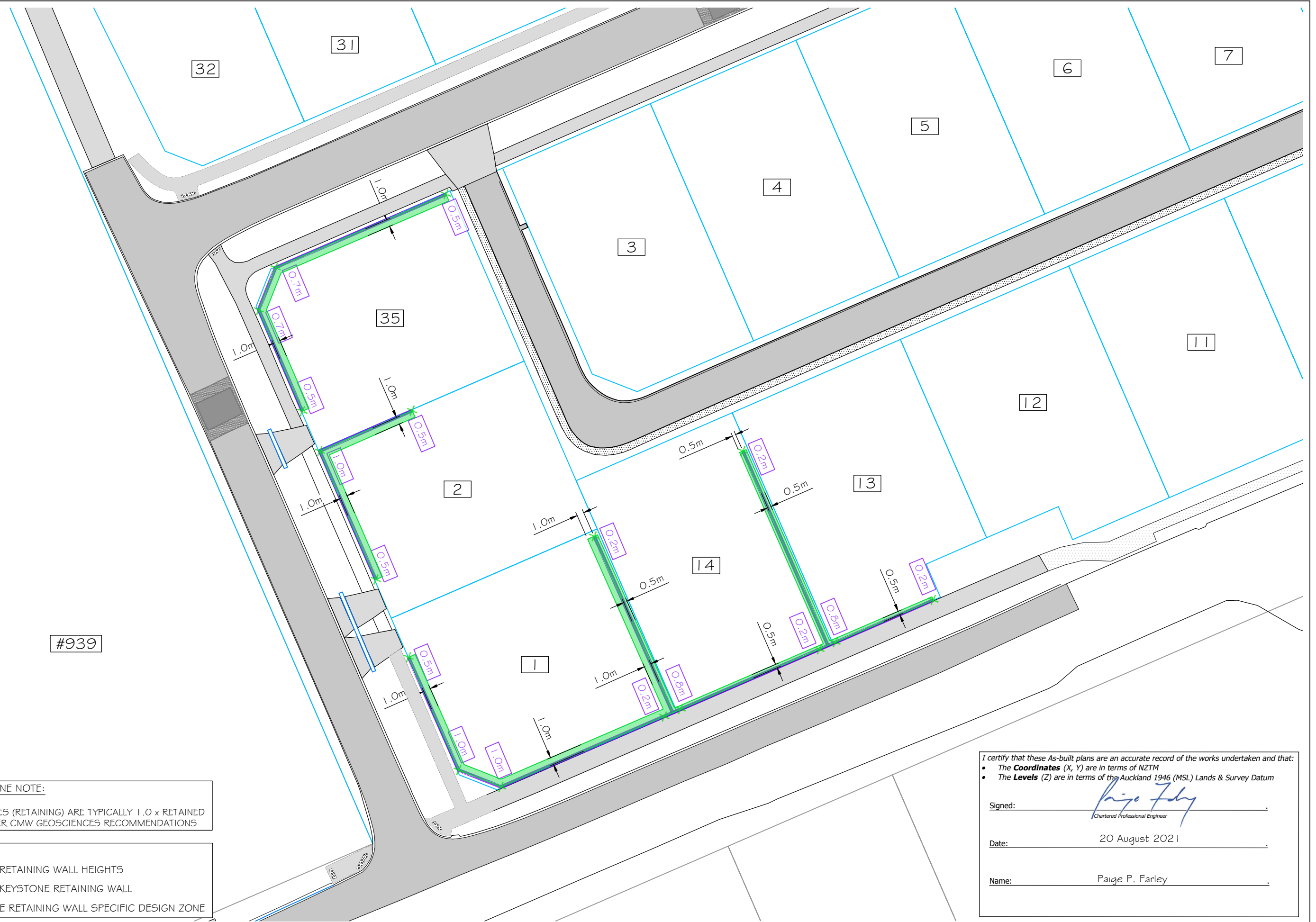
- The **Coordinates** (X, Y) are in terms of NZTM
- The **Levels** (Z) are in terms of the Auckland 1946 (MSL) Lands & Survey Datum

Signed: 
Chartered Professional Engineer

Date: 19 August 2021

Name: Paige P. Farley

						 PO Box 150, Orewa 0946 154 Centreway Road, Orewa 0931 Ph: 09 426 5702 www.hc.co.nz	Design	-	-	Project CABRA PROPERTIES LIMITED PROPOSED SUBDIVISION 941, 951 & 963 MATAKANA ROAD MATAKANA ASBUILTS	Title ASBUILT KEYSTONE RETAINING WALL PLAN	Sheet No. AB-015
							Drawn	M. SYMONS	AUG 2021		Job No. A3-24488 AB	Rev. -
							Checked	P. FARLEY	AUG 2021			
							Approved	I. HUTCHINSON	AUG 2021			
							Scale	1:500 @ A3				
-	ISSUE TO AUCKLAND COUNCIL	-	-	-	AUG 2021		Scale vert. exag.					
No.	Revision	Drawn	Chk.	Appd.	Date							



SPECIFIC DESIGN ZONE NOTE:

SPECIFIC DESIGN ZONES (RETAINING) ARE TYPICALLY 1.0 x RETAINED HEIGHT OF WALL AS PER CMW GEOSCIENCES RECOMMENDATIONS

LEGEND				
1.0m	ASBUILT RETAINING WALL HEIGHTS			
X-X	ASBUILT KEYSTONE RETAINING WALL			
	KEYSTONE RETAINING WALL SPECIFIC DESIGN ZONE			

I certify that these As-built plans are an accurate record of the works undertaken and that:

- The **Coordinates** (X, Y) are in terms of NZTM
- The **Levels** (Z) are in terms of the Auckland 1946 (MSL) Lands & Survey Datum

Signed: Paige Farley
Chartered Professional Engineer

Date: 20 August 2021

Name: Paige P. Farley

						 Hutchinson CONSULTING ENGINEERS PO Box 150, Orewa 0946 154 Centreway Road, Orewa 0931 Ph: 09 426 5702 www.hc.co.nz	Design	-	-	Project CABRA PROPERTIES LIMITED PROPOSED SUBDIVISION 941, 951 & 963 MATAKANA ROAD MATAKANA ASBUILTS	Title ASBUILT RETAINING WALL SPECIFIC DESIGN ZONES	Sheet No. AB-016
					Drawn		M. SYMONS	AUG 2021				
					Checked		P. FARLEY	AUG 2021				
					Approved		I. HUTCHINSON	AUG 2021				
-	ISSUE TO AUCKLAND COUNCIL	-	-	-	AUG 2021		Scale	1:500 @ A3		Job No. A3-24488 AB	Rev. -	
No.	Revision	Drawn	Chk.	Appd.	Date		Scale vert. exag.					

