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Archaeology

Pegasus West Development

An archaeological appraisal

Report prepared for Wolfbrook Developments (Pegasus) Limited

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Submitted: June 2026

Pegasus West Development

An archaeological assessment

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Project details

Archaeological site no.	M35/159, M35/312, M35/440	
Location	Address	Legal description
	40 Mapleham Drive	Lot 4 DP 407339
	n/a	Lot 2 DP 407339
	65A Mapleham Drive	Lot 206 DP 412982
	2 Burntwood Lane	Lot 208 DP 417391
	161 Pegasus Boulevard	Lot 210 DP 453895
	141 Pegasus Boulevard	Lot 211, 701 DP 437099
	158 Pegasus Boulevard	Lot 3 DP 595055
	148 Pegasus Boulevard	Lot 4 DP 595055
	138 Pegasus Boulevard	Lot 2 DP 595055
	160 Pegasus Boulevard, Pegasus	Lot 205 DP 552775
	8 Mapleham Drive	Lot 1 DP 595055
	Mapleham Drive roundabout	Lot 221 DP 400595
	11 Atkinsons Lane	Lot 213 DP 403716
	n/a	Lot 701 DP 403716
	65A Mapleham Drive	Lot 206 DP 412982
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Report submitted to	Wolfbrook Developments (Pegasus) Limited	
Document control ID	J012611_AA_REVA	

Document control

Revision no.	Date submitted	Description	Prepared by	Reviewed by
A	June 2026	Submitted to client	TW, LM	KW
B	July 2026	Revision B	TW	KW

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This report has been prepared for the sole use of the client, Wolfbrook Developments (Pegasus) Limited, the Minister for Infrastructure, relevant Local Authorities and Heritage New Zealand Pouhere Taonga and other participants in relation to a referral application under the Fast-track Approvals Act 2024 for the specific work program described in Section 1.2 of this assessment. This report and the information contained herein are subject to copyright. Ownership of the primary materials created in the course of the research remains the

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Executive summary

Wolfbrook Developments (Pegasus) Limited (Wolfbrook) is proposing the redevelopment of the former Pegasus Golf Course for a (primarily) residential subdivision – the Pegasus West Development. The indicative masterplan shows that the predominant land use will be residential, with some commercial areas on the north side of Pegasus Boulevard between Mara Kai Place and the east intersection of Maplesham Drive. It is understood that earthworks activities may involve demolition and foundation removal of some buildings and other structures, topsoil stripping in advance of cut and fill works to level the area, the infilling and reconfiguration of some existing ponds, the creation of stormwater management facilities, formation of roads, service installation and other works. The following archaeological appraisal has been commissioned to assess the archaeological potential of the development area and to consider the potential impact that the proposed works may have on archaeological sites, for the referral application, with or without mitigation.

A vast number of archaeological sites and features were recorded during previous archaeological investigations of the former Pegasus Golf Course. Some archaeological sites were left partially in situ at the end of the project, including borrow pits and garden soils recorded as M35/159 and M35/312, and the Taerutu Gully Pā (M35/440), as well as sites in the northeast of the project area that are not formally recorded in ArchSite. Current plans exclude the known extent of Taerutu Gully Pā, areas of in situ archaeological sites and high archaeological potential along the Taerutu Stream in the northeast, and the borrow pits recorded as M35/312 in the south of the project area from development and excavation. This would help prevent damage to the significant archaeological values of these sites in the excluded areas.

The development works may affect previously unrecorded archaeological sites in areas where limited previous excavation has taken place, and these sites would likely have moderate-high values. Similarly, damage to- or destruction of these sites would likely result in a significant adverse effect on the archaeological values of these places. While it may not be possible to entirely avoid adverse effects on these unrecorded archaeological sites, negative effects could be partially mitigated by archaeological monitoring of excavation, archaeological recording, and completion of archaeological reports on the archaeological sites found in the area.

Pre-1900 archaeological sites are protected under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPT Act), and modification of these recorded and unrecorded archaeological sites would require an archaeological authority under the HNZPT Act 2014, which can be obtained via the Fast-track Approvals Act 2024.

Archaeological sites recorded within, or potentially affected by, the proposed development of the Pegasus Golf Course.

NZAA site ID	Site name	Site location	Brief description
M35/312		South boundary of Lot 210 DP 453895	Borrow pits and associated garden soils, with two remaining borrow pits.
M35/159		South boundary of Lot 210 DP 453895	Borrow pits and associated garden soils, largely modified.
M35/440	Taerutu Gully Pā	Lot 1 DP 595055, bounded by Taerutu Gully	Early wetland pā site, bounded on two sides by the Taerutu Gully, with a palisade defending the remaining portion. A canoe landing area was located along the north boundary, and numerous organic artefacts were recorded in the wetland and stream to the north, including remains of an eel weir.
n/a	-	-	Previously unrecorded historical occupation sites which might include, middens, ovens, latrine areas, stone working areas, burials, and other sites.

Abbreviations

Abbreviation	Definition
AMP	Archaeological Management Plan
DEM	Digital Elevation Model
EPA	Environmental Protection Authority
FTA 2024	Fast-track Approvals Act 2024
HNZPT	Heritage New Zealand Pouhere Taonga
HNZPTA 2014	Heritage New Zealand Pouhere Taonga Act 2014
LiDAR	Light Detection and Ranging
NZAA	New Zealand Archaeological Association
RMA 1991	Resource Management Act 1991
UOA	Underground Overground Archaeology Ltd

Acknowledgements

Underground Overground Archaeology acknowledges and thanks the following individuals who assisted in this project: Jeremy Habberfield-Short

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1 Introduction

Wolfbrook Developments (Pegasus) Limited is proposing a residential subdivision for the Pegasus West Development of approximately 77 ha of the former Pegasus Golf Course, Mapleham Drive, Pegasus (Table 1-1 and Figure 1-1). There are several recorded archaeological sites within the proposed development area. This archaeological appraisal assesses the archaeological potential of the development area and considers the likely impacts of the proposed works on identified and potential archaeological sites. The discussion of effects is provided at a high level only and does not constitute a comprehensive archaeological assessment of effects. Archaeological sites are defined within legislation as areas that witnessed human occupation prior to the year 1900 and can provide information on the history of New Zealand through archaeological investigation. Archaeological sites are protected under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014).

1.1 Development area

The development area covers a number of land parcels outlined in Table 1-1, centred on the former Pegasus Golf Course on Mapleham Drive and Pegasus Boulevard.

Table 1-1. Summary of development area.

Location	Address	Legal description
	40 Mapleham Drive	Lot 4 DP 407339
	n/a	Lot 2 DP 407339
	65A Mapleham Drive	Lot 206 DP 412982
	2 Burntwood Lane	Lot 208 DP 417391
	161 Pegasus Boulevard	Lot 210 DP 453895
	141 Pegasus Boulevard	Lot 211, 701 DP 437099
	158 Pegasus Boulevard	Lot 3 DP 595055
	148 Pegasus Boulevard	Lot 4 DP 595055
	138 Pegasus Boulevard	Lot 2 DP 595055
	160 Pegasus Boulevard, Pegasus	Lot 205 DP 552775
	8 Mapleham Drive	Lot 1 DP 595055
	Mapleham Drive roundabout	Lot 221 DP 400595
	11 Atkinsons Lane	Lot 213 DP 403716
	n/a	Lot 701 DP 403716
	65A Mapleham Drive	Lot 206 DP 412982
Landowner	Wolfbrook Developments (Pegasus) Limited	
Territorial authority	Waimakariri District Council	
Archaeological site no.	M35/159, M35/312, M35/440 (see Section 6 Previous archaeological investigations and archaeological context).	
Previous archaeological authorities	2006/29, 2007/309, and 2011/444	
New Zealand Heritage List/Rārangī Kōrero	Te Kohanga o Kaikai-a-Waro is a wāhi tapu (List No. 9506)	
Covenant or heritage order	n/a	
Scheduled on district plan	The proposed development area falls partially within Silent File area 017 and 011, with several others in the nearby area (013 and 014) (Jolly, and Ngā Papatipu Rūnanga Working Group, 2013: 368). The partially operative (2021) Waimakariri District Plan lists the following entries in the Ngā whenua tapu o ngā iwi - Sites and Areas of Significance to Māori: SASM006 – Wāhi Tapu – Silent File - covering the northwestern part of site – roughly indicative masterplan area B and C, and parts of A and D. SASM013 – Ngā Tūranga Tūpuna -covering the entire site. Described in the District Plan as: <i>Cultural Landscape encompassing an area of high coastal settlement (in both contemporary and ancestral senses). It comprises significant clusters of recorded archaeology of Māori origin and silent files.</i> SASM025 – Ngā Wai – Awa/ngā manga –directly adjacent it to it at the most south-western boundary and direct line crosses the NW boundary. Described in the District Plan as: <i>River and tributaries (ngā awa me ngā manga) with Mahinga Kai environs, habitats and taonga species.</i>	
Reserve status	N/A	
Statutory acknowledgement area	N/A	
Customary marine title	N/A	

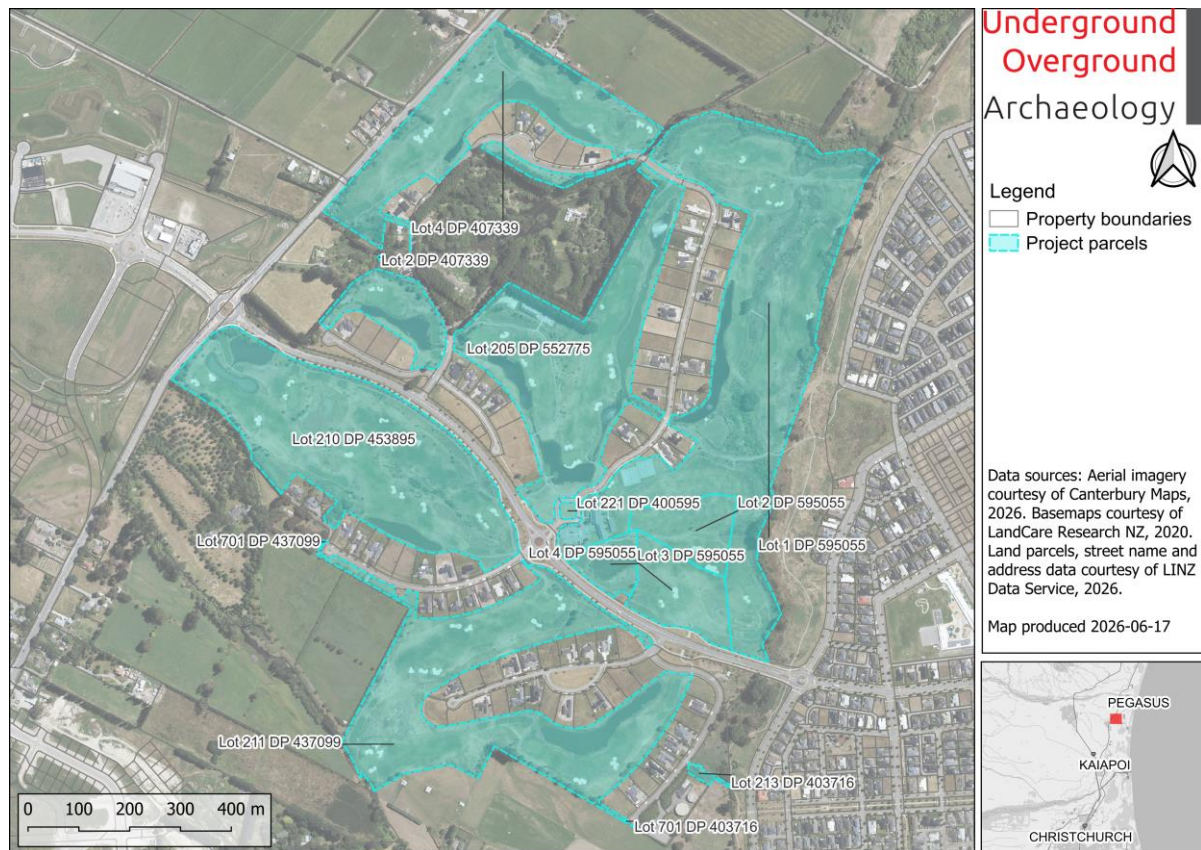


Figure 1-1. Proposed subdivision location, showing legal parcels.

1.2 Proposed activities¹

The project works have yet to be finalised as Wolfbrook is currently seeking a referral application under the FTAA, but will include the subdivision of the former golf course for residential and some commercial and recreational use (Figure 1-2). The predominant land use will be residential, with some commercial areas on the north side of Pegasus Boulevard between Mara Kai Place and the east intersection of Mapleham Drive.

The project will involve the following:

- Staged subdivision and development of up to 1,000 residential allotments/dwellings across a range of residential densities;
- Development of a commercial/community node at the northeast of the Mapleham Drive/Pegasus Boulevard and Te Haunui Lane intersection;
- Associated three waters infrastructure, including an integrated stormwater management and open space network featuring neighbourhood parks and green links;
- Minor alterations to Pegasus Boulevard to provide for access requirements, including intersection improvements and a new road access;
- Associated earthworks, servicing, landscaping and related works to be implemented in stages;
- Areas of land set aside to recognise and provide for cultural and archaeological values including retention of the Taerutu Gully Pā site (M35/440) which is registered as part of a wāhi tapu (List No. 9506) on the Heritage New Zealand List/Rāangi Kōrero.

Earthworks for the development of the project will likely include:

- Construction of new roads and berms, and reformation of intersections, including the SH1/Pegasus Boulevard intersection
- Formation of a pedestrian trail network
- Installation of sewer reticulation

¹ Based on information provided by Wolfbrook and TSA Riley.

- Establishment of stormwater reticulation
- Development of stormwater devices and management areas and wetlands
- Construction of water supply infrastructure
- Trenching and installation of utility services
- Formation of sports fields and community recreation areas
- Creation of building platforms and curtilage for residential, commercial and community uses.
- Planting of vegetation in green spaces. Plantings within the 'Taerutu Gully Enhancement Area' are likely to be limited to 100-200 mm deep excavation.

Cut fill plans are not yet available, but excavations are likely to occur over the majority of the development area to varying depths for removal of existing topsoil and to re-level the area, except for the Taerutu Gully and Pā and within the margins of waterways. Several existing ponds are proposed to be removed and infilled and new ones created. Cut and fill works will involve stripping of topsoil in advance of cutting and filling. Service excavations may be up to 3.5 m from the finished surface. The indicative masterplan is shown in Figure 1-1.

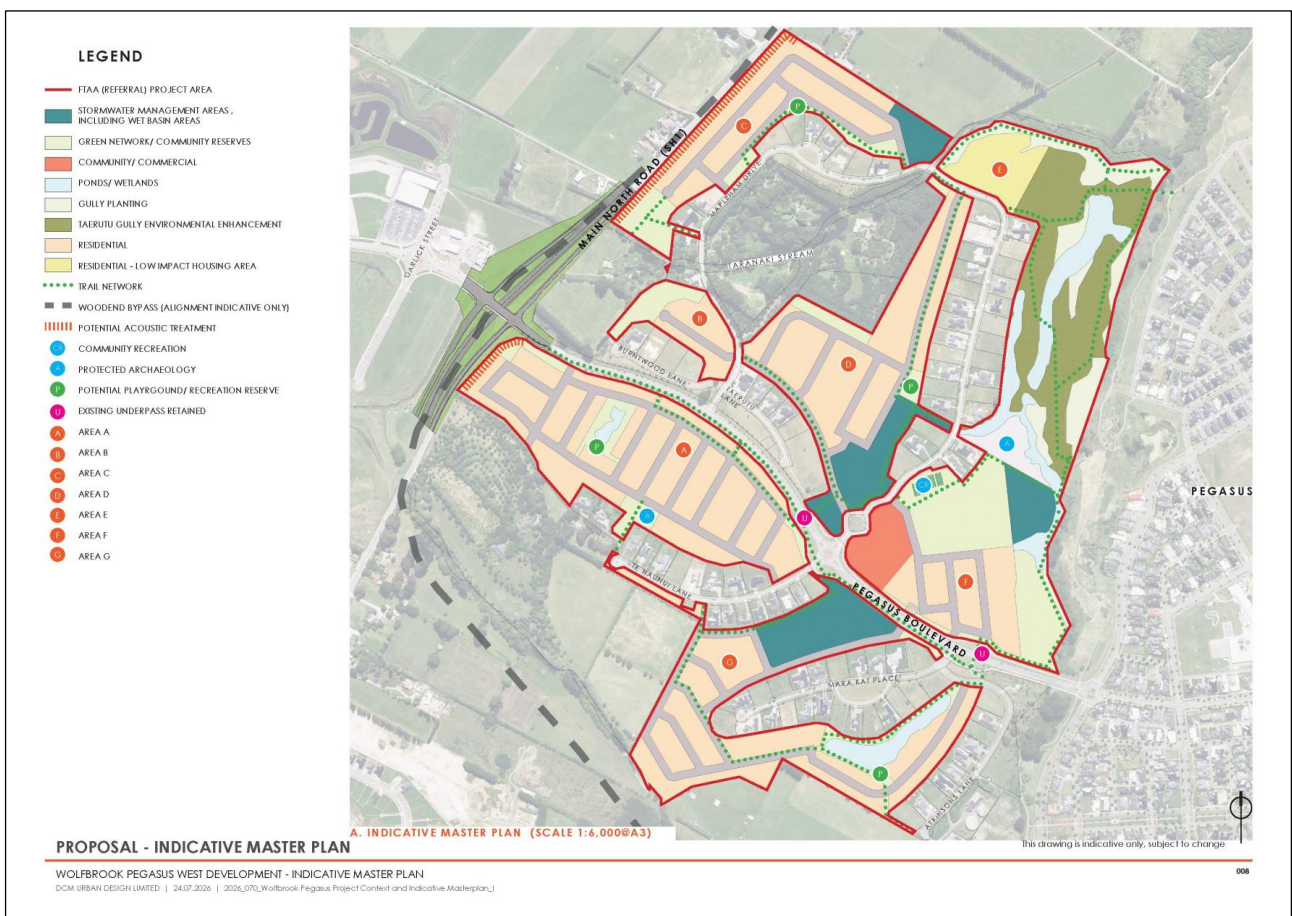


Figure 1-2. Indicative masterplan of proposed development area. Image supplied by Wolfbrook.

2 Statutory requirements

The legislative requirements relating to archaeological sites and artefacts are detailed in the following sections. There are two main pieces of legislation that provide protection for archaeological sites: the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA) and the Resource Management Act 1991 (RMA). Artefacts are further protected by the Protected Objects Act 1975 (POA).

2.1 Heritage New Zealand Pouhere Taonga Act 2014

HNZPT administers the HNZPTA, and the purpose of this Act is to promote identification, protection, preservation, and conservation of New Zealand's historical and cultural heritage. The HNZPTA outlines the archaeological authority process for any work affecting archaeological sites, where an archaeological site is defined as:

- (a) 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)

Archaeological sites are protected under Section 42 of the HNZPTA, and it is an offence to carry out work that may “modify or destroy, or cause to be modified or destroyed, the whole or any part of that site if that person knows, or ought reasonably to have suspected, that the site is an archaeological site”, whether or not the site has been previously recorded. Each individual who knowingly damages or destroys an archaeological site without having the appropriate authority is liable, on conviction, to substantial fines (Section 87).

Any person who intends carrying out work that may damage, modify or destroy an archaeological site, or to investigate a site using invasive archaeological techniques, must first obtain an archaeological authority from HNZPT. The process applies to sites on land of all tenure including public, private and designated land. The Act contains penalties for unauthorised site damage or destruction.

The archaeological authority process applies to all sites that fit the HNZPTA definition, regardless of whether

- the site is recorded in the New Zealand Archaeological Association (NZAA) Site Recording Scheme (ArchSite), listed by HNZPT, or scheduled under a district plan;
- The site only becomes known about as a result of ground disturbance, and/or;
- The activity is permitted under a district or regional plan, or a resource or building consent has been granted.

2.2 Resource Management Act 1991

The RMA defines historic heritage as those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, derived from archaeological, architectural, cultural, historic, scientific, or technological qualities. Historic heritage includes historic sites, structures, places, and areas; archaeological sites; and sites of significance to Māori (including wāhi tapu); and surroundings associated with the natural and physical resources. These categories are not mutually exclusive, and some archaeological sites may include above ground structures or may also be places that are of significance to Māori. It should be noted that this definition does not include the 1900 cut-off date for protected archaeological sites as defined by the HNZPTA. Any historic feature that can be shown to have significant values could be considered in any resource consent application.

The RMA requires city, district, and regional councils to manage the use, development, and protection of natural and physical resources in a way that provides for the well-being of today's communities while safeguarding the options of future generations. The protection of historic heritage from inappropriate subdivision, use, and development is identified as a matter of national importance (section 6f).

Iwi/hapū management plans are planning documents that are recognised by an iwi authority, relevant to the resource management issues, including heritage, of a place and lodged with the relevant local authority. They have statutory recognition under the RMA. Iwi management plans set baseline standards for the management of Māori heritage and are beneficial for providing frameworks for streamlining management processes and codifying Māori values. Iwi management plans can be prepared for a rohe, heritage inventories, a specific resource or issue or general management or conservation plans (NZHPT, 2012).

