

Assessment of Effects on Archaeology

Alternative to the Brynderwyn Hills – Brynderwyn Hills section

2 April 2026

Revision A

10722-PTA-2B0-PE-RPT-0006

Copyright information

Copyright ©. This copyright work is licensed under the Creative Commons Attribution 4.0 International licence. In essence, you are free to copy, distribute and adapt the work, as long as you attribute the work to NZ Transport Agency Waka Kotahi (NZTA) and abide by the other licence terms. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

Table of Contents

GLOSSARY OF ACRONYMS AND ABBREVIATIONS	1
1. INTRODUCTION	2
1.1. Purpose and scope of this report	2
1.2. Qualifications and Experience	2
1.2.1. Matthew Campbell: Archaeologist	2
1.2.2. Andy Brown: Archaeologist.....	2
1.3. Code of Conduct	2
2. ASSESSMENT METHODOLOGY	3
2.1. Assessment Framework	3
2.2. Desktop Assessment	3
2.3. Field Assessment	4
2.4. Alignment changes within the Proposed Designation	4
3. DESCRIPTION OF LAND	6
3.1. General Overview of the Existing Environment	6
3.1.1. Pre-European Māori Period	6
3.1.2. Historic Period.....	6
3.1.3. Previous Archaeological Research	7
4. DESK-BASED ASSESSMENT.....	9
4.1. Previously Recorded Archaeological Sites	9
4.2. LiDAR	9
4.3. Aerial Photographs	10
4.4. Old Maps and Plans	10
4.5. Soils	10
4.6. District Plans and Rārangī Kōrero	15
5. FIELD ASSESSMENT.....	16
5.1. South of the Brynderwyns	16
5.1.1. Artefact finds	16
5.1.2. Q08/360 pā	16
5.1.3. Q08/56 pits.....	18
5.1.4. Q08/702 pits.....	19
5.1.5. Q08/57 pits.....	20
5.1.6. Q08/39 pā	23
5.1.7. Q08/703 pits.....	26
5.1.8. Q08/700 pā	27
5.1.9. Q08/560 historic timber milling	30
5.2. The Brynderwyn Hills	31
5.2.1. Q08/403 findspot.....	31

5.3.	North of the Brynderwyn Hills	32
5.3.1.	Q08/546 pā	32
5.3.2.	Q08/701 midden	34
5.3.3.	Q08/652 historic blacksmith	35
5.3.4.	Q08/663 historic settlement	35
5.4.	Other Sites	35
6.	SUMMARY OF ARCHAEOLOGY IN THE PROPOSED DESIGNATION	37
7.	ASSESSMENT	40
7.1.	Assessment of values	40
7.2.	South of the Brynderwyns	40
7.2.1.	Q08/360 pā	40
7.2.2.	Q08/56 pits	40
7.2.3.	Q08/702 pits	40
7.2.4.	Q08/57 pits	41
7.2.5.	Q08/39 pā	41
7.2.6.	Q08/703 pits	41
7.2.7.	Q08/700 pā	42
7.2.8.	Q08/560 timber milling	42
7.3.	The Brynderwyn hills	42
7.3.1.	Q08/403 findspot	42
7.4.	North of the Brynderwyns	43
7.4.1.	Q08/546 pā	43
7.4.2.	Q08/701 midden	43
7.4.3.	Q08/652 historic blacksmith	43
7.4.4.	Q08/663 historic settlement	43
7.5.	Assessment of effects	44
8.	RECOMMENDATIONS	45
9.	CONCLUSION	46
10.	REFERENCES	47

Figures

Figure 1: Properties visited during field work (blue shading) within the Proposed Designation (green dashed line).

Figure 2: Demonstration of LiDAR derived models. A – Aerial photograph, B – Hillshade model derived from DEM, C – Slope model derived from DEM.

Figure 3: Detail of SO 698 (c. 1864) showing approximate locations of pre-1900 Nova Scotian buildings and bridges.

Figure 4: The location of pre-1900 Nova Scotian buildings in the Proposed Designation based on old survey plans.

Figure 5: ML 13065 showing “Old cultivation Good Land” west of Pukekaroro.

Figure 6: Soils within the Proposed Designation (adapted from DSIR 1954).

Figure 7: Taonga found in the general vicinity of pā Q08/651 – probable gabro toki on left, patu muka second from left, probable pakohe toki third from right on bottom. Photo scale = 0.5 m.

Figure 8: Location of pā Q08/360 in relation to currently designed earthworks.

Figure 9: Sketch plan of pā Q08/360, from the NZAA site record.

Figure 10: Q08/360, terraces and pits, from the NZAA site record.

Figure 11: Location of Q08/56 in relation to currently designed earthworks.

Figure 12: Q08/56 visible in aerial photo SN212/426/47, flown 20 May 1963.

Figure 13: Location of Q08/702 in relation to currently designed earthworks.

Figure 14: Q08/702 visible in aerial photo SN212/426/47, flown 20 May 1963.

Figure 15: Location of Q08/57 in relation to currently designed earthworks.

Figure 16: Q08/57 visible in aerial photo SN212/414/51, flown 20 May 1963.

Figure 17: Sketch plan of Q08/57, from the NZAA site record.

Figure 18: Q08/57, pits looking north.

Figure 19: Location of pā Q08/39 in relation to currently designed earthworks.

Figure 20: Q08/39 visible in aerial photo SN212/424/51, flown 20 May 1963.

Figure 21: Q08/39 viewed from the south. A row of pits is visible just below the crest of the hill.

Figure 22: Q08/39, shallow infilled ditch.

Figure 23: Q08/39, Pit 1, looking west.

Figure 24: Sketch plan of Q08/39.

Figure 25: Location of Q08/703 in relation to currently designed earthworks.

Figure 26: Q08/703, Pit 3 (Figure 27), looking east. Photo scale = 0.5 m.

Figure 27: Sketch plan of Q08/703.

Figure 28: Location of pā Q08/700 in relation to currently designed earthworks.

Figure 29: Pā Q08/700 visible in LiDAR slope data.

Figure 30: Northern, east-west running ditch of pā Q08/700.

Figure 31: Pit 2 (Figure 32), looking south.

Figure 32: Sketch plan of pā Q08/700.

Figure 33: Location of Q08/560 in relation to currently designed earthworks.

Figure 34: Location of Q08/403 in relation to currently designed earthworks.

Figure 35: Sketch of toki.

Figure 36: Location of Q08/546 in relation to currently designed earthworks.

Figure 37: LiDAR-derived slope map showing the extent of Q08/546.

Figure 38: Location of Q08/701 in relation to currently designed earthworks.

Figure 39: Q08/701, a small midden exposed in a drain adjacent to the Waihoihoi River.

Figure 40: Location of Q08/652 and Q08/663 in relation to currently designed earthworks.

Figure 41: Archaeological sites in the Proposed Designation.

Tables

Table 1: Recorded archaeological sites in the Proposed Designation

Table 2: Summary of Archaeological sites in the Proposed Designation and recommendations.

Glossary of Acronyms and Abbreviations

The glossary of acronyms and abbreviations tables in Volumes A and B of the Substantive Application applies to this report and should be referred to in addition to the acronyms and abbreviations below.

Abbreviation / Acronym	Term
NZAA	New Zealand Archaeological Association

Glossary of Defined Terms

The glossary of defined terms table in Volumes A and B of the Substantive Application applies to this report and should be referred to in addition to the defined terms below.

Term	Meaning
ArchSite	The New Zealand Archaeological Association's online platform for the national archaeological site recording scheme.
Historic heritage site	Historic heritage describes the range of place-based heritage. It is defined in the RMA (s2) and includes: <ul style="list-style-type: none">▪ historic buildings and structures▪ archaeological sites▪ places of significance to Māori including wāhi tapu (sacred places) – these may include natural features such as trees, springs, rivers or mountains which were associated with historical or cultural activities or events, but which have no known physical remains of those activities or events▪ the surroundings of buildings, sites and places.
Pā	A Māori village or fortified settlement, most commonly referring to hillforts.
Pit	An excavated area (usually rectilinear) used for food storage by Māori.

1. Introduction

1.1. Purpose and scope of this report

This report provides an assessment of the actual and potential effects on Archaeology, associated with the construction of the Brynderwyn Hills section of the Alternative to the Brynderwyn Hills project (the Project).

This assessment forms part of a suite of technical assessments prepared for NZTA to inform the Substantive Application under the Fast-track Approvals Act 2024 (FTAA) for the Project. This report should be read in conjunction with Volume A of the Substantive Application.

The scope of the assessment includes a description of the methodology applied in preparing the assessment, a description of the archaeological sites to be modified or destroyed by the Project, the values of the archaeological sites and the effects upon those values by the Project works.

1.2. Qualifications and Experience

1.2.1. Matthew Campbell: Archaeologist

I am the director of CFG Heritage.

I hold an MA in Anthropology from The University of Otago Ōtākou Whakahi Waka and a PhD in Archaeology from the University of Sydney. I am a member, and past President, of the New Zealand Archaeological Association.

My experience relevant to this application is as follows:

- Takitimu North Link: I was the lead archaeologist for the extensive archaeological investigations along the route of the Takitimu North Link, Tauranga, from 2019 onwards.
- Te Tupu Ngātahi Supporting Growth: I was the lead archaeologist for the majority of the Te Tupu Ngātahi Supporting Growth projects, having oversight of the archaeological components of the projects and was the principal archaeologist for the Pukekohe section.
- Central Interceptor: I was the lead archaeologist for the Central Interceptor project, a wastewater reticulation project running from Western Springs to Māngere.

1.2.2. Andy Brown: Archaeologist

I am the director of Horizon Archaeology Ltd, based in Whangārei.

I hold a PhD from the Institute of Archaeology University College London, and a MA in Archaeology from the University of Otago. I am a member of the New Zealand Archaeological Association.

I have extensive experience in Northland archaeology and have acted as lead archaeologist for projects such as Transport Rebuild East Coast.

1.3. Code of Conduct

Although this Project is not being considered before the Environment Court, we confirm that we have read the Code of Conduct for expert witnesses as contained in section 9 of the Environment Court Practice Note 2023. We agree to comply with that Code. We are satisfied that the matters which we address in this Assessment are within our area of expertise, except where we state that we are relying on information provided by another person or expert. We have not omitted to consider material facts known to us that might alter or detract from the opinions we express.

2. Assessment Methodology

2.1. Assessment Framework

This assessment has been prepared according to the guidance and standards provided by Heritage New Zealand Pouhere Taonga (HNZPT) (AGS2 – Guidance for writing archaeological assessments) and the NZTA *Historic Heritage Impact Assessment Guide for State Highway Projects* (Version 1 – 2015) and *P45 Heritage Specification for Land Transport Infrastructure*.

2.2. Desktop Assessment

A desktop assessment was undertaken to obtain information and data relating to archaeological and historic heritage sites within the Proposed Designation using the following information sources:

- **New Zealand Archaeological Association (NZAA) Site Recording Scheme** – The NZAA Site Recording Scheme is a database of all *recorded* archaeological sites in New Zealand. It provides information on site features and locations and provides a basic model of site distribution that can guide targeted survey for further unrecorded sites.
- **Heritage New Zealand Digital Report Library** – The digital report library provides critical background information regarded previously conducted archaeological work.
- **Heritage New Zealand List | Rārangī Kōrerō** - Provides a list historically important sites of both pre- and post-1900 date. This information was accessed via the NZTA project GIS.
- **Operative Kaipara District Plan 2013 (OKDP)** - Relevant layers of the operative plan were accessed via the NZTA project GIS.
- **Whangārei District Plan Operative in Part 2022 (WDP)** - Relevant layers of the operative plan were accessed via the NZTA project GIS.
- **LINZ LiDAR** - LiDAR uses rapidly pulsed lasers to develop a three-dimensional map of the ground surface, known as a digital elevation model (DEM). Processing of DEMs into derived models allows archaeologists to detect and interpret archaeological landscapes, including those under heavy bush. Preliminary use of the LiDAR data for archaeological purposes in New Zealand has shown that earthworks such as terraces, ditches, banks and pits, lend themselves to detection via this method even within areas with extensive groundcover and high relief (Jones and Bickler 2017). This project utilised DEMs sourced from LINZ data service, which was processed into two derived models: hillshade and slope, both produced using standard settings in QGIS (Figure 2).
- **Historical Aerials** - Aerial photographs dating back to the 1960s were reviewed to aid the determination of the location and extent of known sites and to identify unrecorded sites. This was done by georectifying aerial photographs sourced from Retrolens (retrolens.co.nz).
- **Soils Data** - Soils data was obtained from DSIR (1954) [Manaaki Whenua Landcare Research <https://iris.scinfo.org.nz/layer/48066-nzlr-soil/>], supplemented by the Manaaki Whenua Landcare Research SoilsMap Viewer (<https://soils-maps.landcareresearch.co.nz/>) and SoilsPortal (<https://soils.landcareresearch.co.nz/>), and Northland Regional Council Our soils (<https://www.nrc.govt.nz/environment/land/our-soils/>). Note that different soil names are in each of these resources – for convenience we use the DSIR soil names. The purpose of our analysis is to determine the likely utility of the land for pre-European Māori kūmara horticulture, which is largely dependent on fertility and drainage. Soils are therefore reclassified to: Poor, Moderate and Hill.
- **Old Maps and Plans** - Pre-1900 maps and plans frequently show the location of historical buildings or sites. Review of maps and plans was carried out by earlier archaeologists using the Farrar's 1928 *Geological Map of Waipu and Mangawhai Survey District* and other survey maps (e.g., SO 698), which resulted in the addition of several sites, both Māori and European, to the NZAA site recording scheme. This process was repeated and expanded for the current assessment, importantly, where possible, field survey was carried out in marked locations to assess the presence of physical remains at sites.

- **Local Histories** – Local histories provide valuable contextual information for the Proposed Designation and may also identify areas of potential historical significance, which require field assessment.

2.3. Field Assessment

Field assessment involved a targeted pedestrian survey of recorded and potential archaeological sites (i.e., those identified during desktop assessment). Pedestrian survey was also carried out across areas regarded as having archaeological potential based on landscape context and the known distribution of sites.

Survey involved the inspection of the ground surface for visible signs of archaeological sites. Areas of disturbed ground, for instance track cuttings, were also inspected for subsurface features and to gain an understanding of localised soil condition. No shovel test pitting was carried out. Identified archaeological sites were recorded with GPS and photographed. Existing NZAA site record forms were updated or new ones created in ArchSite.

Only properties where landowner permissions were obtained were assessed and not all properties known to contain archaeological sites were surveyed (Figure 1). All recorded archaeological sites within the final consent design alignment were accessed and this as sufficient to inform this assessment report.

2.4. Alignment changes within the Proposed Designation

The Indicative Alignment within the Proposed Designation represents a possible alignment which has been developed for assessment purposes and to illustrate what the Project's final design might look like, and the effects generated by its construction and operation. The alignment that gets built including the design and placement of bridges, culverts, stormwater systems, soil disposal areas and landscaping, will be refined and confirmed during the detailed design stage. As a result, this assessment has anticipated impacts within the Proposed Designation, rather than just the Indicative Alignment. The recommended mitigation methods and proposed conditions in Section 11 establish outcome-based criteria that will ensure effects on the environment are adequately avoided, remedied or mitigated, regardless of the final design and construction methodology for the Project. As such, should the final alignment within the Proposed Designation change, the effects assessment, proposed mitigation and recommendations outlined in this report would remain appropriate.

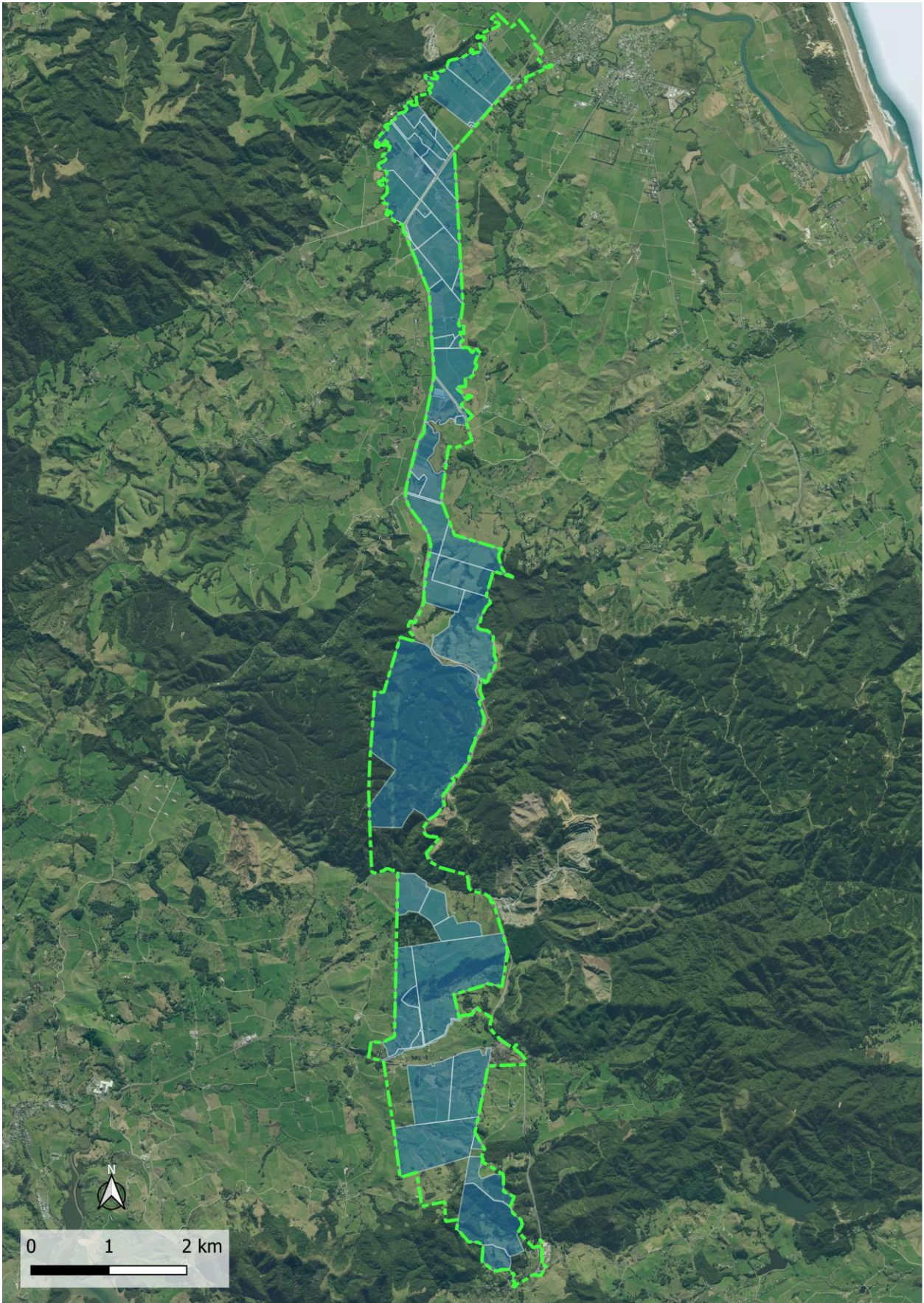


Figure 1: Properties visited during field work (blue shading) within the Proposed Designation (green dashed line).

