A Cultural Resource Evaluation (Phases I and II) for the Ofu-Olosega Road Improvement Project, Phases I and II, Located on Ofu and Olosega Islands, Manu'a, American Samoa

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Abstract

Archaeological investigations have been conducted in association with the Ofu-Olosega Road Improvement Project, Phases I and II. This study was conducted within a corridor consisting of the roadway and its Right-of-Way. Its purpose was to determine if significant historic properties exist within the project limits and, if present, properly document and evaluate those sites.

During the current investigations, a 100% surface survey of the project corridor was undertaken. This survey documented seven sites with a total of ten component features including a boulder with grinder basins, a mound/platform, stone alignments, terraces, a rock shelter, a legendary stone outcropping, and portions of a historic water supply system. These features were thoroughly documented including being mapped and/or photographed with their locations plotted.

Subsurface testing included the mechanical excavation of four trenches using a backhoe as well as the manual excavation of two controlled test units. The mechanical excavation of trenches occurred at locations within Phase I of the subject corridor at which subsurface construction activities were to occur. Manual excavation of test units took place at features (Sites AS-12-11 and AS-12-15) identified along Phase II of the subject corridor and thought to be associated with traditional habitation. Mechanical excavations did not identify any significant properties and significant cultural remains recovered during these excavations were limited to a single traditionally worked artifact. The manual excavation of test units at Sites AS-12-11 and AS-12-15 recovered cultural materials indicating that these sites were indeed utilized for traditional habitation which likely took place in the pre-contact period.

The current investigations have documented seven sites of historic significance. Archaeological Consultants of the Pacific, Inc. recommends that these sites be preserved in place. Prior to construction these sites should be flagged and a meeting should be held with the construction crew to inform them of the significance of the sites. During construction activities these sites should be avoided. If heavy machinery is to be used in the vicinity of a site, a qualified archaeologist should be on hand to monitor construction activities and ensure the protection of the sites. Implementing these recommendations will help mitigate the effects of construction activities so that improvements to the Ofu-Olosega Road will have "no adverse effect" on significant historic properties which exist within the Right-of-Way.
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Section 1: Introduction

At the request of Mr. Howard Tingly of the American Samoa Power Authority (ASPA), Civil/Highways Division, Archaeological Consultants of the Pacific, Inc. (ACP) has conducted Phase I and Phase II cultural resource investigations for the Ofu-Olosega Road Improvement Project, Phases I and II, Federal Aid Primary Project No. ER-AQ-92-1 (5), on Ofu and Olosega Islands, Manu'a, American Samoa. This report presents the results of the archaeological investigations required to meet the American Samoa Historic Preservation Office's (ASHPO) guidelines for Phase I and Phase II survey and evaluation of potentially significant historic sites.

The current investigations were conducted under the supervision of the Principal Investigator, Joseph Kennedy, M.A.. Fieldwork was carried out by the Field Supervisor, Mr. James R. Moore, B.S., with the assistance of Alofa Mapu between October 31st and November 8th, 1995. All notes and materials collected during the current investigations are curated at ACP facilities located at 59-624 Pupukea Rd., Haleiwa, HI..

Section 2: Physical Setting

Section 2.1: The Samoan Archipelago

The Samoan Archipelago is a politically divided chain of islands in the central South Pacific about 4200km (2600mi) southwest of Hawaii and 1000km (620mi) northeast of Fiji. It is located between Geographic Grid Coordinates 168 to 173°W and 13 to 15°S. The large islands of 'Upolu and Savai'i, along with the small islands of Manono and Apolima, make up the independent nation of Western Samoa. To the east lies American Samoa, a territory of the United States. Tutuila, the largest island in American Samoa, and the small neighboring island of Aunu'u form a distinct subgroup about 100km (60mi) west of the Manu'a subgroup which consists of Ofu, Olosega and Ta'u (see Figure 1). Tiny Rose Atoll, about 160km (100mi) further east, represents the easternmost edge of the archipelago. Swains Island 375km (225 miles) to the northwest, though geographically a part of the Tokelau Islands, is the northernmost political possession of American Samoa.

Section 2.2: Ofu and Olosega Islands

Built by volcanic activity along the crest of the easternmost portion of the submarine Samoan Ridge, the Manu'a subgroup is a typical example of "hot spot" progressive volcanism stretching from northwest to southeast. The islands share a common physiography of steep sided volcanic
Figure 1: Project Location on a Map of Ofu and Olosega Islands

Ofu - Olosega Road Improvement Project Phase I & II
source: University of Hawaii Press 1980
shields, narrow (or nonexistent) rockband coastline, fringing coral reef, and a limited area of habitable coastal plain. K-Ar dates for Ofu-Olosega of 0.3 million years Before Present (B.P.) (McDougal 1985) are consistent with the steep topography of the island which contrasts the older, more eroded islands in the Samoan Archipelago to the west.

Ofu and Olosega Islands have been described as, "a complex of volcanic cones that have been buried by lava flows from two coalescing shields" (Stice & McCoy 1968:443). One of these shields is said to have been centered off the northern coast of Ofu at A’ofa (near Sinapoto Pt.) while the second was located off the northwestern coast of Olosega near Sili Village. The islands formed where a’a and pahoehoe flows of non-porphyrhetic basalt, olivine basalt and picrite basalt (with hawaiites at upper elevations on Ofu) from these two shields accumulated to 494m (1621ft) AMSL at the summit of Tumu Mountain (a.k.a. Tumutumu Mountain) and 638.5m (2095ft) at the summit of Plufafua Mountain (Stice & McCoy 1968:427).

Ofu and Olosega fall entirely within the Tropical Climate Zone characterized by a maritime climate with abundant rainfall and warm, humid days and nights. Trade winds blow predominantly from the east. While data concerning rainfall for Ofu and Olosega Islands are lacking, records from the airport on Tutuila indicate a mean annual rainfall of 3100mm (124") (Nakamura 1984:Table 1). This average can be extended as being representative of Ofu-Olosega. Rainfall can vary greatly over small distances, however, due to topographical differences, with some areas receiving as much as 6200mm (250") a year.

The mean daily temperature is reported as 80°F (26.7°C) (Nakamura 1984), ranging from a mean daily maximum of 85.4°F to a mean daily minimum of 74.6°F. Humidity is generally high during day and night, ranging between 80 and 86 percent.

Hurricanes and cyclones strike the islands at irregular intervals, often after a prolonged spell of hot weather. The effect of such storms varies depending on the intensity of the storm and the path of the storm in relation to the islands. Evidence of hurricanes in the archaeological records can be found in the form of anomalous layers of gravel and rocks deposited by the high energy storm surge. The effects of such storms on the prehistoric populations of Ofu and Olosega were certainly as serious as they have been in recorded history.

Yuncker (1945) lists 421 plant species for Manu’á, both indigenous and introduced species. The distribution of vegetation on Ofu and Olosega is largely dependent on the amount of human disturbance which, in turn, is often limited by topography. Additional edaphic, microclimatic, and
drainage conditions have a lesser effect on floral
distribution. Along the coastal plains and less steep
slopes, human activity has significantly modified the natural
vegetation. Shifting plots of taro (Colocasia esculenta),
yam (Dioscorea alata), and other crops dominate the lower
elevations forming garden complexes. Additional crops found
in these gardens include cultigens such as ta'amu (Alocasia
sp.), ti (Cordyline sp.), moso'oi (Canaga odorata), etc., as
well as stands of tree crops; mainly coconut (Cocos
nucifera), breadfruit (Artocarpus communis), and banana (Musa
sp.)(Kirch 1993). Many of the plants in these complexes are
believed to have been introduced to the islands with some of
the earliest immigrants.

The coastal plains of Ofu and Olosega Islands and the
more gently sloping areas, inland of the villages, are
described as being located in a vegetative zone defined as
"managed lands" (Atlas 1981). At higher elevations and along
steep slopes inland of the "managed lands" are areas of
"coastal/littoral vegetation", "disturbed forest", as well as
remnants of the original tropical "montane" forest. The
steep slopes and dense vegetation that comprise the majority
of the inland areas preclude any other than occasional
utilization by humans. A small area of cloud forest also
exists at the summit of Plumafua Mountain on Olosega Island.

Typical of island ecosystems, the fauna of Ofu and
Olosega is impoverished in terrestrial vertebrates with a
somewhat higher diversity of invertebrate species. The
highest vertebrate diversity is among the avifauna with
several permanent resident species along with seasonal
migrants and visiting seabirds. As in other Polynesian
islands, the avifauna diversity has been drastically reduced
since human occupation began.

There is one surviving indigenous mammal, the fruit bat
(Pteropus samoensis)(although informant testimony has
indicated that a small, cave dwelling bat, thought to be
extinct, may still be living in caves located in the cliffs
along the Sili coast). Other mammals, the Polynesian rat
(Rattus exulans), dog (Canis familiaris), pig (Sus scrofa),
and more recently, the housecat (Felis domesticus) were all
introduced. Lizards of the families Gekkonidae and Scincidae
are the only other indigenous terrestrial vertebrates.
Marine turtles (Chelonia mydas and Eretmochelys imbricata)
are infrequent visitors today, although they were certainly
more common in the past.

The majority of the combined coastline of Ofu and
Olosega is surrounded by fringing coral reef 40 to 150m wide.
This complex ecosystem supports over 800 species of fish and
a wide variety of invertebrates (Jordan & Seale 1906) that
are heavily exploited by humans. In the open ocean beyond
the coral reef are a variety of fish, dolphins and, seasonally, whales.

