

Appendix 1e

Schedule of geological items - inner islands

Contents	Page
1.0 Introduction	3
2.0 Key to reasons for scheduling geological items	3
3.0 Disclaimer for all diagrams in appendix 1e	4
4.0 Diagrams of scheduled geological items	4
5.0 Diagrams of site surrounds for scheduled geological items.....	53

Plan modification annotations

-  indicates where content is affected by proposed plan modification x.
refer to plan modification folder or website for details.
-  indicates where the content is part of plan modification x, which is subject to appeal.
- Underlined content to be inserted.
- ~~Struck through~~ content to be deleted.

1.0 Introduction

This appendix contains key information about scheduled geological items. In particular it identifies:

- The location of scheduled items, including the site surrounds.
- The category (A or B) applying to each item.
- The reasons for scheduling each item.

Scheduled geological items are shown on the planning maps. [Part 7 - Heritage](#) contains the objectives, policies and rules applying to such items.

[Section 4.0](#) of this appendix contains diagrams of the scheduled items. Some items have been grouped within a common site surrounds. Those site surrounds diagrams are contained in [section 5.0](#).

The diagrams in sections 4.0 and 5.0 are ordered according to their planning map reference number.

2.0 Key to reasons for scheduling geological items

Each diagram includes a record of the reasons for scheduling the particular item. The reasons relate to the criteria identified in [appendix 4 - Criteria for scheduling heritage items](#). The list of reasons for scheduling geological items is as follows:

Letter	Reason
A/a	Geological significance
B/b	Rarity
C/c	Scientific potential
D/d	Representativeness
E/e	Diversity
F/f	Group
G/g	Visual contribution to the landscape
H/h	Setting
I/i	Intactness
J/j	Education and interpretation value
K/k	Community association with, or public esteem for
L/l	Association with geology-related events or industry, or the history of geology

The reasons are identified on each diagram in the following manner:

1. A capital letter (eg A, D, L) means that the scheduled item scored significantly (ie above the median) for this criteria.
2. A lower case letter (eg a, d, l) means that the scheduled item has scored moderately (ie below the median) for this criteria.
3. Where a letter is omitted, the scheduled item has not scored against this criteria.

3.0 Disclaimer for all diagrams in appendix 1e

The scheduled items are defined by latitude and longitude coordinates. The polygon, shown on the diagrams as a green outline, is defined by the coordinates provided and forms the definitive identity and location of the scheduled item, with all other identifying information (address etc) being supplementary.

Some diagrams may include parts of an item extending below mean high water springs (MHWS). Areas below MHWS fall within the jurisdiction of the Auckland Regional Council, and are therefore outside the jurisdiction of this Plan. Any areas below MHWS are indicative and shown for information purposes only.

4.0 Diagrams of scheduled geological items

Legend



Boundary of scheduled item



Boundary of scheduled site surrounds



GPS point - coordinates recorded by global positioning system (GPS) in the field



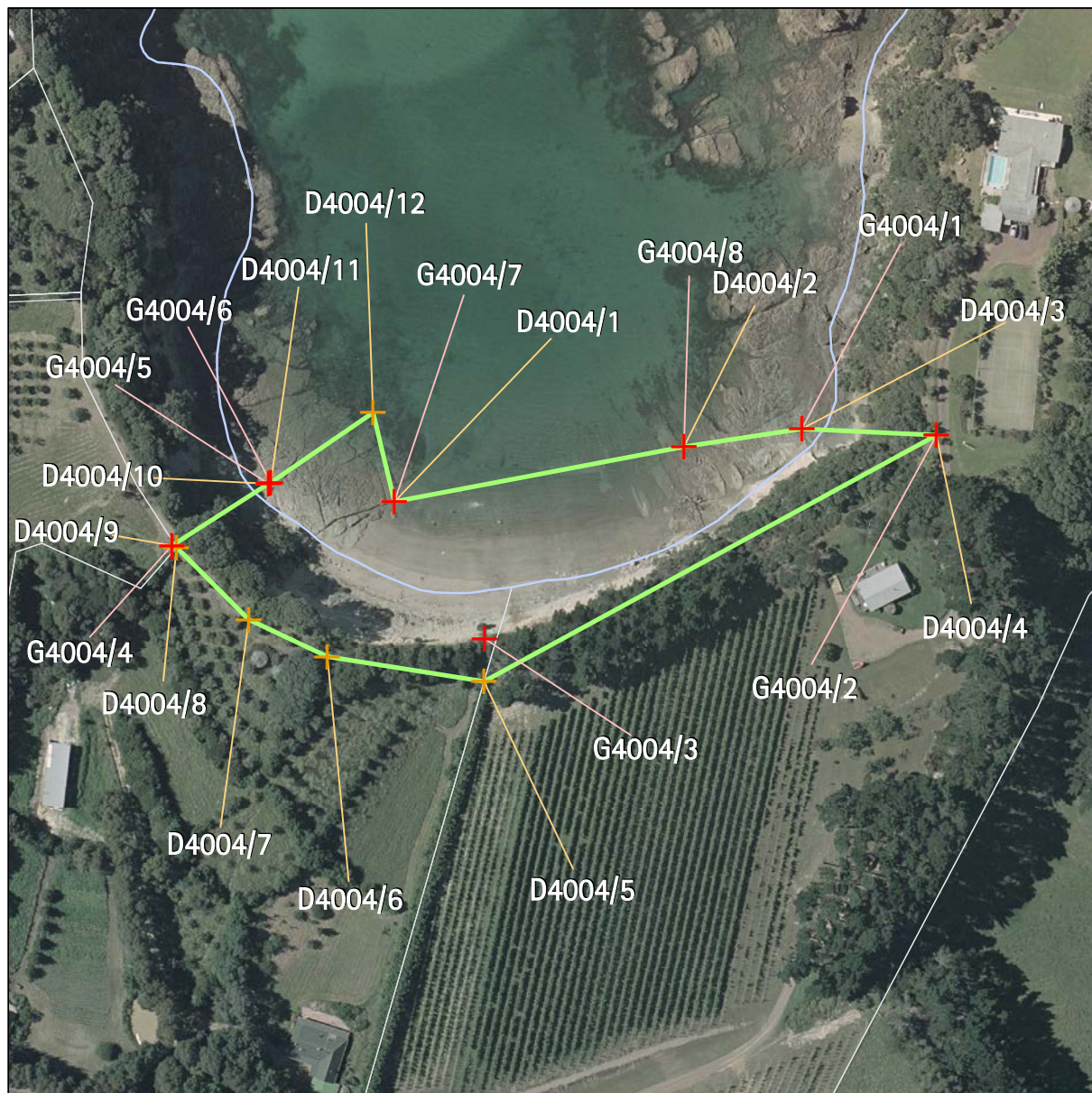
Digitised point - coordinates derived from the NZMG (New Zealand Map Grid) base where recording of a GPS position was not possible



Geology	Name of item: Oneroa Beach fossils		Map reference: 2-1
UID: 4000 Island: Waiheke Feature type: Fragile exposures of geological material	Surrounds protected: N Description of item: Mudstone containing the deepest faunal assemblage of early Miocene fossils and sediments on Waiheke Island.	Reasons: A, B, C, D, E, F, I Category: B	 1:1,000 metres
GPS points (NZMG)		Digitised points (NZMG)	
1) G4000/1 E2689724.86, N6489456.03		1) D4000/1 E2689724.86, N6489462.03 2) D4000/2 E2689730.86, N6489456.03 3) D4000/3 E2689724.86, N6489450.03 4) D4000/4 E2689718.87, N6489456.03	

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Appendix 1e Schedule of geological items - inner islands

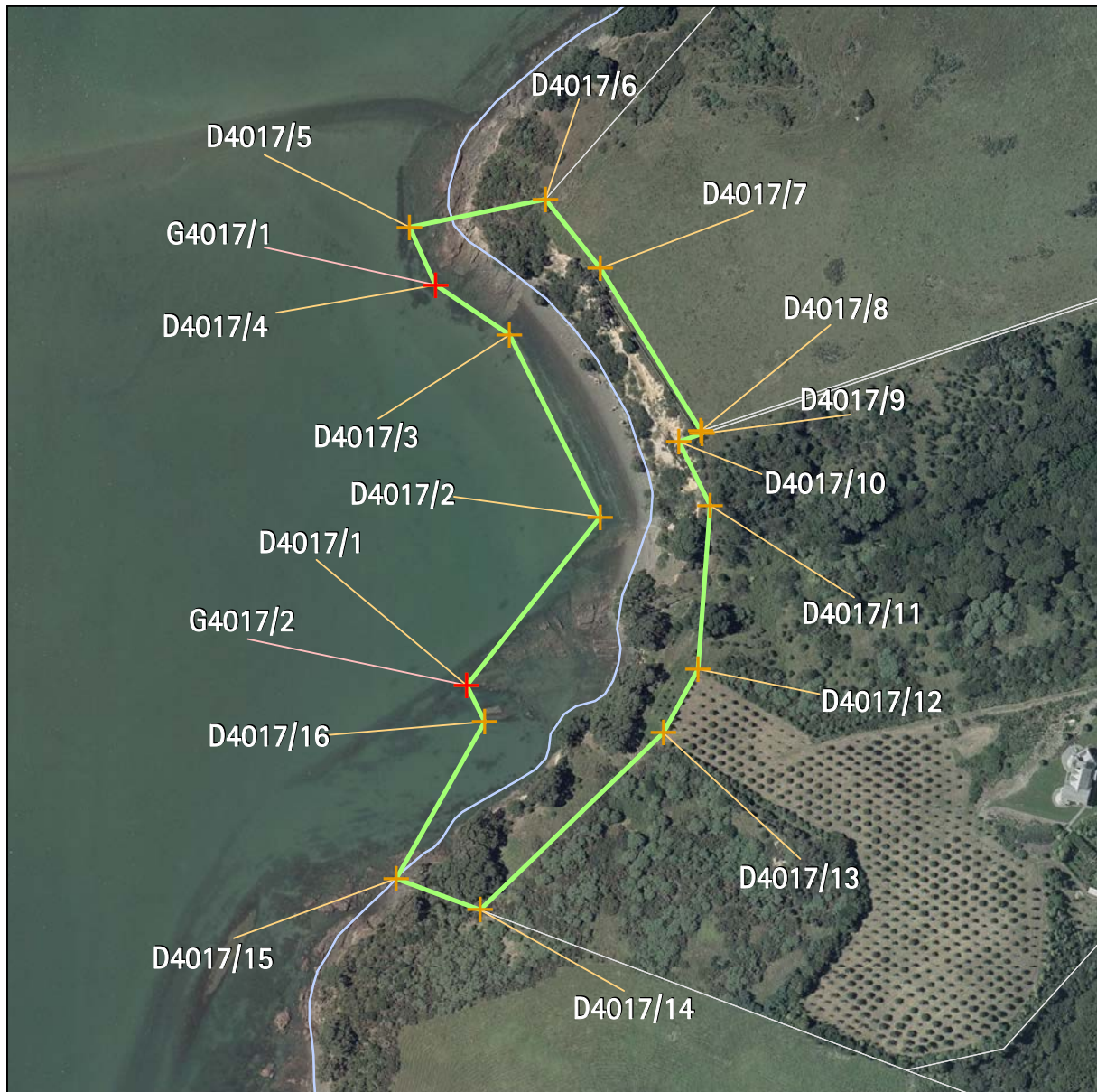


Geology	Name of item: Double U Bay fossils	Map reference: 2-2
UID:4004 Island:Waiheke Feature type: Fragile exposures of geological material	Surrounds protected:N Description of item: Type locality of 45 species of rare inner and midshelf fossil molluscs.	Reasons: A,B,c,D,E,f,g,I,j,k,l Category: B 1:2,000 0 5 10 20 metres
GPS points (NZMG)		Digitised points (NZMG)
1) G4004/1 E2689720.16, N6490254.15 2) G4004/2 E2689759.65, N6490252.26 3) G4004/3 E2689627.25, N6490192.64 4) G4004/4 E2689535.54, N6490219.94 5) G4004/5 E2689563.80, N6490238.08 6) G4004/6 E2689564.55, N6490238.40 7) G4004/7 E2689600.76, N6490232.85 8) G4004/8 E2689685.62, N6490248.87		1) D4004/1 E2689600.76, N6490232.85 2) D4004/2 E2689685.62, N6490248.87 3) D4004/3 E2689720.16, N6490254.15 4) D4004/4 E2689759.65, N6490252.26 5) D4004/5 E2689627.04, N6490180.23 6) D4004/6 E2689581.15, N6490187.38 7) D4004/7 E2689558.06, N6490198.33 8) D4004/8 E2689536.86, N6490219.44 9) D4004/9 E2689535.54, N6490219.94 10) D4004/10 E2689563.80, N6490238.08 11) D4004/11 E2689564.55, N6490238.40 12) D4004/12 E2689594.57, N6490258.90

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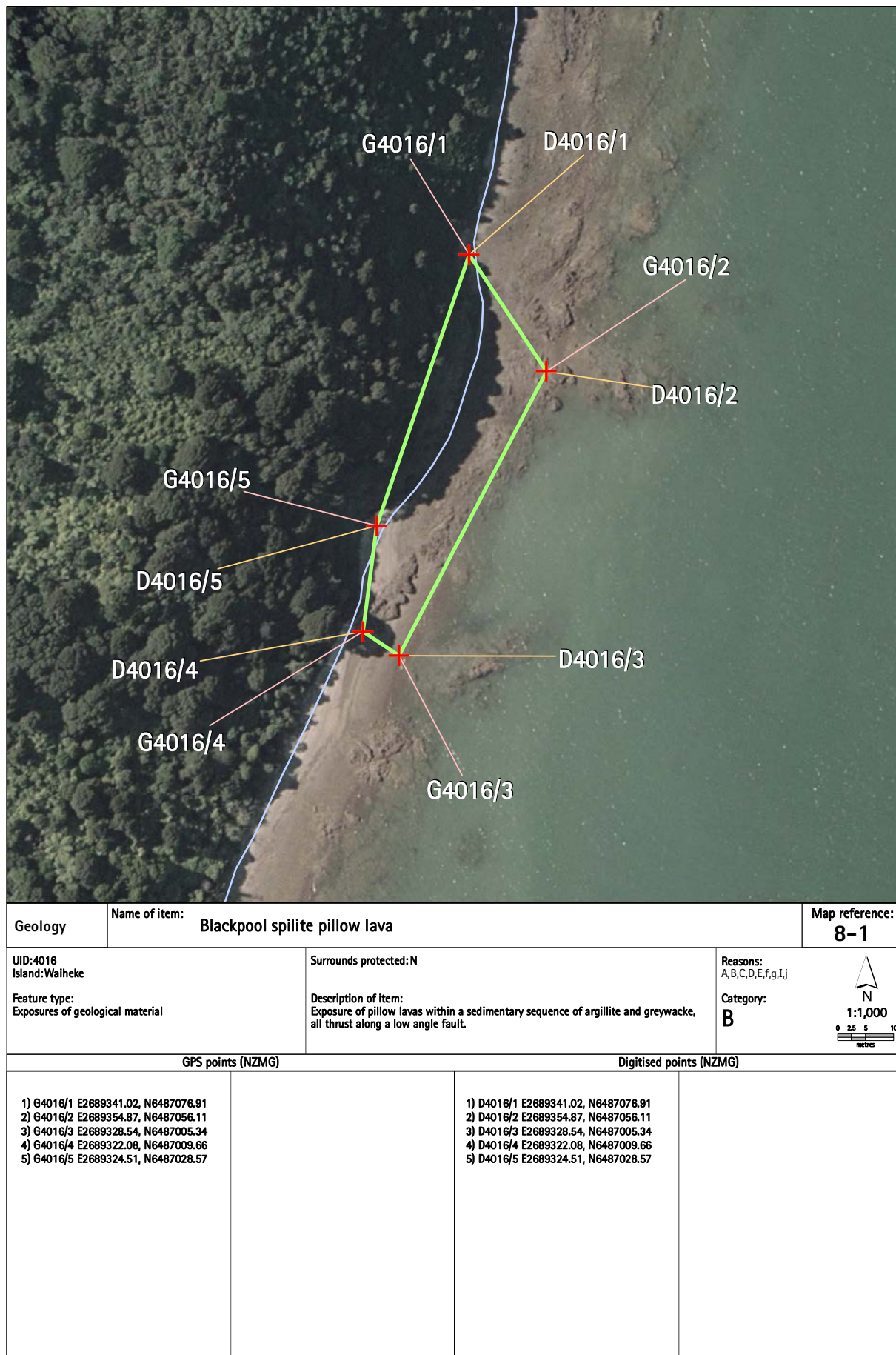
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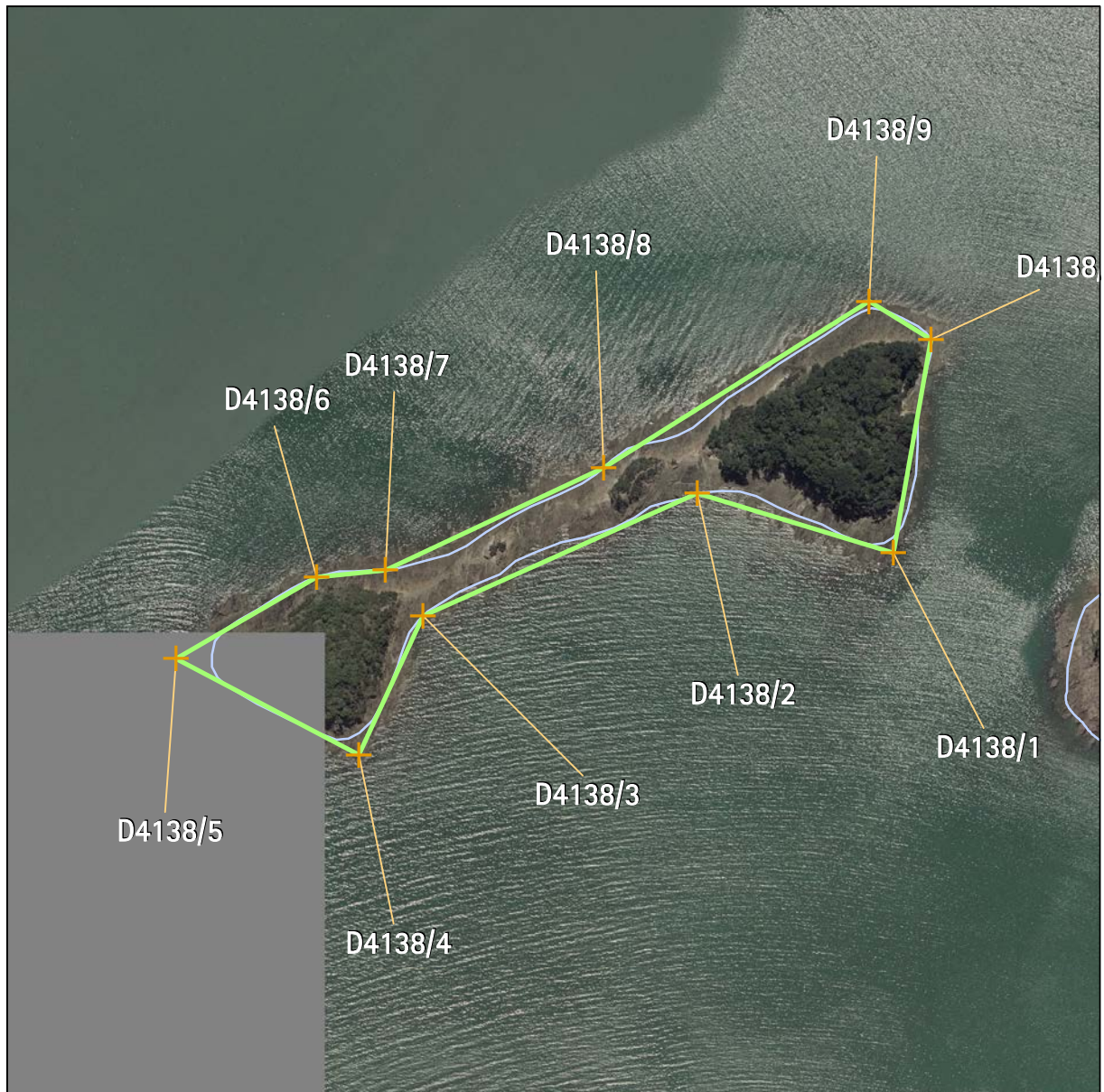


Geology	Name of item: Fossil Bay fossils and rock sequence		Map reference: 7-2
UID: 4017 Island: Waiheke Feature type: Fragile exposures of geological material	Surrounds protected: N Description of item: Fossil gravel beach and sedimentary rock assemblages, type locality for 6 molluscan fossils.	Reasons: A, B, C, D, E, F, G, I, J Category: A	 1:3,000 0 7.5 15 30 metres
GPS points (NZMG)		Digitised points (NZMG)	
1) G4017/1 E2687922.32, N6487666.30 2) G4017/2 E2687935.99, N6487490.39		1) D4017/1 E2687935.99, N6487490.39 2) D4017/2 E2687994.66, N6487564.35 3) D4017/3 E2687954.80, N6487644.40 4) D4017/4 E2687922.32, N6487666.29 5) D4017/5 E2687910.80, N6487691.63 6) D4017/6 E2687970.44, N6487704.02 7) D4017/7 E2687994.65, N6487673.62 8) D4017/8 E2688039.03, N6487602.35 9) D4017/9 E2688039.50, N6487600.93 10) D4017/10 E2688029.34, N6487597.54 11) D4017/11 E2688042.97, N6487569.57 12) D4017/12 E2688037.51, N6487497.51 13) D4017/13 E2688022.38, N6487469.75 14) D4017/14 E2687941.94, N6487391.87 15) D4017/15 E2687904.99, N6487405.75 16) D4017/16 E2687943.92, N6487474.48	

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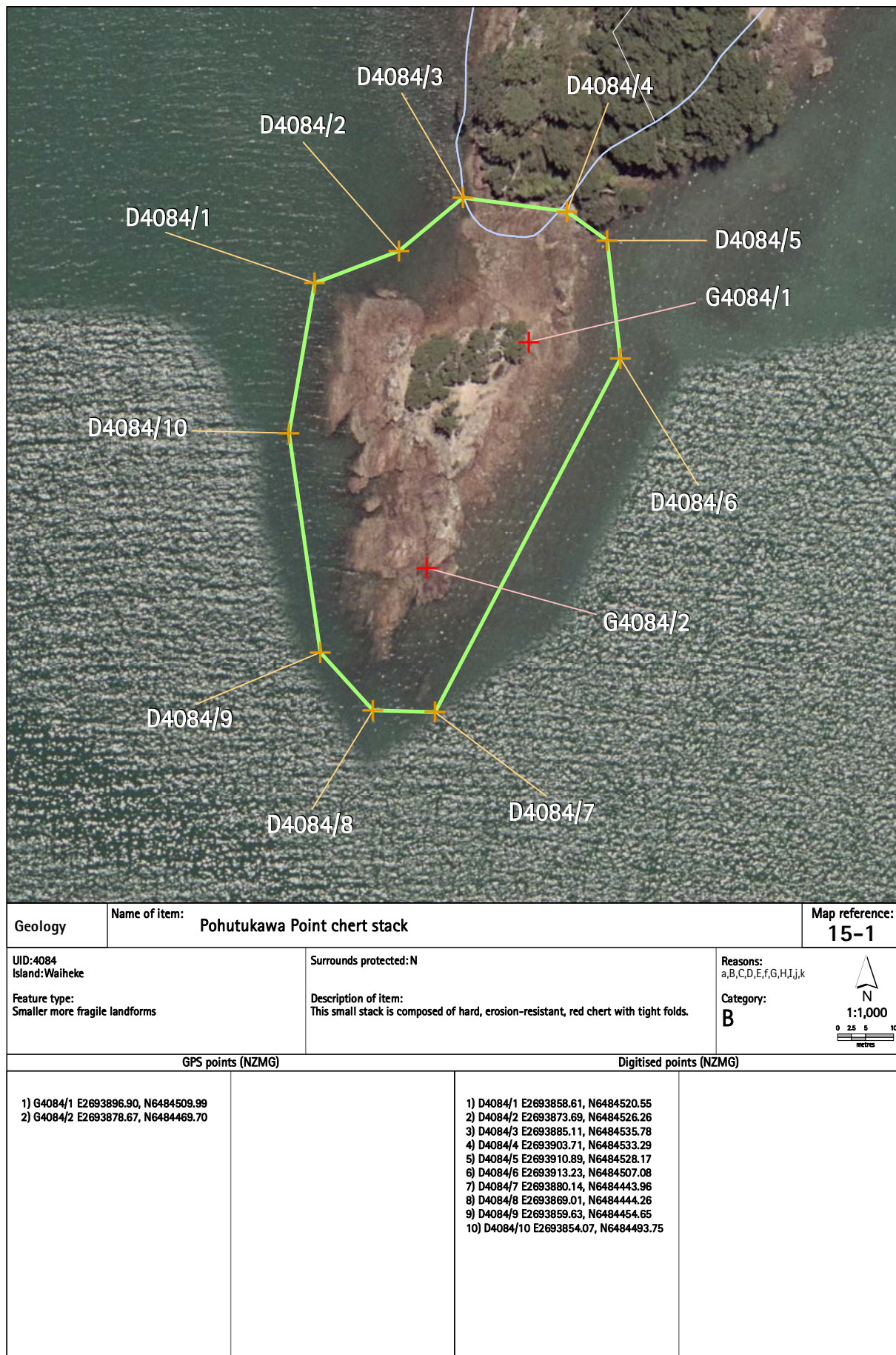