3. Description of Land

3.1. General Overview of the Existing Environment

Northland has a rich archaeological and cultural landscape with heritage sites derived from all periods of time and representing many historical events and processes critical to Northland and New Zealand's history.

The Project is centred on Mano Hiwa Ariki / the Brynderwyn Hills, characterised by steep topography and both native and exotic tree cover. North of the Brynderwyns, the Proposed Designation crosses low hills made of mudstone clays with low fertility (NRC Soil Fact Sheet 3.3.2), which are adjacent to the Ahuroa River valley. To the south, the Proposed Designation includes pastured rolling hills and stream valleys with pockets of both young volcanic soils and limestone soils, both of moderate fertility (NRC Soil Fact Sheet 5.0 & 3.5.1).

3.1.1. Pre-European Māori Period

The environment in and around the Proposed Designation has been a focus of human occupation for centuries. Māori were drawn to the abundance of economic resources of the coastal and harbour areas including stone types suitable for tool manufacture (e.g., Onerahi chert); marine and freshwater mammals, birds and fish; wild resources of forests and swamps; and favourable land and environment for growing imported tropical Polynesian crops such as kūmara and taro (Bickler et al. 2008; Frederickson 1990).

While evidence of early settlement is present, radiocarbon dates from 25 sites in the vicinity of the Proposed Designation, show most Māori occupation occurred post-AD 1500 (Petchey et al. 2022). Māori settlement at this time was predominantly coastal and particularly dense in harbour and estuarine areas north and east of the Proposed Designation. Middens are particularly common. Large shellfish processing sites are located at One Tree Point and Mangawhai (Phillips and Harlow 2001), while smaller, single-event middens have been recorded in the dunes and inland adjacent to rivers.

Pā are distributed on high ground and ridges in the Proposed Designation. Pā exhibit a variety of complexity. The complex of pā on the high ground west of Pukepohatu across to Pukeareinga is large, highly conspicuous, and commands the area south of State Highway 12 (SH12). The site defences enclose middens, living terraces and many storage pits, which suggest large-scale and prolonged occupation. Such pā functioned both as defended occupation and food storage sites, and as political statements. By contrast, several smaller pā in the Proposed Designation are single units, containing storage pits with limited space for occupation.

The Māori economy was based on both wild and cultivated food. Secondary evidence of horticulture is present in the form of crop storage, both inside pā and in 'open' sites, but no gardening sites are currently recorded in the Proposed Designation. However, between the Proposed Designation and Maungaturoto, historical aerial photographs and LiDAR show evidence of parallel slope trenches consistent with horticultural sites in the Whangārei District that utilise the rendzina soils derived from limestone parent material (Furey 2006). Moreover, historical records attest to the presence of large drainage ditches, possibly associated with wetland horticulture, in the Waihoihoi River valley and near the Waipū River mouth (Wilson 1923).

3.1.2. Historic Period

In 1769 James Cook, captain of the *Endeavour*, described the land behind Bream Bay as having 'tufts' of forest and no inhabitants although, during the night, fires were seen inland (cited in Salmond 1991: 213), possibly around the Whangārei Harbour which would have been regarded as inland by Cook because he did not find the harbour mouth.

The Proposed Designation and surrounding area straddle the frontier between the Ngāpuhi and Ngāti Whatua confederations, which meant it was a focal point for conflict, resulting in dynamic land tenure in the early 1800s. This conflict intensified following the arrival of muskets. One of the most famous battles between Ngāpuhi and Ngāti Whatua took place in 1825 east of Kaiwaka (southeast of the Proposed

Designation) and was known as Te Ika a Ranganui. Several Europeans observed the desolation around the area brought about by fighting, which included many deserted kāinga (Pickmere 1986).

By the late 1830s and 1840s access to muskets had equalised and warfare reduced around the district, which encouraged the return of Māori and arrival of European settlers. Early land speculators purchased extensive areas of land prior to the signing of the Treaty of Waitangi. The Ruakākā Block, claimed by James Busby, extended from Whangārei Harbour to Kaiwaka and inland to Tangihua Ranges. The similarly large Te Wairau block, claimed by Wright and Grahame, extended from the Otamatea and Kaiwaka Rivers toward the east coast of the island and overlapped with both the Ruakākā and Mangawhai blocks. These purchases were reviewed by the Land Commission, a body set up to investigate pre-Treaty land purchases and ultimately disallowed (Stirling and Towers 2007). In the case of the Te Wairau block, which covered land in the south of the Proposed Designation, smaller blocks were issued to the original claimants. These blocks came to be known as Taine's Run and the Brynderwyn Run (Butler 1963).

From 1840 the Government began an aggressive land purchasing and confiscation regime in the north. The speed and questionable tactics involved in the sales were driven by a need to provide lands for European settlement (O'Malley 2016). One such settlement was that of the Scottish/Nova Scotian settlers who arrived in Waipū in late 1854. Led by the Reverend Norman McLeod, the Scottish immigrants established a thriving agricultural economy, particularly focussed on beef cattle, which were first introduced around 1855, and dairy farming (McKenzie 1935).

Kauri logging was also a key early industry in the north. Kauri offered straight and clean timber for a range of purposes, particularly shipbuilding and housing, and was both an actively sought resource and a by-product of land clearance (Butler 1963).

Another iconic industry of the north was kauri gum digging, which operated from 1847 into the 1940s (Ross 2011). By the late 19th century and into the early 20th century gum digging was a prominent economic activity in Northland. Following the passing of the Kauri Gum Industry Act (1898) gum digging reserves were formed in or near the Proposed Designation. Gum diggers employed a variety of methods with 'gum hookers' – men who hooked gum from the depths of swamps with large hooks – operating alongside traditional pit digging, while on the higher ground diggers would target specific areas to collect gum from near the surface (Ross 2011). The area between Marsden Point, One Tree Point and Ruakākā was a particularly rich gum field, which in 1887 had 36 men, over half of the total population, engaged in gum-digging (Carpenter et al. 2017). When the kauri was exhausted from blocks, they were converted to farms.

3.1.3. Previous Archaeological Research

The Proposed Designation has undergone a limited amount of development and, as a result, few archaeological investigations have been undertaken in the Proposed Designation.

One such investigation was undertaken by Simon Best (Best et al. 2003) at McGregor's Blacksmith (Q08/652) near the junction of Millbrook Road and State Highway 1 (SH1). Here, Best identified dense concentrations of metal objects, consistent with a general-purpose rural smithy. Complete objects and waste formed a low tell just south of Millbrook Road, although the material extended well into the road reserve. The forge and related structural remains were not identified.

Several excavations have been undertaken just outside the Proposed Designation, which are material to this assessment as they provide examples of the potential archaeological remains associated with both Māori and European occupation in the Proposed Designation.

Excavations in the wider area have been carried out in association with residential developments in coastal flats and nearby uplands at Waipū Cove, Langs Beach and Mangawhai, and have generally identified middens and occupation sites from the later end of the pre-European period. In Waipū, excavation has identified several shell midden (Q08/670, Q08/684 and Q08/669) on the upper terrace of the Waihoihoi and Ahuroa Rivers, which include both estuarine and sandy shore species (Brown 2022). These sites provide evidence that river systems were being used as part of Māori transport networks and were probably a focus of settlement.

Investigations of an early Nova Scotian flour mill (Q08/685) and Norman McLeod's cottage site (Q08/655) were undertaken in conjunction with Best's excavation of the blacksmith site. In both cases, investigations identified significant subsurface remains associated with early European settlement. The results of the McLeod house site investigations are particularly pertinent because several similar former house sites are present in the Proposed Designation. The McLeod house had no visible surface features and was identified on the basis of oral accounts. Excavations did not clearly identify the location of the cottage but did find possible yard surfaces and a rich and varied artefact and faunal assemblage consistent with late 19th and early 20th century occupation (Best et al. 2003).

Archaeological survey has been undertaken in a piecemeal manner in the Proposed Designation. Surveys have largely been constrained to small lot boundaries and most site recording has been carried out remotely. For instance, Q08/57 (pits) was recorded from historical aerial photographs, Nova Scotian house sites (e.g., Q08/555), pā (e.g., Q08/546) and Kauri workings (Q08/540) have been recorded on the basis of late 19th and early twentieth century plans. Prior to the current assessment many of these sites had not been visited by archaeologists.

4. Desk-based Assessment

4.1. Previously Recorded Archaeological Sites

There are ten previously recorded archaeological sites in the Proposed Designation. These include several pā and pit/terrace sites, located in the foothills to the south and north of the Brynderwyns and historic sites relating primarily to the Nova Scotian settlement at Waipū. During this work four new archaeological sites were recorded in the Proposed Designation (Table 1: Recorded archaeological sites in the Proposed Designation).

Table 1: Recorded archaeological sites in the Proposed Designation

NZAA No.		
Q08/360	Pā	Marked as a pā in a map from the 1920s, no defensive ditches visible. Several large, square pits and marked burial ground in northwest corner.
Q08/56	Pit/Terrace	Several pits damaged by a farm track.
Q08/702	Pit/Terrace	New site, identified by LiDAR and confirmed in field. 4 pits.
Q08/57	Pit/Terrace	10 poorly preserved depressions at the end of a flattened north-facing spur.
Q08/39	Pā	Small ring-ditch pā.
Q08/703	Pit/Terrace	New site, identified by LiDAR and confirmed in field. 5 pits.
Q08/700	Pā	New site, identified by LiDAR and confirmed in field. 35m long ditch cutting off small, naturally defensible spur. Internal features unclear due to bush.
Q08/560	Historic	Old kauri working area. Recorded on DP 24461 from 1933.
Q08/403	Findspot	Findspot of a large nephrite adze.
Q08/546	Pā	Recorded on survey map from 1928.
Q08/555 ¹	Historic-Domestic	Site of Hugh McKenzie's homestead, as indicated on SO 698.
Q08/701	Midden	New site, identified in field. Small (<1m ²) scatter of midden exposed in drain cutting.
Q08/663	Historic-Industrial	McGregor's Blacksmith at 'The Junction'
Q08/652	Historic-Domestic	Site of several domestic and commercial buildings at 'The Junction'

4.2. LiDAR

This project utilised DEMs sourced from LINZ data service, which was processed into two derived models: hillshade and slope, both produced using standard settings in QGIS (Figure 2).

¹ Although Q08/555 is recorded within the Proposed Designation, the actual location thereof is approximately 280 m to the south. The actual location thereof was verified to be outside of the Proposed Designation. Effects on this site is therefore not further considered in this report.

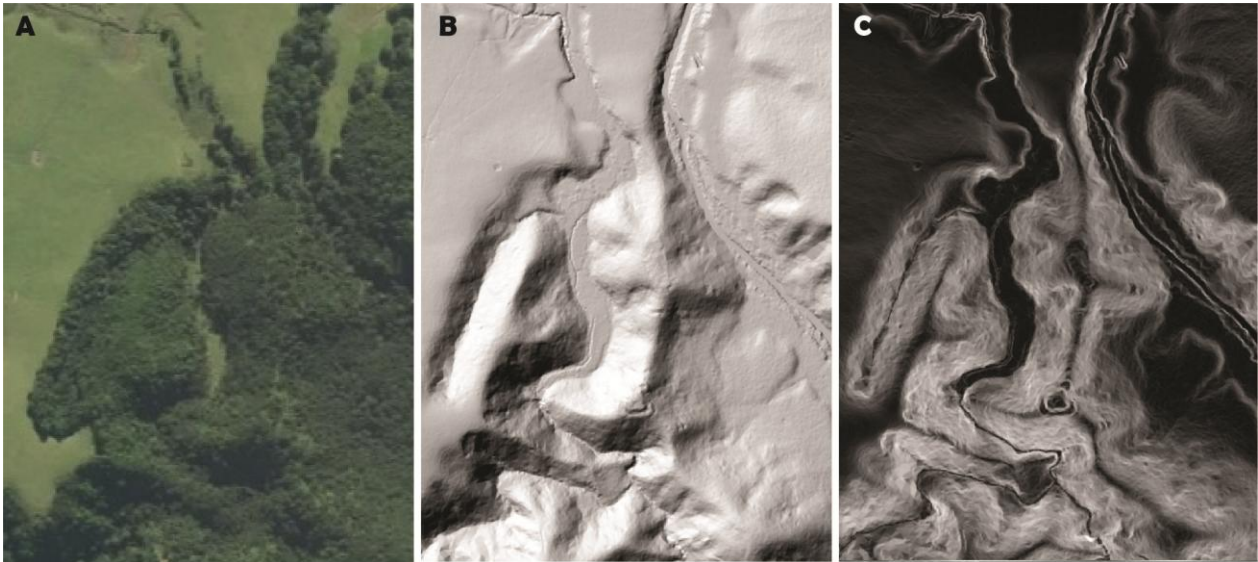


Figure 2: Demonstration of LiDAR derived models. A – Aerial photograph, B – Hillshade model derived from DEM, C – Slope model derived from DEM.

Derived models were manually searched for archaeological features, which were then recorded as shapefiles in the project GIS. Five potential sites were identified using this method; ground survey of these locations resulted in the recording of three new archaeological sites (Q08/700, Q08/702 & Q08/703; see Section 5 below).

Accurate site location and extent information for recorded sites that had not previously been visited was also gained through LiDAR data.

4.3. Aerial Photographs

This exercise identified the same sites as the LiDAR review but was useful in providing a picture of the sites prior to direct damage (e.g., bulldozing) or slow erosion.

4.4. Old Maps and Plans

North of the Brynderwyn Hills, several cottages as well as farm buildings and bridges associated with the Nova Scotian settlement of Waipū were identified. These are represented by small sketches of buildings on early survey plans with the occupier also noted (Figure 3). Typically, the location of these buildings was eyeballed and not accurately surveyed, therefore the locations must be regarded as approximate. In several instances names are replicated, this may represent inter-map error or is a result of the historically attested process of moving cottages on sledges to new locations.

Review of old maps and plans did not result in the identification of further historic-era sites south of the Brynderwyns. However, the presence of Māori cultivations is noted in association with good soils near the southern extent of the Proposed Designation (Figure 5). The precise location of cultivations is unclear, but this indicates the likely presence of such sites on similar soil in the vicinity.

4.5. Soils

Soils are generally poorly to imperfectly drained clays, although the soils of the Brynderwyns are better drained loams but too steep for horticulture (Figure 6). There is a crescent of well drained loams around Pukekaroro (Aponga clays) although only a small part of this extends into the Proposed Designation. Plan SO 979, undated but probably 19th century, describes these as “Excellent Soils.” Plan ML 13065 (Figure 5), also undated, shows “Old cultivation Good Land” in this area, indicating Māori gardening. Soils between SH12 and Pukekaroro are often melanic, a dark grey topsoil formed over limestone. These would have drained better than many of the soils in the Proposed Designation and would potentially have been suitable for kūmara horticulture – note, our field work was undertaken during a wet winter and many of the

soils were clearly poorly drained, and all were waterlogged to some degree. Progressing north the limestone becomes increasingly less prominent, and soils become increasingly heavy. Just south of the Brynderwyns they are leached of nutrients by kauri forests (podzolized) and quite light in colour.

North of the Brynderwyns there are bands of alluvial Whakapara sands along watercourses that would also have drained well though, being low lying, they would have been subject to flooding. Other soils are heavy Waipū clays.



Figure 3: Detail of SO 698 (c. 1864) showing approximate locations of pre-1900 Nova Scotian buildings and bridges.

