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JOSEPH KENNEDY
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June 16, 1988

Mr Earl Fitzpatrick
General Manager, Highways Division
Department of Public Works
American Samoa Government
Pago Pago, American Samoa

Dear Mr. Fitzpatrick:

RE: FINAL ARCHAEOLOGICAL REPORT CONCERNING THE PROPOSED TULA
TO ONENOA ROAD IMPROVEMENT PROJECT

INTRODUCTION

At the request of your office and the Federal Highways Administration, Archaeological Consultants of Hawaii, Inc. has performed a surface survey together with some selective subsurface testing along the proposed Tula to Onenoa Road Improvement.

The purpose of this work was to 1) review pertinent background information relating to this area of the island of Tutuila, 2) determine the presence or absence of surface cultural resources along this route, 3) to determine subsurface potentials at this location 4) based on these actions, to make recommendations for future work, if necessary and 5) to prepare a final report addressing these issues.

This work was performed in April of 1988 with a crew of four - Joseph Kennedy, Archaeologist and Jacob Kaio, Field Director - both of Honolulu - and with the assistance of Mr Samuelu Fesula'i of Leauagae and Mr. Fa Savaiinaea of Pago Village. The field work portion of the project lasted 10 working days. Survey was conducted on foot and actual excavation performed with hand tools.

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EXECUTIVE SUMMARY

To begin, no surface features were encountered along the actual route of the proposed road improvement. In the immediate area of these improvements, several contemporary dwellings existed at the time of survey and are most likely still occupied at this writing. It is not anticipated that road improvements will impact these structures.

Three test trenches were placed at selected locations along the route of the road improvements; in addition, 10 auger stations were also established at an area of suspected activity. In all cases, probes were taken to sterile and the results of all subsurface activities were negative. The reader may wish to refer to the METHODOLOGY and SURVEY RESULTS sections of this report for details.

A review of the previous archaeological work in this area indicates that no work has taken place along the route of the proposed road improvement. However, records do indicate that these improvements will pass in the vicinity of a very early site complex - known as Tulauta - that has been the subject of some substantial past work. Even farther away, but still in the general vicinity of the proposed road improvements, several Ti'a or star mounds have been identified. As can be seen in the PREVIOUS ARCHAEOLOGICAL WORK section of this report, we have good reason to believe that the proposed road improvements will not impact either of these important sites, with a single reservation.

In sum then, the combined results of this archaeological exercise militate in favor of the following interpretation: It does not appear that any cultural impacts will be forthcoming as a result of the proposed road improvement actions, this is based on the subsurface data and the nature of the construction itself. My only reservation is indirect impacts in the area around Tulauta - which I believe can be mitigated through limited monitoring. These recommendations are suggested provided that the plans for said improvements are unchanged from those provided to us in April of this year.

Save for some limited monitoring, no further archaeological work is indicated for this project. However, should routing plans change, or if extra (even temporary) roads are to be added for construction purposes, be advised that this recommendation is no longer valid.

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PHYSICAL SETTING

The proposed road improvements are to take place on the Eastern end of the island of Tutuila between the villages of Tula and Onenoa. The geology of Eastern Tutuila consists of the Olomoana Volcanics of Pliocene- Pleistocene age and recent alluvium derived from these volcanics. The Olomoana volcanics comprise thin-bedded olivine basalt overlying andesites. Tuff and cinder cones occur locally, although dense rocks produced by basaltic and andesitic lava flows predominate.

The present road (atop which the improvements will be made) traverses the northern flanks of Olomoana Mountain which rises to 1074 feet. The steep slopes of the mountain are incised by streams arranged in a radial pattern, with the Vaisa and the Viola Stream immediately north of Tula being the main watercourses in the study area.

Alluvial flats occur in the lower stream catchment areas of the Vaisa and Viola Streams. The main ridge between Tula and Onenoa is the Lefutu Ridge, with the Lefao Ridge being a secondary ridge off the Lefutu. The road crosses the Lefutu Ridge in a saddle area which separates the Lefutu from the Leauagae Ridge.

The soils derived from the basaltic rocks on the steep slopes include the Fagasa-Ofu silty clays and the Fagasa family - Lithic Hapludolls - Rock outcrop association. In the lower slope areas the soils derived from basalt and basaltic alluvium include Aua very stony silty clay loam, with Leafu stony silty clay occurring on the alluvial flat land in the vicinity of Tula.

