



HYDROGEOLOGY • GEOTECHNICAL ENGINEERING • ENGINEERING GEOLOGY

AHN/L4259-1/cam

22 August 2022

Hopper Developments Limited
P O Box 110
Orewa 0946

Attention: Mr Dean Lupton
dean@hoppers.co.nz
Mr Peter Abrahamson
peter@hoppers.co.nz

Dear Sir

**RE: WHAREKAHO DEVELOPMENT (SIMPSONS BEACH SUBDIVISION)
UPPER LEVEL HOUSE SITES**

We completed a walkover survey of the high ground on 17 August 2022 and marked up potential house sites on the RMS drawing D1 dated 20 April 2022.

We have assumed the scale of the earthworks will be no greater than 2m to 3m (cut and/or fill) and that retaining walls will be required in places.

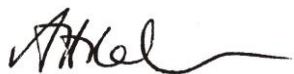
Final sites will need to be confirmed once we have completed our detailed mapping in conjunction with test pitting and surveying of existing gullies and watercourses. Locations will also have to consider:

1. Access grades (particularly the main access up to the hill).
2. Setbacks off potentially unstable slopes.
3. Existing stormwater gullies and flowpaths.
4. The boulder risk below the main bush reserve.
5. The presence and depth of hard rock [there are numerous scattered boulders (0.5m to 3m size), and it appears that hard rock is only 1m to 2m deep in many areas (this could limit earthworks and hence access grades)].

There does seem to be an opportunity to provide a circular link on the higher ground around the water tank instead of the proposed cul de sacs.

The remaining large rural-residential blocs will require site-specific investigations, but overall they look feasible.

Yours faithfully



A H NELSON

Principal Geotechnical Engineer

EARTHTECH CONSULTING LTD

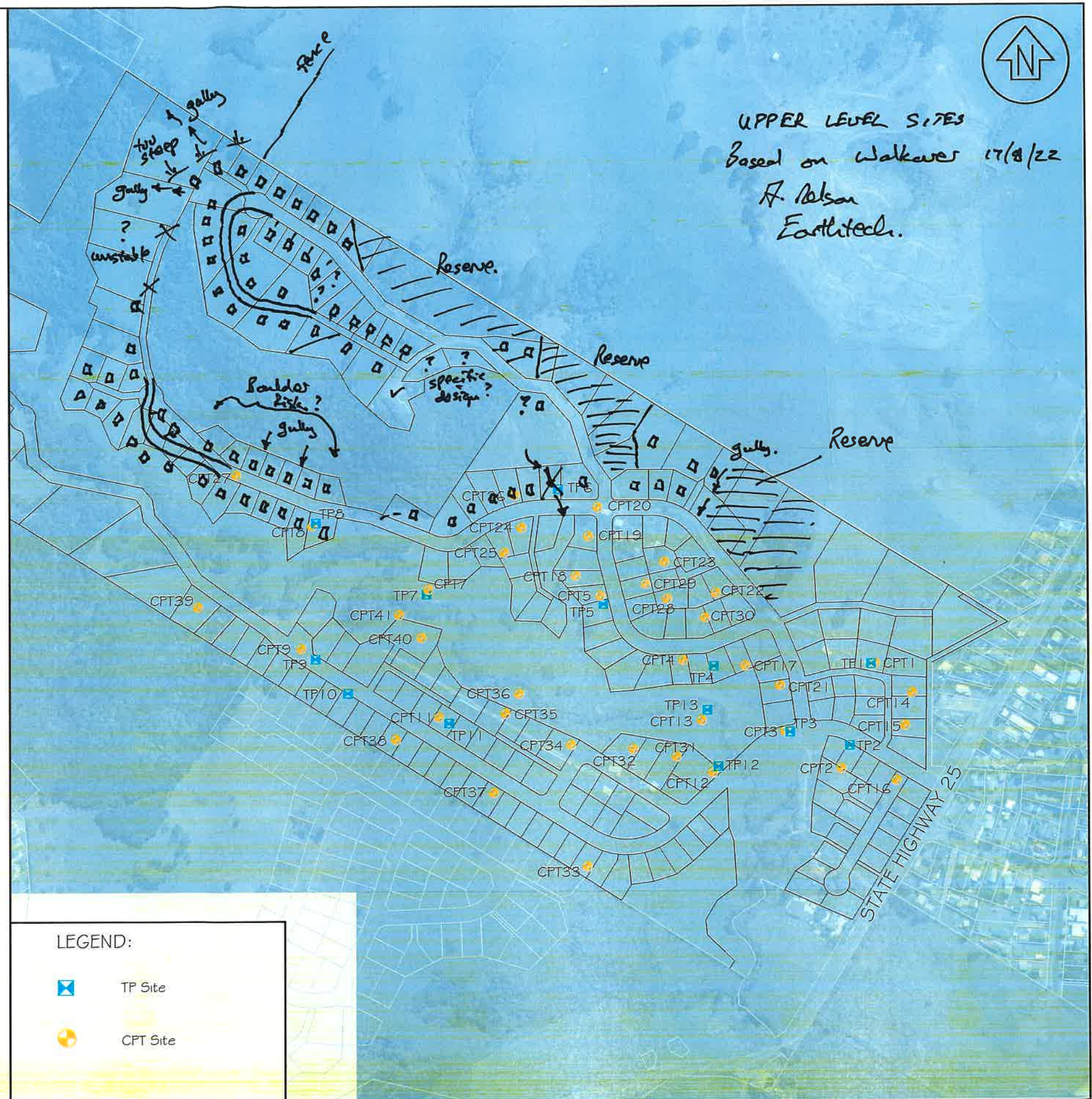
Encls.: Marked up RMS Drawing ref 8073, D1 dated 20 April 2022
Figure 5, Ver B – Geomorphological Mapping