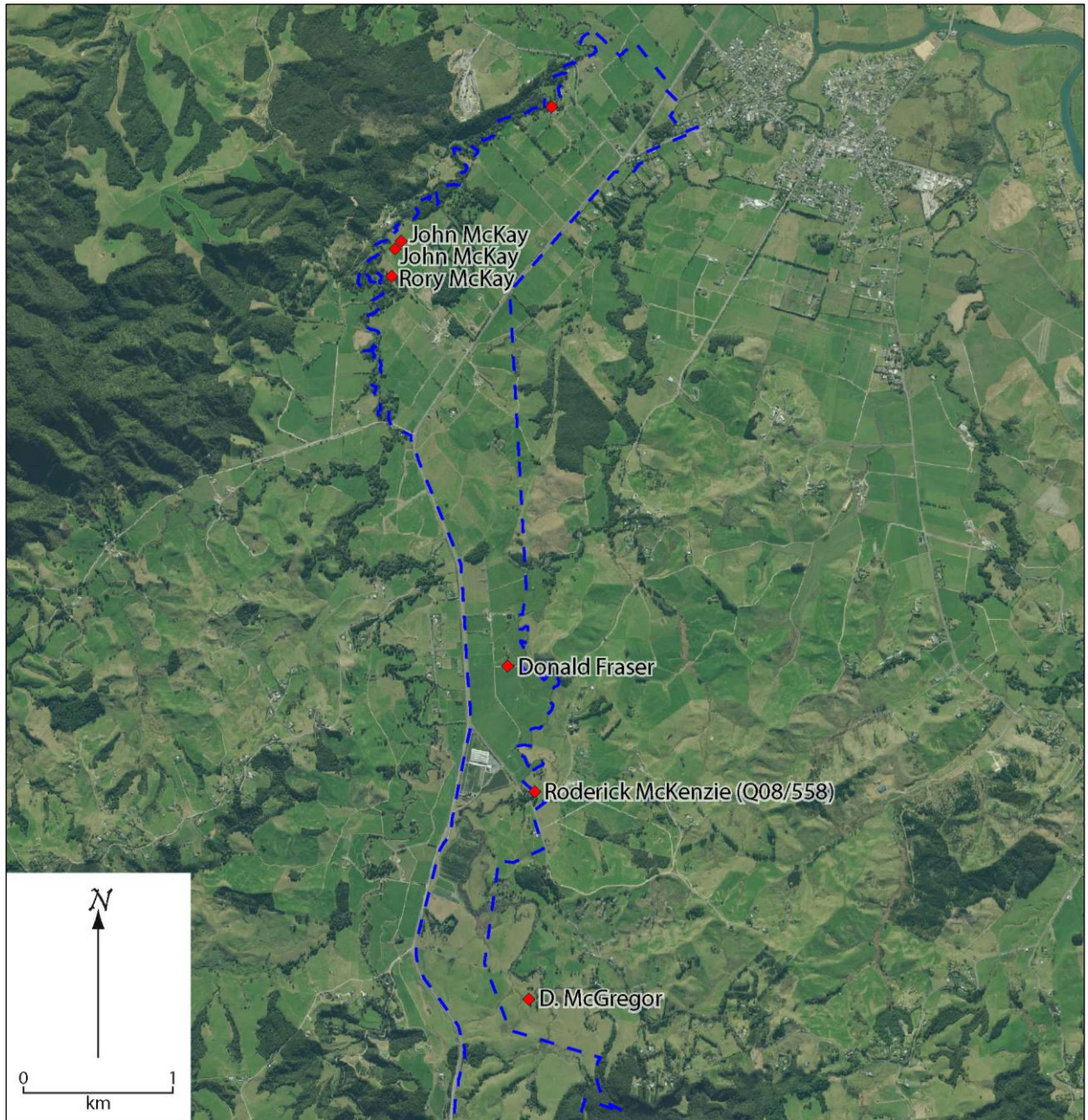


Figure 4: The location of pre-1900 Nova Scotian buildings in the Proposed Designation based on old survey plans.



Figure 5: ML 13065 showing “Old cultivation Good Land” west of Pukekaroro.

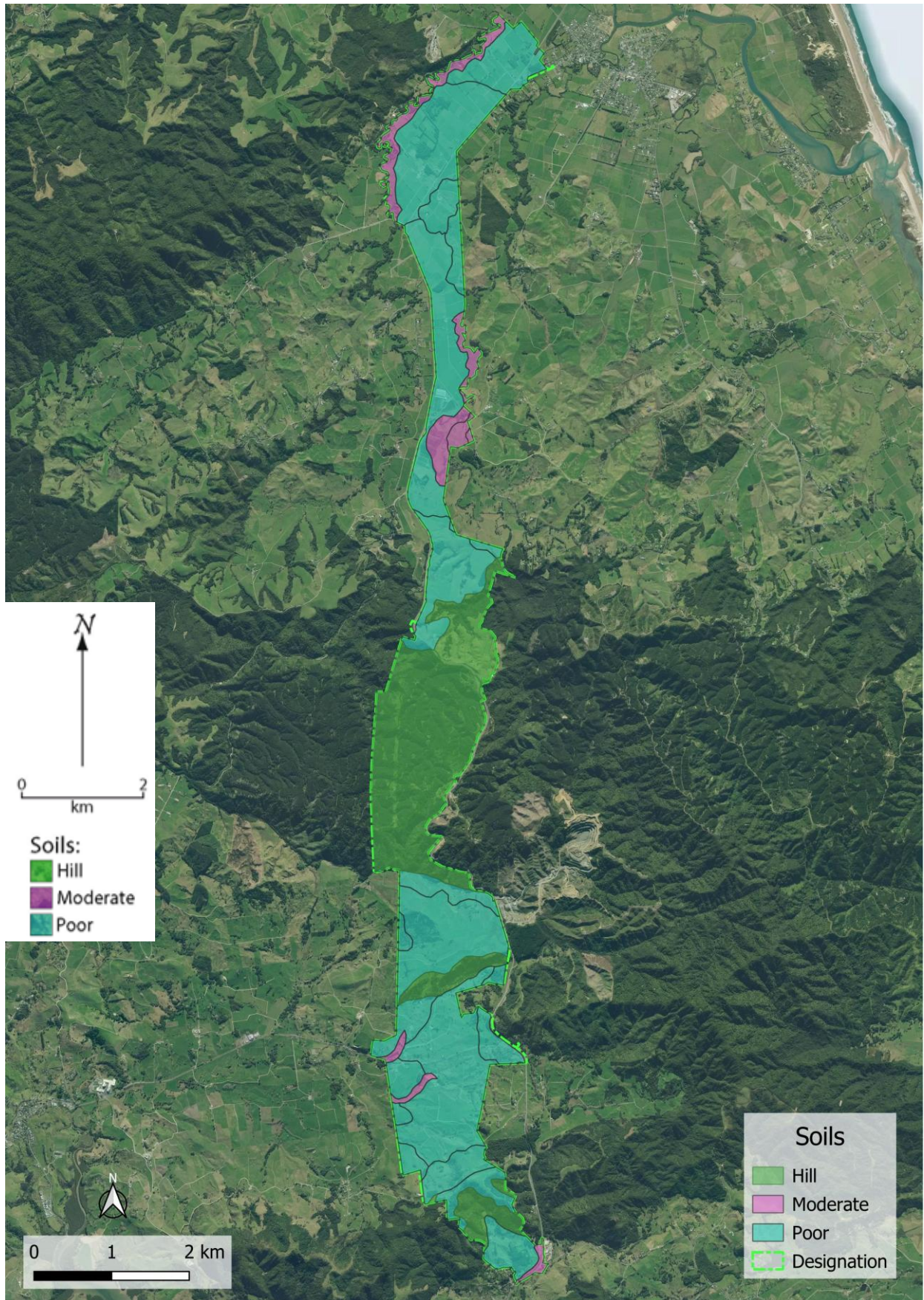


Figure 6: Soils within the Proposed Designation (adapted from DSIR 1954).

4.6. District Plans and Rārangī Kōrero

The OKDP records the Coates Monument (H65) at the junction between SH1 and SH12. The monument remembers Joseph Gordon Coates, 25th prime minister of New Zealand, who was born nearby at Matakohe. The monument was erected in 1944 and is made of the piers of the old Waterloo Bridge in London. Aerial photographs show its original location was at the present junction of the roads, it has since been moved approximately 30 m west to its current location. This is scheduled as Category A in the plan. The current design will result in no modification to this monument; it is therefore not considered further.

No sites recorded in the WDP are present in the Proposed Designation.

No sites recorded on the Heritage New Zealand List - Rārangī Kōrero are present in the Proposed Designation.

5. Field assessment

5.1. South of the Brynderwyns

Six sites were previously recorded in the Proposed Designation south of the Brynderwyns, some of which had been recorded from aerial photographs or old maps and plans but never visited by an archaeologist. Of these, four were surveyed and described and one was not visited (Q08/56). Two new sites were identified by remote sensing and confirmed in the field (Q08/700 – pā, and Q08/703 – pits) and one new site (Q08/702 - pits) was recorded during survey. Sites are described south to north.

5.1.1. Artefact finds

Several taonga – seven toki (adze), one patu muka (flax beater) and one small block of polished pounamu – have been found in the eco village at the southern termination, just outside of the Proposed Designation and are held by Te Uri o Hau. Five of the toki appear to be basalt, one is probably gabro and the other is probably pakohe (argillite) from the northern South Island. Two, including the probable pakohe toki, are quite small, indicating they have been curated for several generations, becoming progressively smaller as they are sharpened and reshaped. These have not been recorded as an archaeological site but are indicative of the potential for finds along the Proposed Designation.



Figure 7: Taonga found in the general vicinity of pā Q08/651 – probable gabro toki on left, patu muka second from left, probable pakohe toki third from right on bottom. Photo scale = 0.5 m.

5.1.2. Q08/360 pā

This unnamed pā was first recorded by Leigh Johnson in 1997 and subsequently by Andrew Brown in 2021, in both cases with site visits. It is also marked as a pā on the 1928 NZ Geological Survey Bulletin Map *Geological Map of Waipu and Mangawhai Survey Districts* but neither Johnson nor Brown recorded any defensive features that would confirm it as a pā (as defined archaeologically) rather than a pit and terrace site. Several pits are described, the largest of which is 7 x 7 m x 4 m deep. The site was not visited as part of the current assessment.

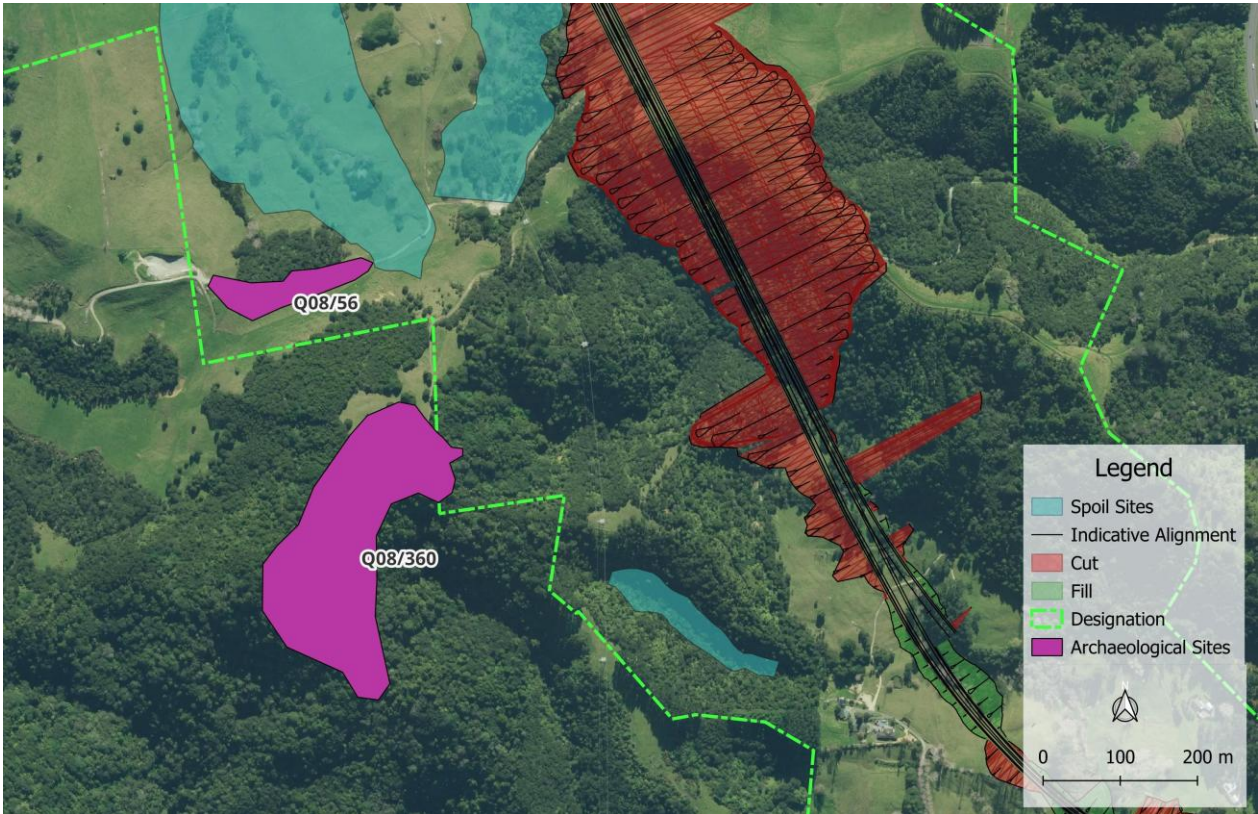


Figure 8: Location of pā Q08/360 in relation to currently designed earthworks.

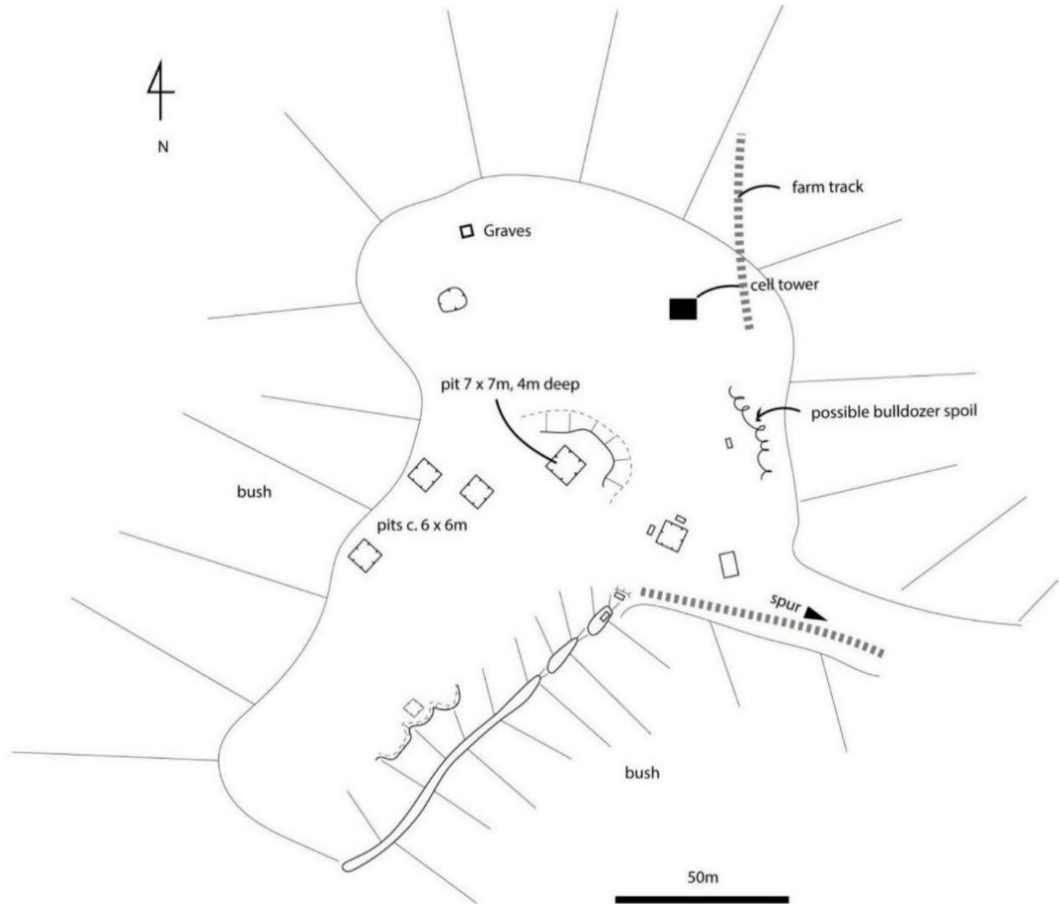


Figure 9: Sketch plan of pā Q08/360, from the NZAA site record.



Figure 10: Q08/360, terraces and pits, from the NZAA site record.

Pā Q08/360 is located on the western edge of the Proposed Designation. It is outside the Indicative Alignment including cut and fill and identified spoil sites.

5.1.3. Q08/56 pits

This pit site was recorded by Tony Walton (about the 1980s – no date is given on the site record form) from aerial photo SN212/425/48, flown 20 May 1963, and subsequently by Leigh Johnson in 1997. Johnson recorded that the site had been damaged, but some pits remained visible. These are not clear in the current aerial photography or LiDAR data. The site was not visited as part of the current assessment.