Te Ngāi Tūāhuriri Rūnanga of Ngāi Tahu are tangata whenua in the Pegasus area and surrounds. The Mahaanui Iwi Management Plan (2013) provides a policy framework for Ngāi Tahu values in the proposed area of works (Jolly and Ngā Papatipu Rūnanga Working Group, 2013).

2.3 Protected Objects Act 1975

The POA was established to provide protection of certain objects, including protected New Zealand objects that form part of the movable cultural heritage of New Zealand. Protected New Zealand objects are defined by Schedule 4 of the POA and includes archaeological objects and taonga tūturu. Under Section 11 of the POA, any newly found Māori cultural objects (taonga tūturu) are automatically the property of the Crown if they are older than fifty years and can only be transferred from the Crown to an individual or group of individuals through the Māori Land Court. Anyone who finds a complete or partial taonga tūturu, accidentally or intentionally is required to notify the Ministry of Culture and Heritage within:

- (a) 28 days of finding the taonga tūturu; or
- (b) 28 days of completing field work undertaken in connection with an archaeological investigation authorised by HNZPT.

2.4 Fast-track Approvals Act 2024

The Fast-track Approvals Act 2024 (FTA) allows for applicants to apply for approvals covering a range of normally separate consents and/or authorities, including several that may apply to heritage (RMA, HNZPTA, Conservation Act 1987 and Reserves Act 1977).

Any approvals, such as archaeological authorities, granted under the FTA 2024 must be treated as if granted under the relevant legislation that establishes it or provides for it (e.g. for as archaeological authorities, the HNZPTA).

Schedule 8 of the FTA outlines the process and requirements for applying (through a substantive application) for an archaeological authority under this legislation. There are no specific information requirements in Schedule 8, for a referral application.

Archaeological sites, historic places and historic areas have the same definition as the HNZPTA (see Section 2.1). All substantive applications for archaeological authorities under the FTA 2024 are referred to HNZPT and the Māori Heritage Council, who provide recommendations back to the expert panel. A substantive application that seeks an archaeological authority under the FTA may include an application for approval of any person nominated to undertake an activity under the authority.

Applications for resource consents under the FTA must also include an assessment of the proposed activity against Section 6 of the RMA, which includes the protection of historic heritage from inappropriate subdivision, use and development.

3 Methodology

This archaeological assessment has been prepared in accordance with HNZPT's (2019) guideline on preparing an archaeological assessment. Presented below are the methods used to gather information to identify the archaeological potential of the development area, and determine the archaeological significance.

3.1 Research to identify archaeology and inform archaeological values

The first half of this report provides the information gathered to inform on the archaeological values of the development area, including the setting, historical background, archaeological context, and the site survey. Documentary research was undertaken to inform the background research sections of this assessment. The physical environment section documents the setting of the development area, its land use, and considers environmental factors that may influence how the site was occupied through time. The historical background first provides an overview of human history for the wider area before narrowing down on evidence that is specific to the development area itself to determine the nature and potential significance of the archaeology. Sources utilised for this research include:

- Published primary and secondary sources for the development of North Canterbury,
- Kā Huru Manu
- Historic newspaper articles through PapersPast,
- Historic maps accessed via GRIP and from Archives New Zealand,
- Land Information New Zealand (LINZ) Data Service,
- The New Zealand Archaeological Association site recording database (ArchSite),
- The HNZPT archaeological reports digital library (HNZPT 2026), and previous archaeological reports for works in the area,
- New Zealand Heritage List/Rārangī Kōrero,

As of writing, UOA have not had the opportunity to see direct feedback from representatives of Ngāi Tūāhuriri regarding the project.

Previous archaeological research and investigations for the development area also provides an understanding of research results, areas of modification, and informs on the potential for the proposed works to affect archaeological sites. This section also considers the wider archaeological context, including the consideration of sites recorded near the development area and how identified site types are represented in the archaeological record at the local, regional, and national level. UOA carried out a search of the Heritage New Zealand Pouhere Taonga (HNZPT) archaeological reports digital library and the New Zealand Archaeological Association's (NZAA) digital site recording scheme (ArchSite, 2026) to identify if there were any previous archaeological monitoring or previously recorded archaeological sites on or near the development area. HNZPT's List Rārangī Kōrero, and the Operative (2005) and Partially Operative (2025) Waimakariri District Plans were also checked to see if there are any recorded heritage sites within or near the development area. The results of the HNZPT, ArchSite, and District Plan searches are documented in Section 6.

A site visit was undertaken by Tristan Wadsworth on 26 June 2026 to inspect the known areas of remaining surface level archaeological sites, and the general area of the project area.

3.2 Assessment of archaeological values

This assessment provides a high-level analysis of the archaeological values of the known and potential sites within the development area. I have adopted a scale to which overall archaeological value is assigned (Table 3-1). These levels of significance follow the guidance established by *LA 104 Environmental Assessment and Monitoring* (Highways England, 2020) and adopted by various New Zealand entities, including NZ Transport Agency Waka Kotahi (NZTA, 2015). This scale for measuring the level of significance, ranging from very high for sites of international significance to sites of low significance that may represent a site of local significance but having poor preservation or contextual associations. It is important to note that it is not possible to fully

understand the significance of subsurface sites, and that the significance of a site may change on the basis of what is found during the work programme.

Table 3-1. Levels of overall significance (Highways England, 2020).

Level of Significance	Criteria
Very High	• Very high importance and rarity, international scale, very limited potential for substitution.
High	• High importance and rarity, national scale and limited potential for substitution.
Medium	• High or medium importance and rarity, regional scale, limited potential for substitution.
Low	• Low or medium importance and rarity, local scale.
Negligible	• Very low importance and rarity, local scale.
Unknown	• Very high importance and rarity, international scale, very limited potential for substitution.

4 Physical environment and setting

The proposed development area is located on the western edge of Pegasus township, within a wider area that has been subdivided and converted from pasture/greenfields into smaller residential sections over the last two decades. The coastline is made up of low swampy estuarine plains and a series of dune systems, which are continually prograding through fluvial sediment deposition (Forsyth et al 2008). The dune systems were dated by Shulmeister and Kirk (1996) using thermoluminescence, and the dune system closest to the sea was formed less than 600 years ago, while the inland dune was formed approximately 2000 years ago. The development area is located on the western side of the inland dune on the edge of a lagoon formed as part of the river flood basin. The proposed development area is located on the western edge of a major dune system, with a fluvial swamp basin in the northeast of the development area associated with Taerutu Stream along the east side of the development area, and Taranaki Stream in the north (Figure 4-1; Begg et al. 2015). The remainder of the proposed development area is a combination of fluvial raised channels and plain formations formed by deposition of river sediments, and lower-lying interchannel troughs between these. These landforms have been found to have a substantial effect on the location and nature of archaeological sites in this area, described in greater detail in Section 6 (c.f. Witter, 2015). Approximately 500 years ago, the Rakahuri/Ashley River turned southeast near the modern Rangiora and followed the rough modern alignment of the Waihora Stream to flow out into Pegasus Bay at Woodend Beach (Witter, 2006).

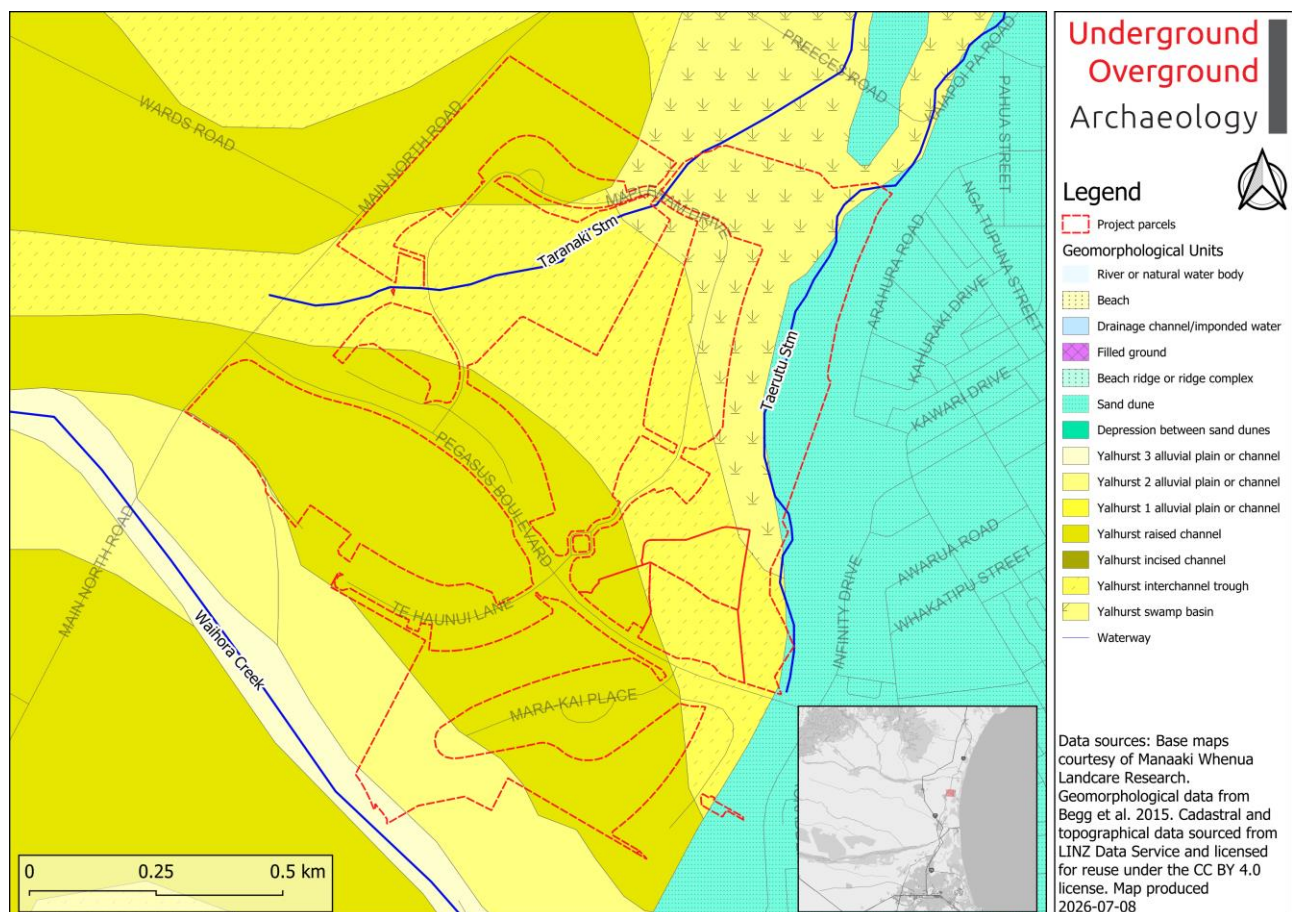


Figure 4-1. Map of development area and wider geomorphological context.

The former Pegasus Golf Course exists between and around several existing subdivision areas on Mapleham Drive, Pegasus Boulevard, Te Huanui Lane and Mara Kai Place. The project area itself is a low, rolling landscape of fairways and greens, with sporadic vegetation plantings, sand bunkers, and small constructed ponds and waterways.

5 Historical background

The first human settlers of Te Wai Pounamu for which traditional accounts and whakapapa are clear were Waitaha, descendants of the explorer Rākaihautū who arrived in the waka *Uruao*. They were followed later by Ngāti Māmoe, who migrated from Te Ika a Māui to Te Wai Pounamu around the late 16th/early 17th centuries. The relationship between Waitaha and Ngāti Māmoe was complicated, with periods of peace and intermarriage as well as conflict, but Ngāti Māmoe gradually came to establish mana whenua through both means over much of the Te Wai Pounamu. In the early to mid-17th century, Ngāi Tahu migrated to Te Wai Pounamu from the lower Te Ika a Māui, and traditions recount their whakapapa to the East Coast and the *Tākitimu* waka. As with their predecessors, Ngāi Tahu came to establish mana whenua over most of Te Wai Pounamu through both conflict and intermarriage (Anderson, 1998; Tau and Anderson, 2008).

Tūrākautahi (son of Tūāhuriri) moved to Canterbury from Kaikōura to establish a home for himself and his hapū. Together with his brother Moki, he constructed a pā adjoining the Taerutu lagoon, located immediately north of the project area, which Tūrākautahi called Te Kōhaka-a-kaikai-a-warō (and is today known as Kaiapoi Pā). The pā covered about 5 acres in extent and was well protected by deep ditches and earthworks, and an almost impenetrable swamp on each side (*Lyttelton Times*, 20/10/1898: 4; Tau and Anderson, 2008: 117). The pā site is located approximately 1.8 km to the northeast of the proposed development area (Figure 5-1). The rivers and swamps around the pā also provided a number of foodstuffs, including fish species such as tuna (eels), kanakana (lamprey), kōkopu (native trout), koukoupā (bullies), and īnanga (whitebait), and a number of bird species were also caught for food, such as pūkeko, pūtakitaki (paradise shelduck), pārerā (grey ducks) and weka (Environment Canterbury, 2007: 13; Stack, 1893: 23).

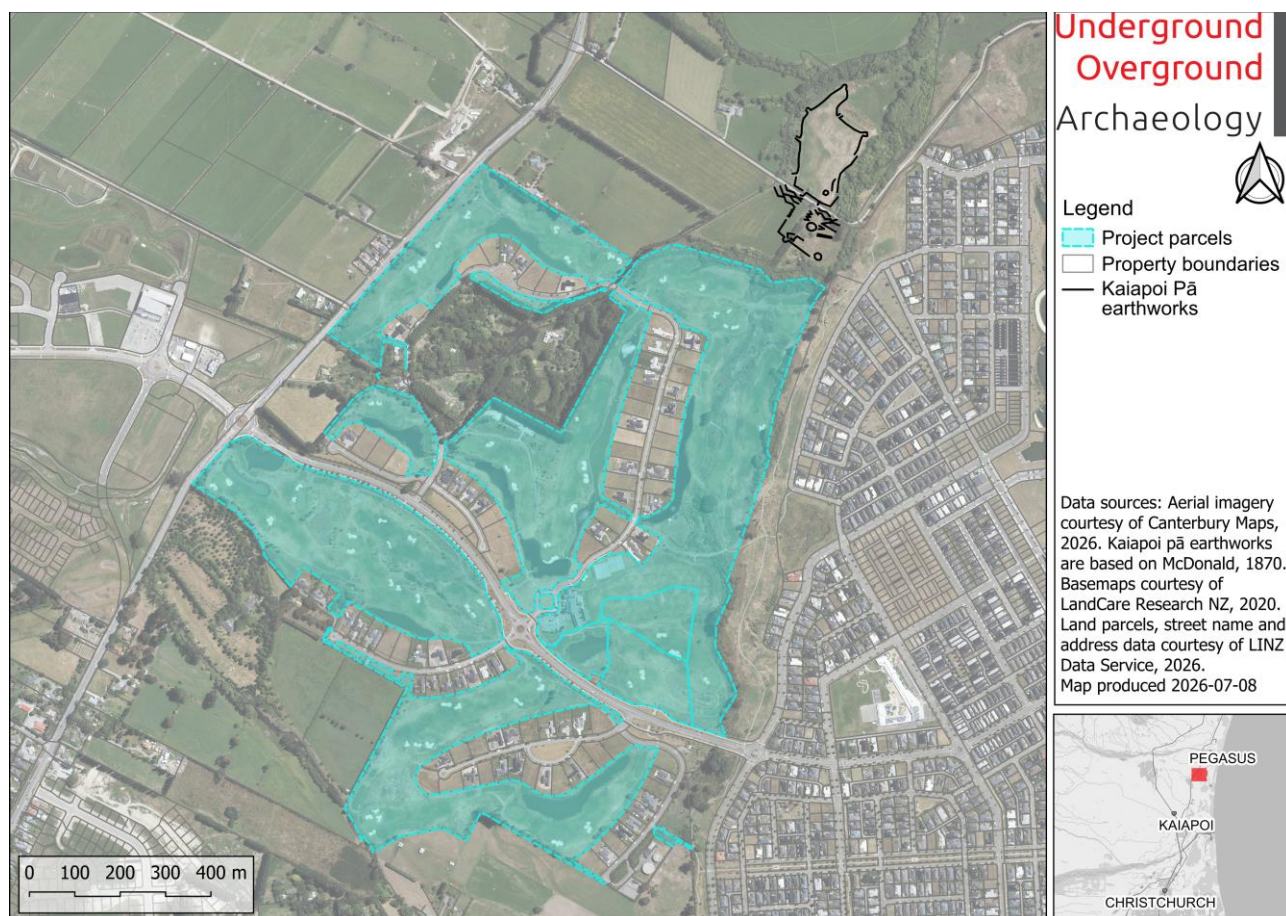


Figure 5-1. Proposed development area in relation to earthworks associated with Kaiapoi Pā, based on an 1870s map and extant features.

It is largely due to its capacity as a trading depot that Kaiapoi pā became the cultural, political, and economic stronghold of Ngāi Tahu in the South Island (Environment Canterbury, 2007: 12). As the Kaiapoi pā cultivated a great quantity of kūmara on its small area of dry land, Tūrākautahi maintained an active trade with the Ngāi

Tahu chiefs living around the coast on the Banks Peninsula, exchanging the fruits of the ‘food basket of the land’ for those of the ‘food basket of the sea’. A lucrative trade of pounamu (greenstone) from the West Coast also brought great wealth to Kaiapoi. James Stack, an early Wesleyan missionary in Christchurch and North Canterbury from 1859 suggested that this trade system necessitated the employment of a large body of carriers to take goods between the various pā and would also have seen the establishment of well-travelled paths connecting the settlements, all of which converged on the Kaiapoi pā (Stack, 1894: 27-28).

When Tūrākaitahi first came to live in the area he brought his large hapū with him, including a number of the younger chiefs of Ngāi Tahu. As the population in the area increased, small skirmishes began to develop. The people then began to separate into smaller hapū groups, taking up residences around the Banks Peninsula and Canterbury. Tau notes that it was common for Māori to reside in relatively small hapū units of 10-30 members, and each hapū would have its own area of mahinga kai (Tau, 2016). While many remained within the main pā at Kaiapoi, smaller areas of settlement began to be formed a short distance away, such as Tuahiwi and Rakiwakaputa (Environment Canterbury, 2007: 13; Jolly and Ngā Papatipu Rūnanga Working Group, 2013: 32; Tau, 2016; Tau and Anderson, 2008: 117, 121-122).

In the late 1820s and early 1830s a coalition of North Island iwi invaded the South Island under the leadership of Te Rauparaha of Ngāti Toa. In 1831 Te Rauparaha besieged Kaiapoi pā, and the pā was razed. At this time, Tuahiwi was among a number of nearby kāinga that were also attacked and destroyed by Te Rauparaha’s invasion. Tuahiwi is said to have been abandoned for a short time after this, as it had become tapu (Anderson, 1998; Tau and Anderson, 2008: 199; Taylor, 1952).

The first recorded account of trading between the Kaiapoi pā and European traders appears in a written account by Joseph Price, a crewman of the barque *Vittoria*, in 1831 (Logan, 1987: 9-10). Following the acquisition of the Canterbury block under the Kemp purchase in 1848 the land between the Waimakariri and Ashley Rivers began to be settled by European colonists. The site of the Kaiapoi pā was set aside as a reserve that it “should be reserved that neither Natives or Europeans dwell there, due to the number of Native graves situated there” (Te Rūnanga o Ngāi Tahu, 2026). In conjunction with this, a 2,630 acre Native Reserve was set aside at Tuahiwi for local Māori to reside on (Te Rūnanga o Ngāi Tahu, 2026). Although this land was set aside, many local Māori continued to occupy their ancestral lands and not relocate into the customary land of another hapū (Tau, 2016). For example, Kemp reported in 1848 that Māori were not living at Tuahiwi, though shortly thereafter some were induced to live at Tuahiwi by Reverend J. W. Stack (Anderson, 1998; Tau and Anderson, 2008: 199; Taylor, 1952). Since that time, Tuahiwi has been a major centre for Canterbury Māori, specifically Ngāi Tūāhuriri.

By the early 1860s the majority of the land extending between modern day Kaiapoi and Pegasus had been surveyed into rural sections and reserves separated by road corridors (Cass, 1864). The land comprising the proposed development area was surveyed by this time as part of Rural Sections 864, 1125, and 6698 (Figure 5-2). The Waihora Stream extended along the southern boundary of the development area.