The vegetation may be broadly classified as tropical rainforest. In the study area, managed lands - mostly small swidden plots of taro, breadfruit, banana or coconut - predominate.

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PREVIOUS ARCHAEOLOGICAL WORK IN THE AREA

Archaeological research in the Samoas began in the early 1960's but still must be considered in the infant stage of development. For a broad overview of island-wide investigations, the reader may wish to consult Clark (1980, 1981).

For the purposes of this report, selected projects may be highlighted and this process begins with Frost's work which was conducted in 1972 (Frost 1976, 1978). She selected seven sites on the island of Tutuila and conducted subsurface excavations at each - all village sites. One of these, an abandoned village complex known as Tulauta or Tulotu, yielded a date of 800 B.C. making this site, at least for the time being, the earliest known occupied location in American Samoa. Aside from this distinction, Tulauta is also important as the proposed road improvements pass in the general vicinity of this complex.

Investigations in the Eastern District of Tutuila continued in 1985. At that time, Gould, Honor and Reinhardt of Brown University briefly visited and described the abandoned village of Tulauta. Their observations may be condensed at this time. They identified the village as covering 16,000 square meters, measuring 200 X 80 meters in what they described as a "kidney shaped" area. They determined this area by observing the presence or absence of lithic and other visible artifacts.

Under this criteria, it was determined that the southern boundary of this site complex is marked by the dirt road, which is also the location of a portion of the proposed improvements. Twenty-six features were recorded at Tulauta including at least 12 structures. The structures consisted of 8 oval house foundations, 1 raised rectangular platform, 1 three-tiered structure, 2 three-sided structures (said to be pig pens) and numerous pits, walls and hearth structures.

It is also important to note that Gould et. al. considered the southern site area of Tulauta (an area of mixed modern and prehistoric structures) to be the oldest portion of the complex. This is also the area closest to the proposed improvements.

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Regarding the significance of Tulauta, Gould et. al. have said, "...Tulauta has been maintained in a fair state of preservation. Its size and complexity give Tulauta high research and interpretive potential, especially regarding the adz manufacturing process, the association of prehistoric and historic structures, human behavioral settlement patterns and survival strategies." (Gould et. al. 1985:8)

One year after Gould and company made their observations regarding Tulauta, Jeffrey Clark of North Dakota State University arrived in Samoa to begin what he called "The Eastern Tutuila Archaeological Project", with results submitted in 1987. Clark's overriding research focus for this project was prehistoric settlement patterns in American Samoa. He concentrated his efforts in the valley regions of this district, did some reconnaissance in Onenoa and did no reconnaissance in Tula.

Nevertheless, Clark does devote several pages of his report to Tulauta, launching into a detailed description of problems associated with Frost's work and underscoring the need to resolve some of these problems at this important site. He concludes the Tula portion of his report by saying "Careful excavations geared toward locating early cultural deposits, expanding our information on later occupation, and understanding the meaning of the lithic assemblage, are desperately needed at this site before we can fully assess its significance (Clark 1987:34)."

As for Onenoa, Clark concludes " As evidenced by our surface finds, prehistoric cultural deposit is (sic) present at Onenoa. It does not seem likely, however, that this small plain would have been occupied early in the settlement sequence - that is, during the ceramic period -but only subsurface testing can resolve the issue. Excavation may yield data useful for understanding Samoan prehistory, but until such work is undertaken we remain ignorant of the significance of site AS-21-11 (Clark 1987:36)."

With Clark's useful comments in mind, and the archaeological overview for this area complete, we may now discuss the methodology for the work conducted in association with this report and place the potential impacts in perspective.

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METHODOLOGY

According to the Environmental Impact Assessment prepared for the American Samoan Government by Tonkin & Taylor International Ltd., the proposed action for the Tula to Onenoa road improvement is to upgrade the existing road over Lefao Ridge. The proposed roading works will make minor grade and alignment changes to the existing road, to improve site distances and decrease gradients. It is then proposed to place metalcourse and form a sealed 18 foot wide carriageway. The plan calls for using the existing road alignment where at all possible to minimize bulk earthworks.

A review of the grading plans to effect the construction of the proposed upgrade was an important component to the testing strategy employed in this scope of work. Before this can be discussed it is important for the reader to note that an overview of the entire road indicated three broad areas that were considered to be of some potential for archaeological recovery. This determination was based on topography, nearness to the Tulauta site and contemporary settlement patterning (which is often closely related to areas of previous occupation).