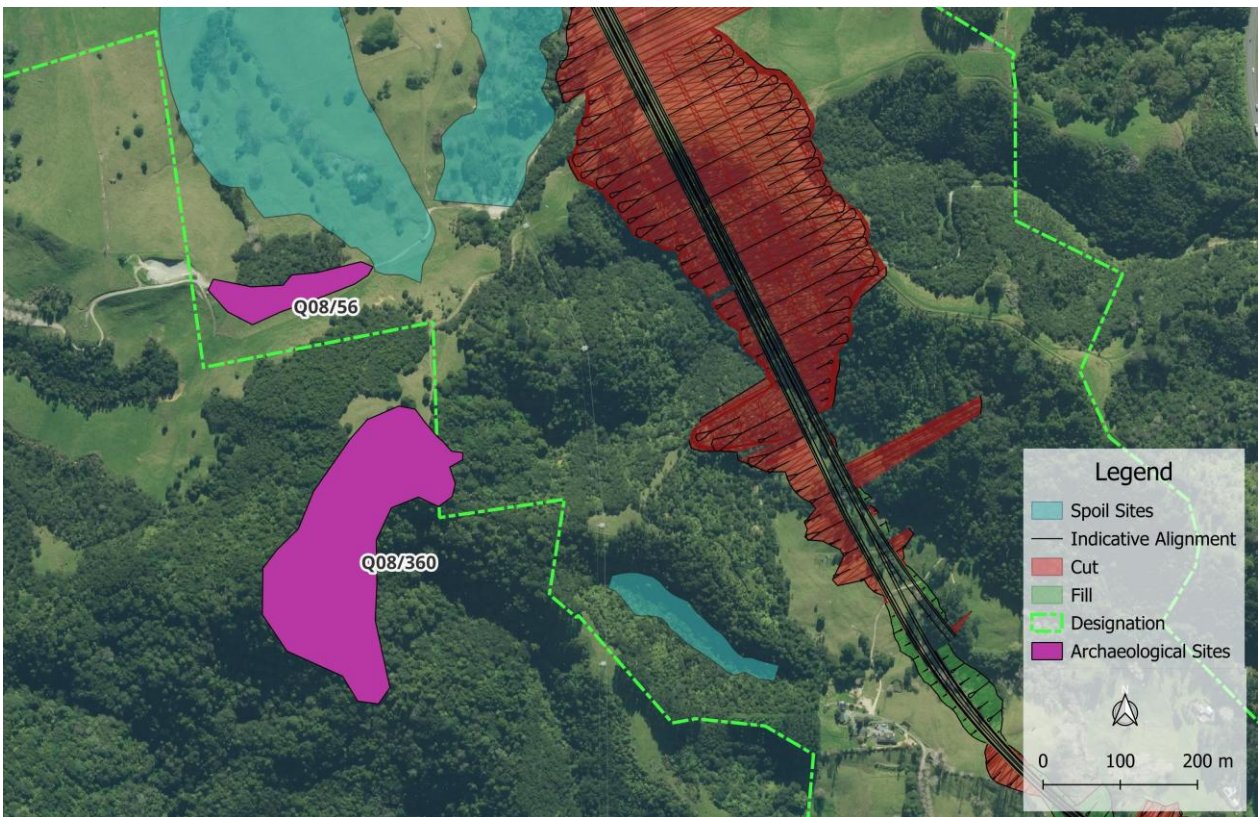


Figure 11: Location of Q08/56 in relation to currently designed earthworks.



Figure 12: Q08/56 visible in aerial photo SN212/426/47, flown 20 May 1963.

Q08/56 is outside the Indicative Alignment including cut and fill, but the edge thereof is within an area identified as a spoil site.

5.1.4. Q08/702 pits

This pit site was recorded by Matthew Campbell in 2025 from aerial photo SN212/425/47, flown 20 May 1963. The photo shows at least six pits along a high, narrow east-west trending hilltop with probably more to the east. The site was not visited as part of the current assessment.

Q08/702 is in the Proposed Designation and within a cut associated with the Indicative Alignment.

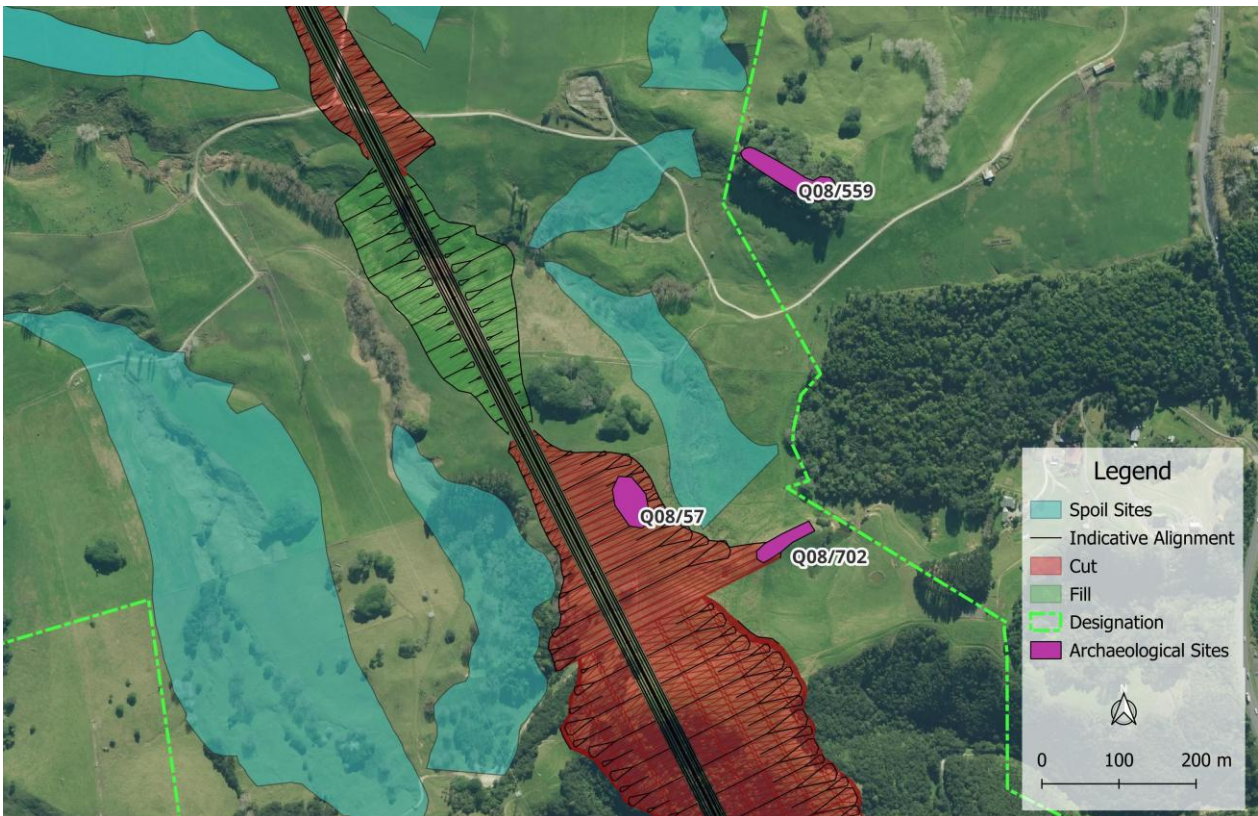


Figure 13: Location of Q08/702 in relation to currently designed earthworks.



Figure 14: Q08/702 visible in aerial photo SN212/426/47, flown 20 May 1963.

5.1.5. Q08/57 pits

This pit site was recorded by Tony Walton (about the 1980s – no date is given on the site record form) from aerial photo SN212/425/48, flown 20 May 1963, and by Leslie Goodliffe and David Bulmer in 1983 during survey for a gas pipeline (Goodliffe and Bulmer 1983). They described “About ten poorly preserved depressions, the largest 3 m x 2 m x 0.5 m, some of the smaller depressions have very unclear outlines.”

The site was inspected by Matthew Campbell and Te Uri o Hau kaitiaki Colin Flavell on 13 October 2025. The site is under low grass and ground surface visibility was reasonable. It remains much as they described it and the pits do not seem to have deteriorated much. The site is in fair condition.

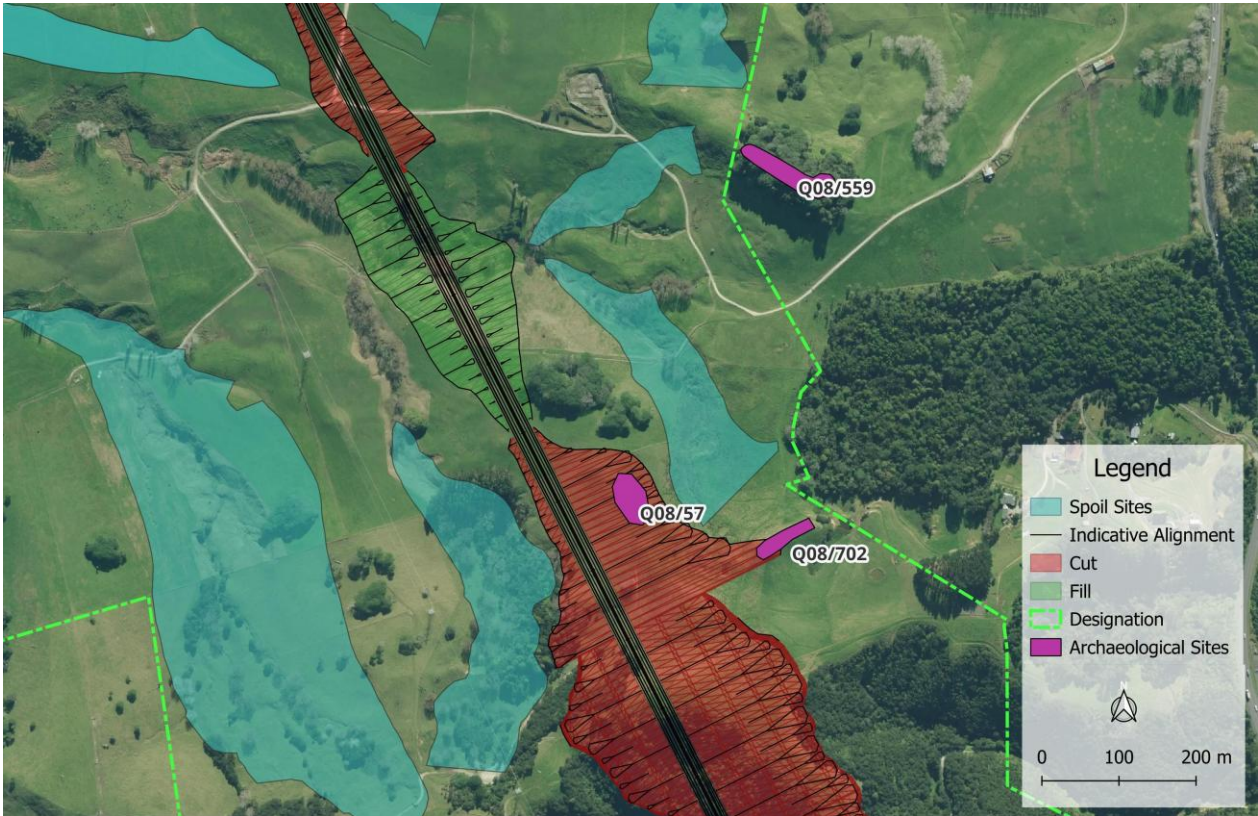


Figure 15: Location of Q08/57 in relation to currently designed earthworks.

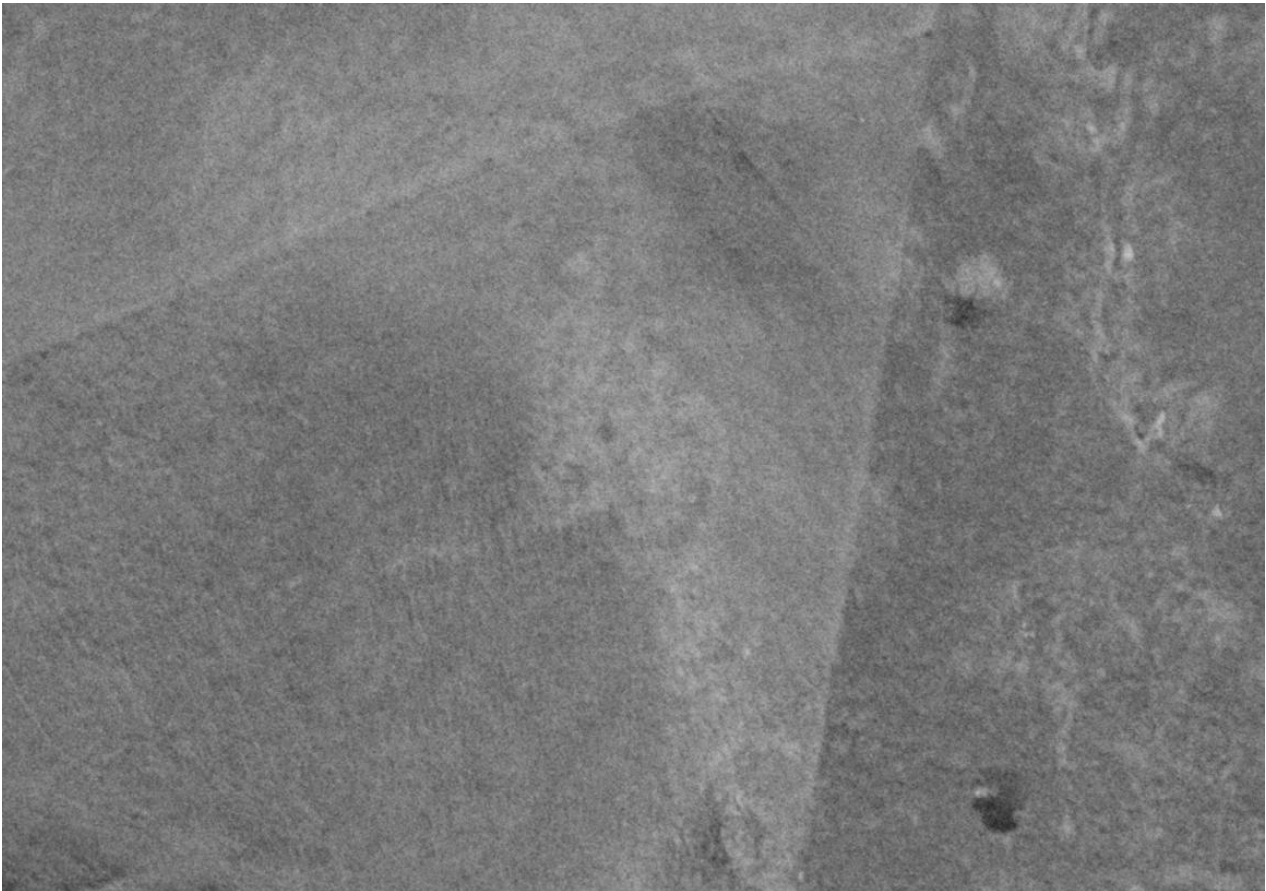


Figure 16: Q08/57 visible in aerial photo SN212/414/51, flown 20 May 1963.

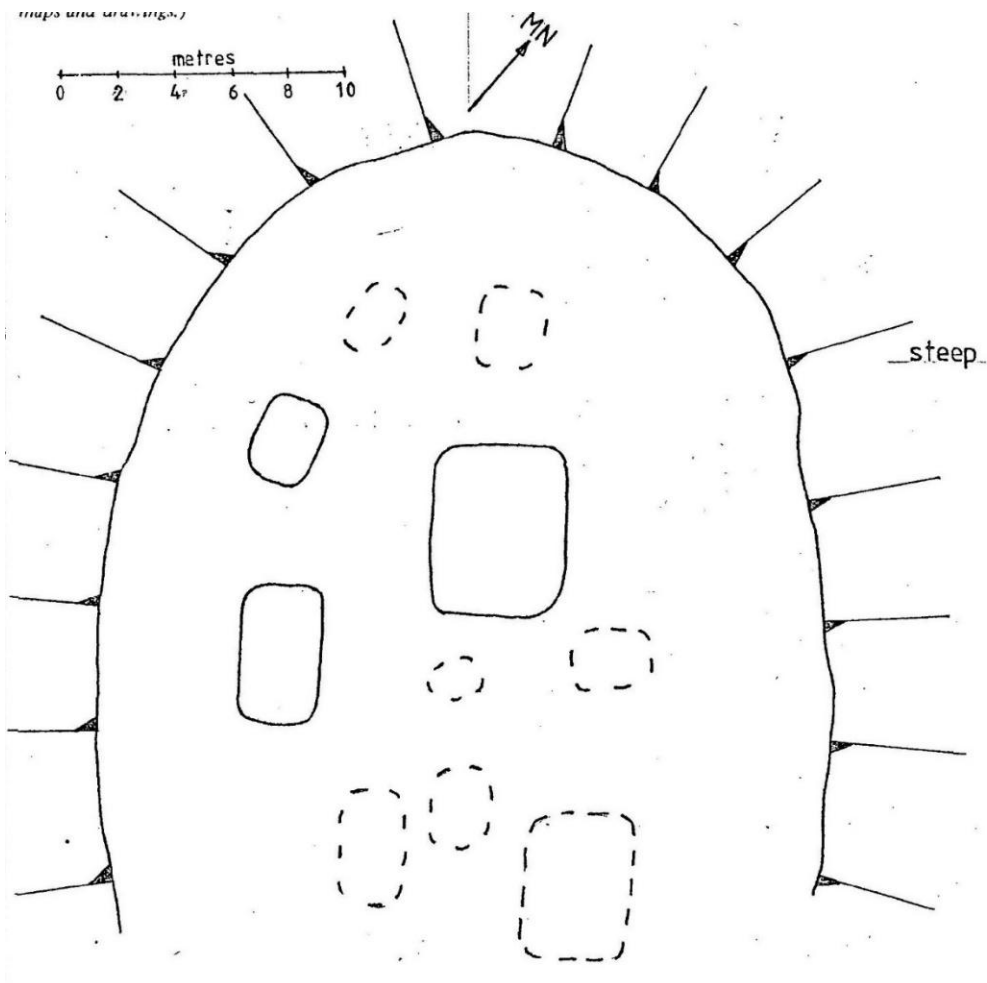


Figure 17: Sketch plan of Q08/57, from the NZAA site record.