Kirch (1993) has developed a morphodynamic model of coastal terrace formation in relation to human occupation on Ofu. His model (based on Holocene sea level change, subsidence due to point loading on the oceanic crust, and increased sedimentary budgets in relation to the formation of the coastal terrace) would predict that the earliest formation and stabilization of the currently habitable coastal zone at To‘aga occurred about 5000 to 3000 years B.P., with rapid progradation after about 2000 years B.P. He states that the area of coastal terrace available for initial establishment of human habitation (about 3400 to 3200 years B.P.) would have been restricted to a relatively narrow beach zone at the base of steep cliffs (1993:40). Similarly, the earliest habitation on Olosega, would be situated in a similar geomorphological location.

Hunt and Kirch (1988) suggest that coastal terrace progradation on Ofu and Olosega was accelerated by an increased sedimentary budget due to deforestation and clearing by human occupants. Kirch's morphodynamic model implies that the earliest archaeological deposits will be found at considerable depths, more likely in the former coastal terrace areas and adjacent marshlands.

Section 2.3: The Subject Property

The current investigations took place along the proposed roadways for Phase I and Phase II of the Ofu-Olosega Road Improvement Project. Both segments of the subject property take the form of corridors that measure 20ft (6.1m) in width. These corridors converge at the bridge which connects the two islands.

The subject corridor for Phase I measures 3600ft (1100m) in length (covering an area of 1.7 acres) and is located along the northeastern coast of Ofu, approaching Asagatai Pt. at geographic grid coordinates 169°37'55" through 169°38'25"W by 14°10'20"S (see Figure 2). The subject corridor for Phase II measures 4000ft (1220m) in length (covering an area of 1.8 acres) and is located along the northwestern coast of Olosega extending from Tamatupu Pt. to Lalmoana at geographic grid coordinates 169°37'20" through 169°37'50"W by 14°10'10" through 14°10'30"S (see Figure 2).

Phase I is planned along the existing roadway which, at the time of the current investigations, had a hard packed gravel surface. On its seaward side, a seawall borders the roadway along a significant portion of the corridor with very little vegetation present. Along the inland edge of the roadway is a steeply sloped hillside covered with vegetation including banana, coconut, hibiscus, macaranga (Macaranga
Figure 2: Subject Property on a U.S.G.S. Topographic Map

Source: U.S.G.S. Topographic Map of the Manua Islands 1963

Ofu - Olosega Road Improvement Project Phase I & II
grandifolia), etc.. Along the planned corridor for Phase II, only a footpath existed at the time of the current investigations. Seaward of the footpath, vegetation consisted of a ground cover of vines including the beach morning glory (Ipomoea pes-caprae) as well as a few individual, scattered trees. Inland of the footpath, the hillside is covered with managed orchards interspersed between sections of untended jungle.

According to Nakamura (1984), the subject corridor passes through areas containing four major soil types. Phase I passes from an area of "Aua very stony silty clay loam" into a small patch of "Ngedebus mucky sand" both of which lie downslope from areas containing "Fagasa family-Lithic Hapludolls-Rock outcrop association". Phase II passes through an area depicted as being of the "Fagasa family-Lithic Hapludolls-Rock outcrop association" into a zone of "Ngedebus Variant extremely cobbly sand" which lies downslope from a band of "Aua very stony silty clay loam".

Section 3: Historic Background and Literature Review

The prehistory of Samoa is intimately linked with that of its neighboring islands and Polynesia as a whole. It has been documented that a seafaring people, travelling from the islands of Southeast Asia, spread eastward throughout the islands of the South Pacific (Kirch & Green 1987 and Jennings 1979). These people developed a unique culture that has become known as the Lapita cultural complex and is named for an archaeological site in New Caledonia from which distinctive pottery crafted by its occupants was recovered. In Samoa, the descendants of the Lapita cultural complex continued crafting pottery until at least A.D. 200 (although recent work has indicated the use of ceramics up to one thousand years later [Clark 1993 and Kirch & Hunt 1993]). This cultural complex has become well documented over the past several years and will not be reviewed further in this paper. Thus, the Lapita people are believed to be the first inhabitants of Samoa and, over the millennia, these original Lapita settlers developed a sub-culture unique to Samoa with its own mythology and cosmology.

Section 3.1: The Samoan Archipelago

Writeings concerning sites of an archaeological nature in the Samoan Archipelago can be traced back to the early missionaries and secular writers of the 19th century. These authors, in the course of describing Samoan life at the time, or their experiences in Samoa, on occasion give general locations for large sites such as abandoned villages and individual site types such as mounds, raised walk-ways and religious structures (fa'ale aitu) (Pritchard 1866; Turner 1884; Churchward 1887; Stair 1895, 1897; Churchill 1902; Williams
In addition, some authors explicitly described archaeological sites as such (Sterndale 1890; Stair 1894). Thompson (1927) provides a description of earthmounds in Western Samoa. Kramer's (1902-3) ethnography of Samoa and and Buck’s (1930) volume on Samoan material culture provide ethnohistoric information of interest to the archaeologist. In the 1940’s, Freeman (1943, 1944a-c) described a number of archaeological sites. Using ethnohistoric material, Watters (1956, 1958), a geographer, constructed a model of early Samoan settlement patterns.

Modern archaeology in Samoa began in the late 1950’s and early 1960’s with Golson’s (1957) preliminary survey and excavations followed by Green and Davidson’s (1969, 1974) extensive surveys and excavations in Western Samoa. Another large survey and excavation project was carried out in Western Samoa in the 1970’s (Jennings et al. 1976; Jennings & Holmer 1980). These surveys provided detailed information on settlement patterns, site types, artifact classes, and a chronology that placed initial occupation of the islands at c. 3000 B.P. In addition, the discovery of Lapita pottery on Upolu in Western Samoa was important information linking the origin of Samoan peoples to migrations from as far away as the Bismarck Islands located north of Papua, New Guinea (Jennings 1974, Kirch 1988).

Meanwhile, by comparison, very little archaeological work was being carried out in American Samoa. Kikuchi (1963, 1964) conducted a preliminary survey and description of surface sites primarily based on informant testimony and site checking. He and Sinoto conducted some very limited test excavations on Tutuila and Ta‘u (Emory & Sinoto 1965). Several contract cultural resource management surveys were conducted by Federal agencies (Ladd 1970; Kikuchi, Palama & Silva 1975; Silva & Palama 1975; McCoy 1977). In 1972, Frost (1976, 1978) carried out the next research directed survey. Clark (1980) compiled a site inventory based on a review of previous work, field checking of sites and very limited survey. Little of this research was intensive or systematic and where it was, it was limited to small project areas tied to compliance.

In 1985, a revitalized American Samoa Historic Preservation Office began funding a series of systematic archaeological surveys and excavations throughout the Territory (Gould, Honor, & Reinhart [later Brophy] 1985; Kennedy 1985; Brophy 1986; Leach & Witter ca. 1986, 1987; Ayres & Eisler 1987; Hunt 1987; Hunt & Kirch 1988; Clark & Herdrich 1988, 1993; Best, Leach & Witter 1989; Clark 1989; Herdrich 1991; Herdrich & Clark 1993; Kirch & Hunt 1993). These surveys and excavations created a much needed baseline understanding of site distribution, provided detailed excavations of the first early pottery sites known for the Territory, and contributed to the understanding of
geomorphological processes that are important in locating early sites. It has also stimulated academic interest in the Territory thereby encouraging scholars to seek funding and carry out work independently of the Historic Preservation Office (Sheppard et al. 1989; Best et al. 1992; Best 1994; Clark & Nunn 1994; Clark & Michlovic 1996; Clark, Wright & Herdrich in review). In addition, beginning in 1989, enforcement of the National Historic Preservation Act of 1966 led to an increase in the number of archaeological compliance projects conducted in the Territory (Kennedy 1989; Clark 1990a-b; Foster 1991a-b; Best 1992a-b, Moore & Kennedy 1996; Shapiro & Cleghorn 1994; Herdrich et al. 1996).

Section 3.2: The Manu’a Group, Ofu and Olosega Islands

Kramer (1902) visited the Manu’a Islands in 1898 providing some limited information on abandoned villages as well as a song that mentions the existence of pigeon catching mounds (tia seu lupe) on Ta’u. On Olosega, Kramer also noted the legendary location called the "Nu’utoa", an isolated cliff on the western slopes of Piumafua where the mountain drops toward Ofu. This legendary spot is associated with a warrior chief named Pao who, according to Kramer (1902:597), was "the Hero of Olosega".

Buck (1930:322-24) provides some information about Manu’a, primarily concerning a raised road in Fitiuta. The first modern archaeological survey work in Manu’a was conducted by Kikuchi and Sinoto (Emory & Sinoto 1965) whose efforts were primarily directed towards Ta’u Island. Clark (1980) visited the Manu’a group while compiling his territory wide inventory of archaeological sites and recorded eight sites on Ofu, eight sites on Olosega, and 50 sites on Ta’u.

In 1986, Hunt and Kirch (1988) carried out test excavations on all three islands as well as additional survey. Their survey acknowledged the presence of 62 sites on Ta’u, eleven sites on Ofu, and nine sites on Olosega, however, it is not stated in their paper whether any of these sites are the same as those inventoried by Clark in 1980. Based upon the results of limited subsurface testing conducted on all three islands, they concluded, "that by the start of the first millennium A.D. both Ta’u and Ofu Islands were ... occupied by makers of Polynesian Plain Ware (Hunt & Kirch 1988:169)."

In 1987 and 1989 they focused their efforts on the To’aga site on Ofu by conducting two seasons of test excavations (Kirch & Hunt 1993). They estimated the To’aga site to cover 21,000 square meters, within which the area of subsurface testing measured 31 square meters (0.15% of the total area). Based upon the results of their excavations, Kirch and Hunt have generated a geomorphological model for the southeastern coastline of Ofu in which coastal terrace
formation occurs through coastal progradation and lateral transgression of the sedimentary budget (refer to Section 2.2). In addition, they propose that To'aga has been, "continuously occupied by prehistoric Polynesians for a full three millennium" (1993:230).

