EXHIBIT F.

State Historic Preservation Division Approval Letter, Dated August 8, 2012

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

August 8, 2012

Mr. Jeffrey Pantaleo, Principal Investigator
C/O Ms. Lisa Rutunno-Hazuka
Archaeological Services Hawai'i
Via Email: lisa@ashMaui.com

LOG NO: 2011.0298
LOG NO: 2011.0340
DOC NO: 1208JP01

Aloha Ms. Rotunno-Hazuka:

SUBJECT: **Chapter 6E-42 Historic Preservation Review-**
Archaeological Assessment Report for the Hawaiian Cement Quarry Expansion Project
Pulehunui Ahupua'a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)

Thank you for the opportunity to review the report titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 pors., Pulehunui Ahupua'a, Kula Moku; Wailuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O'Claray and Pantaleo (January 2011). The report was originally received on January 26, 2011. We apologize for the delayed response.

The archaeological survey with negative findings was conducted for the 24.476-acre proposed rock quarry expansion site. A surface investigation occurred along with twenty excavated mechanical backhoe test trenches. Over the years, the project area has been disturbed continuously by intensive agricultural propagation and rock mining. Approximately 9.5 acres are active sugarcane fields. No further archaeological work is recommended for the project area, we concur with this recommendation.

The report contains information as required for assessment reports, pursuant to Hawaii Administrative Rule (HAR) 13-284 and13-276-5; it is accepted as final. We request that a few corrections to be included in the final report (see attachment). Please send one hardcopy of the corrected final document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library. Please send a corrected final report to the Maui SHPD office as well. For questions about this letter, please contact Jenny at (808) 243-5169 or Jenny.L.Pickett@Hawaii.gov.

Mahalo,

Theresa K. Donham
Archaeology Branch Chief

cc: County of Maui, Planning fax: (808) 270-7634
County of Maui DSA fax: (808) 270-7972

ATTACHMENT

Requested corrections for: *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 pors., Pulehunui Ahupua'a, Kula Moku; Wailuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O'Claray and Pantaleo (January 2011).

Previous Archaeological Studies

1) Please add the recent Cultural Surveys Hawaii archaeological surveys (2007 etc) to the map (Figure 9) and to the previous archaeology background text.

Lab Work

2) Please edit this section to indicate nothing was identified, collected, or being curated.

Trench Descriptions

3) Please correct the associated trench Figures to correspond with the accurate text references.

Additional Comment

4) Please adjust the contents regarding archaeological recommendations for adjacent areas accordingly. In the final copy of the report, please adjust the associated contents accordingly. As we recently discussed in meeting regarding the project report, individual projects are usually treated separately so each project needs to be evaluated on a case-by-case basis. We hope to continue evaluating and providing recommendations regarding future proposed projects for the surrounding areas.

EXHIBIT G.

Letter from State Historic Preservation Division Dated May 12, 2015

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

W. ROY HARDY
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

May 12, 2015

Jeffrey Pantaleo, M.A.
c/o Lisa Rotunno-Hazuka
Archaeological Services Hawaii, LLC
PO Box 1015
Puunene, Hawaii 96784
Via email to: lisa@ashmaui.com

LOG NO: 2014.04654
DOC NO: 1505MD19
Archaeology

Aloha Mr. Pantaleo:

SUBJECT: **Chapter 6E-42 Historic Preservation Review–**
Draft Archaeological Assessment for the Hawaiian Cement Quarry
Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)

Thank you for the opportunity to review the submittal titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-0047:001 pors., Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui* by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014). We received the submitted report on October 13, 2014 and apologize for the delay in our reply.

An archaeological survey was conducted prior to planned expansion of the existing Hawaiian Cement Quarry at the request of Mr. Gomes for the owner. This report documents an archaeological inventory survey of 41.968 acres, a portion of the 2,008 acres contained in parcel 001. Fieldwork occurred on the 14th and 28th of June and the 3rd and 12th of July in 2014. 33.168 acre were cultivated in sugarcane at that time, while 8.8 acres were cleared following harvest. Pedestrian survey was performed by one archaeologist and was followed by 19 mechanical excavations, including 17 backhoe trenches and two bulldozer cuts. No historic properties were identified in any of the excavations or above ground.

We are requesting revisions to the report as detailed in the attachment to this letter. Please contact me at (808) 243-4641 or Morgan.E.Davis@hawaii.gov if you have any questions or concerns about this letter.

Mahalo,

Morgan E. Davis
Lead Archaeologist, Maui Section

Attachment
Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-0047:001 pors., Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui
by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014)

1. Executive Summary, page 2, first paragraph: please replace "As detailed in" for "The" before 'background research.'

    a. Fifth paragraph: please delete everything after the second paragraph, beginning with the sentence beginning "Similarly" – these statements regarding areas outside of the survey area are out of scope for this report.

2. Introduction, page 9, first paragraph: please include a citation for the prior AA work in the nearby 42 acres mentioned here.

3. Figure 2, page 11: please provide a more detailed/closeup view (or a second map showing a portion, not all, of parcel 001) of the APE including the boundaries of Camps 3 and 13.

4. Existing Conditions, page 12, Environmental Setting first paragraph, first sentence: please replace "piece of land district" with "section of land."

    a. Second to last sentence, same page: please replace "Kula District" with either "Makawao District" or "Kula Moku."

    b. Last sentence: please clarify which "this" *ahupua'a* is referring to, as two were mentioned above.

5. Previous Archaeology, page 17, second entry: please note that Sinoto and Pantaleo 1991 does not appear on figure 8; please include.

    a. Page 18, ASH 2010 AA, end of page: please provide a citation for the information about adding marine shells as a soil conditioner to provide phosphorous.

    b. Page 19, final sentence: please replace lead-in "Unfortunately" with "However."

6. Field Work, page 21, second paragraph: please indicate the transect spacing used in pedestrian survey.

    a. Third paragraph, second sentence: please revise – testing was not "systematic random" because it was worked around actively-farmed acreage, approximately 70% of the parcel was farmed in sugarcane at the time.

7. Results of Survey, page 22, third sentence: please revise as necessary, the sentence appears to have been cut off/incomplete after the number 17.

    a. Somewhere in here, the inconsistency of excavation results needs to be addressed. Some trenches contained only a single layer, while others were up to five deep; yet all this was within a generally consistent depth. Please revise as necessary.

8. Table 1, pages 24-25: please continue the header on both pages.

    a. Please provide a key for the null (?) value appearing first in the entry of Layer V, Trench #1.

9. Discussion and Recommendations, page 54, paragraph 2: please revise to include an explanation for variety observed in the findings and questioned in item 7a above.

a. Fourth paragraph, sentence beginning "Similarly" and below – delete text between this word and the final sentence, these statements regarding areas outside of the survey area are out of scope for this report.