Area A consists of a relatively flat coastal strip between Leauagae Settlement and Maupua. Area B is the section of road that is said to form the southern boundary of Tulauta Village and Area C is that section of existing road approaching Onenoa Village.

The entire road has been graduated into numbered stations which, in turn, are cross referenced to a grading plan. This grading plan indicates if the road, at any particular station, is to be filled, dug below grade or else left even. I will use the code "F" for fill, "D" for dug below grade and "E" for those stations that will remain even with existing grade. Below is a list of stations in each test area and the letter code (from above) that will relate to proposed developments at each station.

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AREA A		AREA B		AREA C	
STATION	CODE	STATION	CODE	STATION	CODE
2100	E	100	E	6300	?
2200	E	200	F	6400	D *
2300	D *	300	F	6500	D *
2400	E	400	F	6600	D *
2500	D *	500	F	6700	D *
2600	F	600	F	6800	D *
2700	D *			6900	F
2800	D *			7000	?
2900	D *			7100	?
3000	D *			7200	?
3100	E				
3200	?				
3300	?				
3400	?				

As can be determined from the chart presented above, a total of six stations in Test Area A will be subjected to excavation, there are no stations in Test Area B that will be excavated, and a total of 5 stations in Test Area C.

Operating on the premise that no excavation below grade will result in no impact to any subsurface deposits that may be present, and keeping mindful that there are no surface features, it seemed reasonable to direct our test pits to the area(s) that will be impacted by excavation below grade -Code D.

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As implied above, areas that are to be filled (Code F) or left even with grade (Code E) were deemed locations where impacts to archaeological resources would be either minimal or non-existent.

Using the criteria listed above, three test pits were placed in Area A (where the greatest disturbance is to take place), 10 auger stations were placed in Area C, and no testing was conducted in Area B, where there is to be no excavation whatsoever.

The author is aware that Test Area B is also that portion of the project that comes closest to the important Tulauta site. Here, as is indeed the case for most of the project, the proposed road improvements will essentially consist of paving (18 feet wide) over the exact route of the existing road.

I cannot see how this process will significantly disturb any buried deposits; however, I am concerned about activities related to this paving (truck turnaround areas, increasing visibility on either side of the road, temporary parking lots for heavy equipment, etc.) that may well have some undesired effect on the Tulauta site. I believe this can be remedied by on-site monitoring during this particular phase of construction. This will be discussed further in a later section of this report.

Regarding the remainder of the methodology strategy employed in this project, the ground survey was conducted on foot over the entire route of the proposed road improvement and controlled excavation was performed by hand, passing all excavated material through a 1/4 inch screen and taking all test pits and auger probes to sterile.

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SURVEY RESULTS

As mentioned, the results of the surface survey portion of this project were negative. Some contemporary dwellings exist along either side of the road and it is not anticipated that they will be impacted. In addition to no existing structures (other than those just mentioned) there were no indications of former foundations and no evidence of midden scatter. The only remaining issue to be addressed is the presence of a modern, but abandoned quarry located on the rise just past Maupua. Sometime in the not-too-distant past, heavy equipment was used to construct earthen ramps in order to access the side of the mountain for rock gathering purposes. As will be seen later, I believe this development helps to explain the nature of the subsurface deposits in some of our test pits.

Test Pit 1. This pit was placed at Station 2250 on the ocean shoulder of the existing road. An area measuring 5 feet X 5 feet was opened and taken by trowel to the 3 foot level. At least seven distinct layers (based on color) of hardpacked soil were defined. The extreme compactness of the soil seems to indicate tamping with machine. Several shards of bottle glass were observed tightly imbedded in layers 3 and 6, otherwise no cultural material of any sort was recovered in situ or in the screen.

