

Excavation and survey of the Ara Metua (*Ara Nui o Toi*) and related sites at Arai te Tonga

Preliminary Report June 2019



Cook Islands Tangible Cultural Heritage (CITCH) 2019 Report 3

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1. Introduction

In 2017 a four year project was initiated to investigate the Ara Metua, the famed ancient Polynesian road that encircles the island of Rarotonga. Although circuit roads are known on other Polynesian islands, e.g. Hawai'i (Mills 2002), what serves to make the Ara Metua outstanding is the reputed nature and scale of construction. S. Percy Smith describes the road as being 'about 22 or 23 miles in length, and for about two thirds of its length is paved with flat volcanic or corals stones' (1903, 218). At several places along its length, 'at the sites of the old villages (or *oire*) are to be seen the stone seats' (ibid.). Stephen Savage, who lived on the island between 1894 -1941, describes the *ara-nui-o-Toi* as being 'originally paved with stones the whole of its length' (1961, 37). In the *Material Culture of the Cook Islands* Te Rangi Hiroa (Peter H. Buck) gives a more detailed description:

In the neighbourhood of the villages the road is completely paved, with a raised edge of larger stones at both sides and flatter stones between. It is after the style of a cobbled road, except that the stones are not cut to fit against one another. In some places the stones have been removed for other purposes, but in spite of this a considerable portion of the stonework is intact, though overgrown with vegetation.

Any part where the soil was wet was paved. Hollows and depressions were filled in and the road raised over them. Culverts were built by making two walls and laying flat stones over the top. At some points cobbled roads lead back to the house site of some important chief or priest (1927, 211).

There are several factors to consider here, first, these accounts provide a slightly divergent descriptions of the architecture and constitution of the Ara Metua. Second, the construction date of the Ara Metua is uncertain. For instance, the road has been discussed as a materialization of the route of a founding ancestor Tangi'ia Nui as he travelled around the island establishing *marae* and their guardians in a process of land subdivision (Campbell 2006, 103). The relationship between the road and Tangi'ia Nui is ambiguous as other authors, drawing on the alternative name *Ara nui a Toi*, have posited an earlier date of construction (e.g. Parker 1974, 67). However, the earliest account or description was by S. Percy Smith and based upon his visit to Rarotonga in 1897 and is therefore little more than one hundred years old.

Consequently, we possess little idea of the absolute chronology of the Ara Metua or its material constitution and imagery in its earlier forms, nor whether it was originally

constructed in a similar and consistent manner around the island (or whether there was ever an entire circuit – see report for 2018).

As the Ara Metua provided a formalised route around the island, it also structured movement and encounter, and as a monument its construction would provide a resource or mechanism for exhibiting status and authority. For instance, was the road elaborated and enhanced when approaching and passing important sites such as *Koutou* and *Marae*? Did different social groups employ constructional variation as an index of social position and was road-building an arena of social competition?

In order to explore some of these issues, a number of objectives determined the overall project fieldwork:

1. to assess its current state of preservation of the Ara Metua and associated structures (especially in relation to previous archaeological surveys)
2. where possible to investigate the architecture of the Ara Metua and how this may have varied around the island circuit
3. to examine the relationship of the road to marae complexes, particularly Arai te Tonga.
4. to examine the biography of construction and if possible provide a chronology for the Ara Metua.

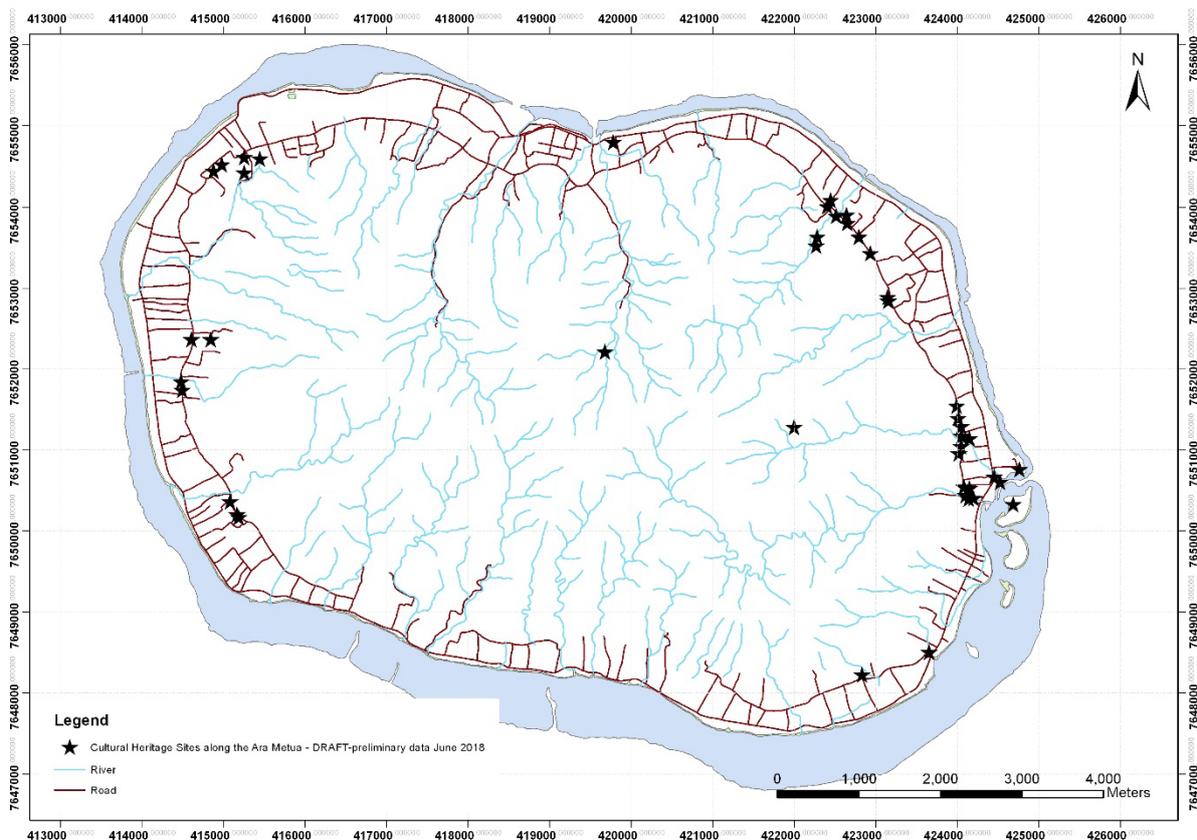


Figure 1. The circuit of the Ara Metua in Rarotonga (stars mark the previously-recorded associated sites and stretches of extant kerbing).