During the analysis of the excavation data for To'aga, radiocarbon dating was conducted on a set of fourteen samples. Of the fourteen samples dated through radiocarbon analyses, nine were derived from marine shell samples, two samples consisted of small amounts of charcoal in ash and sediment matrices, and three were of charcoal samples weighing less than one gram. Because of the types of materials selected for radiocarbon dating, it is possible that the age of the many of the samples may not be contemporaneous with the cultural context from which they were obtained.

Although several species of marine shells were tested, the majority were of *Turbo setosus* (six of the nine marine shell samples). It is known that shells of the species *T. setosus* are utilized by terrestrial dwelling hermit crabs, potentially effecting their deposition within stratigraphic sequences. Two of the remaining three shell samples dated were represented by single shells which, being collected from deposits associated with a high energy beach environment, decreases the probability that they were indeed culturally deposited. It is also possible that shells selected for cultural modification were deposited years before the cultural context from which they were recovered was deposited. Finally, the accepted correction factor (delta-R) of the marine reservoir effect for calibrating age ranges based on marine samples has changed dramatically over the past ten years (Dye 1993), thereby increasing the possibility that calibrations would skew the results in either direction. For all of these reasons, the accuracy of calibrated ages from marine shell samples should be questioned.

Two of the samples which were radiocarbon dated consisted of charcoal and ash in sediment matrices. Samples analyzed that are derived from sedimentary matrices are likely to date the sediments themselves rather than the cultural context of the deposit. Because sediments are derived from calcareous and basaltic sources which incorporated the carbon found in their chemical structures thousands of years before they became sediments, it is probable that radiocarbon analyses will date the source of the sediments and not the cultural context from which they were recovered. In addition, when cultural features are identified within a stratigraphic sequence, it is possible that the sediments within the feature are intrusive and not contemporaneous with the cultural strata in which they are found. Therefore, the effect of dating sediments obtained
from a cultural context may skew the results of radiocarbon analyses.

The final three analyses were conducted on samples weighing less than one gram. Because of the necessity of requiring extended counting times for dating samples weighing less than one gram, thereby increasing statistical variance, the results from these samples also have the potential to be misinterpreted.

Therefore, the entire suite of radiocarbon ages obtained by Kirch and Hunt for To'aga should be interpreted with caution. Although the dates obtained during the radiocarbon analyses may not definitively substantiate the age of the site, the presence of ceramic remains (and the range in form of those remains) indicate that the site is of considerable antiquity comparable to that of other ceramic bearing sites in Samoa. When considering the radiocarbon dates and the presence of ceramics at To'aga in relation to recent results obtained by Clark at Aoa (1993; see also Clark & Michlovic 1996), the age of initial occupation at To'aga may range from as early as 1000 B.C. to as late as 1400 A.D..

The current subject property was previously investigated during a reconnaissance survey conducted by Best (1992). His study took place along the entire roadway on both Ofu and Olosega Islands including the two segments under investigation in the current study. Best's survey was limited due to the fact that the finalized path of the improved roadway had yet to be determined. He identified 23 sites, 21 on Ofu and two on Olosega, and conducted limited subsurface testing in the vicinity of Sites AS-13-11, 12 and 13 at Vaoto. Of the 23 sites identified, 15 of these (Sites AS-13-7, 8 and 14 through 26) are actually located within the area defined as AS-13-1, the To'aga site.

Only one of the sites identified by Best (Site AS-12-9) is located within the subject corridor of the current project. This site is located along the road extension to Sili and was the subject of additional assessment prior to the current survey (Kennedy 1995). The determinations of the prior assessments are summarized below (see Section 5.2).

Section 4: Methods

Section 4.1: Research Design

Archaeological work conducted in the Samoan archipelago relates to large variety of research topics. The results of the current work have relevance or potential relevance for three specific research topics discussed below.
The first area of research interest has to do with prehistoric ceramics. Green (1974) has argued that Samoa has a continuous sequence of pottery which begins with Lapita pottery, a decorated and statistically thin pottery found in Upolu of Western Samoa. Pottery deriving from Lapita continues through time changing to an undecorated and statistically thicker pottery. Until recently it has been believed that pottery production stopped around 200 A.D. Kirch and Hunt (1993) have found pottery at To'aga that dates to 400–500 A.D., later than Green’s sequence. Kirch and Hunt (1993) argue that their dates simply show a minor variation and is of no consequence for Green’s general description of the Samoan pottery sequence. Clark (1993), however, has excavated pottery in Aoa on Tutuila with C14 dates as late as 1400 A.D.

Clark’s dates are, however, at least 1000 years later than Green’s. This raises a number of possibilities in regards to Green’s sequence. First, it may be that there is regional variation within the archipelago and that Green’s sequence is generally correct, but certain communities such as Aoa maintained their tradition longer (Clark 1993, 1994). Secondly, Green (1974a-b) did have late dates from his pottery sites, but interpreted pottery in late stratigraphic contexts as having been pulled up by the prehistoric excavation of posts and features. Clark, in a review of radiocarbon dates and contexts for Samoa, argues that Green’s interpretation exaggerated the extent of this uplifting process (Clark 1994).

The second research topic has to do with the extent of interisland trade in the material used for stone tools. Recently, a number of authors have conducted elemental analyses on stone tools found throughout the Pacific and on source rock from known quarries on Tutuila. Best et al. (1992) have shown that stone tools found in Tonga, Fiji, the Solomon Islands, the Tokelau Islands, and the Cook Islands have all originated from Tutuila quarries, and argue, in particular, that the ultimate source is the quarry known as Tataga-matau near Leone. In addition, Weisler (in Kirch & Hunt 1993) has conducted an analysis on stone tools in Manu’a and compared them to rock found at Tataga-matau. While Weisler acknowledges the "need to collect sufficient samples to define the geochemical variability of adz quarry sources", he concluded that 50% percent of the tools analyzed were from Tataga-matau (Kirch & Hunt 1993:179).

Recently Clark, Wright and Herdrich (in press) have conducted a literature review and analyses of the chemical composition of basalt from all of the major quarries on Tutuila presently known to exist. One of the findings from those analyses is that there is an overlap between the elemental percentages found in stone at different quarries. As a result, they hypothesize that it may not be possible to
pin-point the exact quarry from which any given tool originated, only that it came from a particular island. Weisler's analyses and recent investigations by ACP (Moore & Kennedy 1996), however, have produced results suggesting the possibility that through trace element analyses individual quarries may be distinguished.

The final topic of concern is the pattern of settlement distribution. Previous research in Samoa has shown a settlement pattern that started with coastal settlement. At some point in time, as the population expanded, the loci of habitation moved inland until there was a shift, in the late prehistoric/early historic period, from those inland settlements back to coastal habitation areas (Davidson 1969, 1974). Because there has been a limited amount of controlled survey conducted on Ofu and Olosega Islands, as additional areas are surveyed, a more comprehensive understanding of settlement patterns and land use histories will be forthcoming.

The primary purpose of the current investigations, though, was to identify and evaluate historic and prehistoric archaeological sites within the Right-of-Way (ROW) corridor for Phases I and II of the Ofu-Olosega Road Improvement Project as required by Section 106 of the National Register of Historic Places as amended, particularly Part 800 concerning the protection of historic and cultural properties. This research is important in regards to both territorial and regional research goals.

**Territorial Goals**

Territorial goals include the following:

1) Development of an inventory of historic and prehistoric archaeological sites.
2) Evaluation of historic and prehistoric sites relative to the criteria for the National Register of Historic Places.
3) Nomination of eligible properties to the National Register of Historic Places.
4) Protection of significant historic and prehistoric archaeological properties from potentially negative impacts.

The research contained in this report contributes to these territorial goals in the following ways: 1) By conducting a systematic survey of the road corridor any historic or prehistoric sites within the corridor will be able to be identified, 2) By conducting a systematic evaluation of sites identified in the current survey area, a determination of their significance relative to the National Register of Historic Places criteria will be able to be made, 3) The evaluation of known sites is the first step in the process of nominating sites to the National Register of Historic Places,
4) An assessment of the impact of the road on sites identified as significant will be made and, where necessary, recommendations will be made for their protection. In addition, providing the location of significant archaeological sites will contribute to the protection of these sites in the event of future developments.

Regional Goals

Regional goals include the following:

1) Gaining an understanding of trade relationships between various island groups (Best et al. 1990; Weisler 1993; Clark, Wright & Herdich in review).

2) Polynesian Origins: Constructing a sequence of migration and colonization of island groups (Kirch & Green 1987).

3) Documenting settlement patterns as evidence of the evolutionary trajectory of island societies in order to gain an understanding of evolutionary mechanisms effecting the development of societies throughout the Pacific (Goldman 1970; Kirch 1984; Graves & Green 1993).

The research contained in this report contributes to these regional goals in the following ways: 1) The collected pottery and lithic material can be made available for analysis to determine whether they were of local origin or were made of exotic materials thereby indicating the existence and extent of interisland trade networks with these materials, 2) Future analysis of sites identified during the current study may provide important evidence for understanding the sequence of migration and colonization in the Pacific, 3) The identification and mapping of a rock shelter and a boulder with grinding surfaces are important contributions in understanding the evolution of Samoan settlement patterns. A clearer understanding of Samoan settlement patterns will eventually lead to a better understanding of regional evolutionary mechanisms and trajectories.

Due to the fact that this investigation is compliance oriented the investigators were not guided by an explicit theoretical orientation other than a very general scientific and evolutionary perspective. Also, given that this is a compliance investigation it was not guided by explicit hypothesis testing. However, some of the current findings may contribute to and have implications for hypotheses that are currently being discussed in the literature. The information collected during this survey has potential implications for the recent work discussed above concerning pottery, basalt tools, and settlement patterns.
Section 4.2: Archaeological Methodology

The current investigations were conducted under the supervision of the Principal Investigator, Joseph Kennedy, M.A.. Fieldwork was carried out by the Field Supervisor, Mr. James R. Moore, B.S., with the assistance of Alofa Mapu between October 31st and November 8th, 1995.