10. Appendix A, beginning on page 60: please review and revise. There are too many trench profiles labelled "TR 3" to be accurate; and only TRs 1-6 appear to be present. Also, specifically anomalous trenches like TR 9 are missing.

EXHIBIT H.

Archaeological Assessment Report Revised July 2015

ARCHAEOLOGICAL ASSESMENT REPORT FOR HAWAIIAN CEMENT QUARRY EXPANSION

LOCATED AT TMK: [2] 3-8-004:001 pors.,

PŪLEHU NUI *AHUPUA'A*, KULA *MOKU;*

WAILUKU DISTRICT

ISLAND OF MAUI

FOR: Mr. Dave Gomes Hawaiian Cement

BY: Mr. Nico Fuentes (B.A.), Ms. Lisa J. Rotunno-Hazuka, (B.A),

Ms. Jenny O'Claray-Nu (B.A.) and Jeffrey Pantaleo (M.A.)

REVISED JULY 2015

OCTOBER 2014

ARCHAEOLOGICAL SERVICES HAWAII, LLC.

POB 1015; PU`UNĒNĒ, HI 96784

"Protecting, Preserving, Interpreting the Past While Planning the Future"

EXECUTIVE SUMMARY

Under contract to Mr. David Gomes of Hawaiian Cement, and pursuant to recommendations by the State Historic Preservation Division-SHPD (Doc. No. 0603JP55), Archaeological Services Hawaii, LLC (ASH) conducted an archaeological assessment of the proposed rock quarry expansion site comprised of 41.968 acres. The subject parcel is located within a larger 2008-acre parcel, Parcel 1, situated along the isthmus of Maui, Pūlehu Nui *ahupua'a*, Wailuku District, Kula *Moku,* TMK [2] 3-8-004:001 pors.

Pūlehu Nui was actively settled during both the pre-Contact and historic periods and most of the population appeared to be centered within the *mauka* and *makai* areas. However during the historic period, these marginal or intermediate zones were utilized for commercial sugar and or ranching and contained Plantation Camps dispersed across the landscape.

The subject parcel is presently under various stages of cultivation, 8.8 acres in the southwest corner was recently harvested of sugarcane and the remaining 33.168 acres is actively cultivated. The inventory level procedures consisted of background research, a pedestrian survey and subsurface testing. The 8.8 acres The fieldwork procedures were performed on the 14th & 28th of June 2014 and the 3rd & 12th of July 2014 by Mr. Reynaldo N. Fuentes (B.A.). Overall coordination was executed by Ms. Lisa Rotunno-Hazuka (B.A.) and Mr. Jeffrey Pantaleo (M.A.), was the Principal Investigator.

A total of 17 backhoe trenches and 2 dozer cuts were executed within the approximate 42 acre parcel and all were negative for cultural remains. Documentation of the soil profiles indicated agricultural disturbances and alluvial deposits in the upper layers. Five test trenches (TR's 1-5) and two bulldozer cuts (BD 1-2) were placed in this 8.8 acre section and all trenching was devoid of cultural remains. The remaining 33.168 acres was cultivated in sugarcane and TR's 6-17 were executed in the cane haul roads of this section. The seventeen trenches averaged 4.0 m long by 1.00 m wide with a depth varying between 1.0 m-3.0 m. The two bulldozer cuts ranged from 12.0 to 15.0 m long by 5.0 m wide with an overall depth of 1.6 m.

The negative results of the current investigation were anticipated as the pedestrian survey and archival research indicated that no surface architectural or cultural remains were extant and no former Plantation Camps were located within the boundaries of the subject parcel. Pursuant to Chapter §13-284-7 (1) "no historic properties affected" and due to the negative findings, the project will have no effect on historic properties and no further work including monitoring appears warranted for the subject parcel.

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INTRODUCTION

Under contract to Mr. David Gomes of Hawaiian Cement located at Mokulele Hwy, Pu`unēnē, Hi 96753 and pursuant to recommendations by the State Historic Preservation Division-SHPD (Log. No. and Doc. No. 0603JP55), Archaeological Services Hawaii, LLC. (ASH) conducted an archaeological assessment (AA) of the proposed 41.968 acre rock quarry expansion site situated in Pūlehu Nui *ahupua'a*, Wailuku District, Kula *Moku,* TMK [2] 3-8-004:001 por (Figures 1-4). This revised AA report was prepared according to recommendations by SHPD (Log. No. 2014.04654 and Doc. No. 1505MD19) and the rules and regulations set forth in the Hawaii Administrative Rules (HAR) §13-284-5 (5) (A) and 276-5 (a) (c).

The proposed activity encompasses a long-term project comprised of rock mining within fallow and cultivated sugarcane fields. Due to a lack of surface structural remains during the pedestrian survey, inventory level testing through mechanical excavations was deemed appropriate. A total of 19 trench and bulldozer excavations (TR1-19) were conducted to determine presence/absence, extent and significance (if applicable) of subsurface historic properties including burial features. All mechanical test excavations were negative for buried cultural remains.

PROJECT AREA

The project area, comprised of 41.968 acres, is situated within a larger 2008.69 acre parcel on the isthmus of Maui approximately 5.6 km (3.5 mi) to 6.0 km (4.0 mi) inland from the Mā`alaea coastline and 0.75 km (.5 miles) east (*mauka*) of the intersection Mokulele Highway and Meha Meha Loop (road to Hawaiian Cement and the Animal Shelter). The subject parcel area is bounded to the west by a prior archaeological assessment (Rotunno-Hazuka et. al. 2011) and a paved access road designated Upper Kihei Road, to the south by Kolaloa Gulch, to the north by an irrigation ditch and active sugar cane fields, and east by active sugar cane. As exhibited on Figures 2 and 3, two former historic plantation camps, Kihei Camp 3 and Camp 13. Kihei Camp 3 appeared to be located approximately 2500 ft. (762 m) SE and across Kolaloa Gulch. Camp 13 was approximately 7500 ft. (2286 m) north from the current project area.

The entire parcel (2008-acres) including the 41.968-acre project area has been altered through compounded disturbances from sugar cane cultivation and prior rock mining. The subject parcel is comprised of two sections. One section contains 8.8 acres and is located within the southwestern portion of the project area and the remaining section consists of over 33.0 acres (Figure 4).

This intermittent zone has been actively utilized for sugar cane (*Saccharum officinarium)* and in the more recent past, for rock mining activities. Portions of the central isthmus area contain relatively shallow soil layers overlying decomposing basalt and or bedrock. Due to this depositional environment, this area, like the Central Maui landfill locality is utilized for rock mining and or rock quarries. The project area was subjected to a walk-through reconnaissance survey over two decades ago in 1990 by Archaeological Consultants of Hawaii (ACH). During this investigation, no historic properties were identified and ACH opined that no further archaeological work was necessary (Kennedy 1990: 2).