Appendix C: Laboratory Test Data

**DETERMINATION OF THE WATER CONTENT, LIQUID LIMIT & LINEAR SHRINKAGE
TEST METHOD NZS 4402 : 1986 TEST 2.1, 2.2 & 2.6**

Project Name : 963 Matakana Road, Matakana**Client :** CMW Geosciences Ltd
Address : PO Box 300206
Albany, Auckland 0754**Project No :** 20 0098 00**Page :** 1 of 1**Date of Order :** 05.05.20**Attention :** Jasmine Walden**Sample Method :** Hand auger**Sample Date :** 01.05.20**Sampled By :** CMW Geosciences Ltd

Test Details :

Test performed on :

Whole Sample

History :

Natural

Sample No.	Location	Depth (m)	Liquid Limit	Linear Shrinkage	Natural Water Content (%)
474K	HA02-20	-	72	18	22.9
475K	HA05-20	-	97	22	28.5
476K	HA07-20	-	80	18	31.2

Comments :

Tested By:	ZH	Date :	05 to 08.05.20
Calculated By :	ZH	Date :	11.05.20
Checked By :	ZH	Date :	12.05.20

**DETERMINATION OF THE WATER CONTENT, LIQUID LIMIT & LINEAR SHRINKAGE
TEST METHOD NZS 4402 : 1986 TEST 2.1, 2.2 & 2.6**Project Name : **963 Matakana Road**Client : CMW Geosciences Ltd
Address : PO Box 300206
Albany, Auckland 0754

Project No : 21 0001 09

Page : 1 of 1

Date of Order : 29.01.21

Attention : J.Walden

Sample Method : Hand auger

Sample Date : 27.01.21

Sampled By : CMW Geosciences Ltd

Test Details :

Test performed on :

Whole Sample

History :

Natural

Sample No.	Location	Depth (m)	Liquid Limit	Linear Shrinkage	Natural Water Content (%)
417m	Lot 8	0.4-0.8	102	22	41.7

Comments :

Tested By:	EC	Date :	04.02.21
Calculated By :	EC	Date :	09.02.21
Checked By :	ZH	Date :	09.02.21

**DETERMINATION OF THE WATER CONTENT, LIQUID LIMIT & LINEAR SHRINKAGE
TEST METHOD NZS 4402 : 1986 TEST 2.1, 2.2 & 2.6**Project Name : **963 Matakana Road**Client : CMW Geosciences Ltd
Address : PO Box 300206
Albany, Auckland 0754

Project No : 21 0001 65

Page : 1 of 1

Date of Order : 10.05.21

Attention : L.Stuart-Williams

Sample Method : Hand auger

Sample Date : 10.05.21

Sampled By : CMW Geosciences Ltd

Test Details :Test performed on :
History :Whole Sample
Natural

Sample No.	Location	Depth (m)	Liquid Limit	Linear Shrinkage	Natural Water Content (%)
10n	Lot 3	0.4-0.8	79	21	30.7
11n	Lot 10	0.4-0.8	97	19	45.6
12n	Lot 12	0.4-0.8	93	15	38.7
13n	Lot 15	0.4-0.8	86	19	41.3
14n	Lot 19	0.4-0.8	69	16	35.3
15n	Lot 23	0.4-0.8	96	19	38.6
16n	Lot 26	0.4-0.8	98	23	42.2
17n	Lot 30	0.4-0.8	72	16	33.5

Comments :

Tested By:	AS	Date :	18.05.21
Calculated By :	EC	Date :	25.05.21
Checked By :	ZH	Date :	26.05.21

Appendix D: Field Test Data



Auckland Laboratory
CMW Geosciences (NZ) Ltd Partnership
Building C, 9 Piermark Drive, Rosedale, NZ 0632
PO Box 300206, Albany, Auckland, NZ 0752
Phone: +64 (09) 4144 632

Project: 963 Matakana Road
Project No: AKL2020-0049
Location: Matakana
Report No: AKL2020-0049LAA Rev.0
Report Date: 6/07/2021
Client: Cabra Properties Limited
Client Address: 19 Tamariki Avenue, Orewa, Auckland 0931

Test Methods: NZS 4407 2015 Test 3.1 ◊
NZS 4407 2015 Test 4.2
NZS 4407 2015 Test 4.3
NZGS: August 2001

Notes: Solid Density: Assumed
Solid Density Data Source: N/A
Testing Locations Selected By: CMW Field Staff
◊ Only samples <2.0mm will be considered for endorsed testing
① Blade size of 19mm used.



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

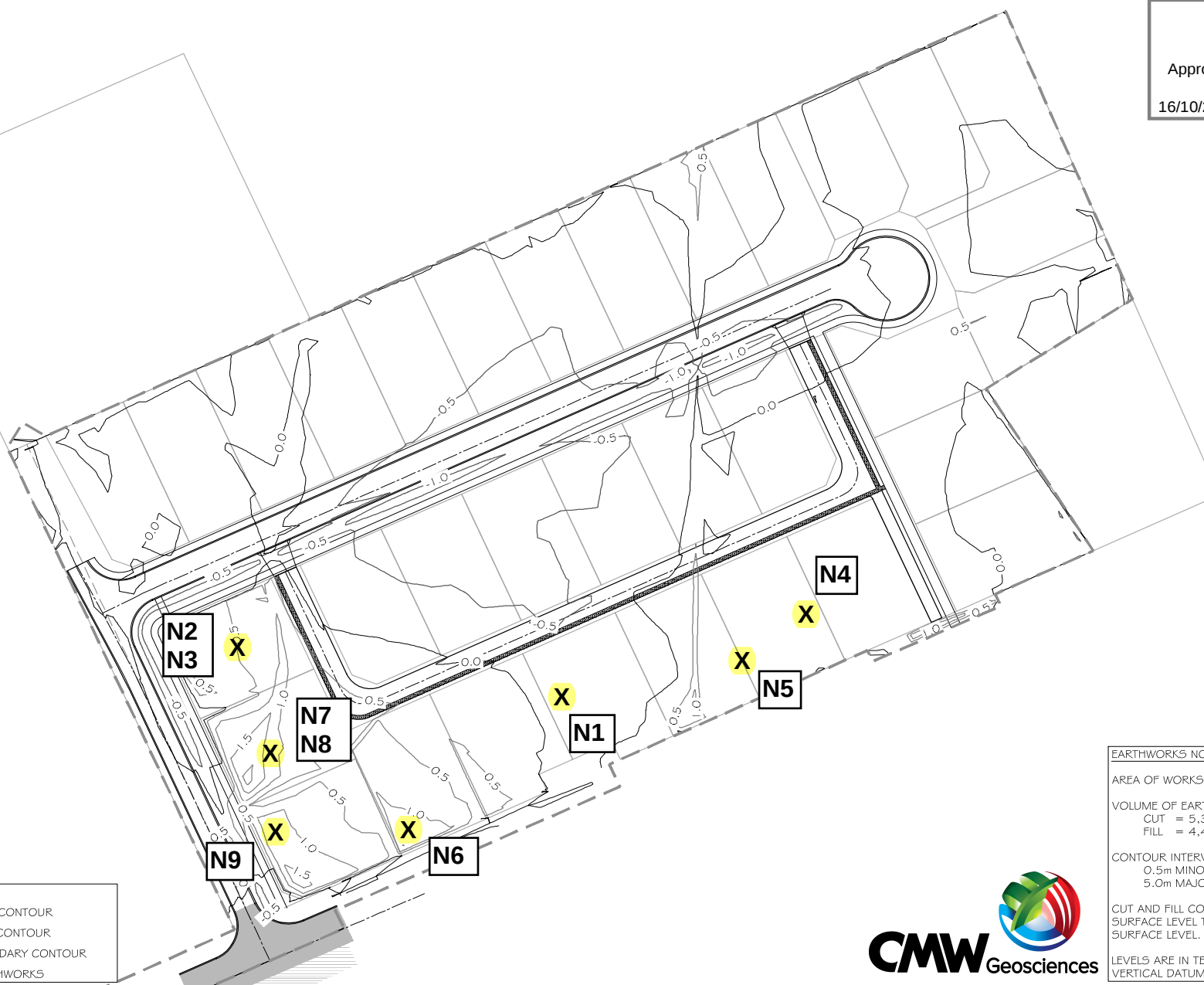
Measurements marked * are not accredited and are outside the scope of the laboratories accreditation