There were three stages to the current investigations. First, following consultation with Mr. David Herdrich, the Territorial Archaeologist, and the American Samoa Historic Preservation Office (ASHPO) it was determined that subsurface testing should occur, within Phase I of the project, at locations towards the coastal flats near Asagatai Pt. at which subsurface disturbances were to occur. Therefore, subsurface testing took place through the mechanical excavation of trenches using a backhoe with an 18 inch bucket. These trenches were placed at locations shown on the project plans where box culverts and a "sectionalizer" were to be placed. All soils removed from these trenches were thoroughly raked and all potential cultural materials examined and/or collected.

The second stage of the investigations involved controlled pedestrian survey along the roadway for Phase II of the project. A 100% surface survey of the subject property was undertaken. This survey was performed by the two man field crew who made two sweeps of the subject property parallel to the proposed corridor spaced at intervals of 5m. The first sweep was conducted traversing a southwest to northeast vector along the existing trail while the second sweep was conducted traversing a northeast to southwest vector approximately 5 to 10m inland of the existing trail. The purpose of this survey was to identify all of the significant historic sites present in the project area. When a surface feature was identified, it was flagged and assigned a temporary field (TF) identification number. Significant features were subsequently assigned permanent territorial site numbers.

Thirdly, limited subsurface testing was conducted at sites identified along Phase II of the proposed roadway through the excavation of controlled test units. Excavation of the 1m x 1m square test units was conducted by excavating natural stratigraphic layers as discrete units. All soils removed from the units were screened through 1/4 inch screen-mesh.

Samples collected included artifacts, faunal remains (both vertebrate and invertebrate), and soil samples. All artifacts and faunal remains were collected and placed in labelled bags. Soil samples were collected from each layer for analysis of soil color and composition. Level forms for each layer were filled out. These forms include a
description of the soil and notes on artifacts and features. In addition, the level forms have space for plan drawings of each level. Drawings of the wall profiles were made.

Laboratory analyses included a range of diagnostic endeavors. Artifactual material was sorted by type, counted and measured with the results tabulated for presentation by provenience. All vertebrate faunal remains were identified to the species level, as possible, by Dr. Alan Ziegler with the results being tabulated and presented by provenience and weight. Marine shell (invertebrate faunal) remains were similarly treated with the samples being identified by ACP personnel to the generic level, as possible.

Photographs of selected features were taken by Karin Apollonia Muller under contract to the American Samoa Government. These photographs were provided to ACP by the ASHPO.

This report provides complete descriptions of the excavations undertaken including written accounts, placement of the test units on plans drawn to scale, profiles depicting stratigraphic and/or cultural deposits (refer to Section 5). Also included are soil descriptions according to U.S.D.A. standards and the presentation of the results of all laboratory analyses described above.

All materials collected during test excavations will be bagged and labelled appropriately, placed in labelled and inventoried boxes, and curated at ACP facilities located at 59-624 Pupukea Rd., Haleiwa, HI.

Section 5: Archaeological Findings

The current archaeological investigations for the Ofu-Olosega Road Improvement Project consisted of three stages; 1) Backhoe testing along the roadway for Phase I of the project (on Ofu Island) at areas where known subsurface disturbances were to occur, 2) Controlled pedestrian survey of the roadway for Phase II of the project (on Olosega Island), and 3) Limited subsurface testing at features identified along the roadway for Phase II of the project.

Section 5.1: Results of Archaeological Investigations for Phase I - Backhoe Testing

Trench 1: Trench 1 (T1) was placed in the coastal flats located along the northeastern side of Asagatai Pt. near the bridge connecting Ofu and Olosega Islands. It was placed in the lawn in front of the former Asaga Grill at the location specified on the project plans at which the "sectionalizer" is to be placed (see Figure 3). The trench measured 6.7m
(meters) in length and reached a maximum depth of 150cmbs (centimeters below surface).

Excavation encountered a surface cover of grass underlain by a layer (Layer I) of light gray (10YR 7/2) sand which measured approximately 10cm thick and reached a maximum depth of 15cmbs (see Figure 4). Layer I was underlain by a layer (Layer II) of very dark gray (10YR 3/1) sandy loam which measured approximately 20cm thick and reached a maximum depth of 35cmbs. This was in turn underlain by Layer III, a pale brown (10YR 6/3) sand which measured up to 65cm thick and reached a maximum depth of 100cmbs. Underlying Layer III was a deposit (Layer IV) of very pale brown (10YR 7/4) sand which was excavated to a depth of 150cmbs.

Cultural material identified was limited to historic debris (an aluminum can, a plastic 6-pack ring, etc.), some of which was believed to originate from as deep as Layer III. This would suggest the possibility of stratigraphic disturbances to this depth which could have been the result of relatively recent storm activity (i.e., Hurricane Val in December of 1991).

**Trench 2:** Trench 2 (T2) was placed along the roadway in the coastal flats located along the northeastern side of Asagatai Pt. It was placed along the inland edge of the road in the location specified on the project plans for the placement of a box culvert (see Figure 3). The trench measured 9.0m in length and reached a maximum depth of 180cmbs.

Excavation encountered a surface cover consisting of a compacted stone, gravel and sand matrix underlain by a layer (Layer I) of yellowish brown (10YR 5/4) sand which measured approximately 170cm thick and reached a maximum depth of 175cmbs (see Figure 5). The upper 50cm of Layer I is extremely rocky and is likely derived from fill placed on the surface of the road. Layer I was underlain by bedrock along the majority of the length of the trench, although, an additional deposit (Layer II) of very pale brown (10YR 7/4) sand which measured approximately 20cm thick and reached a maximum depth of 195cmbs was identified at its northwestern end.

In the inland, southwestern face of the trench, the existing waterline was identified while troweling the sides of the trench. It is located at a depth of 80cmbs indicating that the inland edge of the road has been disturbed to at least that depth and the stratigraphy above derives from backfill. The remaining cultural material identified was limited to a small amount of historic debris.

**Trench 3:** Trench 3 (T3) was placed in the coastal flats located along the northeastern side of Asagatai Pt. near the bridge connecting Ofu and Olosega. As with Trench 2, it was
Figure 4: Profile of Trench 1

Northwestern Face

SW
(1m)

0 50 100 150 200 250 300cm

NE
(4m)

0

surface

Layer I

Layer II

Layer III

Layer IV

unexcavated

Total Length 6.7m
Maximum Depth 150cmbs

Layer I: 10YR 7/2, light gray sand.
Layer II: 10YR 3/1, very dark gray sandy loam.
Layer III: 10YR 6/3, pale brown sand.
Layer IV: 10YR 7/4, very pale brown sand.
Figure 5: Profile of Trench 2

Layer I: 10YR 5/4, yellowish brown sand.
Layer II: 10YR 7/4, very pale brown sand.

Total Length 90m
Maximum Depth 180cmbs
placed along the inland edge of the road, specifically, in the location depicted on the project plans for the placement of an additional box culvert (see Figure 3). The trench measured 16.8m in length and reached a maximum depth of 190cmbs.

Excavation encountered a surface cover consisting of a compacted stone, gravel and sand matrix underlain by a layer (Layer I) of grayish brown (10YR 5/2) sand which measured approximately 15cm thick and reached a maximum depth of 20cmbs (see Figure 6). Layer I was underlain by a layer (Layer II) of black (10YR 2/1) sandy loam which measured approximately 10cm thick and reached a maximum depth of 30cmbs and was in turn underlain by Layer III, a dark brown (7.5YR 3/2) sandy loam which measured up to 55cm thick and reached a maximum depth of 90cmbs. Underlying Layer III was a deposit (Layer IV) of dark brown (10YR 3/3) sandy loam which was excavated to a depth of 155cmbs.

This trench was placed in the same relative position to the road and the existing water line as was Trench 2. The water line was avoided by excavating T3 slightly further towards the center of the road than T2. The stratigraphy identified is consistent with the upper meter of deposits likely representing fill and/or backfill material from one or more filling events. Small amounts of crustacean exoskeleton, unidentified marine shell, fish bone and mammal bone (refer to Appendix A, Table 2) were identified which could have been deposited anthropomorphically (although, likely with fill associated with the water line or roadway).

Trench 4: Trench 4 (T4) was placed in the coastal flats located along the northeastern side of Asagatai Pt. near the bridge connecting Ofu and Olosega Islands. It was placed along the edge of the road approximately 3m inland of the existing water line in the grass lawn in front of the current residences located near the point (see Figure 3). The trench measured 6.5m in length and reached a maximum depth of 160cmbs.