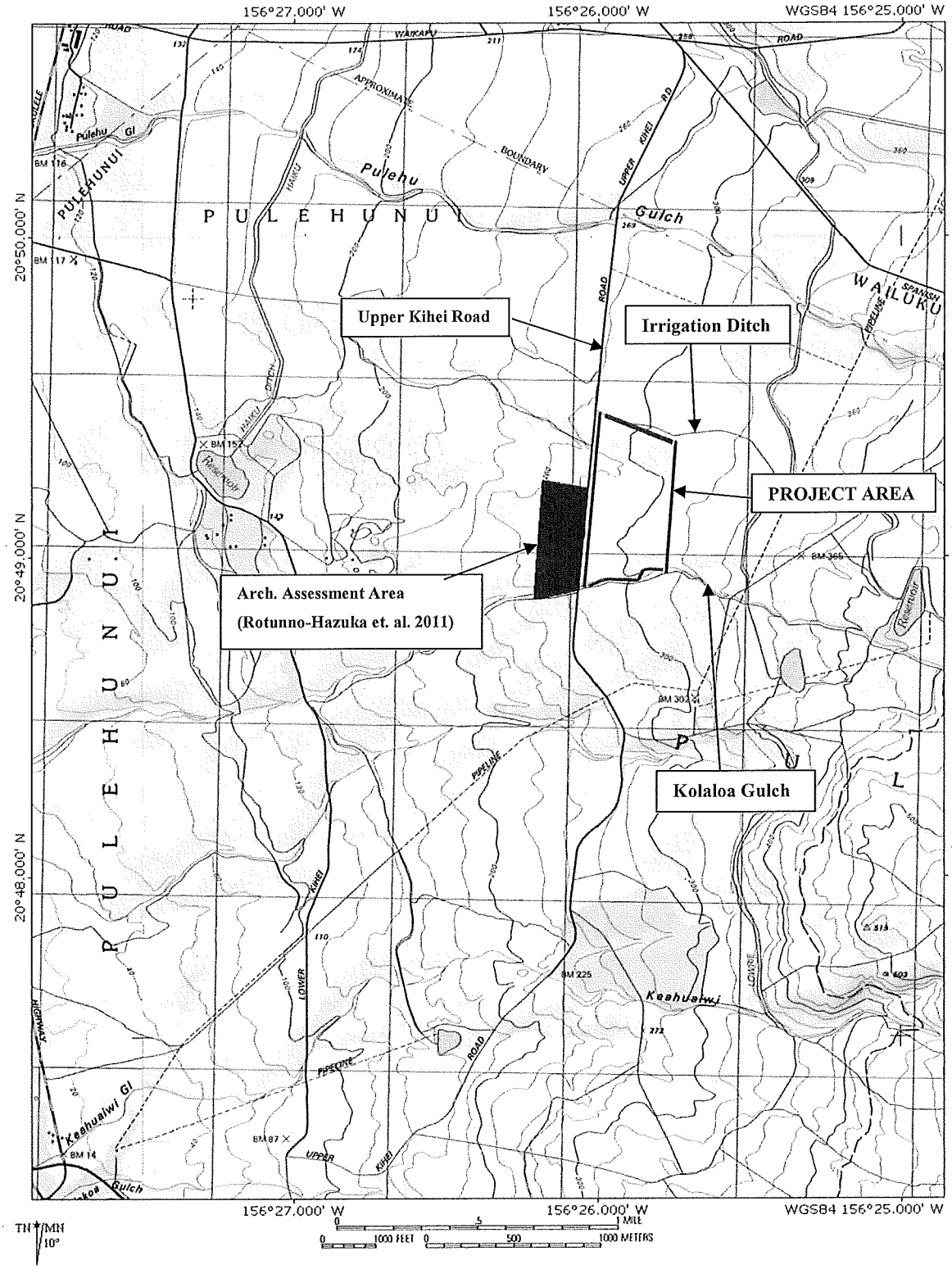

Figure 1. Location of Current Project Area (purple) and Previous Archaeological Assessment (red)

