Appendix H. Archaeological Assessment Report

Archaeological Assessment of the Proposed

Te Ruaotehauhau Water Storage Reservoir

Ohaeawai

1 September 2020

Prepared for:

Te Tai Tokerau Water Trust

c/o Williamson Water & Land Advisory
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Glossary

Classic	The later period of New Zealand settlement
Midden	The remains of food refuse usually consisting of shells, and bone, but can also contain artefacts
Pa	A site fortified with earthworks and palisade defences
Pit	Rectangular excavated pit used to store crops by Maori
Terrace	A platform cut into the hill slope used for habitation
Wahi tapu	Sites of spiritual significance to Maori

1.0 Introduction

Williamson Water & Land Advisory commissioned Geometria Ltd to undertake an archaeological assessment on behalf of the Te Tai Tokerau Water Trust, of the proposed new Te Ruaotehauhau Water Storage Reservoir west of Ohaeawai.

A number of archaeological sites are recorded in the immediate vicinity of the proposed reservoir, and an even larger number are recorded in the wider area.

Under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA, previously the Historic Places Act 1993), all archaeological sites are protected from any modification, damage or destruction except by the authority of Heritage New Zealand Pouhere Taonga.

This report uses archaeological techniques to assess archaeological values and does not seek to locate or identify wahi tapu or other places of cultural or spiritual significance to Maori. Such assessments may only be made by Tangata Whenua, who may be approached independently of this report for advice.

Likewise, such an assessment by Tangata Whenua does not constitute an archaeological assessment and permission to undertake ground disturbing activity on and around archaeological sites and features may only be provided by Heritage New Zealand Pouhere Taonga, and may only be monitored or investigated by a qualified archaeologist approved through the archaeological authority process.

1.1 The Heritage New Zealand Pouhere Taonga Act 2014

Under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA; previously the Historic Places Act 1993) all archaeological sites are protected from any modification, damage or destruction except by the authority of the Historic Places Trust. Section 6 of the HNZPTA defines an archaeological site as:

> *" any place in New Zealand, including any building or structure (or part of a building or structure), that—*
>
> > *(i) was associated with human activity that occurred before 1900 or is the site of the wreck of any vessel where the wreck occurred before 1900; and*
> >
> > *(ii) provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand; and*
>
> *(b) includes a site for which a declaration is made under section 43(1)"*

To be protected under the HNZPTA an archaeological site must have physical remains that pre-date 1900 and that can be investigated by scientific archaeological techniques. Sites from 1900 or post-1900 can be declared archaeological under section 43(1) of the Act.

If a development is likely to impact on an archaeological site, an authority to modify or destroy this site can be sought from the local Heritage New Zealand Pouhere Taonga office under section 44 of the Act. Where damage or destruction of archaeological sites is to occur Heritage New Zealand usually requires mitigation.

Penalties for modifying a site without an authority include fines of up to $300,000 for destruction of a site.

Most archaeological evidence consists of sub-surface remains and is often not visible on the ground. Indications of an archaeological site are often very subtle and hard to distinguish on the ground surface. Sub-surface excavations on a suspected archaeological site can only take place with an authority issued under Section 56 of the HNZPTA issued by the Heritage New Zealand.

1.2 The Resource Management Act 1991.

Archaeological sites and other historic heritage may also be considered under the Resource Management Act 1991 (RMA). The RMA establishes (under Part 2) in the Act's purpose (Section 5) the matters of national importance (Section 6), and other matters (Section 7) and all decisions by a Council are subject to these provisions. Sections 6e and 6f identify historic heritage (which includes archaeological sites) and Maori heritage as matters of national importance.

Councils have a responsibility to recognise and provide for the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, wahi tapu, and other taonga (Section 6e). Councils also have the statutory responsibility to recognise and provide for the protection of historic heritage from inappropriate subdivision, use and development within the context of sustainable management (Section 6f). Responsibilities for managing adverse effects on heritage arise as part of policy and plan preparation and the resource consent processes.

2.0 Location

The Te Ruaotehauhau Water Storage Reservoir is located across several properties located between Hariru Road, Remuera Settlement Road, and State Highway One, to the west of Ohaeawai. The dam structure will straddle two lots, being Lot 2 DP 442506 and the Okako Block.

The impounded water will extend across the properties mentioned above as well as Section 12S and 16S Remuera Settlement to the west of the dam wall.

3.0 Proposed Development

The purpose of the reservoir is to provide a secure source of irrigable water for horticulture and non-ruminant agricultural use within the mid-north region. It is one of several options identified by the Northland Water Storage and Use Project (NWSUP): Pre-feasibility Demand Assessment and Design Study.

This location was initially short-listed due to its central location within and elevated above the mid-north command area, geological setting, and proximity to Lake Omapere among other criteria. The current proposal is for a 400m long embankment dam up to 21m high and capable of storing 1.4Mm3 at full supply level. Only the central 50m portion of the dam would be 10-20m high, with the majority of the length being less than 10-20m.

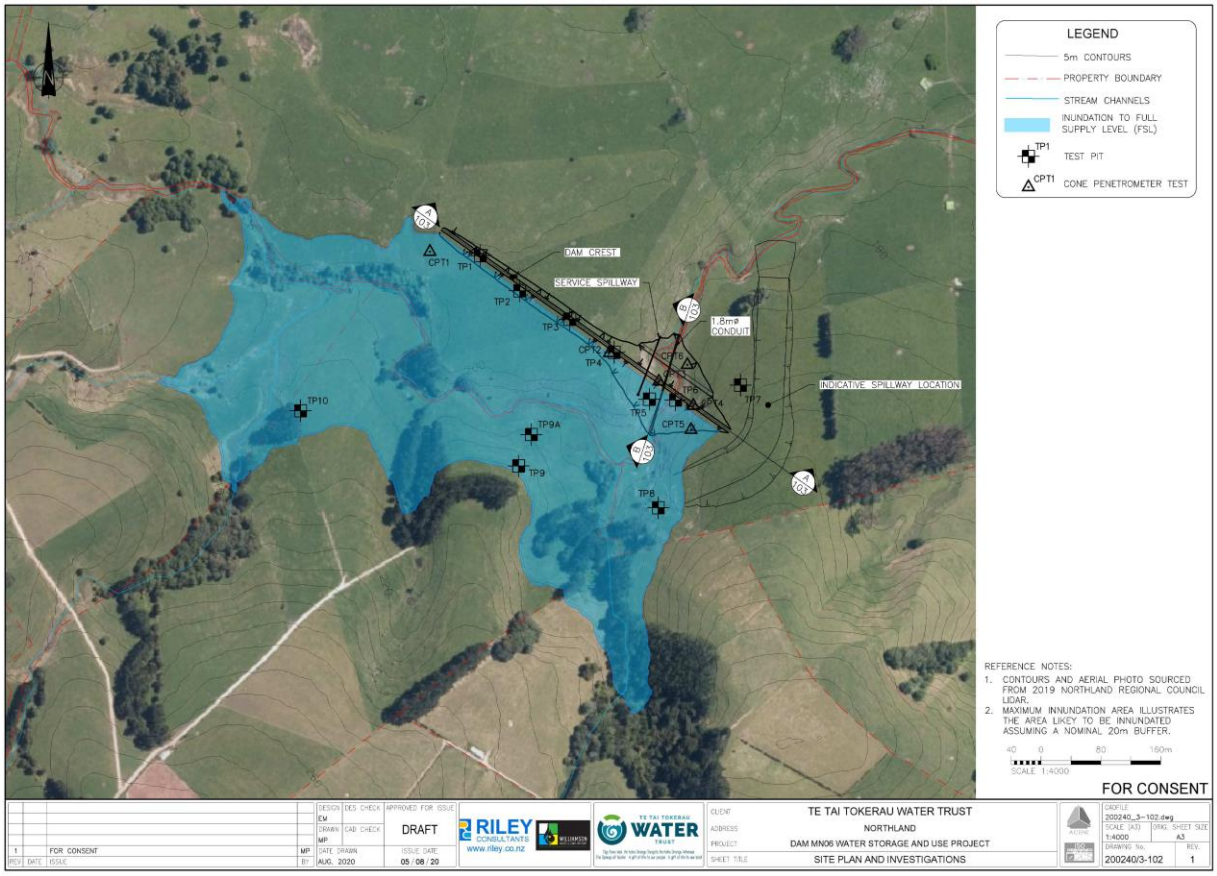


Figure 1: Te Ruaotehauhau Water Storage Reservoir (Riley Consultants 2020).

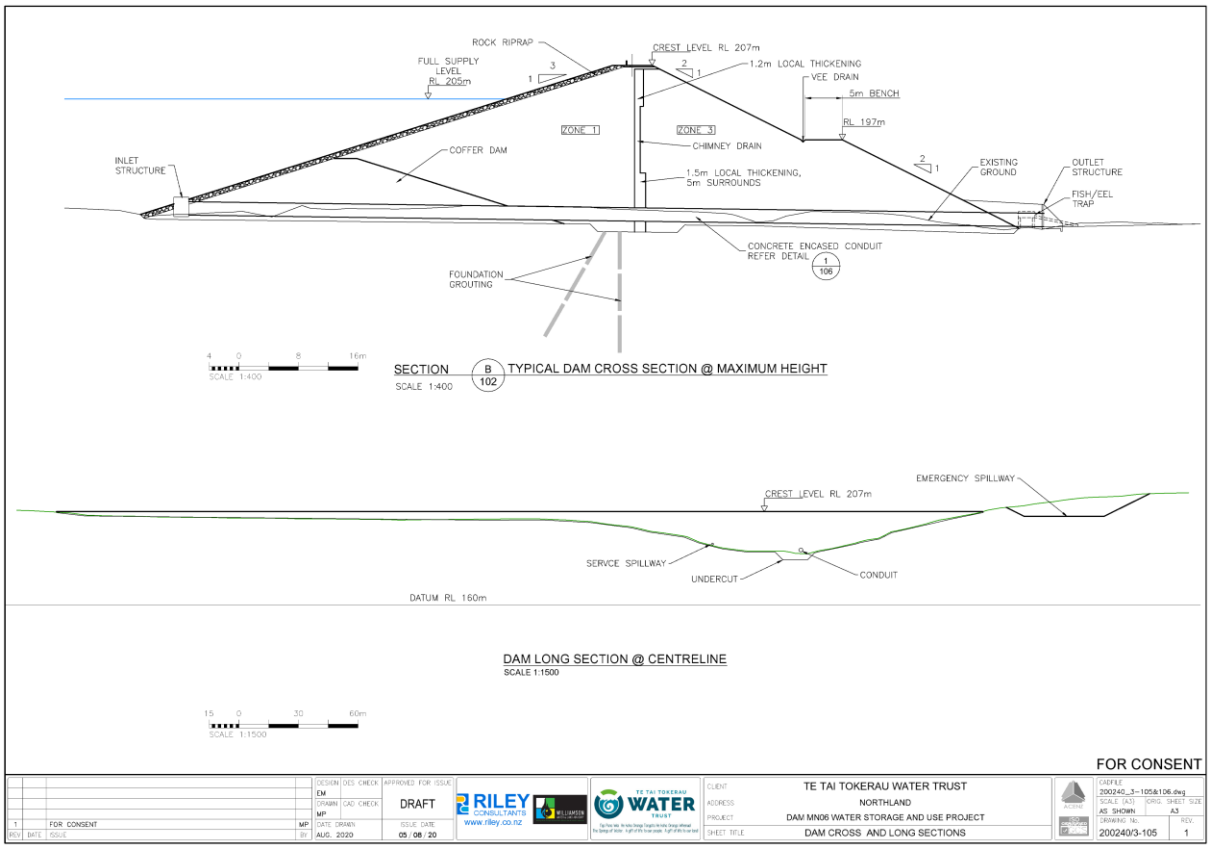


Figure 2: Typical dam cross- and long sections (Riley Consultants 2020).

4.0 Methodology

4.1 Desktop and Field Assessment

The methods used to assess the presence and state of archaeological remains in the project area included both a desktop review and field survey. The desktop survey involved an investigation of written records relating to the history of the property. These included regional archaeological publications and unpublished reports, New Zealand Archaeological Association Site Record Files (NZAA SRF - ArchSite - www.archsite.org.nz - is the online repository of the NZAA SRF), land plans held at Land Information New Zealand, and maps and plans held by other public institutions.

The field assessment involved walking over the project area with a concentration on ridges, spurs and stream banks, and examining eroded or exposed ground surfaces. No probing or test pitting was undertaken given the size of the project area and the obvious surface features making such testing inappropriate.

4.2 Significance Assessment

Where archaeological sites, features and/or values are present in the vicinity of the proposed track improvements, two sets of criteria are used to assess their significance:

The first set of criteria assess the potential of the site to provide a better understanding of New Zealand's past using scientific archaeological methods. These categories are focussed on the intra-site level.

How complete is the site? Are parts of it already damaged or destroyed? A complete, undisturbed site has a high value in this section, a partly destroyed or damaged site has moderate value and a site of which all parts are damaged is of low value.

How diverse are the features to be expected during an archaeological excavation on the site? A site with only one or two known or expected feature types is of low value. A site with some variety in the known or expected features is of moderate value and a site like a defended kainga which can be expected to contain a complete feature set for a given historic/prehistoric period is of high value in this category.

How rare is the site? Rarity can be described in a local, regional and national context. If the site is not rare at all, it has no significance in this category. If the site is rare in a local context only it is of low significance, if the site is rare in a regional context, it has moderate significance and it is of high significance it the site is rare nationwide.

The second set of criteria puts the site into its broader context: inter-site, archaeological landscape and historic/oral traditions.

What is the context of the site within the surrounding archaeological sites? The question here is the part the site plays within the surrounding known archaeological sites. A site which sits amongst similar surrounding sites without any specific features is of low value. A site which occupies a central position within the surrounding sites is of high value.