Excavation encountered a surface cover of grass and detritus underlain by a layer (Layer I) of dark brown (7.5YR 3/2) sandy loam which measured approximately 20cm thick and reached a maximum depth of 25cmbs (see Figure 7). Layer I was underlain by a layer (Layer II) of black (7.5YN 2/0) sandy loam which measured approximately 25cm thick and reached a maximum depth of 50cmbs. This was in turn underlain by Layer III, a very pale brown (10YR 7/4) sand which measured up to 55cm thick and reached a maximum depth of 105cmbs. Underlying Layer III was a deposit (Layer IV) of very dark brown (10YR 2/2) sandy loam which was excavated to a depth of 160cmbs.
Figure 6: Profile of Trench 3

Southern Face

E (9m)  
0  50  100  150  200  250  300cm

W (12m)  
0

0 surface

Layer I

Layer II

Layer III

Layer IV

unexcavated

Total Length 16.8m
Maximum Depth 190cmbs (east end)
125cmbs (west end)

Layer I: 10YR 5/2, grayish brown sand.
Layer II: 10YR 2/1, black sandy loam.
Layer III: 7.5YR, 3/2, dark brown sandy loam.
Layer IV: 10YR 3/3, dark brown sandy loam.
Figure 7: Profile of Trench 4

Layer I: 7.5YR 3/2, dark brown sandy loam.
Layer II: 7.5YN 2/0, black sandy loam.
Layer III: 10YR 7/4, very pale brown sand.
Layer IV: 10YR 2/2, very dark brown sandy loam.
It is likely that the stratigraphy identified in this excavation unit is more closely representative of the natural sequences for this coastline on Ofu than the trenches (T2 and T3) excavated closer to the roadway. This possibility is supported by the recovery of one traditionally worked artifact and one potential artifact from Trench 4. The first consists of a broken adze (refer to Appendix A, Table 3, Artifact #00-001) with both the butt and cutting edge/bevel end missing. It is highly polished on one entire surface and partially polished on the sides (see Figure 8). The second item identified (Artifact #00-002) is the spine from an echinoderm known in Samoa as vatu'e (Heterocentrotus sp.) (Behan 1972). The spine appears to have been utilized as an abrader having the distal end worn to form a conical point (note: As of this writing, a similar echinoid spine recently recovered on Olosega was analyzed and the results indicate that the pattern of wear identified may be a natural phenomenon; ACP personnel are consulting with the staff of the University of Hawaii and the final determination will be reported in a paper currently in preparation). Based upon the recovery of a traditionally worked item, it is likely that additional subsurface deposits originating from the pre-contact period are extant in the inland portions (inland of the current roadway) of the coastal flats on the Ofu side of Asaga Straight.

Section 5.2: Results of Archaeological Investigations for Phase II - Site Descriptions and the Findings of Limited Subsurface Testing

In addition to the known site, AS-12-9, nine additional historic features were identified and two modern structures were noted along the roadway within Phase II of the Ofu-Olosega road project. A complete description and evaluation of each of the sites located within, or in the immediate vicinity of, the planned Right-of-Way is given below.

Site AS-12-9

Site AS-12-9: This site was originally documented by Best (1992) during a reconnaissance survey of the proposed roadway extending to Sili. Additional archaeological assessment of the site was performed by ACP during a one day reconnaissance conducted on September 2, 1995 (Kennedy 1995). The site consists of a boulder with several grinding surfaces which is located on the inland (southern) edge of the proposed roadway, 480m (1575ft) east of the Olosega end of the bridge which connects the two islands (see Figures 2 and 9).

The boulder was described by Best as having "10 broad facets and one side groove (sic.)" (Best 1992:22). Upon examination, the boulder was observed to have nine distinct, circular basins (20 to 50cm in diameter), one longitudinal
Figure 8: Broken Adze, Artifact #OO-001

Top View

Bottom View

Side View

Cross Section

0 1cm
* Note: Figure Depicts Plan of Construction for the Ofu-Olosega Road Improvement Project Phase II (Sheet No. S/10-2.0)

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facet, and a distinct groove between two of the larger basins (see Figures 10 and 11). As stated in the previous assessments, once cleared this site is visually impressive. Its appearance alone, having three morphologically distinct working surfaces, provides information concerning lithic technology and tool manufacture. It is probable that this boulder has been used for the manufacture of lithic items from the pre-contact period, possibly early in the settlement of the Sili coast of Olosega, until introduced western goods took the place of stone implements. It has been suggested that this utilization may have continued into the post-contact period (Kennedy 1995:5).

In addition, Site AS-12-9 is known to nearby residents as a "kava mixing rock". The cultural significance of this function is intimately linked with life in the Samoan village. Future subsurface work at the site promises the potential to define the temporal sequence of its utilization.

Site AS-12-11

This site is composed of two adjacent features located approximately 100m southwest of the first existing structure in the currently occupied section of Sili Village (see Figures 2 and 12). A nearby reference point (Point A) was established from which to plot a sketch map of the site. The location of Point A was plotted using tape and compass from survey marking pins whose locations were known.

Feature AS-12-11A (TF-1): This feature consists of a low, soil backed, stone alignment, located approximately 12m east of Point A (see Figure 13). The alignment measures approximately 5m in length and is constructed of angular basalt stones 40 to 70cm in diameter. The front (seaward) edge stands 1 to 2 courses high, approximately 50cm AGL (above ground level) along most of its length, but reaches up to 90cm AGL on its southern end. Soil backing the alignment forms a slightly sloping surface covered with scattered stones and boulders between 2 and 3m wide. At the back (the eastern side) of this level surface, the slope of the hillside becomes more extreme. Local informants indicated that there had been a fale in this vicinity as late as the 1950’s. It was their impression that this feature was built for soil retention towards the back of the residential compound (per. comm. Taulaga Sualevai 1995). A test unit was excavated at this feature in order to obtain information concerning the site’s age and function.

Test Unit 1 (TU-1): Test Unit 1 was excavated in the soil area backing the stone alignment (see Figure 13). A datum was established on a nearby tree and the depth, below datum (bd), to each corner and the center of the unit was measured. Excavation of the one meter square unit began in 10cm levels which continued for three levels to a depth of 48cmbd.
Figure II: Photograph of Site AS-12-9 (Depicting Grinding Surfaces)

[Image of a photograph showing a rock with grinding surfaces labeled as Basin, Groove, and Longitudinal Facet]

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source: Karin Apollonia Muller 1996
Figure 12: Site and Feature Locations

Location of modern *umu* foundation

Survey Marker 5-10

Site AS-12-16

Point A

Feature AS-12-12B

Feature AS-12-12A

Site AS-12-13

Site AS-12-14

Site AS-12-11

*Note: Figure Depicts Plan of Construction for the Ofu-Olosega Road Improvement Project Phase II (Sheet S2-0-30)*
Further excavation proceeded within the natural stratigraphic layer. Excavation encountered a surface cover of seedlings and detritus underlain by a single layer (Layer I) of black (5YR 2.5/1) clay. The unit was excavated to a maximum depth of 91cmbd (see Figure 14). A large boulder which occupied the majority of the floor of the unit precluded further excavation (see Figure 15).

A variety of cultural material was recovered from the sifted soils of this unit. Both coral and marine shell remains were identified (refer to Table 2). While it is possible that the shell material represents midden, the majority of the mollusk remains consisted of Turbo sp. shell fragments. The shells of Turbo sp. are known to be re-utilized by terrestrial dwelling hermit crabs following the death of the mollusk. Numerous specimens were noticed living in trees adjacent to the test unit, apparently preferring coconut trees. This re-use of the shell may effect its deposition in archaeological contexts.

Significantly, six basalt fragments were recovered which were determined to be waste flakes (refer to Table 3) produced during lithic tool manufacture. In addition, numerous small fragments of volcanic glass were recovered (refer to Table 3). In contrast to the basalt pieces, none of the volcanic glass fragments displayed evidence of modification. It is possible that these small volcanic glass fragments represent material which has been naturally deposited after eroding from glassy selvages at the edge of basaltic dykes. These types of locales exist in the cliffs above Sili (Atlas 1981: Geology Plate 4) and are known to produce basaltic glasses which are not believed to have been utilised anthropomorphically (Clark & Wright 1995). Similar volcanic glass material was identified at To’aga by Kirch and Hunt (1993:165) who also believed it to be naturally deposited. However, they do not specify the total amount recovered nor the location and number of units from which this material was collected. Therefore, it is impossible to make comparisons between the material collected during the current investigations and that collected by Kirch and Hunt. The presence of volcanic glass pieces within the same deposits which contain basalt waste flakes suggests a possible anthropomorphic influence in the deposition of this material.

The results of the excavation at this feature have confirmed that this site was utilized for habitation. Activities which took place at the features which comprise this site include lithic tool manufacture. Based upon the lack of historic materials recovered from the unit, it is possible that the site was utilized solely in the pre-contact period, although, informant testimony indicates that historic habitation also occurred in the immediate vicinity.
Figure 14: Profile of Test Unit 1, Feature AS-12-11A

Layer I: 5YR 2.5/1, black clay.

KEY

Rock
Figure 15: Level Plan, Test Unit 1 (Site AS-12-11A) Bottom of Unit
Feature AS-12-11B (TF-2): This large, level surfaced, stone mound/platform is located adjacent to Feature 11A, approximately 8m northeast of Point A (see Figure 13). It measures over 10m in length and 4m in width. The feature is constructed of angular basalt stones 30 to 50cm in diameter and standing 6 to 10 courses high; 240cm AGL on the ocean side and 120cm AGL on the mountain side. Larger boulders, up to 1m in diameter, form a deteriorated edge on the structures' southern side (see Figure 16). The structure is covered in vines with banana and breadfruit trees growing on its top and sides. Based upon the proximity of this feature to the current roadway, which is in the approximate location of the former roadway, it is possible that this structure was impacted by the construction of the original road to Sili.

This feature likely represents a former habitation platform. The results of excavations at the adjacent Feature 11A indicate a pre-contact utilization, although the sites' use into the historic period cannot be discounted. Future testing at this feature could provide important information concerning the utilization of habitation sites during the transitional time between the pre- and post-contact periods.

Site AS-12-12

Site AS-12-12 consists of three separate historic features which are likely associated with a former water supply system for the Sili Coastline. While not in the immediate vicinity of one another, all of these features are situated on the hillside, immediately inland and above the proposed roadway, at approximately the same elevation, between 30 and 40ft AMSL (see Figures 9 and 12). It is thought that all of these features originate from the World War II era.

Feature AS-12-12A (TF-3): This feature consists of a pair of adjacent, concrete water tanks set on a roughly level soil area retained on its downslope (seaward) side by a low stone alignment. These structures are located approximately 50m southwest of the first existing structure in the currently occupied section of Sili Village (see Figure 12). The larger of the two concrete water tanks measures 3.6m (12ft) square and stands 220cm AGL on the downslope (seaward) side and 250cm AGL on the upslope side. The smaller of the water tanks, located immediately northeast of the larger, measures 2.9m long by 2.2m wide and stands 170cm AGL on the downslope side and 110cm AGL on the upslope side. Both tanks are set above a low alignment of stones which measures 7.2m in length, stands approximately 50cm AGL, and is oriented roughly northeast to southwest. It is believed that this alignment was constructed to retain soil and form a level "pad" on which to place the water tanks. This feature is known to have existed prior to 1960 and is thought to have been constructed after the start of WWII.