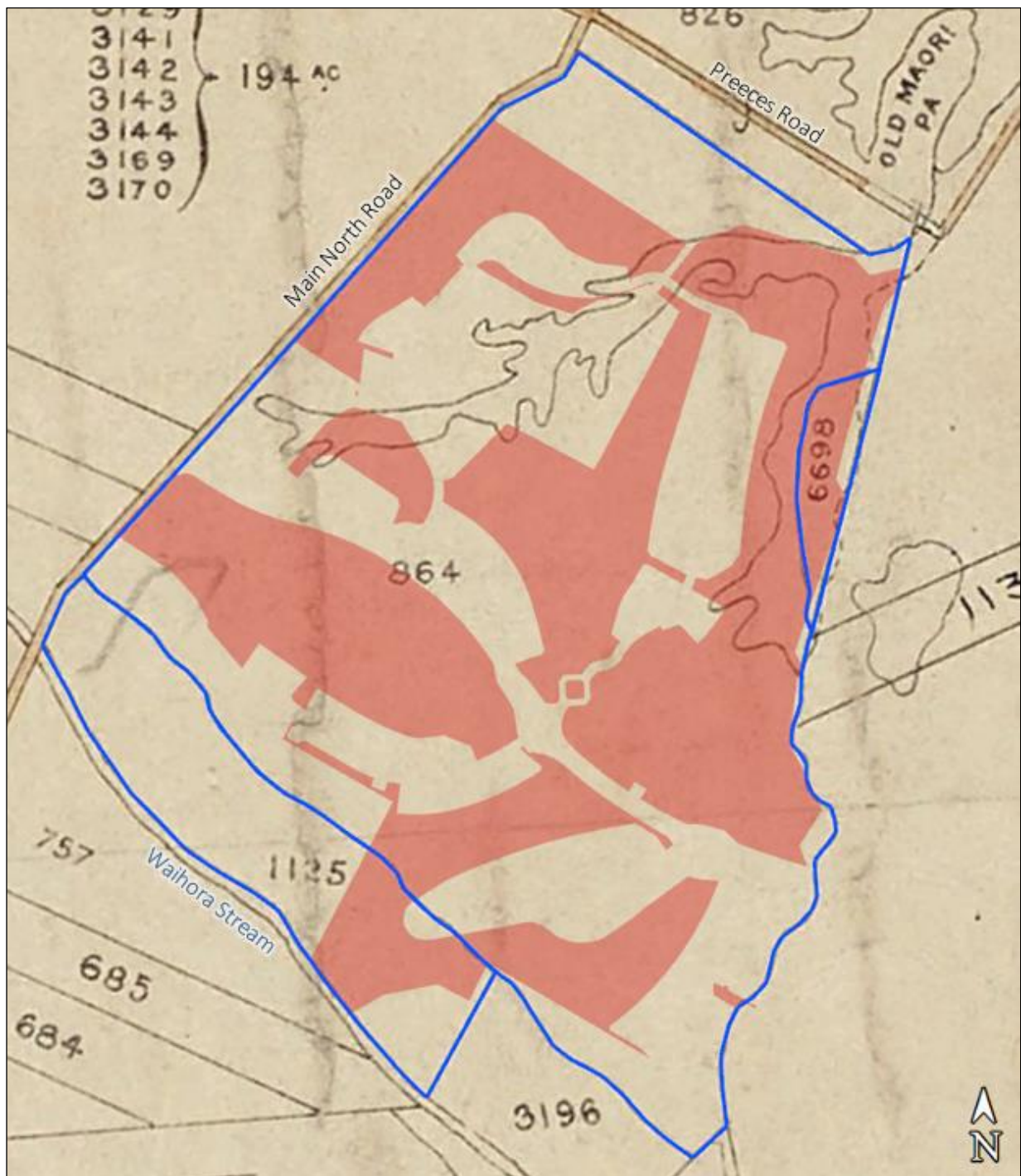


Figure 5-2. Detail from Black Map 141, showing the approximate boundaries² of the proposed development area (coloured red) within part of Rural Section 864, 1125, and 6698 (outlined in blue) in 1864. Image: Archives New Zealand, 1864³.

Reverend John Raven obtained a Crown Grant for Rural Sections 864, 1125, and 6698 in 1869, though he is believed to have taken possession of the properties prior to this date (LINZ, 1860a: 864, 1125; LINZ, 1860b: 6698). Raven had arrived in Lyttelton with his wife and children on board the *Minerva* in 1853. Upon his arrival, Raven purchased a significant holding of land at Rangiora and Woodend where he settled (MacDonald, 1952-

² As these early rural sections utilise natural watercourses/swampy boundaries as property boundaries, accurately aligning these pre-1900 properties with modern property boundaries has proven difficult. The boundaries of the development area have therefore been adjusted in this image to accurately show the extent of the project within the original rural sections.

³ Although a proportionally small portion of the project area appears to extend outside the project area outside of Rural Section 864 into the adjacent section, this may be a result of inaccuracies in georeferencing the 19th century plans at this scale. The historical background for this small proportion of the project area is not related here.

1964: R53a). Rural Sections 864, 1125, and 6698 formed just a small part of this larger property which extended on both sides of Main North Road (Figure 5-3). Raven called his estate *Ravenswood* and constructed his homestead on the western side of Main North Road, on Rural Section 358, outside of the development area (ArchSite, 2014). On the eastern side of Main North Road, Raven constructed a mill in c.1856, alongside a water race which he had diverted through the property (*Press*, 27/5/1978: 15). This mill is not believed to have been located within the proposed development area, and the water race (now known as Drain Reserve Red Map 58) is not located within the development area. Donald Hawkins notes that before Raven could develop his land, he was required to ‘remove’ a significant quantity of Māori material, including koiwi, from the property (Hawkins, 2001: 53). However, the original location of this material is not known, nor what Hawkins did with it, and it is unclear to what degree this account is exaggerated. The remainder of the Ravenswood property was farmed. The land on the southern side of Main North Road remained in Raven’s ownership until 1873, during which time no developments are known to have occurred within the proposed development area beyond agricultural/pastoral pursuits. Raven advertised the Ravenswood estate for sale in September 1873, at which time the land on the eastern side of Main North Road was indicated to contain the Ravenswood Mill, a cottage, and a two-storied house on 400 acres of land (*Lyttelton Times*, 30/9/1873: 4). The two-storied mill house is believed to have been located in close proximity to the mill (both of which are outside of the proposed development area), while the cottage is believed to have been located adjoining Main North Road within the proposed development area. These buildings are discussed further below.

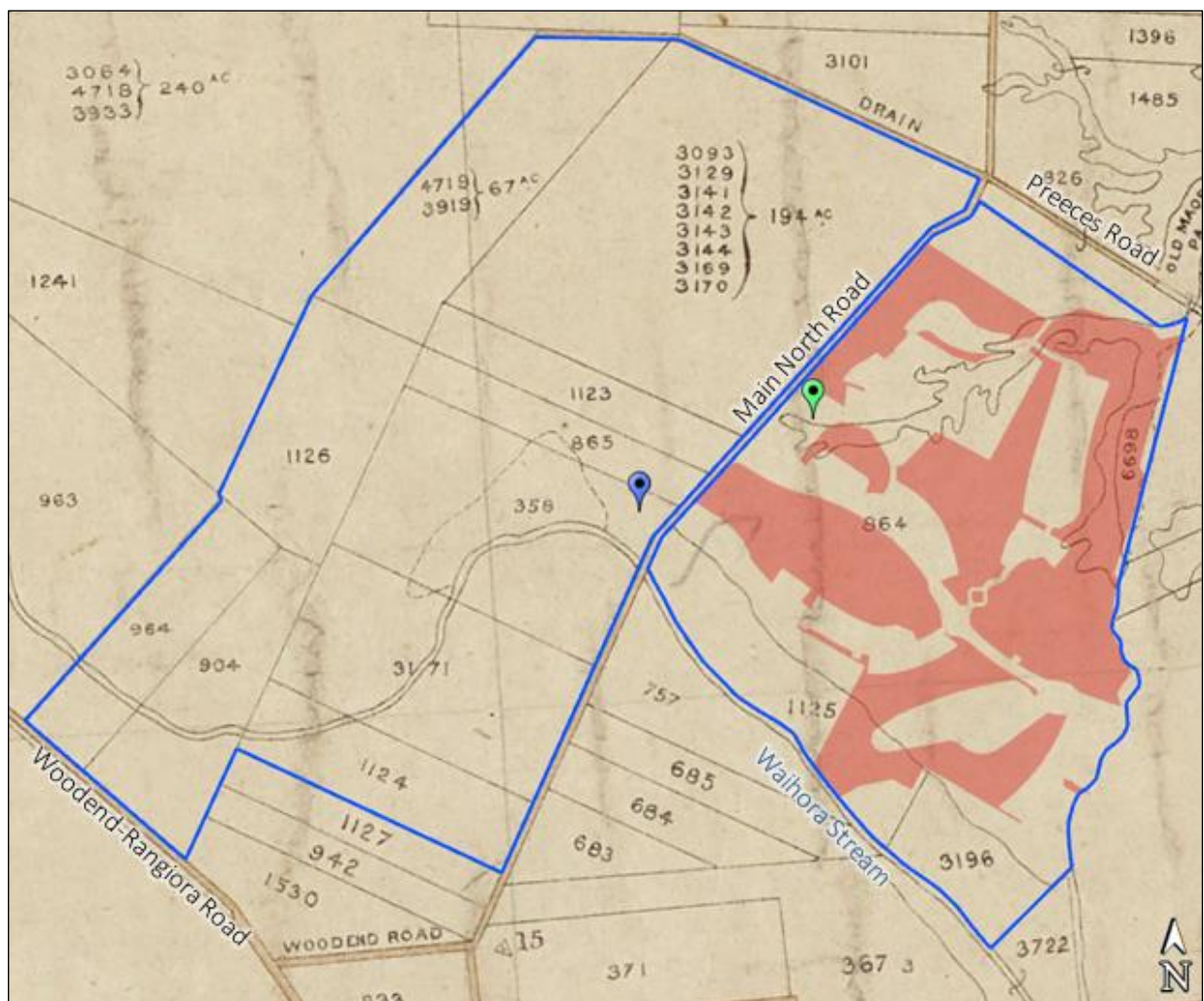


Figure 5-3. Detail from Black Map 141, showing the approximate boundaries of the proposed development area (coloured red) extending through John Raven’s Ravenswood estate (outlined in blue). The approximate location of Raven’s homestead (blue pin) and flour mill development (green pin) are shown. Image: Archives New Zealand, 1864.

John Bowie junior purchased the whole of the Ravenswood estate in November 1873 for £22,000 (*Lyttelton Times*, 18/11/1873: 2). The Bowie family had been leasing and occupying the Ravenswood estate from Raven

since the 1860s (MacDonald, 1952-1964: B609). The land on the eastern side of Main North Road remained in Bowie's ownership until 1878, during which time no developments are known to have occurred within the proposed development area beyond agricultural/pastoral pursuits.

William Hali Burton purchased the eastern half of the Ravenswood estate (Rural Sections 864, 1125, 3196, and 6698) in 1878 (LINZ, 1860a: 864, 1125; LINZ, 1860b: 6698). Burton had married one of the Bowie sisters (Ellen Gilchrist Bowie) in 1870 and had been involved in the management of the Ravenswood estate alongside the Bowies since the mid-1870s (*Press*, 10/12/1870: 2, 11/11/1875: 3, 17/9/1876: 4). It seems likely that Burton resided in the cottage or two-storied house that were located close to the Ravenswood Mill, which led him to formally acquiring the eastern half of the estate in 1878 (New Zealand Electoral Roll [Kaiapoi] 1876-1877: 6, 1878-1879: 5; 1879-1880: 5). Burton resided on, and farmed the eastern half of Ravenswood until 1880, during which time no developments are known to have occurred within the proposed development area beyond agricultural/pastoral pursuits. Burton is recorded as uncovering significant evidence of earlier Māori occupation of land in Woodend during the c.1870s-1880s, including kōiwi, wooden dishes, carvings, needles, amber pearls, stone implements, and pounamu, all of which he donated to the Canterbury Museum (*Press*, 29/4/1880: 3). Although the exact location of where this material was discovered is not provided in local newspapers, Burton is indicated to have uncovered it when "draining a swamp" near the site of the Kaiapoi Pā (*Press*, 29/4/1880: 3). This suggests the material was likely found within the eastern half of the Ravenswood property. Following the sale of his farm, Burton held a sale of his livestock, farming implements, and furniture from the eastern half of Ravenswood in April 1880 in preparation for his removal from the premises (*Lyttelton Times*, 5/4/1880: 8).

Croslegh Dampier-Crossley⁴ purchased the majority of the eastern half of the Ravenswood estate (Rural Sections 1125 and 3196, and part of Rural Sections 864 and 6698) from Burton in 1880 (Figure 5-4; LINZ, 1860a: 1125; LINZ, 1860c: 1339, 1340). Dampier-Crossley was the son of Christopher Edward Dampier (solicitor to the Canterbury Association) and arrived in Canterbury on board the *Rockhampton* in 1858 (*Lyttelton Times*, 13/3/1858: 4). Croslegh was made the heir to his uncle, John Crossley, provided he took the name of Crossley and in 1866 he became Croslegh Dampier-Crossley (MacDonald, 1952-1964: D40). Dampier-Crossley took over the management of his father's sheep run (Esk Head in North Canterbury) in the 1860s and formally inherited it in 1870 (Acland, 1975: 279-280). Dampier-Crossley likely purchased the eastern half of Ravenswood in 1880 due to its convenient location between Christchurch and Esk Head. Dampier-Crossley extended the boundaries of the property by purchasing Rural Section 23662 fronting on Gladstone Road, and he renamed the property Brockenhurst (Figure 5-4; LINZ, 1883b; *Lyttelton Times*, 29/9/1880: 7). Dampier-Crossley is believed to have constructed a homestead for himself on the property which was named Brockenhurst (*Press*, 25/6/1902: 12). The exact date of construction of the Brockenhurst homestead is not certain but is believed to have been constructed sometime in the early-to-mid-1880s (Archives New Zealand, 1913-1920: 527). This building is understood to be located outside the proposed development area. By 1890, the buildings on the Brockenhurst estate included the Ravenswood mill, the two-storied mill house, a cottage (all three of which had been constructed during Raven's ownership) and the Brockenhurst homestead (Figure 5-4). Dampier-Crossley continued to own and farm the whole of the Brockenhurst estate until c.1898 when he began to subdivide and sell off portions of the property.

⁴ Also spelt Croslegh Dampier-Crosley.

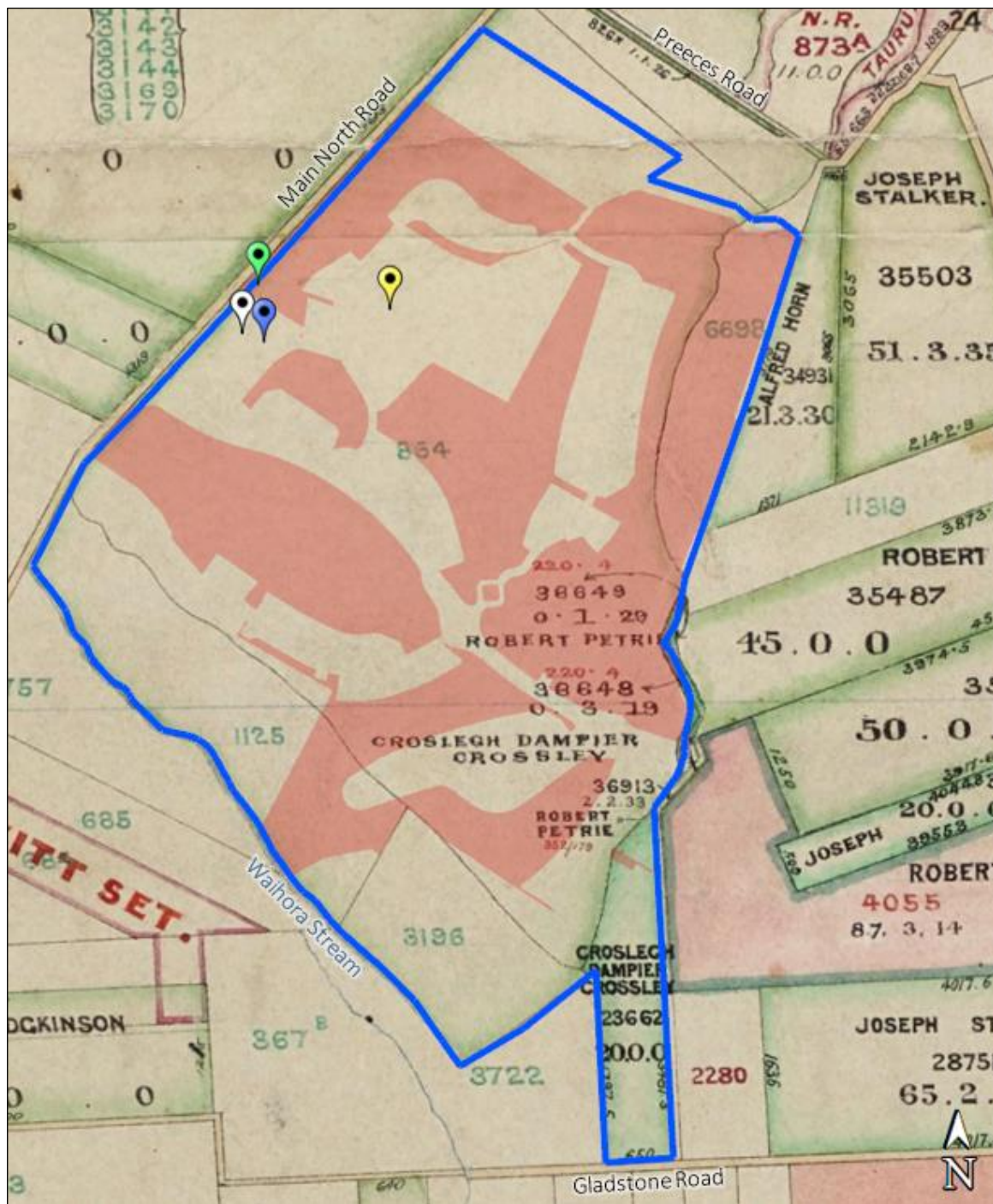


Figure 5-4. Detail from 1880 Crown Grant map of the Rangiora District, showing part of the proposed development area (coloured red) extending within Dampier-Crossley's Brockenhurst Estate (outlined in blue). Building developments at Brockenhurst include the Ravenswood Mill (blue pin), two-storied mill house (white pin), cottage (green pin), and Brockenhurst homestead (yellow pin), and Image: Archives New Zealand, 1880.

Dampier-Crossley sold a seven-and-a-half-acre block of land fronting Main North Road (part of Rural Section 864, located outside of the proposed development area) to Nathaniel Archer in 1898 (LINZ, 1898)⁵. This property is understood to contain the original Ravenswood Mill and the two-storied mill house (Archives New Zealand, 1913-1920: 531). Dampier-Crossley also sold a one-and-a-half-acre block of land (part of Rural Section 1125, located outside of the development area) fronting on Main North Road and the Waihora Stream to the Sefton Mutual Dairy Produce Association Limited for the construction of a creamery in 1901 (LINZ, 1901)⁶.

⁵ This property is the modern property at 1250 Main North Road (part RS 864)

⁶ This property is located within part of the modern property at 1188 Main North Road (Lot 2 DP 80926)

Dampier-Crossley subdivided the remainder of the Brockenhurst estate into four lots in 1902 (Figure 5-5). Dampier-Crossley advertised the four lots of Brockenhurst for sale in June 1902, at which time buildings are indicated to be present on Lots 1 and 2 DP 1799 while Lots 3 and 4 DP 1799 were indicated to be vacant of any building developments (*Press*, 25/6/1902: 12). Dampier-Crossley held a clearing sale of live and dead stock in June 1902 in preparation of his departure from the property (*Lyttelton Times*, 30/6/1902: 8).