What is the context of the site within the landscape? This question is linked to the one above, but focuses onto the position of the site in the landscape. If it is a dominant site with many features still visible it has high value, but if the position in the landscape is

ephemeral with little or no features visible it has a low value. This question is also concerned with the amenity value of a site and its potential for on-site education.

What is the context of the site within known historic events or people? This is the question of known cultural association either by tangata whenua or other descendant groups. The closer the site is linked with important historic events or people the higher the significance of the site. This question is also concerned with possible commemorative values of the site.

An overall significance value derives from weighing up the different significance values of each of the six categories. In most cases the significance values across the different categories are similar.

5.0 Archaeology and History

5.1 Archaeological Sites and Context

5.1.1 Archaeological Context

In general site density in the vicinity of the project area is low, in part because of the lack of survey south of State Highway 1 and east of Hariru Road. However in areas which have been surveyed nearby, site density is relatively high and appears to coincide with areas of highly productive soils around Lake Omapere and Te Ahuahu, Maungakawakawa and Tarahi volcanic cones.

Slane and Grant (1980) undertook a large scale reconnaissance survey of the country between State Highway 1 and State Highway 12 and Lake Omapere, from Old Bay Road in the east to Te Pua Road in the west. While they survey they originally proposed was to encompass the entire area, subsequently they undertook survey around the eastern shore of the Lake, Putahi and Waimitimiti craters. Their final survey did not include the project area however they made a number of general comments regarding site distribution and environment that are pertinent.

From Te Pua Road east to Ohaeawai they noted the land had mostly been cleared of evidence of Maori horticulture (stone clearance and gardening mounds, stone rows and alignments etc) by European farming including ploughing, discing and draining, but stated that many farmers had collections of stone and wooden artefacts. Little evidence of Maori occupation otherwise remained apart from earthworks on the volcanic cones and the occasional stone mound on top of a basalt outcrop that was too difficult for farmers to move.

Elsewhere on the nearby areas with similar underlying Taheke and Horeke basalts, farming and farm development had been less intensive and with the exception of Putahi and Tarahi to the west and south of the project area respectively, contained large numbers of archaeological features. The alluvial flats around the lake had little surface evidence of occupation but large numbers of wooden artefacts have been discovered in the water and on the shoreline.

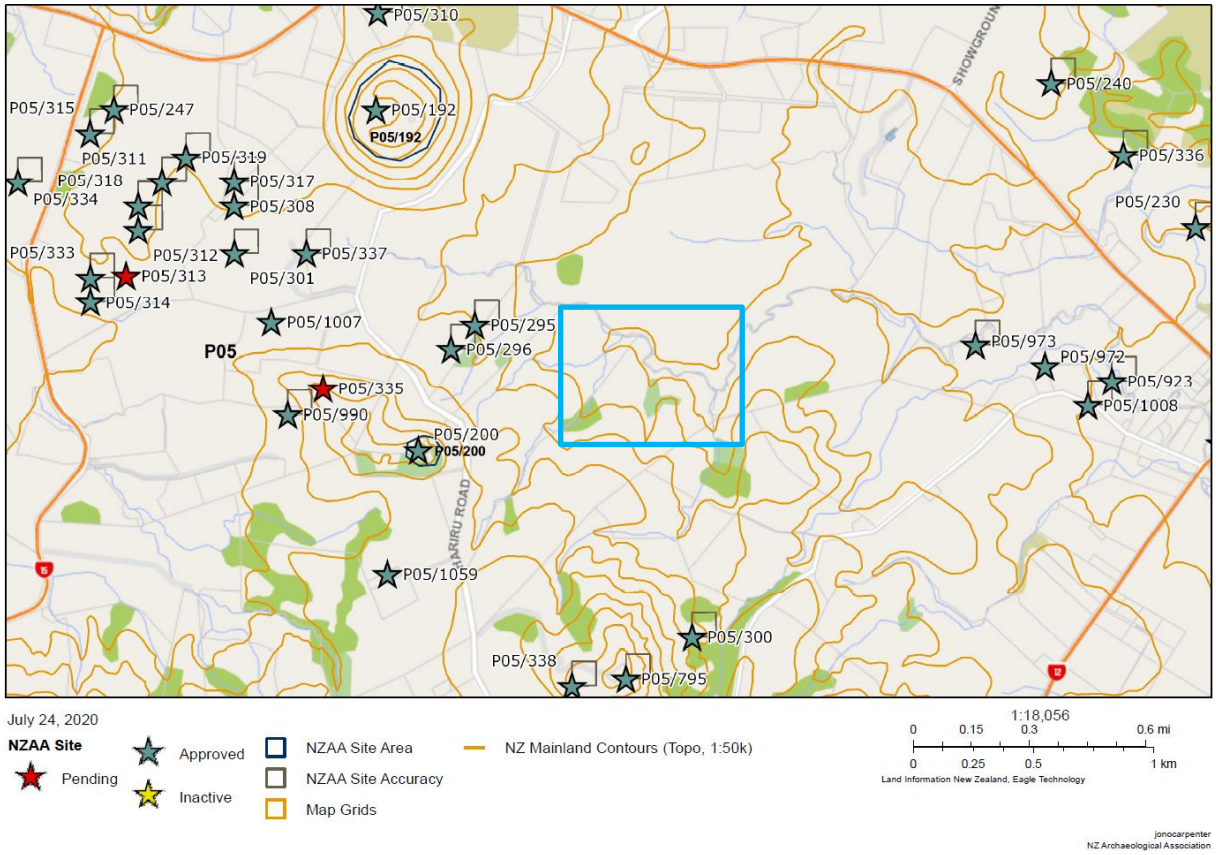


Figure 3: Recorded archaeological sites in the vicinity of the proposed reservoir (in blue).

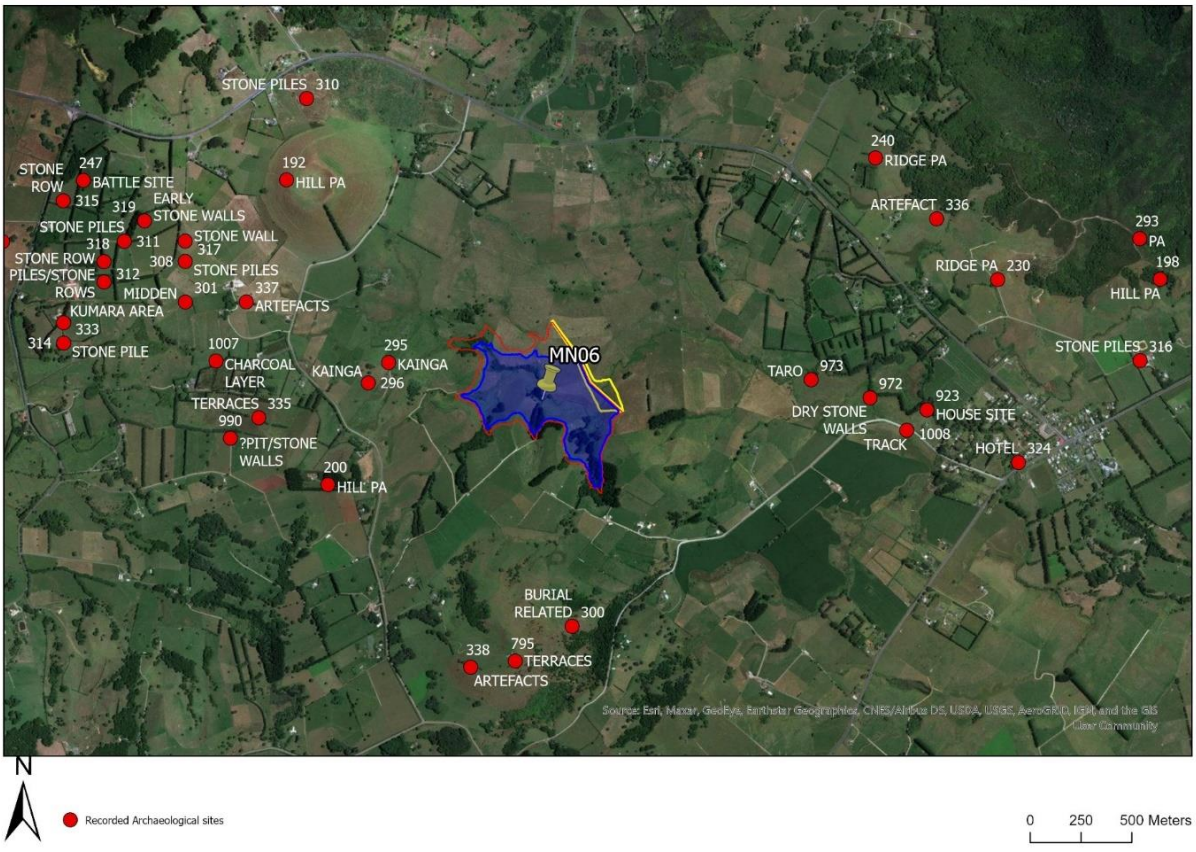


Figure 4: Recorded archaeological sites by site type.

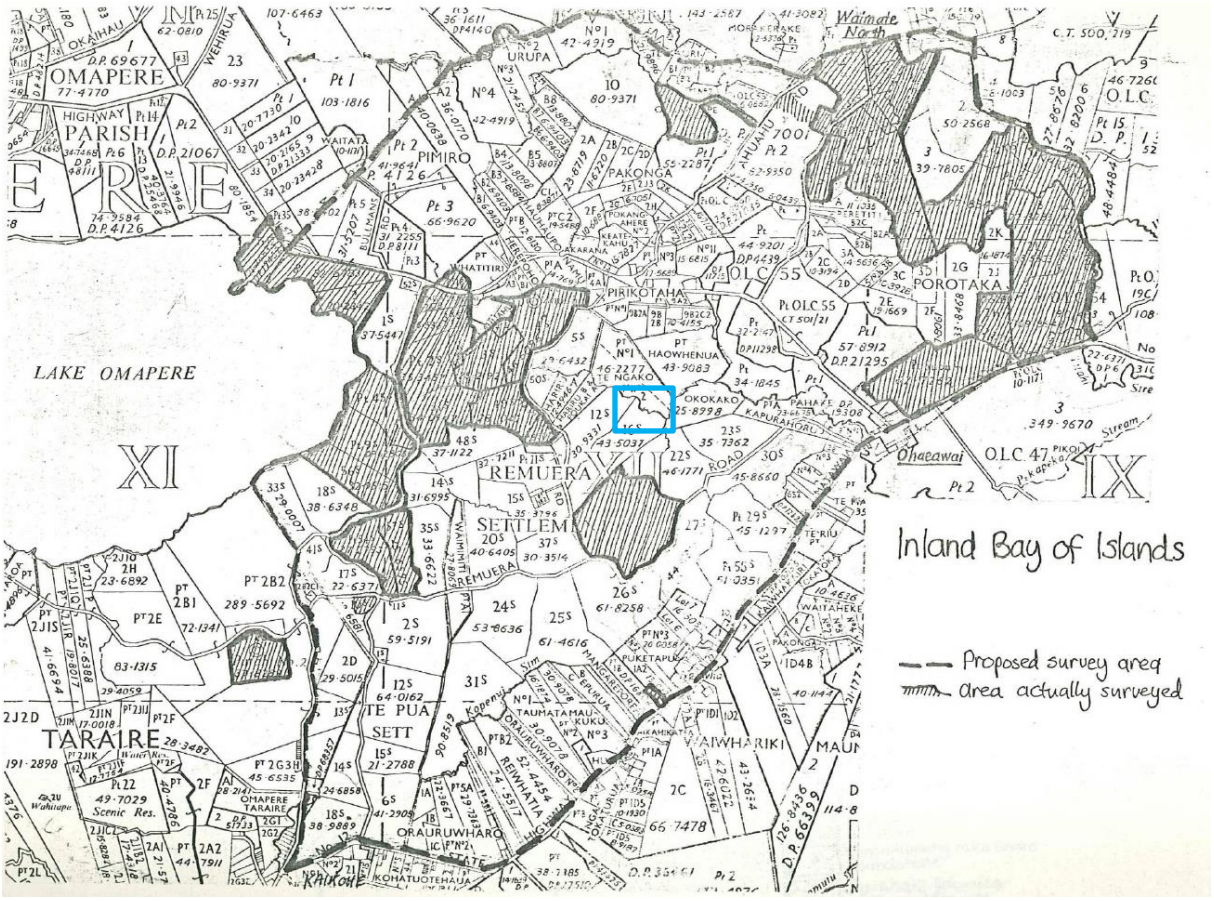


Figure 5: Slane and Grant (1980: 1) proposed and actual site survey (project area in blue).