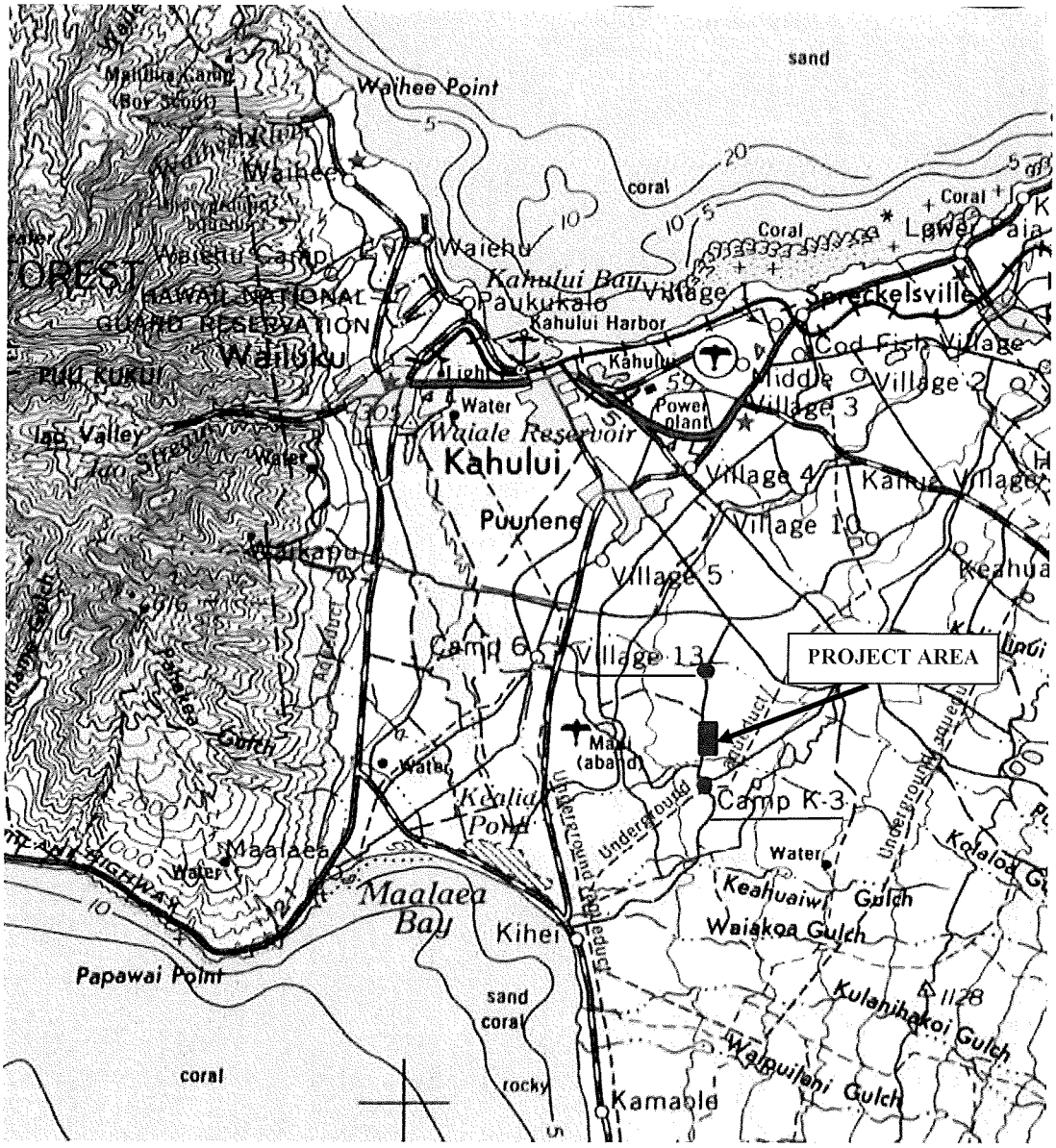

Figure 2. USGS Quadrangle Showing Location of Project Area (purple and red) and Various Plantation Camps Including Kihei Camp 3 and Camp 13

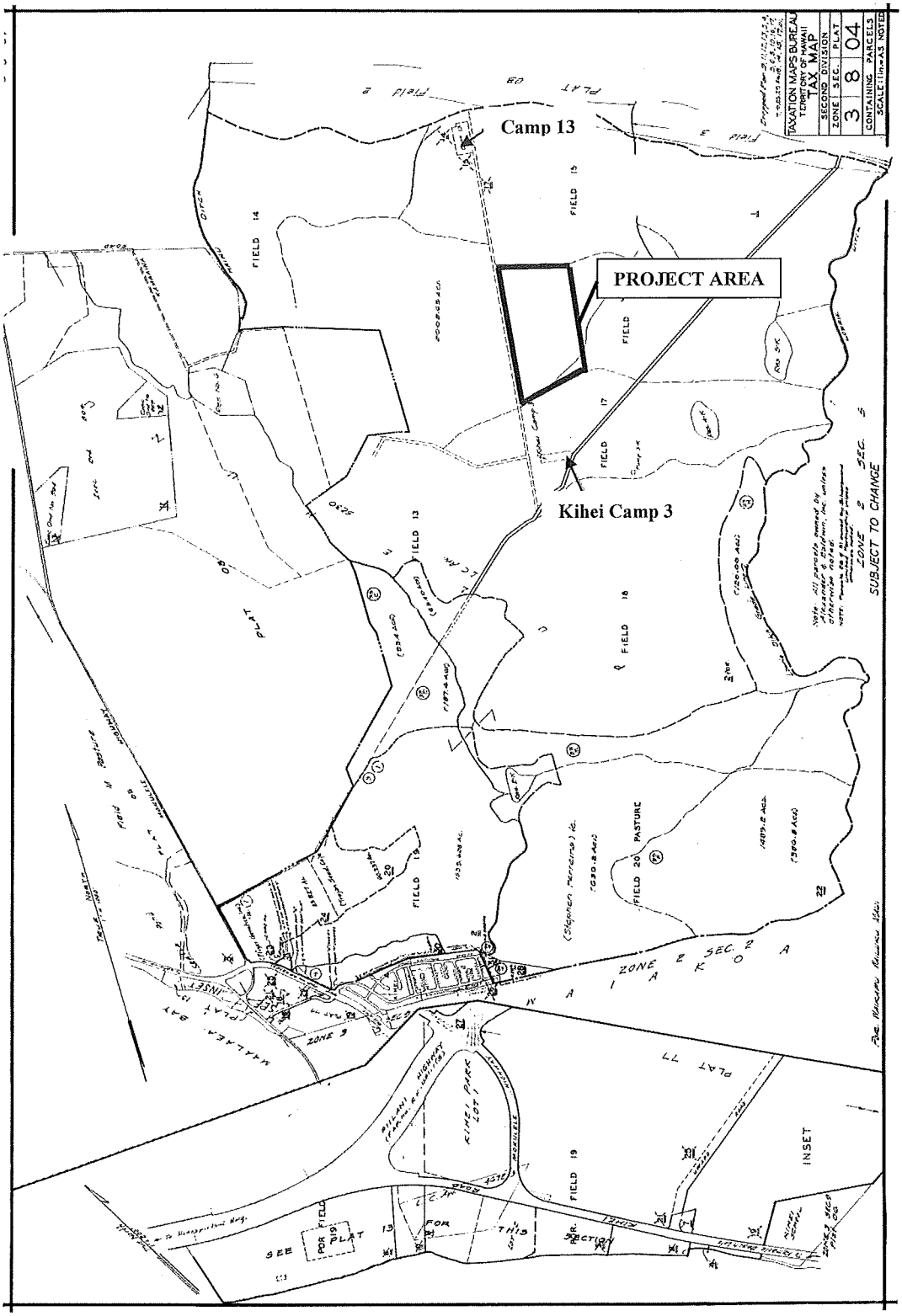

Figure 3. Location of Project Area (purple), Plantation Camps 13 and 3 and LCA 5230 on Tax Map Key [2] 3-8-04:001

EXISTING PROJECT CONDITIONS

The subject parcel is presently under various stages of cultivation. The first test area comprised an 8.8 acre section located in the southwest corner of the project area. This portion was previously harvested and a drainage basin was constructed. The area adjacent to the drainage contains large linear stockpiles for safety purposes, to prevent vehicular and pedestrian traffic from entering the drainage area. The remaining acreage of the project area was cultivated in sugar cane.

Figure 4. Overview from the south of 8.8 acre portion of Project Area

ENVIRONMENTAL SETTING

The subject parcel is within the *ahupua'a* of Pūlehu Nui, a narrow triangular shaped section of land that stretches 15 miles at its base on the sand plains of central Maui, abutting and east of Waikapū *ahupua'a*, to a point at the peak of Kilohana on the rim of Haleakala (Tuggle 2001:12). Pūlehu Nui was part of the traditional *moku* Kula but is now part of the modern district Wailuku (Figure 5). As exhibited on Figure 5, Pūlehu Nui is bounded by Waikapū *ahupua`a* to the west, Wailuku *ahupua`a* to the north and is encompassed by Kula Moku on all sides except the west. Only a small portion of Pūlehu Nui appears to have been adjacent to the coast.