2. The Ara Metua at Arai te Tonga

In 2018 a 2m x 6m trench was excavated across the Ara Metua (Fig. 2), slightly to the west of Arai te Tonga (see report for 2018). The stratigraphy revealed the presence of three superimposed road surfaces.

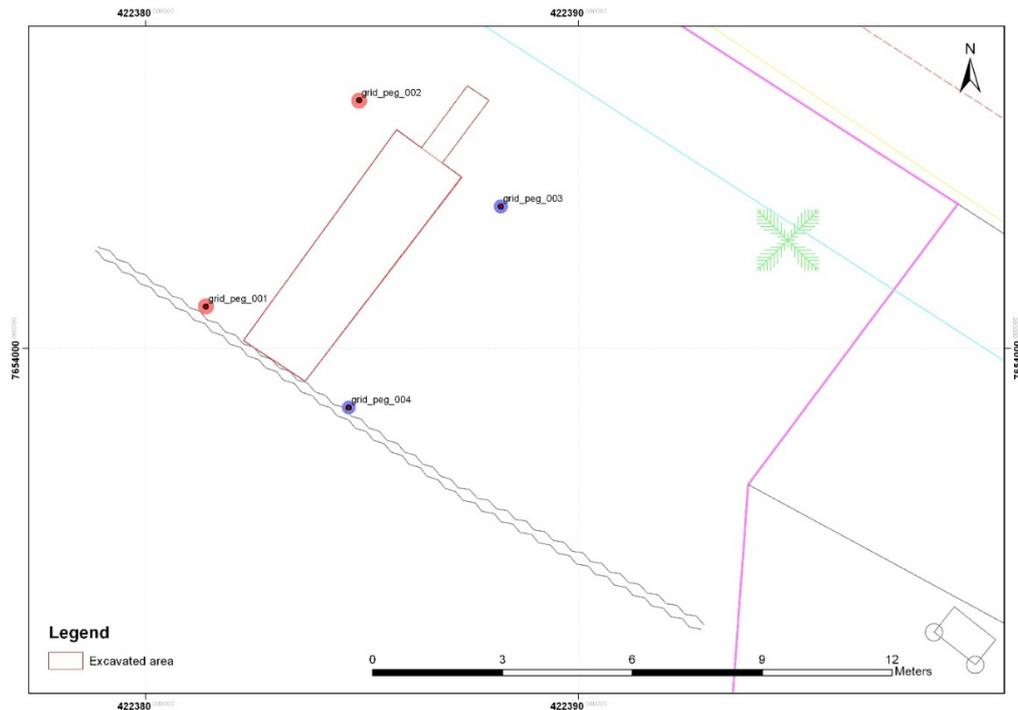


Figure 2. Location of the 2018-19 excavation trench at Arai te Tonga.

In its final form, the road was c. 4m wide and surfaced by a hard and compressed combination of basalt and coral lumps. This hard final road surface can be attributed to the requirements of greater traffic, particularly the introduction of motorised vehicles in the 1950s and 1960s (Fig. 3).



Figure 3. The upper metallated surface of the Ara Metua at Arai te Tonga.

Beneath this an earlier road was revealed as represented by the thick foundation/make-up deposit [024]. This served to elevate the road and emphasise its hard packed surface of coral pebbles and blocks (Fig. 4). Certainly, as it passed Arai te Tonga, the Ara Metua appears to have been kerbed along its northern edge by basalt uprights, of which unfortunately only a single example was found *in situ*. In this form the Ara Metua must have been a truly spectacular construction displaying a white coral surface with black basalt kerbing. It is almost certainly this phase of the Ara Metua that was seen and described by Percy Smith (1903) in the 1890s, and Te Rangi Hiroa in the 1920s. As revealed by excavation, this surface had suffered considerable wear which indicates a relatively long life, consequently we can be confident that it stood in this form over a substantial period of time, and may have been quite old when seen by Smith in the 1890s. Judging from the photograph taken by Buck in the 1920s, the road surface at the adjacent *marae* of ‘Are Rangi, had become covered by soil (see Fig. 6).



Figure 4. Secondary rammed coral road surface of the Ara Metua, which was probably that seen by S. Percy Smith in 1898.

The earliest Ara Metua was defined along its edges by a raised heap or low bank of *kiri-kiri* [027], which also served as a form of kerbing. The profile of the original road was slightly concave, a feature paralleling the profile of the *Ara Moai* on Rapa Nui. The duration of the initial Ara Metua is difficult to know, suffice to note it had been resurfaced at least once by laying a deposit of small chunks and chips of basalt and coral. The original *Ara Metua* was built directly on an old turf-line by laying a c. 6cm thick spread of *kiri-kiri*.

The 2019 fieldwork examined the deposits beneath the earliest road surface [026]. The deposit [036] was excavated to a depth of c. 90cm, its constitution was fairly homogenous being of silty texture and red-brown in colour (a micromorphological soil column for subsequent analysis was taken). However, the upper soil profile contained charcoal flecks and fragments demonstrating anthropogenic activity. Consequently, activities involving burning had already occurred before the Ara Metua was built (see next section). At a depth of c. 25cm (Spit 5 of [036]) the skeleton of an animal, was encountered (Fig. 5). Beyond a depth of c. 55cm the charcoal flecking ceased and the soil profile appeared to become ‘sterile’.



Figure 5. The animal skeleton in deposit [036].

3. Paepae ‘Are Rangi (RAR34)

Paepae ‘Are Rangi is located c.100 m south east along the Ara Metua from Arai te Tonga and runs inland from the road. It was first described in the literature by S. Percy Smith, who visited the site in 1897. He describe it as “where the *ariki* or high chief (some member of the Makea family) usually lived. This is a platform about two feet above the level of the road, the face of which is lined with stone seats having backs to them...” (Smith 1903, 219). The ‘Are Kariei (“house of entertainment”) was directly opposite ‘Are Rangi. Smith’s rather rudimentary sketch of the site, which is clearly not to scale, implies that the *ariki*’s house was close behind the stone seats that fronted the road, which at this point was 16 feet (4.8 m) wide.