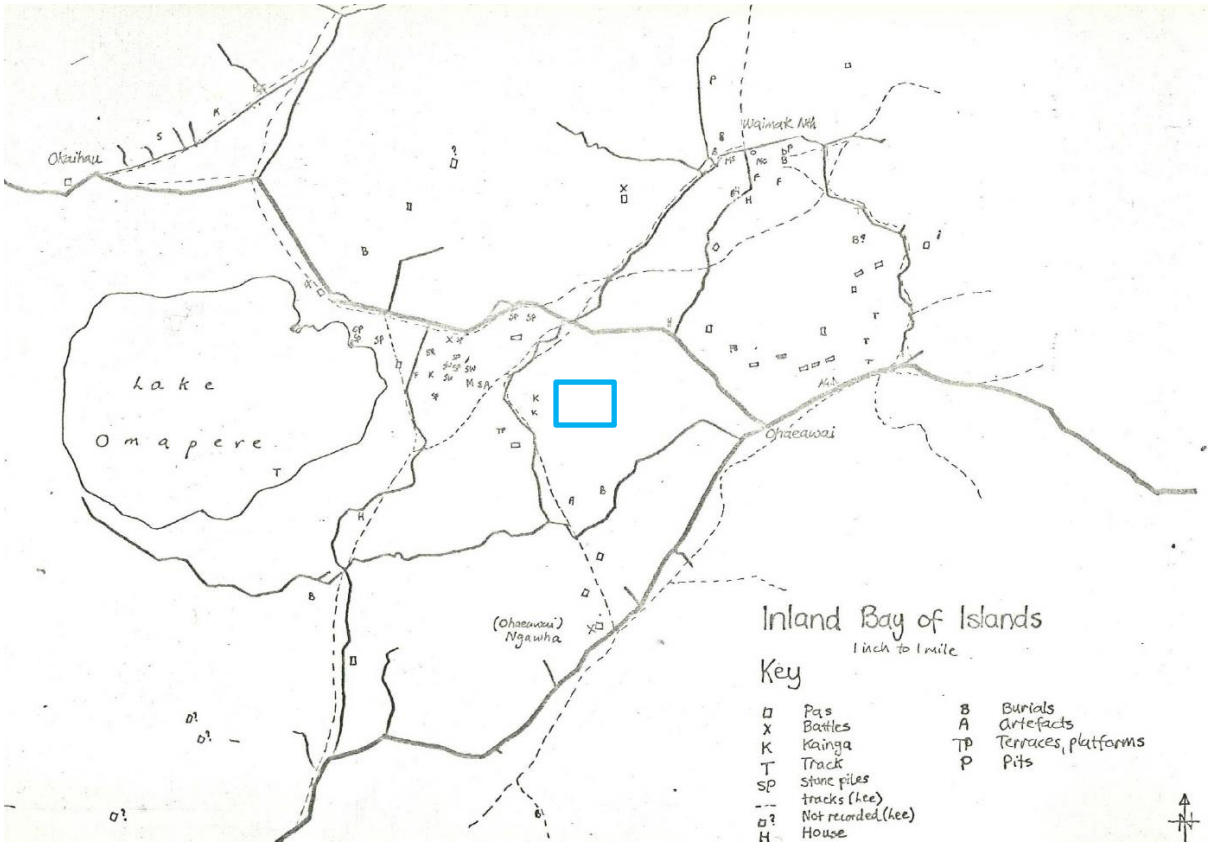


Figure 6: Site distribution by type (Slane and Grant 1980).

5.1.2 Archaeological Sites in the Vicinity of the Project Area

Slane and Grant recorded two archaeological sites immediately west of the western side of the reservoir. These are two kainga or undefended settlements recorded as P05/295 and P05/296 (N15/154 and N15/156 respectively, in the original Imperial map sheet recording system), located on the Hariru Block. These sites are approximately 400m west of the reservoir.

P05/295 and P05/296 were two kainga recorded on the Hariru Block survey plan drawn up by R. C. Davis in 1868. The survey plan shows two areas delineated by dashed rectangles labelled "Kainga", with small triangles drawn inside the rectangles. The rectangles are located on the eastern boundary of the block, below the track from Waimate North to Ohaeawai and the highpoint then referred to as Pukepoto/Kawakawa (i.e. Maungakawakawa).

The sites were revisited by A. Middleton in 2014, in the company of Gil Parker. The site of both P05/295 and P05/296, kainga, is the same place where Gil Parker reported that his grandmothers house once stood. This house was built by his great grandfather, Hare Matenga, but it burnt down in 1948. Remains of the house can be seen beneath the stand of macracarpa trees - concrete, bricks and metal, probably the remains of the chimney at Easting 1676695 Northing 6087900 (NZTM).

Middleton reports that there were also burials associated with this site, beneath the stones to the west while the puriri trees further away towards Tarahi pa (only one or two remaining) is where bodies were once left before their secondary burial. Gil Parker gave her the name of the pa, Taurangatira, which was not a defended pa but more like a kainga. Hare Matenga put an end to burials there and then built the house.

The two kainga P05/295 and P05/296 were located close together, as the Davis plan 948 shows; the track to P05/295 must pass over the vicinity of P05/296, however Middleton saw no apparent surface features relating to this. She states that Gill Parker was particularly clear about the name Taurangatira and that it is likely to have related to both kainga, given their close location.

The next nearest site is Maungakawakawa itself, P05/200, and at Tarahi P05/795 and the other sites associated with those pa/maunga. A large number of sites are recorded further to the west and north west around Te Ahuahu and Lake Omapere, and to the east at Ohaeawai. These sites include features associated with pre- and protohistoric Maori horticulture such as stone gardening mounds, 19th century or later dry stacked stone walls, pa sites and terrace complexes, and burials.

5.1.3 Other Heritage Listings

There are no sites of significance to Maori, historic places or other scheduled items in the Far North District Plan, or listed heritage places in the Heritage New Zealand Pouhere Taonga List, within the project area.

Te Ahuahu, Maungakawakawa and Tarahi are significant landscape features and sites of significance to Maori scheduled in the Far North District Plan. There scheduling is as follows:

Te Ahuahu (MS 09-04; Outstanding natural feature 67)

Hariru (MS 09-27; Outstanding natural feature 29)

Tarahi (Outstanding natural feature 59)

Dry stacked stone walls also have controls in the Far North District Plan.

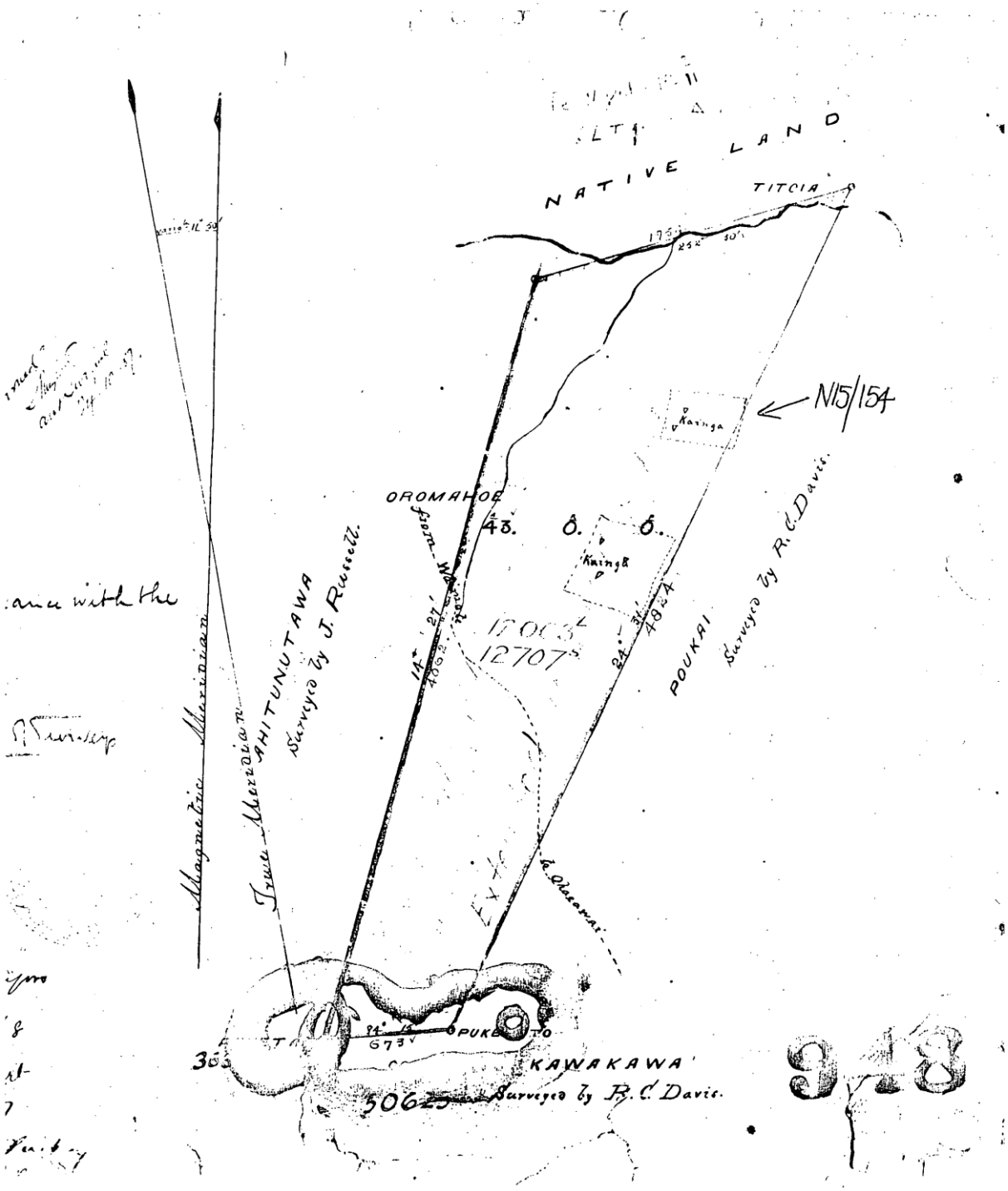


Figure 7: Detail from ML 948 Plan of the Hariru Block, with kainga indicated.

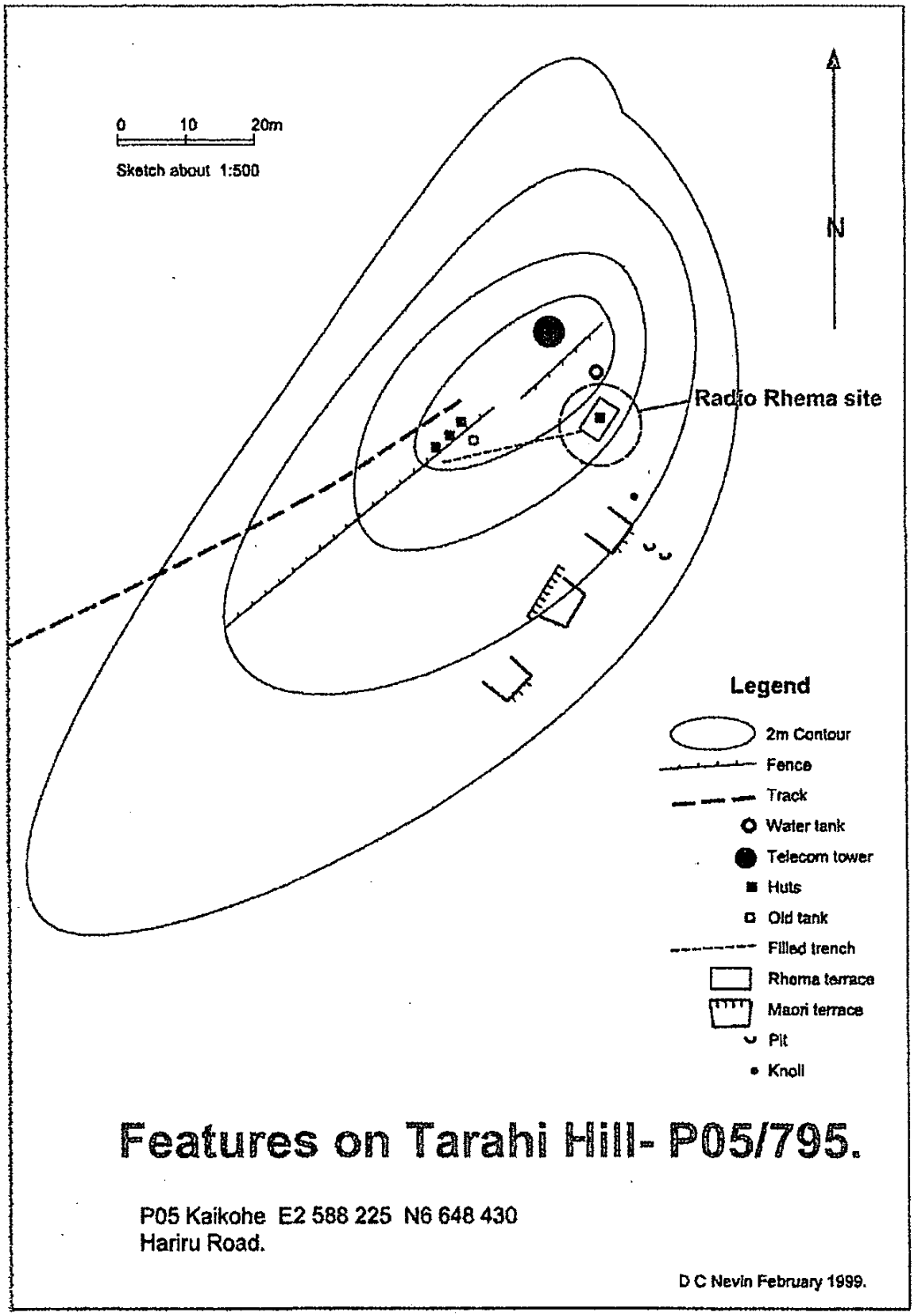


Figure 8: P05/795, Tarahi.