Soils of the project area according to the USDA and Soil Survey Maps shows six soil zones within the project area; Alae cobbly sandy loam(AcA) 0 to 3% slope, Pulehu silt loam (PpB) 3 to 7%, Pulehu cobbly silt loam (PrB) 3 to 7%, Pulehu clay loam (PsA) 0 to 3% slope, and Waiakoa very stony silty clay loam (WgB) 3 to 7% slope, and Waiakoa extremely stony silty clay loam (WhB) 3 to 7% slope (Figure 6). The total area is occupied by 4.8% AcA, 10.8% PpB, 52.9% PrB, 6.5% PsA, 24.3% WgB, and 0.7% WhB. The Pulehu series consist of well-drained soils on alluvial fans and stream terraces around Maui. They developed in alluvium washed from basic igneous rock. The soils are nearly level to moderately sloping. Elevations range from nearly sea level to 300 feet. The Waiakoa series consist of well-drained soils on uplands of Maui. These soils developed in material weathered from basic igneous rock. The upper part of profile is influenced by volcanic ash. These soils are gently sloping to moderately steep. Elevations range from 100 to 1,000 feet.

Both of the aforementioned soils can be utilized in multiple ways; truck crops, pasture lands, home sites and wildlife habitats, however in this instance the primary use was sugarcane cultivation and a rock quarry plant (Figure 7).

Test trenches were placed across the project area to obtain a representative sample of the subsurface conditions and indicate that soils generally consist of dark reddish brown to light brownish gray with moderate variability due to burning episodes associated with sugarcane (Figure 8). Soils contain high frequencies of cobbles, and the surface lacks humic layer components. Trenches near the southern boundary exhibit lenses of black cinders and is consistent with what mining operations have encountered while drilling and blasting (pers. Comm. with Mr. Gomes).

The climate for these two zones is typically dry, in particular the low elevation areas of which the current project are falls. Annual rainfall is less than 35 inches and occurs primarily in winter months; additionally mean annual air temperature falls between 73 and 75 degrees. Surface streams are absent however the large Kolaloa Gulch bounding the project area to the south may run under time of heavy rain.

Vegetation within the project area consists of the cultivated sugarcane (*Saccharum officinarum*) and various other unidentified weeds and grasses. It was observed that concentrations of these unidentified weeds and grass were present within Kolaloa Gulch (see Figure 7).

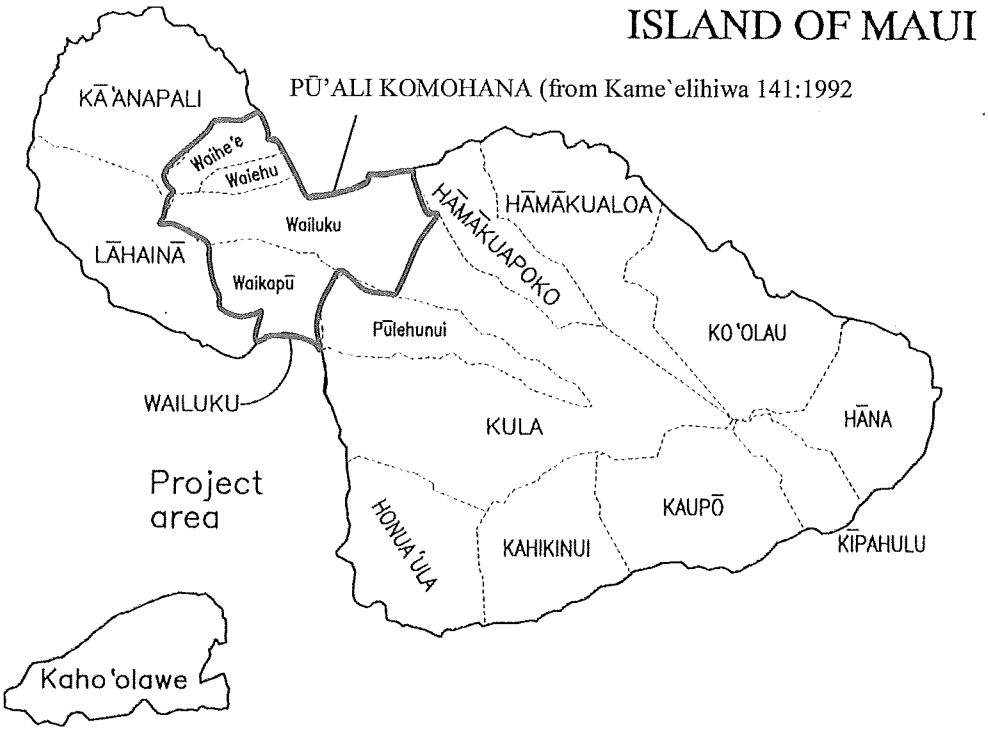

Figure 5. Map of Maui Showing Traditional Districts and Waikapū, Wailuku, Waiehu, Waihe`e and Pūlehu Nui Ahupua`a (from Tomonari-Tuggle-2001)

Figure 6. Location of Project Area on Web Soil Survey Map (outlined in blue)

Figure 7. Aerial Photograph of Project Area (purple outline)