The next description of the site is by Te Rangi Hiroa (Peter H. Buck) from 1926. He describes, and his photograph (Hiroa 1927, 212, Figure 185) illustrates:

In the foreground is the curb of the Great Road [Te Ara-nui-o-Toi, or the Great Road of To'i, the Ara Metua], which makes a step. The back of this is lined with coral slabs, toka-a-punga. Behind that again is the surface of the branch road which leads back to the house known as Harerangi. On the left and right are large stones used as seats.

In Percy Smith's description of Arai-te-tonga, he erroneously described this junction as a row of seats, whereas it formed a step up on to the side road, which was at a higher level, though it could be used as a seat.

Unless the site had been considerably re-worked between Smith's and Hiroa's visits (which seems unlikely), Hiroa's description is more accurate and accords with the site as it is currently visible (Fig. 6).



Figure 6. Paepae 'Are Rangi where it fronted the Ara Metua in 1926 (Hiroa 1927, Figure 185).

The site was described in greater detail by The Canterbury Museum expedition of 1962-64 under the directorship of Roger Duff (Duff and Duff 1974, 41-43):

The junction of the pathway with the Ara Metua is well preserved and was originally in the form of two steps. The first, formed by the basalt kerbing of the road probably was about three inches (7.5cm) high, but present day road metal has almost buried it. The second, of about six inches (15cm)

height is the end of the pathway: a line of rectangular basalt blocks faced with coral slabs and flanked by two large rectangular basalt blocks...

The pathway, which has a kerbing of regular basalt stones... is twelve feet (3.6m) wide at the portal and tapers to eight feet (2.4m)... a distance of sixty-eight feet (20m). The paving, in many parts disrupted by pigs, is an apparently random arrangement of coral and basalt slabs.

They noted that the platform at the rear of the path, that forms the cross of the “T”, was largely incomplete but may have measured as wide as 19.5 m. They mapped the site quite carefully (Fig. 7) and opened up ten excavation trenches across and adjacent to the paepae, mostly 6 x 6 feet. The description of the investigations is quite short and in places unclear, but suggests that the rear platform at least was a historic period construction, or reconstruction, as burnt coral lime, a post-missionary introduction, was found beneath the paving. Large, deep postholes that were interpreted as having originally contained posts about 25 cm in diameter that had been removed by digging a hole next them. These postholes were filled with blocks of burnt coral lime. The path from the road to the platform (the stem of the “T”) overlay a charcoal soil layer (though disturbed by pig rooting) that was interpreted as being the same as Layer 8 from the adjacent ‘Are Kariei excavations (Wilkes 1974, 49-50, Figure 14, not further discussed in this report), so that ‘Are Rangi postdates the ‘Are Kariei in construction. The path was interpreted as being constructed earlier than the platform (Wilkes 1974, 52).

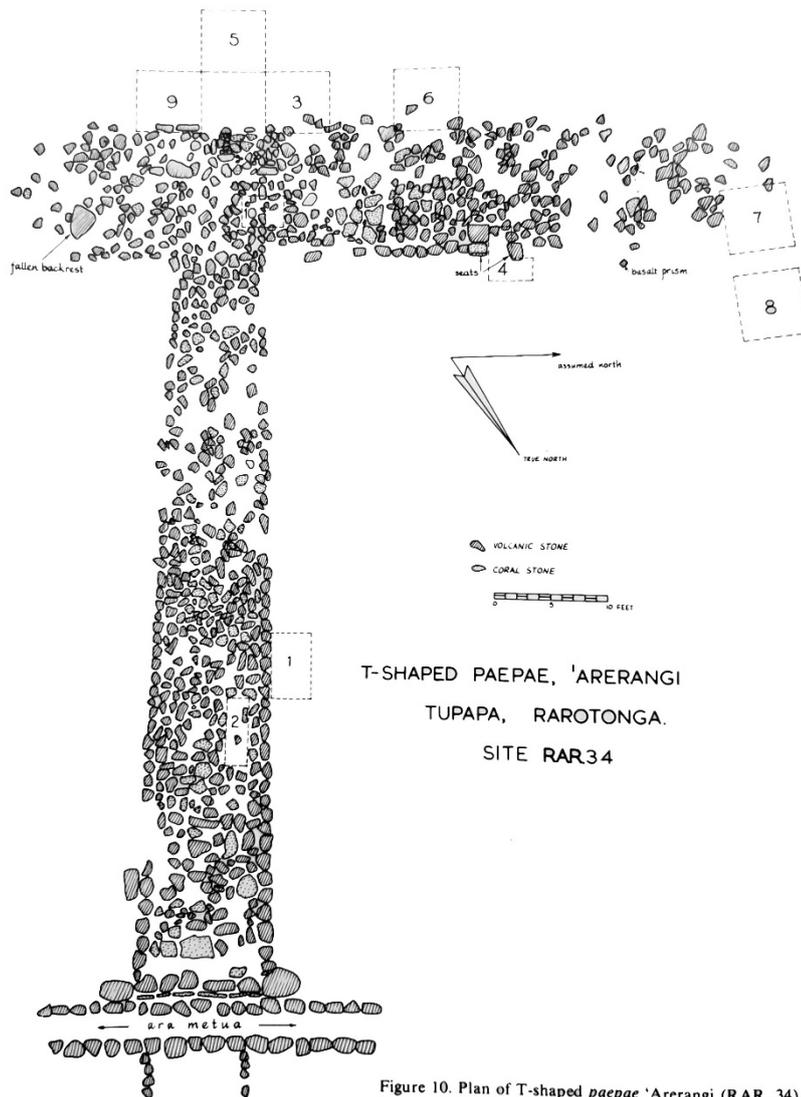


Figure 10. Plan of T-shaped *paepae* 'Arerangi (RAR. 34).

Figure 7. The Canterbury Museum plan of 'Are Rangi. (Duff and Duff 1974, Figure 10).

From the description it appears that pathway of 'Are Rangi, in its final phase, was a late pre-missionary construction with the platform, or certainly a substantial building behind it, a post-missionary construction. This does not, however, rule out that the site may have been constructed, reconstructed and elaborated for some time prior to arriving at its final, current (though disturbed) form.