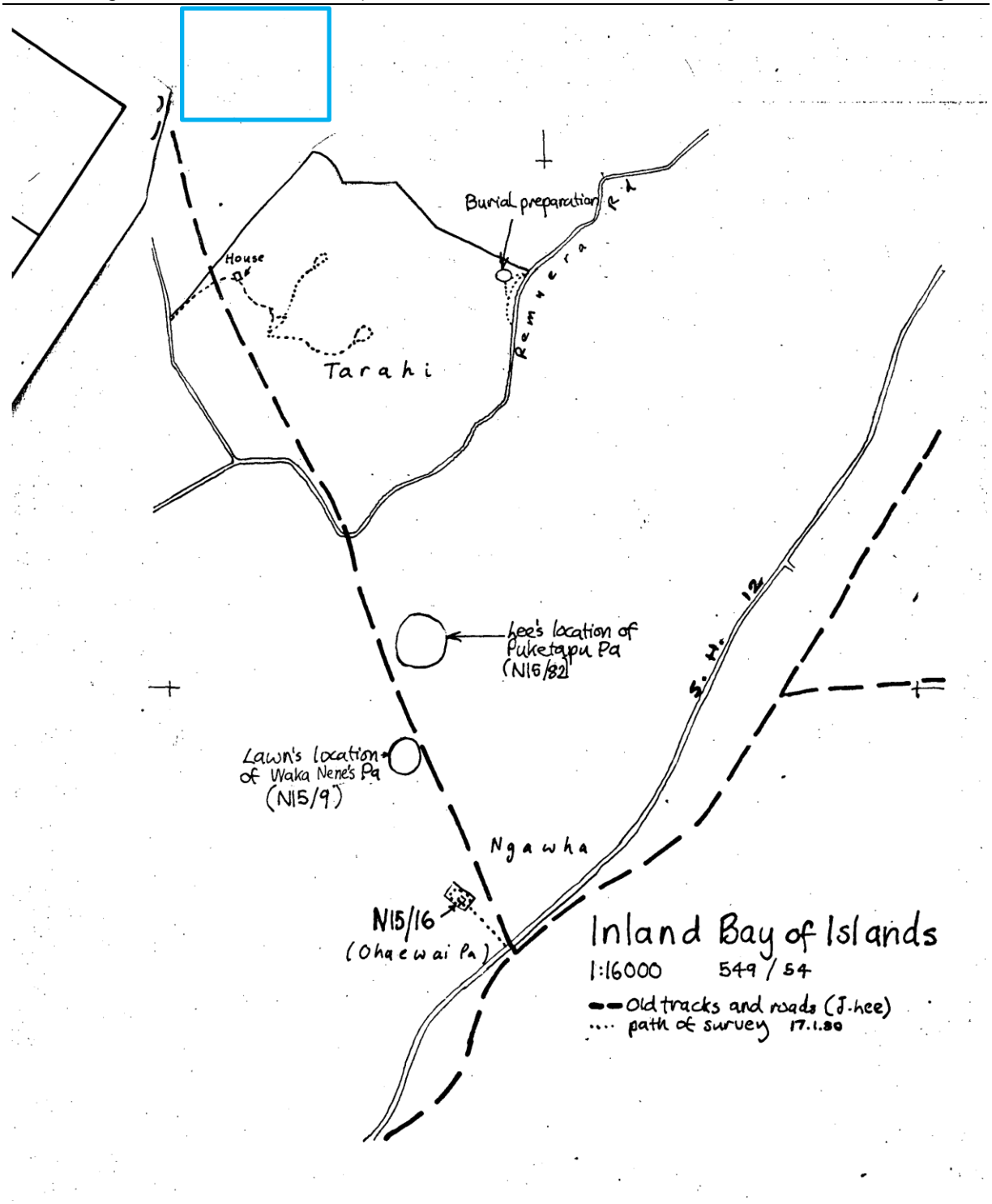


Figure 9: Sites between the project area and Ngawha.

5.2 Historic Background

The Te Ahuahu-Ohaeawai-Kaikohe-Waimate North area was an important area of pre-Contact Maori settlement, and European/Maori interaction in the 19th century. The area was also the site of a major battle of the Northern War of 1845-46, between forces allied with the British under Tamati Waka Nene, and those of Hone Heke. The wider landscape is highly archaeologically, historically and culturally significant.

The history of the area is intimately tied to the spread and consolidation of inland iwi/hapu from the Taimai area eastwards to the coastal areas of what is now the Bay of Islands, in the late 18th and early 19th centuries. In the mid 18th century the area around Te Ahuahu was the domain of Ngati Pou, who came under increasing pressure from the Taiamai people.

The following account is taken from (Sissons et. al. 1987: 27, 30, 34). Whaingaroa, was a leading rangatira of the Taiamai hapu Ngare Hauata and is known today as an important Ngati Hine ancestor. Traditions Whaingaroa, in alliance with Kaitara of Ngati Hineira, and Matahaia of Ngati Rangi defeated the former Ngati Pou, in the 1790s, after which they left the area for the Hokianga and Whangaroa. Kaitara came to settle at Te Ahuahu and married a Ngati Pou woman, Inu.

Wiremu Katene, a great-grandson of Kaitara stated that after the conquest the land was divided into three blocks, first of which was for Whaingaroa (at Pakaraka) [East Taiamai], second to Matahaia at Ohaeawai [West Taiamai], and from Mr. Ludbrook's residence [between Ohaeawai and Pakaraka] to Omapere was allotted to Kaitara [north and north-west of Taiamai] (Maori Land Court Northern Minute Book 5:7).

Kaitara came to live at a settlement called Pukenui, at the foot of Te Ahuahu, and was visited there by a number of early European travellers through the area including Samuel Marsden, Thomas Kendall and Captain Cruise. Marsden noted that the land between Pukenui and Taiamai was the best he had ever seen, and the sides of the hill were under potato cultivation when he visited in 1820. Later, the CMS missionaries from Waimate would include services at Pukenui in their weekly or fortnightly rounds, noting that they could serve 3000-5000 Maori within a five mile circuit.

The principal hapu at Te Ahuahu at that time was probably Ngati Hineira, although the missionaries also met there a Ngati Pou rangatira, Tiiohu. Given Kaitara's wife, Inu, belonged to Ngati Pou, it is possible that after the Taiamai battles some of her relatives had returned to Te Ahuahu to reside there with Ngati Hineira. Tiiohu's father, Te Maunga, was a leading Ngati Pou rangatira at the time of the Taiamai battles, and had occupied Maungaturoto pa. Tiiohu's mother, Puhirangi, was closely related to Kaitara's wife, both of whom were descendants of Rangihaua, the founding ancestor of Ngati Pou.

To the south west of the project area, Kaikohe itself was originally known as Opango, before being renamed after a historic raid by an enemy taua in the early 19th century required the inhabitants to flee to the forest on Tokareireia (Kaikohe Hill) and subsist amongst the Kohekohe trees. By the mid-19th century, the area boasted a Church Mission Society mission along with its Maori inhabitants. To the south east, at Ngawha/old Ohaeawai, the British suffered their worst defeat in the first New Zealand war, in July 1845. Maps from this area show battle sites, Pa, kainga, mission stations, foot and cart tracks and important rivers, streams, mountains and wetlands. Nothing is shown in the project area.

The Te Ngako II Block (ML 2690) was surveyed in 1872 and the Te Ngako I Block (ML 2689) was surveyed in 1873. Both surveys show the name of the stream as Te Rua o te Houhou, which flows into the Pekapeka Stream. In 1905, the western end of the Te Ngako I and II Blocks adjacent to Haririu Road was subdivided off the balance, as shown on DP 3601, and all the land is annotated with the name Marsden Clarke. Marsden Clarke was a son of George Clarke (Senior), CMS missionary and Protector of

Aborigines. Marsden was born in 1837 at Waimate and died there in 1889, suggesting the Marsden on the survey plan was a son or other relative.

The Okokako Block of 64 ha on the southern side of the project area was surveyed in 1867 (ML 453, 1867). At that time, the land to the north and west was still in Maori ownership, while the land to the north east belonged to William Clarke, with the Kapurahoru Block to the south. William was also a son of George Clarke Senior, born in 1827 and dying in 1914.

The Poukai Block was surveyed in 1896 (ML 947 A 1). Along with the stream named Te Rua o te Hou Hou, it shows the point of the stream at the boundary of the Poukai and Hariru Blocks as Titoia, with the point on the stream at the boundary with the Maungakawakawa Block named Te Rotohau, and on the north side of the stream on the Te Ngako side, the name Waiparataniwha. By the 1930s, these blocks had been broken, fenced, and were in a mix of ploughed lands, pasture and fern (SO 20519).

After World War One, the land on the south side of the stream was incorporated into Blocks 12S, 16S and 22S of the Remuera Special Settlement scheme.

The Remuera Special Settlement Scheme, established at the end of the World War One. The Remuera Special Settlement was established for veterans under the Discharged Soldiers' Settlement Act, and which included the project area. The Act allowed the Crown to purchase large, improved estates to subdivided for the benefit of returned servicemen. The land was purchased by the Crown and had been subdivided for the settlement by June 1919, prior to which it had been owned by settlers Messrs Close and Dickson, and Messrs Pithcaithly and Wright (Auckland Star, 6 June 1919).

Johnson and Callaghan (2020: 7), quoting an earlier unpublished report (Johnson and Callaghan 2014) state:

> "With regard to the Remuera Settlement it is understood that Arthur Close and George Dickeson purchased large areas of Maori land and other small farms in this area, prior to WWI (Bradnam 2003). Arthur Close was from Remuera in Auckland-and the 'Remuera Estate' comprising some 3500acres, was named after that suburb. The Estate was farmed, running a Romney Marsh stud and Hereford Cattle. It would appear that at some point between 1911 and 1919 further 'blocks' of land were purchased and incorporated into the 'Remuera Estate'. After World War I, Close and Dickeson were approached by the New Zealand Government for 'compulsive land purchase'. The 'Remuera Settlement' which comprised the 'Remuera Estate' and 'Omapere Farm' (owned by Messrs Wright and Pitcaithly) was divided and sold/leased in 1919 under the Discharged Soldiers Settlement Act (1915).

The opening up of the land was advertised in newspapers in September 1919, with 3553 acres in 31 sections from 70 to 372 acres in size available, valued at £63,000. The land was described as 'First-class" or "Improved", "…ranging from fair to the very best quality", and 40 applicants submitting ballots for the land. Applicants were interviewed by the Auckland Land Board (Taihape Daily Times, 30 August 1919; Auckland Star, 17 September 1919).

However the land was undersubscribed and two weeks after balloting closed, almost half the lots were still available and only 16 men had taken up land there. One suggestion for the lack of interest was the remoteness of the block making it difficult for prospective purchases to inspect the land, but the Auckland Land Board suggested that locals had been running down the quality of the land to prospective purchasers, and putting them off buying there (Auckland Star, 6 October 1919).

Remuera Block sections continued to sell slowly into the early 1920s, with the potential of the land increasing as work was undertaken to lower the level of Lake Omapere (Northern Advocate, 29 January 1921). While hundreds of pounds were spent on roading through the settlement in the mid-1920s, half the settlers (14 of 28) had walked off the land due to the financial and other difficulties (Northern Advocate, 14 March 1928) and the settlers stopped paying rates leading to the deterioration of the Ohaeawai-Lake Omapere road (Northern Advocate, 30 July 1928). The road through the Te Pua and Remuera settlements continued to be a source of frustration, and in the 1929 milking season was so bad that 50,000 pounds of butter fat had to be sledged rather than carted from the settlement to the main highway between Ohaeawai and Okaihau (Northern Advocate, 30 January 1930) and difficulties with the road continued through the 1930s and 1940s.

In its annual report for 1922, the Department of Lands and Survey reported good progress has been made by nearly all the settlers during the year. The settlement was reported to be well established. "About 30 chains of new road had been constructed. The benefit of the lowering of Lake Omapere is now being felt by those settlers occupying the sections on the lake frontage. There were still three vacant sections on the settlement, which should be selected at any time." DEPARTMENT OF LANDS AND SURVEY. DISCHARGED SOLDIERS SETTLEMENT. REPORT FOR THE YEAR ENDED 31st MARCH, 1922. Appendix to the Journals of the House of Representatives, 1922 Session I, C-09

In 1926, the Department reported that the settlers on this block were "…now settling down. Three of the sections were abandoned—one of these has been reselected, and there should be no difficulty in disposing of the others. Some of the sections have been regrouped, and this has made the settlers more contented. At the present time there are twenty settlers all milking and doing well. A road contract has just been completed, which finishes all the roading required at present. Te Pua Settlement. — The five sections on this settlement are all occupied, and all the settlers are getting along satisfactorily, but the land will have to be continually top-dressed to give the best results." DEPARTMENT OF LANDS AND SURVEY. SETTLEMENT OF CROWN LANDS (ANNUAL REPORT ON). Appendix to the Journals of the House of Representatives, 1926 Session I, C-01.

5.2.2 Review of Historic Maps, Plans and Aerials

A review of historic maps and plans for the area was undertaken, and the findings reported on above. More than eighty survey plans for the area were inspected and those showing historic features or other relevant information for the project area were georeferenced into an ArcGIS map project and the features digitised in order to relate their position to the project area.

No specific historic features were identified in the immediate vicinity of the subject property, beyond bush lines, historic place names which have been transferred to land parcels, and old parcel appellations which relate to settlement schemes.

The stream is shown variously as Te Rua o te Hou Hou (or Te Rua o te Hau Hau, or Te Rua o Te Hore Hore (possibly a miscopying of Hou Hou), with points on the stream within the project area named Titoia, Roto Te Hau, Waipara Tanewha, Puketawa and the downstream end of the stream is shown as Pekapeka. Two 19th century kainga are also recorded on the Hariru Block, to the north west of the reservoir, as previously noted.

A number of historic names are recorded for the area on historic survey plans. Hariru and Okokako Blocks are still present, but on the south side of the stream the project area lies within what was the Pouakai Block and the. The north side of the project area falls within the Te Ngako Block. Fenced paddocks and a structure are shown on the western side of the Te Ngako Block in 1905. Te Ngako appears to be a short form of Te Ngako o Tuiti, a name shown on the boundary between the Te Ngako and Haowhenua Block to the east, on the survey of that block from 1870 (ML 1918).

A number of other sources were also examined. Several large scale maps of the area were produced during the first New Zealand War of 1845-46 and which show major pa, other settlements, mission stations and geographic features in the wider area but nothing of note in the project area. The Geological Map of the Omapere Survey District (Crawford 1909) likewise shows nothing of note in terms of historic features and neither does the 1942 NZMS 1 mapsheet for Kaikohe.

A review of aerial imagery for the area was undertaken and some potential archaeological or other historic heritage features are apparent. The earliest, 1955 aerial imagery is partly obscured by cloud over the project area but shows what appears to be stone walls, drainage trenches, and potential stone mounds north of the Rua o Te Hau Hau stream.