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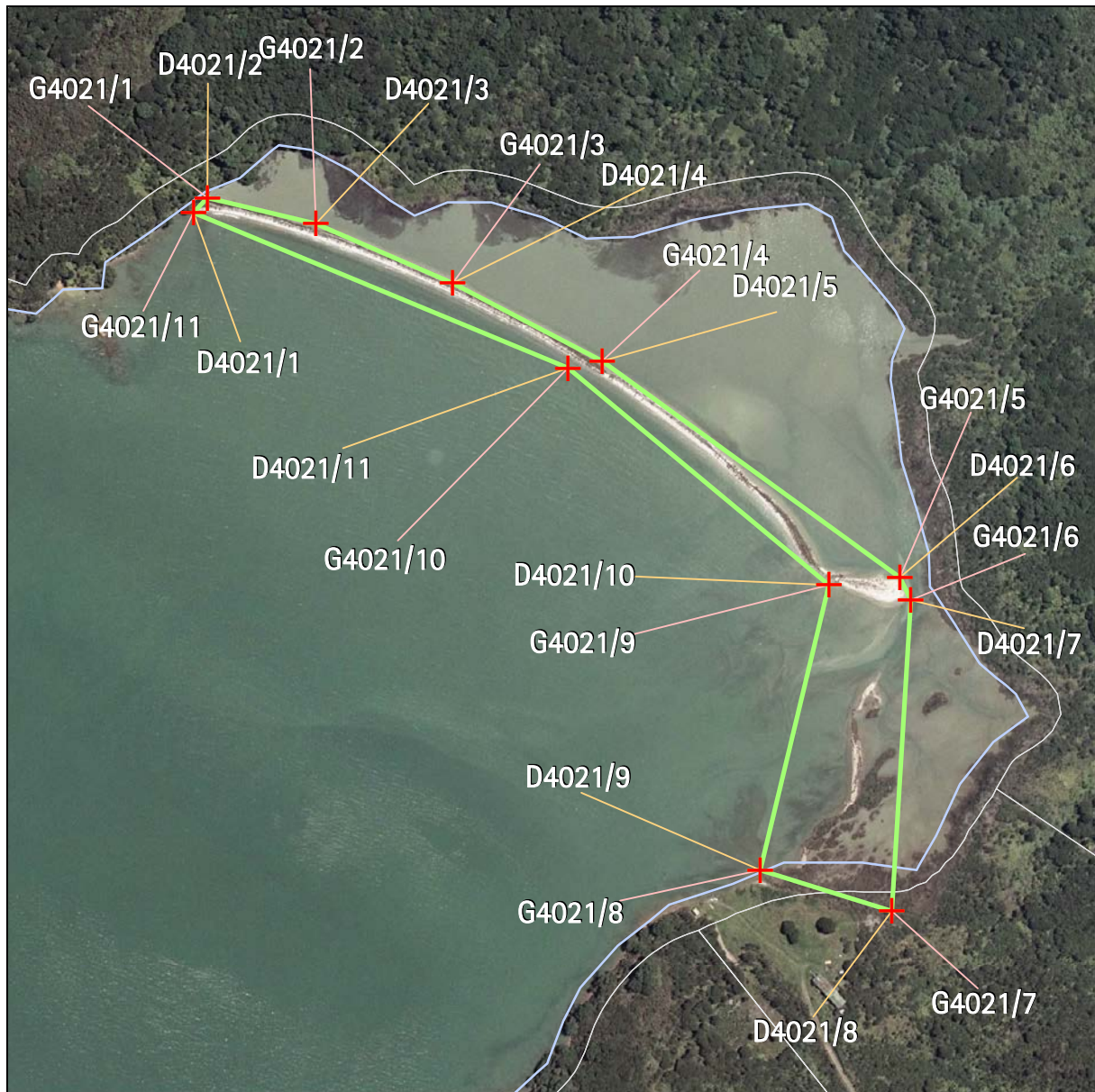


Geology	Name of item: The Sisters double top hat island		Map reference: 9-1
UID: 4138 Island: Waiheke Feature type: Smaller more fragile landforms	Surrounds protected: N Description of item: Best example of a double top hat island in the region and an excellent example of a high tide rock platform.	Reasons: A, B, D, e, f, G, H, I, j, k Category: B	
GPS points (NZMG)		Digitised points (NZMG)	
		1) D4138/1 E2691749.53, N6485535.02 2) D4138/2 E2691663.25, N6485561.05 3) D4138/3 E2691542.92, N6485507.10 4) D4138/4 E2691514.68, N6485446.30 5) D4138/5 E2691434.40, N6485488.51 6) D4138/6 E2691496.02, N6485524.27 7) D4138/7 E2691526.50, N6485527.27 8) D4138/8 E2691622.08, N6485572.34 9) D4138/9 E2691738.93, N6485645.34 10) D4138/10 E2691765.98, N6485628.72	

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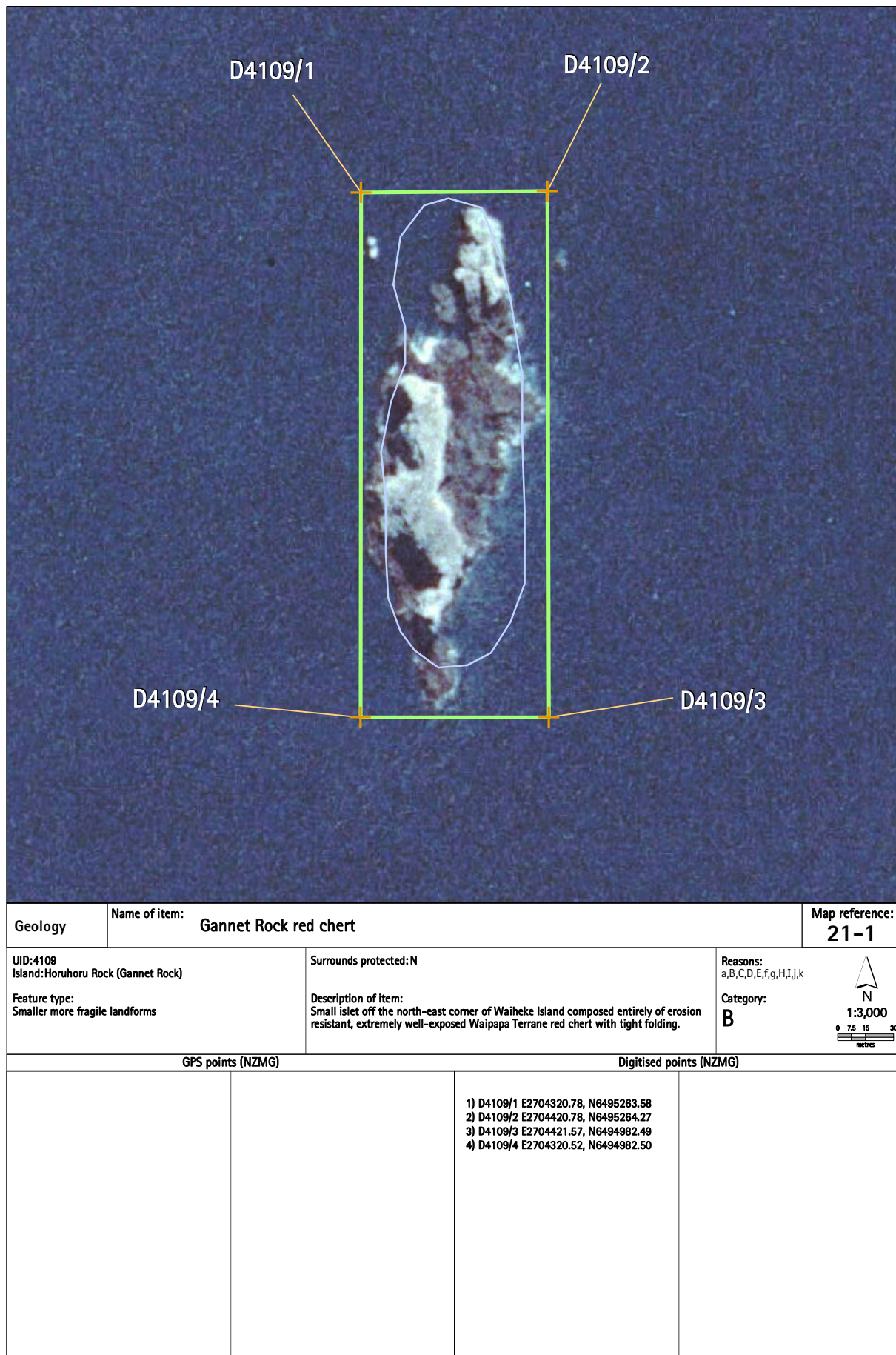


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Geology	Name of item: Te Matuku Bay shell spit and tidal marsh		Map reference: 20-1
UID: 4021 Island: Waiheke Feature type: Dynamic landforms and features	Surrounds protected: N Description of item: Exemplary example of an intertidal-high tidal spit. The spit is an 800m long, 5-10m wide ribbon of sand and cockle shells that has built up in just the last few thousand years.	Reasons: A, B, C, D, F, G, H, I, J Category: B	
GPS points (NZMG)		Digitised points (NZMG)	
1) G4021/1 E2700692.40, N6482850.22 2) G4021/2 E2700772.07, N6482830.89 3) G4021/3 E2700872.18, N6482787.59 4) G4021/4 E2700981.85, N6482730.45 5) G4021/5 E2701200.63, N6482571.24 6) G4021/6 E2701208.55, N6482555.07 7) G4021/7 E2701194.40, N6482326.71 8) G4021/8 E2701097.95, N6482356.83 9) G4021/9 E2701148.52, N6482565.74 10) G4021/10 E2700956.93, N6482725.3 11) G4021/11 E2700682.02, N6482839.2		1) D4021/1 E2700682.02, N6482839.29 2) D4021/2 E2700692.40, N6482850.21 3) D4021/3 E2700772.07, N6482830.89 4) D4021/4 E2700872.18, N6482787.59 5) D4021/5 E2700981.85, N6482730.45 6) D4021/6 E2701200.63, N6482571.24 7) D4021/7 E2701208.55, N6482555.07 8) D4021/8 E2701194.40, N6482326.71 9) D4021/9 E2701097.94, N6482356.83 10) D4021/10 E2701148.52, N6482565.74 11) D4021/11 E2700956.93, N6482725.38	

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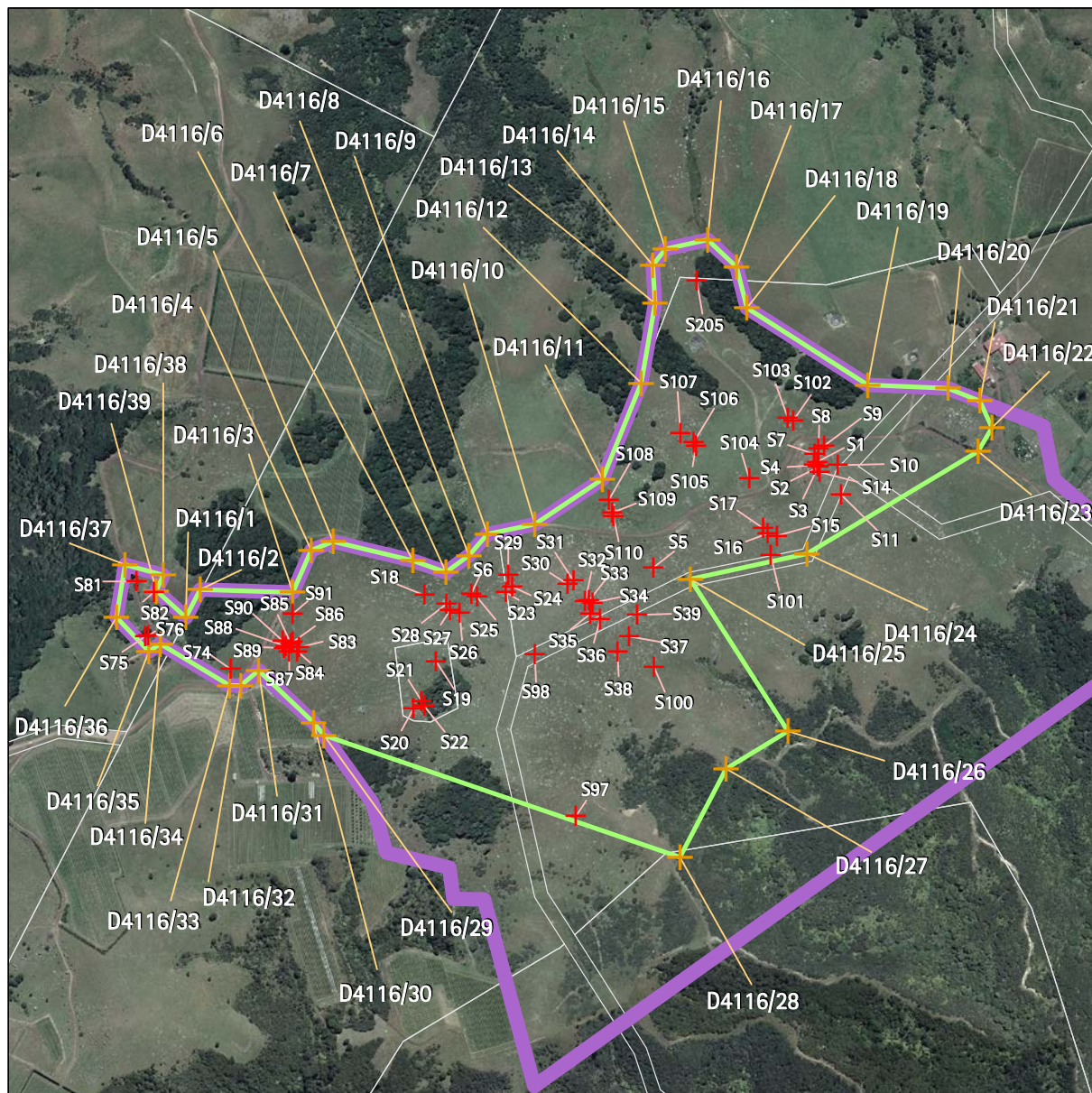
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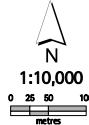


Geology	Name of item: Thumb Point tombolo		Map reference: 21-2
UID: 4141 Island: Waiheke Feature type: Smaller more fragile landforms	Surrounds protected: N Description of item: Supratidal tombolo - a rare example of a fully developed gravel tombolo linking a small island to the mainland.	Reasons: A, B, D, F, G, H, I, J Category: B	 1:3,000 metres
GPS points (NZMG)		Digitised points (NZMG)	
		1) D4141/1 E2704122.93, N6493169.53 2) D4141/2 E2704223.95, N6493108.23 3) D4141/3 E2704167.47, N6493035.05 4) D4141/4 E2704136.71, N6492910.58 5) D4141/5 E2703984.15, N6493048.00 6) D4141/6 E2704040.90, N6493072.75	

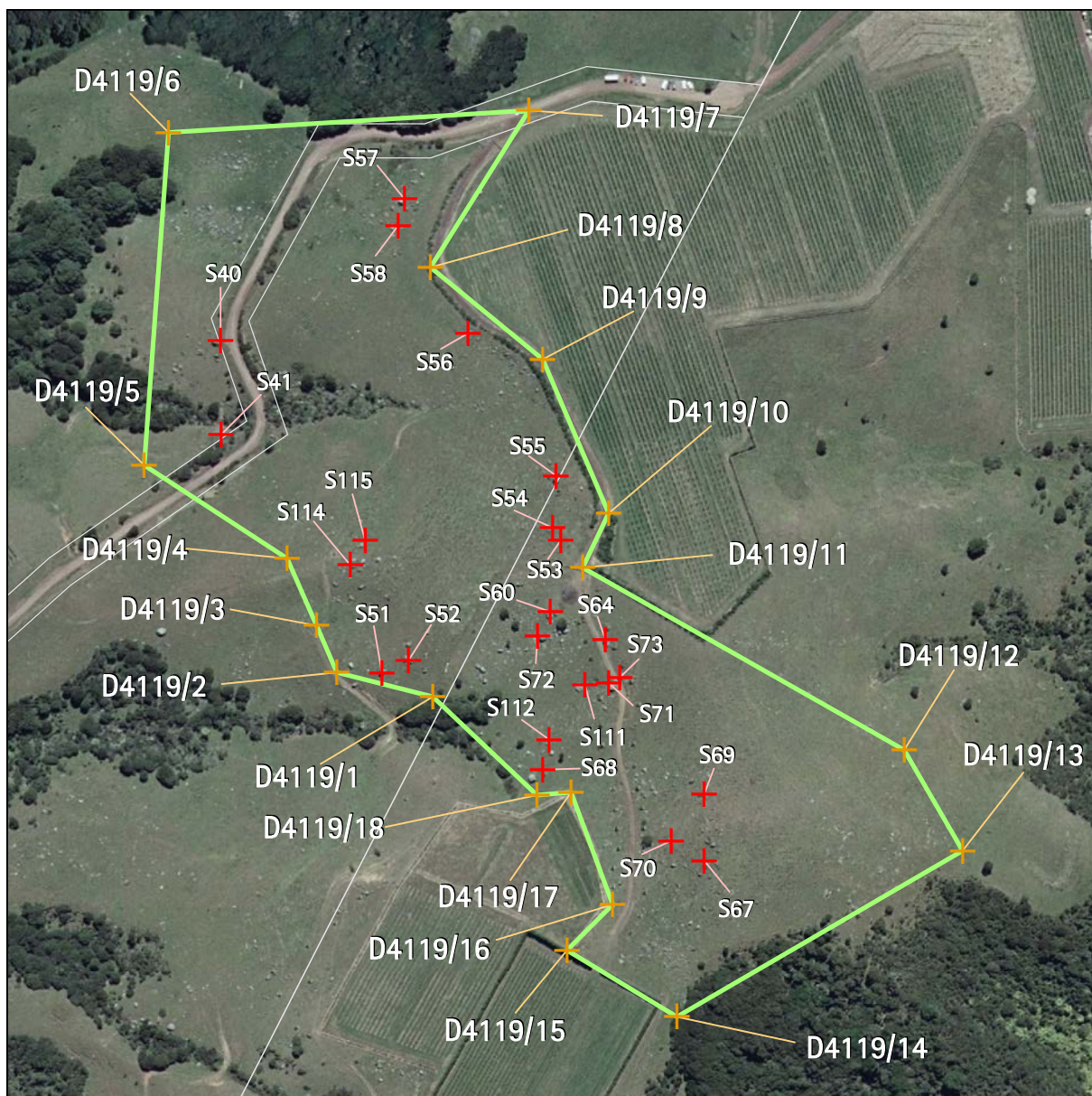
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Appendix 1e Schedule of geological items - inner islands