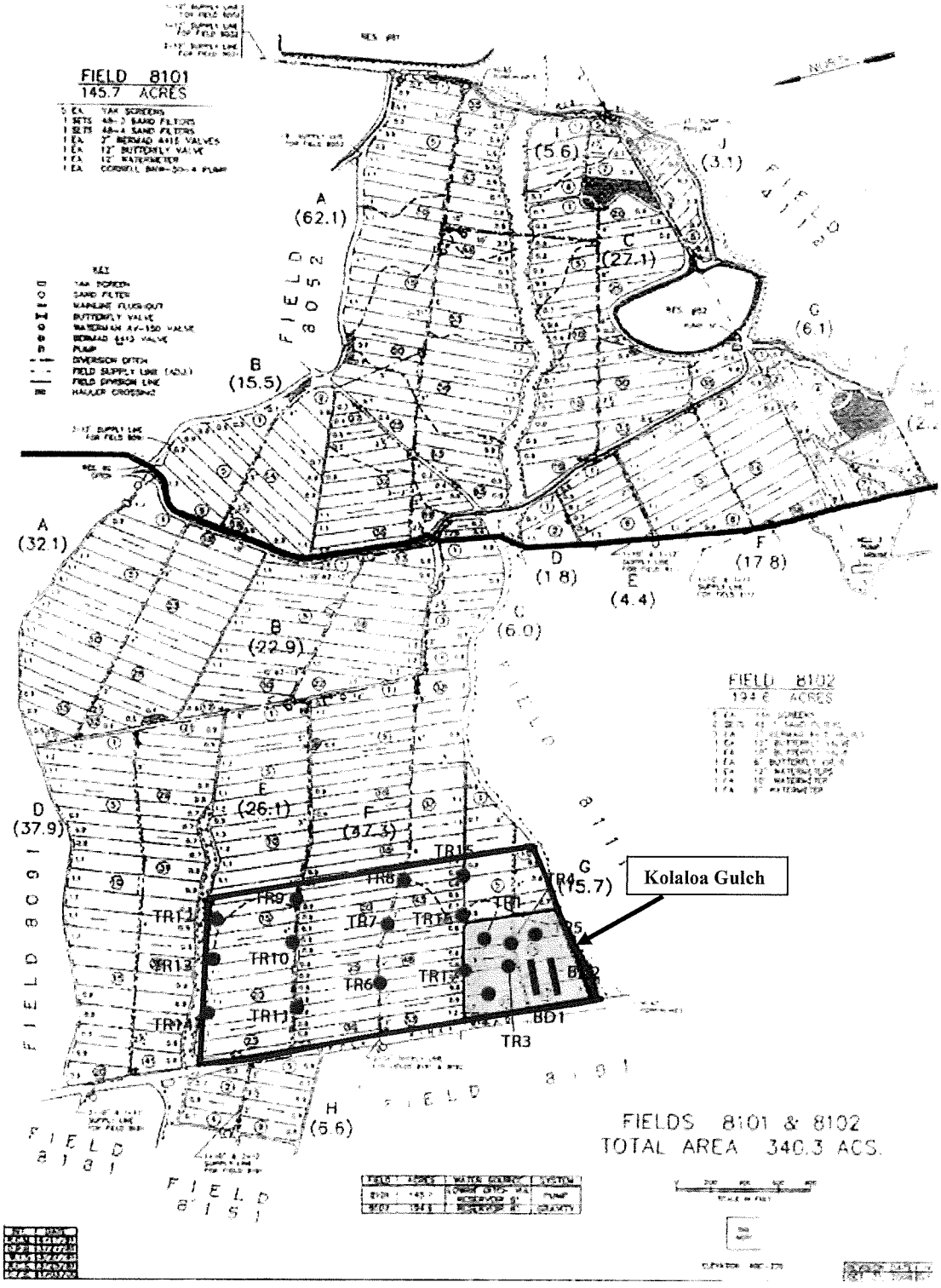

Figure 8. Sugar Cane Field Map Showing Project Area and Test Excavations (TR's 1-17 and BD's 1-2) (note yellow highlighted area is the 8.8 acre section of the project area)

BACKGROUND

As this report is an archaeological assessment, a brief background of the subject parcel and its surroundings is presented here. For a detailed background study of the Pulehu Nui and Waikapu *ahupua`a*, the reader is referred to Tomonari-Tuggle et al. (2001) and Hill et al. (2007).

Based on the background research, it appears that Pūlehu Nui was actively settled during both the pre-Contact and historic period era's and that most of the population appeared to be centered within the *mauka* and *makai* areas. After the Plantation Camps were razed, cultivation of sugarcane continued and ranching also became a dominant activity within this intermittent zone.

LAND TENURE

The project area is situated within LCA 5230 which is comprised of approximately 1668 acres and was awarded to Keawemahi by the King in 1843 (see red arrows Figure 3). This grant was subsequently assigned Royal Patent 8140 but unfortunately no land use was ascribed to Keawemahi's land grant (Waihona `Aina 2000). As exhibited on Figure 3, no other LCA or Grants are within the immediate vicinity; however thirteen land commission awards were applied for within the *ahupua`a* of Pulehu Nui, most of which were more inland and comprised of *kula* lands (Hill et. al. 2007:26). These kula lands were utilized for the cultivation of sweet potato and Irish potato. Hill also stated that one LCA was situated along the coast and referred to fishing rights.

PREVIOUS ARCHAEOLOGY

Few studies have been conducted within this central isthmus, intermittent area. The most notable investigations closest to the project area are presented below in Figures 9 and 10. A more comprehensive background section is presented in the Tomonari-Tuggle et. al. (2001) and Hill et al. (2007).

The project area was subjected to a walk-through reconnaissance survey over two decades ago in 1990 by Archaeological Consultants of Hawaii (ACH). During this investigation, no historic properties were identified and ACH opined that no further archaeological work was necessary (Kennedy 1990: 2).

In 1991, Sinoto and Pantaleo conducted an archaeological inventory survey for the Proposed Kihei Gateway Complex in North Kihei and identified the footings of a bridge, Site 50-50-09-31, that was probably related to a cane railroad and Kihei Camp 1 (Sinoto and Pantaleo 1991) (see Figure 10).

In August of 1995 an inventory survey was conducted by Scientific Consultant Services for the Puunene Bypass/ Mokulele Highway. The pedestrian survey covered a portion of the Pūlehu nui and Wailuku *ahupua'a*. The area covered was approximately 10 miles and consisted primarily of active sugar cane fields. Survey expectations suggested that minimal to no archaeological evidence would be identified. Reasons for the lack of archaeological evidence were provided in the original report and are cited below: "Several factors may account for the lack of archaeological remains: extensive disturbance associated with prior sugarcane cultivation, highway and private construction activities...and/or little or no prehistoric occupation or use of the area." (Burgett and Spear 1997: 7).

In 1999 and AIS was conducted of The Naval Air Station Pu`unene (NASP) which was comprised of 1875 acres. The survey identified five sites composed of 180 features. The five sites are State Inventory of Historic Places 50-50-09-4164, Sugarcane plantation features Site 4800, Post-war ranching features, Site 4801, Old Kihei railroad bed Site 4802, and the Haiku Ditch and reservoir 4803 (Tuggle 2001:70). The NASP dates to just prior to WWII and was composed of multiple facilities, of which the "Hot Mix Plant" appears to be within the current project area (field 13). When the 1999 survey was conducted the proposed quarry location (current project area) was known and is shown in the eastern most portion of the NASP (Tuggle 2001:71). Features in the sugarcane plantation of Site 4800 consist of canals, roadbeds, and miscellaneous glass and porcelain fragments from Camp 6. Features interpreted as Post-war ranching elements from Site 4801 consist of corrals, watering troughs and fence post. The Old Kihei railroad bed, Site 4802 was identified as a concentration railway spikes and berm consistent with railroad berm forms.

The field inspection of 81.50 acres by Cultural Surveys Hawaii, Inc. (Hill et. al. in 2007) produced negative findings.