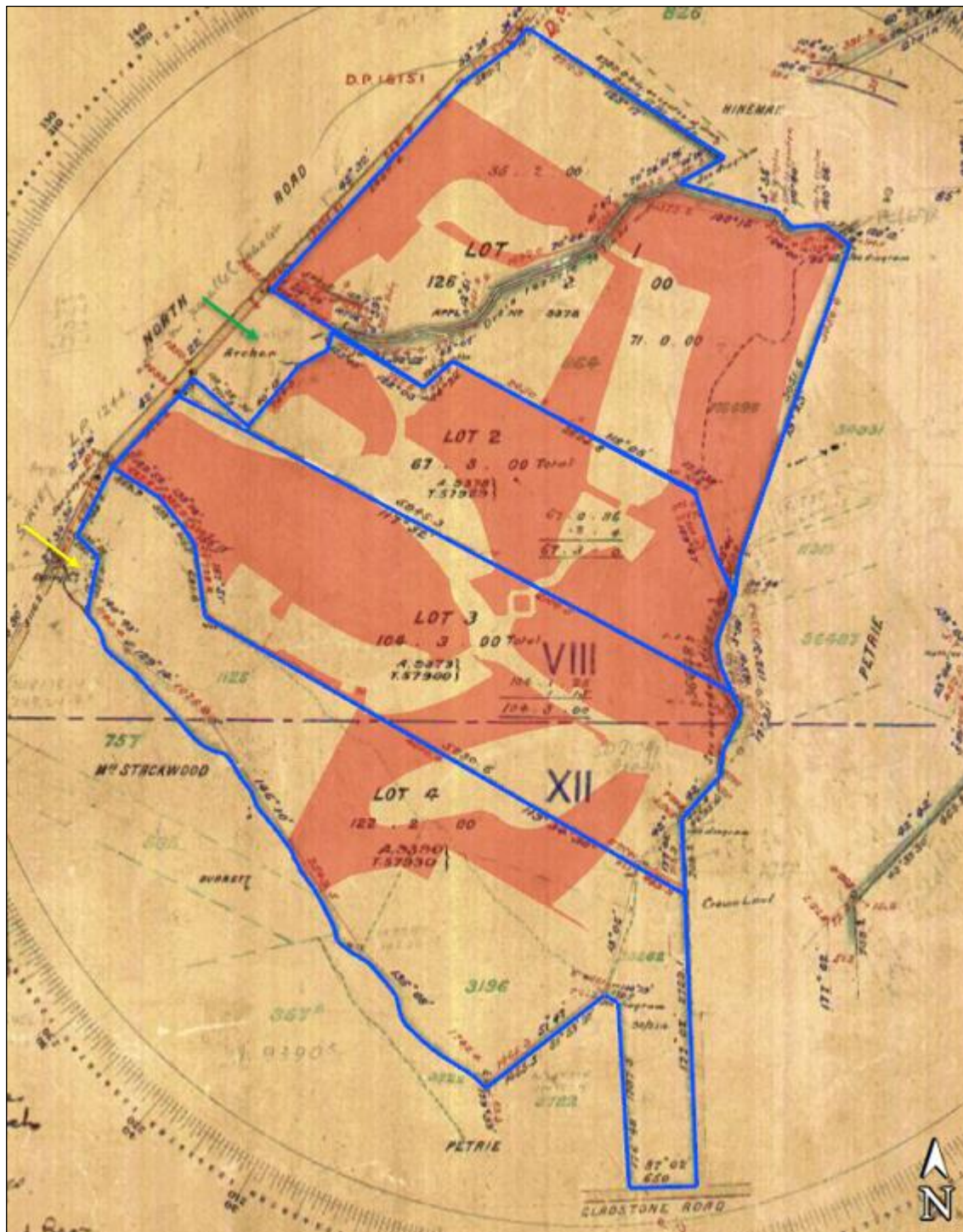


Figure 5-5. Detail from Deposited Plan 1799, showing the subdivision of Brockenhurst Estate in 1902. The proposed development area (coloured red) is shown to extend within Lots 1, 2, 3, and 4 of the subdivision (outlined in blue). The location of the Ravenswood Mill property purchased by Archer is indicated with a green arrow and the creamery property is indicated with a yellow arrow. Image: LINZ, 1902d.

5.1 Lots 1 and 2 DP 1799

Lots 1 and 2 DP 1799 comprised 126 acres of land extending over part of Rural Sections 864 and 6698 (Figure 5-5). James Crawford purchased Lots 1 and 2 DP 1799 in 1902 and continued to own the sections until 1937 (LINZ, 1902c). As previously mentioned, Lots 1 and 2 DP 1799 were indicated to contain buildings when the property was advertised for sale in June 1902. These included a “good house, good stables, granary, shed, garden and orchard” on Lot 1 DP 1799, while Lot 2 DP 1799 was indicated to contain “good four-roomed cottage and granary” (*Press*, 25/6/1902: 12). These are believed to be the buildings constructed and occupied during the 19th century during Raven, Burton, and Dampier-Crossley’s ownerships. The drain reserve is shown on the 1902 plan extending through the property, following the mill race which Raven had cut in the 1850s to facilitate the running of the Ravenswood Mill.

A property valuation for Crawford’s property recorded in c.1912, indicates that the property contained a dwelling house which was 34 years old at the time of recording, a second dwelling which 26 years old, and five outbuildings were between 26 and 28 years old (Archives New Zealand, 1913-1920: 527). This indicates the first dwelling was constructed in c.1878, the second dwelling was constructed in c.1886, and the outbuildings were constructed between 1884 and 1886. The c.1878 dwelling is believed to refer to the cottage constructed on the property by Raven prior to 1873, with the later date possibly referring to alterations to the building. The c.1886 dwelling is believed to refer to Dampier-Crossley’s Brockenhurst homestead.

Aerial imagery from 1942 shows the developments present within Crawford’s former property (Figure 5-6). These developments include a small building (yellow arrow) on the northern boundary of Lot 1 DP 1799, extending within part of the development area. This building is believed to be the cottage constructed by Raven prior to 1873 with likely c.1878 alterations, which is mentioned in the 1873 advertisement, the 1902 advertisement, and the 1912 valuation register. This building was removed from the property by the 1960s (LINZ, 1961). The 1942 aerial imagery also shows the location of the Brockenhurst homestead (red arrow) which remains standing at 67 Mapleham Drive (Lot 2 DP 388447) outside of the development area. A number of outbuildings (green arrow) are also present on the property in 1942. These buildings are believed to be the 19th century outbuildings mentioned in the 1912 valuation register. The majority of these outbuildings have been removed from the property, with one notable exception being the iron shed which remains standing at 70 Mapleham Drive (Lot 215 DP 400595) outside of the development area (Google Earth, 2026). The majority of Lots 1 and 2 DP 1799 were included as part of the Pegasus residential subdivision during the early 21st century.

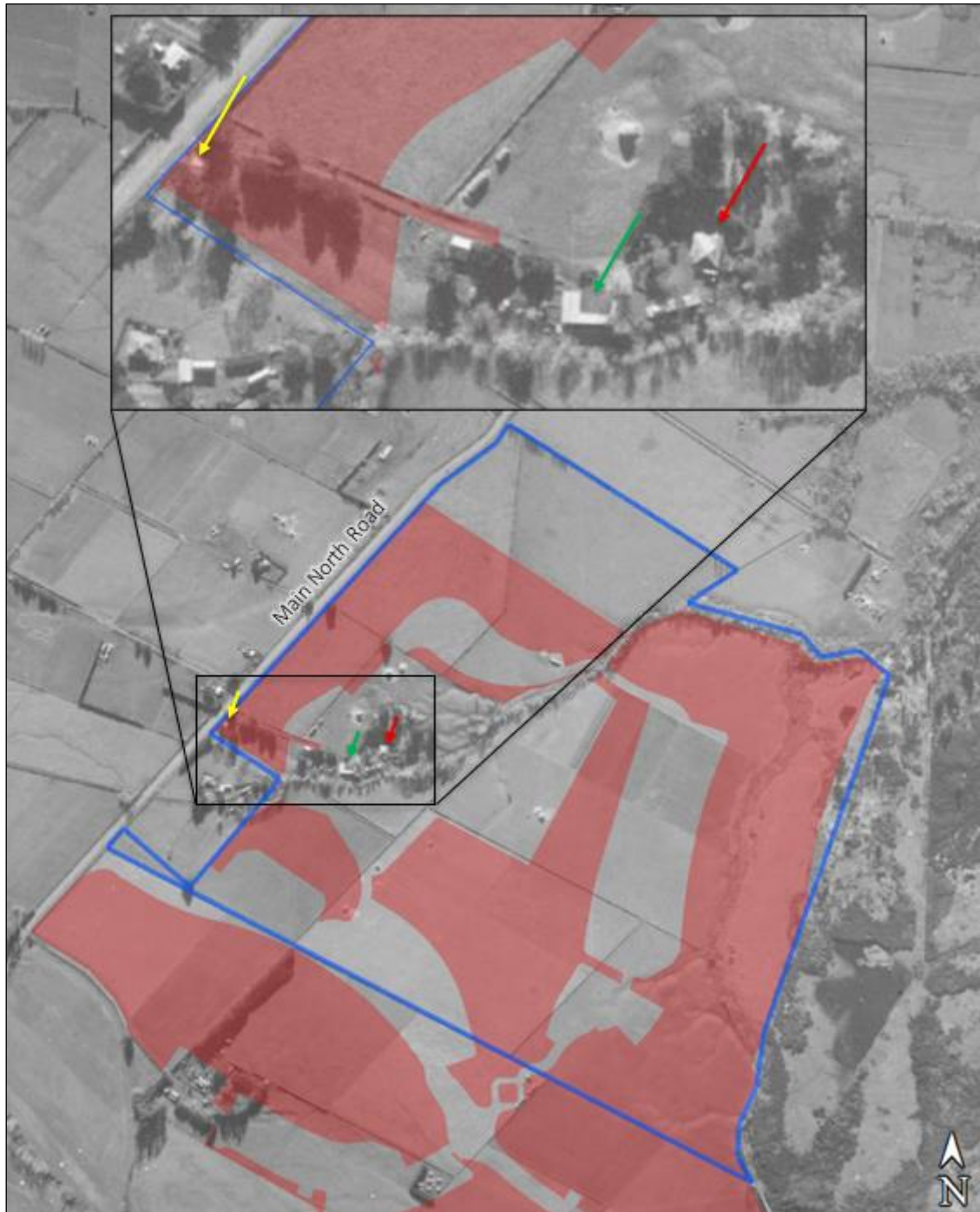


Figure 5-6. Aerial imagery from 1942, showing the developments present within the Crawford's former block of land (outlined in blue), including a small cottage (yellow arrow), the Brockenhurst homestead (red arrow) and various outbuildings (green arrow). Part of the development area is indicated in red. Image: LINZ, 1942.

5.2 Lot 3 DP 1799

Lot 3 DP 1799 comprised 104 acres of land extending over part of Rural Sections 864 and 23662 (Figure 5-5). James Gibbs Stanton obtained a certificate of title for Lot 3 DP 1799 in 1903, though he had taken possession of the property the year prior (LINZ, 1903). The property remained in the Stanton family's ownership until at least the 1960s (LINZ, 1903). As previously mentioned, Lot 3 DP 1799 was indicated to be vacant of any buildings in June 1902 (*Press*, 25/6/1902: 12). Stanton is believed to have developed the property a few years after taking possession of the land, as a property valuation recorded in c.1912 indicates the property contained a dwelling house which was 7 years old at the time of recording, and a stable and barn which were 1 year old at the time of recording (Archives New Zealand, 1913-1920: 528). This indicates the buildings were constructed between 1905 and 1911. Aerial imagery from 1942 shows occupation are present within Lot 3 DP

1799 which is believed to be the location of the early 20th century buildings (Figure 5-7). The remainder of the land is utilised for agricultural/pastoral purposes. The majority of Lot 3 DP 1799 was included as part of the Pegasus residential subdivision during the early 21st century.

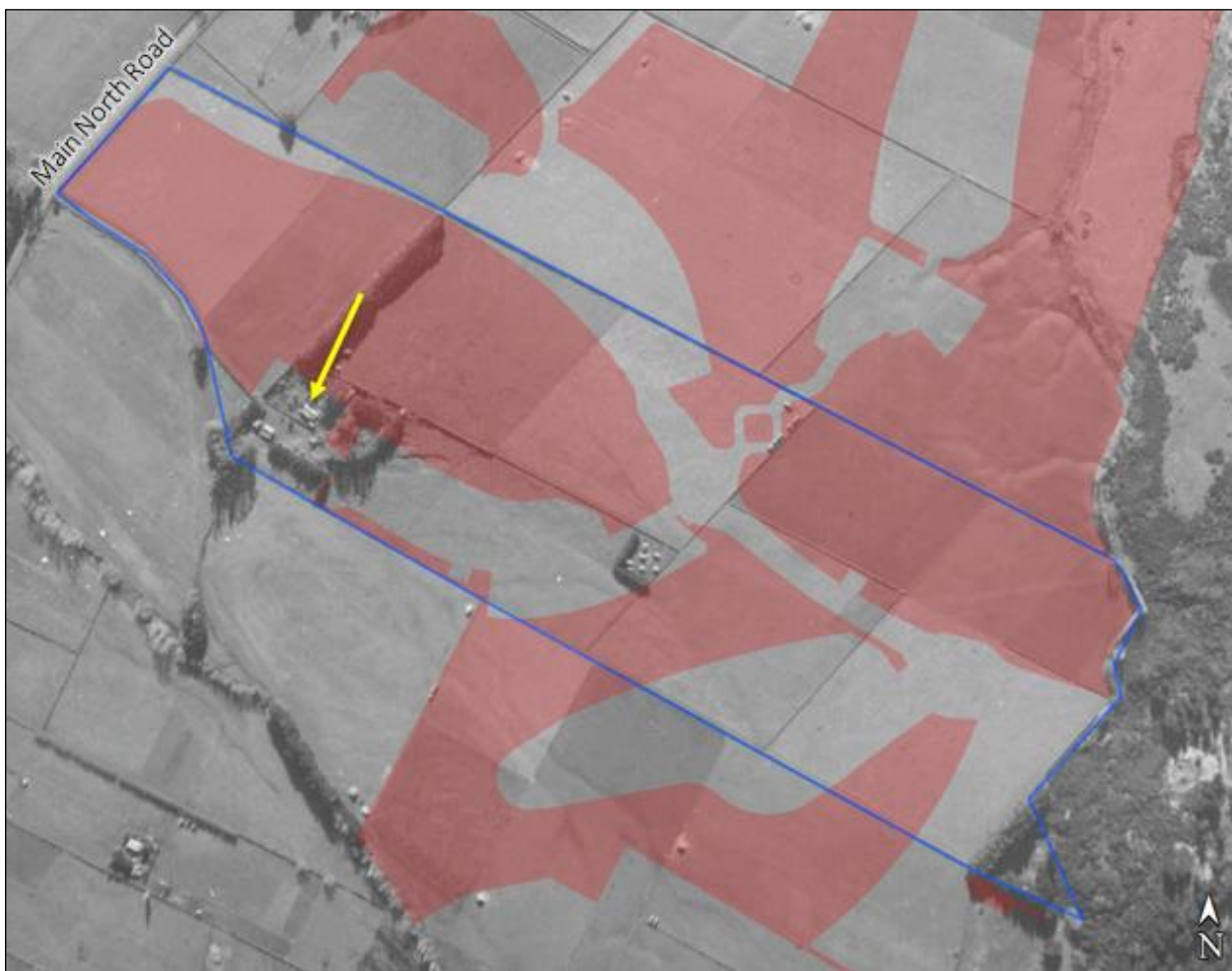


Figure 5-7. Aerial imagery from 1942, showing the development present within Lot 3 DP 1799 (outlined in blue), including the early 20th century buildings believed to date to James Stanton's occupation (yellow arrow). Part of the proposed development area is indicated in red. Image: LINZ, 1942.

5.3 Lot 4 DP 1799

Lot 4 DP 1799 comprised 122 acres of land extending over Rural Sections 1125, 3196, 23662 and part of Rural Section 864 (Figure 5-5). Robert Petrie junior and James Petrie purchased Lot 4 DP 1799 in 1902 (LINZ, 1902b). The Petries had previously purchased the adjoining portion of Rural Section 3722 in 1900 (LINZ, 1860d: 1435). The Petries were long established farmers in Woodend and likely purchased Lot 4 DP 1799 as an extension of their farming operations in the district (*Press*, 10/1/1935: 17). A property valuation for Lot 4 DP 1799 recorded in 1912 indicates that the land was fenced, cleared, and grassed but contained no buildings (Archives New Zealand, 1913-1920: 529). Petrie further extended his property boundaries by purchasing the former Woodend creamery property in 1922 (LINZ, 1902a).

Aerial imagery from 1942 shows the developments present within Petrie's property (Figure 5-8). The foundations of the 1901 creamery building are evident on the property fronting Main North Road. A number of buildings are also evident within the property by 1942, located within the modern property at 160 Gladstone Road, outside of the proposed development area.

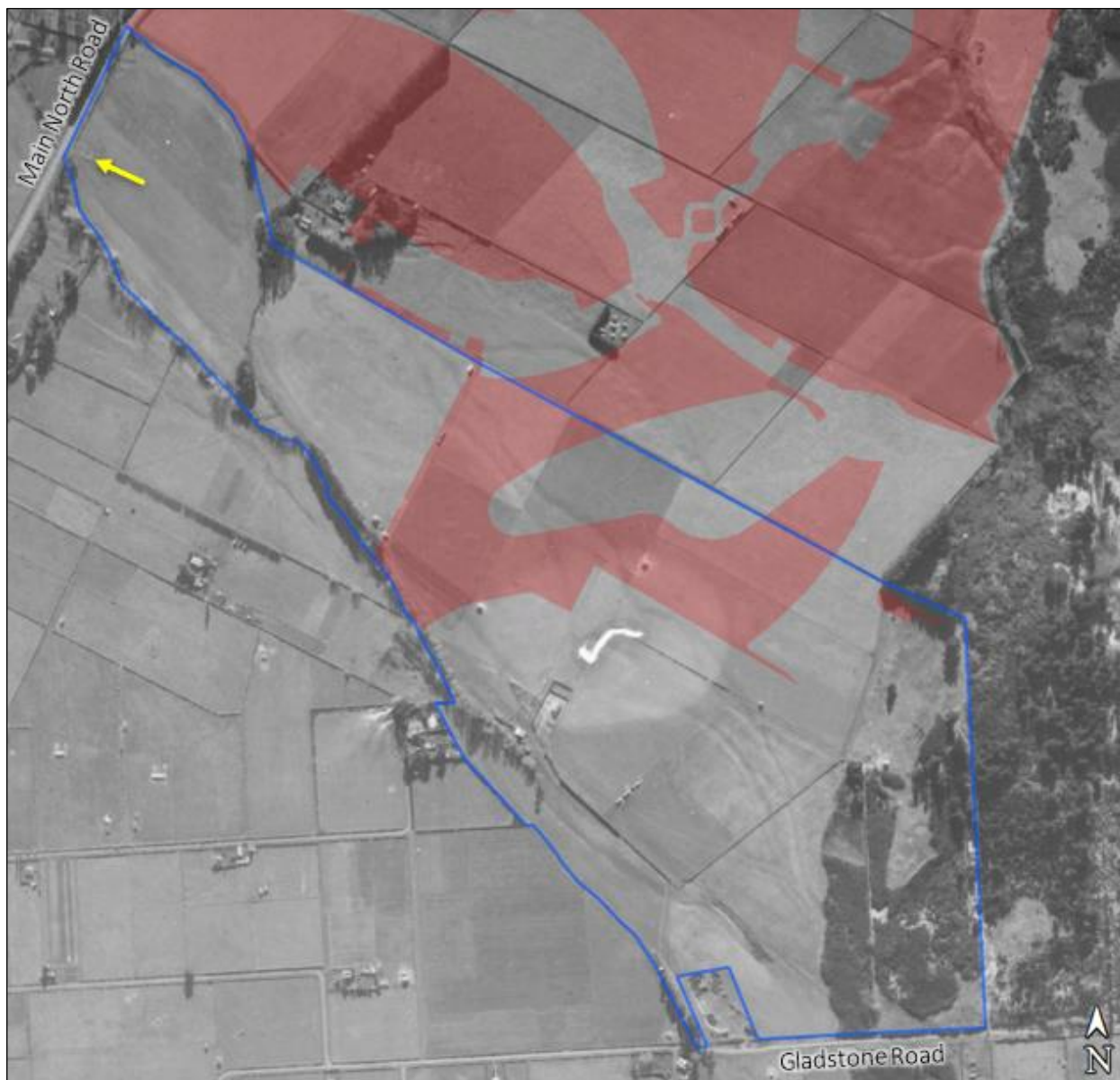


Figure 5-8. Aerial imagery from 1942, showing the developments present within the Petries' block of land (outlined in blue). Part of the proposed development area is indicated in red. The 1901 creamery building foundations are indicated with a yellow arrow. Image: LINZ, 1942.

The whole property remained in the Petrie family ownership until 1986, at which time the property was subdivided in two (Figure 5-9). The Petrie family continued to own Lot 1 DP 50913 until 1993 (LINZ, 1987). A large portion of Lot 1 DP 50913 (including the portion comprising the proposed development area) was included as part of the Pegasus residential subdivision during the early 21st century.