3.1 The 2019 investigation of 'Are Rangi

Since being recorded by the Canterbury Museum expedition, 'Are Rangi had become overgrown with trees and vines and was no longer clearly visible – local informants told us that, while they were well acquainted with Ari te Tonga, many were unaware of the presence of 'Are Rangi. The site was initially cleared by a prison work gang, with weeding and clearance completed by the archaeologists. Once exposed, some changes in layout and condition were evident. The pavement was even more disturbed by vegetation growth and pig rooting than recorded by the Canterbury Museum expedition, which indicates the possibility that it may originally have been more regularly and evenly laid. The eastern arm of the platform has now been almost entirely destroyed through cultivation. A fallen seat back recorded in this area has been moved to the pathway close to the road (Fig. 8) (for a more recent investiture ceremony). Duff and Duff (1974, 41, Figure 10) record that the pathway narrowed from a width 3.6 m at the road to 2.4 m inland, but this is not currently evident. There is no clear evidence of the path being reconstructed as the kerbing remains *in situ* and in good condition. This discrepancy is not easily explained.

A seat with a coral back and dished basalt seat remains *in situ* on the eastern arm of the platform, as described by Duff and Duff (1974: 43). Next to this is another probable seat and several large stones scattered across the surface of the platform may also be fallen seats. Most of the stone on both the pathway and the platform is a moderately coarse, vesicular dark-grey basalt, which is presumably from a local source, but one piece was observed that was a fine-grained light-grey basalt, with a smooth surface and some evidence of deliberate shaping in the form of flake scars around the edge. This was presumably brought in site from elsewhere on the island.



Figure 8. Fallen seat originally recorded by Duff and Duff (1974: Figure 10) on the now destroyed eastern arm of the platform, now located on the pathway close to the road.



Figure 9. Aerial view of ‘Are Rangi following clearance and excavation.

Adjacent to the Ara Metua, the pavement of the pathway is made of more substantial basalt and coral stones that remain *in situ*. A 4 x 4 m excavation trench was opened above the road at the front of the paepae and excavated down as far as the kerbing. This trench was as wide as the front of the paepae and extended across the width of the road to encompass one of the stone lines that joined the ‘Are Kariei to the road (Wilkes 1974, Figure 14).

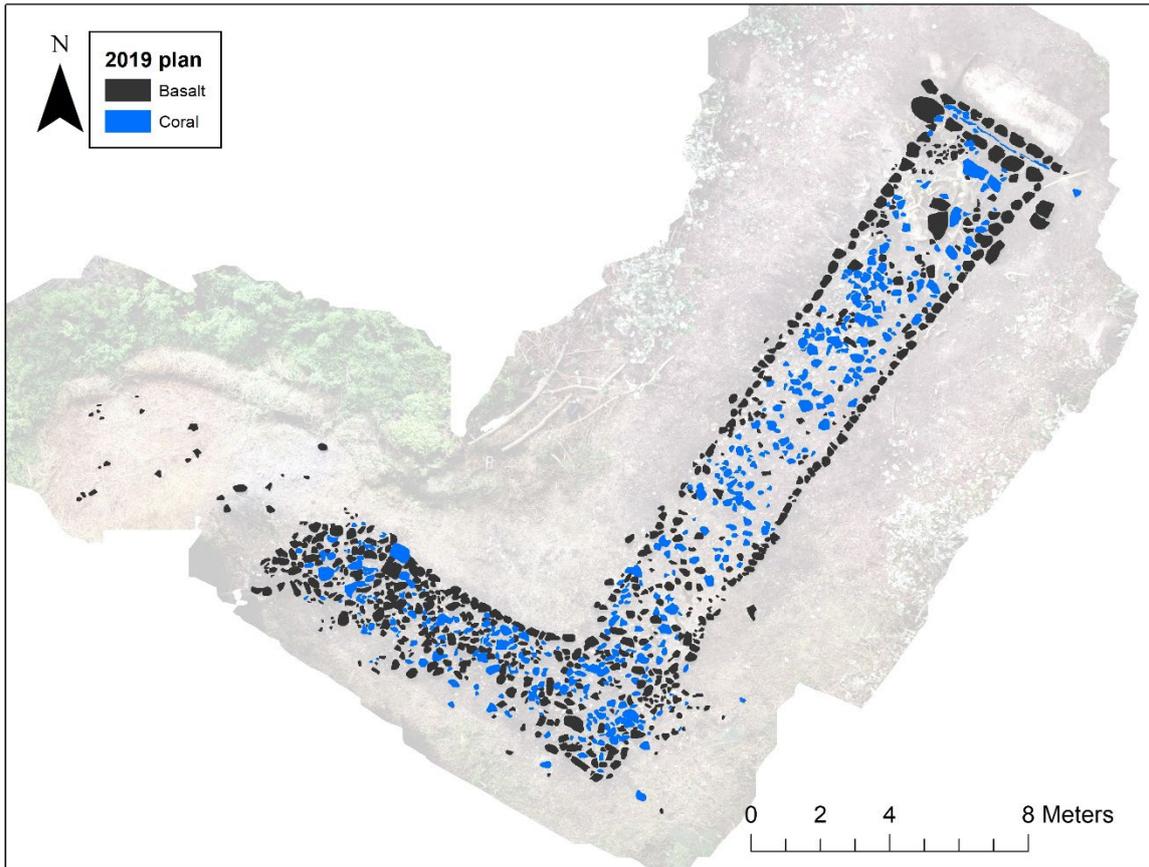


Figure 10. Plan of ‘Are Rangi (basalt in black – coral in blue).

The upper deposit was a mix of topsoil and compacted basalt gravel road surface [100], generally 70-100 mm thick, while beneath this was a white beach sand containing coral gravel and fragments [101], generally 50-100 mm thick. Duff and Duff’s (1974: Figure 11) illustration of the roadside profile of ‘Are Rangi shows the basalt kerb [104] just visible (Fig. 11), but the upper road deposits ran over the kerb and up over the coral uprights [105] behind them, indicating that these represented a late 20th century road episode of road-surfacing, post-dating the Canterbury Museum expedition.

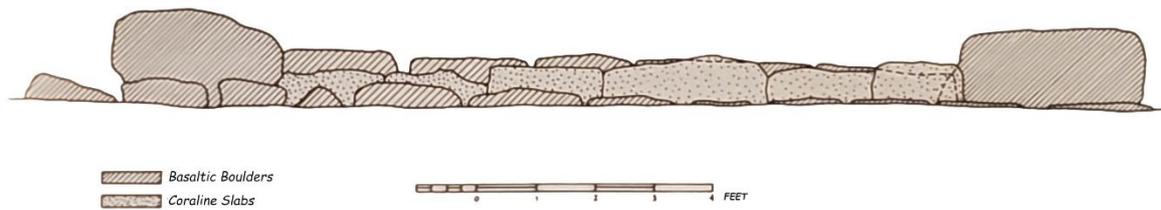


Figure 11. Road side profile of Are Rangi visible in the early 1960s (Duff and Duff 1974, Figure 11).