In 2010, ASH performed an Archaeological Assessment (AA) of 24.476 acres. During the procedures, a total of 20 backhoe trenches were executed across the project area that were negative for intact cultural remains. The excavations revealed that the project area had been disturbed by continuous agricultural activities and recent grading for rock mining. During the initial pedestrian surface survey, isolated marine shells, recent glass shards and concrete fragments along with agricultural materials consisting of plastic sheeting, irrigation tubing, PVC pipes and etc. were observed and scattered within the S-1 and S-2 areas (Rotunno-Hazuka et. al 2011). Documentation of the soil profiles exhibited that all trenches contained upper layers of the agricultural till zone within Layers I and II and these layers contained gravel, the above agricultural materials, fragments

of glass and metal bolts for machinery. Most trenches contained about 3.0 ft. of soil overlying decomposing bedrock and or dense bedrock, Layers III and IV. The thickest soil deposits within the project area were noted along Kolaloa Gulch, and appeared to be from episodic flooding and or intentional buildup of the road for flood control purposes. The marine shells noted on the surface likely originated from imported sand (Grade B) material which is utilized as a soil conditioner providing nutrients (phosphorus) for the sugarcane (personal communication with Hawaiian Cement personnel).

The AA further recommended that,

> "..As no intact deposits of cultural materials were noted during the survey, no further archaeological work including monitoring is warranted for the subject parcel. Similarly, it appears that future archaeological investigations in the adjoining areas may be unwarranted unless historic plantation camps are situated within the subject parcels, and or significant deposits are discovered in the future. In those parcels which contain plantation camps, subsurface testing should be concentrated around the camp unless scattered cultural deposits or surface structural remains are noted elsewhere during the pedestrian sweep (Rotunno-Hazuka et. al 2011:63).

However, SHPD recommended that inventory survey procedures should be conducted prior to rock mining activities.

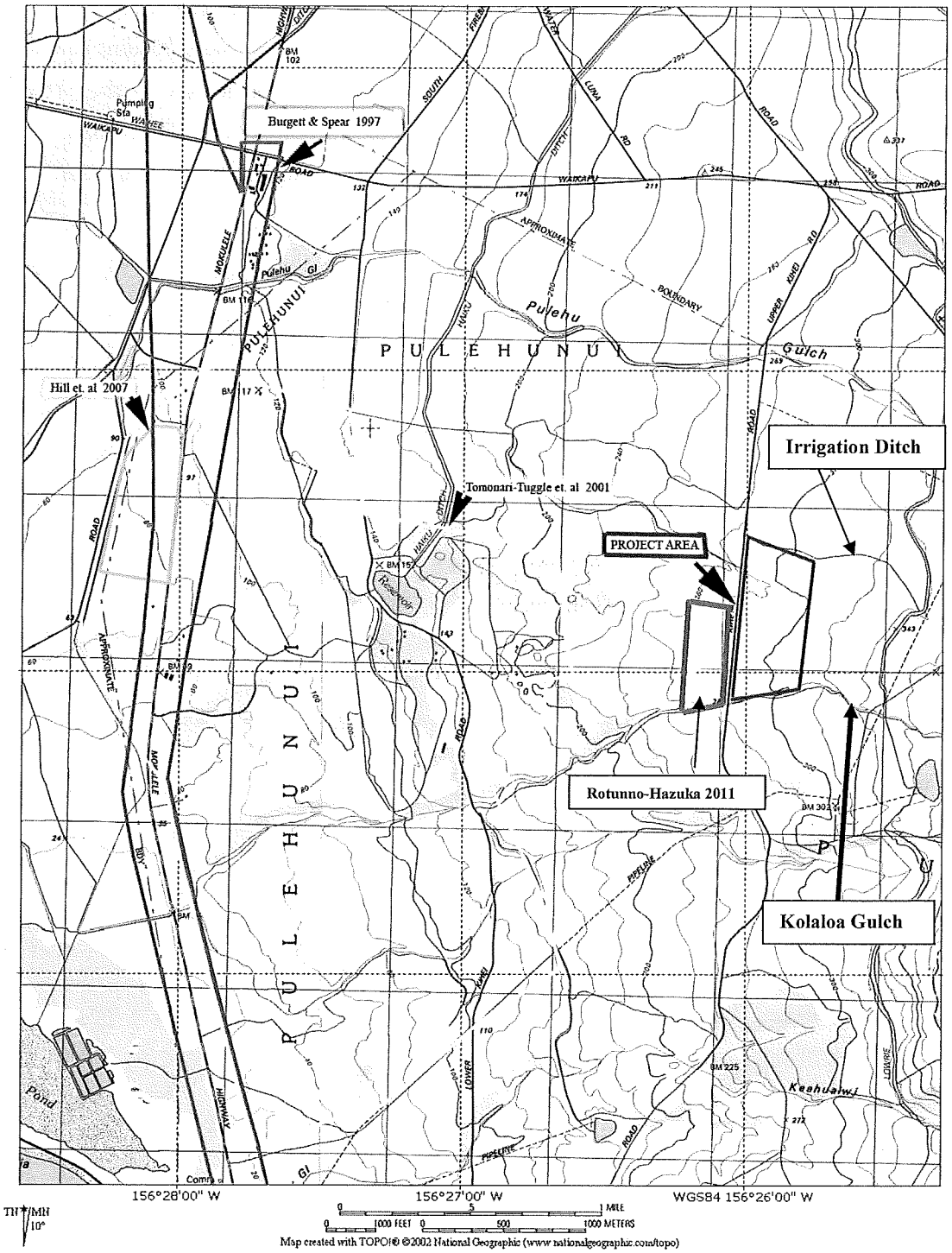

Figure 9. Plan View Map Showing Previous Archaeological Studies near the Project Area