Figure 10: Detail from 1845 map of Bay of Islands (south is up; project area outlined in blue).

Figure 11: Detail from 1845 campaign map (north east is up; project area outlined in blue).

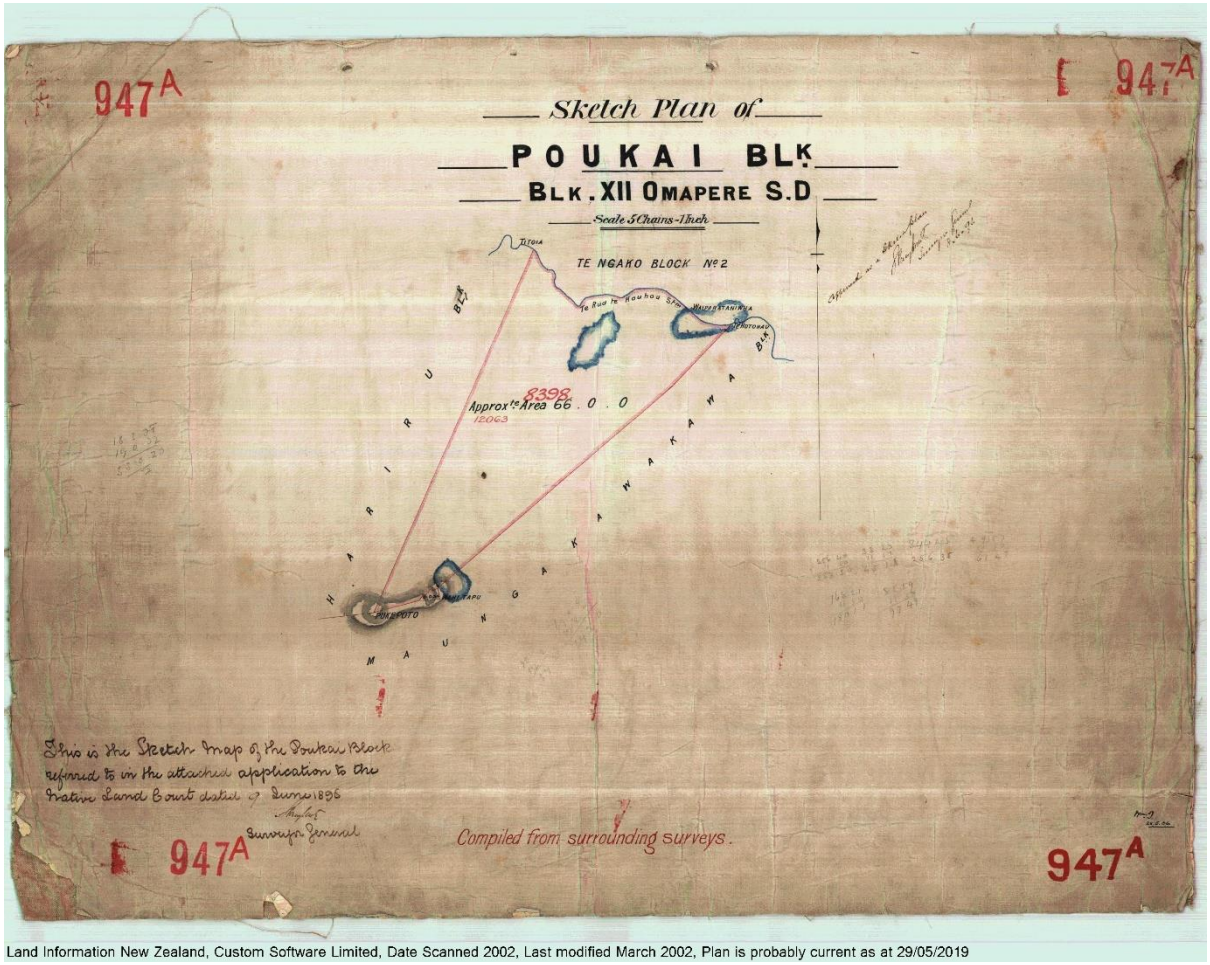
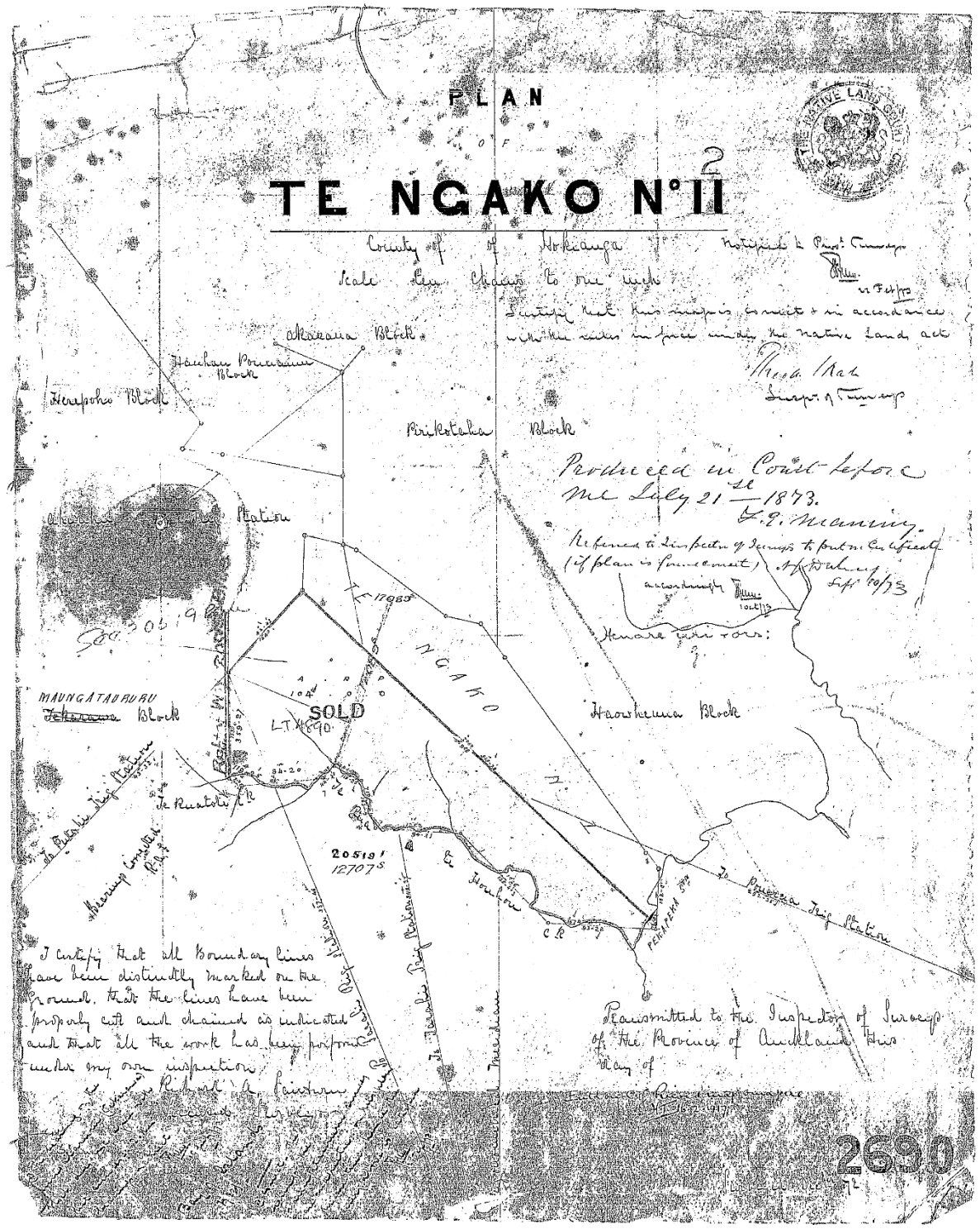
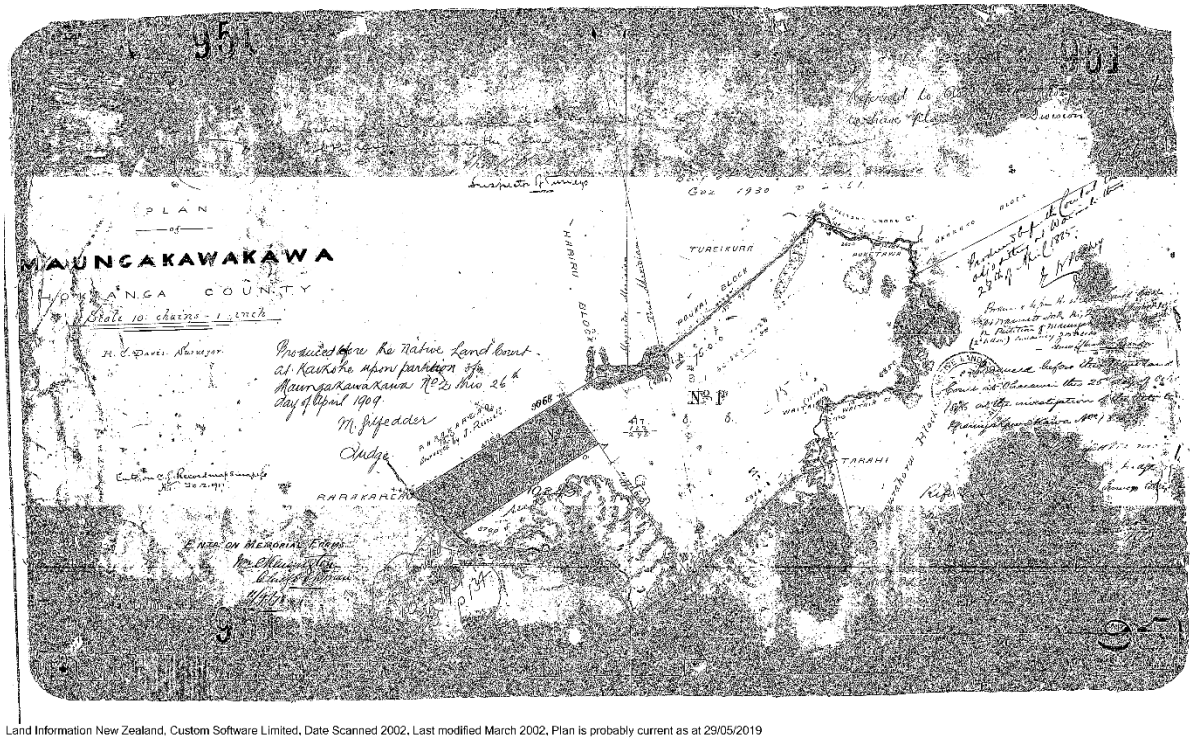


Figure 12: ML 947 (original survey 1868) showing Poukai Block, and names on the stream.



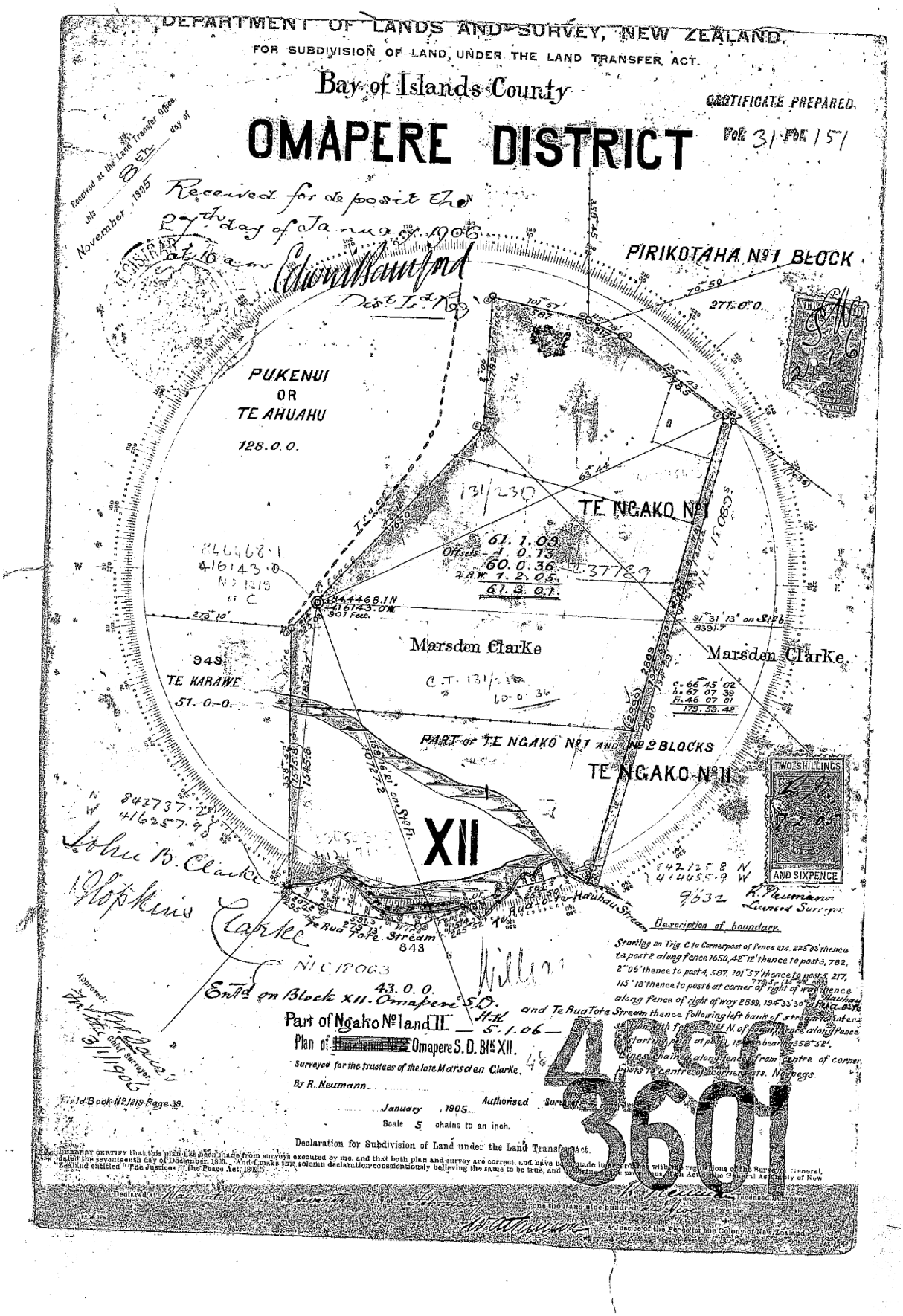
Land Information New Zealand, Custom Software Limited, Date Scanned 2002, Last modified March 2002, Plan is probably current as at 29/05/2019

Figure 13: ML 2690 (1873) Te Ngako I and II Blocks, and names on stream.