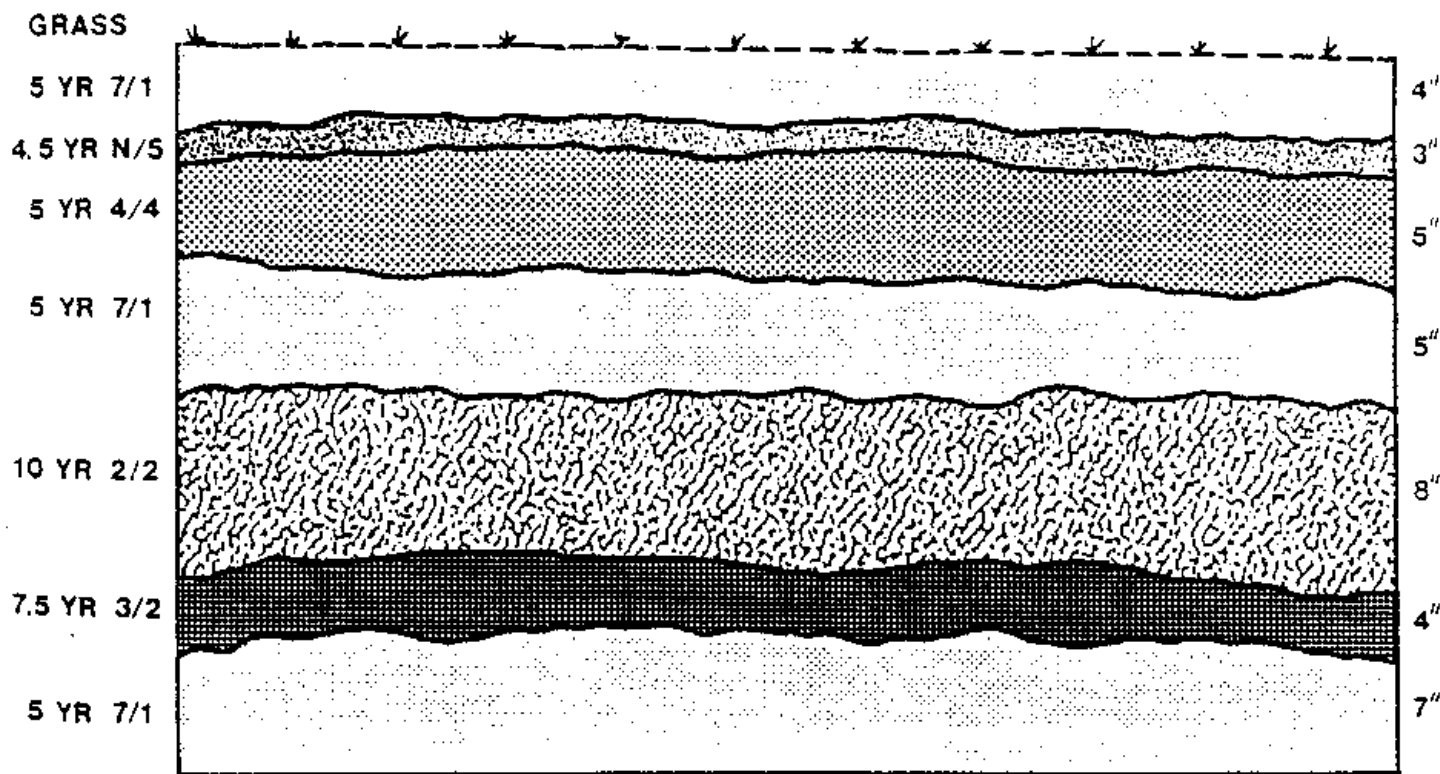
At the three foot mark (level seven), an auger probe was placed in the center of the pit and revealed an additional 3.5 feet of identical material as that contained in layer seven. Based on this datum, it was determined that layer seven was the terminal base at this location.

Test Pit 2. T-2 was opened at Station 2250 on the village shoulder of the existing road, just past the last existing structure on the Onenoa side. This pit also measured 5 feet X 5 feet and trowel and bucket excavation was terminated at the 5 foot, six inch level. The entire profile and contents of this pit consisted of coral and basalt rocks that were roughly hand-sized. Cultural material was restricted to a few dozen fragments of bottle glass encountered at the 2.5 foot mark and again at the 3.5 foot mark. The nature of this deposit gives every indication that the rocks were placed at the time of the construction of the existing road (1966?) to even the footing for this road. Excavation terminated at the appearance of several large rocks at the 5.6 foot level.