Figure 18: Q08/57, pits looking north.

The NZAA site record located the site to the east of its true location, which would have placed it under a proposed spoil site. It is directly beneath proposed cut of the current Indicative Alignment.

5.1.6. Q08/39 pā

This unnamed pā was recorded by Tony Walton (about the 1980s – no date is given on the site record form) from aerial photo SN212/414/51, flown 20 May 1963, but not visited at the time. No description is given in the site record other than “Pa with pits” but the aerial photo shows terracing to the east and west ends on a low hill with two east-west running rows of pits. The north of the site is quite obscured by some farming activity, but there appears to be another row of pits (Figure 20).

The site was inspected by Matthew Campbell and Te Uri o Hau kaitiaki Colin Flavell on 13 October 2025. The western end of the hill on which the site is located had been quarried for limestone, but this does not appear to have affected any archaeological features. A shallow, mostly infilled ditch was visible at the western end of the site with two pits on a shallow terrace east of this, two rows of four pits on the top of the hill and steepened banks to the north and east. The site is in fair condition.

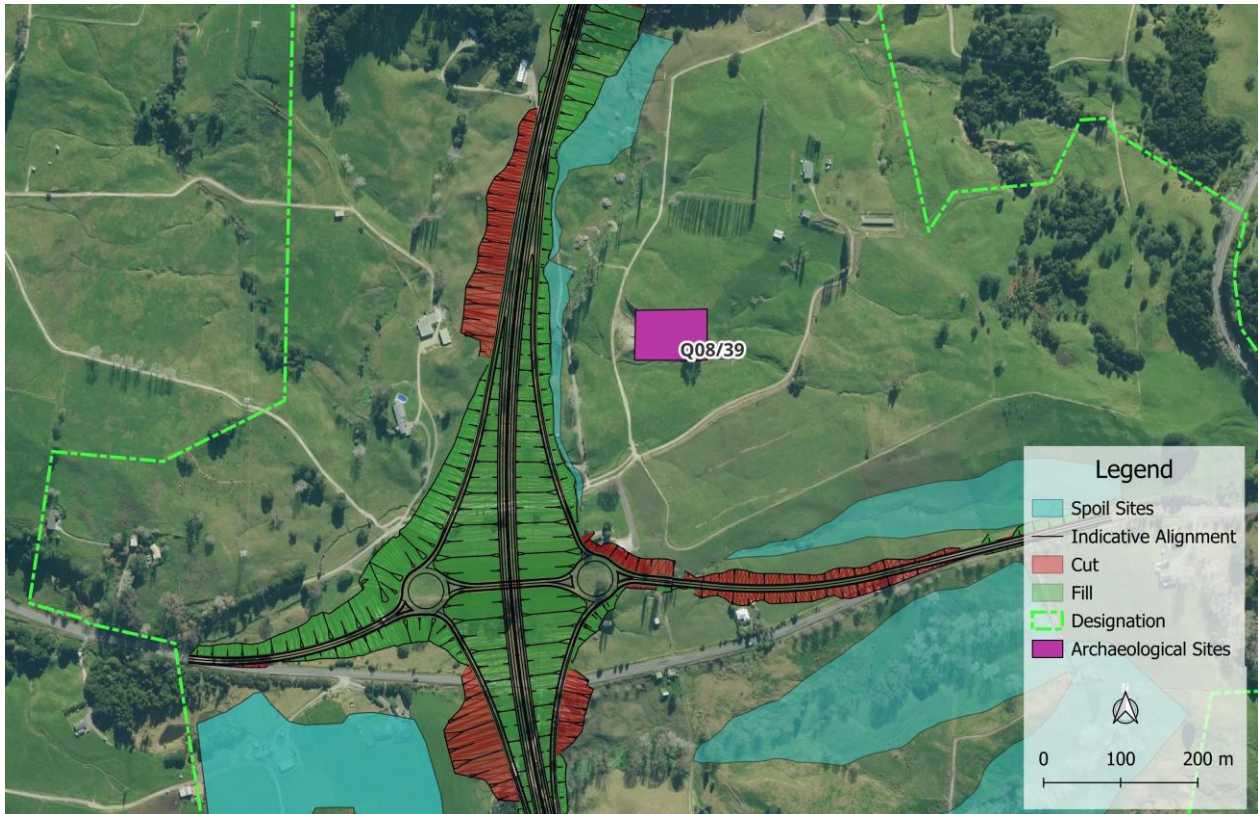


Figure 19: Location of pā Q08/39 in relation to currently designed earthworks.

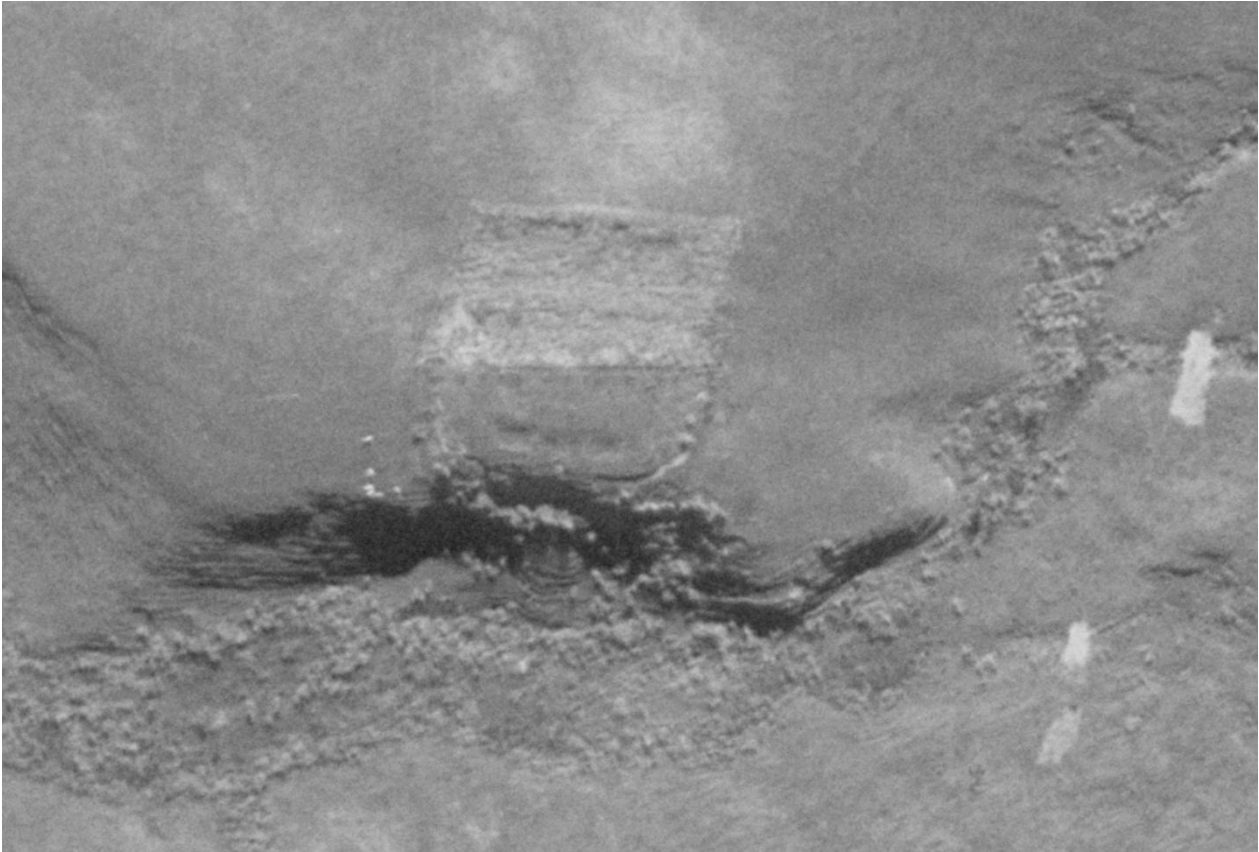


Figure 20: Q08/39 visible in aerial photo SN212/424/51, flown 20 May 1963.



Figure 21: Q08/39 viewed from the south. A row of pits is visible just below the crest of the hill.



Figure 22: Q08/39, shallow infilled ditch.



Figure 23: Q08/39, Pit 1, looking west.

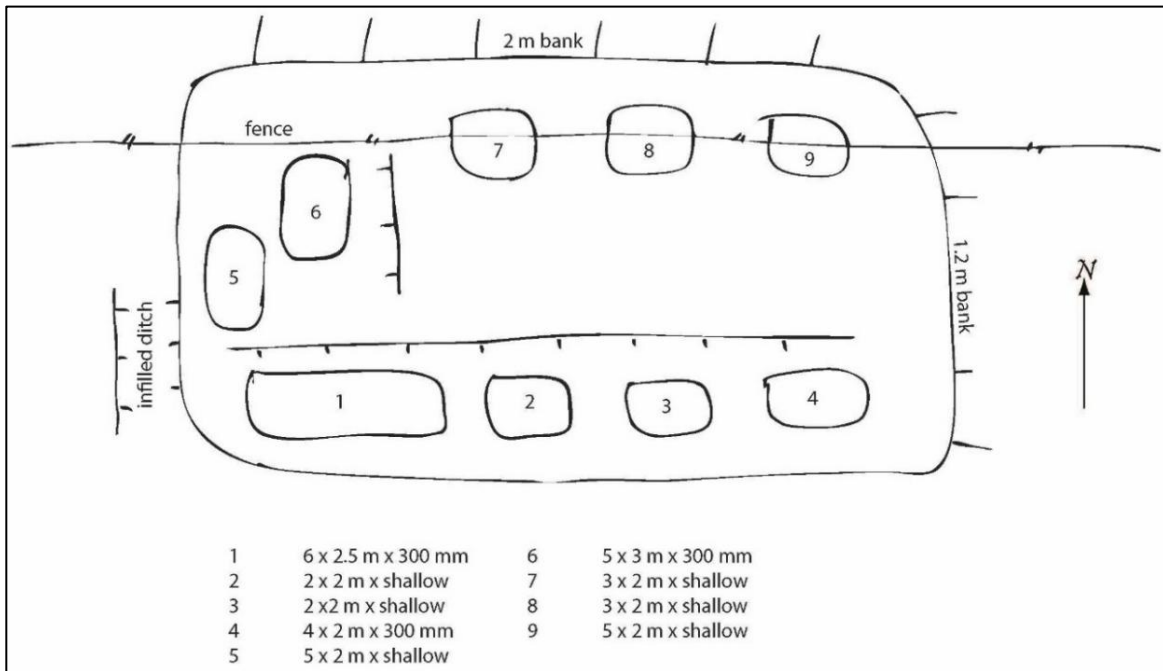


Figure 24: Sketch plan of Q08/39.

Pā Q09/39 was located within the Indicative Alignment and cut and fill of a previous design, however the SH12 intersection has since been redesigned to avoid this site.

5.1.7. Q08/703 pits

This pit site was recorded by Matthew Campbell, accompanied by Te Uri o Hau kaitiaki Tipene Ratima, on 22 September 2025 during a site visit for this assessment. It is located at the top of a steep south-facing escarpment under establishing second growth native bush. Ground surface visibility was good. The site consists of a row of five pits, one of which is in the fence line and quite shallow, while the other four are behind the fence and in better condition as they are not often accessed by stock. They are up to 0.5 m deep. The site is in fair condition.

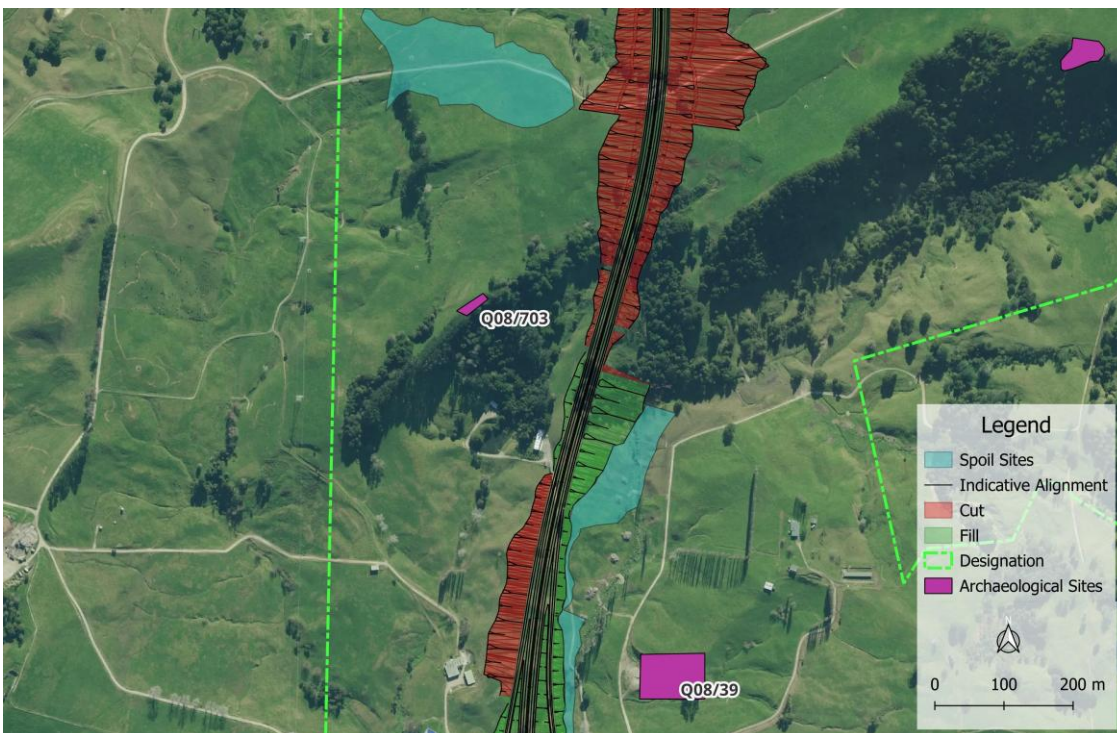


Figure 25: Location of Q08/703 in relation to currently designed earthworks.



Figure 26: Q08/703, Pit 3 (Figure 27), looking east. Photo scale = 0.5 m.

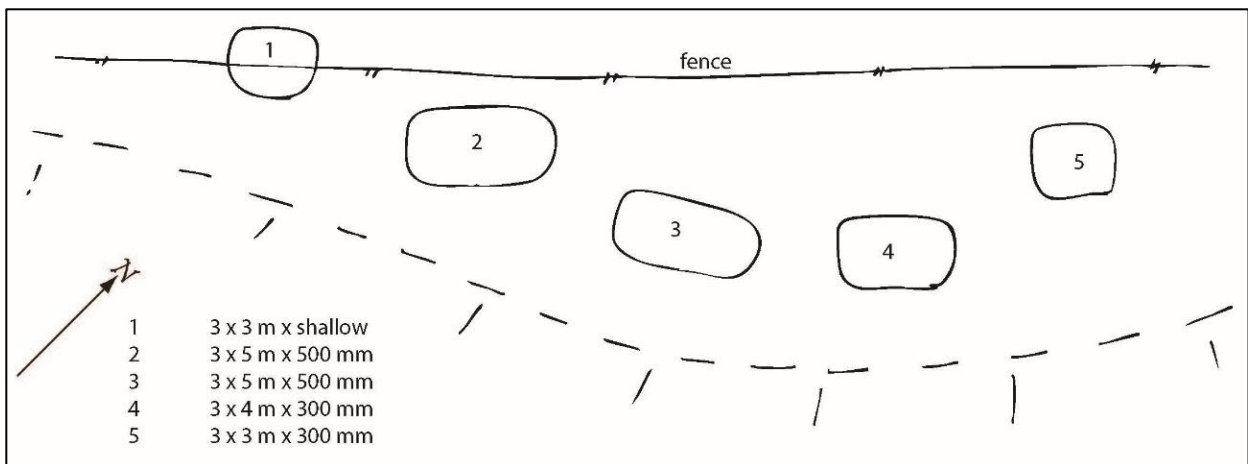


Figure 27: Sketch plan of Q08/703.

Q08/703 is outside the current Indicative Alignment and associated earthworks (including cut and fill and spoil sites), but within the Proposed Designation.

5.1.8. Q08/700 pā

This unnamed pā was recorded by Matthew Campbell, accompanied by Te Uri o Hau kaitiaki Tipene Ratima, on 22 September 2025 during a site visit for this assessment. It is located at the top of a steep south-facing escarpment under dense second growth native bush. Ground surface visibility ranged from good to poor. The site is behind the fence and in variable condition – it is not often accessed by stock, and some features are well preserved although others are very shallow or filled by mature trees. The northern, east–west running ditch just behind the fence is in good condition, clearly visible, and 4 m wide, up to 2.5 m high with a 800 mm high bank behind it. As it bends to the south at its western end it becomes shallower. There are two large deep pits just behind the western ditch up to 1.5 m deep while other pits are shallower and quite vague in outline. The ditch and the two larger pits are visible in the LiDAR slope model. The steep drop off of the escarpment to south and east provided protection from those quarters. The site is in fair but variable condition.