Land Information New Zealand. Custom Software Limited. Date Scanned 2002. Last modified March 2002. Plan is probably current as at 29/05/2019

Figure 14: ML 951 (1878) showing the Maungakawakawa Block, and names on the stream.



Land Information New Zealand, Custom Software Limited, Date Scanned 2002, Last modified February 2002, Plan is probably current as at 29/05/2019

Figure 15: DP 3601 showing subdivision of the western side of Te Ngako Blocks I and II.

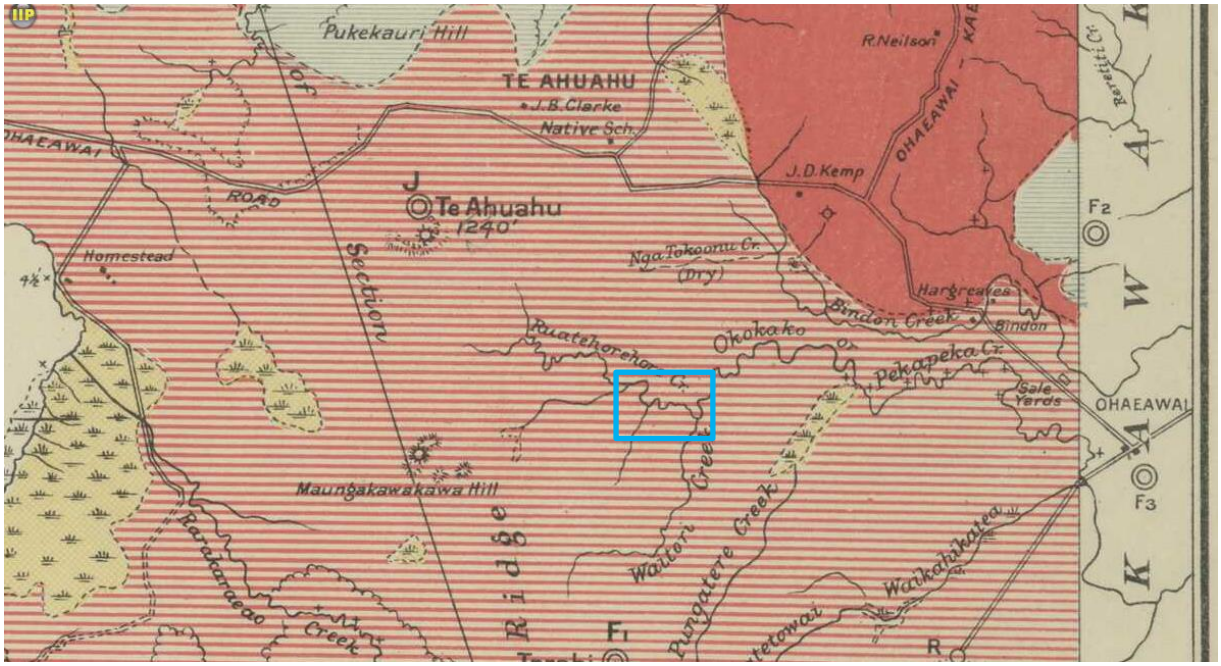


Figure 16: Detail from Crawford (1909).

Figure 17: SO 20519 showing the southern part of the project area incorporated into the Remuera Special Settlement.

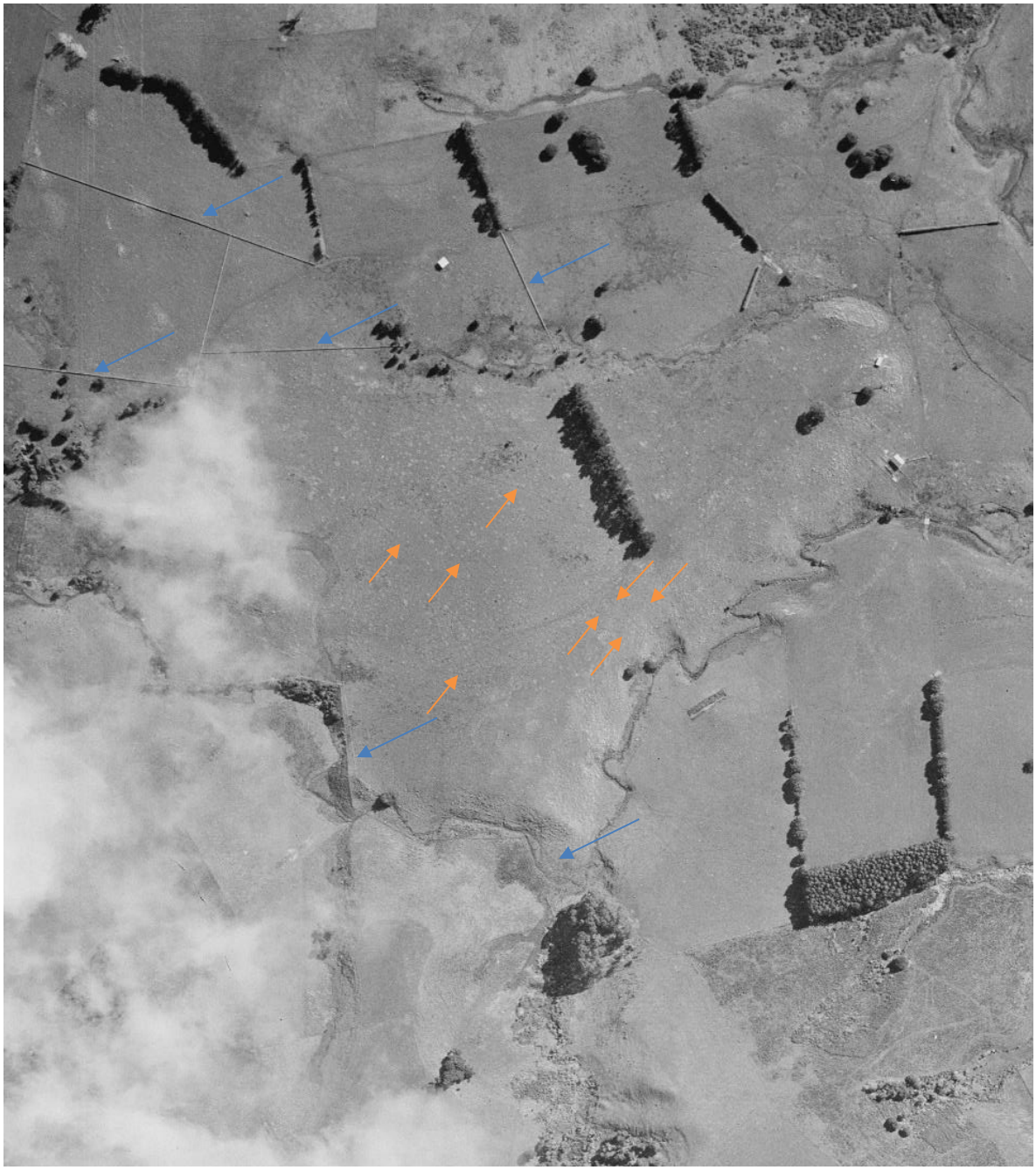


Figure 18: Detail from SN 209-548-47 (1955) with stone walls (arrowed blue) and drains (arrowed orange); small white circles may be horticultural mounds.

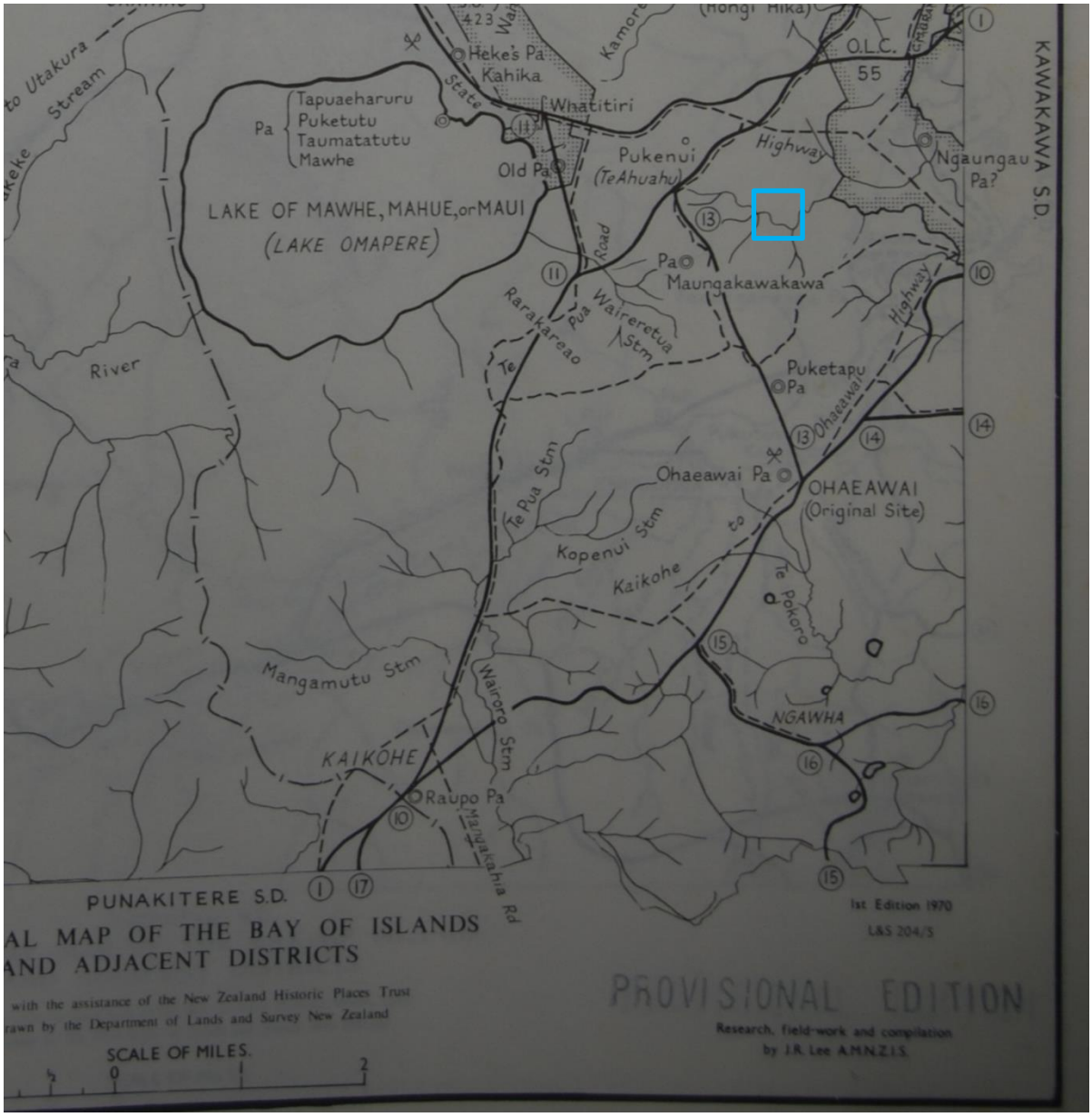


Figure 19: Historic places and tracks identified by Lee (1970).

6.0 Field Assessment

The Te Ruaotehauhau Water Storage Reservoir site was visited over the course of two visits, an initial high level walkover with the wider project team for approximately one hour on June 2020, and a day-long visit with a representative of the Tangata Whenua and the Water Trust community relations consultant in July 2020.

Survey conditions on both visits were fair to excellent, with most of the area is recently grazed pasture with good surface visibility, with smaller areas under regenerating native forest where the stream systems had been retired from grazing. The first visit accessed the project area via the eastern side belonging to the Dixon family, with the second visit via the western access over the Bell property.

Most of the project area has been inspected, apart from the north eastern side, on the Dixon property, which was stocked at the time. The southern valley has also not been inspected.

A number of archaeological sites and features or other features of historic or cultural interest were observed across the project areas and adjacent to the reservoir. These include dry stacked stone field boundary walls, low stone mounds associated with pre- or protohistoric Maori horticulture, possible pit or house floors, obsidian flakes, and taro.