Date Sampled	Sample No.	Testing Location	Soil Description*	Solid Density (t/m³) *	Vane ID		In-situ Vane Shear Strengths					Field and Laboratory Testing Data									Comments
					Head #	Blade # ①	Test 1 (kPa)	Test 2 (kPa)	Test 3 (kPa)	Test 4 (kPa)	Ave.	Gauge Wet Density (t/m³) **	Gauge Dry Density (t/m³)	Gauge Water Content (%)	Gauge Air Voids (%)	Gauge Probe Depth (mm)	Oven Water Content (%)	Oven Dry Density (t/m³)	Oven Calculated Air Voids (%) *		
12/01/2021	N1	Refer to Site Plan	CLAY	2.70	2992	2992	UTP	UTP	UTP	UTP	UTP	1.88	1.46	29.0	4	300	27.5	1.48	5	Retest of N2	
18/01/2021	N2	Refer to Site Plan	CLAY	2.70	2080	2080	UTP	UTP	UTP	UTP	UTP	1.81	1.40	29.5	7	300	21.1	1.49	13		
22/01/2021	N3	Refer to Site Plan	CLAY	2.70	2080	2080	UTP	UTP	UTP	208+	208+	1.91	1.50	27.4	3	300	24.2	1.54	6		
26/01/2021	N4	Refer to Site Plan	CLAY	2.70	2080	2080	UTP	UTP	UTP	UTP	UTP	1.94	1.56	24.4	4	300	17.7	1.65	10		
	N5	Refer to Site Plan	CLAY	2.70	2080	2080	UTP	UTP	UTP	UTP	UTP	1.91	1.48	29.4	2	300	20.1	1.59	9		
9/02/2021	N6	Footpath	CLAY, minor Gravel	2.70	2080	2080	UTP	UTP	UTP	UTP	UTP	1.87	1.50	24.8	7	300	19.0	1.57	12		
26/03/2021	N7	SED	CLAY	2.70	2080	2080	163	208+	UTP	145	172+	1.84	1.40	31.8	4	300	27.0	1.45	7		
7/04/2021	N8	Pond Fill	CLAY	2.70	2080	2080	UTP	UTP	UTP	208+	208+	1.90	1.49	27.8	4	300	25.3	1.52	6		
	N9	Pond Fill	CLAY	2.70	2080	2080	166	148	193	208+	179+	1.90	1.46	30.6	1	300	25.3	1.52	5		

This report should only be reproduced in full.

** Gauge Wet Densities outside of the calibrated range of 1.728 to 2.756 t/m³ are not accredited and are outside the laboratories scope of accreditation.

Created By: BZ Date: 19/01/2021
Checked By: JLM Date: 6/07/2021
Authorised Signatory: JW Date: 6/07/2021



LEGEND

- PROPOSED CUT CONTOUR
- PROPOSED FILL CONTOUR
- CUT & FILL BOUNDARY CONTOUR
- EXTENT OF EARTHWORKS

EARTHWORKS NOTES

AREA OF WORKS = 3.674 Ha

VOLUME OF EARTHWORKS

CUT = 5,300m³FILL = 4,450m³

CONTOUR INTERVALS:

0.5m MINOR

5.0m MAJOR

CUT AND FILL CONTOURS ARE FROM THE EXISTING SURFACE LEVEL TO THE PROPOSED FINISHED SURFACE LEVEL.

LEVELS ARE IN TERMS OF THE L#5 AUCKLAND VERTICAL DATUM 1946



No.	Revision	Drawn	Chk.	Appd.	Date
1	ISSUE FOR RESOURCE CONSENT				JUL 2020

Hutchinson
 198 Coleridge Road, Ormauka 1046
 Ph: 09 428 5702 www.hc.co.nz

Design	M. SYMONS	JUL 2020
Drawn	M. SYMONS	JUL 2020
Checked	P. FARLEY	JUL 2020
Approved	I. HUTCHINSON	JUL 2020
Scale	1:1000 @ A3	
Scale vert, exag.		