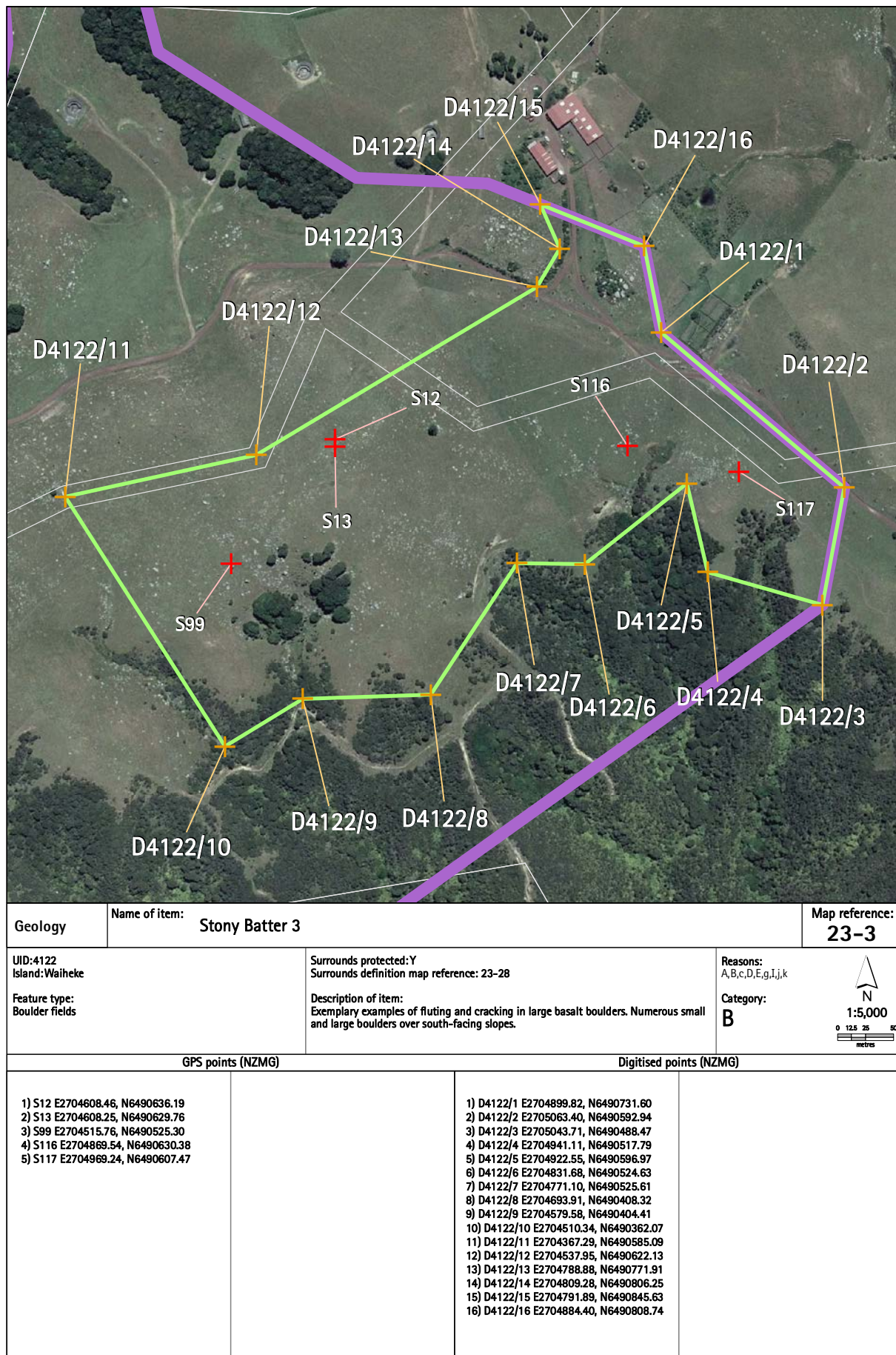
Geology	Name of item: Stony Batter 1	Map reference: 23-1
UID:4116 Island:Waiheke Feature type: Boulder fields	Surrounds protected:Y Surrounds definition map reference: 23-28 Description of item: The most prominent area of the boulder field containing excellent examples of the full range of significant boulders	Reasons: A,B,C,D,E,G,H,I,J,K Category: A 
GPS points (NZMG)		Digitised points (NZMG)
1) S1 E2704553.60, N6490756.32 2) S2 E2704554.13, N6490748.61 3) S3 E2704555.42, N6490749.15 4) S4 E2704548.44, N6490751.41 5) S5 E2704313.10, N6490601.37 6) S6 E2704046.59, N6490563.64 7) S7 E2704549.23, N6490767.85 8) S8 E2704554.91, N6490774.93 9) S9 E2704564.06, N6490780.16 10) S10 E2704583.43, N6490751.39 11) S11 E2704588.44, N6490708.43 12) S14 E2704586.93, N6490741.24 13) S15 E2704494.44, N6490647.92 14) S16 E2704480.80, N6490651.54 15) S17 E2704474.34, N6490659.38 16) S18 E2703977.33, N6490560.98 17) S19 E2703994.90, N6490464.76 18) S20 E2703961.32, N6490394.97 19) S21 E2703973.66, N6490405.57 20) S22 E2703977.32, N6490398.15 21) S23 E2704097.28, N6490564.91 22) S24 E2704106.52, N6490573.62 23) S25 E2704054.79, N6490558.22 24) S26 E2704029.18, N6490535.11	25) S27 E2704015.28, N6490538.78 26) S28 E2704009.49, N6490547.89 27) S29 E2704100.40, N6490590.48 28) S30 E2704187.71, N6490576.89 29) S31 E2704196.11, N6490581.75 30) S32 E2704213.20, N6490552.67 31) S33 E2704219.23, N6490553.52 32) S34 E2704224.48, N6490549.77 33) S35 E2704220.81, N6490534.12 34) S36 E2704235.05, N6490526.16 35) S37 E2704277.56, N6490501.22 36) S38 E2704260.14, N6490478.26 37) S39 E2704288.99, N6490532.40 38) S74 E2703694.19, N6490452.49 39) S75 E2703568.67, N6490501.19 40) S76 E2703572.39, N6490501.86 41) S81 E2703556.03, N6490581.40 42) S82 E2703580.97, N6490566.45 43) S83 E2703793.95, N6490485.06 44) S84 E2703791.33, N6490479.11 45) S85 E2703781.78, N6490490.25 46) S86 E2703784.82, N6490492.03 47) S87 E2703779.77, N6490477.86 48) S88 E2703774.10, N6490486.25	1) D4116/1 E2703628.24, N6490528.75 2) D4116/2 E2703649.12, N6490569.10 3) D4116/3 E2703784.56, N6490564.86 4) D4116/4 E2703811.74, N6490626.62 5) D4116/5 E2703843.60, N6490639.72 6) D4116/6 E2703960.59, N6490612.21 7) D4116/7 E2704009.04, N6490595.18 8) D4116/8 E2704042.65, N6490619.64 9) D4116/9 E2704069.80, N6490650.58 10) D4116/10 E2704139.62, N6490665.33 11) D4116/11 E2704238.57, N6490730.88 12) D4116/12 E2704295.24, N6490871.63 13) D4116/13 E2704315.76, N6490988.92 14) D4116/14 E2704311.85, N6491044.64 15) D4116/15 E2704330.42, N6491068.10 16) D4116/16 E2704392.95, N6491081.78 17) D4116/17 E2704434.97, N6491041.71 18) D4116/18 E2704450.60, N6490982.08 19) D4116/19 E2704627.46, N6490869.68 20) D4116/20 E2704744.60, N6490864.48 21) D4116/21 E2704791.89, N6490845.63 22) D4116/22 E2704809.28, N6490806.25 23) D4116/23 E2704788.88, N6490771.91 24) D4116/24 E2704537.95, N6490622.13

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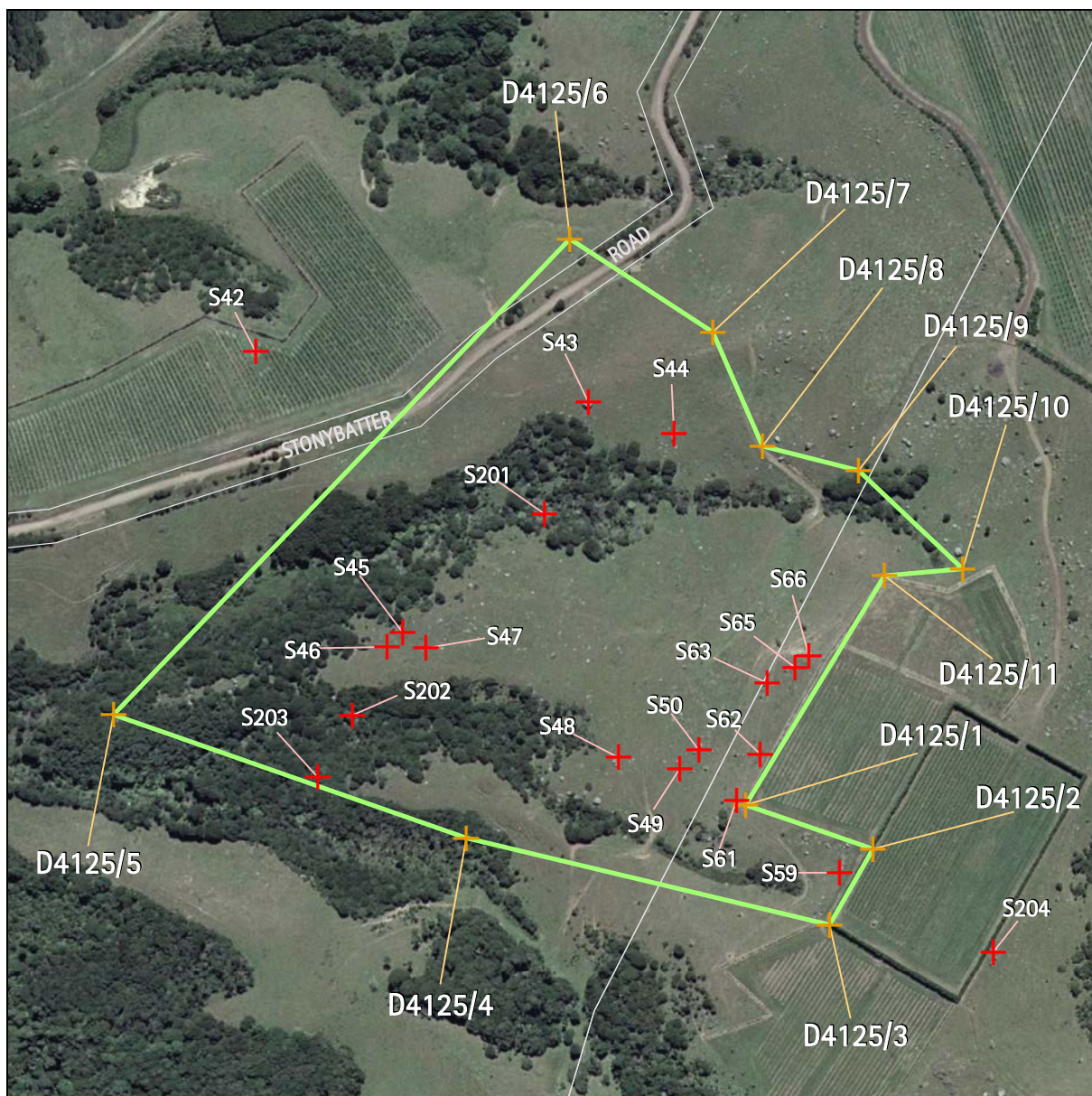


Geology	Name of item: Stony Batter 2	Map reference: 23-2
UID: 4119 Island: Waiheke Feature type: Boulder fields	Surrounds protected: N Description of item: Highly visible boulder field containing significant boulders showing excellent examples of fluting and cracking	Reasons: A, B, C, D, E, G, I, J, K Category: A
GPS points (NZMG)		Digitised points (NZMG)
1) S40 E2703225.09, N6490211.55 2) S41 E2703225.50, N6490156.34 3) S51 E2703319.61, N6490016.81 4) S52 E2703335.26, N6490024.13 5) S53 E2703424.28, N6490094.29 6) S54 E2703419.53, N6490101.82 7) S55 E2703421.47, N6490132.23 8) S56 E2703370.18, N6490215.60 9) S57 E2703332.80, N6490294.05 10) S58 E2703329.00, N6490278.55 11) S60 E2703418.28, N6490052.71 12) S64 E2703450.36, N6490036.30 13) S67 E2703508.33, N6489906.88 14) S68 E2703413.94, N6489959.96 15) S69 E2703508.23, N6489945.47 16) S70 E2703488.94, N6489918.47 17) S71 E2703452.45, N6490010.91		1) D4119/1 E2703349.31, N6490002.65 2) D4119/2 E2703293.02, N6490016.86 3) D4119/3 E2703281.38, N6490044.52 4) D4119/4 E2703263.91, N6490083.82 5) D4119/5 E2703180.41, N6490138.17 6) D4119/6 E2703194.48, N6490332.95 7) D4119/7 E2703405.61, N6490345.85 8) D4119/8 E2703348.14, N6490254.33 9) D4119/9 E2703413.83, N6490200.36 10) D4119/10 E2703452.53, N6490110.01 11) D4119/11 E2703437.28, N6490078.33 12) D4119/12 E2703625.54, N6489971.47 13) D4119/13 E2703659.73, N6489912.52 14) D4119/14 E2703492.41, N6489815.50 15) D4119/15 E2703427.90, N6489854.22 16) D4119/16 E2703454.88, N6489881.20 17) D4119/17 E2703430.25, N6489946.91
		18) D4119/18 E2703410.41, N6489945.14

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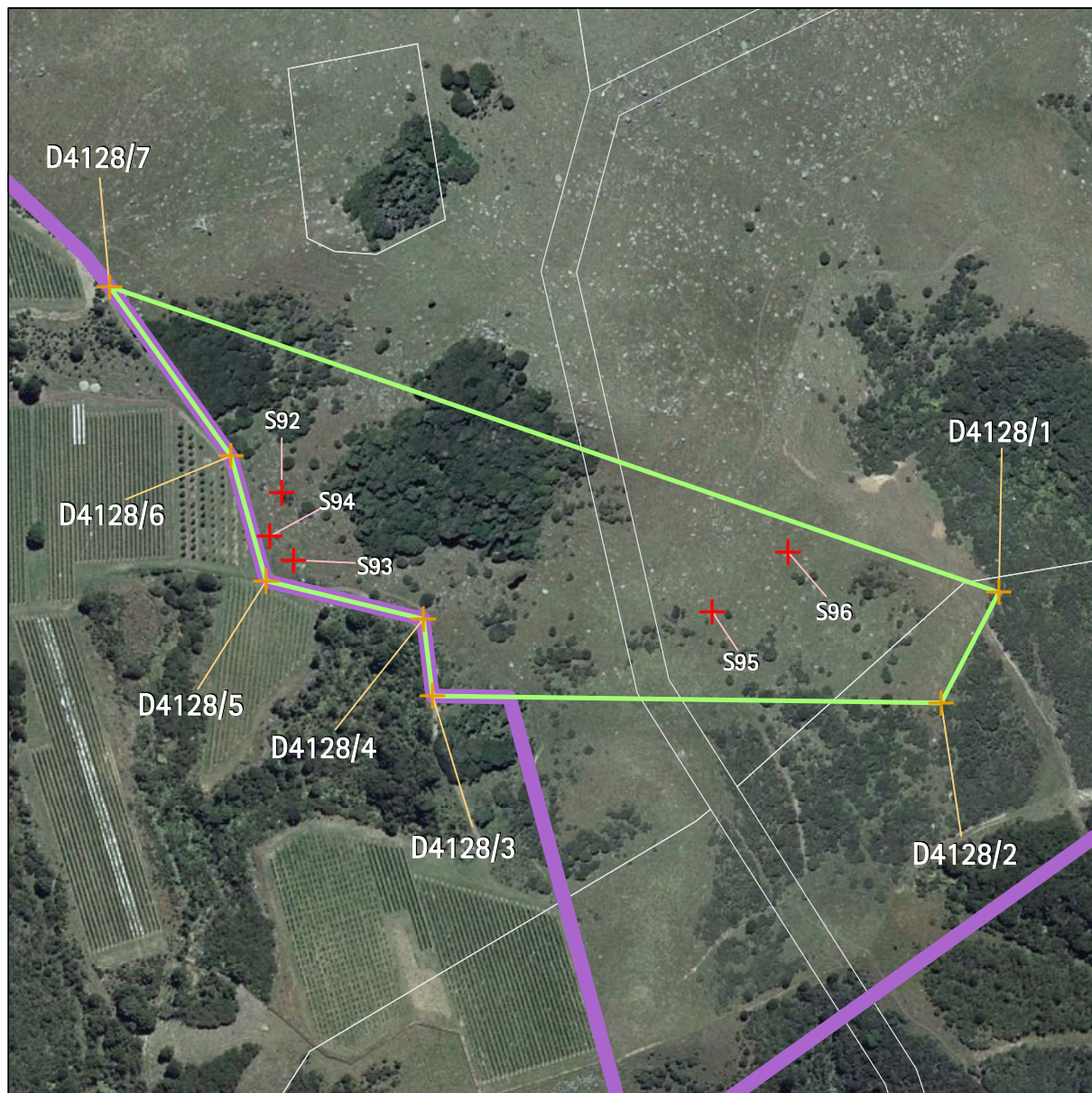
Refer to the disclaimer at the beginning of this appendix.



Geology	Name of item: Stony Batter 4	Map reference: 23-4
UID:4125 Island: Waiheke Feature type: Boulder fields	Surrounds protected: N Description of item: Contiguous lower part of the second most important area of boulders, with numerous significant boulders showing variously developed fluting and cracking. A few have native vegetation still on top of them.	Reasons: A, B, C, D, E, H, I, J, K Category: B
GPS points (NZMG)		Digitised points (NZMG)
1) S42 E2702996.29, N6490072.03 2) S43 E2703191.28, N6490042.68 3) S44 E2703241.32, N6490023.99 4) S45 E2703082.50, N6489907.69 5) S46 E2703073.32, N6489899.25 6) S47 E2703096.04, N6489898.79 7) S48 E2703208.83, N6489834.56 8) S49 E2703244.59, N6489828.36 9) S50 E2703255.75, N6489839.08 10) S59 E2703338.25, N6489767.19 11) S61 E2703278.05, N6489809.57 12) S62 E2703291.83, N6489836.74 13) S63 E2703295.79, N6489878.47 14) S65 E2703312.19, N6489887.34 15) S66 E2703320.22, N6489894.10 16) S201 E2703165.39, N6489977.37 17) S202 E2703052.88, N6489859.37		1) D4125/1 E2703283.19, N6489806.99 2) D4125/2 E2703357.67, N6489781.18 3) D4125/3 E2703332.45, N6489736.59 4) D4125/4 E2703119.56, N6489787.63 5) D4125/5 E2702913.12, N6489859.79 6) D4125/6 E2703180.41, N6490138.17 7) D4125/7 E2703263.91, N6490083.82 8) D4125/8 E2703293.02, N6490016.86 9) D4125/9 E2703349.31, N6490002.65 10) D4125/10 E2703410.41, N6489945.14 11) D4125/11 E2703364.56, N6489941.05

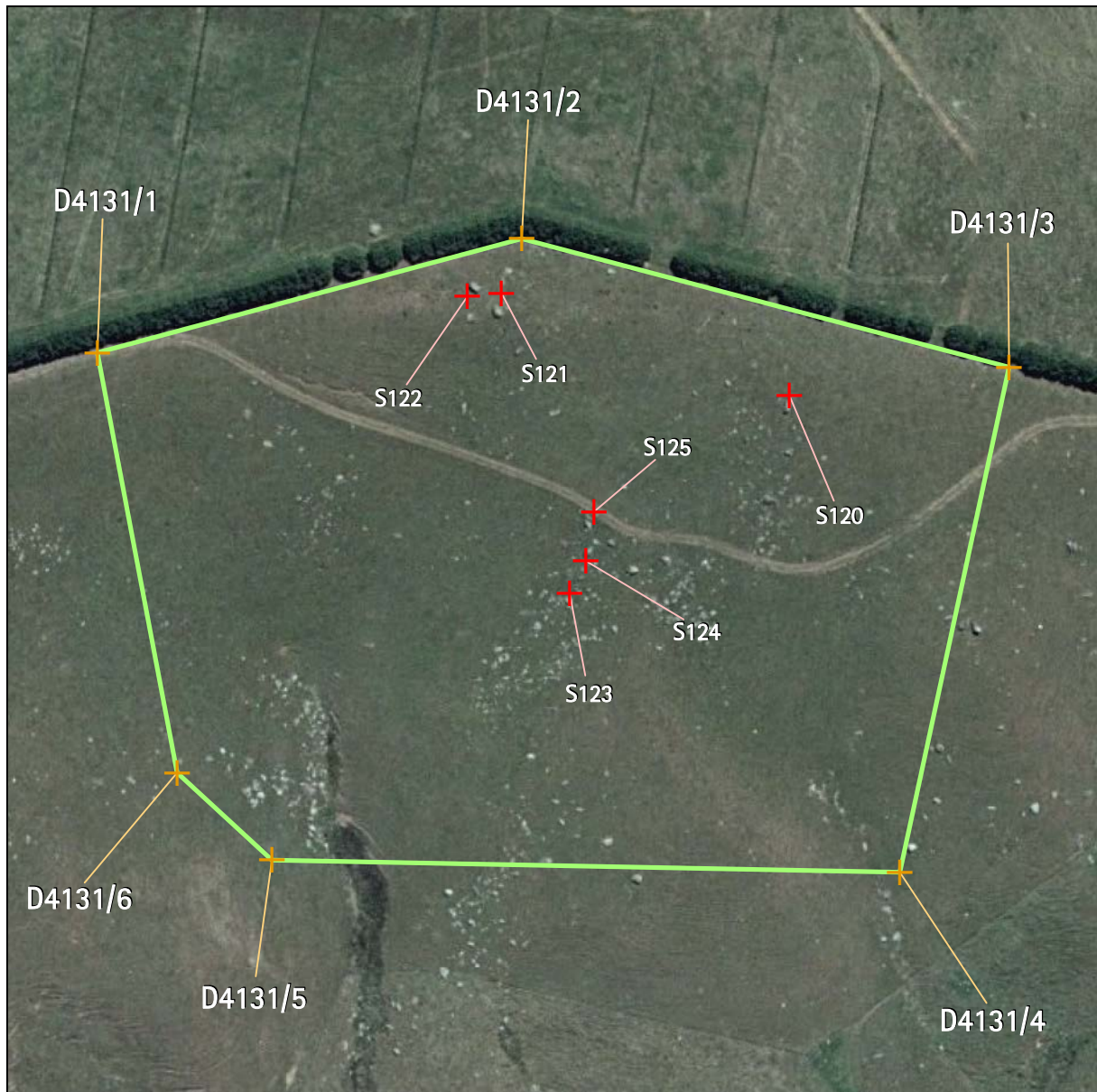
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Appendix 1e Schedule of geological items - inner islands



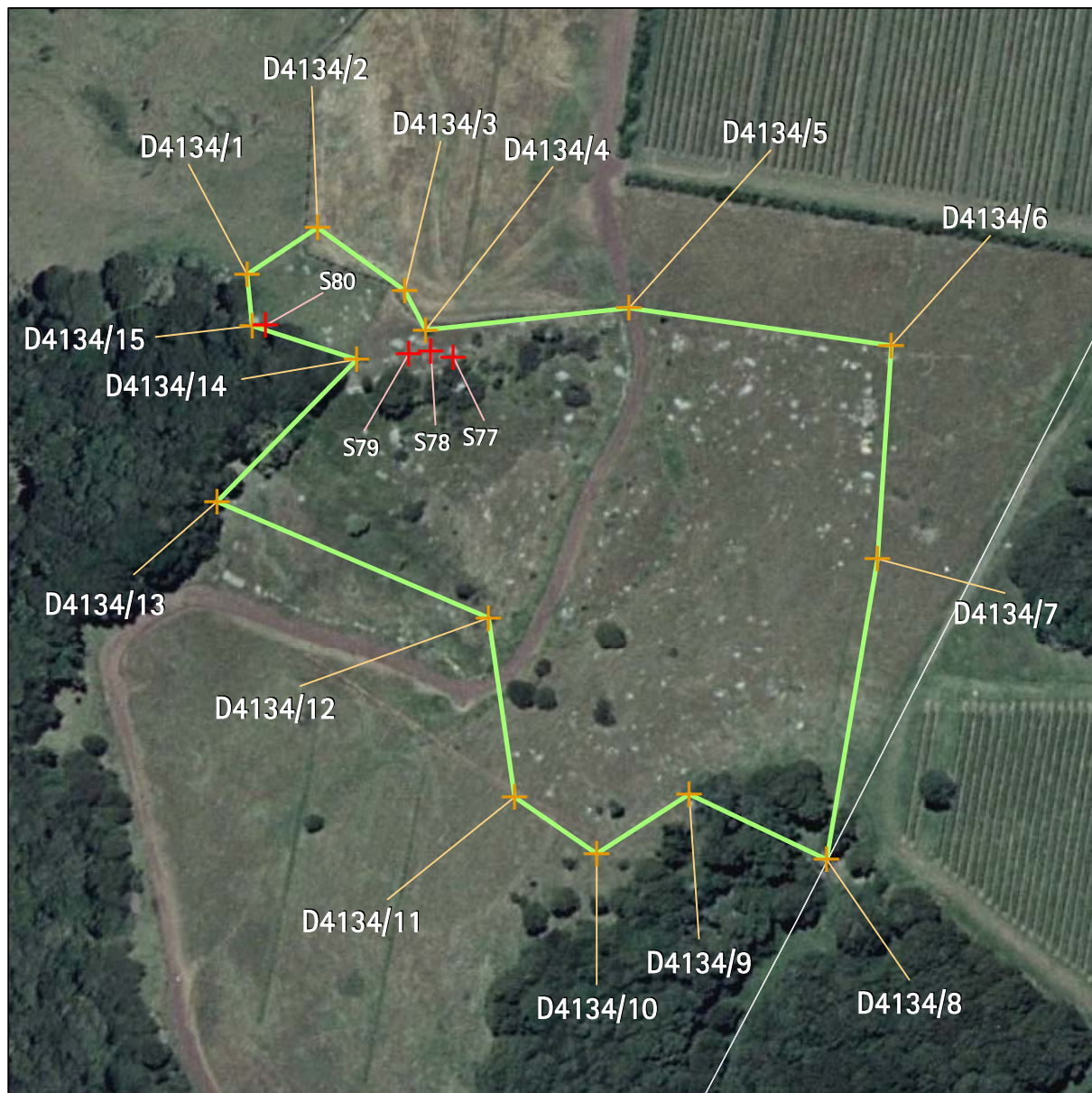
Geology	Name of item: Stony Batter 5	Map reference: 23-5
UID:4128 Island:Waiheke Feature type: Boulder fields	Surrounds protected:Y Surrounds definition map reference: 23-28 Description of item: Contiguous lower part of the most important area of boulders. A good example of boulder field containing numerous boulders, including identified significant boulders.	Reasons: A,B,c,d,e,h,i,k Category: B
GPS points (NZMG)		Digitised points (NZMG)
1) S92 E2703931.20, N6490235.79 2) S93 E2703937.80, N6490195.99 3) S94 E2703924.00, N6490210.04 4) S95 E2704183.45, N6490165.50 5) S96 E2704227.72, N6490200.87		1) D4128/1 E2704351.64, N6490177.07 2) D4128/2 E2704317.79, N6490112.50 3) D4128/3 E2704019.57, N6490116.34 4) D4128/4 E2704014.21, N6490161.72 5) D4128/5 E2703921.74, N6490183.98 6) D4128/6 E2703901.37, N6490257.05 7) D4128/7 E2703829.94, N6490356.37