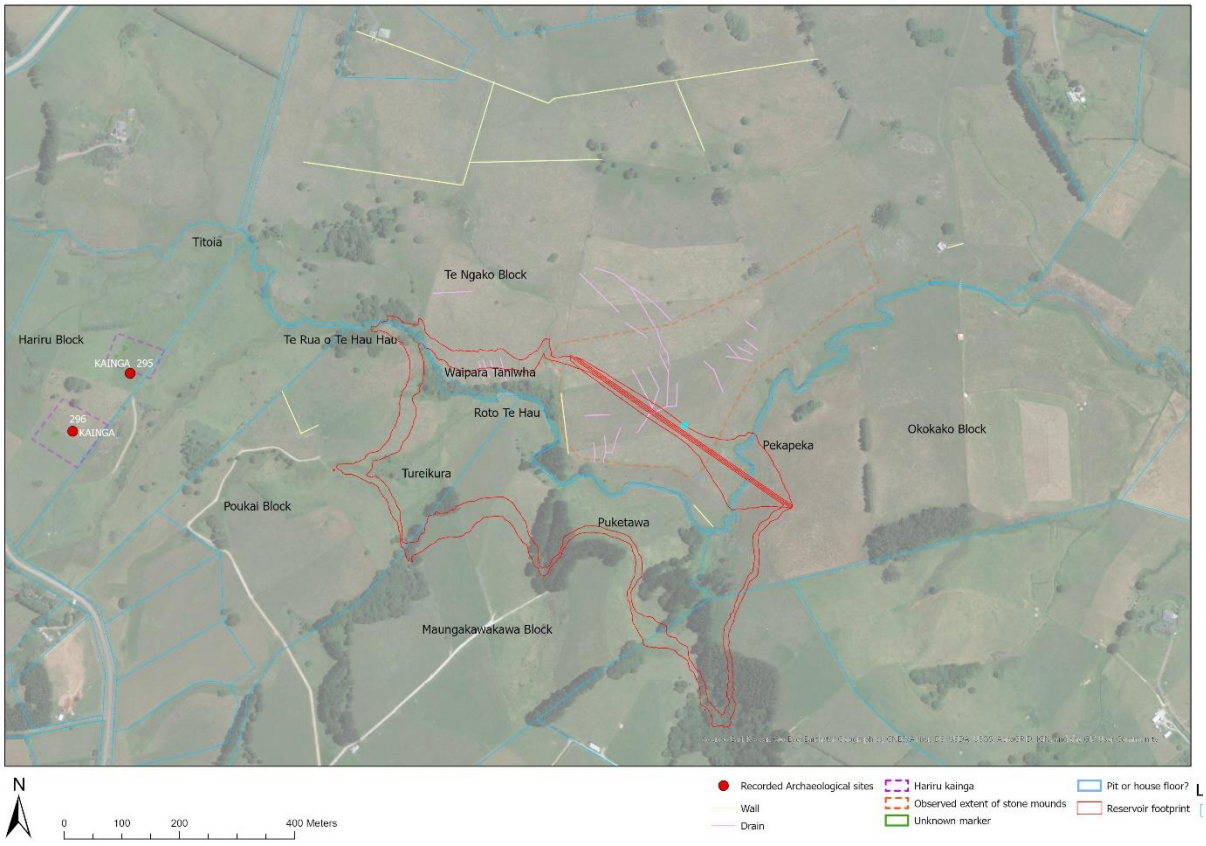


Figure 20: Archaeological, historic and cultural features at Te Ruaotehauhau reservoir.

6.1 Dry Stacked-stone Walls

In the course of the first visit, the presence of stacked dry-stone farm walls was noted on the Dixon property. These included intact/serviceable stone walls outside the project area on the Dixon property, and to the west on the Bell property, typically 1.6m high and 1.2m wide at the base. Two sections of largely destroyed stone wall, consisting of a single course of volcanic rock approximately 80cm wide and 40cm high were observed immediately east of the stream, on level to gently sloping ground, on the Dixon property. These features are within the inundation zone.

Maori horticultural systems are also known for having low, stacked dry-stone alignments or walls delineating plots or to encourage suitable microclimates, but the walls observed within the project area appear to be related to keeping stock out of the stream and ate to the historic or early modern period, after the land passed out of Maori ownership.

It is the overall extent, pattern and condition of the stone walls across a landscape and within in any geographic area which provides most of their heritage value, rather than any individual section of wall. The pattern of stone walls is not static and as working elements of historic farms the walls were continuously opened and closed throughout their history, and were replaced or were replaced by post and wire fences, according to the needs of the farmer and the changing organisation of the farm and fields. Therefore the position of gates/access ways through stone walls tend to change over time as farms developed, and the walls themselves are regularly repaired, removed and re-instated or replaced by cheaper alternatives such as post and wire fences.

The exception would be remnant of the earliest phase of stone wall building in the area from the mid-19th century, or potentially stone walls associated with important events or personalities in the history of the area. However there is no indication that these walls are particularly early, and they probably post-date the surveys and freeholding of the land.

6.2 Stone Gardening Mounds

Features consisted with pre- or proto-historic Maori horticultural activities were observed on the northern/eastern side of the stream, on the Dixon property. These features comprised stone and earth mounds. The mounds were observed on the flat to gently sloping ground approximately 5-10m above the stream.

The mounds are typically circular with diameters of 1.2-1.4m, spaced at intervals of 7-10m. The internal arrangement of several mounts was visible due to stock damage, the mounds comprising an outer ring of larger volcanic rocks with an inner core of smaller stones and soil. The area of observed stone gardening mounds covered an area of approximately 10ha.

No mounds were observed on the western side of the stream on the Bell property, and the features appear to be restricted to the lava flow from Te Ahuahu.

Furey provides the following account of stone mounds in her monograph Maori Gardening. An Archaeological Perspective (2006: 31):

> "In the archaeological literature, the terms 'stone heaps' and 'stone mounds' have been used interchangeably, but work focusing specifically on these features during the 1980s' investigations of the garden systems of South Auckland has indicated that there are differences between them (Coates 1992). Mounds have a distinctive rock and soil core covered with, or surrounded by, small rocks. Challis & Walton (1993) defined heaps at Pouerua as being structured piles using larger stones on the outside and smaller stones in the core. In contrast, mounds were defined as low piles with larger stones forming a perimeter and often containing a large quantity of earth. They suggested that heaps, which contain more stones, may represent the first attempt at stone clearance, and mounds may have been the result of a second level of clearance or may have functioned as gardens. A classification of mounds has been attempted based on plan, cross-section and composition (Rickard et al. 1983), but it is the internal composition that is important (Coates 1992), and this cannot always be ascertained from surface features. Mounds may also be fragmentary or dilapidated rows (Sullivan 1974)."

6.3 Shallow Trenches

A number of shallow, straight trenches or drains were observed at ground level during the site visit. Reference to aerial imagery suggests the area of stone mounds is criss-crossed by a reticulated network of such shallow trenches. Such features are commonly associated with Maori horticultural sites.

In between the site visits, a major storm even hit the northern part of the North Island causing widespread flooding; shortly after this even S. McManus observed these drains running, with water directed into the stream.

With regard to ditches and trenches, Furey states (2006: 38-40):

> "Ditches and trenches occur in various situations and probably had more than one function, according to local and regional conditions.
> …
> These ditch-and-trench features are often difficult to see and they may be severely under-represented in the records: because they are shallow (usually less than 500 mm deep) and narrow, they are vulnerable to erosion and infilling, and on flat land are destroyed by ploughing and intensive European land-use practices. Often they are only visible when seen from a distance in particular light conditions, and under close-cropped pasture grass.
> …
> Within this category, several different functions or overlapping functions are implied from the surface evidence. These include diversion of surface water away from gardens, and reticulation of water to flatter areas for specific crop requirements. This latter interpretation implies that taro (the only moisture tolerant cultigen) was grown on the flat, and kumara on the slopes; however, this may be a simplistic explanation. Examples of water diversion include systems with cross-ditches on the upper slope.
> …

> Although water or erosion control may be one reason for the presence of trenches on some sloping sites, in other places on gentle slopes or flat land, such as on sandy loam flats behind beaches or on volcanic soils, drainage was not an issue. At Pouerua, there are examples of slope trenches joining longer trenches in valley floors, and parallel trenches up to 300 m long that cross knolls and ridges in the lava flow (Fig. 10). Short, transverse trenches occur in the space between the long trenches (Phillips 1980). Given the free-draining nature of the volcanic soils at Pouerua, and the fact that these trenches cross over knolls, they are unlikely to have had a drainage or water-channelling function. Rather, they can be interpreted as garden boundaries, perhaps doubling as footpaths around the edges of gardens."

6.4 Possible Pits or House Floors and Mounds

Two possible pits or house floors were observed just off the level ground, on the bouldery tongue of land above the confluence of the main stream and the gully to the south. These features comprised approximately rectangular, stone-free areas.

To the west of the western extent of inundation, two large rock piles were observed around several totara. It appears as if field rock has been piled up in this area, and the totara is relatively young. However there appears to be an internal structure to the mounds, with large rocks around the outside and smaller stones in the centre. These may or may not be archaeological features but are outside the inundation area and will not be affected.

6.5 Artefacts

A large obsidian flake was recovered from the stream flats near the southern section of stone wall. The flake has a small amount of cortex on one side, suggesting primary reduction was occurring in the area. It is possible that the flake has washed down from further up the stream, but regardless of its ultimate origin on the stream it is suggestive of stone tool production nearby.

Figure 21: Maori horticultural system; looking north to Te Ahuahu over stone mounds.

Figure 22: Stock-trampled stone mounds after severe flooding.

Figure 23: Possible stone lined pit or house floor.

Figure 24: Southern stacked dry stone wall remnant.

Figure 25: Detail of stacked dry stone wall remnant.

Figure 26: Detail of stacked dry stone wall remnant.

Figure 27: Northern stacked dry stone wall remnant.

Figure 28: Obsidian flake from stream flats.

7.0 Significance Assessment

The following assessments find that P05/1091 is of moderate archaeological significance. It is a previously unrecorded, extensive proto- and possibly pre-historic Maori gardening system. Similar archaeological sites and features are known from the nearby Taiamai plains, Waitangi and Moerewa, where rocky volcanic soils predominate.

The system is largely intact, except for minor damage from stock, farm fencing and track making, and possibly from robbing rock for later historic/modern stone wall construction.

There have been few large scale investigations of such gardening systems, particularly in the last 20-30 years and there are still significant gaps in understanding their use. The careful investigation of such features is likely to have significant information potential.

There are extensive Maori Land Court records for the underlying blocks, Te Ahuahu, Okokako, Poukai, and Te Ngako, and the neighbouring Maungakawakawa and Hariru Blocks. These suggest intensive occupation of the area, and competition for resources in the late prehistoric and into the protohistoric period, associated with named ancestors and specific events.

Table 1: Significance assessment of P05/1091 Stone mounds/Pits/Terraces/Artefacts.

Significance Category	Value	Comment
Integrity, Condition and Information Potential	High	The observed features are in good condition although surrounding areas have been modified by fencing and other farming-related activity, and stock damage.
Diversity	High	The site comprises stone gardening or clearance mounds, stone walls, possible pits and mounds, and obsidian artefacts and taro. Associated subsurface features are likely to be present.
Rarity	Moderate	Similar features are recorded to the west around the western and southern side of Te Ahuahu, and they are well known from the adjacent Taiamai plains to the east. Other similar features may be present outside the observed area of the proposed reservoir.
Archaeological Context	Moderate	Three important maunga and pa overlook the site, Te Ahuahu, Maunga Kawakawa and Tarahi. The area was gardened and occupied into the mid-19th century and traversed by an important walking track in the same period linking Waimate with Oheawai.
Landscape Context and Amenity	Moderate	The features are visible and obvious at ground level but are not readily apparent from a distance or nearby Hariru Road or SH1.

Historical and Community Associations	Moderate	The features are not associated with any known person or event, but are likely to be of significance to Tangata Whenua. Several names are associated with the stream and its environs which may be significant, and the Hairiru kainga to the west are associated with Hare Matenga, a mid-late 19th century ancestor. The Te Ahuahu/Pukenui area is associated with the defeat of Ngati Pou and the expansion of Ngapuhi, and Kaitara an early 19th century ancestor. The area was the site of intensive occupation and feuding in the proto- and prehistoric period, and the battle between forces allied with Hone Heke, Kawiti and Waka Nene during the Northern War of 1845-46. There are extensive Maori Land Court records outlining whakapapa, ownership claims and land history for the area.

8.0 Assessment of Effects

The archaeological effects on P05/1091 from the proposed Te Ruaotehauhau reservoir are high.

Features recorded within the footprint of the dam wall, including stone mounds, drains, pits or house floors, and any associated subsurface features and artefacts will be destroyed, as will any features within borrow areas, haul roads, yards and hardstands. This amounts to approximately 7000m^2 of the observed 10ha of the horticultural system destroyed by the dam wall alone.

Features recorded within the inundation zone, which include the features noted above along with subsurface features, plus the remains of the dry stacked stone walls will be made unavailable for further research, and will be affected by compression from the water column, and potential bio-chemical effects of being submerged in water. This amounts to at least 3ha of the 10ha system.

Other features outside the inundation zone may be affected by fencing off the reservoir and e.g. the creation of new wetlands and areas of native plantings to offset those modified or destroyed by the reservoir.

It is possible that wooden artefacts may be found in waterlogged deposits on the valley floors and around the streams, as such artefacts were often cached in wetlands for protection, and a number of such finds are known from the Kaikohe-Omapere area (e.g. Slocombe 2002; Phillips et. al.: 2002) and from areas immediately adjacent to the project area (McManus to Carpenter pers. comm., 2020).

Subsurface features are unlikely to be proactively identified/identifiable prior to the commencement of earthworks, such as by exploratory or test excavation across the area by hand or mechanical excavator. Such features are more likely to be identified during top soil stripping through archaeological monitoring. Such monitoring should be targeted at those areas most likely to contain archaeological sites and features, namely ridge tops and gentle north-facing slopes and descending ridges and spurs.

Trenching for water supply pipes will need to be assessed as any earthworks in the distribution area has potential archaeological effects due to the high site density in the area.

Land use intensification as pastoral farming changes to horticulture in the identified distribution area for the reservoir is likely to have high archaeological effects as this

area overlaps with an area of high archaeological site density which broadly maps to the extent of highly productive volcanic soils used by Maori in the pre- and proto Contact period for horticultural production with associated occupation areas nearby.

9.0 Findings and Recommendations

1) The Te Tai Tokerau Water Trust will need to apply for a general archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014 to modify recorded archaeological site P05/1091.