Project
CABRA PROPERTIES LIMITED
PROPOSED SUBDIVISION
941, 951 & 963 MATAKANA ROAD
MATAKANA
RESOURCE CONSENT

Title	PROPOSED CUT TO FILL CONTOUR PLAN
Job No.	A3-24488 RC

Sheet No.
EW-103

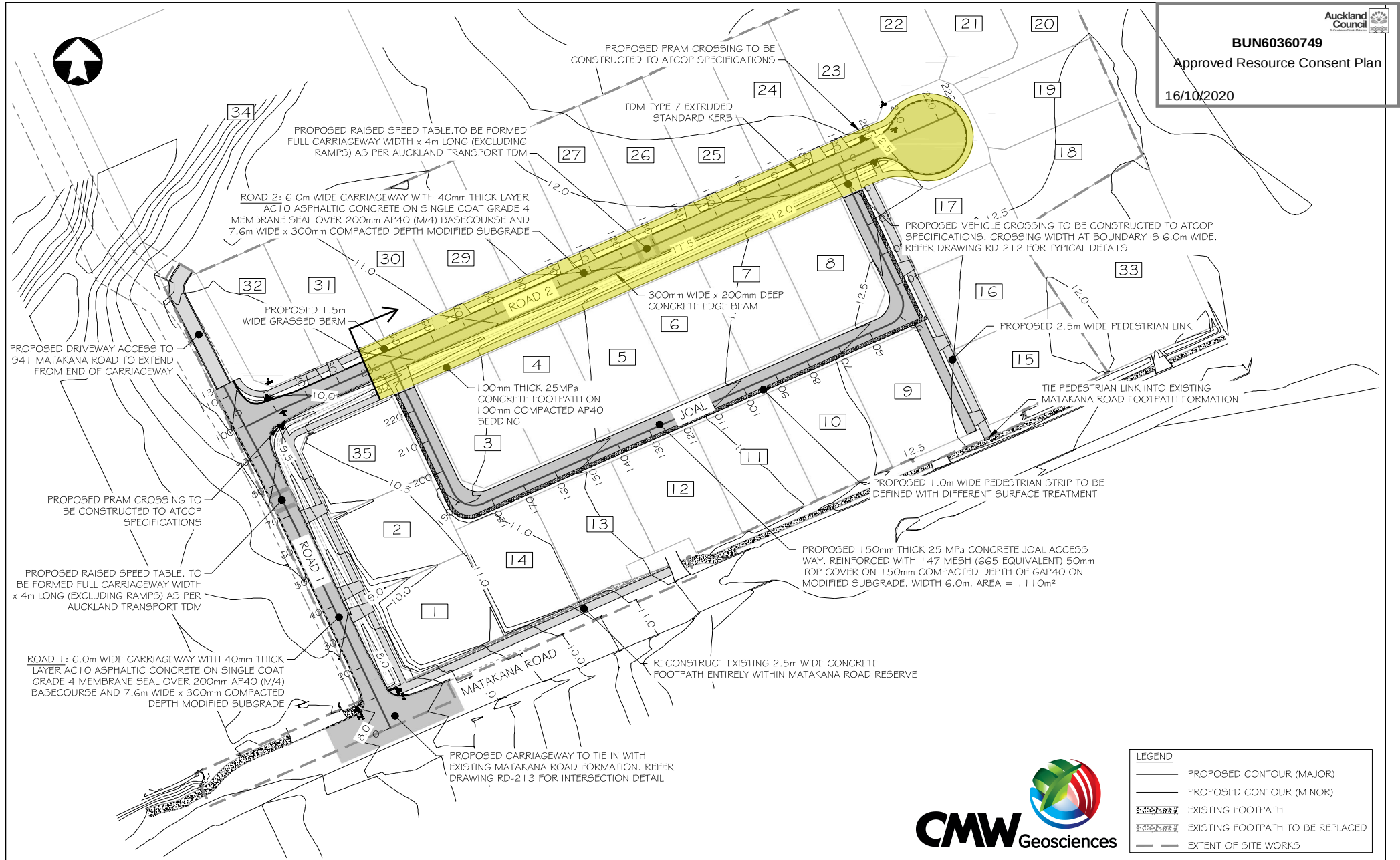
			LF14 Rev.12 Dynamic Cone Penetration (DCP) Test Report NZS 4402: 1988 Test 6.5.2							
Project: Project No: Location: Report No: Test Date: Tested By: Client: Client Address:			963 Matakana Road AKL2020-0049 Matakana AKL2020-0049LAB Rev.0 3/02/2021 HN Cabra Developments 19 Tamariki Avenue, Orewa, Auckland 0931				Auckland Laboratory CMW Geosciences (NZ) Ltd Partnership Building C, 9 Piermark Drive, Rosedale, NZ 0632 PO Box 300206, Albany, Auckland, NZ 0752 Phone: +64 (09) 4144 632			
			Testing Locations Selected By:				CMW Field Staff			
							Test results indicated as not accredited are outside the scope of the laboratory's accreditation * Equivalent CBR Values are not accredited and are outside the scope of the laboratory's accreditation			
Test No	1		2		3		4		5	
Test Location	Road 2		Road 2		Road 2		Road 2		Road 2	
Chainage & Offset	CH40L		CH50R		CH60L		CH70R		CH80L	
Material & Layer	SG/CLAY		SG/CLAY		SG/CLAY		SG/CLAY		SG/CLAY	
Depth (mm)	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*
0 - 100	6	13	6	13	5	10	3	6	6	13
100 - 200	4	8	2	4	3	6	2	4	3	6
200 - 300	2	4	2	4	1	2	2	4	2	4
300 - 400	2	4	3	6	1	2	2	4	2	4
400 - 500	2	4	1	2	1	2	1	2	2	4
500 - 600	2	4	2	4	1	2	2	4	1	2
600 - 700	2	4	2	4	2	4	2	4	2	4
700 - 800	1	2	1	2	2	4	1	2	2	4
800 - 900										
900 - 1000										
Test No	6		7		8		9		10	
Test Location	Road 2		Road 2		Road 2		Road 2		Road 2	
Chainage & Offset	CH90R		CH100L		CH110R		CH120L		CH130R	
Material & Layer	SG/CLAY		SG/CLAY		SG/CLAY		SG/CLAY		SG/CLAY	
Depth	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*
0 - 100	3	6	6	13	3	6	6	13	4	8
100 - 200	1	2	2	4	1	2	2	4	1	2
200 - 300	2	4	1	2	1	2	1	2	1	2
300 - 400	1	2	2	4	1	2	2	4	1	2
400 - 500	2	4	2	4	2	4	1	2	0	0
500 - 600	2	4	2	4	2	4	1	2	1	2
600 - 700	3	6	2	4	2	4	2	4	1	2
700 - 800	5	10	3	6	3	6	1	2	2	4
800 - 900										
900 - 1000										
Created by: JLM Checked by: JLM Authorised Signatory: JW						Date: 10/02/2021 Date: 28/06/2021 Date: 2/07/2021				
This report should only be reproduced in full *Equivalent CBR values calculated using AUSTRROADS (2010) Guide to Pavement Technology Part 2, Figure 5.3, For Fine Grained Cohesive Soils, and are relevant to fine grained cohesive soils only. Page 1 of 3										

			LF14 Rev.12 Dynamic Cone Penetration (DCP) Test Report NZS 4402: 1988 Test 6.5.2							
Project: Project No: Location: Report No: Test Date: Tested By: Client: Client Address:			963 Matakana Road AKL2020-0049 Matakana AKL2020-0049LAB Rev.0 3/02/2021 HN Cabra Developments 19 Tamariki Avenue, Orewa, Auckland 0931				Auckland Laboratory CMW Geosciences (NZ) Ltd Partnership Building C, 9 Piermark Drive, Rosedale, NZ 0632 PO Box 300206, Albany, Auckland, NZ 0752 Phone: +64 (09) 4144 632			
			Testing Locations Selected By:				CMW Field Staff			
							Test results indicated as not accredited are outside the scope of the laboratory's accreditation * Equivalent CBR Values are not accredited and are outside the scope of the laboratory's accreditation			

Test No	11		12		13		14		15	
Test Location	Road 2		Road 2		Road 2		Road 2		Road 2	
Chainage & Offset	CH140L		CH150R		CH160L		CH170R		CH180L	
Material & Layer	SG/CH		SG/CH		SG/CH		SG/CH		SG/CH	
Depth (mm)	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*
0 - 100	4	8	6	13	6	13	1	2	2	4
100 - 200	2	4	2	4	4	8	1	2	2	4
200 - 300	2	4	2	4	1	2	2	4	1	2
300 - 400	2	4	2	4	1	2	2	4	1	2
400 - 500	2	4	2	4	2	4	2	4	2	4
500 - 600	1	2	1	2	1	2	3	6	2	4
600 - 700	1	2	2	4	1	2	3	6	2	4
700 - 800	1	2	2	4	2	4	5	10	2	4
800 - 900										
900 - 1000										