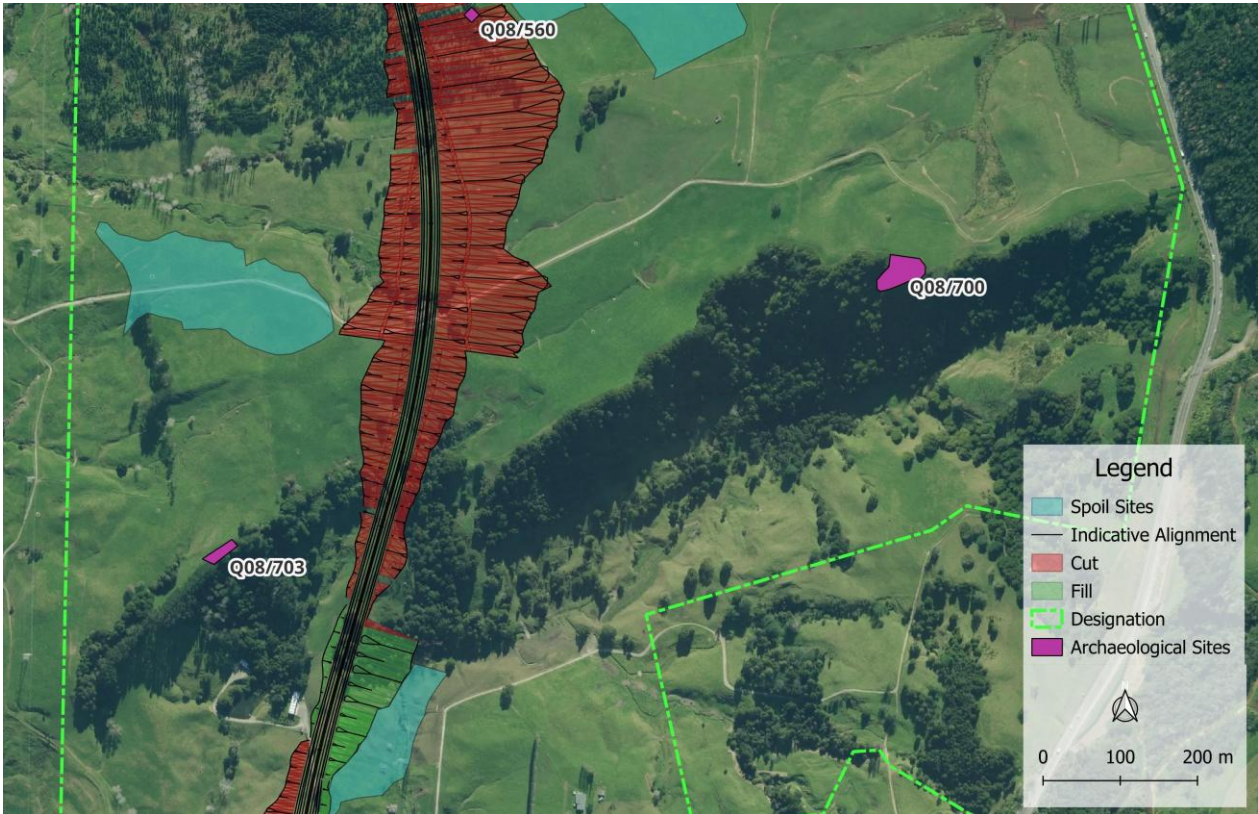


Figure 28: Location of pā Q08/700 in relation to currently designed earthworks.

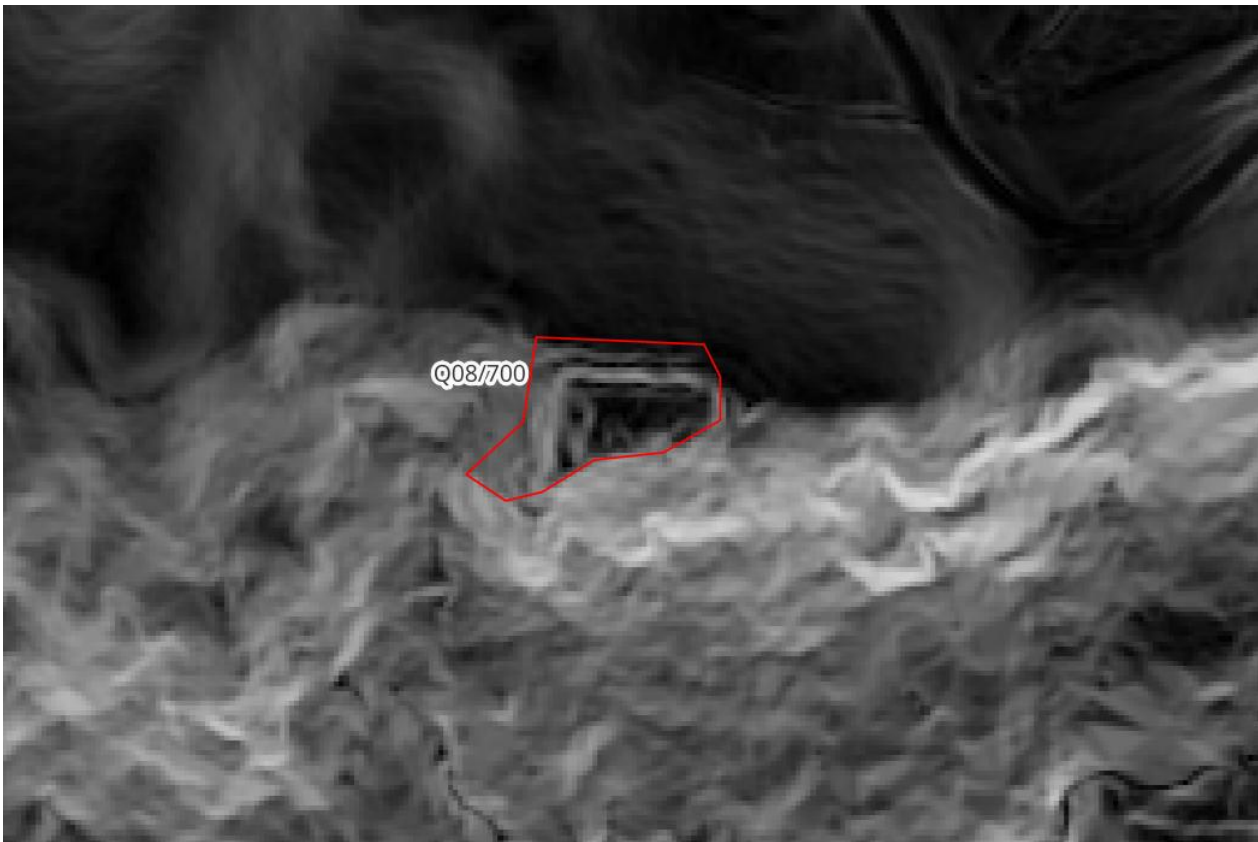


Figure 29: Pā Q08/700 visible in LiDAR slope data.



Figure 30: Northern, east-west running ditch of pā Q08/700.



Figure 31: Pit 2 (Figure 32), looking south.

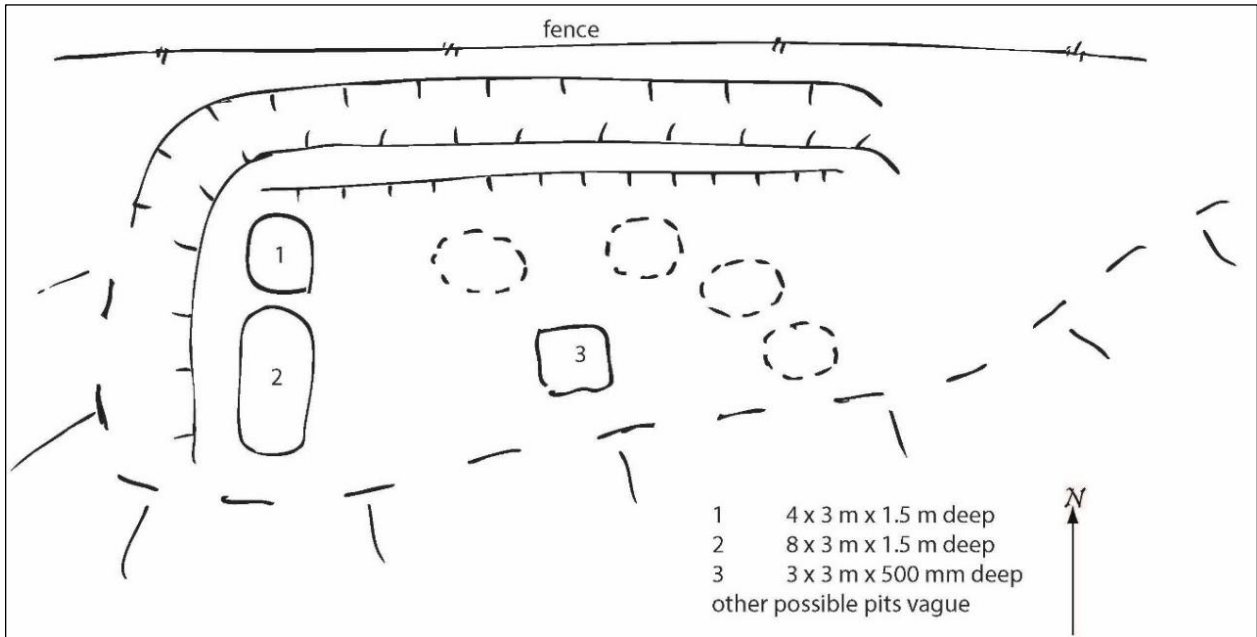


Figure 32: Sketch plan of pā Q08/700.

Q08/700 is outside the Indicative Alignment and associated earthworks (including cut and fill and spoil sites), but within the Proposed Designation.

5.1.9. Q08/560 historic timber milling

This site was recorded in 2010 by Jonathan Carpenter from DP 22461, dated 1932, that showed a general area of “old Kauri workings.” The area was assessed by Matthew Campbell on 23 September 2025, but no evidence of timber extraction or milling was visible.

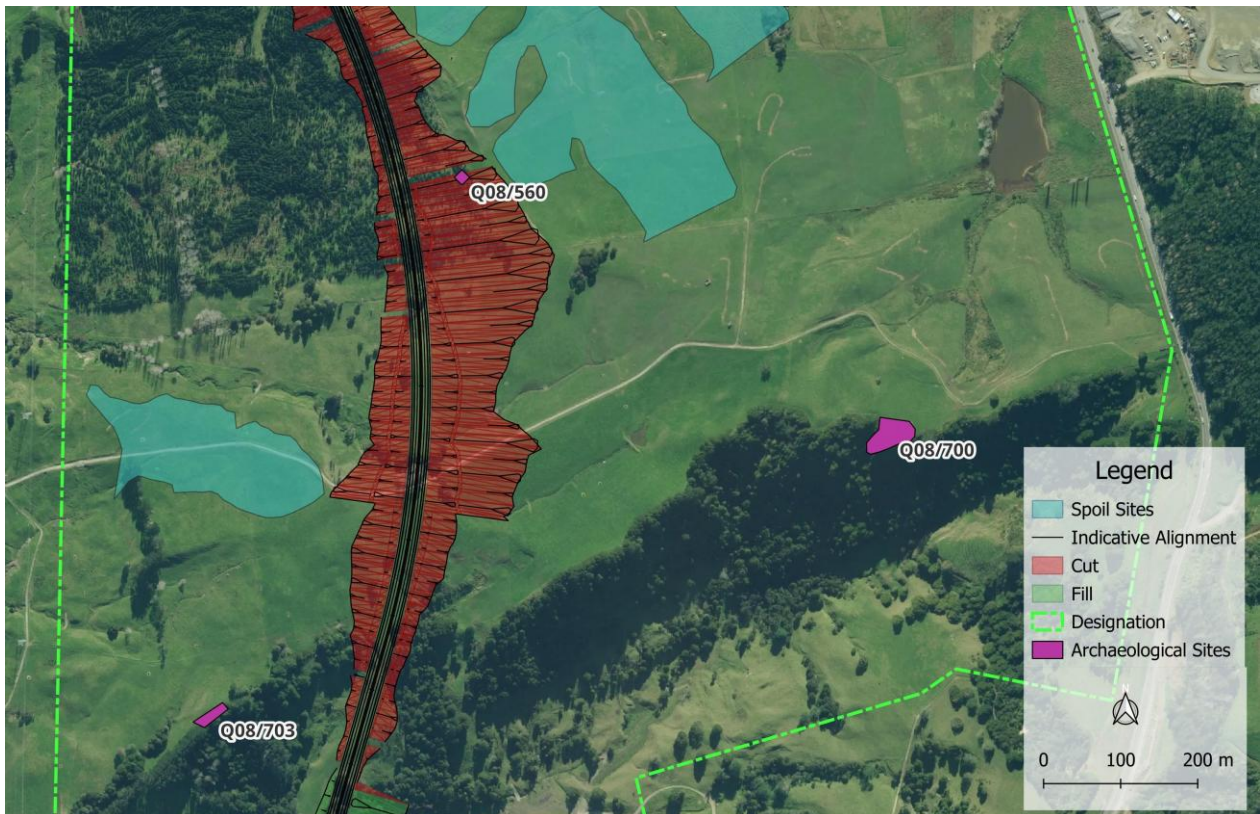


Figure 33: Location of Q08/560 in relation to currently designed earthworks.

Q08/560 is not strictly an archaeological site although it is indicative of early European industry. The point recorded by Carpenter is just an indication of much wider activities in the landscape, and evidence of timber milling may be found in this wider landscape. It is located within the cut of the Indicative Alignment.

5.2. The Brynderwyn Hills

A single archaeological site is recorded in the Proposed Designation in the Brynderwyn Hills.

5.2.1. Q08/403 findspot

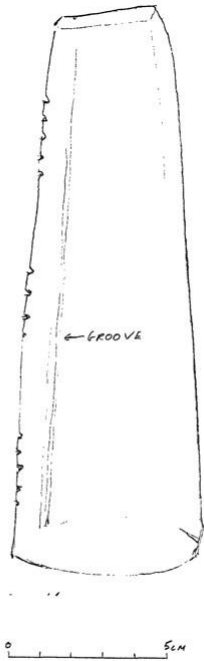
Q08/403 is a findspot for a pounamu toki. The site was recorded by Joan Maingay in 1999 on the basis of a report from a member of the public. The toki measured 17.9 x 5.8 cm with notching along one edge (Figure 35). No evidence of occupation was noted where the artefact was found, and its recorded location represents a best estimate.

The recorded location of the site and the wider area was surveyed on 30 October by Andy Brown and Opania George. No evidence of Māori occupation associated with the toki or further taonga was identified.

The recorded location of Q08/403 is outside the Indicative Alignment, but on the margin of a spoil site. At least two rotations of forestry operations have resulted in considerable landscape modification such that, if ever present, features associated with the findspot were not visible. Nevertheless, given the level of proposed earthworks in this zone, it is reasonable to suspect unrecorded, subterranean features may be impacted by works.



Figure 34: Location of Q08/403 in relation to currently designed earthworks.



ROUGH SKETCH OF NEPHRITE ADZE

Figure 35: Sketch of toki.

5.3. North of the Brynderwyn Hills

Three archaeological sites were previously recorded in the Proposed Designation north of the Brynderwyn Hills, two of these (Q08/546 Q08/663) had been recorded on the basis of old maps and plans or the historical record but never visited by an archaeologist. Q08/652 has previously been investigated by archaeologists. One new site (Q08/701) was recorded during site survey. Sites are described south to north. Properties were only assessed as landowner permission was obtained and not all properties known to contain archaeological sites were assessed.

5.3.1. Q08/546 pā

This site is a pā recorded in 2010 by Jonathan Carpenter from the 1928 NZ Geological Survey Bulletin Map *Geological Map of Waipu and Mangawhai Survey Districts*. The site was not visited at the time of recording. LiDAR models identified clearly visible features of the pā on the ridge adjacent to its recorded location. The site consists of two clusters of terrace and possible pits enclosed by defences and connected via a narrow ridgeline. The terrain offers a natural level of defensibility. The SRS has been updated to reflect the correct location.

A survey was conducted by Andy Brown and Opania George on 24 September 2025. This confirmed the absence of features in the originally recorded site location, but the corrected location of the pā could not be surveyed due to access issues.

Q08/546 is outside the Indicative Alignment and associated earthworks, including cut and fill and spoil sites, but partly within the Proposed Designation.