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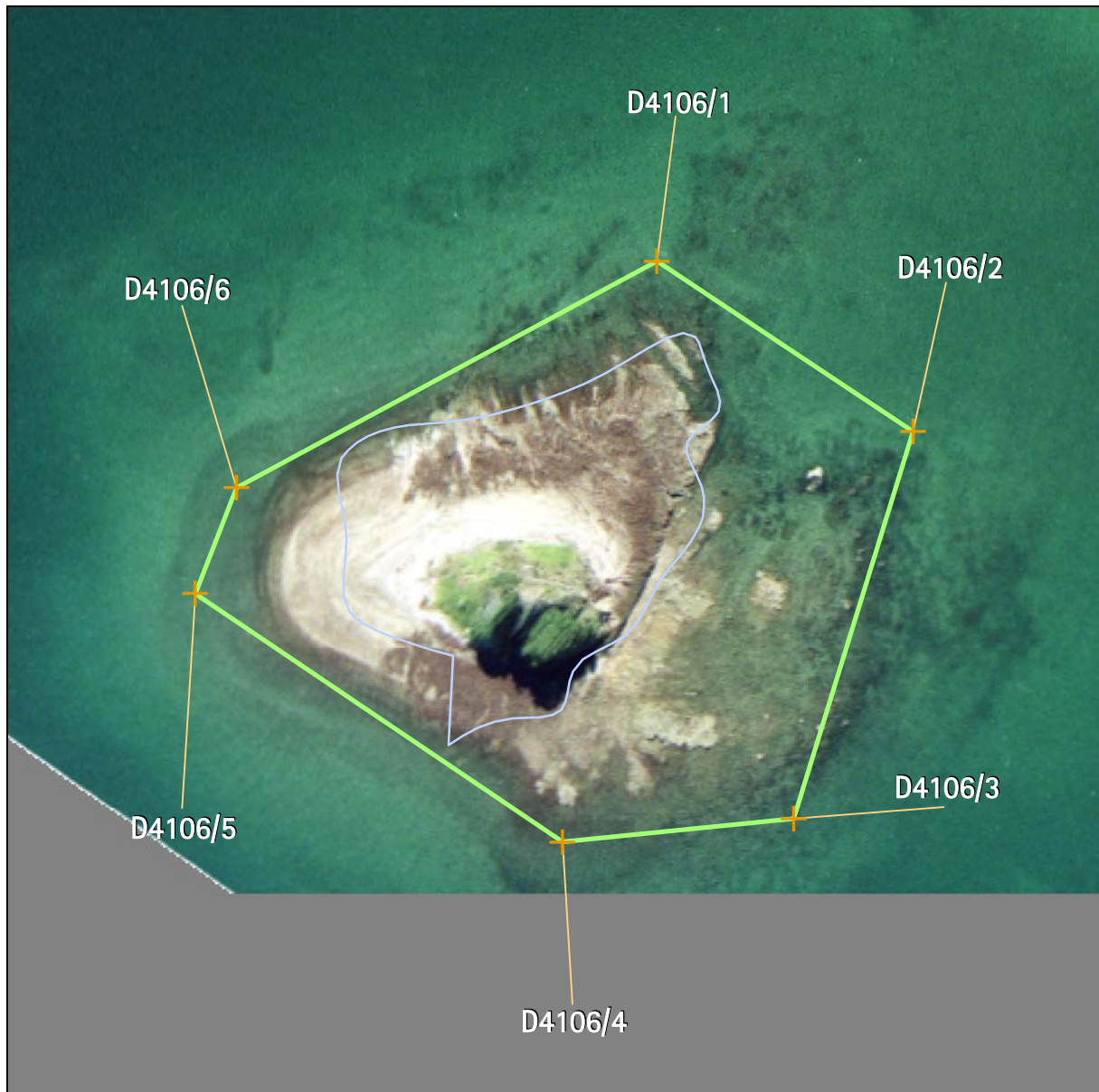
Geology	Name of item: Stony Batter 6		Map reference: 23-6
UID:4131 Island: Waiheke Feature type: Boulder fields	Surrounds protected: N Description of item: Six significant boulders scattered throughout this area with moderately well-developed fluting.	Reasons: A, B, d, e, i, k Category: B	
GPS points (NZMG)		Digitised points (NZMG)	
1) S120 E2705231.21, N6491112.17 2) S121 E2705146.88, N6491142.18 3) S122 E2705136.88, N6491141.17 4) S123 E2705166.80, N6491054.23 5) S124 E2705171.65, N6491063.72 6) S125 E2705173.92, N6491078.26		1) D4131/1 E2705028.47, N6491124.80 2) D4131/2 E2705152.80, N6491158.20 3) D4131/3 E2705295.60, N6491120.53 4) D4131/4 E2705263.63, N6490972.71 5) D4131/5 E2705079.62, N6490976.26 6) D4131/6 E2705051.92, N6491001.84	

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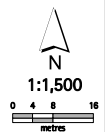


Geology	Name of item: Stony Batter 7	Map reference: 23-7
UID:4134 Island:Waiheke Feature type: Boulder fields	Surrounds protected:N Description of item: Good sample of boulder field. Five boulders with fluting and one with iconic fluting and original vegetation growing on top of it.	Reasons: A, B, d, E Category: B
GPS points (NZMG)		Digitised points (NZMG)
1) S77 E2703604.44, N6490836.48 2) S78 E2703597.80, N6490838.27 3) S79 E2703591.41, N6490837.40 4) S80 E2703549.44, N6490845.83		1) D4134/1 E2703543.93, N6490860.70 2) D4134/2 E2703564.68, N6490874.45 3) D4134/3 E2703590.27, N6490855.88 4) D4134/4 E2703596.29, N6490844.34 5) D4134/5 E2703655.86, N6490850.81 6) D4134/6 E2703732.92, N6490839.87 7) D4134/7 E2703728.75, N6490777.37 8) D4134/8 E2703713.89, N6490689.18 9) D4134/9 E2703673.57, N6490708.32 10) D4134/10 E2703646.46, N6490690.92 11) D4134/11 E2703622.38, N6490707.58 12) D4134/12 E2703614.85, N6490760.01 13) D4134/13 E2703535.07, N6490794.04 14) D4134/14 E2703576.21, N6490835.80 15) D4134/15 E2703545.49, N6490845.60

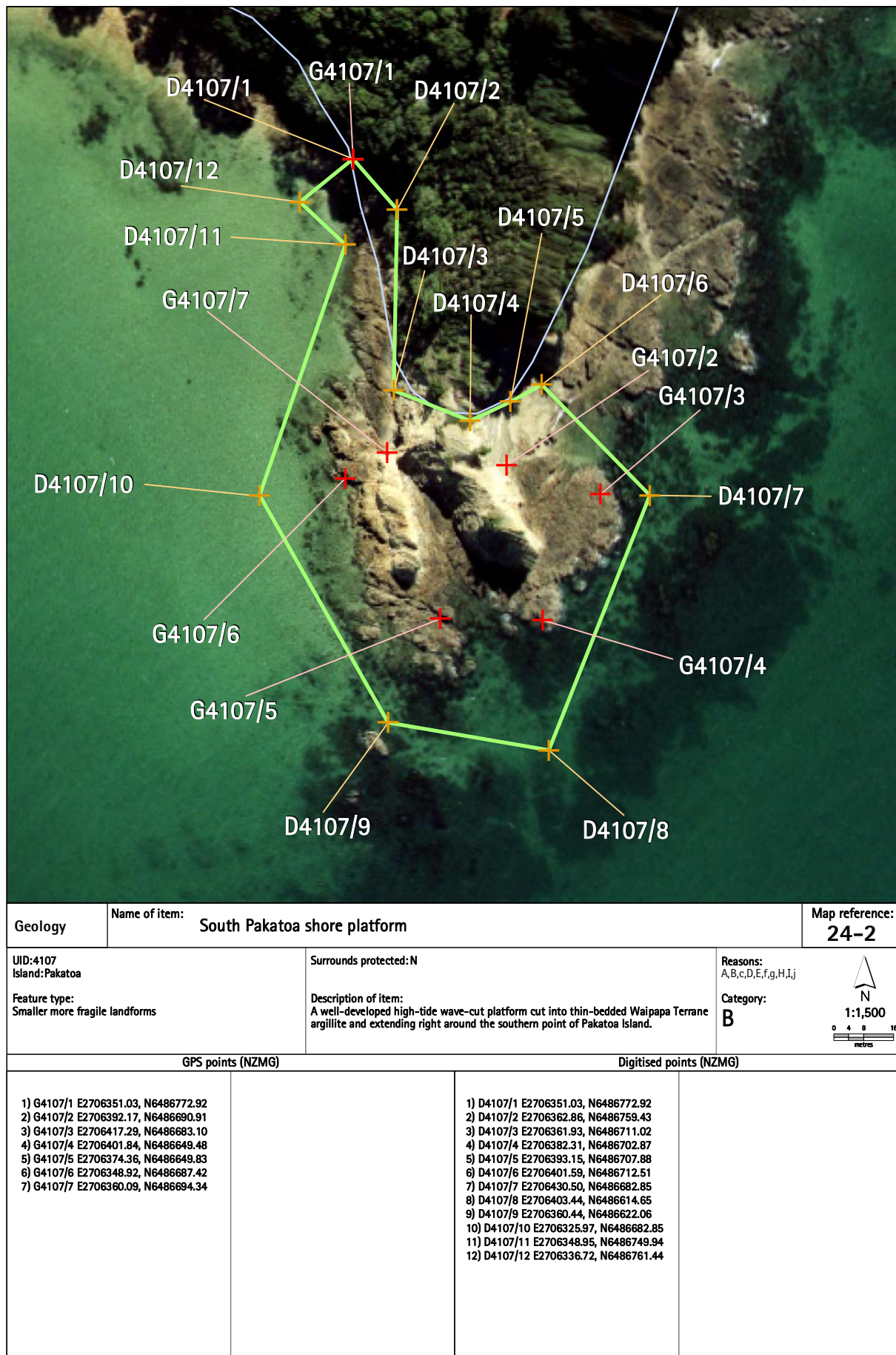
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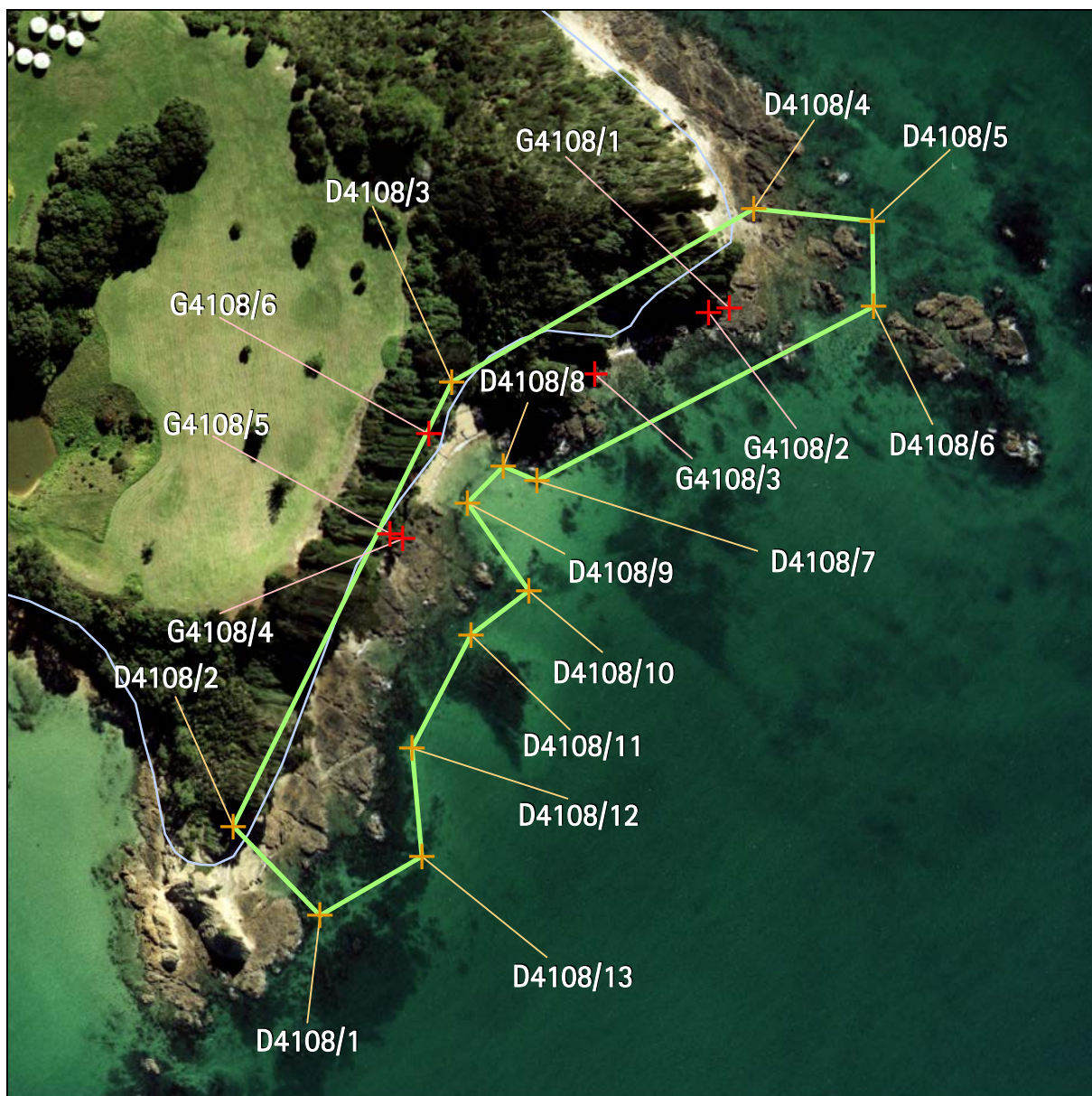
Geology	Name of item: Frenchmans Cap	Map reference: 24-1
UID:4106 Island: Frenchmans Cap (Kahakaha) Feature type: Smaller more fragile landforms	Surrounds protected: N Description of item: A rare, exceptionally well-developed top hat island with wide intertidal rock platform.	Reasons: A, B, D, F, G, H, I, J, K Category: B
GPS points (NZMG)		Digitised points (NZMG)
		1) D4106/1 E2705391.42, N6486388.84 2) D4106/2 E2705447.52, N6486351.53 3) D4106/3 E2705421.43, N6486266.54 4) D4106/4 E2705370.67, N6486261.49 5) D4106/5 E2705290.16, N6486315.91 6) D4106/6 E2705299.14, N6486339.19



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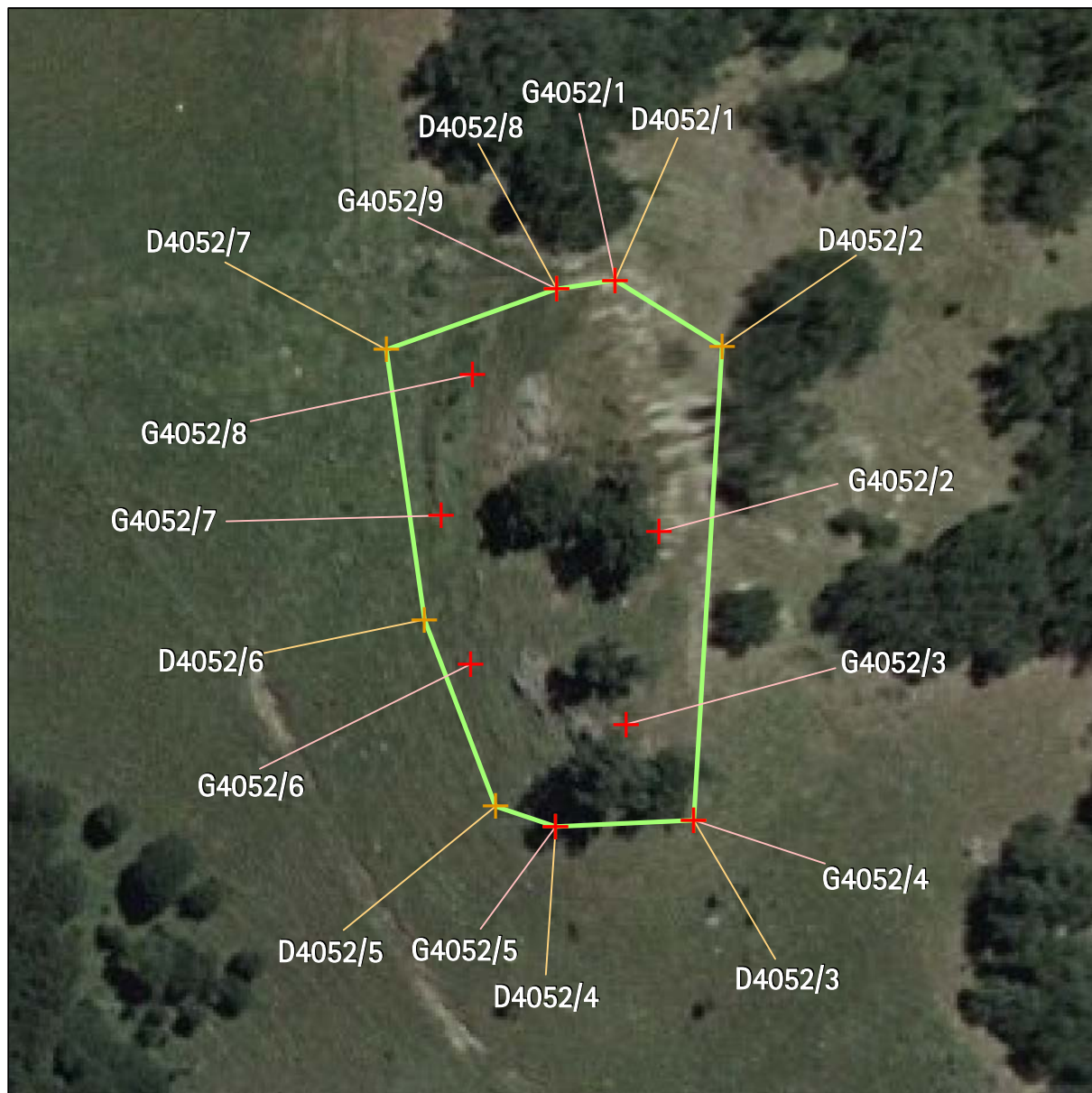


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Geology	Name of item: East Pakatoa broken formation	Map reference: 24-3
UID: 4108 Island: Pakatoa Feature type: Exposures of geological material	Surrounds protected: N Description of item: Fresh and continuous 300m exposure of broken formation in Waipapa Terrane argillite and greywacke with intense deformation and a wide variety of structural features.	Reasons: A, B, C, D, E, f, g, H, I, j Category: B
GPS points (NZMG)		Digitised points (NZMG)
1) G4108/1 E2706610.55, N6486949.36 2) G4108/2 E2706601.44, N6486947.54 3) G4108/3 E2706551.36, N6486920.47 4) G4108/4 E2706466.86, N6486848.22 5) G4108/5 E2706461.25, N6486850.40 6) G4108/6 E2706478.33, N6486894.09		1) D4108/1 E2706430.50, N6486682.85 2) D4108/2 E2706392.37, N6486722.02 3) D4108/3 E2706488.59, N6486917.15 4) D4108/4 E2706621.07, N6486993.13 5) D4108/5 E2706673.32, N6486987.67 6) D4108/6 E2706673.91, N6486950.15 7) D4108/7 E2706525.98, N6486873.72 8) D4108/8 E2706511.05, N6486880.01 9) D4108/9 E2706495.36, N6486863.94 10) D4108/10 E2706522.44, N6486825.40 11) D4108/11 E2706496.86, N6486805.89 12) D4108/12 E2706470.97, N6486756.24 13) D4108/13 E2706475.29, N6486708.70

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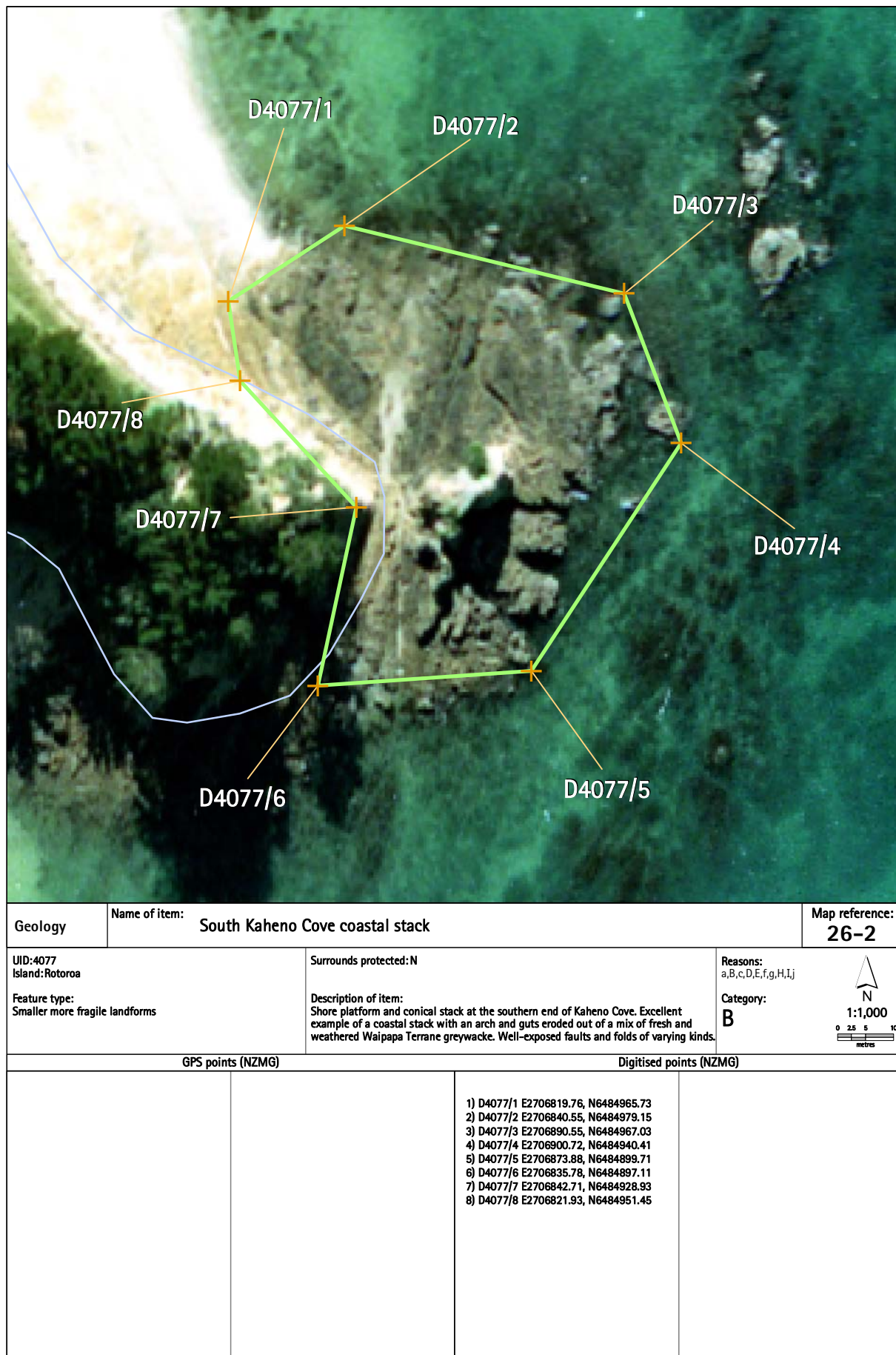
Geology	Name of item: Fort Hill andesite breccia outcrop	Map reference: 24-4
UID:4052 Island:Waiheke Feature type: Large landforms	Surrounds protected:N Description of item: Small cliff-top hill at the east end of Waiheke with distinctive steep-sided fort shape. It is composed of Miocene andesitic lahatic breccia which are exposed in the cliff on its eastern side associated with eruptions of the Coromandel volcanic arc.	Reasons: A,B,c,D,e,G,I Category: B
GPS points (NZMG)		Digitised points (NZMG)
1) G4052/1 E2706693.38, N6490866.43 2) G4052/2 E2706699.80, N6490829.58 3) G4052/3 E2706694.93, N6490801.38 4) G4052/4 E2706704.88, N6490787.34 5) G4052/5 E2706684.62, N6490786.34 6) G4052/6 E2706672.17, N6490810.20 7) G4052/7 E2706667.84, N6490831.99 8) G4052/8 E2706672.47, N6490852.63 9) G4052/9 E2706684.82, N6490865.16		1) D4052/1 E2706693.38, N6490866.43 2) D4052/2 E2706709.05, N6490856.65 3) D4052/3 E2706704.88, N6490787.33 4) D4052/4 E2706684.62, N6490786.34 5) D4052/5 E2706675.84, N6490789.35 6) D4052/6 E2706665.41, N6490816.69 7) D4052/7 E2706659.80, N6490856.23 8) D4052/8 E2706684.82, N6490865.16