Test No	16		17		18		19		20	
Test Location	Road 2		Road 2		Road 2		Road 2		Road 2	
Chainage & Offset	CH190R		CH200L		Turnaround		Turnaround		Turnaround	
Material & Layer	SG/CH		SG/CH		SG/CH		SG/CH		SG/CH	
Depth	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*
0 - 100	2	4	4	8	3	6	4	8	4	8
100 - 200	1	2	2	4	1	2	1	2	2	4
200 - 300	1	2	1	2	1	2	1	2	2	4
300 - 400	2	4	1	2	1	2	2	4	1	2
400 - 500	2	4	2	4	1	2	2	4	2	4
500 - 600	2	4	1	2	1	2	1	2	2	4
600 - 700	1	2	1	2	1	2	1	2	1	2
700 - 800	2	4	2	4	2	4	2	4	2	4
800 - 900										
900 - 1000										

Created by: JLM Checked by: JLM Authorised Signatory: JW				Date: 10/02/2021 Date: 28/06/2021 Date: 2/07/2021				This report should only be reproduced in full *Equivalent CBR values calculated using AUSTRROADS (2010) Guide to Pavement Technology Part 2, Figure 5.3, For Fine Grained Cohesive Soils, and are relevant to fine grained cohesive soils only. Page 2 of 3			
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C	REVISED PAVEMENT NOTES	MS	PF	IH	OCT 2020
B	REVISED SPEED TABLE LOCATION & LANE WIDTH	MS	PF	IH	OCT 2020
A	REVISED INTERSECTION CURVES - S92 ISSUE	MS	PF	IH	AUG 2020
-	ISSUE FOR RESOURCE CONSENT	-	-	-	JUL 2020
No.	Revision	Drawn	Chk.	Appd.	Date

Hutchinson
154 Centenary Road, Orewa 09311
Ph: 09 426 5702 www.hc.co.nz

Design	M. SYMONS	JUL 2020
Drawn	M. SYMONS	JUL 2020
Checked	P. FARLEY	JUL 2020
Approved	I. HUTCHINSON	JUL 2020
Scale	1:1000 @ A3	
Scale vert. exag.		



Project
**CABRA PROPERTIES LIMITED
PROPOSED SUBDIVISION
941, 951 & 963 MATAKANA ROAD
MATAKANA
RESOURCE CONSENT**

Title PROPOSED ROADWAY LAYOUT PLAN	Sheet No. RD-201c
Job No. A3-24488 RC	

			LF14 Rev.12 Dynamic Cone Penetration (DCP) Test Report NZS 4402: 1988 Test 6.5.2							
Project: Project No: Location: Report No: Test Date: Tested By: Client: Client Address:			963 Matakana Road AKL2020-0049 Matakana AKL2020-0049LAC Rev.0 3/03/2021 HN Cabra Developments 19 Tamariki Avenue, Orewa, Auckland 0931				Auckland Laboratory CMW Geosciences (NZ) Ltd Partnership Building C, 9 Piermark Drive, Rosedale, NZ 0632 PO Box 300206, Albany, Auckland, NZ 0752 Phone: +64 (09) 4144 632			
			Testing Locations Selected By:				CMW Field Staff			
							Test results indicated as not accredited are outside the scope of the laboratory's accreditation * Equivalent CBR Values are not accredited and are outside the scope of the laboratory's accreditation			

Test No	1		2		3		4		5	
Test Location	JOAL		JOAL		JOAL		JOAL		JOAL	
Chainage & Offset	CH220L		CH210R		CH200L		CH190R		CH180L	
Material & Layer	150mm hardfill on SG		150mm hardfill on SG		150mm hardfill on SG		150mm hardfill on SG		150mm hardfill on SG	
Depth (mm)	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*
0 - 100	6	13	11	20+	4	8	8	18	4	8
100 - 200	9	20	8	18	12	20+	9	20	14	20+
200 - 300	5	10	8	18	6	13	4	8	8	18
300 - 400	4	8	3	6	4	8	5	10	4	8
400 - 500	2	4	2	4	3	6	3	6	6	13
500 - 600	2	4	2	4	3	6	3	6	3	6
600 - 700	1	2	2	4	2	4	4	8	3	6
700 - 800	1	2	2	4	1	2	3	6	2	4
800 - 900										
900 - 1000										

Test No	6		7		8		9		10	
Test Location	JOAL		JOAL		JOAL		JOAL		JOAL	
Chainage & Offset	CH170R		CH160L		CH150R		CH140L		CH130R	
Material & Layer	150mm hardfill on SG		150mm hardfill on SG		150mm hardfill on SG		150mm hardfill on SG		150mm hardfill on SG	
Depth	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*
0 - 100	8	18	1	2	8	18	3	6	5	10
100 - 200	10	20+	6	13	11	20+	4	8	11	20+
200 - 300	11	20+	12	20+	7	15	4	8	7	15
300 - 400	7	15	8	18	3	6	3	6	4	8
400 - 500	3	6	3	6	2	4	2	4	2	4
500 - 600	3	6	2	4	3	6	2	4	1	2
600 - 700	2	4	1	2	2	4	2	4	2	4
700 - 800	1	2	3	6	2	4	2	4	2	4
800 - 900										
900 - 1000										

Created by: JLM Checked by: JLM Authorised Signatory: JW				Date: 8/03/2021 Date: 28/06/2021 Date: 2/07/2021				This report should only be reproduced in full *Equivalent CBR values calculated using AUSTRROADS (2010) Guide to Pavement Technology Part 2, Figure 5.3, For Fine Grained Cohesive Soils, and are relevant to fine grained cohesive soils only. Page 1 of 4			
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			LF14 Rev.12 Dynamic Cone Penetration (DCP) Test Report NZS 4402: 1988 Test 6.5.2							
Project: Project No: Location: Report No: Test Date: Tested By: Client: Client Address:			963 Matakana Road AKL2020-0049 Matakana AKL2020-0049LAC Rev.0 3/03/2021 HN Cabra Developments 19 Tamariki Avenue, Orewa, Auckland 0931				Auckland Laboratory CMW Geosciences (NZ) Ltd Partnership Building C, 9 Piermark Drive, Rosedale, NZ 0632 PO Box 300206, Albany, Auckland, NZ 0752 Phone: +64 (09) 4144 632			
			Testing Locations Selected By:				CMW Field Staff			
							Test results indicated as not accredited are outside the scope of the laboratory's accreditation * Equivalent CBR Values are not accredited and are outside the scope of the laboratory's accreditation			