Figure 12. The front of ‘Are Rangi where it meets the landward kerb of the Ara Metua as revealed in 2019.

Beneath the post 1960s deposits was a compacted basalt gravel layer [109] that probably represented the road surface at the time of the Canterbury Museum expedition. It ran over the seaward and landward kerb stones to a depth of 30-50 mm. This deposit was only excavated sufficiently to reveal the kerb stones in plan and its full depth is unknown. Hiroa (1927, Figure 185) shows the road surface in 1926 approximately 200 mm lower than our excavation, so the lower layer can be interpreted as representing an early - mid-20th century road surface.

The front of the paepae (compare Fig’s 11 & 12), where it joins the landward road kerb, remains largely as shown by Hiroa (1927: Figure 185) and Duff and Duff (1974: Figure 11). Within the excavation trench 10 basalt stones forming the landward kerb [104] were exposed, measuring between 0.45 x 0.48m and 0.32 x 0.83m in plan. Tree roots have shifted some of these slightly out of place. Behind the kerb, the first element of the paepae is a line of six shaped coral uprights [105] (Fig. 12). Both Hiroa (1927) and Duff and Duff (1974) show that the western coral uprights are higher than the eastern uprights, and this remains the case. However, the westernmost upright has been disturbed out of position, probably by tree roots. Behind this line of coral uprights is a series of five large, carefully laid basalt paving slabs at the same or slightly higher level as the top of the coral. At either end of this line of basalt was a larger basalt boulder, but only the western boulder remains *in situ* [102] measuring 1m x 0.7 m x 0.35 m above ground level. The eastern boulder [103] has been disturbed and rests out of

position, and is now broken in two. The kerb of the paepae remains *in situ* but much of the paving has been disturbed and displaced.

The seaward kerb of the Ara Metua [107] was also exposed beneath the upper deposits where seven aligned basalt kerb stones were uncovered. These ranged in texture from fairly fine-grained to quite blocky basalt. The width of the Ara Metua between the two lines of kerbing was quite narrow in being 2.1m. Percy Smith (1903, 219) described the road at this point as being 16 feet (4.8 m) wide. Hiroa's illustration (1927, Figure 185) does not show the seaward kerb, while Duff and Duff's (1974, Figure 10) plan shows the road as being extremely narrow at this point, approximately 2 feet (0.6 m). These discrepancies are not easily accounted for, although it seems that Duff and Duff have made no attempt at accuracy with regards to the width of the road. Nonetheless, the kerb stones they illustrate are the same as those exposed in 2019 (Fig. 13).



Figure 13. Aerial view of the Ara Metua at 'Are Rangi, note the *in situ* basalt kerbing to both sides.

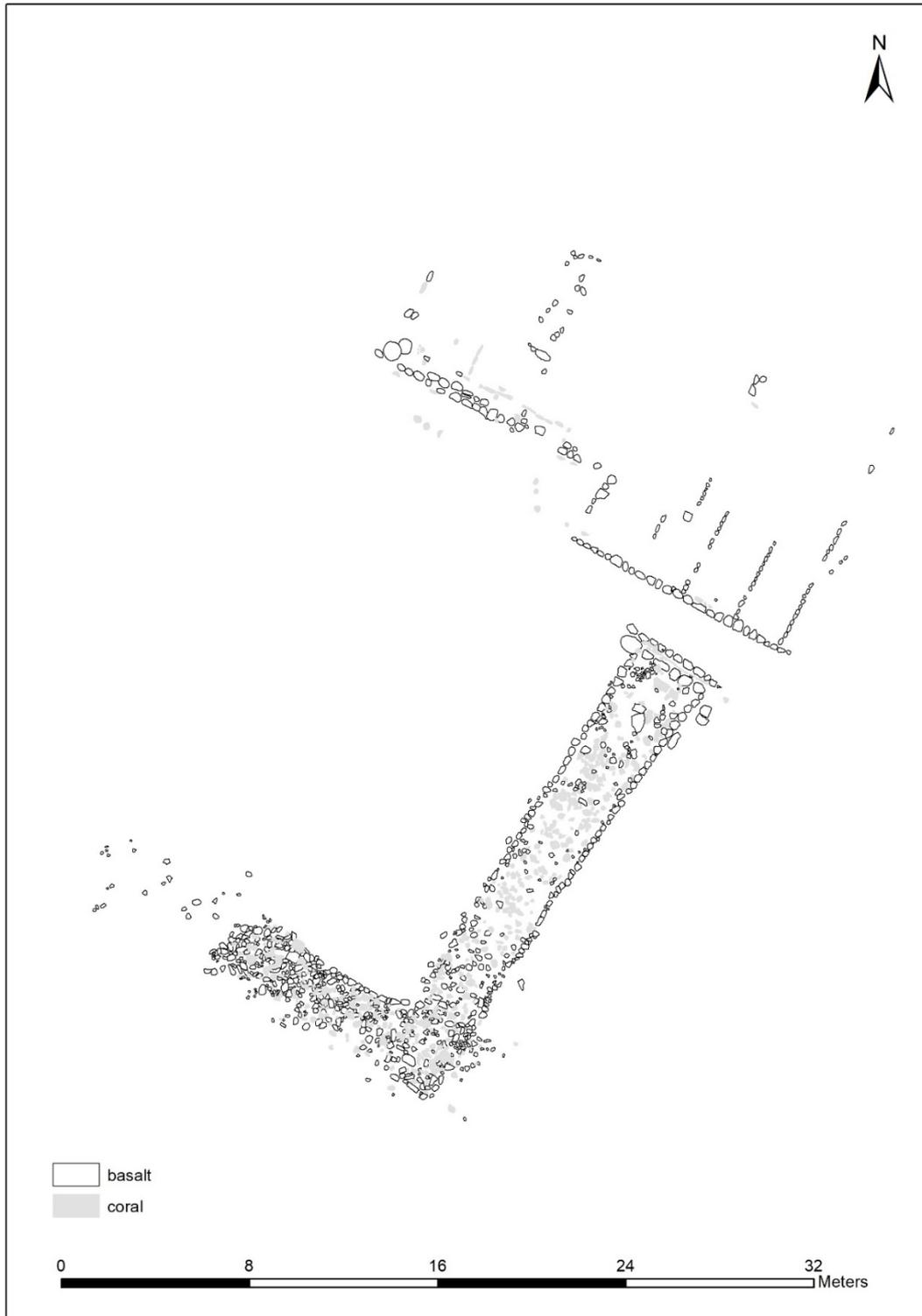


Figure 14. Composite plan showing the spatial relations between 'Are Rangi and 'Are Kariei as illustrated individually by Wilkes (1974).