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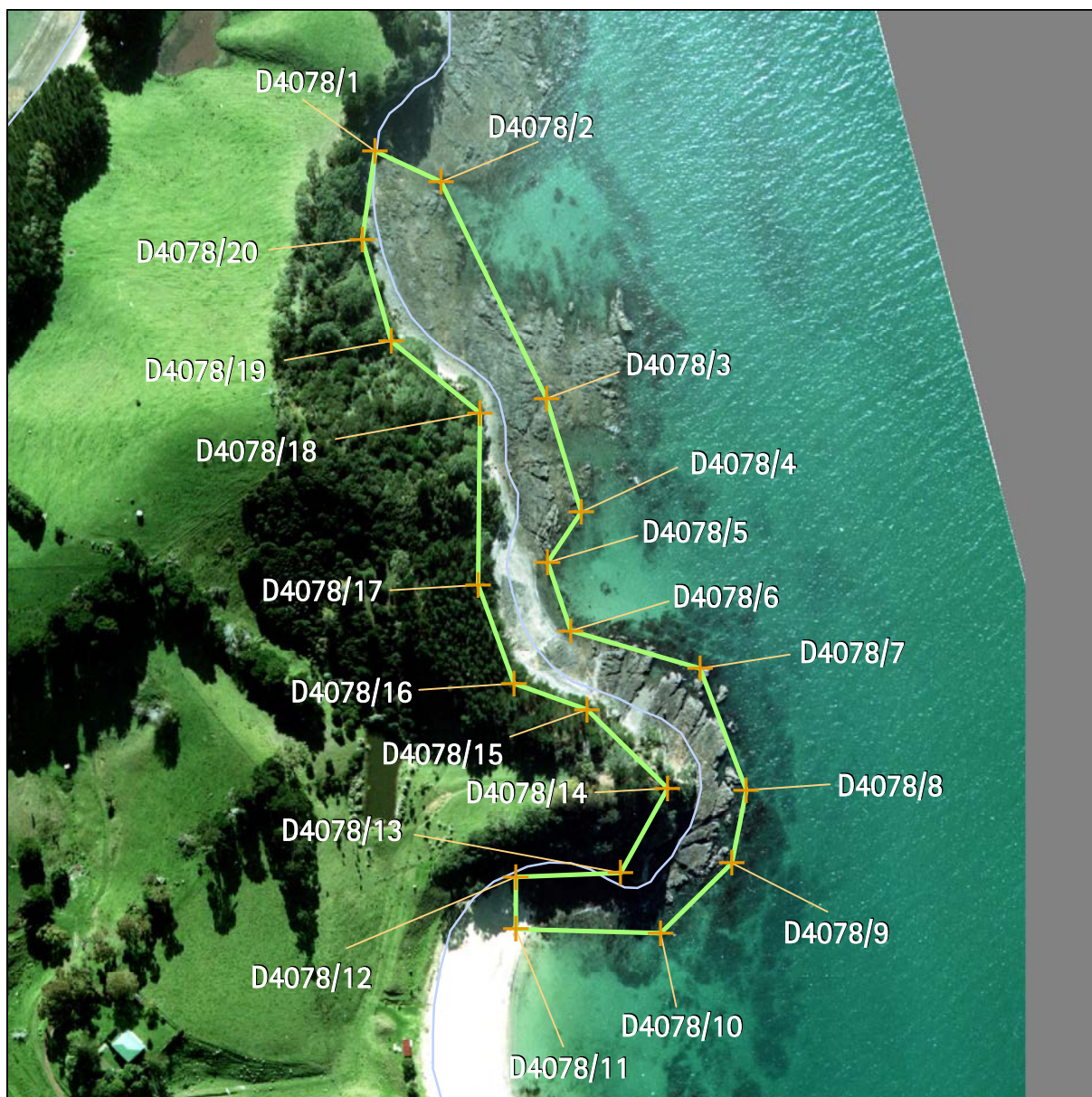


Geology	Name of item: West Rotoroa coastal headland		Map reference: 26-1
UID:4112 Island: Rotoroa Feature type: Smaller more fragile landforms	Surrounds protected: N Description of item: A superb example of a long, narrow, knife-edge-crested coastal point eroded into weathered Waipapa Terrane rocks extending south-west from the wharf. Includes incipient coastal stack formation.	Reasons: A, B, C, D, e, f, G, H, I, J Category: B	 1:2,500
GPS points (NZMG)		Digitised points (NZMG)	
		1) D4112/1 E2706028.19, N6484828.02 2) D4112/2 E2706089.21, N6484723.88 3) D4112/3 E2705885.49, N6484628.14 4) D4112/4 E2705840.48, N6484626.38 5) D4112/5 E2705812.63, N6484698.68	

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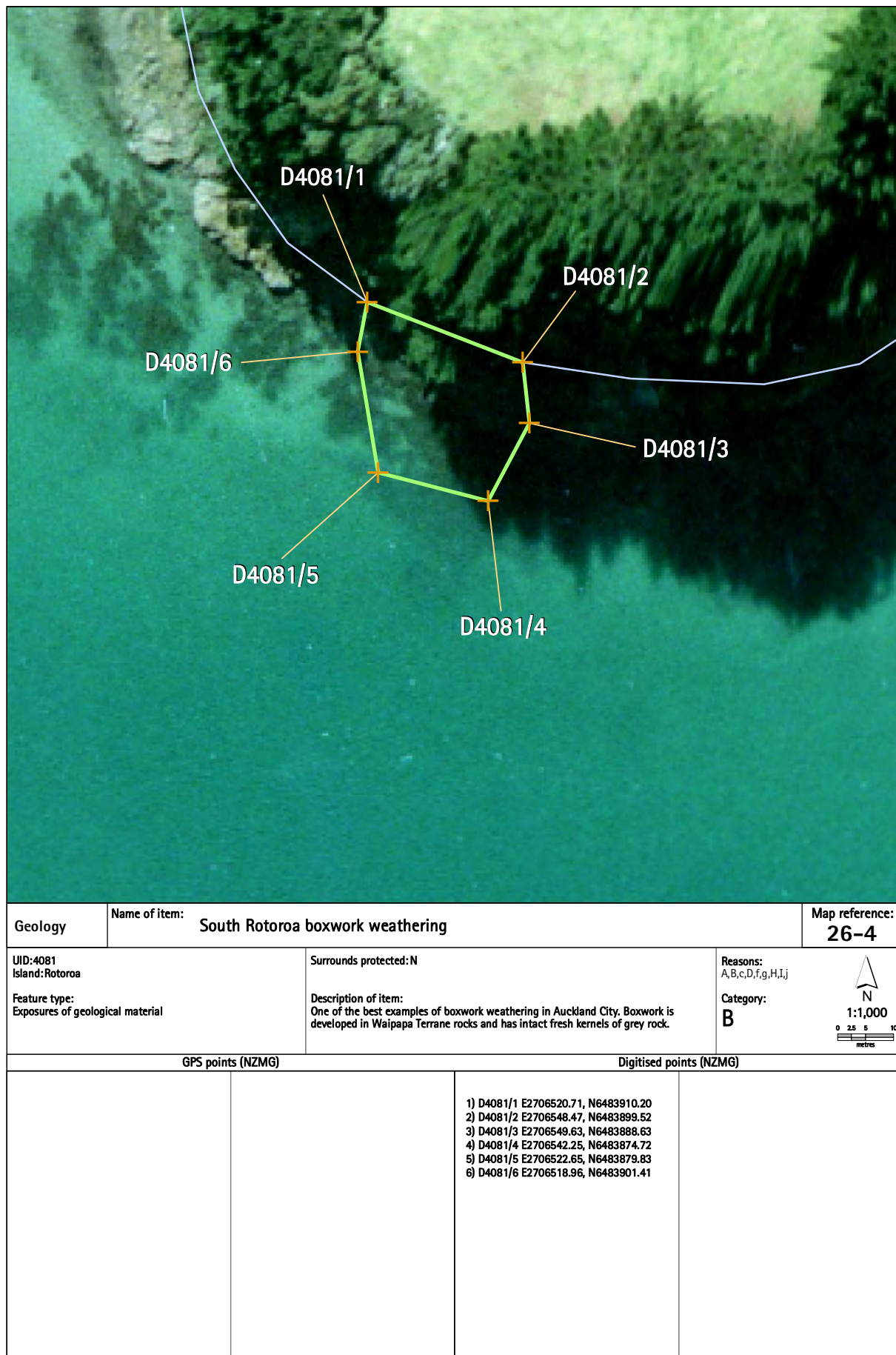


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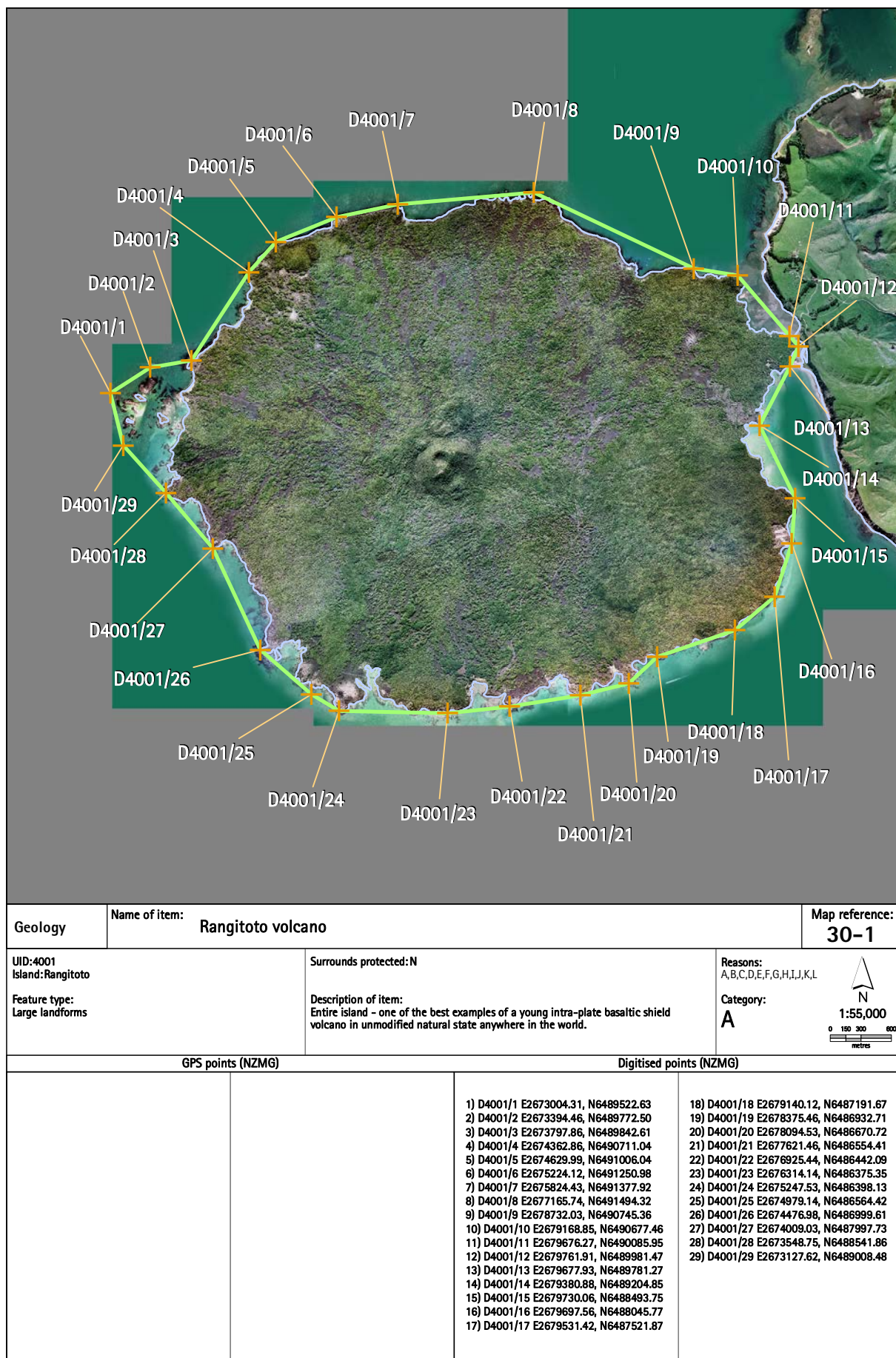


Geology	Name of item: North Kaheno Cove folded greywacke		Map reference: 26-3
UID: 4078 Island: Rotoroa Feature type: Exposures of geological material	Surrounds protected: N Description of item: Excellent exposures of multiple phased folding in fresh, thin-bedded argillite and greywacke (Waipapa Terrane) in 600m of shore platform and base of cliffs extending north from the north end of Kaheno Cove.	Reasons: A, B, C, D, e, f, g, H, I, J Category: B	 1:4,000
GPS points (NZMG)		Digitised points (NZMG)	
		1) D4078/1 E2706730.79, N6485567.95 2) D4078/2 E2706769.33, N6485549.99 3) D4078/3 E2706831.00, N6485423.10 4) D4078/4 E2706851.29, N6485356.81 5) D4078/5 E2706831.68, N6485327.38 6) D4078/6 E2706845.21, N6485287.47 7) D4078/7 E2706920.63, N6485265.48 8) D4078/8 E2706948.03, N6485194.12 9) D4078/9 E2706939.57, N6485151.50 10) D4078/10 E2706897.63, N6485110.57 11) D4078/11 E2706813.07, N6485112.94 12) D4078/12 E2706813.07, N6485143.38 13) D4078/13 E2706874.29, N6485145.75 14) D4078/14 E2706901.69, N6485195.13 15) D4078/15 E2706854.68, N6485241.13 16) D4078/16 E2706812.06, N6485256.35 17) D4078/17 E2706791.09, N6485314.19 18) D4078/18 E2706792.10, N6485414.65 19) D4078/19 E2706740.35, N6485456.59 20) D4078/20 E2706723.10, N6485516.46	

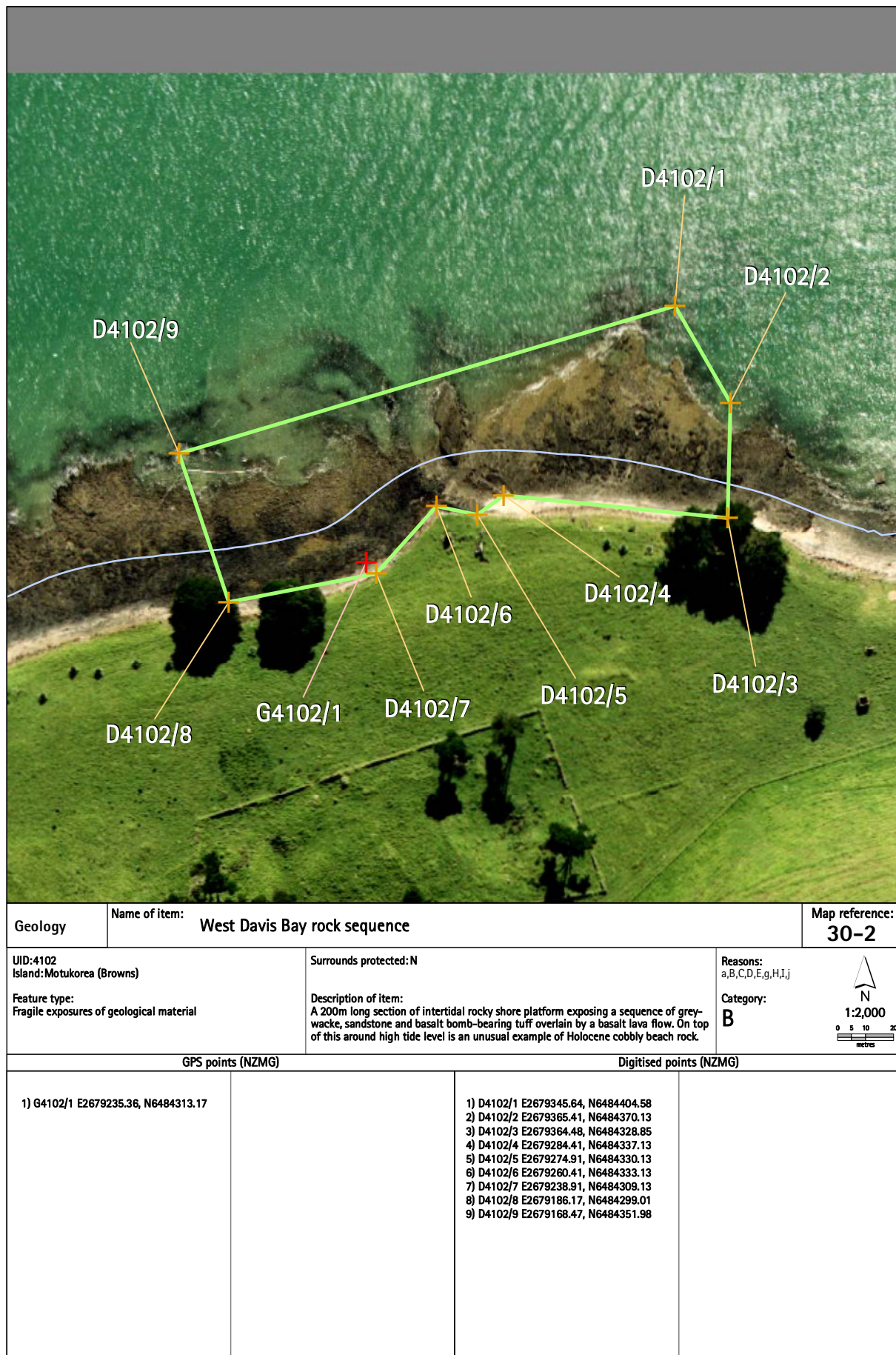
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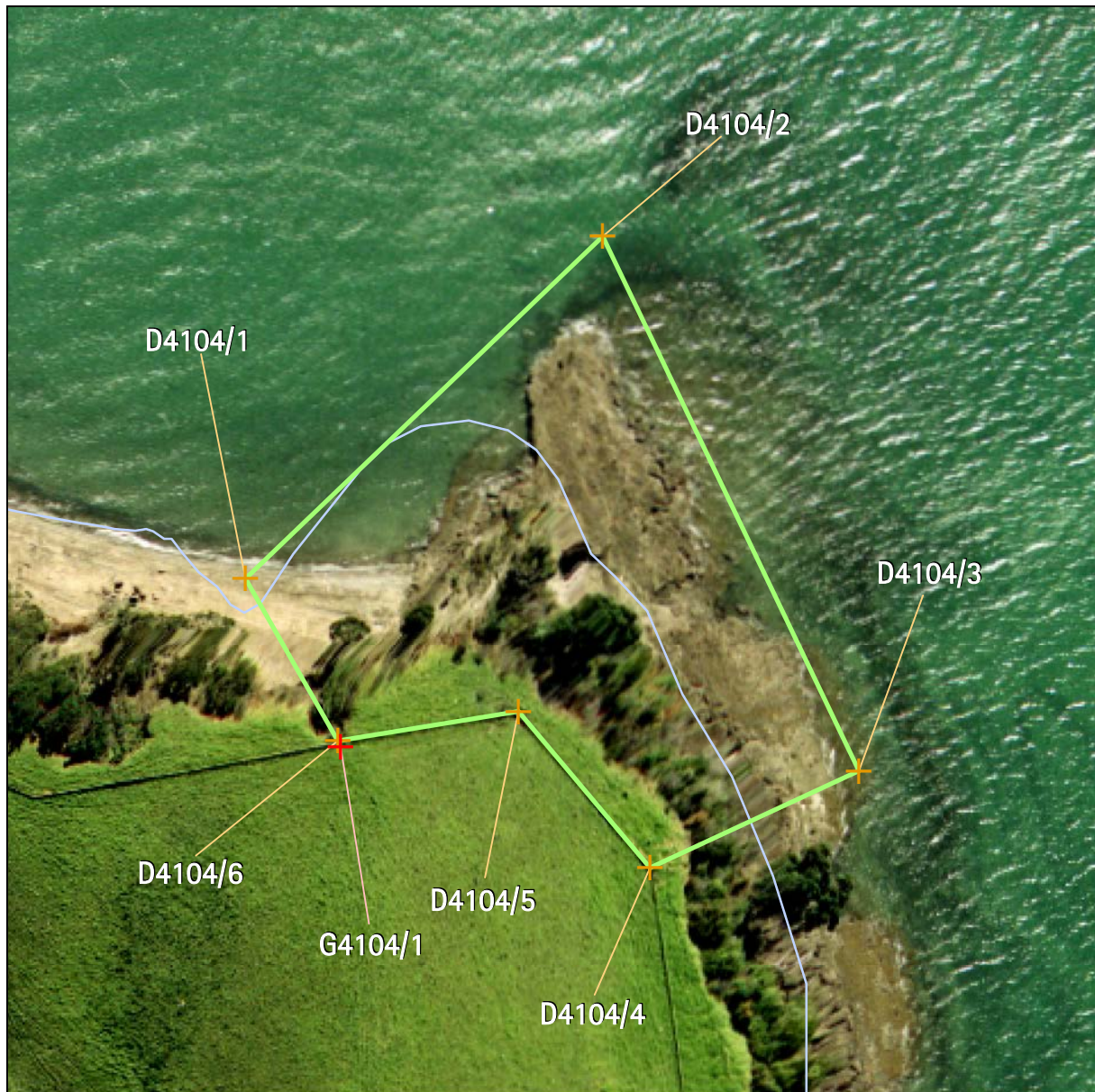
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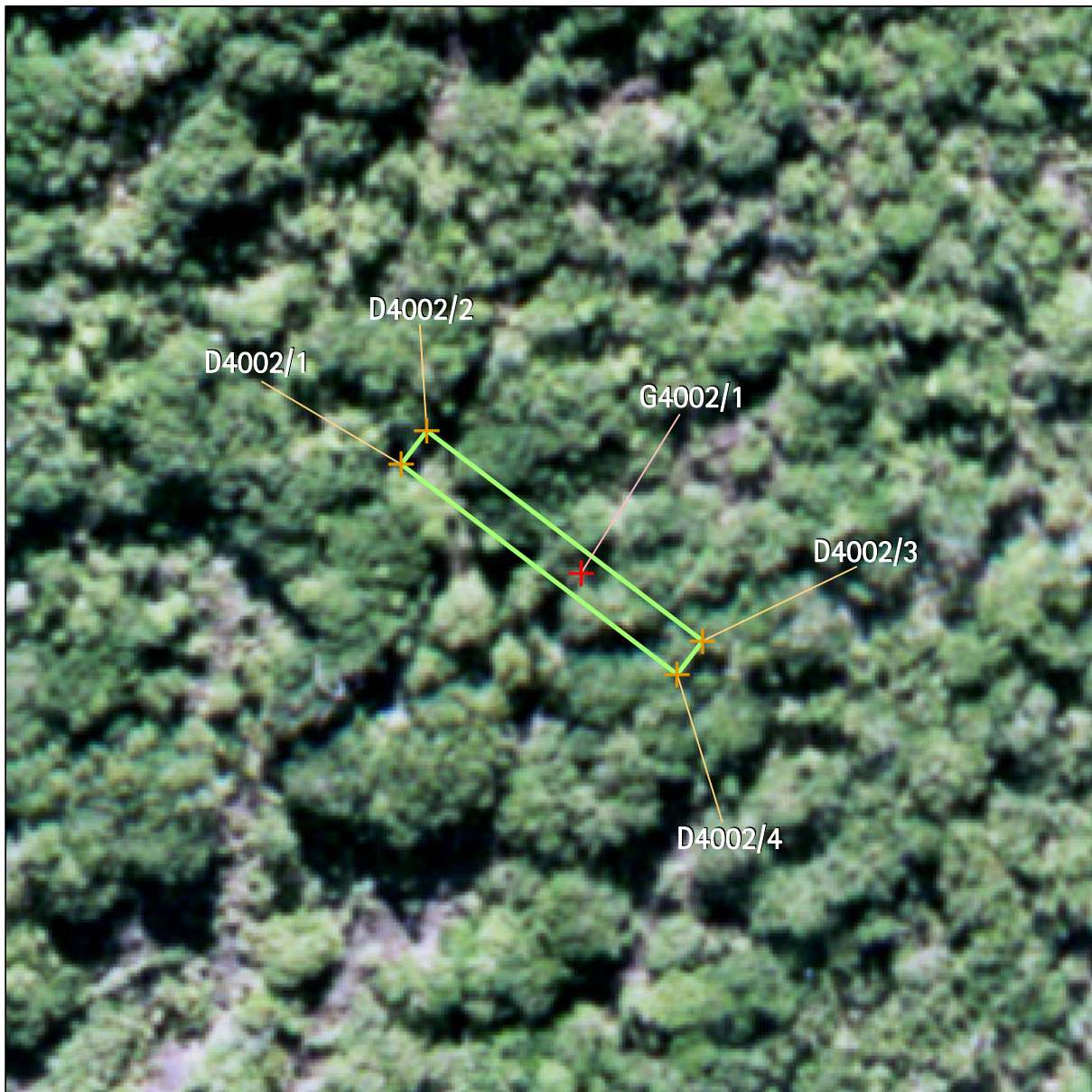