Test No	11		12		13		14		15	
Test Location	JOAL		JOAL		JOAL		JOAL		JOAL	
Chainage & Offset	CH120L		CH110R		CH100L		CH90R		CH80L	
Material & Layer	150mm hardfill on SG		150mm hardfill on SG		150mm hardfill on SG		150mm hardfill on SG		150mm hardfill on SG	
Depth (mm)	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*
0 - 100	2	4	8	18	4	8	3	6	3	6
100 - 200	6	13	10	20+	8	18	16	20+	9	20
200 - 300	5	10	6	13	5	10	8	18	5	10
300 - 400	3	6	4	8	3	6	7	15	3	6
400 - 500	1	2	1	2	2	4	5	10	2	4
500 - 600	2	4	2	4	2	4	5	10	1	2
600 - 700	0	0	0	0	2	4	8	18	1	2
700 - 800	2	4	2	4	2	4	6	13	2	4
800 - 900										
900 - 1000										

Test No	16		17		18		19		20	
Test Location	JOAL		JOAL		JOAL		JOAL		JOAL	
Chainage & Offset	CH70R		CH60L		CH40R		CH30L		CH20R	
Material & Layer	150mm hardfill on SG		150mm hardfill on SG		150mm hardfill on SG		SG		150mm hardfill on SG	
Depth	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*
0 - 100	4	8	9	20	4	8	8	18	4	8
100 - 200	8	18	10	20+	10	20+	6	13	10	20+
200 - 300	13	20+	7	15	12	20+	5	10	5	10
300 - 400	5	10	5	10	3	6	2	4	2	4
400 - 500	4	8	3	6	3	6	1	2	1	2
500 - 600	2	4	2	4	1	2	0	0	1	2
600 - 700	2	4	1	2	1	2	1	2	1	2
700 - 800	1	2	2	4	1	2	2	4	2	4
800 - 900										
900 - 1000										

Created by: JLM Checked by: JLM Authorised Signatory: JW				Date: 8/03/2021 Date: 28/06/2021 Date: 2/07/2021				This report should only be reproduced in full *Equivalent CBR values calculated using AUSTRROADS (2010) Guide to Pavement Technology Part 2, Figure 5.3, For Fine Grained Cohesive Soils, and are relevant to fine grained cohesive soils only. Page 2 of 4			
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		LF14 Rev.12 Dynamic Cone Penetration (DCP) Test Report NZS 4402: 1988 Test 6.5.2									
Project: Project No: Location: Report No: Test Date: Tested By: Client: Client Address:		963 Matakana Road AKL2020-0049 Matakana AKL2020-0049LAC Rev.0 3/03/2021 HN Cabra Developments 19 Tamariki Avenue, Orewa, Auckland 0931				Auckland Laboratory CMW Geosciences (NZ) Ltd Partnership Building C, 9 Piermark Drive, Rosedale, NZ 0632 PO Box 300206, Albany, Auckland, NZ 0752 Phone: +64 (09) 4144 632 Testing Locations Selected By: CMW Field Staff					
						Test results indicated as not accredited are outside the scope of the laboratory's accreditation				* Equivalent CBR Values are not accredited and are outside the scope of the laboratory's accreditation	
Test No	21										
Test Location	JOAL										
Chainage & Offset	CH10L										
Material & Layer	SG										
Depth (mm)	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	
0 - 100	1	2									
100 - 200	2	4									
200 - 300	2	4									
300 - 400	1	2									
400 - 500	1	2									
500 - 600	2	4									
600 - 700	1	2									
700 - 800	2	4									
800 - 900											
900 - 1000											
Test No											
Test Location											
Chainage & Offset											
Material & Layer											
Depth	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	Blow Count	Equiv CBR*	
0 - 100											
100 - 200											
200 - 300											
300 - 400											
400 - 500											
500 - 600											
600 - 700											
700 - 800											
800 - 900											
900 - 1000											
Created by: JLM Checked by: JLM Authorised Signatory: JW						Date: 8/03/2021 Date: 28/06/2021 Date: 2/07/2021					
This report should only be reproduced in full *Equivalent CBR values calculated using AUSTRROADS (2010) Guide to Pavement Technology Part 2, Figure 5.3, For Fine Grained Cohesive Soils, and are relevant to fine grained cohesive soils only. Page 3 of 4											



BUN60360749

Approved Resource Consent Plan

16/10/2020

LEGEND

- PROPOSED CUT CONTOUR
- PROPOSED FILL CONTOUR
- CUT & FILL BOUNDARY CONTOUR
- EXTENT OF EARTHWORKS

EARTHWORKS NOTES

AREA OF WORKS = 3.674 Ha

VOLUME OF EARTHWORKS

CUT = 5,300m³FILL = 4,450m³

CONTOUR INTERVALS:

0.5m MINOR

5.0m MAJOR

CUT AND FILL CONTOURS ARE FROM THE EXISTING SURFACE LEVEL TO THE PROPOSED FINISHED SURFACE LEVEL.

LEVELS ARE IN TERMS OF THE L45 AUCKLAND VERTICAL DATUM 1946



No.	Revision	Drawn	Chk.	Appd.	Date
-	ISSUE FOR RESOURCE CONSENT	-	-	-	JUL 2020

Hutchinson
 CONSULTANTS
 154 Cambridge Road, Otawa 064
 Ph: 09 426 5702 www.hc.co.nz

Design	M. SYMONS	JUL 2020
Drawn	M. SYMONS	JUL 2020
Checked	P. FARLEY	JUL 2020
Approved	I. HUTCHINSON	JUL 2020
Scale	1:1000 @ A3	
Scale vert. exag.		

Project
**CABRA PROPERTIES LIMITED
 PROPOSED SUBDIVISION
 941, 951 & 963 MATAKANA ROAD
 MATAKANA
 RESOURCE CONSENT**

Title PROPOSED CUT TO FILL CONTOUR PLAN	Sheet No. EW-103
Job No. A3-24488 RC	



LF12 Rev.13 Aggregate Field Density NDM - Backscatter Report

Auckland Laboratory
CMW Geosciences (NZ) Ltd Partnership
Building C, 9 Piermark Drive, Rosedale, NZ 0632
PO Box 300206, Albany, Auckland, NZ 0752
Phone: +64 (09) 4144 632

Project:	963 Matakana Road	Test Methods:	Notes:
Project No:	AKL2020-0049	NZS 4407:2015 Test 3.1 $\diamond$	Solid Density: Assumed
Location:	Matakana	NZS 4407:2015 Test 4.3	Soild Density Data Source: N/A
Report No:	AKL2020-0049LAD Rev.0	$\diamond$ Only samples <2.0mm will be considered for endorsed testing	Testing Locations Selected By: CMW Field Staff
Report Date:	6/07/2021		
Client:	Cabra Properties Limited		
Client Address:	19 Tamariki Avenue, Orewa, Auckland 0931		