35
Figure 16: Photograph of Feature AS-12-11B, View Facing Northwest

source: Karin Apollonia Muller 1996
Feature AS-12-12B (TF-6): This feature consists of two adjacent concrete blocks located on the hillside above the surviving ford which had been part of the former roadway (see Figure 12). Embedded within one of the blocks is a metal pipe and metal turn handle that appears to have functioned as a valve. There are also fragments of PVC pipe that appear to have been added to the system since it was first placed on the hillside. These blocks appear to have served as part of the system providing water to residences along the Sili coast. It is likely that this system has been in place since WWII.

Feature AS-12-12C (TF-8): Feature 12C consists of a series of small stone mounds aligned along the hillside, roughly in a straight line. These mounds are located between 5 to 10m south (inland) of Site AS-12-15 (see Figures 9 and 17). Each mound consists of a stacked pile of angular basalt stones (around 30cm in diameter) which stands approximately 1m AGL. These piles, generally, measure approximately 1m in diameter at their base. One of these piles, though, measures about 3m in length and forms a rough wall-like structure. Each of these mounds is topped with concrete that is formed so that it appears to have once held a pipe. There are four of these mounds in the vicinity of Site AS-12-15 and it is likely that additional, similar mounds exist elsewhere at this elevation along the coastline. These mounds, also, appear to have served as part of the system providing water to residences along the Sili coast. It is likely that this system has been in place since WWII.

Site AS-12-13

Site AS-12-13 (TF-4): Site AS-12-13 consists of a series of three stepped terraces located approximately 10 to 15m southwest of Feature AS-12-12A and approximately 60m southwest of the first existing structure in the currently occupied section of Sili Village (see Figure 12). These terraces are slightly offset from one another with the upper terrace extending past the lower terraces towards the northeast and the bottom terrace extending past the upper terraces towards the southwest. The top and bottom terraces are similar to one another being defined by one to two course alignments of angular basalt stones (30 to 50cm in diameter) forming the front (downslope) edges which stand 50 to 70cm AGL. They are soil backed and have roughly level surfaces, 1 to 2m wide. The middle terrace has apparently been constructed to form a rough, rubble-like downslope edge (reminiscent of a small revetment) that stands approximately 1m AGL. This terrace is also soil backed and has a roughly level surface, 1 to 2m wide. Each terrace measures between 5 and 8m in length. It is thought that this site represents the remains of agricultural terraces which may have been in use from as early as the late pre-contact to early post-contact period. It is also possible that the site may have been
modified during the construction of the nearby water tanks (Feature AS-12-12A).

Site AS-12-14

Site AS-12-14 (TF-5): This site consists of a low, rubble alignment located in a level area covered with banana trees approximately 80m southwest of the first existing structure in the currently occupied section of Sili Village (see Figure 12). The site is constructed of angular basalt stones 30 to 50cm in diameter forming an alignment 1 to 2 courses high and standing 40 to 50cm AGL. The alignment measures approximately 5m in length. The feature is not soil backed, instead, it appears to form a low, deteriorated wall. Although geographically separated from Site AS-12-13 by a small gulch, based upon its morphology, this site is thought to be associated with agricultural practices dating from the late pre-contact to early post-contact period.

Site AS-12-15

Site AS-12-15 (TF-7): Site AS-12-15 consists of a paved rock shelter formed from large, adjacent boulders located approximately 400m (1300 to 1350ft) east of the Olosega end of the bridge which connects the two islands (see Figures 2 and 9). One of the boulders forms an arcing overhang that covers a level area that has been paved with basalt 'ili'ili. The downslope (northern) side of the paved surface is retained by an alignment of large basalt stones (50 to 80cm in diameter) that measures approximately 5m in length and stands up to 70cm AGL. Another stone alignment defines the upslope (southern) boundary of the site. This alignment is constructed of angular basalt stones, 30 to 50cm in diameter and standing 75cm AGL, which retain the soils above the paved surface (see Figure 17). The paved 'ili'ili surface itself measures approximately 15m square (5 by 3m). A test unit was excavated through the paved 'ili'ili surface in order to obtain information concerning the site's age and function.

Test Unit 2 (TU-2): Test Unit 2 was excavated below the overhanging boulder through the 'ili'ili surface (see Figure 17). A datum was established on a nearby tree and the depth, below datum (bd), to each corner and the center of the unit was measured. The unit measured one meter square and was excavated by removing the 'ili'ili fill until soils and detrital material were reached at which time all additional material removed from the unit was screened. Excavation encountered a surface cover of 'ili'ili which formed a deposit of fill measuring approximately 25cm thick. The 'ili'ili fill was underlain by a single layer (Layer I) of black (5YR 2.5/1) slightly silty clay loam which was excavated to a maximum depth of 98cmbd (see Figure 18). At the base of Layer I, several large boulders occupied the
Layer I: 5YR 2.5/1, black slightly silty clay loam.

KEY

Rock
majority of the floor of the unit precluded further excavation (see Figure 19).

Cultural material was recovered from both within the 'ili'ili fill and from the soils of Layer I. The 'ili'ili fill yielded two pieces of coral and a ceramic rim sherd identified as Polynesian Plain Ware (refer to Table 3, Artifact #’s 00-012, 00-013 and 00-014). It is believed that the coral pieces represent manuports because they were embedded in the 'ili'ili fill which is known to have been brought to the site to pave the rockshelter. In addition, one of the pieces appears to have a groove around it which could have been worked into the coral. The presence of a fragment of Polynesian Plain Ware is indicative of habitation at this site.

The soil layer encountered beneath the 'ili'ili fill (Layer I) also showed evidence of habitation. This layer contained pieces of coral, crustacean remains, and marine shell remains (refer to Table 2). The presence of specimens representing several gastropod genera, including Nerita sp. and Drupa sp. (genera known to have been commonly utilized by inhabitants collecting resources from littoral areas in a subsistence economy), supports the hypothesis that this site was used for habitation. The fact that these remains were recovered from the soils beneath the 'ili'ili fill implies that the rock shelter may have been utilized before the floor was covered with the 'ili'ili.

The results of the excavation of Test Unit 2 have confirmed that this site was utilized for habitation. Activities which took place at this site likely include the consumption of meals. This site is believed to have been utilized during the pre-contact period. Based upon the recovery of a fragment of Polynesian Plain Ware, this site may have been in use as early as the To’aga site where ceramic is believed to have been used until between A.D. 300 to 500 (Kirch & Hunt 1993:231).

Site AS-12-16

Site AS-12-16: This site consists of a rock outcropping located in the ocean offshore from Lalomoana approximately 200m southwest of the first existing structure in the currently occupied section of Sili Village (see Figure 12). The rock is exposed at low tide and awash in the larger waves at high tide. To local residents the rock is known as "Ma’a Fe’e" (literally "octopus stone") and is the legendary anchoring spot of the Tu’i Manu’a along the Sili coastline. According to informant testimony, the Tu’i Manu’a gave the Sili coast to his two grandsons who moved there and established two hamlets that, together, were called the village of Sili-tai. When visiting his grandsons on Olosega, the Tu’i Manu’a would anchor his double-hulled canoe at the
Figure 19: Level Plan, Test Unit 2 (Site AS-12-15) Bottom of Unit
Ma‘a Fe‘e, coming ashore at Lalomoana (per. comm. Taulaga Sualeval 1995).

Modern Features

Features noted which were not considered historic sites included a modern water well on a concrete pad enclosed by a locked chainlink fence. An overgrown bulldozed driveway leads from the current trail up to the well, which is currently capped. The well is located approximately 50m southwest of the former ford which is shown on plans reproduced in this paper as Figure 12.

Finally, a foundation for an umu was identified which, according to informant testimony, is believed to be approximately 20 years old. This foundation is located about 20m southwest of the wall depicted on plans extending from the first house in the currently occupied section of Sili Village.

Section 6: Discussion of Archaeological Findings

The current investigations have documented seven sites of historic significance, all within Phase II of the planned road improvement corridor. While excavations along Phase I of the planned road improvement corridor indicated that there was the potential of encountering significant cultural deposits inland of the current roadway, the only significant sites identified during the current project were along the Phase II corridor. One of these sites (AS-12-9) had been previously identified and the remaining six sites (AS-12-11 through 16) were identified during the current study. Three of these seven sites (AS-12-9, AS-12-15 and AS-12-16) are especially important examples of the pre-contact history and the patterns of habitation along the Sili coastline of Olosega.

Site AS-12-9 is a visually impressive boulder with numerous grinding surfaces. Morphologically, having three distinct working surfaces, the site provides information concerning lithic technology and tool manufacture. It is probable that this boulder has been used for the manufacture of lithic items since early in the pre-contact period. In addition, Site AS-12-9 is known to nearby residents as a "kava mixing rock". The cultural significance of this function is intimately linked with life in the Samoan village.

Site AS-12-15, a rock shelter with a floor paved using basalt ‘ili‘ili, represents a pre-contact habitation site that may have been utilized in more than one episode of occupation. Cultural materials recovered from the soils of Layer I indicate the probable habitation of the site prior to
the paving of the shelters’ floor. The recovery of cultural materials collected from the ‘ili‘ili fill itself indicate probable habitation of the site at the time the pavement was in place. This information could indicate at least two episodes of occupation, the first prior to the paving of the floor and a second following the paving of the shelter.