Leauagae, American Samoa
ARCHAEOLOGICAL CONSULTANTS OF HAWAII
TULA TO ONENOA ROAD EXTENSION - MAR. 1988

STRATIGRAPHIC PROFILE

T-1



STATION # 2000
WEST FACE

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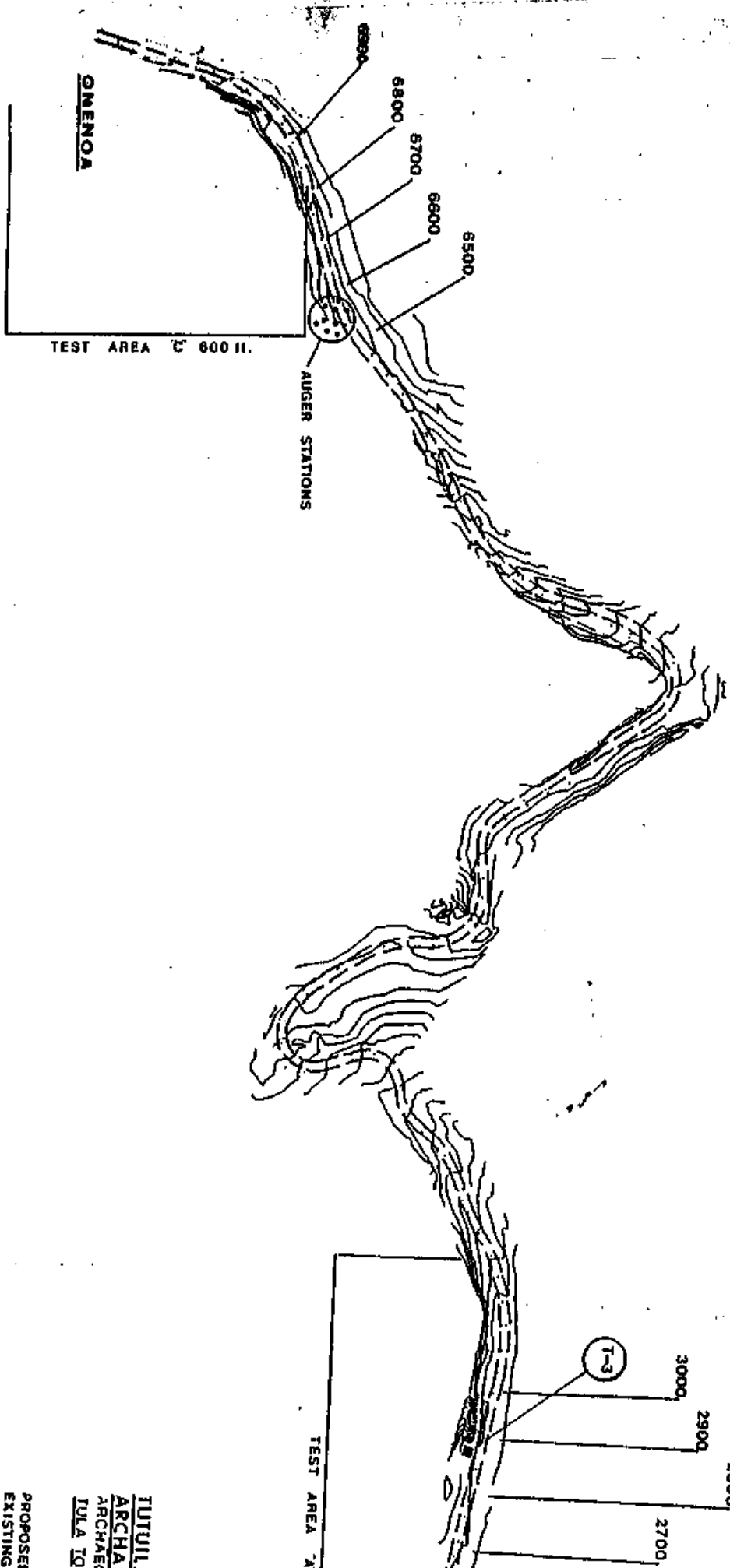
Concerning the abandoned quarry operation located at Maupua, it is entirely possible that the rock removed from this site was used to produce fill which, in turn, provided a flat and stable foundation footing for the existing road. The road may well have been the sole reason for the quarry in the first place, although this is uncertain.

No informant could either confirm or deny this supposition, although Muta Nua Fui, a resident of Leauagae since the mid-1960's recalls large machines (presumably there for road construction purposes) knocking down the large palm trees in front of her fale.