NOTES:

1. Coordinates in terms of NZGD2000 (Mt Eden Circuit)
2. Levels in terms of Mean Sea Level - AVD 1946
3. Origin of levels OBM 10 SO 60088 (C3LM) - RL 10.54m
(Source: LINZ GDB via NZVD16)
4. There is no CPT22-6 and CPT22-10
5. Date of Survey: 14th April 2022

TABLE OF COORDINATES

CPT				TP			
SITE	NORTHING	EASTING	HEIGHT	SITE	NORTHING	EASTING	HEIGHT
CPT22-1	808619.82	485307.84	10.60	TP22-1	808619.30	485303.13	10.66
CPT22-2	808498.31	485268.64	9.13	TP22-2	808524.73	485278.46	6.86
CPT22-3	808541.38	485203.50	4.47	TP22-3	808540.76	485208.95	4.41
CPT22-4	808624.06	485086.45	7.80	TP22-4	808617.14	485121.73	6.78
CPT22-5	808699.12	484990.63	9.67	TP22-5	808689.44	484993.82	9.51
				TP22-6	808822.59	484942.07	11.11
CPT22-7	808706.88	484792.56	9.22	TP22-7	808701.29	484790.60	9.13
CPT22-8	808780.64	484659.12	14.38	TP22-8	808784.15	484663.74	14.33
CPT22-9	808638.66	484646.32	19.37	TP22-9	808626.47	484662.99	20.73
				TP22-10	808586.87	484700.00	22.38
CPT22-11	808559.05	484804.47	14.98	TP22-11	808551.94	484816.10	14.65
CPT22-12	808493.90	485120.60	5.25	TP22-12	808501.02	485126.64	4.97
CPT22-13	808554.36	485107.74	5.70	TP22-13	808566.30	485114.06	5.71
CPT22-14	808585.43	485349.97	8.58				
CPT22-15	808547.87	485341.70	6.80				
CPT22-16	808484.17	485332.06	5.63				
CPT22-17	808617.82	485157.73	5.54				
CPT22-18	808722.57	484962.18	10.40				
CPT22-19	808768.17	484976.85	11.31				
CPT22-20	808801.64	484987.69	11.25				
CPT22-21	808594.57	485197.79	4.77				
CPT22-22	808701.88	485124.41	7.25				
CPT22-23	808738.09	485065.06	7.90				
CPT22-24	808778.29	484900.13	10.74				
CPT22-25	808749.55	484880.34	10.67				
CPT22-26	808815.77	484892.64	14.63				
CPT22-27	808839.74	484571.75	16.07				
CPT22-28	808695.53	485068.23	7.58				
CPT22-29	808712.50	485043.15	8.26				
CPT22-30	808673.53	485111.60	5.80				
CPT22-31	808512.66	485078.70	6.16				
CPT22-32	808521.36	485028.38	5.95				
CPT22-33	808386.33	484974.94	6.79				
CPT22-34	808526.75	484956.35	8.66				
CPT22-35	808563.09	484881.14	8.09				
CPT22-36	808585.51	484896.91	7.20				
CPT22-37	808471.47	484867.53	12.41				
CPT22-38	808532.99	484755.04	15.16				
CPT22-39	808687.14	484526.84	15.57				
CPT22-40	808651.06	484784.68	11.89				
CPT22-41	808677.84	484758.95	9.46				



LEGEND:

-  TP Site
-  CPT Site

Date: 20 April 2022 Scale: 1:5000 (A3)

WHITIANGA WATERWAYS - WHAREKAHO BLOCK
CPT & TP SITE LOCATIONS
25 & 39 WHAREKAHO ROAD, WHAREKAHO



Property Development Consultants
Resource Management Consultants
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33 Albert Street, Whitianga
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Drawn KHA	Project No. 8073
Designed	Drawing No. D1
Verified	Revision:
Approved	

No.	Date	Revision Details	By



LEGEND

Landslide feature

Alluvial fan

0.5m-2.0m step down to river flood plain

Shallow creep, <0.5m

Watercourse

Dry watercourse

Notes:

1. Aerial from Google.

2. Parcels from Linz.

0m50100150200250m

Scale 1:5000