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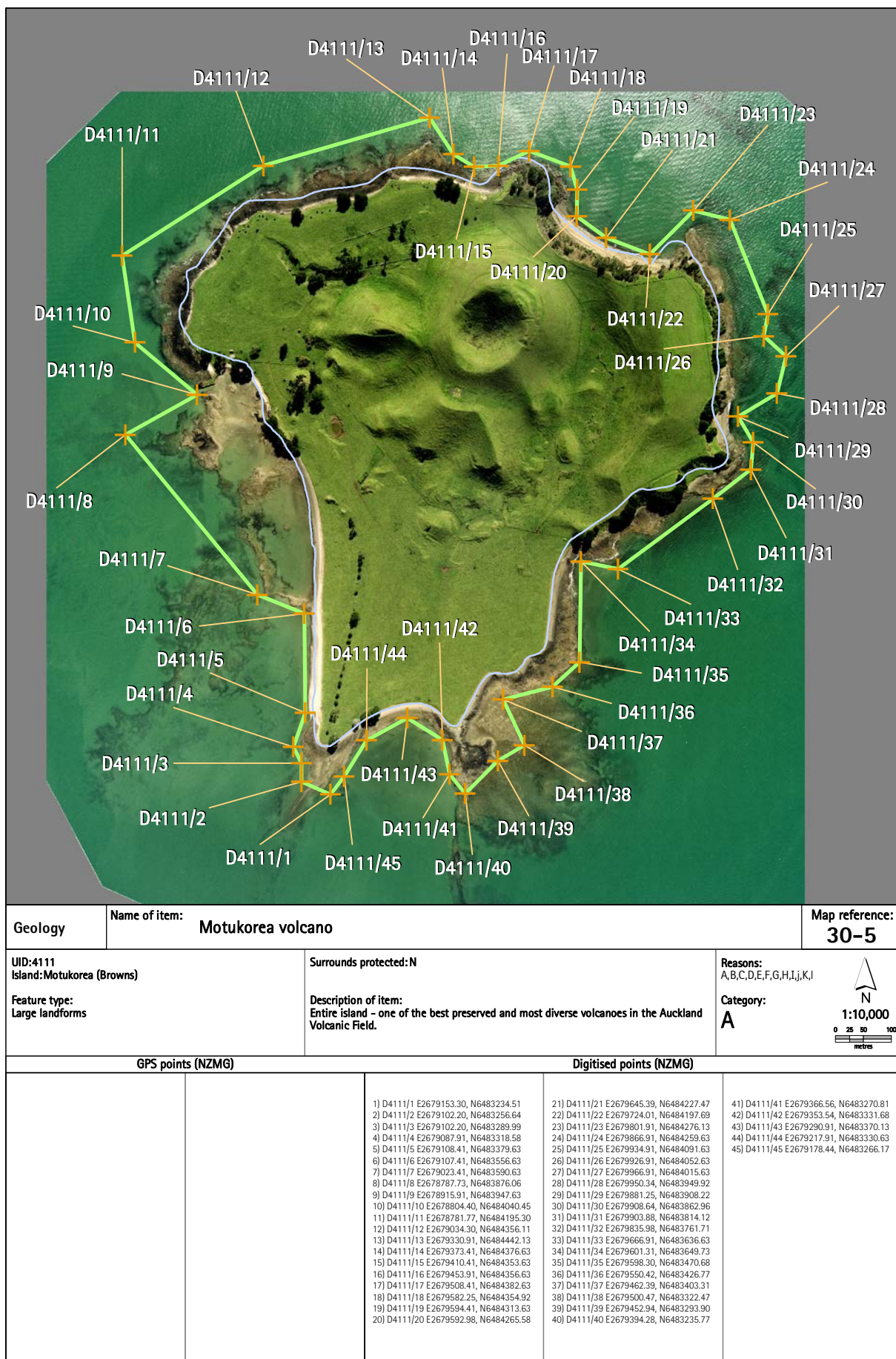
Geology	Name of item: East Crater Bay cliffs tuff sequence		Map reference: 30-3
UID: 4104 Island: Motukorea (Browns) Feature type: Fragile exposures of geological material	Surrounds protected: N Description of item: High cliff section at east end of Crater Bay contains best exposed section through the tuff ring of bedded ash with various examples of volcanic bomb impact depressions, wet and dry eruption deposits, faults and pleistocene shell fossils.	Reasons: A, B, C, D, E, H, I, J Category: A	1:1,500 metres
GPS points (NZMG)		Digitised points (NZMG)	
1) G4104/1 E2679745.31, N6484150.18		1) D4104/1 E2679724.28, N6484187.34 2) D4104/2 E2679802.91, N6484262.63 3) D4104/3 E2679859.39, N6484145.04 4) D4104/4 E2679813.41, N6484123.63 5) D4104/5 E2679784.41, N6484158.13 6) D4104/6 E2679744.64, N6484151.60	

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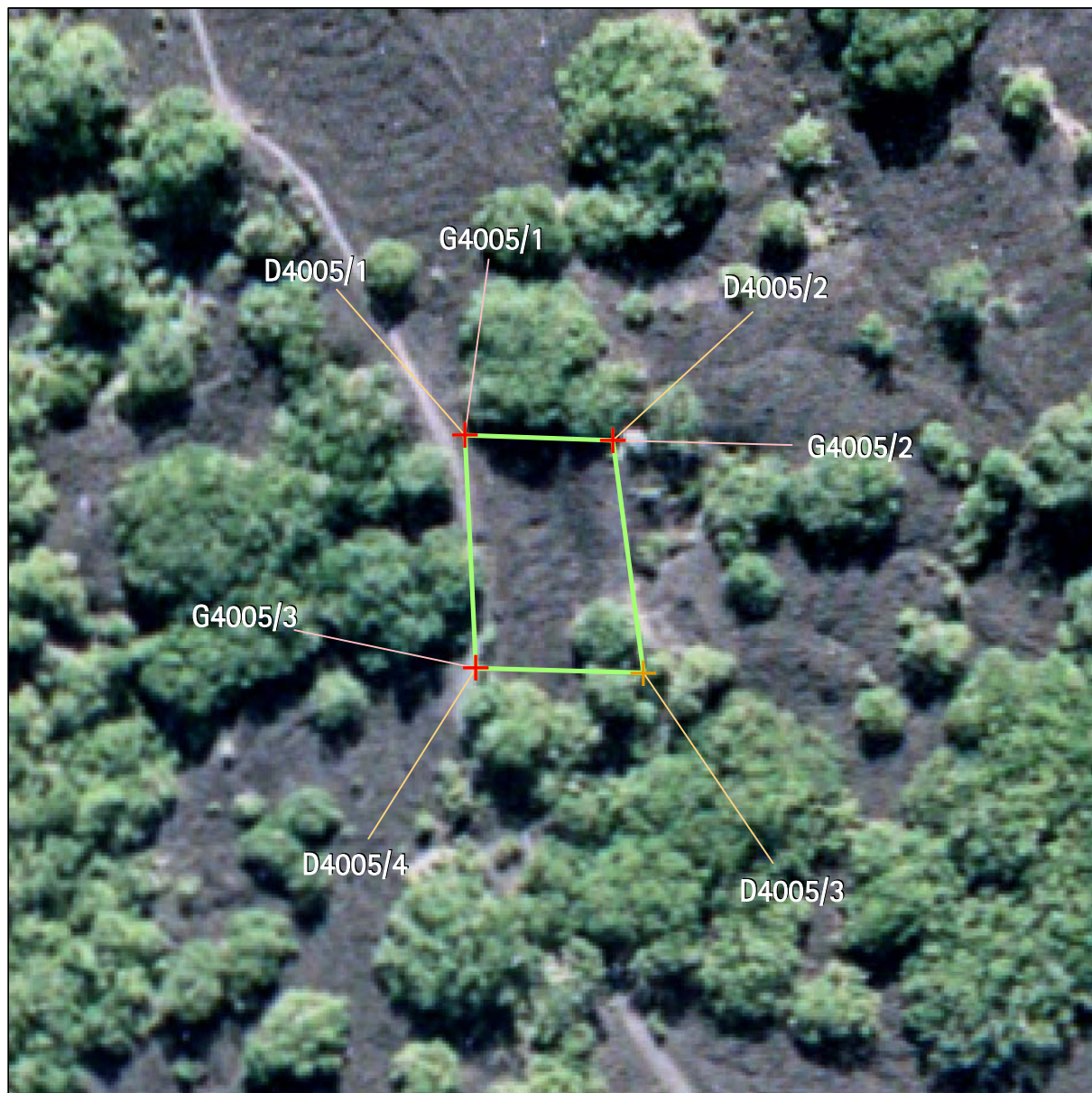


Geology	Name of item: Ladder lava cave		Map reference: 30-4
UID:4002 Island: Rangitoto Feature type: Caves	Surrounds protected: N Description of item: Unmodified, publicly accessible 64m long lava cave with the best stalactites and natural pahoehoe floor of any Rangitoto lava cave.	Reasons: A,b,c,D,E,F,H,I,J Category: B	
GPS points (NZMG)		Digitised points (NZMG)	
1) G4002/1 E2676622.99, N6488378.64		1) D4002/1 E2676596.65, N6488394.61 2) D4002/2 E2676600.40, N6488399.53 3) D4002/3 E2676640.79, N6488368.70 4) D4002/4 E2676637.04, N6488363.79	

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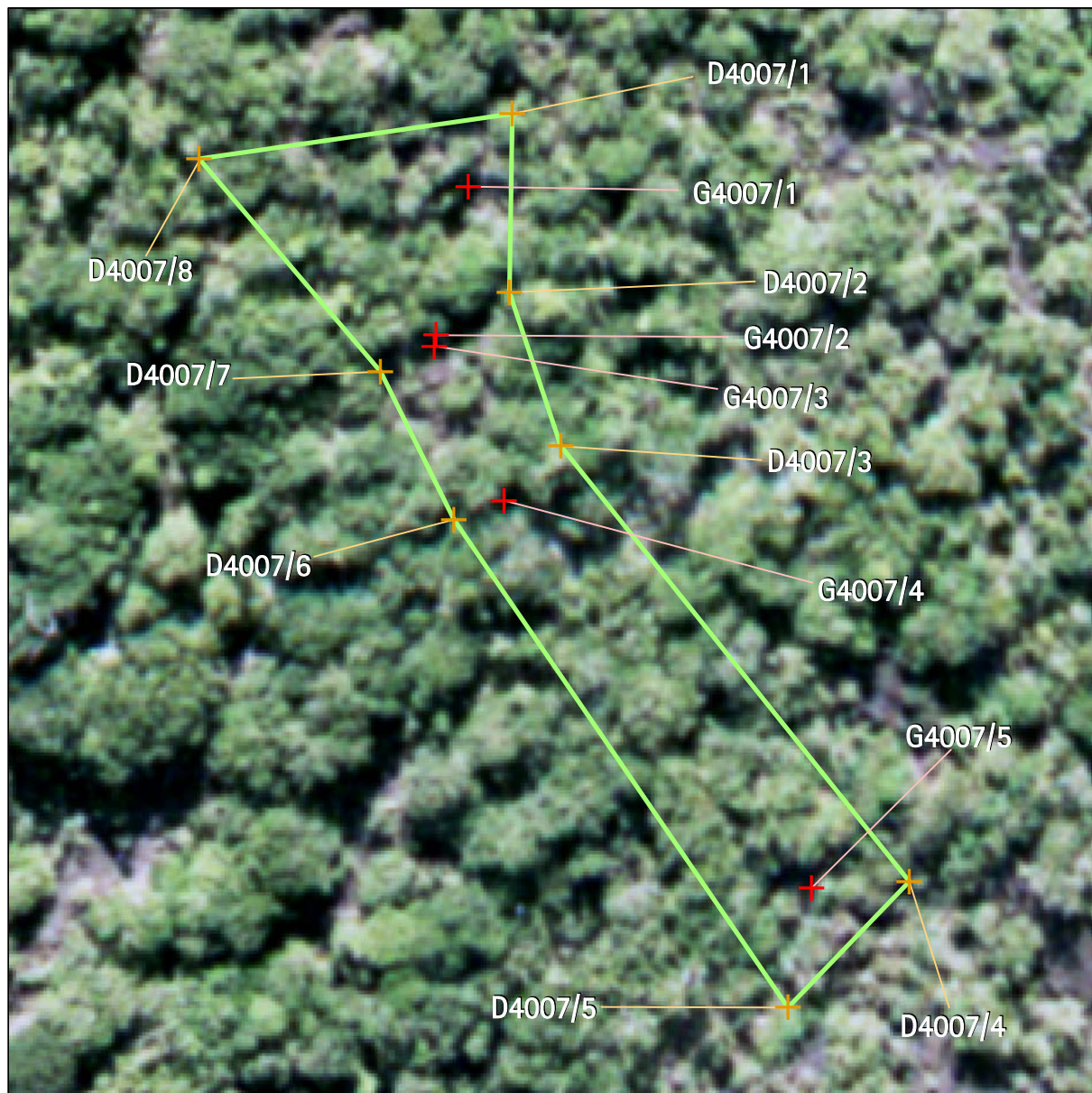
Geology	Name of item: Lava levees		Map reference: 30-6
UID:4005 Island: Rangitoto Feature type: Smaller more fragile landforms	Surrounds protected: N Description of item: Easily accessible, excellent representative example of lava flow levees.	Reasons: A, B, D, F, G, H, I, J Category: A	 1:1,000
GPS points (NZMG)		Digitised points (NZMG)	
1) G4005/1 E2676444.31, N6487002.26 2) G4005/2 E2676466.03, N6487001.48 3) G4005/3 E2676445.94, N6486968.10		1) D4005/1 E2676444.31, N6487002.26 2) D4005/2 E2676466.03, N6487001.48 3) D4005/3 E2676470.48, N6486967.41 4) D4005/4 E2676445.94, N6486968.10	

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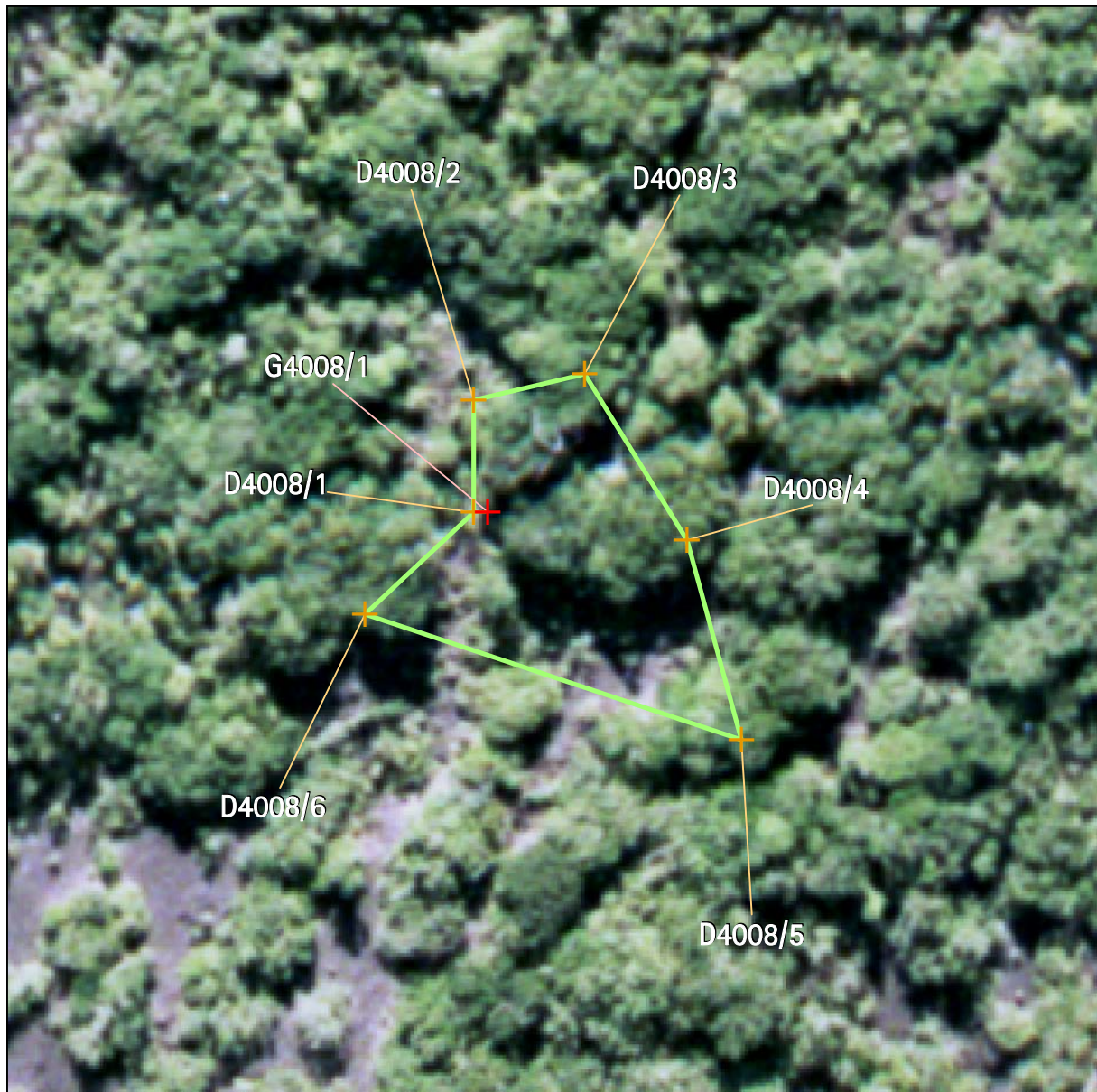
Geology	Name of item: Northern lava cave		Map reference: 30-7
UID: 4006 Island: Rangitoto Feature type: Caves	Surrounds protected: N Description of item: Natural, unmodified publicly accessible lava cave.	Reasons: A, b, c, D, e, F, H, I, J Category: B	
GPS points (NZMG)		Digitised points (NZMG)	
1) G4006/1 E2676666.10, N6488459.60		1) D4006/1 E2676660.68, N6488460.79 2) D4006/2 E2676666.27, N6488464.82 3) D4006/3 E2676695.71, N6488424.07 4) D4006/4 E2676690.12, N6488420.03	

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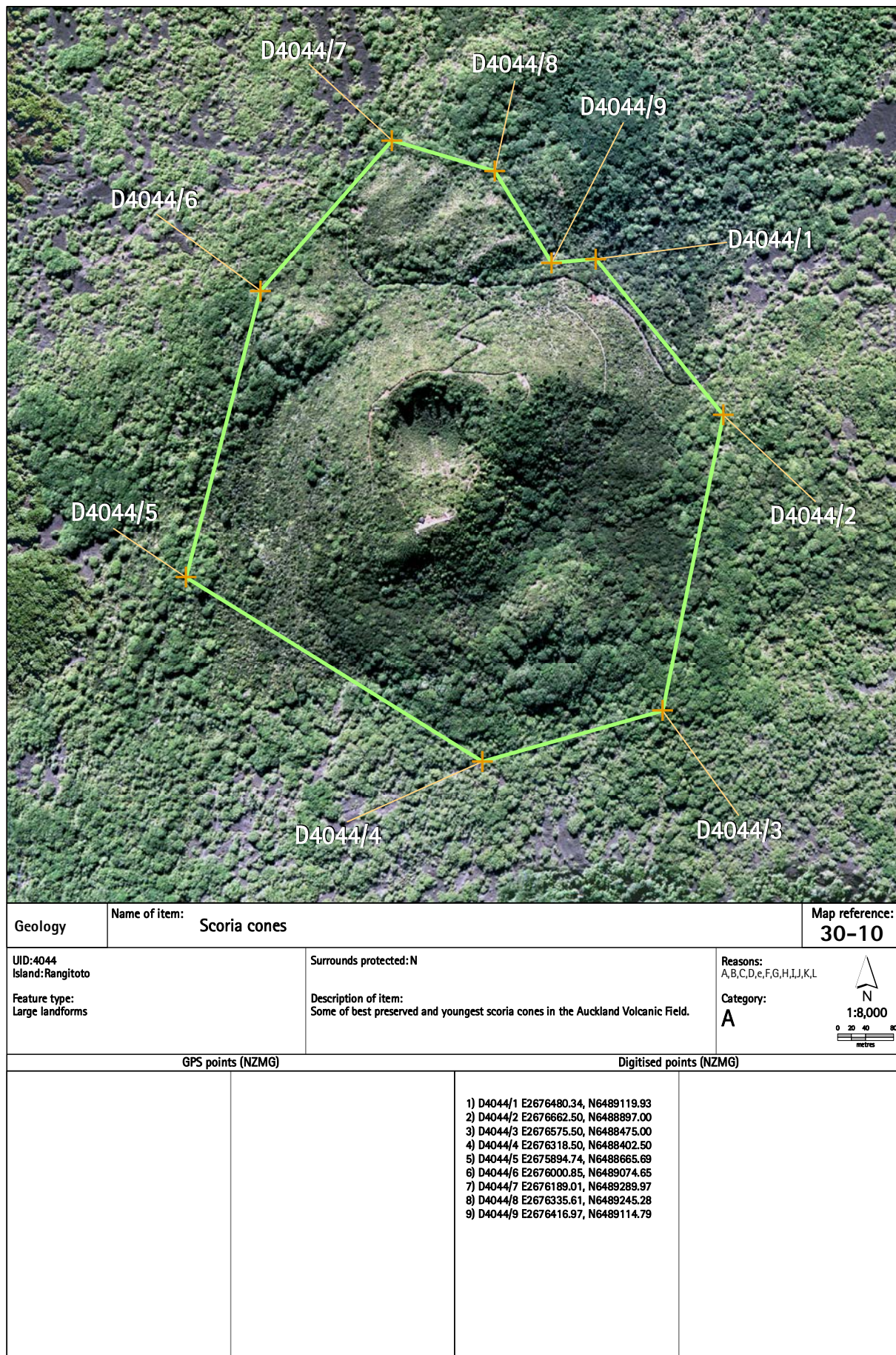
Geology	Name of item: Trench lava cave		Map reference: 30-8
UID:4007 Island: Rangitoto Feature type: Caves	Surrounds protected: N Description of item: Natural, unchanged, accessible lava cave of unique trench-like shape with numerous roof collapses, branch tubes and stalactites.	Reasons: A, B, C, D, E, F, G, H, I, J, K Category: A	
GPS points (NZMG)		Digitised points (NZMG)	
1) G4007/1 E2676648.74, N6488425.95 2) G4007/2 E2676644.00, N6488404.13 3) G4007/3 E2676643.74, N6488402.51 4) G4007/4 E2676654.03, N6488379.92 5) G4007/5 E2676699.07, N6488323.15		1) D4007/1 E2676655.23, N6488436.63 2) D4007/2 E2676654.80, N6488410.44 3) D4007/3 E2676662.31, N6488387.90 4) D4007/4 E2676713.38, N6488324.15 5) D4007/5 E2676695.57, N6488305.69 6) D4007/6 E2676646.64, N6488377.17 7) D4007/7 E2676635.91, N6488398.85 8) D4007/8 E2676609.31, N6488429.97	