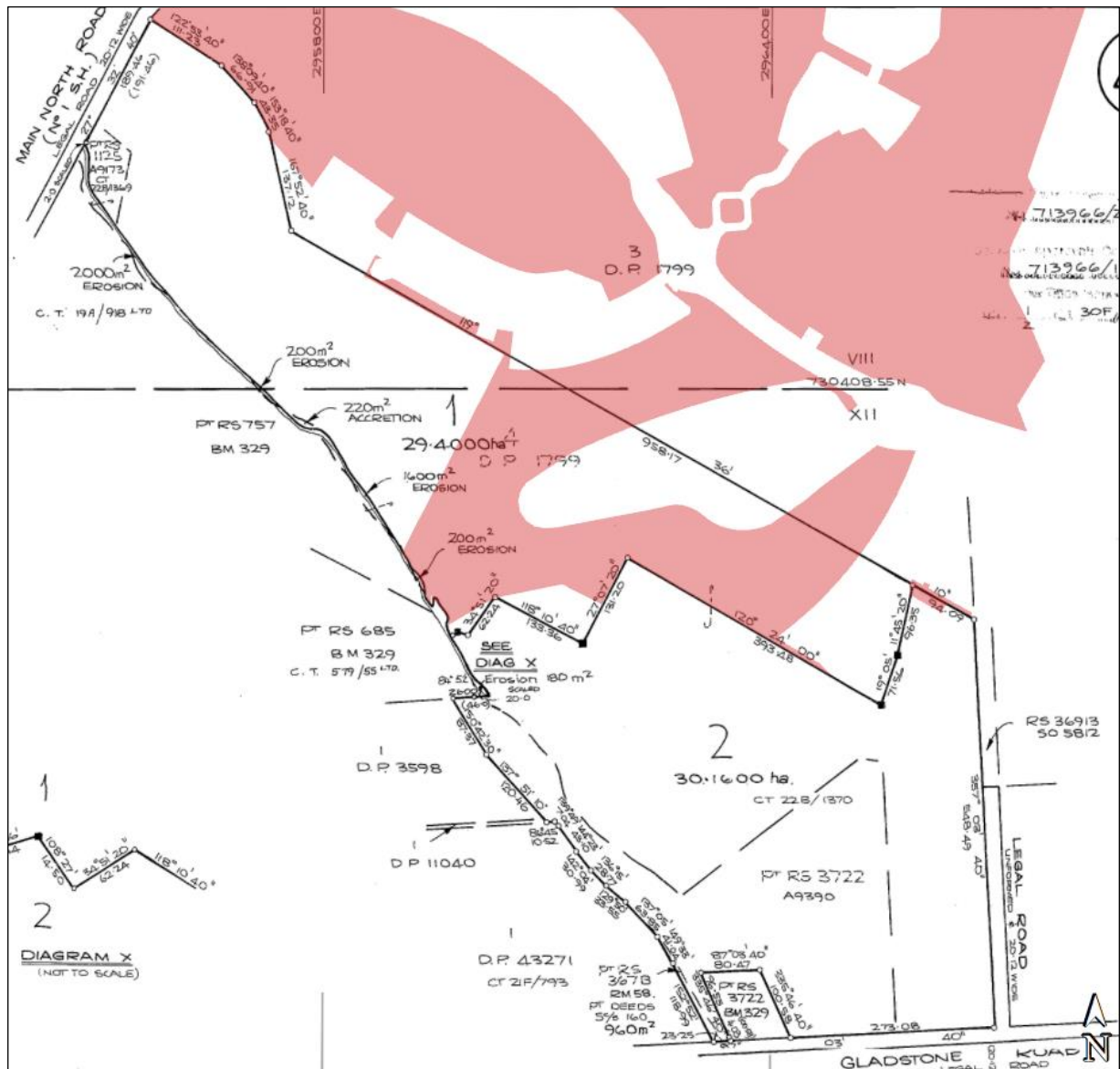


Figure 5-9. Detail from Deposited Plan 50913, showing the subdivision of the Petrie property in 1986. Part of the proposed development area is indicated in red. Image: LINZ, 1986.

5.4 The Pegasus/Mapleham residential development

During the early 21st century, the land comprising the proposed development area was acquired as part of the Pegasus residential development, which saw the creation of the current Pegasus residential subdivision and golf course (Figure 5-10 and Figure 5-11). Aerial imagery from 2008 shows the initial stages of the establishment of the Pegasus residential area (Figure 5-11). The area west of the main dune system (see Section 4 Physical environment and setting) was referred to as 'Mapleham', with the main area of subdivision to the east the majority of the Pegasus subdivision. However, the works shared the same master plan (Witter, 2005: 68), occurred concurrently with the same contractors and under the Pegasus Town Ltd, and the name Pegasus rapidly came to refer to both areas. The land comprising the project area assessed here was developed as a golf course during these works, and has remained a golf course since that time.

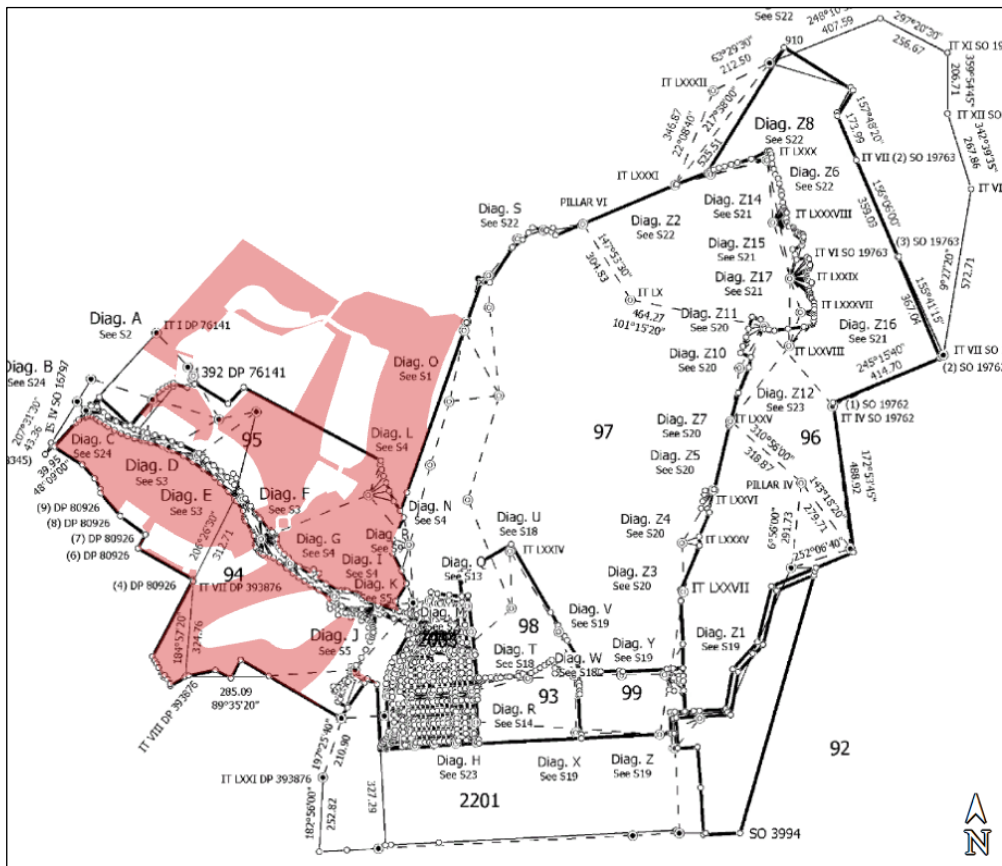


Figure 5-10. Detail from Deposited Plan 394635, showing part of the land acquired and subdivided as part of the Pegasus residential development in 2007. The proposed development area is indicated in red. LINZ, 2007.

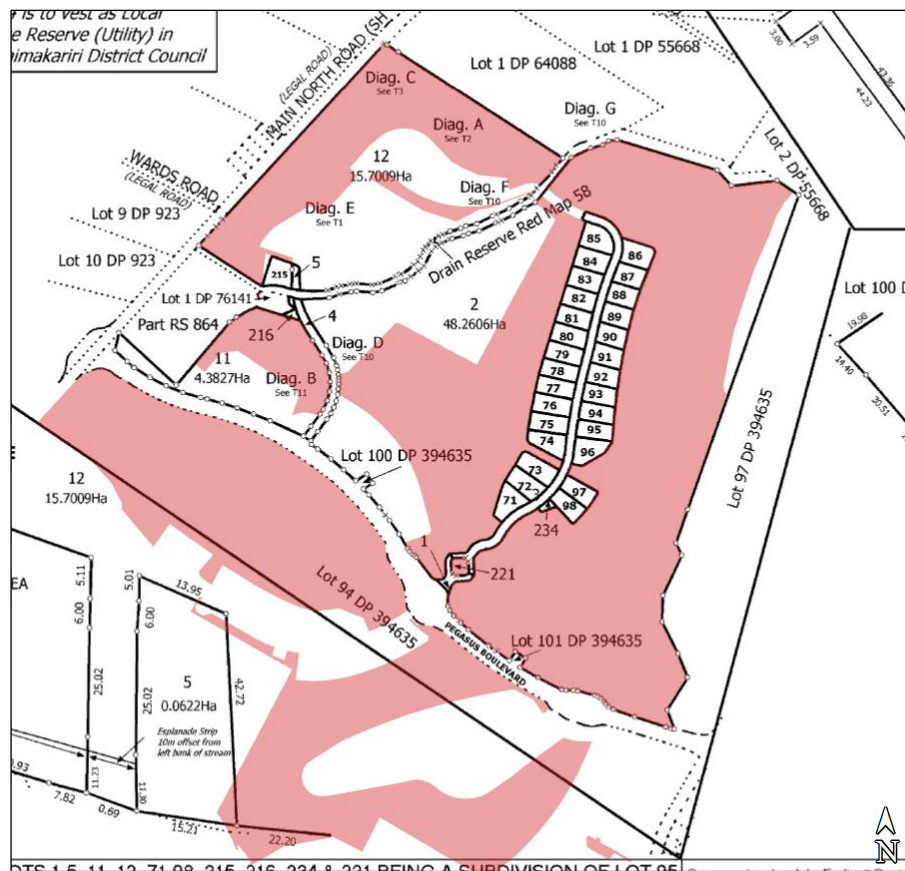


Figure 5-11. Detail from Deposited Plan 400595, showing part of the land acquired and subdivided as part of the Mapleham portion of the Pegasus residential development in 2008. Part of the proposed development area is indicated in red. Image: LINZ, 2008.



Figure 5-12. Aerial imagery from 2008, showing the development works for the Mapleham/Pegasus residential development and golf course within the proposed development area (outlined in red). Image: Google Earth, 2026.

6 Previous archaeological investigations and archaeological context

Previous archaeological research and investigations of the proposed development area provide an understanding of the archaeological landscape, areas of modification, and informs on the potential for the proposed development to affect archaeology. This section also considers the wider archaeological context, including the consideration of sites recorded near the development area and how identified site types are represented in the archaeological record at the local, regional, and national level.

6.1 Wider archaeological context

There are numerous archaeological sites recorded on ArchSite in the wider Woodend-Pegasus area (Figure 6-1). The majority of these sites record sites of Māori occupation and settlement, which give evidence to the area's rich history of Māori occupation and land use. A few of the sites also record early European settlement in the area.

A significant quantity of these sites has been recorded in the past two decades in association with the substantial residential development that has occurred, such as the Pegasus township development. As a result, the distribution of recorded archaeological sites appears to be strongly influenced by the distribution of archaeological investigation; sites are concentrated in areas investigated as a result of development works, while agricultural areas with little or no investigation show few recorded sites.

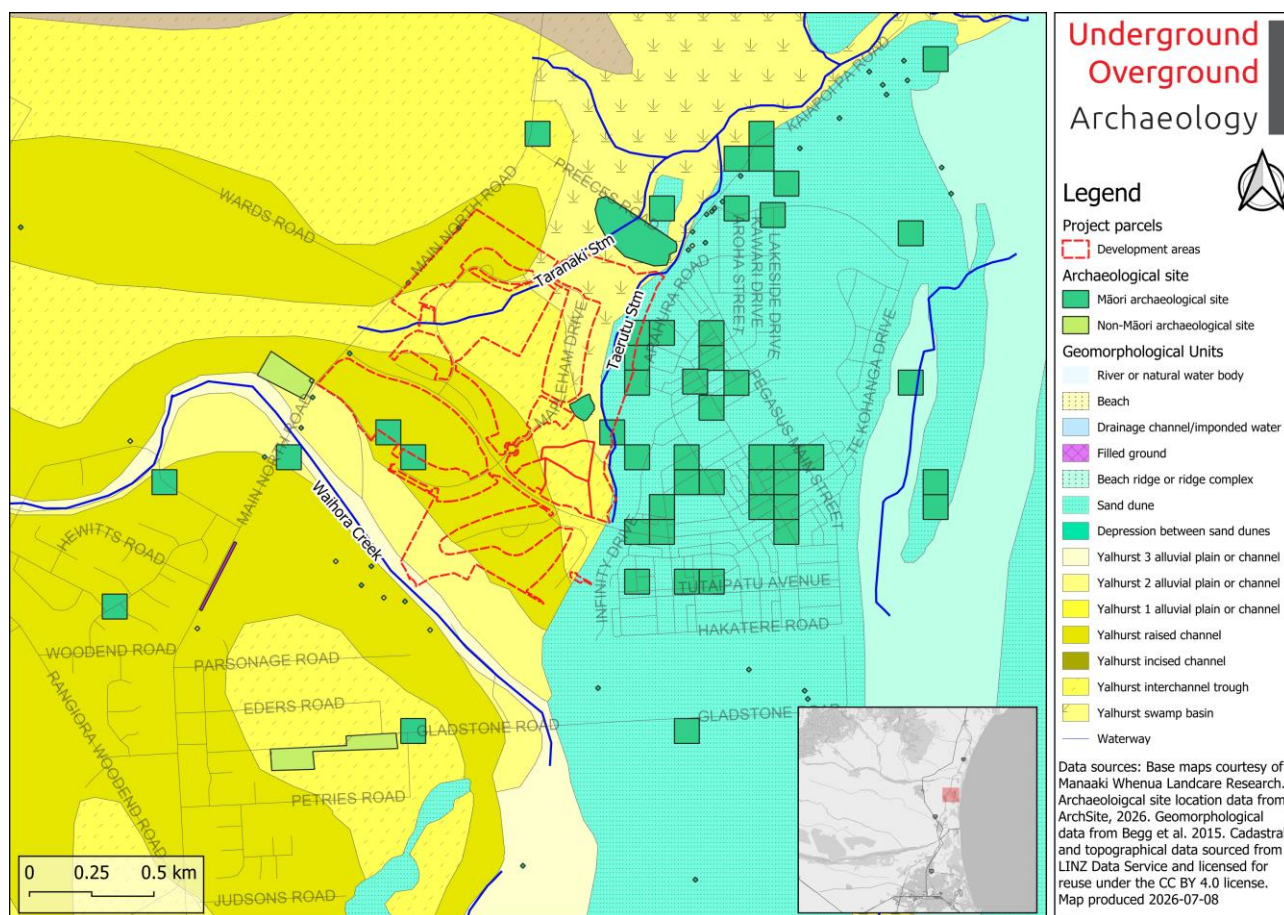


Figure 6-1. Recorded archaeological sites in the Woodend-Pegasus areas.

Table 6-1 summarises the recorded archaeological sites within the development area (M35/159, M35/312, and M35/440) and those within 100 m of the boundary of works, providing the context of pre-1900 occupation of the immediate area.

The majority of recorded sites are of Māori origin. These represent either sites associated with Māori horticultural activity, such as borrow pits for the harvesting of gravels to add to natural soils to produce garden

soils, and the garden soils themselves, or midden/oven sites, which contain firestones, shell material, and stone artefact working areas. Borrow pit sites are likely to be surrounded by areas of modified garden soil, to substantial distances around the pits (c.f. Walton, 1985; Trotter and McCollough, 2001; Wadsworth and Mearns, 2024). The western dune ridge system that forms most of the Pegasus subdivision is the location of numerous recorded sites, largely midden and oven sites, and garden sites are generally located west of this system, on the alluvial river systems (Figure 6-1). The distribution of sites and the presence of the significant Kaiapoi Pā can be seen as interrelated.

Several historical sites associated with Pākehā farming and industry are located in the nearby area (M35/1105, M35/1009, M35/1010, and M35/1189). Early European occupations are typically confined to their original land parcels. The boundaries of these properties can often therefore be determined, but the extent of occupation within a property (particularly when the pre-1900 property is large) can often be difficult to ascertain from the historic record, particularly when pre-1900 buildings have been removed from the site.

Table 6-1. Summary of recorded archaeological sites within 500 m of the development area (ArchSite, 2026). Recorded sites within the project area are shaded in grey.

NZAA ID	Location	Site type	Brief description
M35/7	Kaiapoi Pā	Pā	Kaiapoi Pā, defended by ditch and bank earthworks, and bound on two sides by Taranaki Stream and Taerutu Stream.
M35/10	Kaiapoi Pa Road, south side	Pā, midden/oven	Archaeological features associated with outer defences of Kaiapoi Pā: charcoal-stained cultural layers, midden deposits, ovens, pounamu toki, exposed in paddocks. Earthworks in this area no longer visible on the surface.
M35/12	‘Western dunes’ Pegasus	Midden/oven	Midden site in western dune area of Pegasus, east of Taerutu Stream. Although the approximate ArchSite boundary of the site falls partially within the area of the development, in it believed the site itself falls outside the development area.
M35/13	At south end of lagoon (Taerutu gully)	Midden/oven	Small midden, “one or two hundred yards southeast of the midden dug by Sorensen, Eyles & Duff”.
M35/159	East side of Main North Road, within the Pegasus golf course	Māori horticulture	Site of two large pits. The largest measures 80 m long and 15 m wide.
M35/307	‘Western dunes’ Pegasus	Midden/oven	Midden site in western dune area of Pegasus, east of Taerutu Stream. Although the approximate ArchSite boundary of the site falls partially within the area of the development, in it believed the site itself falls outside the development area.
M35/308	‘Western dunes’ Pegasus	Midden/oven	Midden site in western dune area of Pegasus, east of Taerutu Stream. Although the approximate ArchSite boundary of the site falls partially within the area of the development, in it believed the site itself falls outside the development area.
M35/309	‘Western dunes’ Pegasus	Midden/oven	Midden site in western dune area of Pegasus, east of Taerutu Stream. Although the approximate ArchSite boundary of the site falls partially within the area of the development, in it believed the site itself falls outside the development area.
M35/310	‘Western dunes’ Pegasus	Midden/oven	Midden site in western dune area of Pegasus, east of Taerutu Stream.
M35/311	In paddock along 1188 Main North, Woodend.	Māori horticulture	Site of a gravel borrow pit, now infilled, along Main North Road, Woodend. In July 2016, pits were excavated on the eastern side of Main North Road to enable the installation of UFB cables. These works were monitored by an archaeologist under archaeological authority 2016/1082. The pits measured 300/700 mm x 1300/1700 mm and 850/1250 mm in depth. No archaeological material was observed during the works. None of the observed strata were able to be interpreted as modified garden soils. No fragments of charcoal or mixing of tephra was observed. Although several silty layers were observed to contain scattered river pebbles, it is not clear if these were cultural additives.
M35/312	East side of Main North Road, within the Pegasus golf course	Māori horticulture	Site of two gravel pits and one pile of large stones, presumably sorted out from finer gravel that was mined for addition to soil.
M35/347	‘Western dunes’ Pegasus	Midden/oven	Midden site in western dune area of Pegasus, east of Taerutu Stream.
M35/440	Taerutu Gully Pā, located in bend of stream, about 200m north-east of the	Pā	Pā site, by a row of palisade post holes (50 m long), within two side channels and the Taerutu Gully channel. The pā is about 50 x 50 m and has no ditch and bank. One of the side gully channels produced a large wet wood assemblage and a canoe

NZAA ID	Location	Site type	Brief description
	golf club house, against a dune ridge and by a creek channel and lake		landing. Features include large midden deposits on northeast side, and greenstone workshops with numerous adzes and chisels. Several burials were also encountered.
M35/1002	Paddock at the rear of 130B Main North Road, Woodend.	Midden/ oven	A small midden of cockle shell fragments scattered to around twenty metres in diameter by repeated cultivation of paddock.
M35/1003	Paddock at the rear of 130B Main North Road, Woodend.	Midden/ oven	A scatter of fragmentary cockle shells occurs for 45 metres along the edge of the paddock, with pieces of firestone amongst the shell. There is another scatter of firestones without shells to the north with a second smaller scatter of shell fragments.
M35/1004	Paddock at the rear of 130B Main North Road, Woodend.	Midden/ oven	Gravel has been added to the soil in the eastern third of the paddock. There is also the occasional firestone. Scattered fragments of cockle shell midden occurs.
M35/1005	Paddock at the rear of 130B Main North Road, Woodend.	Historic – land parcel	Low bank with a ditch on its south side, typical of those made for gorse hedges in the nineteenth century. Its height varies (through erosion) but is typically 30 to 50 centimetres high.
M35/1009	Paddock at the rear of 130B Main North Road, Woodend.	Historic/ domestic	The remains of the Burnett Family homestead.
M35/1010	West side of Main North Road, 155 m south of the Ravenswood-Pegasus roundabout	Agricultural/ pastoral	Site of a large red gum tree, probably planted by the Rev. John Raven near his homestead at Ravenswood in the 1860s or 1870s.
M35/1013	Located about 700m on Main North road from Pegasus turnoff north of Woodend on edge of east side of highway	Midden/oven	Two middens in 10 x 20 m area, cockle, pipi & mudsnail. Recorded as destroyed during works for the Pegasus subdivision under authority 2006/29.
M35/1014	Located about 350m on Main North road from Pegasus turnoff north of Woodend on edge of east side of highway.	Midden/oven	Oven in 2 x 2 m area, greywacke flake.
M35/1015	Located at the entrance of the Pegasus turnoff north of Woodend on edge of east side of highway.	Midden/oven	This site records the location of an oven and greenstone artefact find. Recorded as destroyed during works for the Pegasus subdivision under authority 2006/29. In July 2016, a trench was excavated to connect the existing Enable conduit placed near the intersection of Pegasus Boulevard and Main North Road/SH1. These works were monitored by an archaeologist under archaeological authority 2016/1082. The trench was placed adjacent to the north side of the footpath, and was 300 mm in width and 450 mm in depth. Although part of the trench were as little as 20 m from M35/1015, no archaeological material was observed during the works.
M35/1189	1211 Main North Road, Woodend.	Historic/ domestic	The site of Rev. John Raven's homestead in his farm 'Ravenswood'. No pre-1900 buildings are believed to have been present on the property by 2014. All buildings have subsequently been demolished from the property.