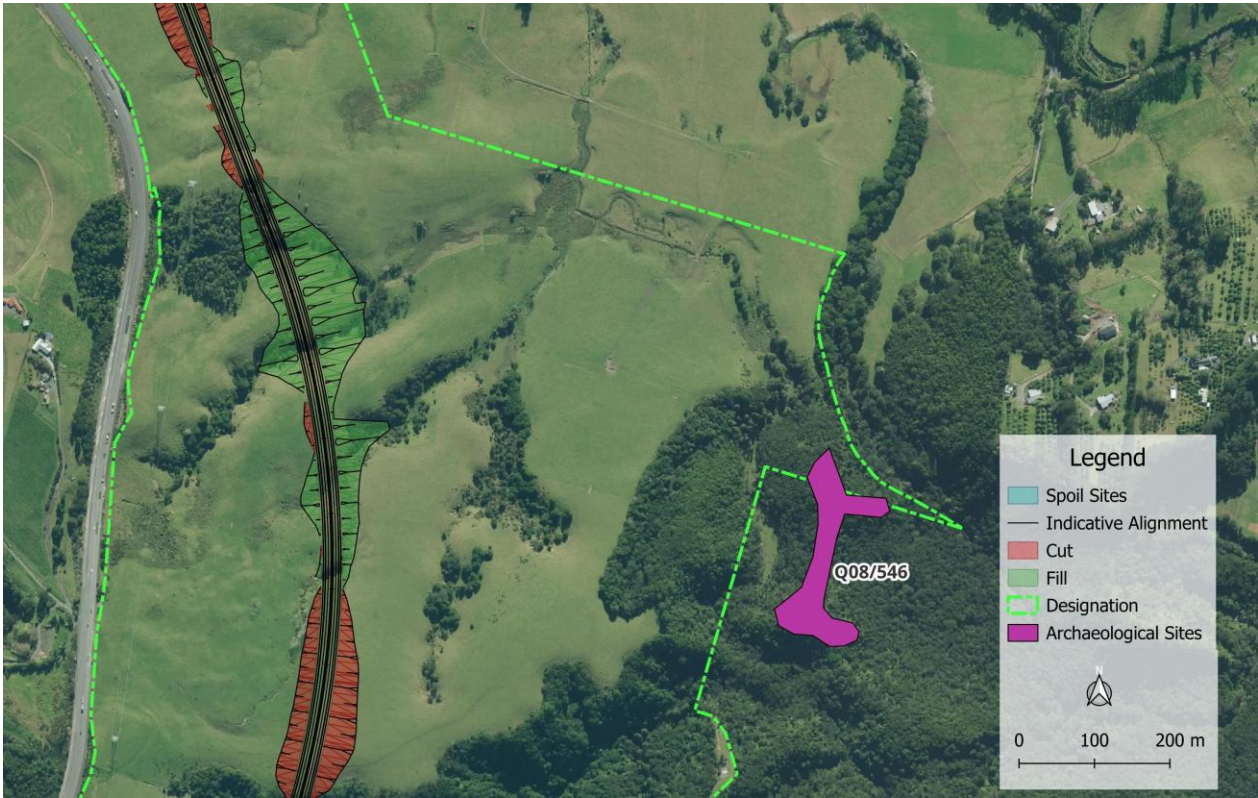


Figure 36: Location of Q08/546 in relation to currently designed earthworks.

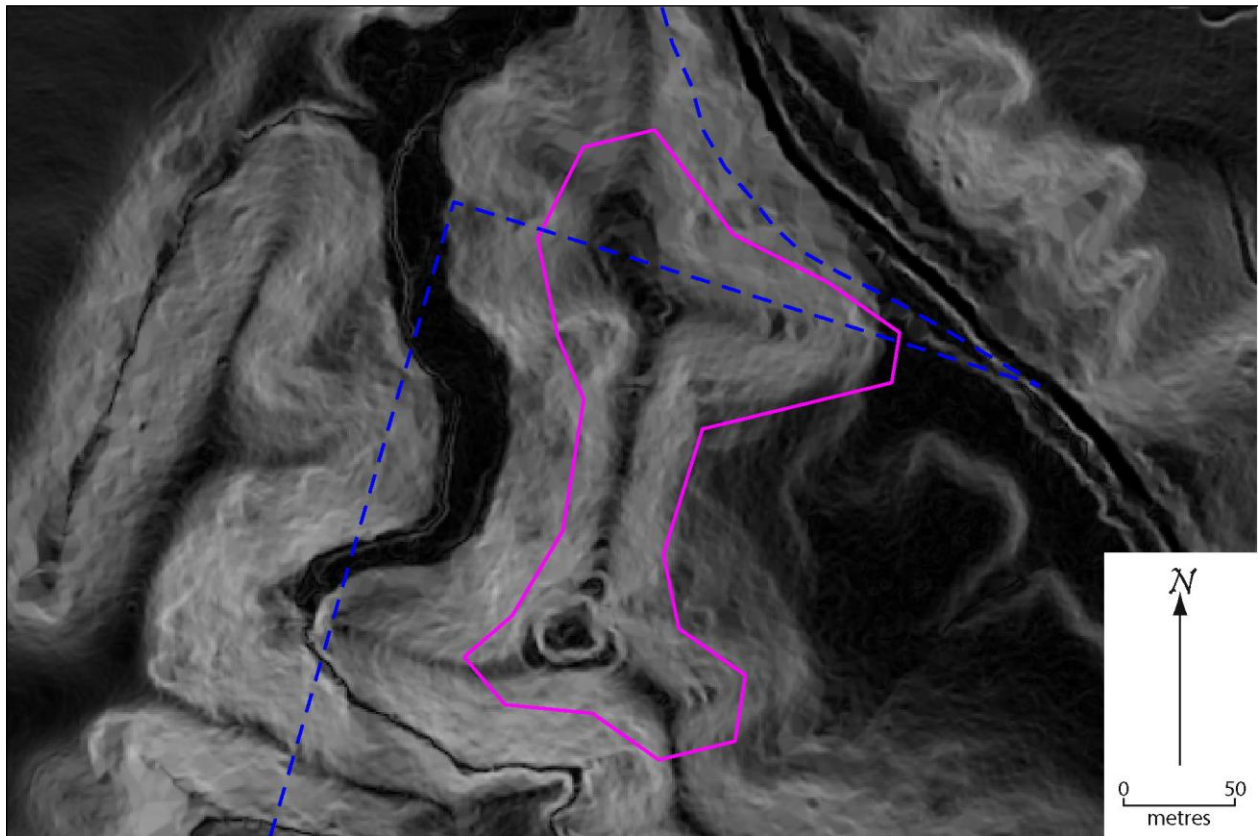


Figure 37: LiDAR-derived slope map showing the extent of Q08/546.

5.3.2. Q08/701 midden

This site was recorded by Andy Brown and Reese Newton during the present survey. The site is a small (c. 1m²) shell midden exposed in a drain cutting approximately 5 m west of the Waihoihoi Stream. The site is currently located on the margin of the Indicative Alignment.



Figure 38: Location of Q08/701 in relation to currently designed earthworks.



Figure 39: Q08/701, a small midden exposed in a drain adjacent to the Waihoihoi River.

5.3.3. Q08/652 historic blacksmith

The site is a blacksmith's shop owned by Roderick McGregor and dating from the late 19th century. Part of the site was excavated in 2002 by Simon Best, a range of metal artefacts were identified but the forge or associated structures were not found. The site was first recorded by Charlotte Judge in 2021. The site was inspected by Andy Brown, a small mound where the 2002 excavation took place is visible, but no other surface features were identified. Q08/652 is located outside of proposed cut, fill and spoil sites, associated with the Indicative Alignment and roads that tie into the existing network, but within Proposed Designation.

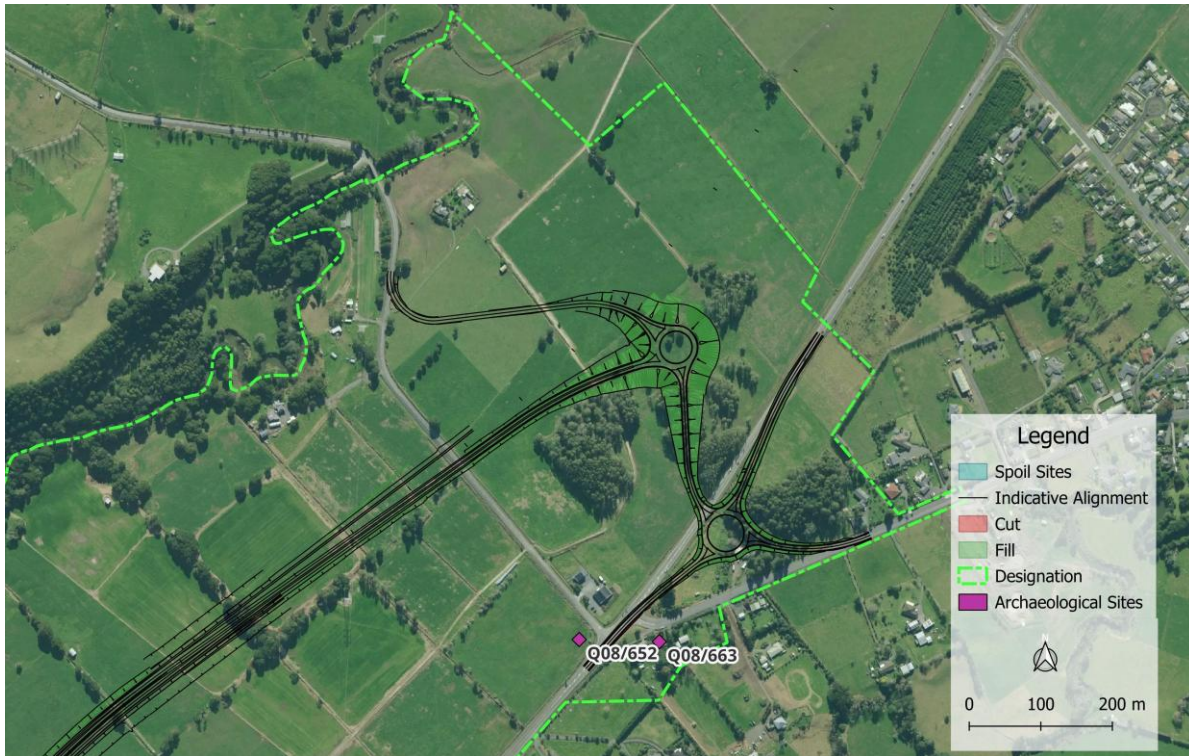


Figure 40: Location of Q08/652 and Q08/663 in relation to currently designed earthworks.

5.3.4. Q08/663 historic settlement

Q08/663 is recorded by Charlotte Judge as the location of several shops and buildings, known as 'The Junction'. The Junction was an early focus of commercial activity before this was consolidated around the Waipū town centre. No surface evidence was observed by Judge. The site was not visited.

Q08/663 is located outside the Indicative Alignment and associated cut and fill and spoil sites, but inside the Proposed Designation. There is no surviving surface evidence of 'The Junction' and it is unclear what its original extent was. Although the area has been heavily modified by roading, utilities and subsequent construction, some peripheral evidence may survive within the Proposed Designation.

5.4. Other Sites

Old survey maps (e.g., SO 698) from the Waipū settlement identified several additional cottage sites. Many of these site locations were surveyed, but no visible surface features were identified. In most cases significant agricultural disturbance had occurred, such that there was no indication of early settlement. Two possible sites were observed to have macrocarpa stumps that formed shelter belts. Probing around these locations did not detect any subsurface features.

Comparison of current or former recorded locations of settler cottages with those shown in survey plans often shows a disparity. For instance, Hugh McKenzie's homestead ('The Braigh' - Q08/555) is currently located outside the Proposed Designation, but SO 698 records it ~300m north, which places it inside. This may be explained by the cottage being moved from the point shown on the plan to its current location, but

it is more likely the disparity is the result of the cottage locations being estimated on the plans. In the absence of clear physical evidence, cottage sites marked on plans were not recorded as archaeological sites but should be flagged in the Historic Heritage Management Plan as areas requiring investigation or monitoring.

6. Summary of Archaeology in the Proposed Designation

In summary, there are thirteen recorded sites within the Proposed Designation, as set out in Table 2 below and shown in Figure 41.

Table 2: Summary of Archaeological sites in the Proposed Designation and recommendations.

Site	Type	Recommendation
Q08/360	Pā	Avoid – exclude from HNZPTA authority
Q08/56	Pits	Obtain HNZPTA authority
Q08/702	Pits	Obtain HNZPTA authority
Q08/57	Pits	Obtain HNZPTA authority
Q08/39	Pā	Avoid – exclude from HNZPTA authority
Q08/703	Pits	Obtain HNZPTA authority
Q08/700	Pā	Avoid – exclude from HNZPTA authority
Q08/560	Timber milling	Obtain HNZPTA authority
Q08/403	Findspot	Obtain HNZPTA authority
Q08/546	Pā	Avoid – exclude from HNZPTA authority
Q08/701	Midden	Obtain HNZPTA authority
Q08/663	Shops/Housing	Obtain HNZPTA authority
Q08/652	Blacksmith	Obtain HNZPTA authority

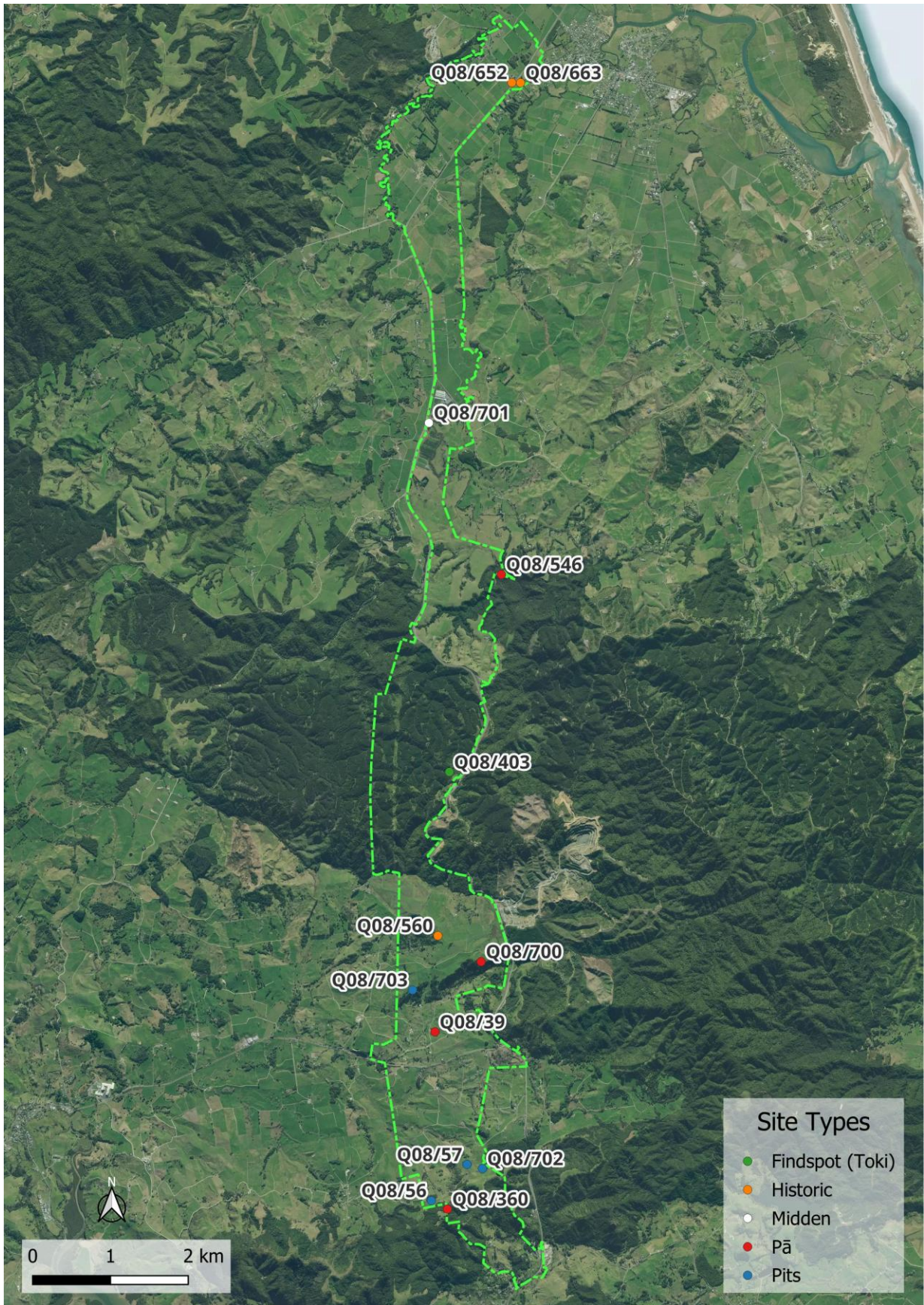


Figure 41: Archaeological sites in the Proposed Designation.

Eight sites are recorded in the Proposed Designation south of the Brynderwyns. Except for Q08/560, these are all earthwork sites: either pits, or small pā containing pits. The pā are small, defended food

storage sites, so in essence these sites all relate to crop storage. Analysis of the soils indicated that they were generally not good kūmara growing soils, but the presence of storage pits shows that kūmara was probably being grown, even if not extensively, in the Proposed Designation. There is little visible evidence of any other activities, but it must be assumed that there were open settlements associated with gardens in the Proposed Designation. Finds of toki in the south of the Proposed Designation also indicates that other activities, such as house building and wood carving, were being carried out. No shell middens were observed south of the Brynderwyns, even though the southern end of the Proposed Designation is less than 2 km for the upper reaches of the tidal Kaiwaka River.

There is a single recorded find spot (Q08/403) in the Brynderwyn Hills. No evidence of pā or other occupation sites are present in this area. Review of the wider distribution of sites suggests pā and related sites were concentrated on the foothills of Manu Hiwa Ariki (the Brynderwyns) and in similar locations in the Mareretū hills west of the Proposed Designation. While the upper areas of the Brynderwyn Hills may not have been heavily occupied, the presence of Q08/403 provides clear evidence of the area being passed through by Māori at the very least.

North of the Brynderwyn Hills, one significant pā (Q08/546) is located on the high ground above the alluvial flats in the Waihoihoi Valley. The position of this site is consistent with the wider distribution of pā in the area. A single midden site (Q08/701) was located near the Waihoihoi Stream, consistent with the pattern observed near the Waipū township where midden are observed close to waterways, which provided travel corridors inland. Most of the sites north of the Brynderwyn Hills relate to the Nova Scotian settlement and include surviving cottages and bridges as well as demolished buildings.