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

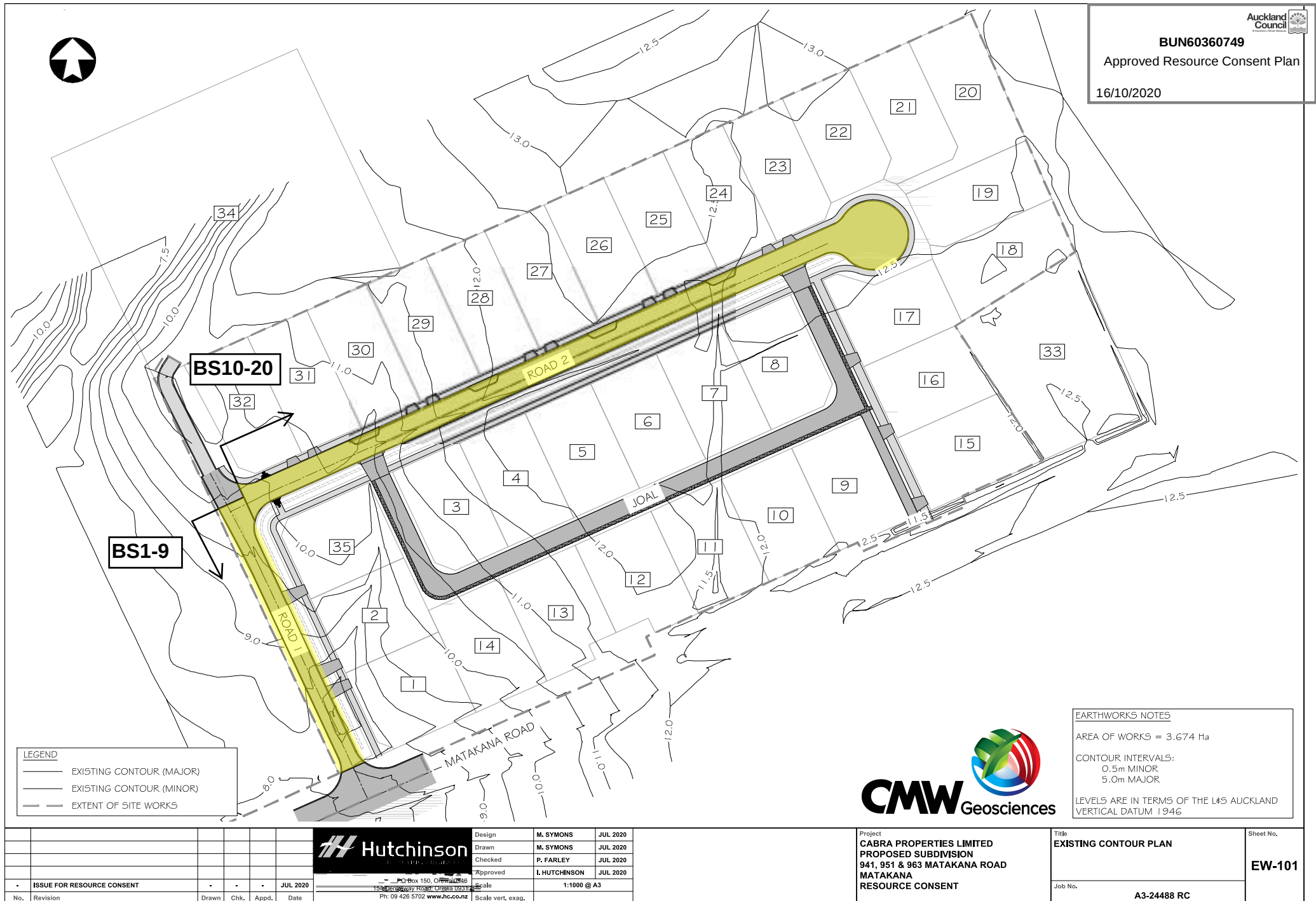
Measurements marked * are not accredited and are outside the laboratory's scope of accreditation

Date Sampled	Sample No.	Test Location*		Material Details						Field and Testing Data					Comments
		Test Area	RL/Depth	Material*	Quarry	Material Data Source	OMC* (%)	MDD* (t/m ³)	SD* (t/m ³)	Gauge Wet Density (t/m ³) **	Gauge Dry Density (t/m ³)	Gauge Water Content (%)	Calculated Compaction (%) *	Calculated Total Voids (%) *	
24/06/2021	B1	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.39	2.29	4.6	97	16	
	B2	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.47	2.34	5.4	99	14	
	B3	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.41	2.31	4.7	98	15	
	B4	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.42	2.32	4.1	98	15	
	B5	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.43	2.35	3.6	100	14	
	B6	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.43	2.34	3.8	99	14	
	B7	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.40	2.31	3.9	98	15	
	B8	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.37	2.28	3.9	97	16	
	B9	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.37	2.31	3.0	98	15	
	B10	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.54	2.43	4.4	103	11	
	B11	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.53	2.43	4.2	103	11	
	B12	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.44	2.33	4.4	99	14	
	B13	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.49	2.40	3.8	102	12	
	B14	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.65	2.56	3.6	108	6	
	B15	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.42	2.32	4.4	98	15	
	B16	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.47	2.37	4.2	100	13	
	B17	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.48	2.39	4.0	101	12	
	B18	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.43	2.33	4.4	99	14	
	B19	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.44	2.32	5.2	98	15	
	B20	Refer to site plan	-	TNZ40	Matakana	Coffey MDD:ETAM20S-03809	5.00	2.36	2.72	2.48	2.37	4.6	100	13	

This report should only be reproduced in full.

** Gauge Wet Densities outside of the calibrated range of 1.728 to 2.756 t/m³ are not accredited and are outside the laboratories scope of accreditation.

Created By: JLM Date: 24/06/2021
Checked By: JLM Date: 6/07/2021
Authorised Signatory: JW Date: 6/07/2021



Appendix E: Producer Statement

14 June 2021

Document Ref: AKL2020-0049AE Rev.0

Cabra Properties Limited
19 Tamariki Avenue
PO Box 197
Orewa

Attention: Duncan Unsworth

Dear Duncan

**RE: GEOTECHNICAL CONSTRUCTION REVIEW FOR FOUNDATION CONSTRUCTION OF
KEYSTONE RETAINING WALLS – BCO10319051**

963 MATAKANA ROAD, MATAKANA

CMW Geosciences (CMW) visited the site at 963 Matakana Road, Matakana legally described as Lot 1 DP 556084 on several occasions between April 2021 and May 2021 to observe the ground conditions and hardfill compaction for the site works in the construction of the keystone retaining walls.

Our work has included review of the following documents and drawings:

- Conditions of Auckland Council Building Consent referenced BCO10319051 issued 7 January 2021;
- Consented construction drawings, prepared by Hutchinson Consulting Limited, referenced Cabra Properties Limited, Proposed Subdivision 941, 951 and 963 Matakana Road, Matakana, Job Number – A3-24488 EPA Sheets RW-602 and RW-605, dated October and December 2020;
- Geotechnical report for 963 Matakana Road, Matakana, prepared by CMW Geosciences, referenced AKL2020-0049AB Rev.0, dated 25 May 2020.