An additional and important piece of information was provided by Ms. Fui. She referred to an enormous rock (so big, in fact, it was simply referred to as Ma'apo'a, or "the large rock") located very close to Test Pit 2. As best she can recall, the rock was more than six feet high and had a circumference of more than 10 feet! At any rate, she is quite sure that TNT was used on several occasions to remove it for road construction purposes. This information was confirmed, through translation, by Malae O Manu, Ms. Nua's elderly mother and a lifetime resident of the area.

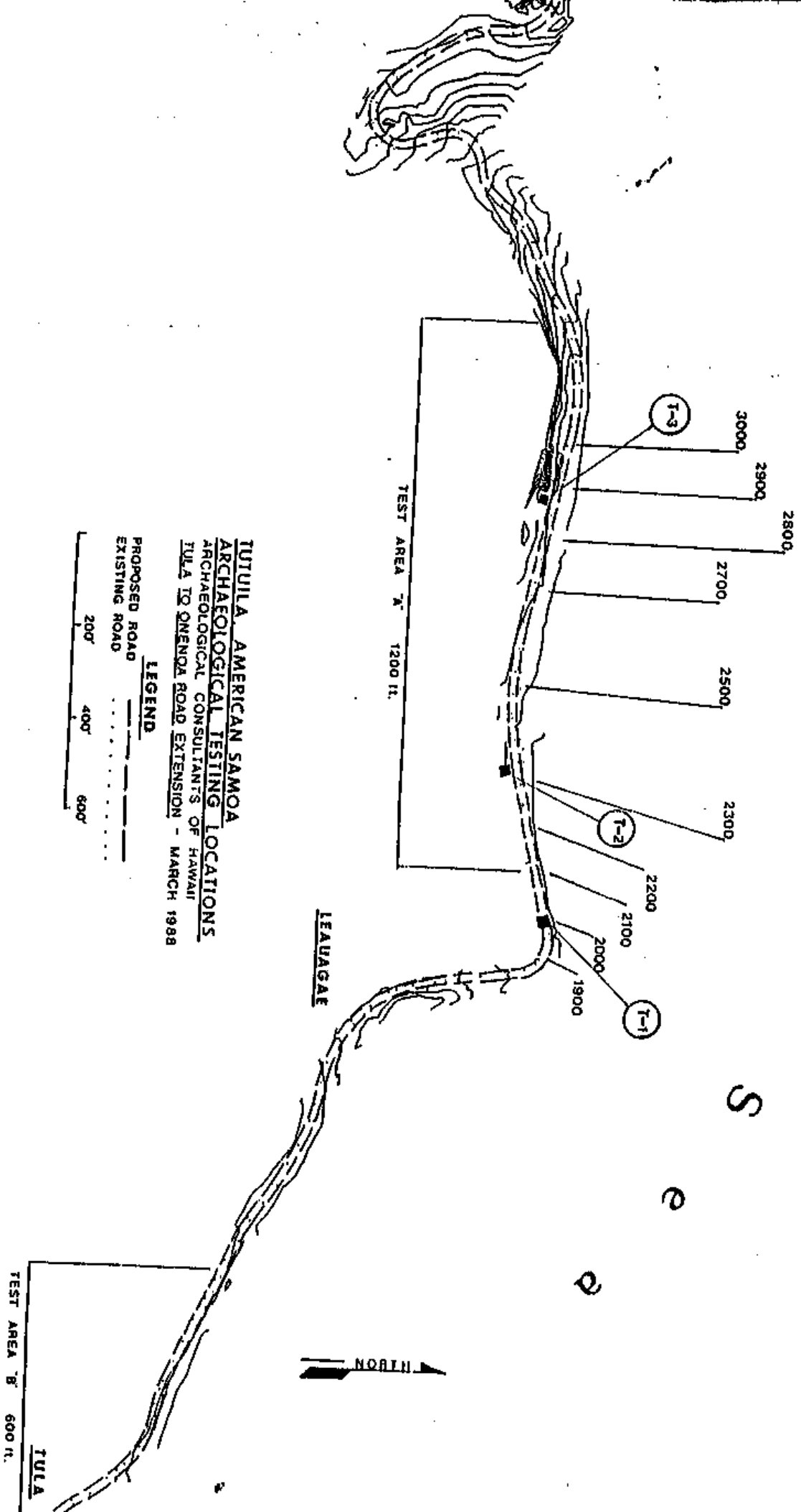
Malae O Manu was able to provide several other pieces of independent information that was also of value to this investigation. The first is that she can never recall anyone living in this area before the 1950's. The major village of residence was Tula and some lesser occupation in Onenoa. She claims that before that time, Tulauta was the principal place of residence for the area and can even recall some occupied dwellings there when she was a little girl. I estimate her age at this writing to be early 70's.