7. Assessment

7.1. Assessment of values

The following assessment of archaeological values is based on the criteria set out in the HNZPT (2019). This assessment relates only to potential archaeological values. Other interested parties, in particular tangata whenua, may hold different values regarding the effects of the Project.

7.2. South of the Brynderwyns

7.2.1. Q08/360 pā

Condition	Pā Q08/360 was not visited during this assessment but previous records indicate it is in good condition.
Rarity	Pā are a moderately common site type locally, regionally and nationally.
Context	Pā Q08/360 is part of a wider pre-European Māori archaeological landscape stretching from Pukekaroro to the Brynderwyns and the Kaipara Harbour.
Information	There is the potential for scientific information to be recovered by archaeological methods if Pā Q08/360 was affected by construction (it is not in the Indicative Alignment, and our recommendations are that it continue to be avoided).
Amenity	Pā Q08/360 has limited amenity – it is on private land and is not easily accessed, surface features have limited visibility, and it is not readily interpreted to the public.
Cultural	Pā Q08/360 is a pre-European Māori site, and its cultural values can only be determined by tangata whenua.

7.2.2. Q08/56 pits

Condition	Q08/56 was not visited during this assessment but a comparison of early aerial photos and modern photos indicates it is in poor condition. The survival of subsurface features is unknown.
Rarity	Pit sites are a common site type locally, regionally and nationally.
Context	Q08/56 is part of a wider pre-European Māori archaeological landscape stretching from Pukekaroro to the Brynderwyns and the Kaipara Harbour.
Information	There is the potential for scientific information to be recovered by archaeological methods if Q08/56 was affected by construction (it is not in the Indicative Alignment, and our recommendations are that it be avoided).
Amenity	Q08/56 has limited amenity – it is on private land and is not easily accessed, surface features have limited visibility, and it is not readily interpreted to the public.
Cultural	Q08/56 is a pre-European Māori site, and its cultural values can only be determined by tangata whenua.

7.2.3. Q08/702 pits

Condition	Q08/702 was not visited during this assessment but a comparison of early aerial photos and modern photos indicates it is in good condition. The survival of subsurface features is likely to be good.
Rarity	Pit sites are a common site type locally, regionally and nationally.
Context	Q08/702 is part of a wider pre-European Māori archaeological landscape stretching from Pukekaroro to the Brynderwyns and the Kaipara Harbour.

Information	There is the potential for scientific information to be recovered by archaeological methods if Q08/702 was affected by construction (cut and fill shown in the Indicative Alignment potentially affects the site and our recommendation is that any effects be mitigated through an archaeological authority).
Amenity	Q08/702 has limited amenity – it is on private land and is not easily accessed, and it is not readily interpreted to the public.
Cultural	Q08/702 is a pre-European Māori site and its cultural values can only be determined by tangata whenua.

7.2.4. Q08/57 pits

Condition	The pits remain visible and much as they were when first recorded in 1983. Subsurface survival of features is likely to be good.
Rarity	Pit sites are a common site type locally, regionally and nationally.
Context	Q08/57 is part of a wider pre-European Māori archaeological landscape stretching from Pukekaroro to the Brynderwyns and the Kaipara Harbour.
Information	There is the potential for scientific information to be recovered by archaeological methods if Q08/57 was affected by construction (it is in the Indicative Alignment and our recommendation is that any effects be mitigated through an archaeological authority).
Amenity	Q08/57 has limited amenity – it is on private land and is not easily accessed, and it is not readily interpreted to the public.
Cultural	Q08/57 is a pre-European Māori site, and its cultural values can only be determined by tangata whenua.

7.2.5. Q08/39 pā

Condition	Pā Q08/39 is currently under grass. The ditch has been partially filled but remains visible and ten pits are also clearly visible, though often shallow. Subsurface survival of features is likely to be good.
Rarity	Pā are a moderately common site type locally, regionally and nationally.
Context	Pā Q08/39 is part of a wider pre-European Māori archaeological landscape stretching from Pukekaroro to the Brynderwyns and the Kaipara Harbour.
Information	There is the potential for scientific information to be recovered by archaeological methods if Pā Q08/39 was affected by construction (it is not in the Indicative Alignment, and our recommendations are that it continue to be avoided).
Amenity	Pā Q08/39 has limited amenity – it is on private land and is not easily accessed, and although surface features are reasonably visible it is not readily interpreted to the public.
Cultural	Pā Q08/39 is a pre-European Māori site, and its cultural values can only be determined by tangata whenua.

7.2.6. Q08/703 pits

Condition	Five pits in good condition are visible. Subsurface survival of features is likely to be good.
Rarity	Pit sites are a common site type locally, regionally and nationally.
Context	Q08/703 is part of a wider pre-European Māori archaeological landscape stretching from Pukekaroro to the Brynderwyns and the Kaipara Harbour.
Information	There is the potential for scientific information to be recovered by archaeological methods if Q08/703 was affected by construction (it is not in the Indicative Alignment, and our recommendations are that it be avoided).

Amenity	Q08/703 has limited amenity – it is on private land and is not easily accessed, and it is not readily interpreted to the public.
Cultural	Q08/703 is a pre-European Māori site and its cultural values can only be determined by tangata whenua.

7.2.7. Q08/700 pā

Condition	Pā Q08/700 is currently under regenerating bush – the ditch is in good condition as are two pits, but other internal features are difficult to make out. Subsurface survival of features is likely to be good.
Rarity	Pā are a moderately common site type locally, regionally and nationally.
Context	Pā Q08/700 is part of a wider pre-European Māori archaeological landscape stretching from Pukekaroro to the Brynderwyns and the Kaipara Harbour.
Information	There is the potential for scientific information to be recovered by archaeological methods if Pā Q08/700 was affected by construction (it is not in the Indicative Alignment, and our recommendations are that it be avoided).
Amenity	Pā Q08/700 has limited amenity – it is on private land and is not easily accessed, and it is not readily interpreted to the public.
Cultural	Pā Q08/700 is a pre-European Māori site, and its cultural values can only be determined by tangata whenua.

7.2.8. Q08/560 timber milling

Condition	No surface evidence survives of site Q08/560. The site as recorded is indicative of the local timber industry
Rarity	Timber milling sites a moderately common site type locally, regionally and nationally.
Context	Q08/650 is indicative of early colonial activity in the area.
Information	There is the potential for scientific information to be recovered by archaeological methods if Q08/650 was affected by construction (it's recorded location is in the Indicative Alignment and our recommendation is that any effects be mitigated through an archaeological authority).
Amenity	Q08/650 has no visible surface features and therefor has no amenity.
Cultural	Q08/650 is a 19th century European site.

7.3. The Brynderwyn hills

7.3.1. Q08/403 findspot

Condition	Low. The site is a find spot with no associated archaeological features. The area around the findspot has been heavily modified by successive pine harvests.
Rarity	High. Find spots for taonga are relatively uncommon in the immediate area.
Context	Medium. Q08/403 is indicative of Māori occupation and use of Manu Hiwa Ariki, despite the absence of visible features.
Information	Medium. There is the potential for scientific information to be recovered by archaeological methods if unrecorded features associated with the findspot are present.
Amenity	Low. Q08/403 has no visible surface features and limited amenity.
Cultural	Māori

7.4. North of the Brynderwyns

7.4.1. Q08/546 pā

Condition	High. Q08/546 is currently under regenerating bush – based on LiDAR data the site appears to be in good condition. Subsurface survival of features is likely to be good.
Rarity	Medium. Pā are a common site type locally, regionally and nationally.
Context	High. Q08/546 is part of a wider pre-European Māori archaeological landscape, which includes a string of pā on the lower slopes of the Brynderwyn and Mareretū hills overlooking Waipū.
Information	High. There is the potential for significant scientific information to be recovered by archaeological methods if Pā Q08/546 was affected by construction (it is not in the Indicative Alignment, and our recommendations are that it be avoided).
Amenity	Low. Q08/546 has limited amenity – it is on private land and is not easily accessed, and it is not readily interpreted to the public.
Cultural	Pā Q08/546 is a pre-European Māori site, and its cultural values can only be determined by tangata whenua.

7.4.2. Q08/701 midden

Condition	Medium/Low. The site is small and has been significantly damaged by the drain cutting.
Rarity	Medium. Midden are common nationally and regionally, but relatively uncommon in the inland river system around Waipū.
Context	Medium. The site is part of a small, but growing collection of sites in the alluvial plains around Waipū that attest to Māori occupation of the area.
Information	Medium. The site is relatively small, but in the absence of other midden, it has the potential to contribute an out weighted amount of information to the understanding of Māori subsistence.
Amenity	The site has limited amenity value.
Cultural	Midden Q08/701 is a pre-European Māori site, and its cultural values can only be determined by tangata whenua.

7.4.3. Q08/652 historic blacksmith

Condition	High. Earlier excavations indicate well-preserved subsurface features/deposits.
Rarity	High. Few blacksmith sites are recorded regionally.
Context	High. Q08/652 is part of the early colonial cultural landscape around Waipū
Information	Medium. The site has previously been excavated, albeit in a constrained manner in small units, and therefore information has already been gained from the site. Nevertheless, if Q08/652 was affected by construction (it's recorded location is not in proposed earthwork zones; our recommendation is that any effects be mitigated through an archaeological authority), it is expected that further excavation using archaeological methods would yield considerable information.
Amenity	Medium. The site is close to the road and could be enhanced by interpretation.
Cultural	19th century European site.

7.4.4. Q08/663 historic settlement

Condition	Medium/Low. No surface features are recorded, but intact subsurface features are likely.
-----------	--

Rarity	Medium. Early commercial centres are not well-represented in the archaeological record.
Context	High. Q08/663 is part of the early colonial cultural landscape around Waipū
Information	Medium. The unknown condition of features / deposits makes determination of information potential difficult.
Amenity	Medium. The site is close to the road and could be enhanced by interpretation.
Cultural	19th century European site.

7.5. Assessment of effects

The current Indicative Alignment, including associated cut and fill and spoil sites, affects several recorded archaeological sites (Table 2). However, as previously noted, the final alignment could occur anywhere within the Proposed Designation and therefore it is unknown if these sites will continue to be affected or not. Any of the recorded sites (except pā) could potentially be modified or destroyed by the works within the Proposed Designation.

We have recommended (in Section 8 below) that the final alignment design, including cut and fill, spoil sites or laydowns, entirely avoids all pā in the Proposed Designation (Q08/360, Q08/39, Q08/700 and Q08/546). A condition of consent is proposed to reflect this.

Although final design is not yet available (noting that when the tender is awarded the constructor may redesign the alignment), earthworks are likely to include extensive cut to prepare the pavement, fill for the raised carriageway, provision of haul roads, and associated cut and fill to form the geometry of the road. Archaeological sites or features within the designed earthworks footprint will be destroyed or modified, which is considered a more than minor effect.

8. Recommendations

These recommendations are only made based on the archaeological potential that has been outlined above. Any other values associated with special interest groups, including tangata whenua, can only be determined by them. It is recommended that:

- all pā sites within the Proposed Designation (Q08/360, Q08/39, Q08/700 and Q08/546) are avoided and that a suitable exclusion zone / buffer be established around them that includes the lower slopes of the hills on which they are located;
- all pā sites (including buffer) are excluded from the archaeological authority application;
- NZTA apply for an authority to modify or destroy archaeological sites Q08/56, Q08/702, Q08/57, Q08/703, Q08/560, Q08/403, Q08/701, Q08/652, Q08/663, , and any newly discovered archaeological sites and features (except pā) in the Proposed Designation;
- the authority holder (NZTA) is also the landowner when works commence;
- individual authorities should be sought for each of the four Earthworks Zones;
- a Draft Historic Heritage/Archaeology Management Plan is prepared prior to the commencement of Project works, which sets out appropriate methods for managing any effects on the archaeological sites during construction, including methods to ensure;
 - all pā sites (Q08/360, Q08/39, Q08/700, and Q08/546) are appropriately avoided and protected;
 - sites not directly affected by the final design alignment, including cut, fill, spoil and laydown areas are appropriately avoided and protected;
- consultation with the appropriate tangata whenua is undertaken;
- appropriate tikanga (protocols) should be followed during works – tangata whenua may make recommendations outlining these;
- in the event of kōiwi (human remains) being uncovered during any future construction, work should cease immediately and tangata whenua should be contacted so that suitable arrangements can be made for the management of the kōiwi;
- since archaeological survey cannot always detect sites of traditional significance to Māori, or wāhi tapu, the appropriate tangata whenua authorities should be consulted regarding the possible existence of such sites, and the recommendations in this report as part of the FTAA application process for the Project.

9. Conclusion

Thirteen archaeological sites are recorded within the Proposed Designation: four pā, six other pre-European Māori sites and four historic sites. None of the pā are large – they seem to be primarily fortified food storage areas rather than large, central places of political importance. Several other storage sites show that the area was gardened despite the heavy soils not being ideal for kūmara cultivation. Three of the historic sites are north of the Brynderwyns, associated with the Nova Scotian settlement of Waipu in the mid- to late 19th century.

Of these sites, the pā are of such significance that we have recommended that they, and a suitable buffer around them, be completely avoided during future design and construction. For other sites we have recommended that archaeological authorities for each Earthworks Zone be applied for from The Environmental Protection Authority under Section 42(4)(i) and Schedule 8 of the Fast-Track Approvals Act 2024.

10. References

- Goodliffe, L. and D. Bulmer 1983. Archaeological site survey of the lateral routes of the Auckland–Whangarei gas pipeline. Unpublished NZ Historic Place Trust report.
- Best, S., Robinson, J., Slocombe, A., Hawkins, S., Low, J., Fisher, T. and B. Thorne. 2003. The Minister, the Miller and the Blacksmith: History and Archaeology of Three Early Waipu Identities. Unpublished Report.
- Bickler, S., Farley, G., Plowman, M. and Clough, R. 2008. Investigations at McGregors Bay, Whangārei Heads: Final Report in fulfilment of NZHPT Authority No. 2003/143.
- Brown, A. 2022. Interim report on archaeological investigations at Ferry Road, Waipu. Unpublished Report to Heritage New Zealand Pouhere Taonga.
- Butler, D. 1963. This Valley in the Hills. The Story of Maungaturoto, Brynderwyn, Bickerstaffe, Batley, Marohemo and Whakapirau. Maungaturoto Centennial Association. Northern Publishing Co., Whangarei.
- Carpenter, J., Jorgenson, A. and M. Barret. 2017. Archaeological Monitoring of the Stage 11 Sewerage Scheme, Ruakaka South. Report prepared for Whangārei District Council.
- DSIR [Department of Scientific and Industrial Research] 1954. *General Survey of the Soils of North Island, New Zealand*. Soil Bureau Bulletin (n.s.), 5. New Zealand Department of Scientific and Industrial Research, Wellington.
- Frederickson, C. 1990. A chert quarry workshop (Q07/346) at Onerahi, Whangārei. *Archaeology in New Zealand*, 33(3): 152 – 163.
- Furey, L. 2006. Māori Gardening: An archaeological perspective. Science and Technical Publishing, Department of Conservation.
- Goodliffe, L. and D. Bulmer 1983. Archaeological site survey of the lateral routes of the Auckland–Whangarei gas pipeline. Unpublished NZ Historic Place Trust report.
- Maingay, J. 1986. Initial Report on Northland Archaeology. Report to New Zealand Historic Places Trust.
- McKenzie, N. 1935. *The Gael Fares Forth: The Romantic Story of Waipu and her Sister Settlements*. Whitcombe and Tombs Ltd, Wellington.
- Nevin, G and Nevin, D. 1981. Archaeological Site Survey Whangārei Harbour: Mangapai – Marsden Point. Unpublished Report.
- Nevin, G. 1984. Whangārei Harbour Study. Technical Report No. 9 Whangārei Harbour Study Working Committee.
- Nichol, R. 1977. N.H.B. Midden Site: Kioreroa. Unpublished report.
- Northland Soil Factsheets. Accessed via Northland Regional Council – Managing Northland Soils factsheet viewer (<https://nrcgis.maps.arcgis.com/apps/webappviewer>)
- O'Malley, V. 2016. Northland Crown Purchases, 1840-1865. A Report Commissioned by the Crown Forest Rental Trust.
- Petchey, F., Bickler, S., Hughes, L. and M. Bunbury. 2022. The Aotearoa New Zealand Radiocarbon Database Upgrade, *Archaeology in New Zealand* 65 (3): 32-40.
- Phillips, C. and D. Harlow 2001. Investigation of midden sites at One Tree Point, Whangārei Harbour. Unpublished report
- Pickmere, N.P. 1986. *Whangārei. The Founding Years 1820 -1880*. Whangārei: N.P.
- Ross, B. 2001. *Ripples from the River: a history of Mangawhai*. B. C. Ross: Mangawhai.

- Salmond, A. 1991. *Two Worlds: first meetings between Māori and Europeans 1642-1772*. University of Hawaii Press.
- Stirling, B. and Towers, R. 2007. *Not With the Sword But With the Pen: The Taking of the Northland Old Land Claims, Part I – Historical Overview*. A Report Commissioned by the Crown Forest Rental Trust.
- Turner, M., Bickler, S., Clough, R., Best, S. and Wallace, R. 2010. *Puwera Landfill Site, Portland, Whangarei: Final Report on Excavations at Sites Q07/1091, 1092 and 1103 in fulfilment of NZHPT Authority No. 2004/50 and 2009/250*.
- Wilson, D. 1923. Ancient Drains, Māori Drains, North Auckland. *Journal of the Polynesian Society*, 31 (3): 130-133.