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Geology	Name of item: Wallaby lava cave		Map reference: 30-9
UID: 4008 Island: Rangitoto Feature type: Caves	Surrounds protected: N Description of item: An unmodified, publicly accessible lava cave with narrow entrance and two levels.	Reasons: A, b, c, D, e, F, H, I, J Category: B	
GPS points (NZMG)		Digitised points (NZMG)	
1) G4008/1 E2676577.28, N6488351.55		1) D4008/1 E2676575.21, N6488351.42 2) D4008/2 E2676575.21, N6488367.88 3) D4008/3 E2676591.54, N6488371.69 4) D4008/4 E2676606.54, N6488347.43 5) D4008/5 E2676614.42, N6488318.18 6) D4008/6 E2676559.36, N6488336.54	

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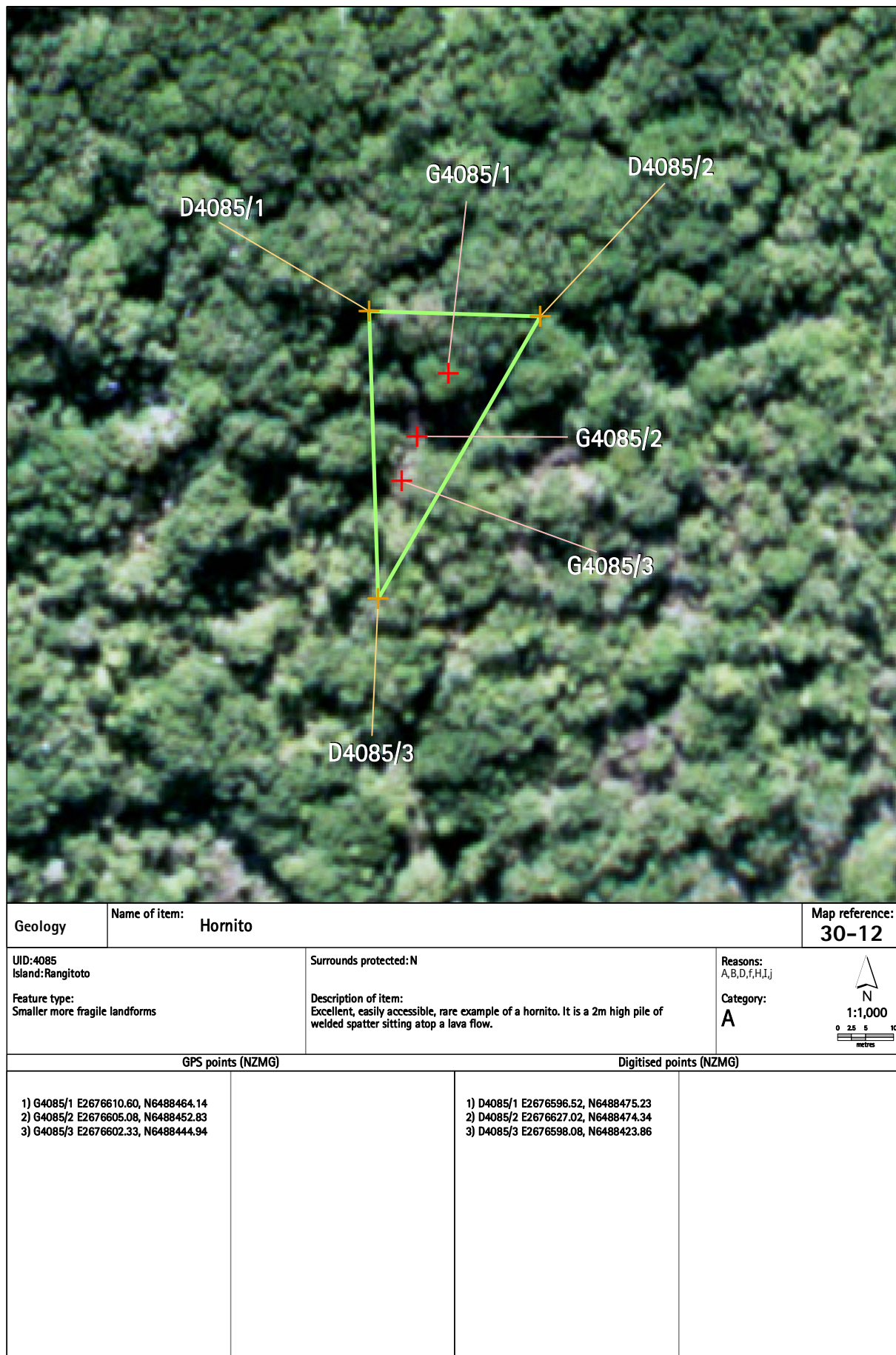


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Geology	Name of item: aa lava field		Map reference: 30-11
UID: 4056 Island: Rangitoto Feature type: Smaller more fragile landforms	Surrounds protected: N Description of item: Easily accessible, excellent representative example of aa lava flows.	Reasons: A, B, D, F, G, H, I, J Category: A	 1:1,500
GPS points (NZMG)		Digitised points (NZMG)	
1) G4056/1 E2676303.25, N6487268.35		1) D4056/1 E2676282.14, N6487347.87 2) D4056/2 E2676321.01, N6487347.07 3) D4056/3 E2676326.85, N6487207.66 4) D4056/4 E2676287.78, N6487210.07	

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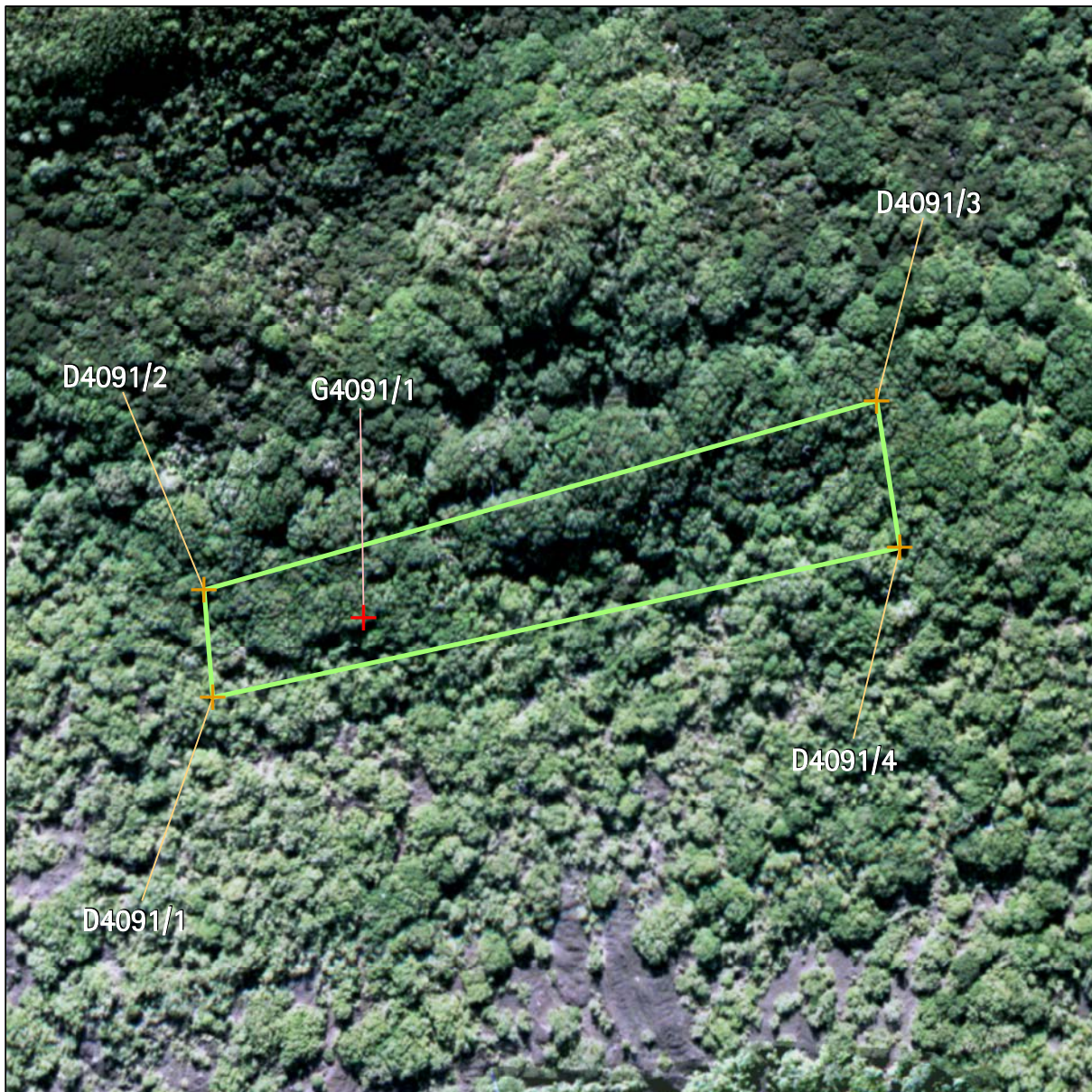


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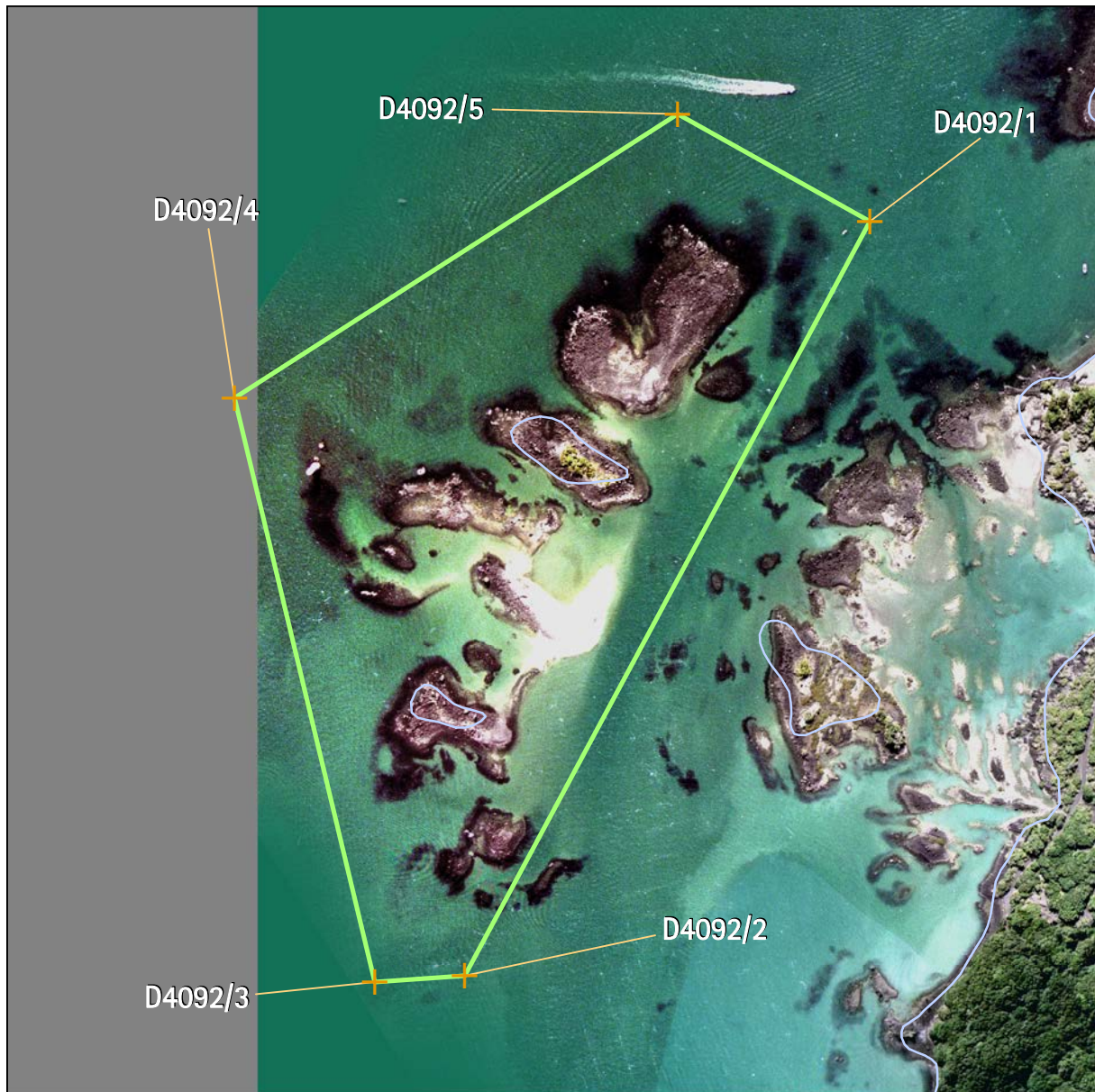
Geology	Name of item: Fossil locality, lava bombs, pahoe-hoe lava and baked marine sediments		Map reference: 30-13
UID: 4086 Island: Rangitoto Feature type: Fragile exposures of geological material	Surrounds protected: N Description of item: Baked marine sediment containing fossilised shells, volcanic lava bombs and pahoe-hoe lava flows.	Reasons: A, B, C, D, E, f, H, I, j Category: B	
GPS points (NZMG)		Digitised points (NZMG)	
1) G4086/1 E2675030.52, N6486691.26 2) G4086/2 E2675015.09, N6486662.94		1) D4086/1 E2674956.89, N6486688.33 2) D4086/2 E2675033.00, N6486710.50 3) D4086/3 E2675087.50, N6486663.50 4) D4086/4 E2675069.50, N6486653.50 5) D4086/5 E2675092.97, N6486621.10 6) D4086/6 E2675094.83, N6486606.24 7) D4086/7 E2674979.14, N6486564.42 8) D4086/8 E2674907.96, N6486634.00 9) D4086/9 E2674959.81, N6486673.33	

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Geology	Name of item: Moat	Map reference: 30-14
UID:4091 Island: Rangitoto Feature type: Large landforms	Surrounds protected: N Description of item: Good example of a collapse feature resulting from magma withdrawal.	Reasons: A, B, c, D, f, g, H, I, j Category: A
GPS points (NZMG)		Digitised points (NZMG)
1) G4091/1 E2676320.65, N6488450.46		1) D4091/1 E2676254.24, N6488415.32 2) D4091/2 E2676250.43, N6488462.67 3) D4091/3 E2676546.01, N6488545.58 4) D4091/4 E2676556.32, N6488481.18

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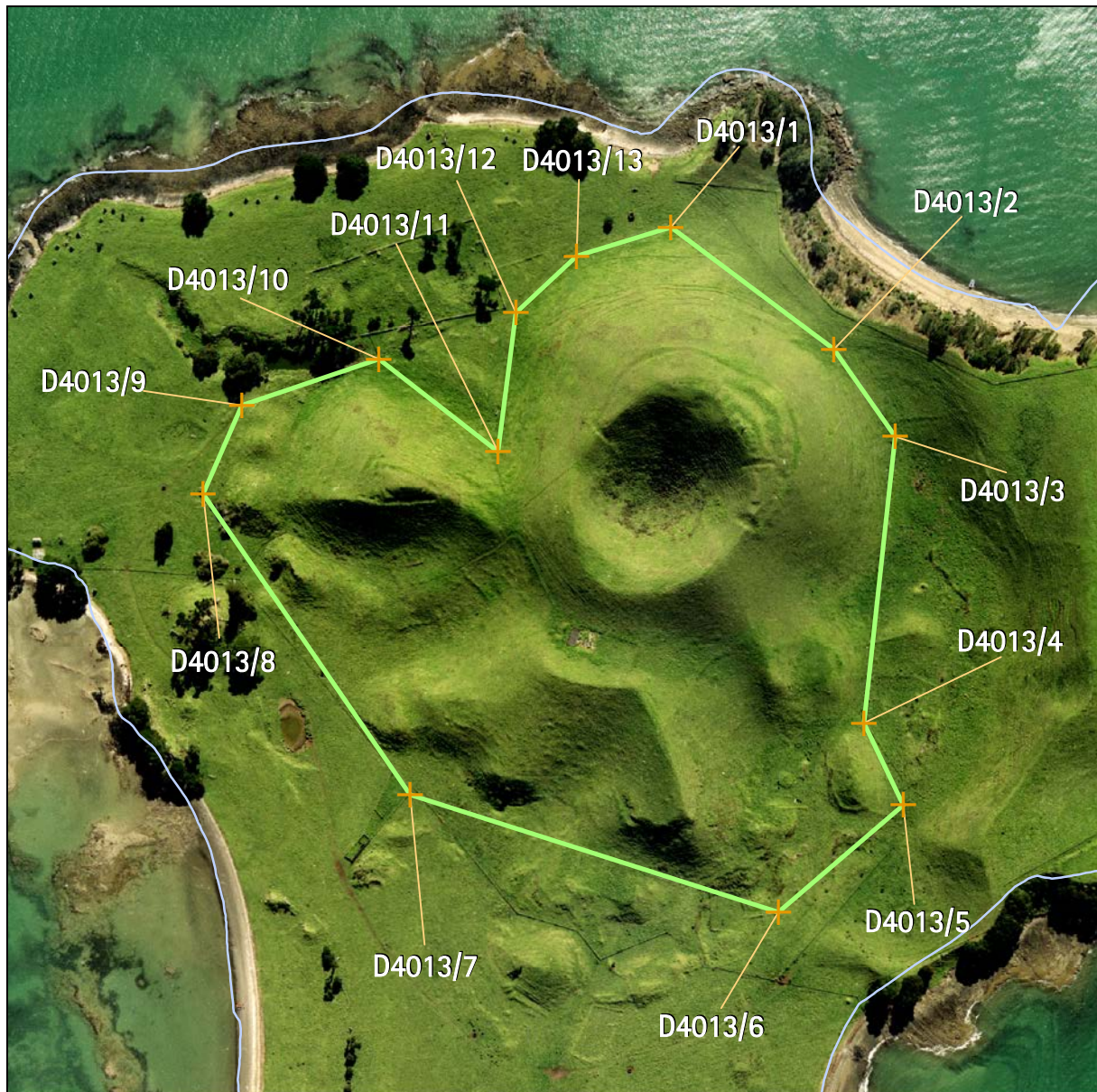
Geology	Name of item: Anadara fossil locality and Queen Victoria rock stack		Map reference: 30-15
UID: 4092 Island: Rangitoto Feature type: Smaller more fragile landforms	Surrounds protected: N Description of item: The outcrop is an unusual small lava rock stack in shape of Queen Victoria. The fossil locality is an approximately 5m x 1m block of fossil-bearing sediment containing shells of Sydney mud cockle (<i>Anadara</i>) which is now extinct in New Zealand.	Reasons: A, B, C, D, e, g, H, I Category: B	
GPS points (NZMG)		Digitised points (NZMG)	
		1) D4092/1 E2673563.75, N6489678.17 2) D4092/2 E2673206.87, N6489014.06 3) D4092/3 E2673127.62, N6489008.48 4) D4092/4 E2673004.31, N6489522.63 5) D4092/5 E2673394.46, N6489772.50	

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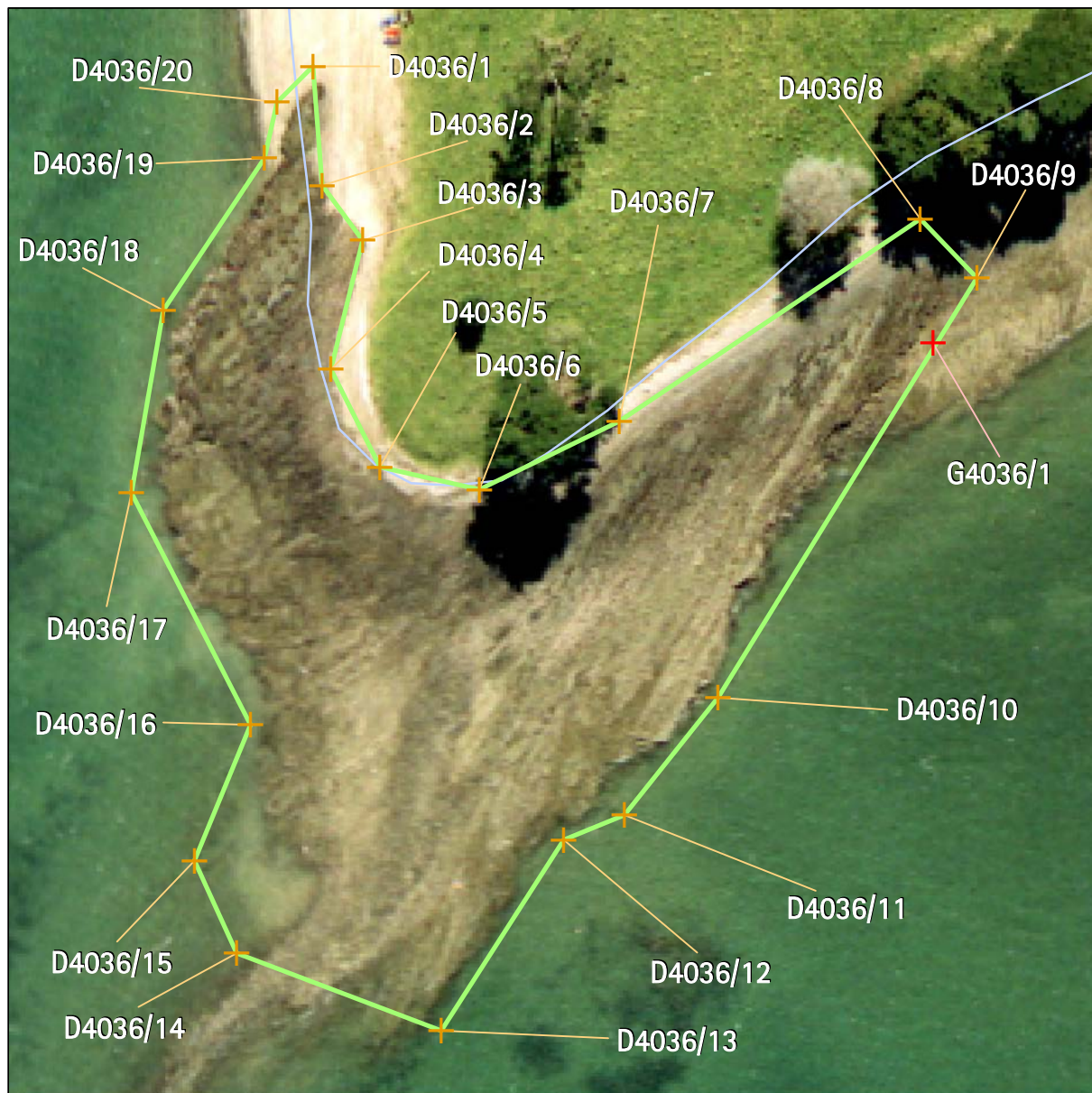
Geology	Name of item: Finger lava	Map reference: 30-16
UID:4095 Island: Rangitoto Feature type: Smaller more fragile landforms	Surrounds protected: N Description of item: One of the best examples of branching lava flow fingers formed at the toe of a lava flow as it flowed from land to the sea - transitional to pillow lavas.	Reasons: A, B, C, D, e, f, g, h, i, j Category: A
GPS points (NZMG)		Digitised points (NZMG)
1) G4095/1 E2676551.57, N6486499.83		1) D4095/1 E2676548.35, N6486481.29 2) D4095/2 E2676552.52, N6486512.20 3) D4095/3 E2676560.55, N6486517.75 4) D4095/4 E2676574.66, N6486504.28