2) An archaeological management plan and research strategy will be required to manage archaeological effects from the project, and guide the investigation of archaeological features as mitigation for those effects, due to the scale of effects, significance of the site, and complexity of the project.

3) The applicant should undertake consultation with Tangata Whenua in light of the findings and recommendations from this report, as part of the archaeological authority process and should develop protocols around the appropriate tikanga for Maori archaeological sites and features and discuss opportunities for cultural monitoring of earthworks.

4) A detailed map of surface archaeological features should be prepared to inform the management plan and research strategy, prior to the preparation and submission of the archaeological authority application.

5) Proactive investigation of archaeological features within the footprint of the dam wall, and any other areas where earthworks are to be undertaken, will be required (borrow areas, haul roads, hard stands, and yards), guided by the research strategy.

6) A representative sample of features to be inundated but otherwise not affected, will need to be investigated.

7) Archaeological monitoring may be required in other areas.

8) Areas of stone mounds and associated horticultural features outside the reservoir footprint should be identified for possible permanent protection through heritage covenants.

10.0 Summary

Geometria Ltd was commissioned by Williamson Water & Land Advisory to undertake an archaeological assessment of the proposed new Te Ruaotehauhau Water Storage Reservoir near Ohaeawai, on behalf of the Te Tai Tokerau Water Trust.

The proposed new reservoir will affect an archaeological landscape, comprising approximately 10ha of proto and or pre-historic Maori horticultural features. Artefacts, cultivable taro, obsidian artefacts, and historic stone walls are found in association with the horticultural system which comprises low stone mounds and shallow trenches. These features were previously unrecorded, and have now been added to the New Zealand Archaeological Association database ArchSite as P05/1091.

While not locally or regionally rare, these features are in good condition and are associated with a highly significant historic and cultural landscape. The site has been assessed as being of moderate archaeological significance overall.

The Te Ruaotehauhau Water Reservoir will destroy approximately 7000m^2 of these features, with additional effects on 3ha due to modification by inundation within the reservoir footprint. There will likely be additional effects on subsurface archaeological features, and effects from haul roads, borrow areas, yards and hard stands, and the development of wetlands and areas in native planting to offset those affected by the reservoir. There are also likely to be downstream effects from developing pipe services to supply water from the reservoir, and land use change/intensification from horticultural development.

An archaeological authority from Heritage New Zealand under the Heritage New Zealand Pouhere Taonga Act 2014 will be required for the construction of the dam and reservoir itself. Such an authority, if granted, will likely contain a number of conditions for archaeological mitigation.

Given the scale and complexity of the project a comprehensive archaeological management plan and research strategy will be required to manage effects and guide investigation of the site.

Proactive investigation of features to be destroyed and a sample of features to be inundated will be required, prior to site establishment and bulk earthworks. Other works will require archaeological monitoring and investigation as necessary.

Such investigation will use standard archaeological methods but will also require radiocarbon and microfossil analysis. Such an investigation and associated analysis and reporting will exceed the $100,000 threshold which needs to be indicated in the archaeological authority application to Heritage New Zealand Pouhere Taonga.

11.0 References

11.1 Books and Reports

Best, S., n.d. Proposed Southern Landfill Site, Kaikohe: Scoping Report, Archaeological Overview.

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Furey, L., 2006. Maori Gardening. An Archaeological Perspective. Department of Conservation, Whangarei.

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Maingay, J., 2003. Archaeological Inspection of Pa Site N15/16, Ngawha.

Lee, J., 1983. 'I have named it the Bay of Islands…' Hodder and Staughton, Auckland.

Phillips, C., D. Johns and H. Allan, 2002. Why did Maori bury artefacts in the wetlands of pre-contact Aotearoa/New- Zealand?. Journal of Wetland Archaeology, Vo. 2, p. 39-60.

Robinson, J., 2008. Archaeological Monitoring at St Michael's Church and Ohaewai Gunfighter Pa, Ngawha.

Sissons, J., W. Wihongi, and P. Hohepa,1987. Nga Puriri o Taiamai. A political history of Nga Puhi in the inland Bay of Islands. The Polynesian Society, Auckland.

Slane, C. and J. Grant, 1980. Lake Omapere Survey Report.

Slocombe, A., 2002. An Archaeological Investigation of Wetland Site, P06/82, Kaikohe. Department of Conservation, Whangarei.

Walton, A., 1982. Ngawha Springs: An Archaeological Survey.

11.2 Maps, Plans, Photographs and Other Images

DP 3601.

DP 4440.

DP 11715.

DP 13915.

ML 453.

ML 525.

ML 860.

ML 861.

ML 876.

ML 877.

ML 879.

ML 947.

ML947A.

ML 948.

ML 949.

ML 950.

ML 951.

ML 1130.

ML 1366.

ML 1367.

ML 1918.

ML 2689.

ML 2690.

ML 5904.

ML 6042.

ML 7305.

ML 7870.

ML 7919.

ML 1925.

ML 8398.

ML 4800.

ML 8402.

ML 8474.

ML 9068.

ML 9069.

ML 9167.

ML 10249.

ML 10271.

ML 10539.

ML 11333.

ML 11411.

ML 11479.

ML 11489.

ML 11613.

ML 11705.

ML 11841.

ML 12063.

ML 12089.

ML 12185.

ML 12695.

ML 12707.

ML 12941.

ML 13327.

ML 13329.

ML 14479.

ML 14596.

ML 14705.

ML 14797.

ML 14596.

ML 14820.

ML 14886.

ML 15496.

ML 15505.

ML 15579.

ML 15677.

ML 15874.

ML 15908.

SO 808.

SO 20493..

SO 20495.

SO 20519.

SO 20579.

SO 23405.

SO 23407.

SO 24001.

SO 25697.

SO 29147.

SO 29375.

SO 30055.

SO 30547.

SO 33005.

SO 36637.

SO 41917.

SO 45974.

Appendix A – Archaeological Site Record

ARCHSITE archaeological site recording scheme

Site Record Form

NZAA SITE NUMBER: P05/1091

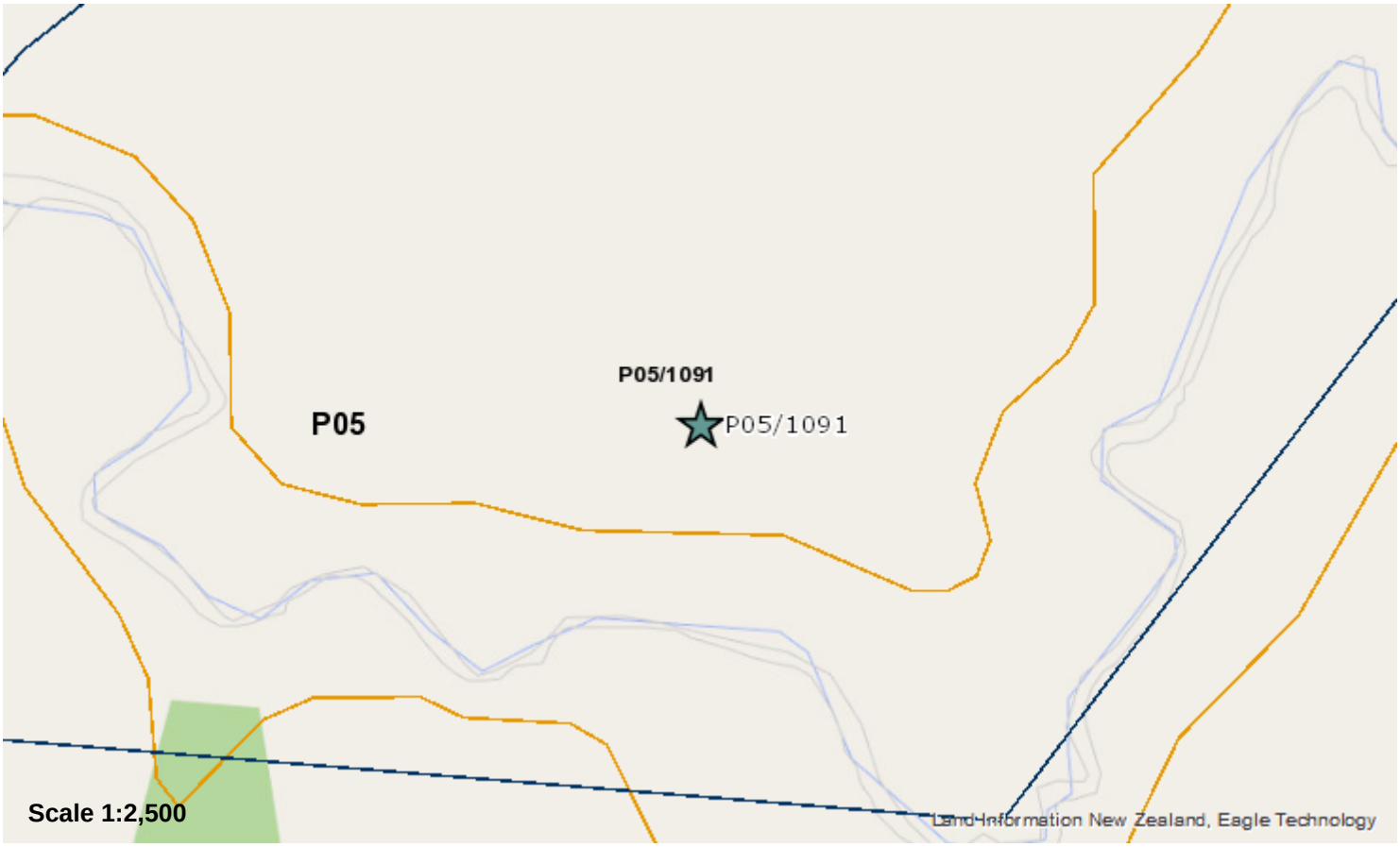
SITE TYPE: Maori horticulture

SITE NAME(s):

DATE RECORDED:

SITE COORDINATES (NZTM) Easting: 1677711 **Northing:** 6087839 **Source:** On Screen

IMPERIAL SITE NUMBER: **METRIC SITE NUMBER:** P05/1091



Finding aids to the location of the site

North side of Te Rua o Te Hau Hau (or Hou Hou) Stream, on Lot 2 DP 442506, one km east of Hairuru Road and 1.2km south of SH1. On level to gently rolling ground 5-10m above the stream.

Brief description

Horticultural features: stone and earth mounds, drains, artefact

Recorded features

Artefact - obsidian, Drain, Mound, Pit, Stone heap/ mound, Stone wall, Taro, Trench

Other sites associated with this site

SITE RECORD HISTORY	NZAA SITE NUMBER: P05/1091

Site description

Updated 11/08/2020 (Field visit), submitted by jonocarpenter , visited 10/06/2020 by Carpenter, Jonathan
Grid reference (E1677711 / N6087839)

Features consisted with pre-/proto-Contact Maori horticultural activities were observed on the northern/eastern side of the stream, on the Dixon property (Lot 2 DP 442506) in the course of an assessment for a proposed reservoir.

These features comprised stone and earth mounds. The mounds were observed on the flat to gently sloping ground approximately 5-10m above the stream. The mounds are typically circular with diameters of 1.2-1.4m, spaced at intervals of 7-10m. The internal arrangement of several mounts was visible due to stock damage, the mounds comprising an outer ring of larger volcanic rocks with an inner core of smaller stones and soil.
The area of observed stone gardening mounds covered an area of approximately 10ha. This area is associated with the lava flow from Te Ahu Ahu to the north.

A number of shallow, straight trenches were observed at ground level during the site visit. Reference to aerial imagery suggests the area of stone mounds is criss-crossed by a reticulated network of shallow trenches. Such features are commonly associated with Maori horticultural sites.

In between the site visits in early June and late July, a major storm even hit the northern part of the North Island causing widespread flooding; shortly after this event neighbouring land owner S. McManus observed these drains running, with water directed into the stream.

Two possible pits or house floors were observed just off the level ground, on a bouldery tongue of land above the confluence of the main Rua o Te Hau Hau stream and a stream and gully to the south. These features comprised approximately 4x2x.5m deep rectangular, stone-free areas in the otherwise boulder area.

A large obsidian flake was found on the small flat beside the stream, below this tongue of land.

Two sections of largely destroyed stacked dry stone wall, consisting of a single course of volcanic rock approximately 80cm wide and 40cm high were observed immediately east of the stream and north of the stream, on level to gently sloping ground, on the Dixon property. Intact/serviceable stone walls outside the project area to the east on the Dixon property, and to the west on the Bell property on the other side of the stream (Section 12S and 16S Remuera Settlement). These walls appear to be from the late historic or early modern period and consistent with European pastoral farming.

Two possible large stone mounds were observed on the west side of the stream but require further investigation. They comprise two mounds approximately 5-10m wide, with large outer rocks and a core of smaller rocks, separated by a metre of clear ground. Young totara are growing on the mounts. The mounds are in an area of intermittent rock outcrops associated with the lava flow from Maungakawakawa to the west. Several hundred metres to the west are the Hariru kainga recorded on the 1868 survey plan of the same name, which have rock mound burials associated with them. If not for the smaller rocks in the core of the feature, I would have considered them to be farm clearance mounds.

These features are within or on the edges of the proposed MN06 Reservoir project sponsored by the Te Tai Tokerau Water Trust. See:

Carpenter, J., 2020. Archaeological Assessment of the Proposed MN06 Water Storage Reservoir. Ohaeawai. Unpublished report for Williamson Water and Land Advisory and the Te Tai Tokerau Water Trust.

Condition of the site

Statement of condition

Updated: 12/08/2020 - Good – Majority of visible features are intact, but some minor loss of definition and/or damage

Current land use:

Updated: 12/08/2020 - Grazing

Threats:

Updated: 12/08/2020 - Stock trampling, Farming practices, Erosion, Services/ utilities

SITE RECORD INVENTORY	NZAA SITE NUMBER: P05/1091

Supporting documentation held in ArchSite