The recovery of a fragment of Polynesian Plain Ware from controlled excavations at Site AS-12-15 is the first such sample collected on Olosega Island. Its presence indicates that the Sili coast has likely been occupied since as early as the nearby To‘aga site, located less than two kilometers away on Ofu Island. At To‘aga ceramic is believed to have been used until between A.D. 300 to 500 (Kirch & Hunt 1993:231).

Another topic of interest concerning a site identified during the current investigations is that of Site AS-12-16. Site AS-12-16 is a partially submerged rock located offshore from the Lalomoana section of Sili. It is known as "Ma‘a Fe‘e" (literally "octopus stone") and is believed to be a legendary anchoring spot of the Tu‘i Manu‘a along the Sili coastline. Another partially submerged rock located offshore from the Luma section of Ta‘u Village (Site AS-11-16) was documented by Clark (1980:24) and is also named "Ma‘a Fe‘e". While Kikuchi reported that it represented a petrified squid, Clark reported that the site was associated with a legendary throwing contest between two chiefs.

It is possible that many of these types of geological formations (rocks awash at the tide line) have acquired similar specialized names, probably based upon the native populations’ knowledge of the littoral zone (i.e., implying that these stone formations are a possible biological niche inhabited by octopus and squid). In addition to acquiring names, it is apparent that these types of geological features (as well as other similar geological formations) are associated with legendary persons and events.

The identification of the historic sites described in Section 5 as well as those briefly discussed in more detail above, significantly increases our knowledge of site distribution along the Sili coast of Olosega. It is apparent that habitation sites took various forms, specialized activities occurred at certain sites, and geological formations were associated with legendary events.

Based upon the distribution of sites identified along this 1.2km length of coastline during the current study, it is likely that the entire Sili coast has been utilized to form a continuous community (nu‘u) consisting of hamlet-like sections (pitonu‘u) (Davidson 1969:56) and individual households interspersed between patches of cultivated land and managed orchards. This utilization first occurred in the
pre-contact period, possibly early in the settlement of the Manu’a Islands, and continues to the present day.

Section 7: Assessment of Site Significance

Seven sites were identified during the current investigation which have been determined to be significant historic properties. These sites and the criteria under which they are significant are summarized in Table 1.

Site AS-12-9, a boulder with numerous grinding surfaces, is significant under Criterion C (as an excellent example a site type) and D (likely to yield important scientific information) of the criteria set forth by the National Register of Historic Places. Sites AS-12-11 through 15, including both habitation and agricultural sites which date to both the pre- and postcontact periods, are significant under Criterion D (likely to yield important scientific information) of the criteria set forth by the National Register of Historic Places. Finally, Site AS-12-16, a stone outcropping awash at the tide line and associated with legendary events, is significant under Criterion B (being associated with the life of a significant person) and D (likely to yield important scientific information - this criteria is believed to apply based upon the potential to gather further ethnographic accounts related to this legendary location from individuals familiar with Sili) of the criteria set forth by the National Register of Historic Places.
### Table 1: Summary of Site Significance Evaluations

<table>
<thead>
<tr>
<th>Site</th>
<th>Feature</th>
<th>Description</th>
<th>Function</th>
<th>Significance Evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS-12-09</td>
<td>Boulder w/ Grinder Basins</td>
<td>TM/CER</td>
<td>C and D</td>
<td></td>
</tr>
<tr>
<td>AS-12-11</td>
<td>Residential Grouping</td>
<td>HAB</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A Stone Alignment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B Mound/Platform</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS-12-12</td>
<td>Historic Water System</td>
<td>HAB/AG</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A Adjacent Water Tanks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B Concrete Blocks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C Stone &amp; Concrete Mounds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS-12-13</td>
<td>Terraces</td>
<td>AG</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>AS-12-14</td>
<td>Stone Alignment</td>
<td>AG</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>AS-12-15</td>
<td>Rock Shelter</td>
<td>HAB</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>AS-12-16</td>
<td>Stone/Boulder (partially submerged)</td>
<td>LGD</td>
<td>B and D</td>
<td></td>
</tr>
</tbody>
</table>

**Code For Significance Evaluation Criteria**

A - Site Reflects Major Trends in History  
B - Site is Associated with the Life of a Significant Person  
C - Site is an Excellent Example of a Site Type  
D - Site Likely to Yield Important Scientific Data

**note:**  
TM = Traditional Tool Manufacture  
CER = Ceremonial  
LGD = Legendary  
HAB = Habitation  
AG = Agricultural
Conclusion

Archaeological investigations have been conducted in association with the Ofu-Olosega Road Improvement Project, Phases I and II. This study was conducted within a corridor consisting of the roadway and its Right-of-Way. These investigations documented seven sites of historic significance.

Based upon the result of the current study, Archaeological Consultants of the Pacific, Inc. recommends that these sites be preserved in place. Prior to construction these sites should be flagged and a meeting should be held with the construction crew to inform them of the significance of the sites. During construction activities these sites should be avoided. If heavy machinery is to be used in the vicinity of a site, a qualified archaeologist should be on hand to monitor construction activities and ensure the protection of the sites. Implementing these recommendations will help mitigate the effects of construction activities so that improvements to the Ofu-Olosega Road will have "no adverse effect" on significant historic properties which exist within the Right-of-Way.
Bibliography

Atlas


Behan, R.


Best, S.,


Best, S., Leach, H. M. and Witter, D. C.


Best, S., Sheppard, P., Green, R.C., and Parker, R.


Brophy, K.R.

Buck, P.,


Churchhill, Llewella Pierce


Churchward, William B.

1887 My Consulate In Samoa. Bentley, London.

Clark, Jeffery T.


Clark, J.T. and Herdrich, D.J.

Clark, J.T. and Michael Michlovic


Clark, J.T. and P.D. Nunn


Clark, J.T., and E. Wright


Clark, J.T., E. Wright, D.J. Herdrich

in review Interactions Within and Beyond the Samoan Archipelago: Evidence from Basalt Geochemistry. Accepted for volume edited by Marshall Weisler, volume prospectus provisionally accepted by University of Hawaii Press.

Davidson, Janet M.


Dye, Tom


Emory, K.P. and Y.H. Sinoto

Foster, R.


Freeman, J.D.
1943 The Seuao Cave. Journal of the Polynesian Society. 52:101-109


1944b O le Fale o le Fe’e. Journal of the Polynesian Society. 53:121-144.


Frost, Janet


Goldman, I.
Gould, R.A., Honor, K.E. and Reinhardt, K.J.

1985 Final Project Report for Tulauta and Fagatele Bay
Prehistoric Villages and Leone Bay petroglyphs.
Report on file, Historic Preservation Office, Pago
Pago.

Green, R.C.

1974a Excavations of the Prehistoric Occupations of SU-Sa-3.
In Green, R.C. and Davidson J.M., eds, Archaeology in
Western Samoa, Vol II. Bulletin of the Auckland

1974b A Review of Portable Artifacts from Western Samoa. In
Green R.C. and Davidson, J.M., eds., Archaeology in
Western Samoa, Vol. II. Bulletin of the Auckland
Institute and Museum 7:245-275.

Green, R.C. and Davidson, J.M., eds

1969 Archaeology in Western Samoa, Vol. I. Bulletin of the
Auckland Institute and Museum 7: 245-275.

Herdrich, David J.

1991 Towards an Understanding of Samoan Star Mounds.
Journal of the Polynesian Society. 100(4)381-435.

Herdrich, D.J. and Jeffery T. Clark

1993 Samoan Tia 'ave and Social Structure: Methodological
and Theoretical Considerations. In Graves, M.W. and
R.C. Green, eds. The Evolution and Organisation of
Prehistoric Society in Polynesia. pp.52-63. New
Zealand Archaeological Association Monograph 19.

Herdrich, D.J., J.R. Moore, N. Kilzer, J. Kennedy

1996 A Cultural Resource Evaluation (Phase I and II) for a
portion of Road 1b, Phase I of the Ta’u Road
reconstruction located on Ta’u Island, Manu’a,
American Samoa. Report on file at the American Samoa
Historical Preservation Office, Pago Pago, American
Samoan.

Hunt, T.L.

1987 Archaeological Survey and Assessment of the Proposed
Fiti’u’ata Airport Site, Ta’u Island, Manu’a Group,
American Samoa. Report prepared for Department of
Public Works, American Samoa Government. Report on
file, American Samoa Historic Preservation Office,
Pago Pago.

52
Hunt, Terry L. and Patrick V. Kirch

Jennings, J.D.


Jennings, J. D., and Holmer, R. N.

Jennings, J.D., Holmer, R.N., Janetski, J. and Smith, H. L.

Jordan, D.S., and A. Seale

Kennedy, Joseph


Kikuchi, William K.


Kikuchi, W.K., Palama, S.L. and Silva, T. E.


Kirch, Patrick V.


Kirch, P.V., and R. Green


Kirch, P.V., and T.L. Hunt (eds.).


Kramer, A.

Ladd, E.J. and D.K. Morris

Leach, H.M. and D.C. Witter


McCoy, P.

McDougall, I.

Moore, James R., and Joseph Kennedy

Nakamura, S.

Pritchard, W. T.
1866 Polynesian Reminiscences, or Life in the South Pacific Islands. London: Chapman and Hall.
Shapiro, William and Paul Cleghorn
Silva, T.E. and S.L. Palama
Stair, J. B.
Sterndale, R.A.
Stice, G.D. and F.W. McCoy
Thompson, Andrew
Turner, G.
Watters, Raymond F.


Williams, J.


Yuncker, T.G.