Next, Malae O Manu told me of the place being used by the palagi malini (United States Marine Corps) during the war. It is well known that in 1942 there were more marines in Samoa than Samoans. Apparently some number of them established an encampment near Leauagae and among other items, positioned a large generator on, or very close to the site of Test Pit 1.



TUTUILA
 ARCHAEOLOGICAL
 SURVEY
 TULA 101

PROPOSED
 EXISTING



TUTUILA - AMERICAN SAMOA
ARCHAEOLOGICAL TESTING LOCATIONS
 ARCHAEOLOGICAL CONSULTANTS OF HAWAII
 TULA TO ONENOUA ROAD EXTENSION - MARCH 1988

LEGEND

- PROPOSED ROAD ————
- EXISTING ROAD - - - - -



TEST AREA B' 600 ft.

TULA

NORTH

LEAUGAE

TEST AREA A' 1200 ft.

S

e

a

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Test Pit 3. This shallow pit was also 5 feet X 5 feet but came to term at the 3 foot level. It is located at Station 2900, in Maupua and in front of the earthen ramps constructed for the quarry. All throughout this pit, large rock measuring more than 1 foot long and at least half as wide were encountered. No cultural material of any sort was observed. From the size and position of these large rocks, it was determined that they were either the by-product of the quarry activities or fallen material from the ridge above -or both. In any case, it was determined highly unlikely that this pit would be able to yield any productive material.

Auger Probes. The ten auger probes were placed in a random fashion between the 6500 and 6600 stations, which are located on a flat area of a ridge just Maupua side of Onenoa. Much like our other testing, the auger probes did not produce any cultural materials nor significant stratification. A small, temporary and unoccupied fale was located in the vicinity and invited testing at this particular spot.

Test Pit 4. (not indicated on map). A fourth test pit was attempted between Test Pit 1 and Test Pit 2 on the last field day. No report on this pit is available due to the fact that heavy rains precluded proper excavation. The pit was started, moved down to the .5 foot mark and abandoned due to existing conditions.

CONCLUSIONS

As mentioned, the surface survey demonstrated that there are no existing structures, foundations or midden scatter along the route of the proposed improvements. The only exception is the presence of contemporary, occupied structures and it is not anticipated that the proposed improvements will have an impact on any of these.

Subsurface indications point to fill conditions along most of the route. There was an absence of subsurface artifactual material (save for modern glass fragments scattered throughout some of the pits) and no evidence of lithic, ceramic or midden scatter. No datable material in a cultural context was observed.

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Furthermore, informant testimony indicates that settlement in the area (at least in memorable history) was located elsewhere, that large machines were used for the construction of the existing road (no doubt causing heavy disturbance in the area and most likely resulting in the construction of a fill footing), that a very large rock once rested at a point along the route of the present road making settlement (at least for a time) impossible and that a portion of the area was occupied by the U.S. Marine Corps during World War Two, most likely explaining the glass fragments located in the footing of the road.


On the other hand, the previous archaeological literature for this area indicates that a portion of the road will pass next to a very important prehistoric site (in fact the earliest known site in American Samoa) near Test Area B.

While I do not believe that the simple placement of a tarmac surface over existing roadway (with no excavation for this area indicated) will have much impact to any subsurface portion of the Tulauta site, I am concerned that indirect impact is likely to take place. This will be in the form of truck turnaround areas, temporary parking for heavy equipment, and increasing visibility on either side of the roadway.

Therefore, I recommend that some limited monitoring take place in Test Area B, which forms the southern boundary of Tulauta Village. Otherwise, I can see no need for any further archaeological mitigation measures for the proposed road improvements.