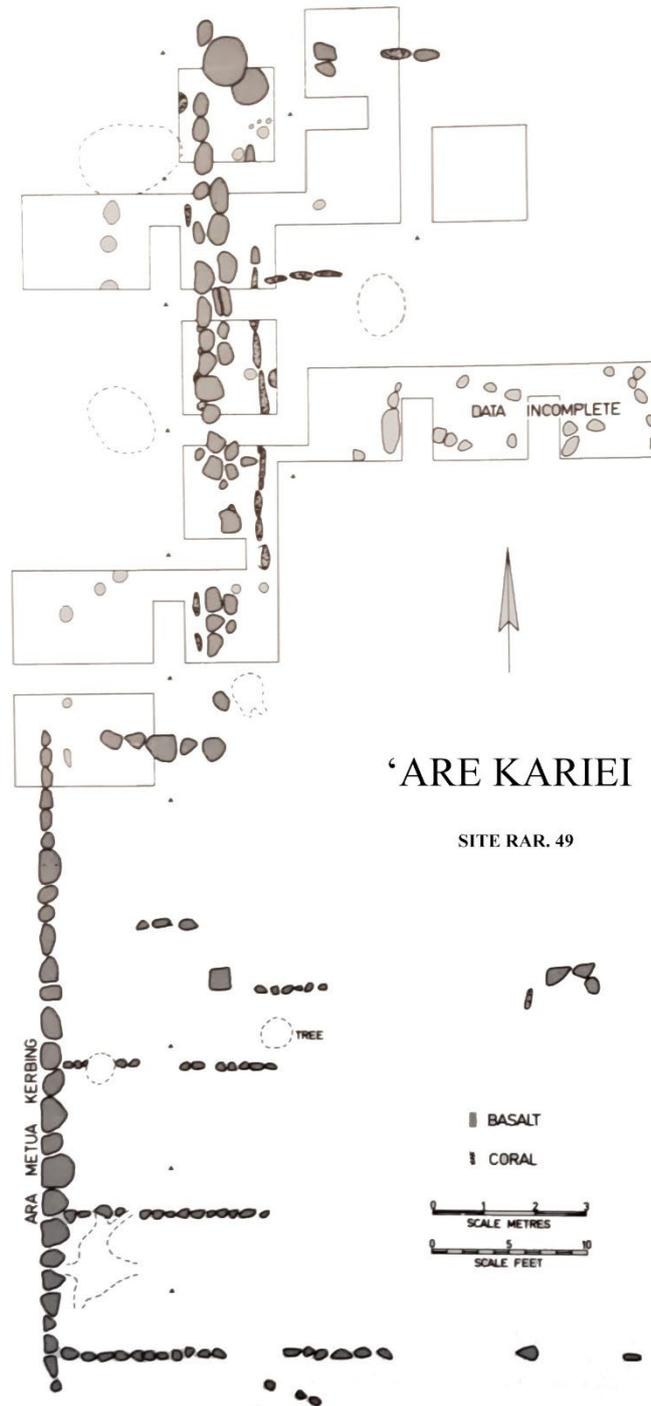


Figure 15. Detail of plan of 'Are Kariei as illustrated by Wilkes (1974, Figure 14).

3.2 ‘Are Kariei or House of Amusement

On the seaward side of ‘Are Rangi was another element of the Arai te onga complex, ‘Are Kariei, known as the ‘house of amusement’ (Smith 1903, 219) (Fig. 14). In the 1960s the Canterbury expedition were able to both identify ‘Are Kariei, and create a detailed plan which also identified the location of a number of excavation trenches (Fig. 15).

When survey work began in 2019 it was assumed that this building had been completely destroyed by the construction of the modern 1980s road which runs c. 3m to the north of the Ara Metua. However, during clearing of the northern kerb, a line of basalt stones running seaward from the old road were uncovered that mirrored those illustrated by Duff and Duff (see Fig. 5). A second line of three stones to the east were also exposed. A comparison of this plan with Wilkes 1974, Figure 1, (Fig 13) shows that these are remnants of the ‘Are Kariei, and consequently its front section remains to the south of the modern road.. Two more of these stone lines were also relocated, along with the large basalt ‘sacrifice’ stone, which had clearly been moved out of position since it was recorded by Wilkes. Further investigations at the ‘Are Kariei will form part of next year’s fieldwork in 2020.

Despite some discrepancies between the different records of the sites forming the east of the Arai te Tonga complex that have been made since 1897 (Smith 1903; Hiroa 1927; Duff and Duff 1974), together with recent road construction, the level of survival is remarkably high.

For example, Paepae ‘Are Rangi remains much as it was at the time it ceased to be used, probably at some stage in the 19th century. The eastern arm of the platform, and to a lesser extent the paving across most of the pathway and platform, are disturbed, but the kerbing of the pathway and the seaward side of the western arm of the platform remain largely intact (as recorded by Duff and Duff 1974), while one seat remains in situ and other probable fallen seats can be seen across the site. Where the paepae fronts the Ara Metua the site remains in very good condition, with the basalt kerbing, coral uprights and initial row of basalt paving all largely in place. The seaward kerb of the Ara Metua also remains in good condition. We only uncovered the uppermost road-surface which suggests the level of the road observed by Hiroa (1927: Figure 185) is protected and intact. Hiroa (1927: 211) states that the road was completely paved near villages, and this is probably the case also for the Arai Te Tonga complex. Equally, the frontage of ‘Are Kariei remains relatively intact despite its close proximity to the modern road.