APPENDIX A

Tables
Table 2: Analysis of Faunal Remains

<table>
<thead>
<tr>
<th>Classification</th>
<th>Trench 3</th>
<th>Trench 4</th>
<th>TU-1</th>
<th>TU-1</th>
<th>TU-2</th>
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<tbody>
<tr>
<td></td>
<td>LI/1</td>
<td>LI/3</td>
<td>LI/1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Invertebrate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coral</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echinoderm</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Crustacean</td>
<td></td>
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</tr>
<tr>
<td><strong>Phylum Mollusca</strong></td>
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<tr>
<td><strong>Class Gastropoda</strong></td>
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<td></td>
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</tr>
<tr>
<td>Turbo sp.</td>
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<td></td>
<td>18.0</td>
<td></td>
<td>10.5</td>
</tr>
<tr>
<td>Nerita sp.</td>
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<td></td>
<td></td>
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<td>&lt;0.5</td>
</tr>
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<td>Cymatium sp.</td>
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<td>2.5</td>
</tr>
<tr>
<td>Drupa sp.</td>
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<td>0.5</td>
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<td>Marginella sp.</td>
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<td></td>
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</tr>
<tr>
<td>Unidentified</td>
<td></td>
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<td>1.0</td>
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<td>3.5</td>
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<tr>
<td>Marine Shell</td>
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<td><strong>Vertebrate</strong></td>
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<td>Class Osteichthyes</td>
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<td>Diodontid</td>
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<td></td>
<td>0.5</td>
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</tr>
<tr>
<td>Fish</td>
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<td></td>
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</tr>
<tr>
<td><strong>Class Mammalia</strong></td>
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<td></td>
</tr>
<tr>
<td>Unidentified</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>small to medium</td>
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<td></td>
</tr>
<tr>
<td>sized mammal</td>
<td></td>
<td></td>
<td>1.0</td>
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<td></td>
</tr>
</tbody>
</table>

Note: All data is presented by weight, in grams, of the samples identified.
Table 3: Artifact Accession List

<table>
<thead>
<tr>
<th>Artifact #</th>
<th>Provenience</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OO-001: Basalt</td>
<td>Trench 4, Sift</td>
<td>Broken Adze; highly polished on one surface, partially polished on two surfaces, trapezoidal cross section; 4.8x3.0x2.6cm, 125.5g. See Figure 8.</td>
</tr>
<tr>
<td>OO-002: Echinoderm</td>
<td>Trench 4, Sift</td>
<td>Spine Abrader; distal end worn forming a conical point; 4cm long, 1cm in diameter, 2.5g.</td>
</tr>
<tr>
<td>OO-003: Basalt</td>
<td>Test Unit 1, Layer I/1, (9-28cmbd)</td>
<td>Waste Flake; dorsal ridge, platform, no bulb of percussion, no cortex; 3.5x3.0x1.0cm, 10.0g.</td>
</tr>
<tr>
<td>OO-004: Basalt</td>
<td>Test Unit 1, Layer I/1, (9-28cmbd)</td>
<td>Waste Flake; snapped on two opposite edges, post-depositional breakage, no cortex; 2.5x2.0x0.5cm, 2.5g.</td>
</tr>
<tr>
<td>OO-005: Volcanic Glass</td>
<td>Test Unit 1, Layer I/1, (9-28cmbd)</td>
<td>Twelve small pieces, no evidence of modification; &lt;0.5 to 1.5g.</td>
</tr>
<tr>
<td>OO-006: Basalt</td>
<td>Test Unit 1, Layer I/2, (28-38cmbd)</td>
<td>Rectangular piece w/flake removed along longitudinal edge; flatness of sides and angles at edges appear un-natural; 3.0x2.0x1.0cm, 11.0g.</td>
</tr>
<tr>
<td>OO-007: Basalt</td>
<td>Test Unit 1, Layer I/2, (28-38cmbd)</td>
<td>Waste Flake; dorsal ridge, platform and percussion bulb, no cortex; 2.0x1.5x1cm, 2.5g.</td>
</tr>
<tr>
<td>OO-008: Basalt</td>
<td>Test Unit 1, Layer I/2, (28-38cmbd)</td>
<td>Waste Flake; dorsal ridge, platform and diffuse bulb of percussion, no cortex; 3.5x2.5x1.0cm, 5.0g.</td>
</tr>
<tr>
<td>Artifact #</td>
<td>Provenience</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>OO-009: Basalt</td>
<td>Test Unit 1, Layer I/2, (28-38cmbd)</td>
<td>Waste Flake; finishing/retouch fragment; platform and diffuse bulb of percussion, no dorsal ridge, no cortex; 2.5x1.5x &lt;0.5cm, 0.5g.</td>
</tr>
<tr>
<td>OO-010: Volcanic Glass</td>
<td>Test Unit 1, Layer I/2, (28-38cmbd)</td>
<td>Seventeen small pieces, no evidence of modification; &lt;0.5 to 1.0g.</td>
</tr>
<tr>
<td>OO-011: Volcanic Glass</td>
<td>Test Unit 1, Layer I/3, (28-38cmbd)</td>
<td>Eight small pieces, no evidence of modification; two pieces display a distinct vein along one side; &lt;0.5 to 2.5g.</td>
</tr>
<tr>
<td>OO-012: Ceramic</td>
<td>Test Unit 2, ‘ili ‘ili fill, (15-51cmbd)</td>
<td>Polynesian Plain Ware, rim sherd; porous, reddish brown (2.5YR 4/4), w/ crystalline inclusion, possible incision along lip; 1.5x1.5x1.0cm, 1g.</td>
</tr>
<tr>
<td>OO-013: Coral</td>
<td>Test Unit 2, ‘ili ‘ili fill, (15-51cmbd)</td>
<td>Water worn, probable manuport; possible circumambient groove; 2.5x1.5x0.5cm, 3.5g.</td>
</tr>
<tr>
<td>OO-014: Coral</td>
<td>Test Unit 2, ‘ili ‘ili fill, (15-51cmbd)</td>
<td>Water worn, probable manuport; 2.5x2.5x0.5cm, 1.0g.</td>
</tr>
</tbody>
</table>
APPENDIX B

Correspondence
Mr. John Enright, Historic Preservation Officer
American Samoa Department of Parks and Recreation
Pago Pago, American Samoa 96799

Dear Mr. Enright:

Subject: Project AS-ER-AQ-92-1(005). Reconstruction of THS Route 20, Ofu/Olosega - Compliance with Section 106 of the National Historic Preservation Act of 1966 with Amendments

Thank you for your letter which advised this office of potential violations of the Section 106 process. Please be advised that during the initial stages of preliminary engineering for this project, this office worked closely with Mr. Roderick Brown of your office as well as engineers in the Department of Public Works. An acceptable specification for the needed archaeological work was jointly developed. As I am sure you are aware, the design project went through considerable changes over the past couple of years. Apparently, one of the changes inadvertently removed the jointly developed specification. We have been in contact with Messrs. Fred Pele and Howard Tinglay to discuss ways to correct this oversight. It has been agreed that ASFA will initiate a contract change order with the contractor for the work, or a qualified archaeologist will be hired to conduct the needed investigations in accordance with Section 106 requirements. We are hereby requesting that your office provide the needed technical assistance to ASFA in detailing the work required by the archaeologist.

This federal-aid project is an "undertaking" to reconstruct hurricane damaged portions of Territorial Highway System (THS) Route 20 from the existing concrete roadway to the bridge, which connects the islands of Ofu and Olosega. This portion is considered as Phase I and is approximately 1.2 kilometers in length. The section will consist of a 5.5 meter wide portland cement concrete roadway with 1.2 meter wide concrete ditches.
along the inland side of the road. The new roadway will be located in the existing roadbed. In an effort to protect this roadway from future storms, shore protection has been incorporated into the project.

Phase II of the project is approximately 1.2 kilometers in length. It begins on the island of Olosega adjacent to the bridge and goes toward the village of Sili. The width of roadway for Phase II will be 3.6 meters. The plans call for shifting the roadway to match the existing terrain. Please note that this section of roadway has been destroyed by two consecutive hurricanes. The roadway is being replaced in an effort to allow the Sili villagers to return to their land.

An Archaeological Reconnaissance Survey was performed for this project in 1992. (Copy enclosed) The survey took into account the area within 9 meters on both sides of the existing roadway. Twenty-three sites were located through the survey. Please note that the survey was conducted over the entire length of THS 20 on both islands. The current construction project involves only a small portion of the area surveyed. As discussed with Mr. David Herdrich, Territorial Archaeologist, the new revetments, culverts, and utility cuts may impact archaeological sites which have not yet been discovered. These areas will be included in the new survey.

The area of potential effect (APE) for this project will be the roadbed itself plus the side slopes and ditches. As noted previously, the purpose of this project is to reconstruct the hurricane-damaged portions of THS 20. Thus, a considerable amount of the existing roadway was destroyed by two successive hurricanes. The survey performed for this project indicates that some of the identified sites have already been disturbed by previous roadwork. With this in mind, we have determined that this federal undertaking will not cause any changes in character or use of the historic properties.

From the survey supplied to this office, it appears that the only potential historic property which will be impacted by this project is site AS-12-9 along the road to Sili. The survey indicates that this site needs to be protected and monitored during construction. We concur with this finding and by copy of this letter are hereby advising the ASPA to comply with this determination. We are also advising the ASPA to coordinate any work in this area with the Territorial Archaeologist. This
project will have no adverse effect on site AS-12-9.

Your letter discusses the section of road adjacent to the Lalomaona area near the village of Sili. We concur in the determination that this area was not included in the previous survey. The new archaeological survey will take this area into consideration. Based on the fact that the road to Sili will be constructed over the existing alignment, we do not anticipate any adverse effects to this area. However, this will need to be determined through further study.

This office looks forward to the expeditious completion of the work necessary to evaluate the sites and make any determinations as to whether or not any sites are discovered which may or may not be eligible inclusion on the National Register. We will work with your office and ASPA to assure that all section 106 requirements are satisfied. Please contact this office if further information is required.

Sincerely,

Abraham Wong
Division Administrator

By:

[Signature]
Raymond J. McCormick
Territorial Representative

CC:
Mr. Abe U. Malae, Executive Director ASPA
Mr. Manusinalesoa S. Puletasi, Director of Public Works