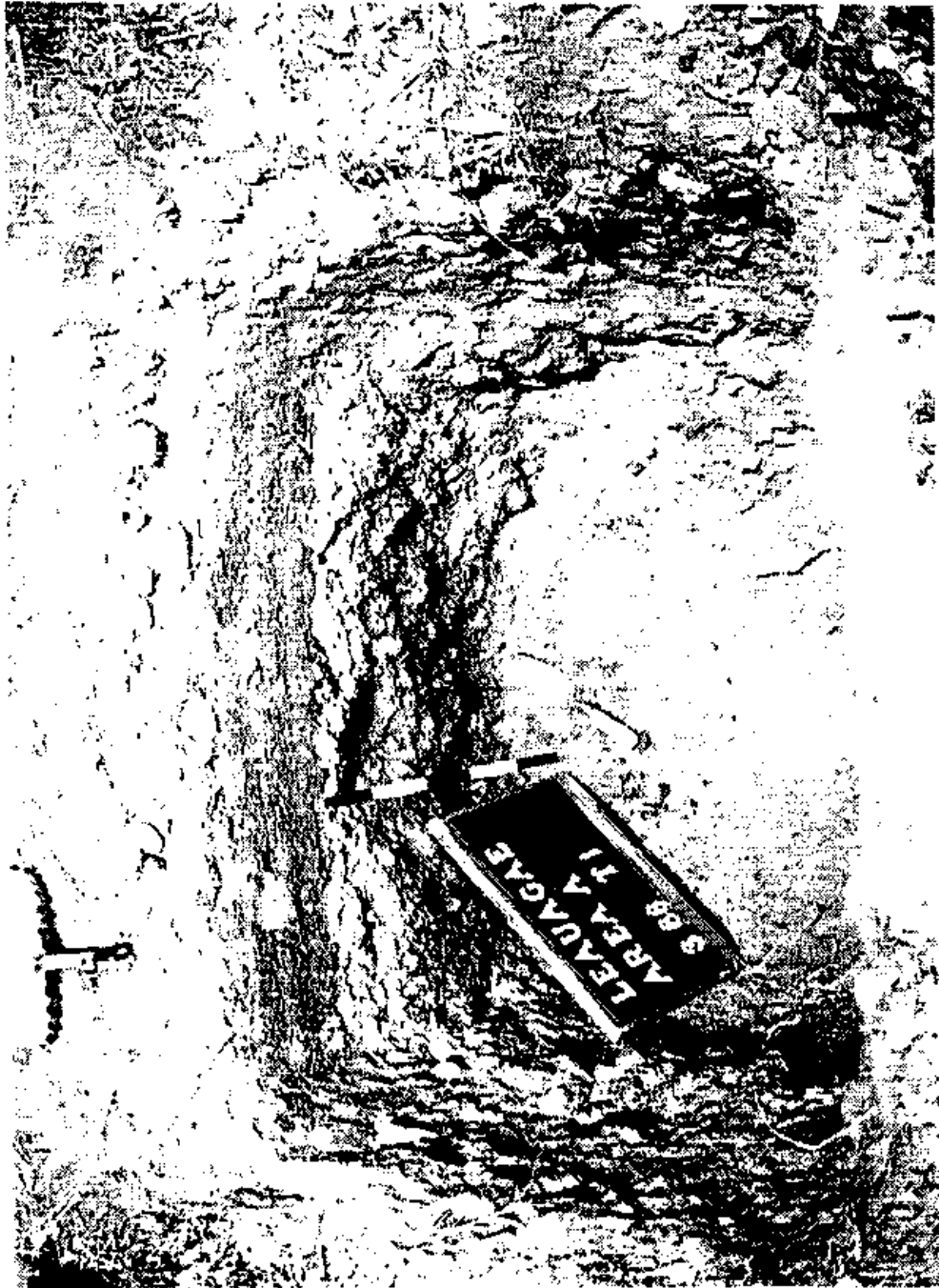
If there are any questions regarding this final report, please feel free to contact me.

Aloha,


Joseph Kennedy









BIBLIOGRAPHY

- Clark, J.T
1980 Preliminary Archaeological Site Inventory
of American Samoa. Ms. 041580, on file
B.P. Bishop Museum, Honolulu
- 1987 The Eastern Tutuila Archaeological Project
Preliminary Report of 1986 Findings.
Department of Parks & Recreation.
Pago Pago, American Samoa
- Frost, J.
1976 Summary Report of Archaeological
Investigations on Tutuila Island, American
Samoa. NZ Archaeological Association 19 (1)
30-37
- Gould, et. al.
1985 Final Project Reports for Tulauta and Fagatele
Villages and Leone Bay Petroglyphs. Dept. of
Anthropology, Brown University. Providence RI