3.3 Marae Pureora (RAR 33)

Approximately 20m inland from ‘Are Rangi is Marae Pureora. This site was mapped and briefly described by the Canterbury Museum expedition (Wilkes 1964: 52, Figure 16). There are four modern, probably 19th century, coral lime graves on the site that Wilkes assumed were made by burning coral from the a‘u of the marae, although he gives no justification for this assumption. Four trenches were excavated and very briefly described, with a “large oven

area” beneath the coral kiri-kiri paving of the marae. A mid-16th century AD date was obtained from this layer (probably, this context is unclear) but the tree species are unknown and the date is quite possibly not reliable. Wilkes’ plan shows a kerb of basalt (“and probably also vertical coral slab facings”) delineating much of the site, and several small low platforms. These may also mark post-missionary graves – if so they are likely to be earlier than the coral lime graves. It is probable that Pureora was a pre-missionary marae that has been subsequent used for Christian burial. The name Pureora means ‘prayer of life’, so the name may also be post-missionary.

The site was partly cleared in 2019 with the assistance of missionary volunteers from the Church of Jesus Christ of Latter Day Saints. The easternmost of the coral lime graves was cleared and a wider area to the south and east, about 18 x 15m, of this grave was also cleared. This was sufficient to relocate Wilkes’ (1974: Figure 16) plan (Figs 16 & 17).

The coral lime graves remain *in situ*, though in a degraded condition, and one larger platform grave to the south of these also remains intact, but many others smaller platform / graves along with the basalt kerb of the site, as recorded by Wilkes, have been lost to, probably, pig rooting. Much of the site remains heavily overgrown and some platforms and graves may survive beneath uncleared vegetation. To the west of the coral lime graves, on the banks of the Tupapa Stream, is a more substantial stone faced and paved platform, not apparently recorded by Wilkes, roughly 500 mm high and 4 x 4 m in plan. This feature is heavily overgrown with hibiscus.



Figure 16. Aerial view of part of the Pureora site.

The status of Pureora as a pre-missionary marae is uncertain, though this seems probable. The site was used as a 19th century, post-missionary, cemetery, which will have destroyed and obscured much pre-missionary evidence. Since being recorded by the Canterbury Museum

expedition, the site has suffered further damage and is now heavily overgrown. At least one substantial platform survives largely intact beneath dense vegetation.

3.4 Marae Manuka (RAR 22)

Manuka is one of the marae said to have been established by Tangi'ia. It is located c. 60m seaward of the Ara Metua from Arai te Tonga. It was first described by the Canterbury Museum expedition (Wilkes 1974: 50-52, Figure 15) as very disturbed by tree roots, pig rooting and road construction. They partly cleared and mapped the site and opened up eight excavation trenches of varying sizes. Wilkes (1974: 50) describes the most substantial structures to the south of the complex, including a 5 x 2.5 m platform he described as an a'u. In the excavated trenches, Layer 2 was equated with a similar brown silty layer from the 'Are Kariei, and was dated to the 13-14th centuries AD but the tree species are unknown and the date is quite possibly not reliable.

Further work involving conservation and reinstatement was conducted as an earthwatch project at Manuka in 1980s (Stephenson & Kurashina, n.d.). As part of further investigations at the Arai te Tonga complex, survey work will be undertaken next year in 2020 (permissions pending).

4. Conclusion and recommendations

The main objectives of the 2019 season of fieldwork were to complete the excavations of the Ara Metua at Arai te Tonga and reveal and investigate different elements of the Arai te Tonga complex (Fig. 17). These objectives were partially completed, but a number of the elements remain to be further examined during the 2020 season. The work undertaken by the Canterbury expedition in the 1960s was extremely useful in identifying different components and assessing the levels of preservation and destruction. In some instances, for example, 'Are Kariei (the house of amusement), which was considered destroyed by the subsequent 1980s road, the frontage remains relatively undisturbed. While work is ongoing, it is recommended that the fairly well preserved paepae at 'Are Rangi which was uncovered this year should be conserved as a heritage attraction. Moreover, Arai te Tonga is actually a combination of different sites and monuments and should be presented and displayed as such.



Figure 17. Plan showing different elements of the Arai te Tonga marae complex.

A key aim of our project, to investigate the Ara Metua in its entirety is still ongoing, however we have assessed the current survival of adjacent features since the 1960s and are therefore able to discern the rate of destruction over the last 50 years (Fig 18). At the time of the Canterbury Museum team's fieldwork in the 1960s, much of the Ara Metua was represented by three 'discontinuous sections of dirt road usable by motor traffic' (Parker 1974, 64). Consequently, far less damage had been incurred than is evident today where sections of road following the course of the Ara Metua are of upgraded metalled construction, with associated drainage ditches and services and utilities such as water and sewage pipes.

Unfortunately, a combination of these services and utilities in conjunction with house building and development has damaged and destroyed substantial numbers of sites identified in the 1960s. Three key areas where seats, paving and kerbing remain extant were identified and it is recommended these should be designated as 'protected heritage sites'.