The site works observed and/or tested by CMW staff incorporated:

- assessment of soil strengths in the exposed foundation excavations;
CMW inspected the ground conditions of the subgrade for some areas of the keystone retaining walls, however, not all walls were checked due to hardfill having already been placed when CMW arrived on site. The areas which were observed had vane shear strength readings in excess of 148kPa and were generally founded in engineered fill.
- assessment of hardfill compaction within retaining wall footing foundations;
The approximately 150mm thick GAP65 hardfill leveling pad beneath the retaining walls was inspected by CMW. Impact hammer tests were completed, and values observed ranged from 21CIV to 33CIV with hardfill appearing generally well bound and compacted.

On the basis of our observations and testing, we consider that the site works observed and/ or tested have been completed in accordance with the approved Building Consent and related approved documentation described above, are in accordance with the requirements and/or recommendations of the geotechnical report and provide the basis for our attached PS4 Construction Review producer statement.

CMW's site presence during construction for this project included periodic observations of specific elements of work as described herein. As we were not on site at all times during construction, we have relied on the Contractor's diligence and their construction observations to ensure that the works have been carried out in accordance with:

- a) The approved Contract drawings and design details;
- b) The approved Contract specifications;
- c) Authorised Variations to (a) and (b) during the execution of the works;
- d) The conditions of Resource and Building Consents where applicable;
- e) The relevant Geotechnical Investigation reports, recommendations and site instructions;

and that all as-built information and other details provided to the Client and/or CMW are accurate and correct in all respects.

For and on behalf of CMW Geosciences

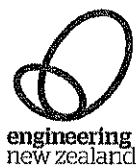
Sam Gibb

Principal Geotechnical Engineer, CPEng

Distribution: 1 electronic copy to Cabra Properties Limited via email
Original held at CMW Geosciences

Attachments: Producer Statement - Construction Review





association of
consulting and
engineering

Building Code Clause(s) B1

PRODUCER STATEMENT – PS4 – CONSTRUCTION REVIEW

ISSUED BY: CMW Geosciences (NZ) Limited Partnership
(Construction Review Firm)

TO: Cabra Properties Limited
(Owner/Developer)

TO BE SUPPLIED TO: Auckland Council
(Building Consent Authority)

IN RESPECT OF: Siteworks for the ground conditions and hardfill compaction in the keystone retaining wall foundations
(Description of Building Work)

AT: 963 Matakana Road, Matakana
(Address)

Town/City: Auckland LOT 1 DP 556084 SO
(Address)

We CMW Geosciences (NZ) Limited Partnership have been engaged by Cabra Properties Limited
(Construction Review Firm)

To provide ☐ CM1 ☐ CM2 ☐ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☒ observation as per agreement with
owner/developer Cabra Properties Limited

or ☒ other as described in CMW letter referenced AKL2020-0049AE Rev.0, dated 14 June 2021 services
(Extent of Engagement)

in respect of clause(s) B1 of the Building Code for the building work described in

documents relating to Building Consent No. BCO10319051 and those relating to

Building Consent Amendment(s) Nos. issued during the
course of the works. We have sighted these Building Consents and the conditions of attached to them.

Authorised instructions/variation(s) No. (copies attached)
or by the attached Schedule ☐ have been issued during the course of the works.

On the basis of ☒ this review ☐ these review(s) and information supplied by the contractor during the course of the works
and on behalf of the firm undertaking this Construction Review, I believe on reasonable grounds that
☐ All or ☒ Part only of the building works have been completed in accordance with the relevant requirements of the

Building Consent and Building Consent Amendments identified above, with respect to Clause(s) B1
of the Building Code. I also believe on reasonable grounds that the persons who have undertaken this construction review have
the necessary competency to do so.

I, Sam Gibb (Author #3126) am: ☒ CPEng.# 1023416
(Name of Construction Review Professional)

I am a member of: ☒ Engineering New Zealand and hold the following qualifications BSc, CMEngNZ, CPEng

The Construction Review Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than
\$200,000*.

The Construction Review Firm is a member of ACE New Zealand: ☒

SIGNED BY Sam Gibb (Author #3126) (Signature) [Signature]
(Name of Construction Review Professional)

ON BEHALF OF CMW Geosciences (NZ) Limited Partnership Date 2/6/21
(Construction Review Firm)

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the
Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building
Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of \$200,000*.

This form is to accompany Forms 6 or 8 of the Building (Form) Regulations 2004 for the issue of a Code Compliance
Certificate.

THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACE NEW ZEALAND AND ENGINEERING NEW ZEALAND

GUIDANCE ON USE OF PRODUCER STATEMENTS

Producer statements were first introduced with the Building Act 1991. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects, Institution of Professional Engineers New Zealand (now Engineering New Zealand), ACE New Zealand in consultation with the Building Officials Institute of New Zealand. The original suit of producer statements has been revised at the date of this form as a result of enactment of the Building Act (2004) by these organisations to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with reasonable grounds for the issue of a Building Consent or a Code Compliance Certificate, without having to duplicate design or construction checking undertaken by others.

PS1 Design Intended for use by a suitably qualified independent design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;

PS2 Design Review Intended for use by a suitably qualified independent design professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;

PS3 Construction Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:2013 or Schedules E1/E2 of NZIA's SCC 2011²

PS4 Construction Review Intended for use by a suitably qualified independent design professional who undertakes construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate.

This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines are provided by ACE New Zealand and Engineering New Zealand to interpret the Producer Statement.

Competence of Design Professional

This statement is made by a Design Firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its designers.

A competent design professional will have a professional qualification and proven current competence through registration on a national competence based register, either as a Chartered Professional Engineer (CPEng) or a Registered Architect.

Membership of a professional body, such as Engineering New Zealand (formerly IPENZ), provides additional assurance of the designer's standing within the profession. If the design firm is a member of the ACE New Zealand, this provides additional assurance about the standing of the firm.

Persons or firms meeting these criteria satisfy the term "suitably qualified independent design professional".

*Professional Indemnity Insurance

As part of membership requirements, ACE New Zealand requires all member firms to hold Professional Indemnity Insurance to a minimum level.

The PI Insurance minimum stated on the front of this form reflects standard, small projects. If the parties deem this inappropriate for large projects the minimum may be up to \$500,000.

Professional Services during Construction Phase

There are several levels of service which a Design Firm may provide during the construction phase of a project (CM1-CM5 for Engineers³). The Building Consent Authority is encouraged to require that the service to be provided by the Design Firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4

Building Consent Authorities should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the Design firm's engagement.

Attached Particulars

Attached particulars referred to in this producer statement refer to supplementary information appended to the producer statement.

Refer Also:

- 1 Conditions of Contract for Building & Civil Engineering Construction
NZS 3910: 2013
- 2 NZIA Standard Conditions of Contract SCC 2011
- 3 Guideline on the Briefing & Engagement for Consulting Engineering Services
(ACE New Zealand/IPENZ 2004)
- 4 PN Guidelines on Producer Statements

www.acenz.org.nz
www.engineeringnz.org



association of
consulting and
engineering