Some of the most recent archaeological works that have occurred in the area were associated with the development of the Ravenswood subdivision area (to the west of the project area), and the preliminary works for the formation of the Woodend Bypass. Several archaeological sites have been recorded during the preliminary excavations for the Woodend Bypass, and these largely match the observations from the archaeological investigations that occurred under the Pegasus Township development, with similar sites recorded (J. Habberfield-Short pers. comm.) The Ravenswood subdivision works (Cable, 2022a; 2022b; 2023a; 2023b) encountered similar sites, including midden, ovens, and very occasional wooden artefacts, but considerably less dense deposits than those recorded during the Pegasus subdivision (see below), confirming the significance of the latter area and the concentration of occupation and activity around Kaiapoi Pā and the Taranaki and Taerutu Streams.

6.2 Previous archaeological investigations

Archaeological investigations have previously taken place within the proposed development area as part of the formation of the Pegasus/Mapleham subdivision and golf course under archaeological authorities 2006/29, 2007/309, and 2011/444. The final reports for works under 2006/29 and 2011/444 have not been

completed, limiting the full understanding of the location and nature of archaeological sites and features, but the archaeological sites recorded during field works and the interim reports provide some context. Few archaeological sites are currently recorded in the area – also known as Maplehem/Brockenhurst – in the New Zealand Archaeological Association’s site recording scheme (ArchSite, 2026; Table 6-1). Figure 6-3 shows waypoint data from the Pegasus archaeological excavations in addition to the sites recorded in the NZAA site recording scheme, demonstrating that the majority of sites in the ‘Maplehem’ area of the excavation have not been recorded in ArchSite, and the formally recorded archaeological sites under-represents the true distribution of archaeological sites in the area. The recorded archaeological sites within the area of the Pegasus golf course and subdivision were generally recorded prior to their formation.

Works in this area of the Pegasus development included formation of an access road from SH1, in the approximate alignment of the modern Pegasus Boulevard, formation of a utilities compound area in the southeast, formation of artificial ponds, streams, and wetland areas, and cut and fill shaping of the area for formation of residential lots and formation of the fairways, bunkers and other aspects of the golf course. To the best knowledge of the author, topsoil was stripped across almost the entirety of the golf course area, with the exception of the existing wetland areas in the northeast of the area and along the Taerutu and Taranaki Streams, which were less subject to modification (see below; Figure 5-12).

Multiple features and sites were recorded during works for the overall Pegasus development, including both the formation of the golf course and the residential development (Figure 6-3), including ovens, middens (including moa remains), hearth areas, borrow pits, postholes (including those from historical farming), historical rubbish pits, garden soils, burials, and stone-working areas (Witter, 2006a, 2006b, 2006c, 2007, 2008a, 2008b, 2009a, 2009b, 2009c, 2009d, 2010a, 2010b, 2010c.). At least 189 of these recorded archaeological sites were recorded within the proposed development area assessed here. A significant proportion of the archaeological features were encountered during the initial topsoil stripping, but some sites, such as the Taerutu Gully Pā, were encountered under substantial silt layers (~ 1 m deep, believed to be the result of deliberate infilling for level farmland), indicating that archaeological sites could remain in situ at substantial depth, and may have survived in areas where only shallow topsoil stripping was carried out. The distribution of archaeological sites (Figure 6-3) shows clustering of archaeological features, with some areas of few recorded sites, such as in the golf course area south of Pegasus Boulevard. Portions of this area are now rolling in topography (e.g. Area A), and it is possible that this area has been either subject to minimal excavation or otherwise built up, and it is possible that archaeological sites could remain in situ in such areas.

The earliest topsoil stripping works occurred during phases where it was not possible for trained archaeologists to monitor all the topsoil stripping works, so it is possible that some archaeological sites were not identified and flagged for further investigation, and may remain partially in situ (J. Habberfield-Short, pers. comm.).

A ‘substantial portion’ of the sites encountered during archaeological monitoring were not excavated as they consisted largely of highly fragmented and scattered shell in the plough zones (Witter, 2007: 24, 34). Some features were investigated only through partial excavation, so it is possible that portions of these remain in areas where no further or deeper excavation was required for the project (Witter, 2006a, 2006b, 2006c, 2007, 2008a, 2008b, 2009a, 2009b, 2009c, 2009d, 2010a, 2010b, 2010c.). The garden soil areas were described as ‘extensive’ but the full extent not explicitly recorded. Rare and unique finds included the finds of Māori latrine features in the south of the ‘Maplehem’ area (Witter 2007, 2008b: 9).

Among the most notable find during works for the Pegasus/Maplehem golf course and housing subdivision was the remains of the early Taerutu Gully Pā, with associated charcoal-stained cultural layers, greenstone workshop, and palisade postholes (M35/440; Witter, 2007a, 2007b, 2008b, 2009c). The pā was encountered below approximately 1m of silts, indicating that other archaeological sites could remain at substantial depth (J. Habberfield-Short, pers. comm.). The area of the pā was set aside from development in November 2007 to preserve it in situ after partial archaeological investigation (Witter, 2008b: 12). Several burials were encountered in close vicinity to this site, including one associated with a side channel forming the south side of the pā (Witter, 2008b: 10). The pā now forms part of wāhi tapu Te Kohanga o Kaikai-a-Waro (no. 9506) including part of Pt Lot 6 DP 388447(CT 353808)(Brown, 2010).

Organic artefacts and features were encountered in the northern side channel and wetlands around the pā, including wooden artefacts, a canoe landing, fibre artefacts, and a unique fish trap system. The wooden artefacts preserved in the wetlands included adze handles, digging sticks, clubs, tops, and a manaia carving, which is among the largest and best-preserved wooden artefact assemblages in New Zealand (Witter, 2010a). These preserved wooden artefacts are rare in New Zealand (Philips et al., 2002; Irwin, 2004; Gumbley et al, 2005) and were sent for conservation to Dilys Johns at the University of Auckland, and remain there at the time of writing (J. Habberfield-Short, pers. comm.). The investigation of the pā and the constructed pond on the west boundary of Lot 1 DP 595055, west of Taerutu Gully, is reported to have required 6 months of archaeological investigation (J. Habberfield-Short pers. comm.). The archaeological remains of a kāinga site was located to the north, on the east side of the Taerutu Stream within Lot 1 DP 595055, with evidence of housing post holes, midden and ovens, and kōiwi tangata (Witter, 2009b: 9, 11-12; Witter, 2009c; Witter, 2010a: 9, 16, 18; Witter, 2010b: 7; Figure 6-2). The area of this kāinga site was also set aside for preservation and protection, and archaeological material was left in situ below the surface.

Part of the former golf course was the location of modified garden soils for kumara gardening, associated with borrow pits both recorded in the site recording scheme and visible in early aerial photographs (Figure 6-2, Figure 6-4 and Figure 6-5). The full extent of the modified garden soils was not recorded in detail, in part due to the nature of earthworks (J. Habberfield-Short, pers. comm.). When the area was stripped to develop the golf course, “numerous midden and oven sites were exposed with in situ deposits below the plough zone” (Witter, 2015: 9).

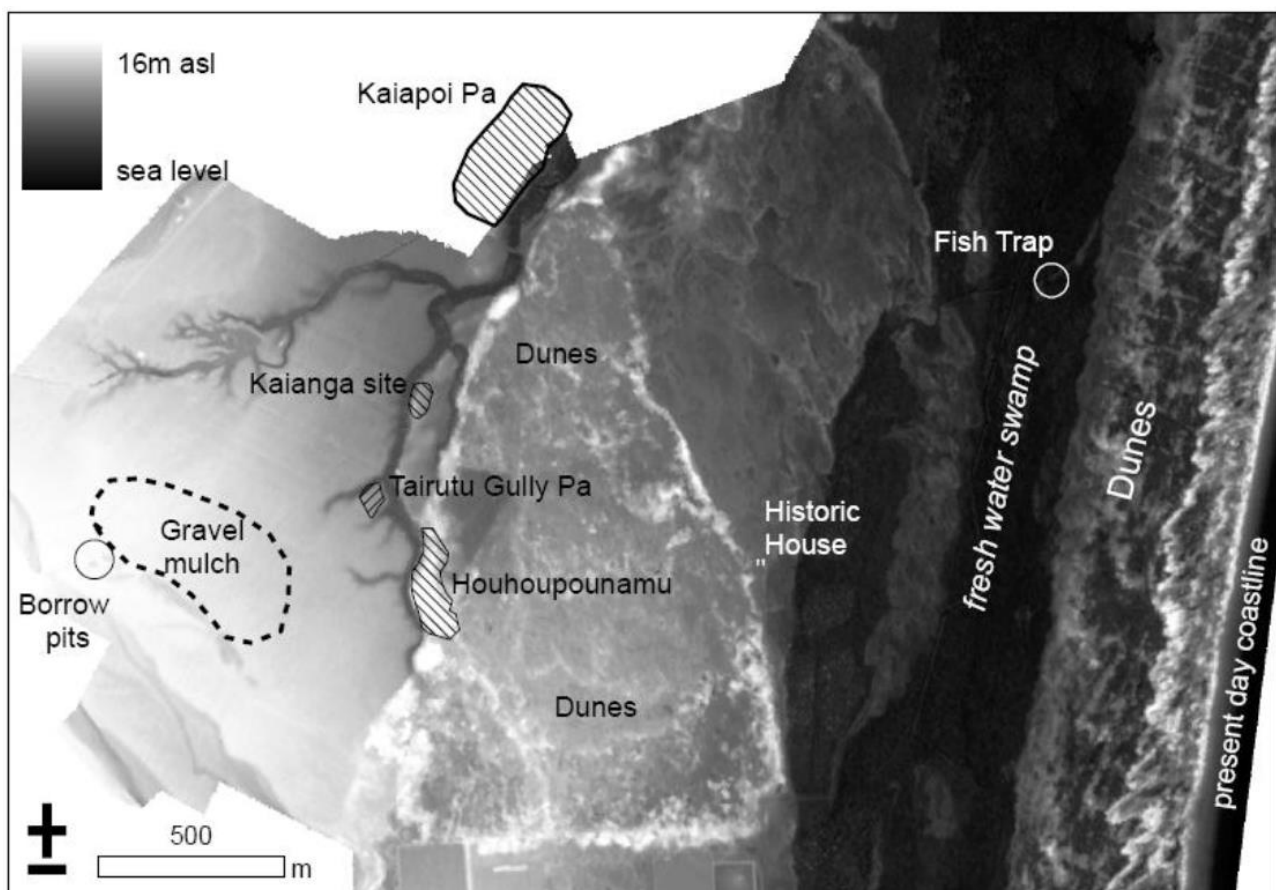


Figure 6-2. LiDAR data of Pegasus/Mapleham area, showing the approximate indication of the modified garden soils and garden site. From Witter, 2010: 48.

In addition to the preservation of the Taerutu Gully Pā, plans were made involving tangata whenua, Pegasus Town Limited and Heritage New Zealand for the preservation and protection of the kāinga site north of the pā, east of the Taerutu Stream, and borrow pits and garden areas in the south of the golf course area (c.f. Witter, 2010: 2010b: 7). Unfortunately, records of any conservation plans or the conversations around them

are unavailable. The protected areas include wāhi tapu Te Kohanga o Kaikai-a-Waro (no. 9506) including part of Pt Lot 6 DP 388447(CT 353808)(Brown, 2010). It is difficult to determine the full extent and nature of these protected areas, or the nature of protection besides the formation of the wāhi tapu area, but is assumed that some of the sites have been partially physically protected by leaving archaeological material in situ and covering with overlying soils. Based on LiDAR data, two of the borrow pits recorded as part of M35/312 remain in situ and apparently unmodified, and the easternmost borrow pit has been modified and extended to the west to form a pond (Figure 6-4, Figure 6-5). The remaining pits appear to have been infilled.

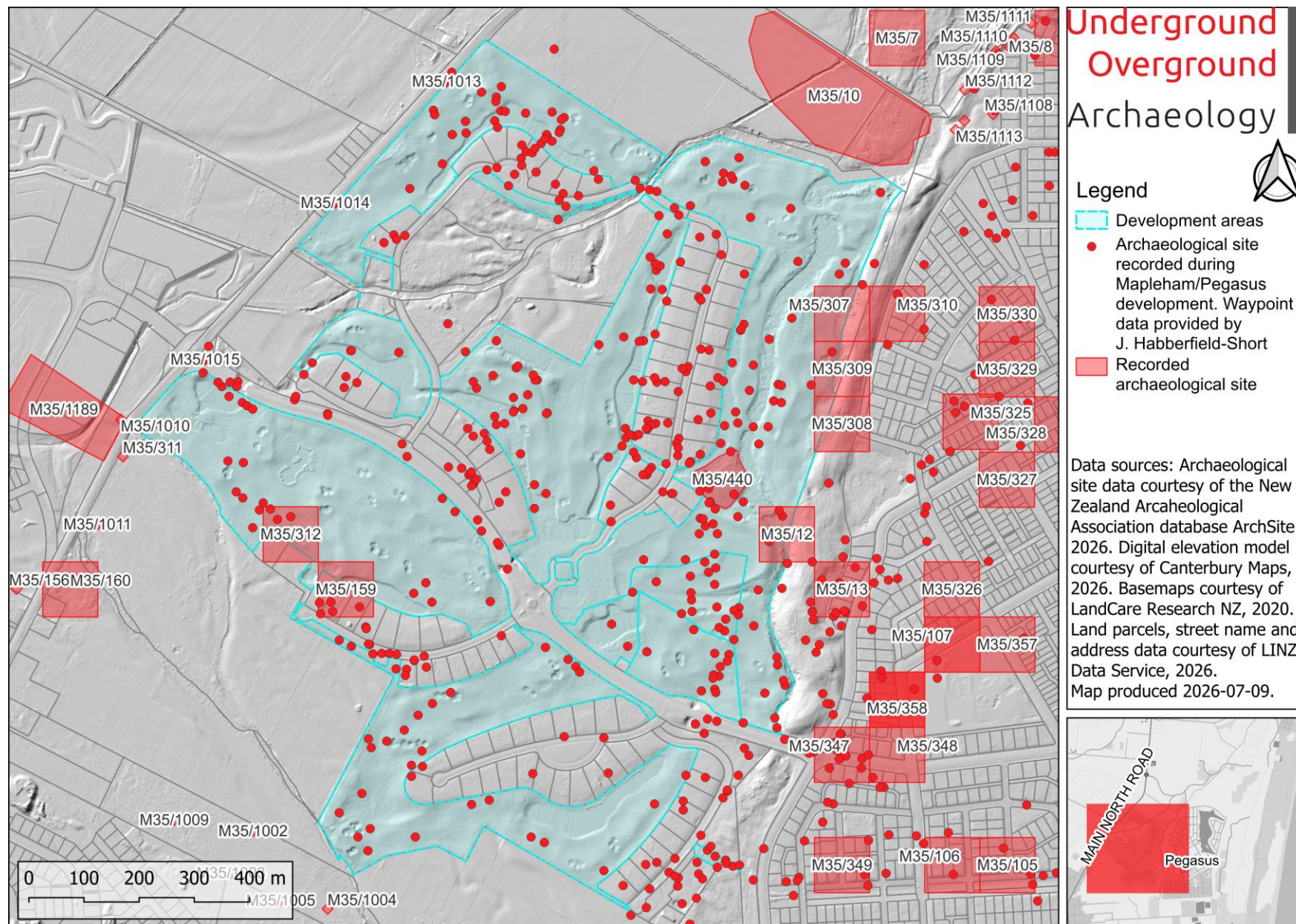


Figure 6-3. Archaeological sites/features recorded in the Pegasus Golf Course area in relation to LiDAR data.



Figure 6-4. Aerial imagery from 1940s, showing borrow pits in south of development area. The western 3-4 borrow pits are recorded as M35/312 and the two large eastern pits recorded as M35/159.

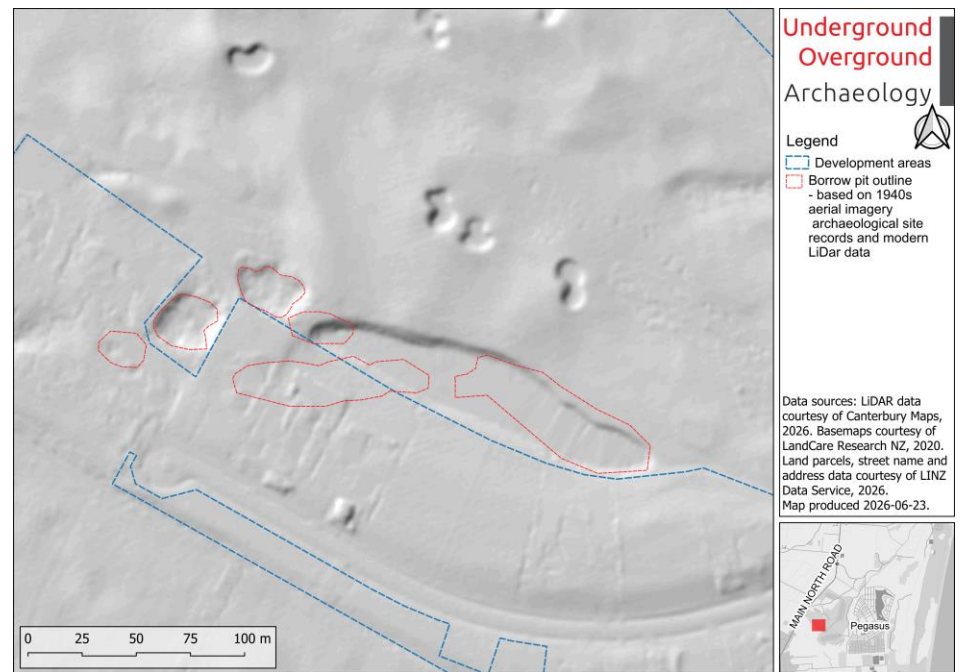


Figure 6-5. LiDAR imagery from 2020-2025, showing modification of the borrow pits by this time. The western 3-4 borrow pits are recorded as M35/312 and the two large eastern pits recorded as M35/159. Several of the borrow pits have been infilled, though two pits from M35/312 remain apparently unmodified, and the easternmost pit has been extended to form a small pond.

Te Kohanga o Kaikai-a-Waro, the site of the Taerutu Gully Pā, is a wāhi tapu listed on The New Zealand Heritage List/Rārangī Kōrero (List No. 9506). The Heritage List described the site as located on and includes part of the land described as Pt Lot 6 DP 388447(RT 353808), Canterbury Land District. The listing is focused on the pā site and bound by the footpaths to the south and west, 'Lake 8' to the northwest, a stone water feature forming the Lake 8 outflow into Taerutu Gully to the north, and by Taerutu Gully to the east. Appendix 1 of the listing registration report includes a map showing the extent of the wāhi tapu registration (New Zealand Historic Places Trust Pouhere Taonga, 2010: 24); at the request of Te Ngāi Tūāhuriri Runanga this map has not been reproduced here. The listing mentions such significant key features as: the pā site itself, the Tauranga waka/waka landing, Taerutu Gully and associated planting, the palisade fence, pou, waharoa and planting, all in situ archaeology, and seven kōiwi interred within the wāhi tapu and associated limestone boulders protecting the burial sites. The listing report includes the following statement of wāhi tapu values:

Te Kohanga o Kaikai-a-Waro is a wahi tapu in the traditional, ritual and spiritual senses as a site of former Maori occupation, an urupa and as a symbolic focus for the recognition and memorialisation of the cultural heritage values of the wider cultural landscape. As the resting place of tipuna the wahi tapu is integrally connected to the history and whakapapa of Ngai Tahu Whanui and their occupation of the Kaiapoi area. The wahi tapu holds important stories, histories and associations for Te Runanga o Ngai Tuahuriri and wider Ngai Tahu Whanui. (New Zealand Historic Places Trust Pouhere Taonga, 2010).

In terms of archaeological evidence of historical agricultural occupation, the majority of archaeological features from this period were recorded in the northwest of the development area, but no archaeological features were recorded in the likely area of the pre-1900 cottage at the southwest of Lot 4 DP 407339 fronting Main North Road. Modern LiDAR data and aerial photographs from 2008 suggest that this small area may not have been substantially modified during the golf course formation, and has been built up (see Figure 7-2). As such, it is possible that historical archaeological features associated with the cottage remain in situ in this area.

7 Site survey

A site visit was carried out on 26 June 2026 by Tristan Wadsworth to inspect the recorded borrow pits, and to visually assess the degree of landscape modification elsewhere within the proposed development area. The golf course is rolling, with areas of higher and lower points than the surrounding properties and roading areas, and clear areas of subsurface drainage systems (Figure 7-1, Figure 7-2).



Figure 7-1. View east across golf course in an area of few previously recorded features, showing the current variability in ground surface.



Figure 7-2. View of the general area of Raven's cottage, constructed prior to 1873 (see Section 5.1 Lots 1 and 2 DP 1799), on the west of the golf course, showing the rolling ground. No archaeological material was visible on the surface.