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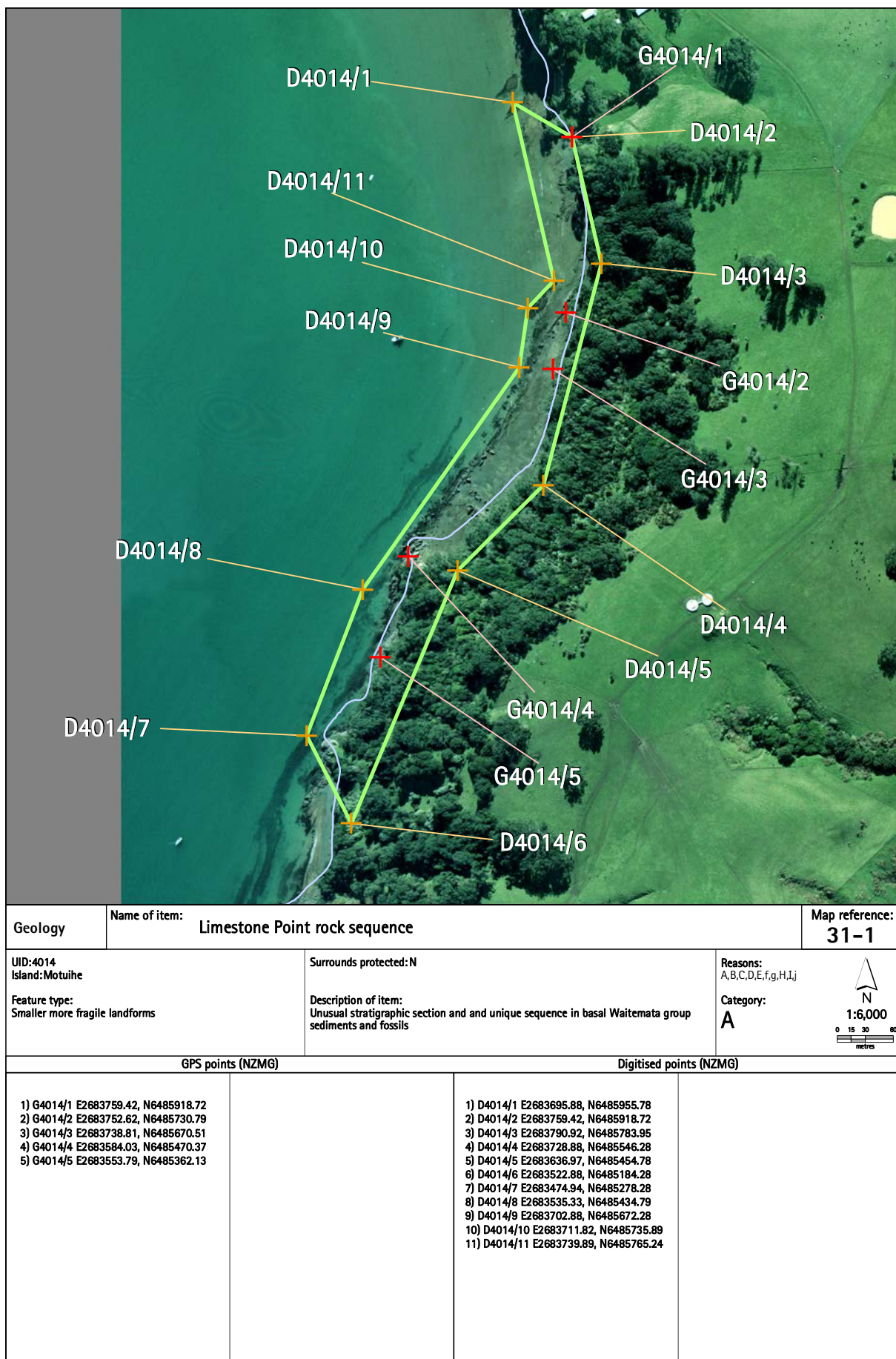
Geology	Name of item: Scoria cones	Map reference: 30-17
UID:4013 Island: Motukorea (Browns) Feature type: Large landforms	Surrounds protected: N Description of item: Excellent example of a scoria cone with a large deep crater and small surrounding hills. One of the best preserved in Auckland, one of the few that has had no quarrying.	Reasons: A, b, c, D, E, F, G, H, I, j, K Category: A
GPS points (NZMG)		Digitised points (NZMG)
		1) D4013/1 E2679441.41, N6484254.63 2) D4013/2 E2679560.91, N6484165.13 3) D4013/3 E2679605.95, N6484101.21 4) D4013/4 E2679583.08, N6483891.59 5) D4013/5 E2679611.86, N6483831.76 6) D4013/6 E2679520.43, N6483753.13 7) D4013/7 E2679250.73, N6483839.07 8) D4013/8 E2679098.97, N6484059.40 9) D4013/9 E2679127.31, N6484124.32 10) D4013/10 E2679227.88, N6484158.14 11) D4013/11 E2679314.90, N6484090.47 12) D4013/12 E2679328.26, N6484192.14 13) D4013/13 E2679372.41, N6484233.63

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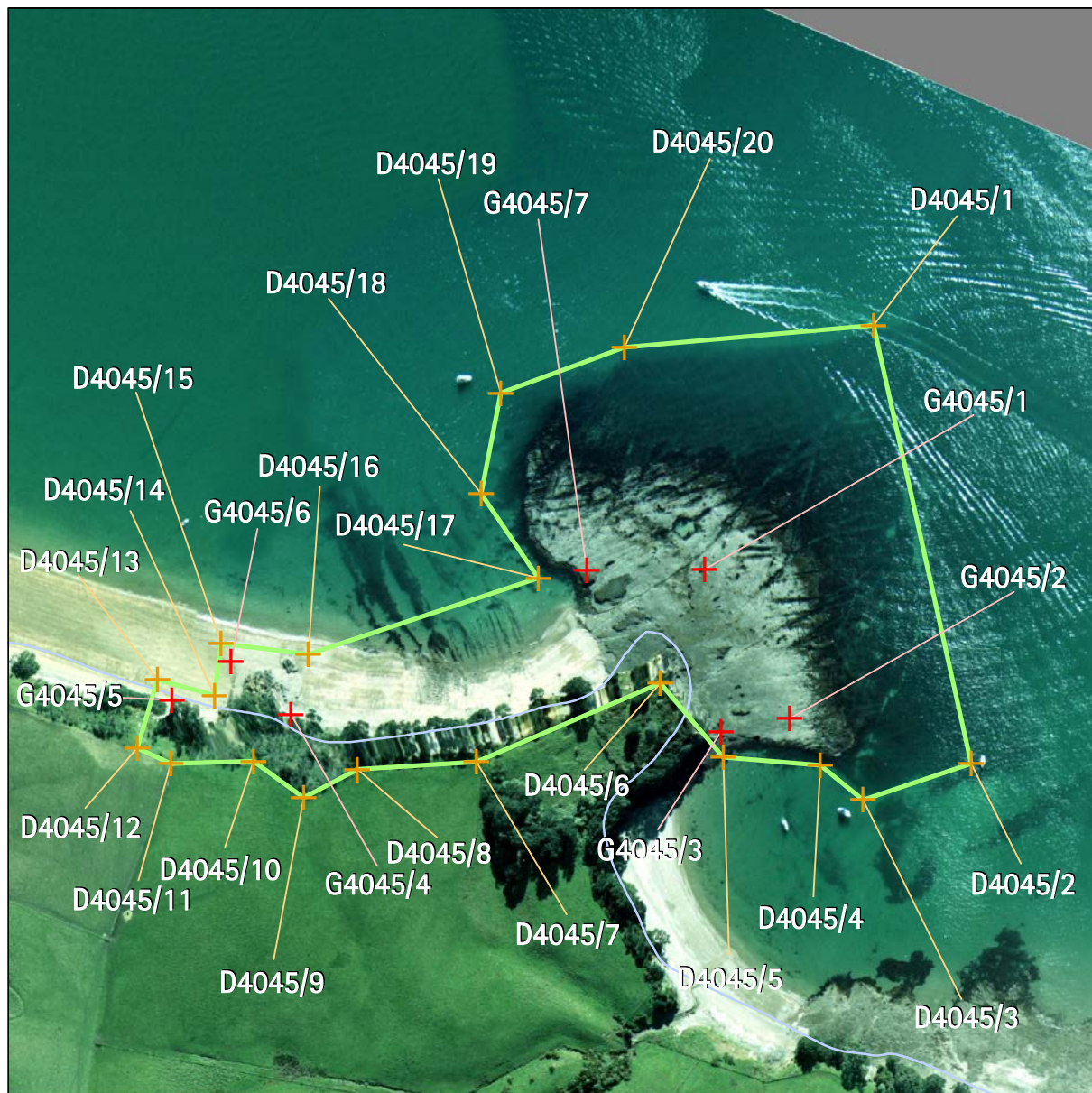


Geology	Name of item: Type locality for Motukoreaite	Map reference: 30-18
UID:4036 Island: Motukorea (Browns) Feature type: Fragile exposures of geological material	Surrounds protected: N Description of item: Mineral motukoreaite type locality.	Reasons: A, B, C, D, H, I, J, L Category: A
GPS points (NZMG)		Digitised points (NZMG)
1) G4036/1 E2679216.41, N6483341.00		1) D4036/1 E2679125.56, N6483381.60 2) D4036/2 E2679126.91, N6483364.13 3) D4036/3 E2679132.86, N6483356.08 4) D4036/4 E2679128.19, N6483337.25 5) D4036/5 E2679135.34, N6483322.94 6) D4036/6 E2679149.91, N6483319.63 7) D4036/7 E2679170.41, N6483329.63 8) D4036/8 E2679214.53, N6483359.25 9) D4036/9 E2679222.91, N6483350.63 10) D4036/10 E2679184.94, N6483289.08 11) D4036/11 E2679171.23, N6483271.91 12) D4036/12 E2679162.32, N6483268.28 13) D4036/13 E2679144.37, N6483240.36 14) D4036/14 E2679114.35, N6483251.64 15) D4036/15 E2679108.15, N6483265.23 16) D4036/16 E2679116.41, N6483285.13 17) D4036/17 E2679098.91, N6483319.13
		18) D4036/18 E2679103.62, N6483345.83 19) D4036/19 E2679118.41, N6483368.13 20) D4036/20 E2679120.32, N6483376.36

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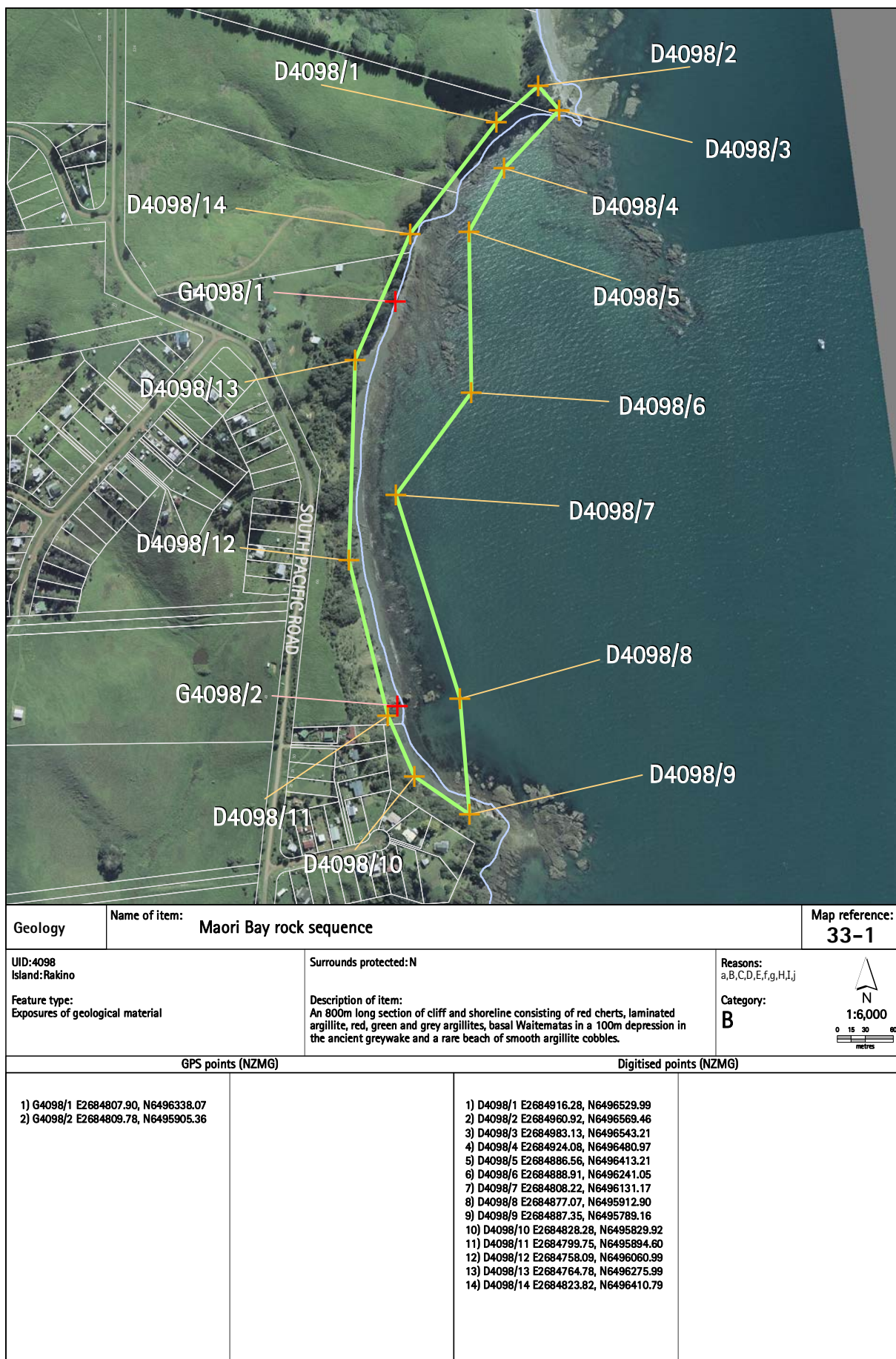


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Geology	Name of item: East Ocean Beach rock sequence	Map reference: 31-2
UID:4045 Island: Motuihe Feature type: Exposures of geological material	Surrounds protected: N Description of item: Cliff and shore platform. One of the best exposed transitions from shallow water basal Waitemata sediment sections through bathyal sandstone to deep bathyal Waitemata Sandstone and Parnell Grit beds.	Reasons: A,B,C,D,E,f,g,H,I,j Category: B
GPS points (NZMG)		Digitised points (NZMG)
1) G4045/1 E2684584.53, N6486510.27 2) G4045/2 E2684647.00, N6486400.84 3) G4045/3 E2684596.75, N6486391.01 4) G4045/4 E2684281.45, N6486403.97 5) G4045/5 E2684194.10, N6486414.52 6) G4045/6 E2684237.28, N6486442.48 7) G4045/7 E2684498.15, N6486509.30		1) D4045/1 E2684708.33, N6486689.00 2) D4045/2 E2684779.89, N6486367.79 3) D4045/3 E2684700.61, N6486341.36 4) D4045/4 E2684669.44, N6486366.43 5) D4045/5 E2684598.30, N6486372.53 6) D4045/6 E2684552.22, N6486426.74 7) D4045/7 E2684417.38, N6486369.14 8) D4045/8 E2684329.97, N6486363.72 9) D4045/9 E2684290.83, N6486343.00 10) D4045/10 E2684253.83, N6486369.50 11) D4045/11 E2684193.33, N6486368.00 12) D4045/12 E2684168.83, N6486379.50 13) D4045/13 E2684183.61, N6486429.45 14) D4045/14 E2684225.62, N6486417.93 15) D4045/15 E2684230.36, N6486455.88 16) D4045/16 E2684294.06, N6486447.75 17) D4045/17 E2684462.78, N6486503.99
		18) D4045/18 E2684420.77, N6486565.65 19) D4045/19 E2684435.00, N6486639.51 20) D4045/20 E2684525.79, N6486672.71

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5.0 Diagrams of site surrounds for scheduled geological items

Legend



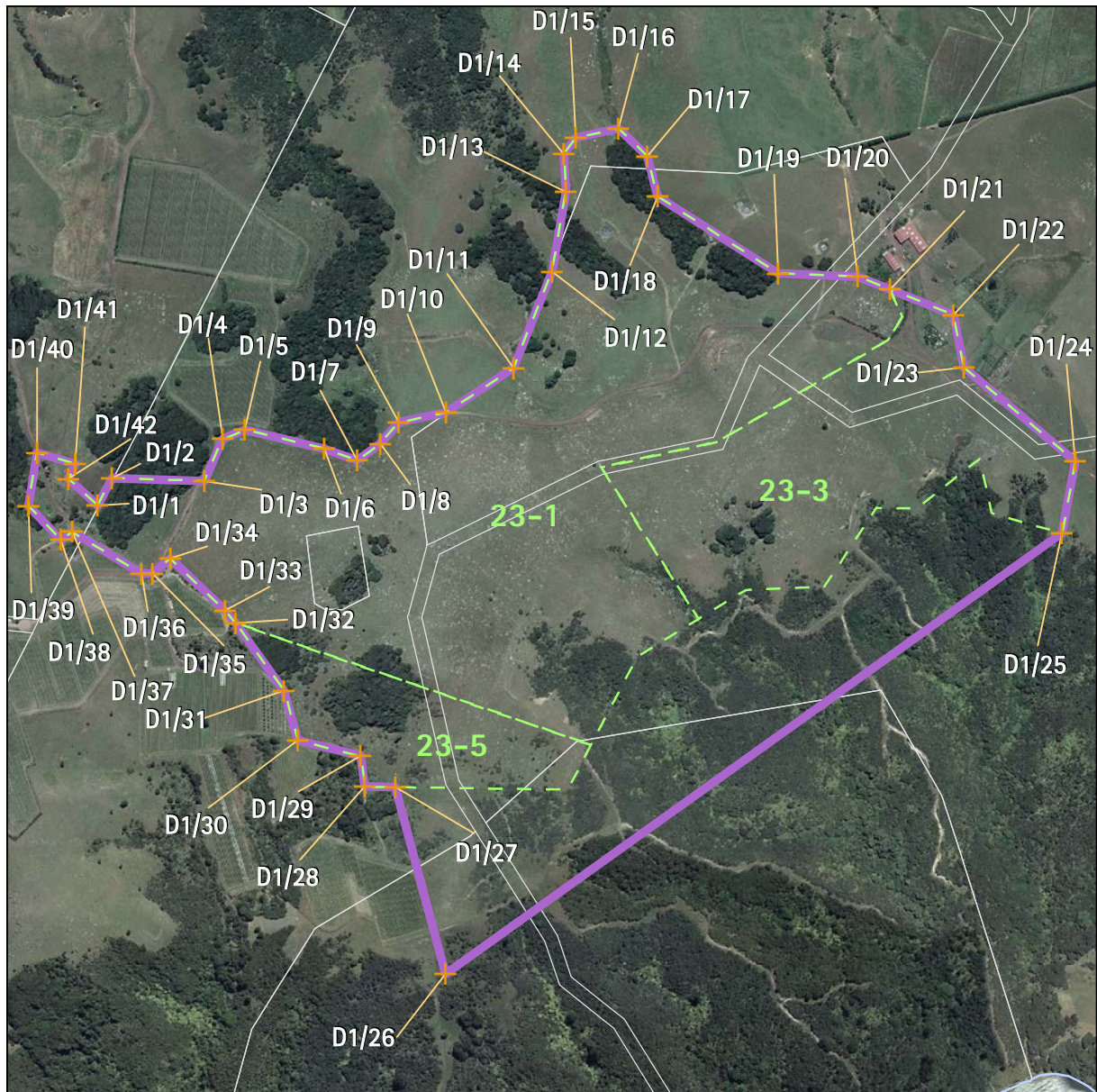
Boundary of scheduled site surrounds



Boundary of scheduled item



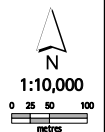
Digitised point - coordinates derived from the NZMG (New Zealand Map Grid) base



Geology	UID: 1 Island: Waiheke	Name of feature: SITE SURROUNDS 1	Map reference: 23-28
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Scheduled geological items:

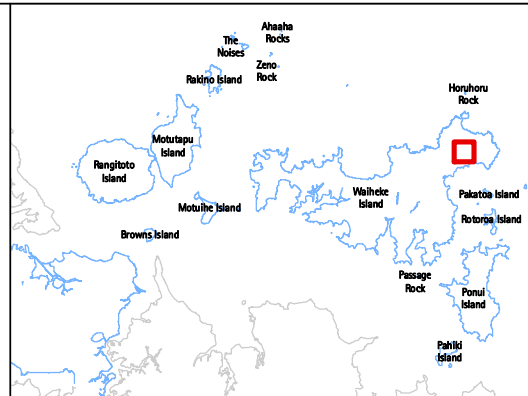
23-1
23-3
23-5



Digitised points (NZMG)

1) D1/1 E2703628.24, N6490528.75
 2) D1/2 E2703649.12, N6490569.1
 3) D1/3 E2703784.56, N6490564.86
 4) D1/4 E2703811.74, N6490626.62
 5) D1/5 E2703843.6, N6490639.72
 6) D1/6 E2703960.59, N6490612.21
 7) D1/7 E2704009.04, N6490595.18
 8) D1/8 E2704042.65, N6490619.64
 9) D1/9 E2704069.8, N6490650.86
 10) D1/10 E2704139.62, N6490665.33
 11) D1/11 E2704238.57, N6490730.88
 12) D1/12 E2704295.24, N6490871.63
 13) D1/13 E2704315.76, N6490988.92
 14) D1/14 E2704311.85, N6491044.64
 15) D1/15 E2704330.42, N6491068.1
 16) D1/16 E2704392.95, N6491081.78
 17) D1/17 E2704434.97, N6491041.71
 18) D1/18 E2704450.6, N6490982.08
 19) D1/19 E2704627.46, N6490869.68
 20) D1/20 E2704744.6, N6490864.48
 21) D1/21 E2704791.89, N6490845.63

22) D1/22 E2704884.4, N6490808.74
 23) D1/23 E2704899.82, N6490731.6
 24) D1/24 E2705063.4, N6490592.94
 25) D1/25 E2705043.71, N6490488.47
 26) D1/26 E2704138.53, N6490841.49
 27) D1/27 E2704064.57, N6490115.76
 28) D1/28 E2704019.57, N6490116.34
 29) D1/29 E2704014.21, N6490161.72
 30) D1/30 E2703921.74, N6490183.98
 31) D1/31 E2703901.37, N6490257.05
 32) D1/32 E2703829.94, N6490356.37
 33) D1/33 E2703815.39, N6490374.98
 34) D1/34 E2703734.48, N6490451.09
 35) D1/35 E2703708.09, N6490428.91
 36) D1/36 E2703692.02, N6490429.11
 37) D1/37 E2703590.43, N6490489.93
 38) D1/38 E2703573.25, N6490478.5
 39) D1/39 E2703526.29, N6490528.5
 40) D1/40 E2703538.74, N6490605.9
 41) D1/41 E2703594.71, N6490590.32
 42) D1/42 E2703584.73, N6490568.01



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