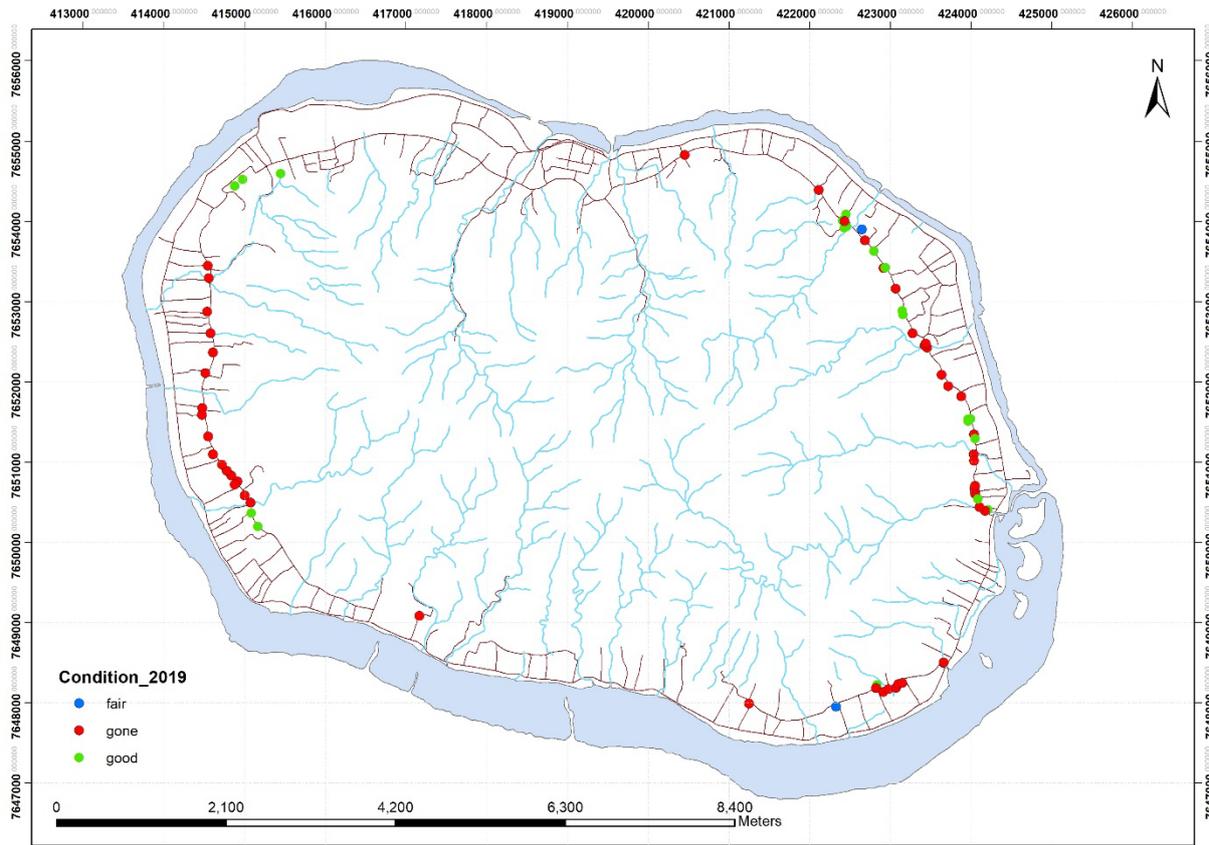


Figure 18. Survey in 2019 showing the survival and condition of adjacent sites along the Ara Metua.

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Appendix 1: Context List (Ara Metua at Arai te Tonga)

- 001 Topsoil
- 002 Upper road surface
- 003 Seat structure (horizontal and vertical stones)
- 004 Seat structure (horizontal and vertical stones)
- 005 Line of basalt blocks in south running E-W (marae)
- 006 Layer of loam and kiri kiri adjacent to [005]
- 007 Sand layer – foundation for later road widening
- 008 OLS beneath stone blocks [005]
- 009 Coral layer – earlier road surface in N of trench – same as [012]
- 010 Kiri kiri layer beneath 007 in S
- 011 Coral coble lower road surface in S and centre of road
- 012 Upper coral surface in N – original road
- 013 Yellow-brown sub soil adjacent to edge of road in N
- 014 Circular cut in S of trench, adjacent to [005]
- 015 Fill of [014]
- 016 Fill of [017]
- 017 Trench/cut through surface [012]
- 018 Same as [009]
- 019 Upper coral surface of central portion of secondary road
- 020 Large coral stone wedged in cut [017]
- 021 Upright stone in SE corner of trench adjacent to [005]
- 022 Cut for [021]
- 023 Fill/packing of [021]
- 024 Make-up for secondary road surface [011]
- 025 Resurfacing coral and basalt ‘cobbles’ over surface [026]
- 026 Kiri-kiri surface of primary road
- 027 Raised kiri-kiri edging of surface [026]

- 028 Basalt outer edging of coral surface [012] in N of trench
- 029 Interface between topsoil [001] and [008] in N of trench
- 030 Angled basalt stone in S. of trench.
- 031 Hard, compact coral layer
- 032 Narrow cut
- 033 Fill of [032]
- 034 Mottled blocky soil beneath [031]
- 035 Orange brown soft silt loam
- 036 Orang brown loam beneath [026]
- 037 Upright stone beyond seats to north

Appendix 2: contexts at ‘Are Rangi

- 100 Topsoil and mixed road base
- 101 Beach sand and coral road base, mid 20th century
- 102 Large basalt block
- 103 Large basalt block, disturbed out of position
- 104 Basalt front kerb of paepae
- 105 Coral uprights kerb of paepae
- 106 Landward kerb of road
- 107 Seaward kerb of road
- 108 Line of basalt running seaward from 107 — associated with the ‘Are Kariei
- 109 Consolidated fill of road base, mid to late 20th century
- 110 3 coral blocks seaward of 107

Appendix 3: Small finds register

Arai te Tonga

- 100 Basalt flake
- 101 Basalt flake
- 102 Basalt flake
- 103 Basalt flake
- 104 Basalt flake

- 105 Basalt flake
- 106 Basalt flake
- 107 Animal bone, probably young pig

Appendix 4: Samples register

Arai te Tonga

- 020 Charcoal fragments for dating, from Context 026
- 021 Charcoal fragments for dating, from Context 026
- 022 Bulk sample for charcoal flotation, from Context 036, Spit 1 (1 bag)
- 023 Bulk sample for charcoal flotation, from Context 036, Spit 1 (1 bag)
- 024 Bulk sample for charcoal flotation, from Context 036, Spit 1 (1 bag)
- 025 Bulk sample for charcoal flotation, from Context 036, Spit 2 (2 bags)
- 026 Fragment of charcoal for dating, from Context 036
- 027 Bulk sample for charcoal flotation, from Context 036, Spit 3 (2 bags)
- 028 Bulk sample for charcoal flotation, from Context 036, Spit 4 (1 bag)
- 029 Bulk sample for charcoal flotation, from Context 036, Spit 5 (2 bags)
- 030 Bulk sample for charcoal flotation, from Context 036, Spit 6 (3 bags)
- 031 Bulk sample for charcoal flotation, from Context 036, Spit 7 (2 bags)
- 032 Bulk sample for charcoal flotation, from Context 036, Spit 8 (1 bag)
- 033 Bulk sample for charcoal flotation, from Context 036, Spit 9 (1 bag)
- 034 Bulk sample for charcoal flotation, from Context 036, Spit 10 (1 bag)
- 035 Column sample for micromorphological analysis, from Context 036, Spits 1-10

Note, Bulk samples 022-026 and 027-034 have been processed

Appendix 5: Drawing register

1. Plan of road [002]
2. Plan of surface [009]
3. Section of [014]
4. Plan of [014]
5. Plan of [025]

6. Section – W. facing
7. Section – E facing
8. Plan of [026]
10. Overall plan of Trench 1
11. Overlay of plan 10
12. N-S Profile across both kerbs and Ara Metua at 'Are Rangi
13. Section drawing of Trench 1