7.1 Borrow pits

The locations of the two borrow pits recorded as part of M35/312 were visited. One is located at the boundary of Lot 210 DP 453895 and Lot 49 DP 437099, with the south portion of the pit extending into Lot 49 DP 437099 (Figure 7-3 and Figure 7-4). The pit is approximately 30 m by 20 m and up to approximately 2 m deep, with more gradual slopes on the west and north sides. The pit contains a 20th century shed, and is surrounded by several mature trees. The movement of vehicles in and out of the borrow pit is considered partially responsible for the rounding of the edges of the pit.



Figure 7-3. View southwest of borrow pit (M35/312).



Figure 7-4. View southeast of borrow pit, showing internal shed.

The second borrow pit is located in a small protrusion of Lot 210 DP 453895 between Lot 99 DP 453895 and Lot 49 DP 437099. This pit is approximately 27 m by 27 m and 2 m deep, but is heavily overgrown and not particularly visible from the main golf course area (Figure 7-5). The vegetation includes several large mature trees and smaller scrubby plants (Figure 7-6 and Figure 7-7).



Figure 7-5. View south toward borrow pit, heavily obscured by vegetation.



Figure 7-6. View southwest into borrow pit.



Figure 7-7. View northeast within borrow pit from rim.

7.2 Taerutu Gully Pā and surrounds

The Taerutu Gully Pā is bounded on the southwest by a palisade in the approximate area of the original palisade alignment (Figure 7-8). The interior of the site is level, with pou and an area of modern shell to signify the location of the canoe landing area (Figure 7-9). No archaeological material was visible on the ground surface. The area to the north of the pā, east of the pond was low and rolling, with grasses, tussocks and flaxes. No surface archaeological material was observed.



Figure 7-8. View northeast towards Taerutu Gully Pā, with modern palisade.



Figure 7-9. View of modern representation of canoe landing area.



Figure 7-10. View of area north of pā.

8 Research results

The lands surrounding the Kaiapoi Pā were part of a significant area of Māori occupation, with considerable traditional and archaeological evidence for the importance of the area, and its long history of occupation. The development of the golf course, Pegasus township and Mapleham subdivisions resulted in the identification and recording of one of the densest archaeological landscapes recorded so far in New Zealand, including numerous, unique, rare and significant archaeological sites within the former golf course area. The sites recorded during the previous works included a diverse and significant range of middens, ovens, fortified pā sites, kainga/village sites and whare/house sites, historical building and fencing remains and rubbish deposits, urupā/burials, stone working areas, borrow pits, garden soils, latrines, fish traps, canoe landings, and cached wooden artefacts within the wetlands.

While numerous archaeological features were investigated under archaeological authorities 2006/29, 2007/309, and 2011/444, it is likely that archaeological sites remain in relatively good condition in several situations: where encountered and not fully excavated during previous investigations and deeper excavation was not required; where sites were not identified during topsoil stripping, or located at substantial depth and not exposed during excavations; and where steps were actively taken to protect and preserve sites in situ. As such, it is likely that remaining archaeological sites could be encountered during the proposed development. Recorded sites that remain at least partially in situ within the area of works include M35/440 (Taerutu Gully Pā), and M35/159 and M35/312 (borrow pits), but the majority of archaeological sites within the golf course have not been recorded in the NZAA site recording scheme.

In several areas, archaeological sites were left partially in situ, and several areas with such sites were set aside for protection during the previous development, including the Te Kohanga o Kaikai-a-Waro wāhi tapu (List No. 9506), which incorporates the Taerutu Gully Pā site, and the wetland areas surrounding and to the north within Lot 1 DP 595055. Two borrow pits recorded as part of M35/312, and surrounding modified garden soils were to be set aside and protected, but the full extent of the 'protected' areas is not precisely known.

The former golf course varies in elevation, with rolling high and low points along and beside the greens and fairways. The previous excavation works involved topsoil stripping across much of the proposed development area, at which point the majority of features were recorded, but further features were recorded during subsequent deeper excavations. Excavation varied in depth across the area, with some areas lowered for formation of bunkers, ponds, stormwater management areas, fairways, greens and the like, and other areas built up to form rolling dunes and the like. Some areas were subject to minimal earthworks, in particular parts of Lot 1 DP 595055. It is likely that areas that had minimal excavation could have remnant archaeological material.

8.1 Constraints and limitations

The implementation of Optical Character Recognition (OCR) software to convert 19th century newspapers into digitised word searchable text by Papers Past, has created some errors in translation which limits a researcher's ability to accurately identify all contemporary newspaper articles on a specific topic. Historical research of the area in the 19th century has a limited photographic record, and limited documentary sources, making detailed identification of the location of historical buildings and features difficult.

Although the proposed development area has been subject to previous archaeological investigation, the production of the final archaeological report was not funded by the previous developer and authority holder, and there is substantial data from the archaeological investigations that have not been formally written up or recorded, and this information is not available during the production of this report. As such, the full extent of archaeological material, the depth of archaeological features, the extent to what archaeological material was left in situ is not known. Similarly, the extent of the areas that were excavated and the exact extent and location of archaeological features left in situ are not precisely known.

9 Archaeological and other values

The criteria for the assessment of values is provided by HNZPT (2019), including the condition of the site, its uniqueness, contextual value, information potential, amenity value, and cultural associations. The archaeological values of specific archaeological sites or site types will not be outlined in this report, but a general consideration of the archaeological values of archaeological sites in the development area is presented here.

Generally, the archaeological values of the archaeological landscape within the surrounds of Kaiapoi Pā is considered very high. The archaeological values of individual sites varies, but is difficult to assess without at least preliminary investigation. Where not previously affected by the golf course's development, archaeological sites would be expected to remain in good condition, with minor disturbance from agricultural activity such as ploughing. The rarity values of the sites varies, with small oven and midden sites being common sites in the area, to the Taerutu Gully Pā site and associated wetland archaeological deposits being unique sites of local and national significance. The condition values of the majority of archaeological sites in the area have been reduced by the prior development works, and based on both interim reports for previous archaeological investigations and personal communication with involved parties, most have been destroyed, but it is possible that some remain at least partially in situ where not fully excavated, or where features exist at substantial depth, and were not exposed by relatively shallow excavations. Those sites that were left in situ during the previous phase of works are expected to remain in good condition. The full condition and extent of garden sites in the south of the development area is not known, in part as these were not clearly recorded during previous investigations, and the extent of these features that extend outside the former golf course area is not known, though some garden soils could remain in situ to the south in Lot 2 DP 80926. It is possible that significant wetland archaeological sites with organic artefacts could be found in proximity to the Taerutu Gully Pā and near the waterways in the area, though the exact locations where these sites could be encountered is not known.

The information potential of the sites in the area is high, particularly in light of the fact that the archaeological investigations that occurred under the previous golf course development did not fully realise the information potential of the investigated sites, as the final analysis and reporting were not completed. The sites have the ability to provide understanding regarding a long period of occupation, with the earliest sites identified as preceding the extinction of moa, and continuing into the 19th century. The variety of site types have the potential to provide information about landscape use and environmental change, resource gathering and use, diet, domestic activity, the manufacture and preservation of wooden artefacts, use of waterways and construction of eel weirs, gardening activity, construction of fortifications and the periods of greatest cultural change in the history of Aotearoa. The contextual values of the sites are considered high, as they exist within a highly significant cultural landscape, and the numerous other recorded archaeological sites in the area. The amenity value varies, with limited amenity value for the small oven and midden sites in the area, and high amenity value for the Taerutu Gully Pā, the borrow pits, and particularly the wetland archaeological material in the area, following its conservation.

The historical archaeological sites in the area are considered to have medium-high archaeological values, as few rural historical sites have been subject to investigation, and the information potential of these sites is considered high.

As such, the archaeological values of the area are high, especially for those sites left in situ in the east and south of the project, such as the Taerutu Gully Pā recorded as M35/440 and the associated kāinga and wetland area, and the borrow pits recorded as M35/312 (all proposed to be protected). The area has further heritage values in addition to the archaeological values of the area; Te Kohanga o Kaikai-a-Waro is a wāhi tapu (List No. 9506). Parts of the site are subject to District Plan overlays reflecting cultural values (SASM0006 SASM013 and Ngā Tūranga Tipuna), however it should be noted that the archaeological values of the sites in the area should not be considered representative of the cultural values of the features. Ngāi Tūāhuriri are best placed to comment on the cultural values of these sites, but the area is known to have significant cultural values.

10 Assessment of effects and other considerations

The assessment of effects takes into account the criteria established by HNZPT (2019) as outlined in Section 3. Also considered here is a discussion of the methods to avoid, minimise, and mitigate any adverse effects to archaeological values. Because the earthworks associated with the proposed development are not known in detail, it is not possible to provide a comprehensive evaluation of the effects of the proposal, nor is this required at the referral stage under the FTAA. Instead, this section of the report provides a high-level discussion of the potential effects of the proposed development, consideration of the significance of those effects, and what, if any, mitigation may be appropriate.

10.1 Assessment of effects on archaeological and other values

10.1.1 *Potential unrecorded archaeological sites*

The earthworks for the residential subdivision and development of the project area are likely to be extensive but the depth of excavation will likely vary across the site and by specific works. Cut and fill works are the most extensive earthworks to be carried out across the development area, and will likely involve removal of topsoil across the site in advance of cut and fill works. The development area varies in elevation, with rolling high and low points along and beside the former greens and fairways. The previous excavations in the area is understood to have involved topsoil stripping across much of the development area, excluding some natural waterway areas, with subsequent deeper excavations in some areas and filling of other areas. Archaeological sites were previously encountered below substantial depth of natural alluvium (up to 1 m) during the golf course formation works, so it is possible that unrecorded archaeological sites could be encountered in areas with minimal previous excavation with substantial depth of fill, or outside areas of previous excavation, such as along current and previous natural waterways. If previously unrecorded archaeological sites are encountered during works, they are likely to be excavated in order to complete the works. This would result in the destruction of any archaeological sites within the excavations, which would permanently and negatively reduce the archaeological values of the sites, including their condition values, contextual values, amenity values, information potential and all heritage values.

10.1.2 *Previously recorded archaeological sites*

Although the majority of sites recorded during the formation of the golf course were investigated and destroyed, it is possible that some remnant archaeological material could remain from these investigated sites. In addition, archaeological features in several areas were left partially in situ, including the borrow and garden soil area in the south of the development area (M35/312), and the east and northeast along the Taerutu Gully, including the pā, kāinga site, and wetland archaeological sites in the Te Kohanga o Kaikai-a-Waro wāhi tapu. Current indicative master plans have the Taerutu Gully Pā set aside from development, and the area north of the pā and along the Taerutu and Taranaki Streams identified as part of a 'green network'. Presumably, this latter area would not require excavation, in which case the archaeological sites and their values would be largely unaffected.

The southern area of works, where the borrow pits and garden soils are located, is currently designed as part of Development Area A, to be subdivided into individual housing units. The current indicative masterplan shows the areas of the remaining borrow pits recorded as M35/312 excluded from the housing subdivisions. Works in the surrounding area are likely to involve topsoil stripping, and landscaping excavation to level the lots, and subsequent infilling. The amenity values of the site could be enhanced by removal of removal of vegetation and the standing building within one of the pits, as well as public interpretation, where appropriate.

If garden soils remain in the surrounding area, excavation for formation of the subdivision may result in the destruction of the remaining garden soils within the area of works. The full condition and extent of these sites is not known, and it is possible that no remaining garden soils associated with these sites remain in situ outside the former golf course area. However, if they do remain within the project area, the excavation mentioned above would permanently and negatively affect the archaeological values of the sites, including their condition values, contextual values, amenity values, information potential and all heritage values.

10.2 Recommendations to avoid, minimise and/or mitigate adverse effects

Mitigation methods for the adverse effects on archaeological values shall follow the effects management hierarchy to avoid, minimise, or mitigate effects. The mitigation strategies aimed at preventing or minimising the impact of the proposal are outlined below.

10.2.1 *Sites and features to be avoided or protected*

The preferred mitigation for adverse effects to archaeological sites is avoidance and preservation of archaeological sites in situ in the first instance. The best opportunities for avoiding damage to archaeology and heritage arise when the options for design are being considered. The design of the project should take into consideration the considerable archaeological and heritage values of the sites, and should retain protection of the sites and areas left intact during formation of the golf course, including the Taerutu Gully Pā, the wetland archaeological sites to the north, the wāhi tapu Te Kohanga o Kaikai-a-Waro, and the borrow pit and garden soil area in the south of the area. Development of the Taerutu and Taranaki Stream banks should similarly be avoided to prevent disturbance to any unrecorded sites along the waterway. Though there were originally multiple borrow pits in the Woodend and Pegasus, the majority of these have been infilled and destroyed during developments, and those remaining from M35/312 are the only remaining examples in this area. During development, these areas should be fenced off in order to prevent any vehicle movements within them.

10.2.2 *Methods to minimise damage to archaeological sites or features*

The Taerutu Gully Pā, associated Taerutu wetland archaeological features and kāinga within the northeast of the development area are of such significance and of such high archaeological and heritage values that there is no form of mitigation sufficient to account for their destruction. This area was so rich in archaeological finds, including rare and unique wooden artefacts, their management required specialist intervention and preservation by Dilys Johns of the University of Auckland. These artefacts remain held in specialist facilities at the University of Auckland, and cannot be returned to Canterbury without an adequate facility. Excavations in similar areas of the project area, such as along the Taerutu and Taranaki waterways, and in the area north of Taerutu Gully Pā could affect similar former wetland archaeological sites to the original pond formation in the golf course, and if an equivalent proportion of archaeological material were to be encountered, there is a likelihood that there would not be sufficient facility in New Zealand to allow for its preservation and mitigate its destruction. The prohibitive costs for investigation, analysis, and specialist preservation facilities for archaeological material in these areas contributes to the inability to mitigate the damage in these areas. While Ngāi Tūāhuriri are best placed to comment on the cultural values of the area, it is considered unlikely that damage to the heritage and cultural values of the wāhi tapu could be mitigated. Current indicative plans of the project area have these areas of concern described above set aside from excavation and development, avoiding these risks.

In terms of mitigating damage to unrecorded archaeological sites outside the areas mentioned above, as the location of unrecorded subsurface archaeological features within the area are currently unknown, an avoidance strategy cannot be implemented. Any archaeological features discovered during earthworks are likely to be damaged or completely removed to facilitate the project works. Mitigation methods, such as contractor briefings, archaeological management plans, archaeological monitoring, and earthworks methodologies that minimise ground disturbance can be implemented to minimise the damage to subsurface archaeological features. Though it should be noted that any damage to archaeological sites would result in permanent adverse effects.

10.2.3 *Mitigation for information loss*

If damage, modification, or destruction of archaeological features by the project works is not able to be avoided in the first instance, then the loss of archaeological information may be partially mitigated by investigation, recording, analysis, and interpretation using best practice archaeological methods. It should be noted that “the recovery of information is a method of mitigating the loss of archaeological information, not

for the loss of the site itself" (Heritage New Zealand Pouhere Taonga, 2019: 10). As stated above, for the known archaeological sites in the borrow pit area in the south of the development area, and the Taerutu Gully Pā, kāinga and associated sites along the Taerutu Stream in the northeast of the development area, it is considered unlikely that sufficient action could be taken that would mitigate the information loss resulting from their destruction.

Outside of the identified areas – the borrow pit area in the south of the development area, and the Taerutu Gully Pā, kāinga and associated sites along the Taerutu Stream in the northeast of the development area – where development should not occur, the proposed development will still likely result in the permanent removal of previously unrecorded archaeological features and deposits despite recording and investigation, and possibly result in permanent removal of all archaeological evidence for the site. If the latter, this will result in the permanent removal of archaeological values related to the site(s).

The fact that the analysis and reporting for previous archaeological investigations that occurred during the formation of the Pegasus golf course and subdivision were not completed inhibits mitigation of any subsequent attempts to mitigate damage to archaeological features, as the lack of this contextual information inhibits the ability to adequately realise the information potential of damaged sites. Completion of the archaeological reports for authorities 2006/29 and 2011/444 will be essential to mitigate the loss of the archaeological values for any archaeological sites affected by the proposed development. There is an opportunity for the applicant to fund the completion of these reports.

10.3 Summary of effects on archaeological values

Although the previous development of the Mapleham/Pegasus Golf Course encountered and destroyed a high number of archaeological sites within the development area, several archaeological sites and features were left in situ and protected during the works, and there remains the possibility of previously unrecorded sites in areas that were subject to limited excavation during the previous works. The current indicative plan has excluded from excavation and development the main known areas of archaeological concern and in situ archaeological features in the area of the Taerutu Gully Pā, and to the north within Lot 1 DP 595055, as well as the remaining borrow pits recorded as M35/312. This will largely prevent negative effects to the archaeological values of the sites in these areas, particularly their condition values.

Outside the areas outlined above, earthworks are to occur across almost the entirety of the development area, and it is possible that remnant unrecorded or unreported archaeological remains could be encountered in these areas, and that these sites would have to be destroyed to complete the works. As the location of any previously unrecorded subsurface archaeological features is unknown, the project works cannot be planned to avoid them in advance, and other methodologies – such as protection in situ where possible, and other mitigation methods described above – would have to be utilised to mitigate the adverse effects on these sites. Such mitigation strategies would help reduce potential for accidental damage to archaeological features and will aid in the recovery of archaeological information prior to the damage of the site. Despite these mitigation strategies the project works could still result in damage to and destruction of archaeological sites. This would have a significant adverse effect on the archaeological and heritage values of the remaining sites in the area.

11 Conclusions and recommendations

This archaeological assessment has identified that the proposed redevelopment of the former Pegasus Golf Course has the potential to affect a number of highly significant archaeological sites that were previously retained during the golf courses formation (Table 11-1). These known sites are assessed as having high or very high archaeological values. It is possible that the works may also impact previously unrecorded sites in areas of limited previous excavation. Under current plans, the Taerutu Gully Pā, and the area to the north are to be excluded from residential subdivision as part of a 'green network' with an assumption of no or very limited excavation to occur in these areas, where multiple significant archaeological sites remain partially in situ. The remaining borrow pits recorded as part of M35/312 in the south of the project area are also to be at least partially excluded from the residential development. The exclusion of these areas from excavation and development will avoid damage to the archaeological and cultural values of the sites within them.

Pre-1900 archaeological sites are protected under the Heritage New Zealand Pouhere Taonga Act 2014, and any modification of these archaeological sites would require an archaeological authority under the HNZPT Act 2014 or the FTA Act 2024. In addition to the known, partially in situ archaeological sites mentioned above, there remains the possibility that previously unrecorded archaeological sites could be encountered during excavation within the project area. It is likely that if unrecorded sites are encountered during excavation, they would need to be destroyed in order for the proposed works to be completed. Destruction of any archaeological sites within the project area would have a significant and permanent impact on the archaeological values of these sites. Archaeological monitoring, recording, investigation, interpretation, and reporting could partially mitigate the effects of the proposed redevelopment works on some archaeological site types.

Table 11-1. Sites within or potentially affected by the development of the former Pegasus Golf Course.

NZAA Site Id	Site Name	Site Location	Brief Description
M35/312		South boundary of Lot 210 DP 453895,	Borrow pits and associated garden soils, with two remaining borrow pits.
M35/159		South boundary of Lot 210 DP 453895,	Borrow pits and associated garden soils, largely modified.
M35/440	Taerutu Gully Pā	Lot 1 DP 595055, bounded by Taerutu Gully	Early wetland pā site, bounded on two sides by the Taerutu Gully, with a palisade defending the remaining portion. A canoe landing area was located along the north boundary, and numerous organic artefacts were recorded in the wetland and stream to the north, including remains of an eel weir.
n/a	-	-	Previously unrecorded historical occupation sites, middens, ovens, latrine areas, stone working areas, burials, and other sites.

On the basis of this assessment, I make the following recommendations:

1. **Further assessments:** Ngāi Tūāhuriri and the Kaiapoi Pā Trust should be consulted regarding the overall cultural aspects of the project, and should be involved early and often in the project, and given the ability to influence design.
2. **Protection of sites/features:** As a first principle, every practical effort must be made to avoid damage to any archaeological site, whether known, or discovered during any redevelopment of the site.
 - a. **Design:** the current designs exclude the area of the Taerutu Gully Pā, and the area to the north where further significant archaeological remains, including the partially in situ 'kainga' site and the wetland archaeological features, all of which form part of the area of the wāhi tapu Te Kohanga o Kaikai-a-Waro (list no. 9506). Any future adjustments to design should exclude these areas from development or excavation. No development or excavation that could encounter archaeological remains or alter the wetland context of the area should take place in the northeast of the development area north of the Taerutu Gully Pā, or along the Taerutu or Taranaki Streams.
 - b. **Design:** the current designs exclude the remaining borrow pits recorded as part of M35/312. Any future adjustments to design should continue to exclude these areas from development or excavation, and should include provisions to enhance the amenity values of the currently obscured and overgrown borrow pits.
3. **Authority application:** As the proposed works may affect previously recorded archaeological sites, including M35/312 and M35/440, and previously unrecorded archaeological sites, an archaeological

authority under Section 44 of the HNZPTA 2014 or the FTA Act 2024 must be obtained prior to any modification of any archaeological site.

- a. If development plans are altered from those reviewed for this assessment (Appendix A), then UOA must be alerted, as any changes may alter the outcome of this assessment

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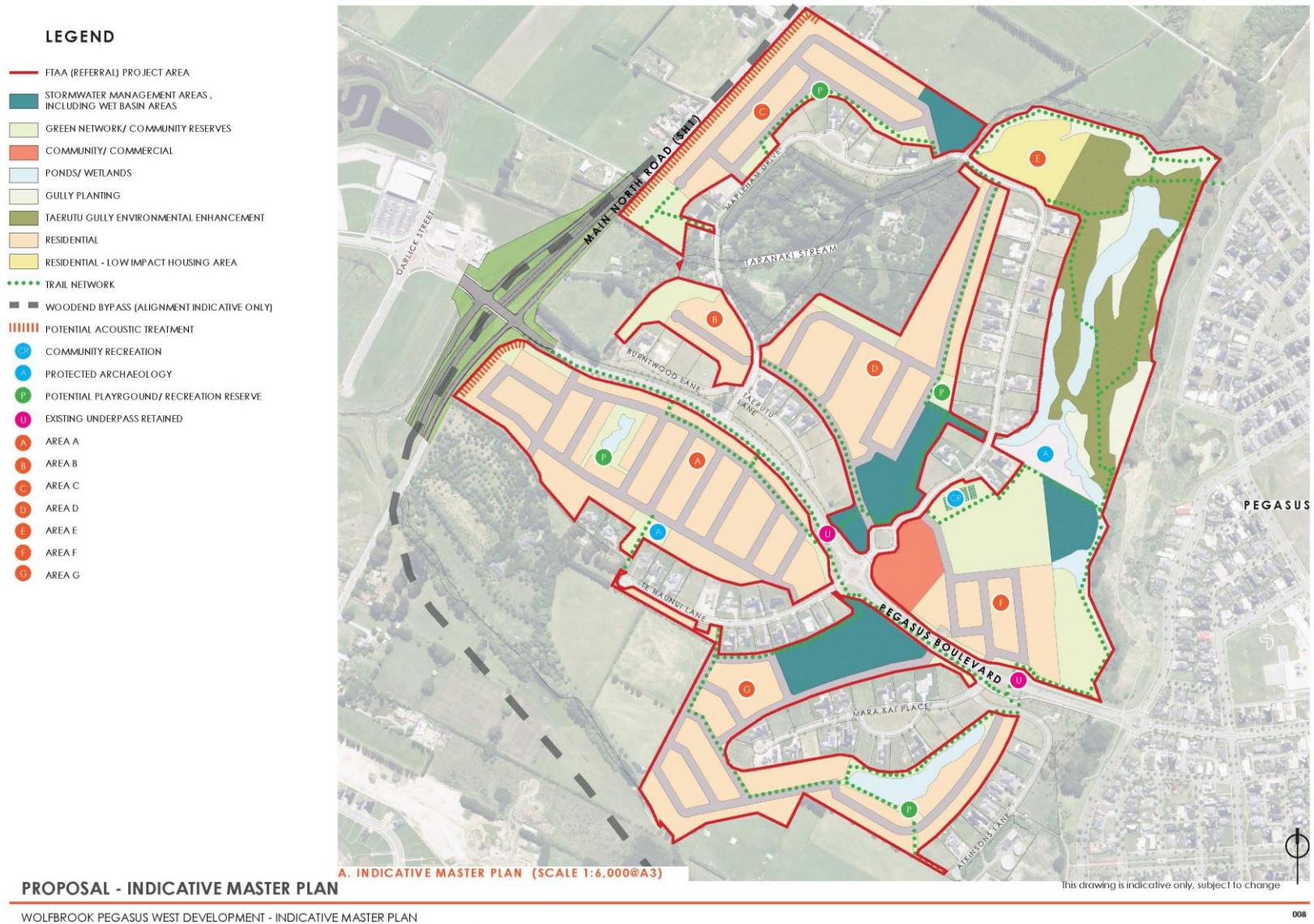
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Appendix A Development plans



Appendix B Site record forms

List of site record forms attached for sites that will be affected by the proposed works.

NZAA Site Id	Site Name	Site Location	Brief Description
M35/312		South boundary of Lot 210 DP 453895	Borrow pits and associated garden soils, with two remaining borrow pits.
M35/159		South boundary of Lot 210 DP 453895	Borrow pits and associated garden soils, largely modified.
M35/440	Taerutu Gully Pā	Lot 1 DP 595055, bounded by Taerutu Gully	Early wetland pā site, bounded on two sides by the Taerutu Gully, with a palisade defending the remaining portion. A canoe landing area was located along the north boundary, and numerous organic artefacts were recorded in the wetland and stream to the north, including remains of an eel weir.



Site Record Form

NZAA Site Number: M35/159

Imperial Site Number:

Site Type: Maori horticulture

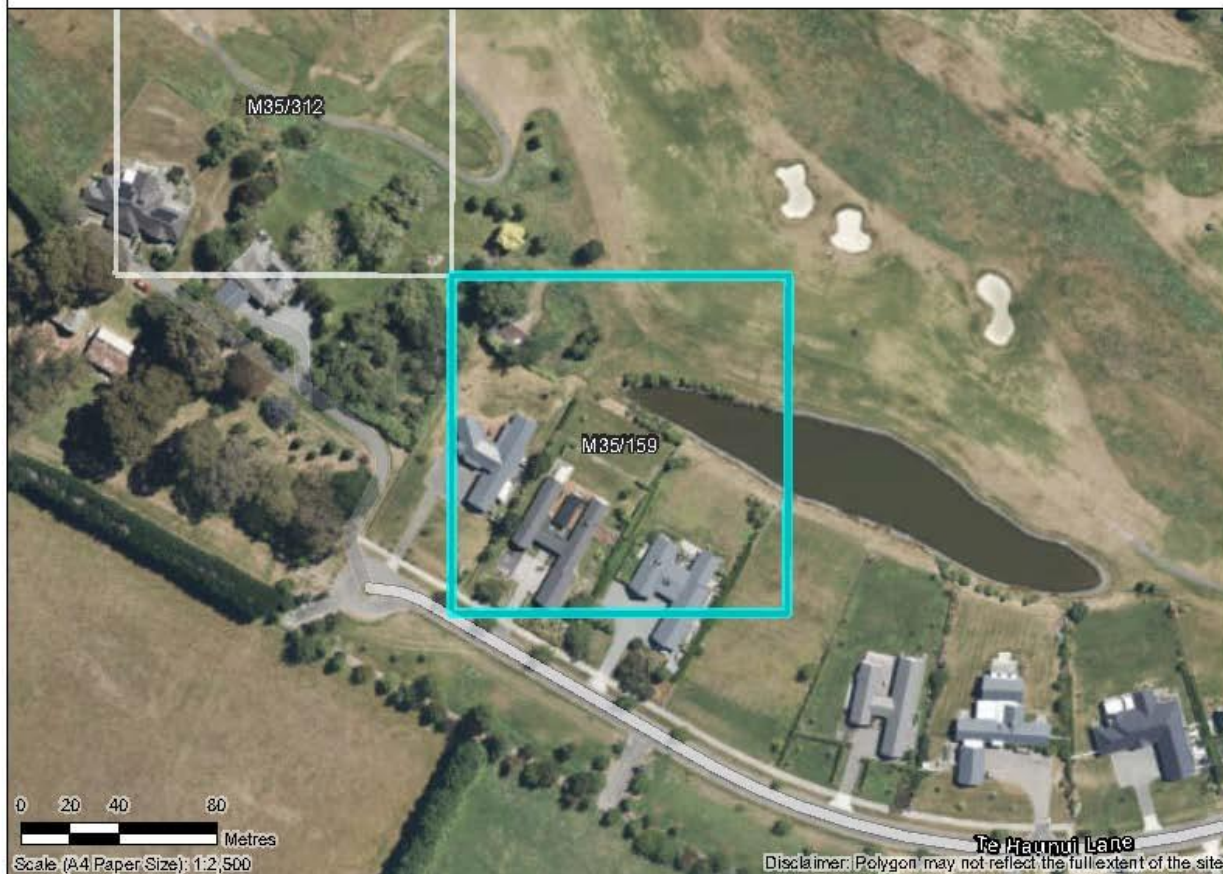
Site Name(s):

Site Coordinates (NZTM)

Easting: 1573848

Northing: 5204329

Source: CINZAS



Finding Aids to the Location of the Site:

Brief Description:

BORROW PITS

Condition of Site when last visited:

No Recent Info

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION INCORPORATED

Site Periods:

Ethnicity:

Maori

Site Features:

Borrow pit

Associated Sites:

Description:

Updated 11/12/2025 by ArchSite.

Grid reference changed from (E1573798 / N5204279) to centroid of site polygon (E1573848 / N5204329).

Condition Notes:

Date Report Created: 22/06/2026

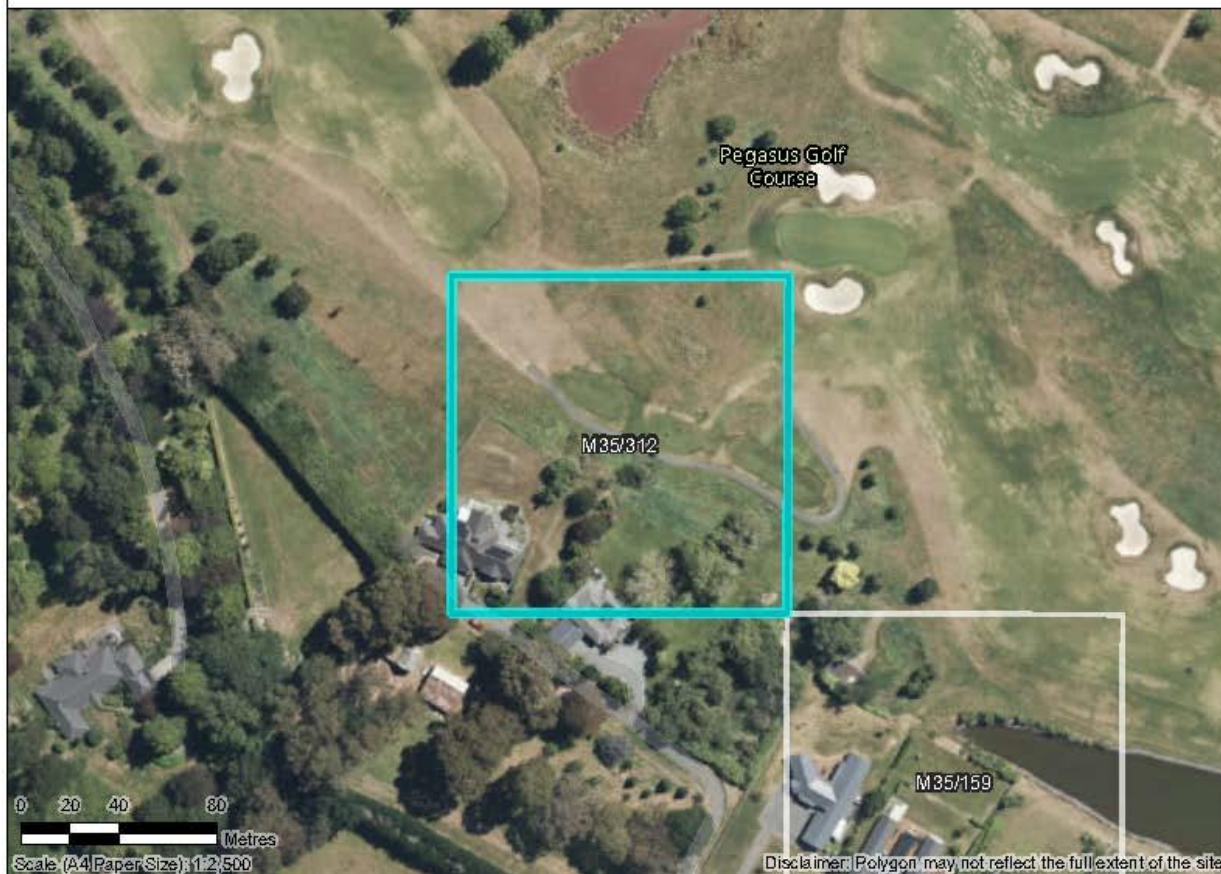
NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION SITE RECORD FORM NZMS260 map number M35 NZMS260 map name CHRISTCHURCH NZMS260 map edition 1 st 1984		NZAA METRIC SITE NUMBER M35/159 DATE VISITED 1998-2001 SITE TYPE BORROW PITS SITE NAME: MAORI OTHER	
Grid Reference Easting 24 8 3 8		Northing 57 6 5 9	
1. Aids to relocation of site (attach a sketch map) Woodend. Site 'A' in Walton (1985) where I assumed that it was the same site as that recorded by Trotter as S76/150. Trotter & McCulloch (n.d.), however, list it a separate site (see also notes below).			
2. State of site and possible future damage Ploughed, i.e. the slopes of the sides are much reduced (M.Trotter pers.comm. 19/5/2001).			
3. Description of site (Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here) Two large pits evident on aerial photographs. Largest is about 80 m long by 15 m wide. Site is briefly discussed in Walton (1985) and Trotter & McCulloch (n.d.). The latter source notes that "less than a hundred metres to the east [of S76/150] is Tony Walton's site 'A' which could have yielded another 500 to 600 cubic metres, judging from the 1942 aerial photograph (its present condition makes ground measurement impractical). Within 500 metres to the west is site M35/311, Tony's 'C', and the St Barnabas Church site."			
REFERENCES: TROTTER, Michael and Beverley McCulloch (n.d.). Once were borrowers. <i>Archaeology in New Zealand</i> forthcoming WALTON, Tony, 1985. The distribution and extent of quarry pits near Kaiapoi, Canterbury. <i>New Zealand Archaeological Association Newsletter</i> , 28(2): 113-115.			
4. Owner Hugh Robinson Address "Ravenswood", Woodend		Tenant/Manager Address	
5. Nature of information (hearsay, brief or extended visit, etc.) Photographs (reference numbers and where they are held) Aerial photographs (reference numbers and clarity of site)		Aerial photos. M.Trotter pers.comm. 19/5/2001 RN120/51,52 (1942) shows clearly -	
6. Reported by A. Walton Address Department of Conservation 9 August 2001		Filekeeper C. Jacobs Date 10/1/02	
7. Department of Conservation (for office use)			
C Z Type of site A E Land classification		B B Condition/threat S V Local body	



Site Record Form

NZAA Site Number: M35/312
Imperial Site Number: S76/150
Site Type: Maori horticulture
Site Name(s):

Site Coordinates (NZTM)
Easting: 1573748
Northing: 5204429
Source: CINZAS



Finding Aids to the Location of the Site:

Brief Description:

GRAVEL PITS

Condition of Site when last visited:

No Recent Info

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION INCORPORATED

Site Periods:

Ethnicity:

Maori

Site Features:

Borrow pit

Associated Sites:

Description:

Updated 11/12/2025 by ArchSite.

Grid reference changed from (E1573698 / N5204379) to centroid of site polygon (E1573748 / N5204429).

Condition Notes:

Date Report Created: 22/06/2026

S76/150

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION SITE RECORD FORM (NZMS 260) ADDITIONAL INFORMATION	SITE NUMBER M35/312 BORROW PITS, RAVENSWOOD
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The sketch is a hand-drawn site plan. On the left, a vertical line represents a 'HOUSE'. To its right is a large, irregular area labeled 'SHEEP YARDS'. Within the sheep yards, there are two oval shapes labeled 'stone heap'. Below the house, a dashed circle is labeled 'Pit filled in'. A north arrow points upwards, labeled 'NORTH'. The text 'Sketch not to scale' is written in the bottom right corner of the sketch area.

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION SITE RECORD FORM		NZAA SITE NUMBER M35/312 [S76/150] DATE VISITED .08.1980 SITE TYPE BORROW P[ITS SITE NAME 'Ravenswood'
NZMS 260 Map Number M35 NZMS 260 Map Name CHRISTCHURCH NZMS 260 Map Edition 1984		
Grid Reference Easting 24 837 00 Northing 57 660 00 [M35/837 660]		
1. Location Follow the side road to the farm yard which has been established round the pits opposite house. On 'Ravenswood' property beyond Woodend.		
2. State Some damage, one filled in		
3. Description There are two gravel pits and one pile of large stones presumably sorted out from finer gravel that was mined for addition to soil. Farm buildings and a concrete slab are in one pit; doubtless there is some modification to the sides. Note: a plan should be made of the pits and the area of spread gravel in the paddock to the north (and possibly elsewhere) confirmed. Update, May 2001: Northernmost pit is oval, 30 x 16 metres, the other is 45 x 25 metres at its widest. The latter has a large heap of stones in its centre, and a smaller heap near its western edge. Farm buildings and trees in both pits. There was also another pit, now filled in, immediately south of this pair, size probably about 17 x 22 metres. Sketch plan made of pits. These pits are not visible on early aerial photographs because of tree cover. Trotter & McCulloch.		
4. Owner Mr H Ivan Robinson Address 'Ravenswood', KAIAPOI		
5. Nature of Information Reported/inspected Photographs Aerials		
6. Reported by Michael M Trotter Filekeeper Sally E Burrage Address Canterbury Museum Date 19.01.1982		
7. Department of Conservation (for office use) ☐ Type of site ☐ Condition / threat ☐ Land classification ☐ Local body		

Printed: 14 June 2001

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION		NZAA NZMS 1 SITE NUMBER S76/150	
SITE RECORD FORM (NZMS1)		DATE VISITED August 1980	
NZMS 1 map number S76		SITE TYPE Gravel pits.	
NZMS 1 map name Kaiapoi		SITE NAME: MAORI "Ravenswood"	
NZMS 1 map edition 4th 1977		OTHER Kaiapoi	
Grid Reference		Easting	6 0 4 4 0 0
		Northing	5 8 2 6 0 0
1. Aids to relocation of site (<i>attach a sketch map</i>)			
Follow the side road to the farm yard which has been established round the pits. On "Ravenswood" beyond Woodend.			
2. State of site and possible future damage Farm buildings and a concrete slab are in one pit; doubtless there is some modification to the sides.			
3. Description of site (<i>Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here</i>) There are two gravel pits and one pile of large stones presumably sorted out from finer gravel that was mined for addition to soil. Note. A plan should be made of the pits and the area of spread gravel in the paddock to the north (and possibly elsewhere) confirmed.			
4. Owner Address		Tenant/Manager Address	
Mr H. Ivan Robinson "Ravenswood" Kaiapoi			
5. Nature of information (<i>hearsay, brief or extended visit, etc.</i>) Reported and inspected			
Photographs (<i>reference numbers, and where they are held</i>)			
Aerial photographs (<i>reference numbers, and clarity of site</i>)			
6. Reported by Address		Filekeeper Date	
M.M. Trotter Canterbury Museum		S.E. Burrage 19/1/82	
7. Key words Gravel pits.			
8. New Zealand Register of Archaeological Sites (<i>for office use</i>)			
NZHPT Site Field Code			
C Z			
AA Type of site		B B Present condition and future danger of destruction	
- - Local environment today		A A Security code	
A C Land classification		G D Local body	



Site Record Form

NZAA Site Number: M35/440
 Imperial Site Number:
 Site Type: Pa
 Site Name(s): Tairutu Gully pa

Site Coordinates (NZTM)
 Easting: 1574510
 Northing: 5204521
 Source: Handheld GPS



Finding Aids to the Location of the Site:

Site is in Pegasus Town golf course, north of Woodend. It is about 200m north-east of the golf club house, against a dune ridge and by a creek channel and lake. It is being prepared as a feature of interest on the golf course.

Brief Description:

Pa site, defined by a row of palisade post holes (50 m long), two side channels and the Tairutu Gully channel. The pa is about 50 x 50 m and has no ditch and bank. One of the side gully channels produced a large wet wood assemblage.

Condition of Site when last visited:

Below surface

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION INCORPORATED

Site Periods:

Indigenous pre-1769

Ethnicity:

Maori

Site Features:

Artefact - adze, Artefact - cache, Artefact - stone flakes, Artefact - wooden, Burial, Canoe landing, Midden, Ovenstones, Post hole, Skeletal remains, Working area/ flaking floor

Associated Sites:

Description:

Updated: 08/03/2010, Visited: 25/01/2007 - NZTM E1574510 / N5204521 (Handheld GPS). The site was found during of earthworks in 2007. Salvage excavations were finished in 2009. In addition to the palisade post holes, the pa had post hole patterns indicating houses, storage platforms and fences. Midden deposits were on the north-east side channel slope, including a variety of mollusc and vertebrate species. Approximately 3000 pieces of greenstone and 60 greenstone adze/chisels were recovered from the site, indicating workshops for flint and greenstone. A range of other stone materials and tools were found, also worked bone. About 200 pieces of wet wood from the side channel are being preserved, including artefacts and by-products. Also in the side channel was a canoe landing using log rollers. Five burials were found. The site has not yet been dated but is expected to be about 500 years old. Inspected by: Witter, Dan.

Condition Notes:

Updated: 09/03/2010, Visited: 25/01/2007 - About half the pa remains unexcavated and has been capped with about half a metre of fill for preservation. The side channel has been dug out as a lake.