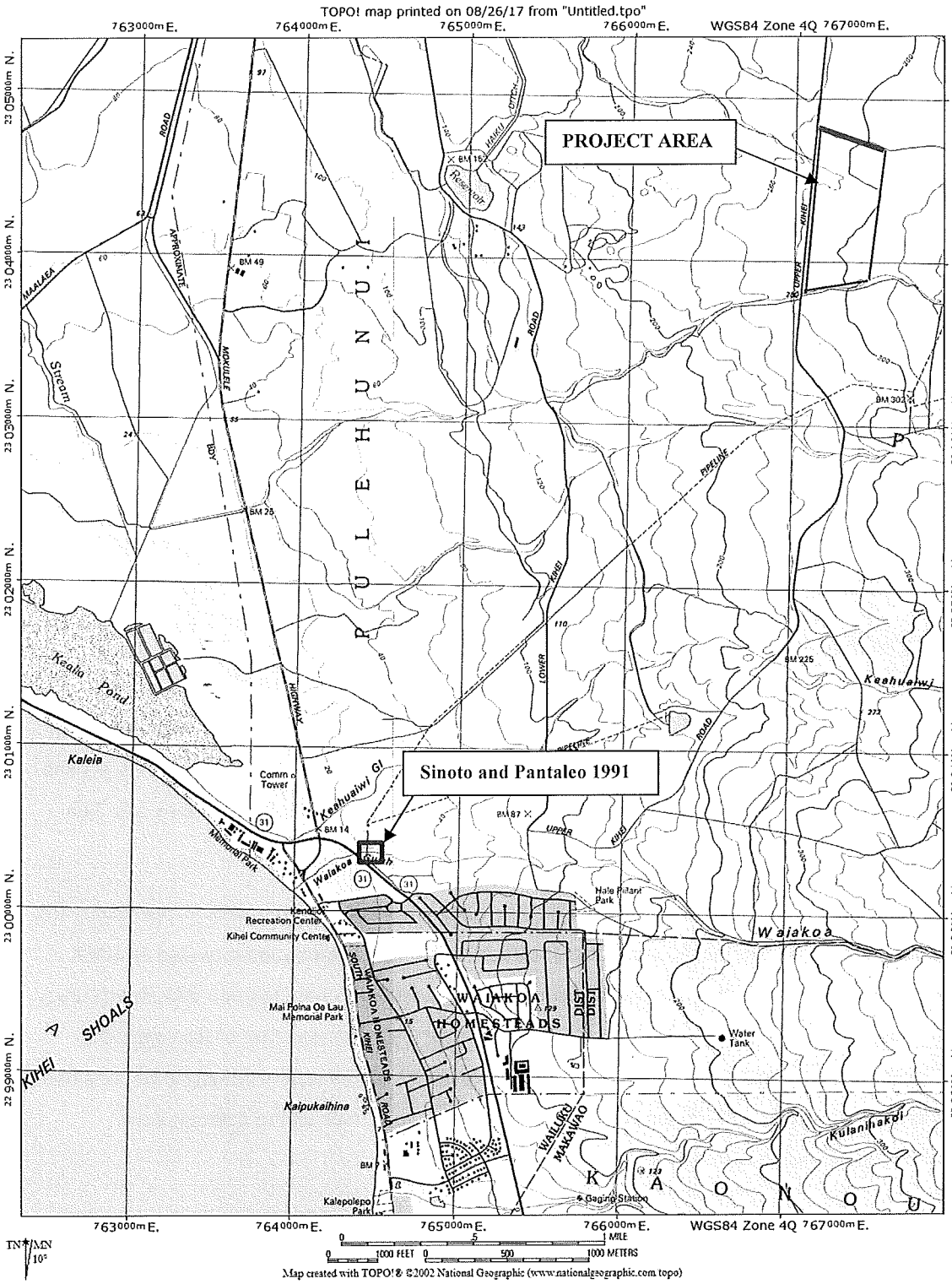

Figure 10. USGS Quadrangle Map Showing Previous Archaeological Studies near Project Area

SITE EXPECTABILITY

Based on the aforementioned information, the project area lies within the intermittent zone which was marginally occupied. It may have contained pre-Contact temporary habitation with small agricultural features, *mauka-makai* trails and possibly ceremonial structures such as *koa.* Traditional settlement patterns would have centered around the shoreline and near the several fishponds within the area as well as along the lower and upper slopes of Haleakala. Historically, this same settlement pattern would have occurred but with the addition of Plantation Camps positioned along old access roads and railroads. Lastly, ranching era sites consisting of walled enclosures constructed from rock walls or barbed wire, cattle troughs, loading chutes and etc., may have been extant; however due to the extensive grading activities from sugar cane cultivation these historic properties may not have survived.

METHODS AND PROCEDURES

Prior to the commencement of field work, archaeological, historical and geographical archival researches were conducted at the SHPD and ASH libraries.

FIELD WORK

Fieldwork was conducted on the 14th & 28th of June 2014 and the 3rd & 12th of July 2014 by Mr. Reynaldo N. Fuentes (B.A.) and Ms. Lisa Rotunno-Hazuka for a total of 55 person hours. Overall coordination and supervision of the project was executed by Ms. Lisa Rotunno-Hazuka (B.A.) and Mr. Jeffrey Pantaleo (M.A.) was the Principal Investigator. Drafting was performed by Ms. Mia Watson.

The parameters of the project area were verified by comparing current landmarks (Upper Kihei Rd, Kolaloa Gulch, sugarcane fields) and natural features along with information provided on TMK maps and aerial photographs provided by the client. Field methods consisted of a pedestrian survey with 5.0 m transect intervals across the entire project area, with the exception of the sugarcane fields where only the cane roads were traversed. The purpose of this walk-through survey was two-fold; to ascertain if any cultural materials were present on the surface and to determine the placement of the backhoe trenches.

Due to an absence of surface structural remains, subsurface testing through backhoe test trenches was first performed. The testing method employed was systematic random sampling, where the areas to be analyzed are chosen at random with a subsequent pre-determined strategy (Hester et. al. 2009). "Use of this sample technique guarantees more uniform coverage of an area than would likely occur with simple random sampling" (Hester et. al. 2009:29). As defined by Hester et. al.,

"simple random sampling means each sample unit has an equal chance to be selected (Hester et. al. 2009:29)," and could result in all, or the majority of the sample units located within one section. With systematic random sampling, the sample units are chosen by a random procedure, such as every 50 m, utilizing a pre-determined strategy, for example, the un-cultivated zones at 8.8 acres and the cane haul roads.

Backhoe trenches were excavated utilizing a 3' wide bucket. At all times during the excavations soil profiles were visually inspected by an archaeologist for any cultural material. A total of 17 excavator test trenches (TR) and 2 bulldozer cuts were placed within the subject parcel. Cultural materials if present would be collected with associated trench proveniences. If a significant amount of cultural materials were present during the backhoe trenching, controlled manual test units would be executed adjacent to the trench to further document the soil horizons and context of cultural remains. Trenches were plotted utilizing tape and compass to a known surveyed point.

After the trench excavations were conducted stratigraphic profiles (Appendix A) were drawn and soil color and texture were recorded utilizing the Munsell color system. Additionally, an overview photograph and profile of each trench was recorded.

LAB WORK

All soil samples collected during the undertaking will be accessioned and analyzed for color and texture utilizing the Munsell color system and the USDA textural classification system. No charcoal samples, midden and or artifacts were collected during the current course of work. All recovered samples, field notes, maps, and photographs generated in connection with the current project are the property of ASH, LLC and will be curated at Archaeological Services Hawaii, LLC, in Wailuku, Maui.

RESULTS

A total of 17 backhoe trenches (TR 1-17) and 2 bulldozer cuts (BD 1-2) were performed within the project area and averaged 4.0 m long by 1.00 m wide and ranged in depth from 0.80 m to 3.0 m (see Figures 8 and 11 and Table I). As previously discussed, the project area was divided into two sections, the 8.8 acre portion in the southwest corner and the remaining section comprised of over 33.0 acres. Trenches 1-5 and BD 1-2 were placed within the 8.8 acre section and TR's 6-17 were positioned in the 33.0 acres. The field survey observed agricultural materials scattered throughout all sections which consisted of black plastic, PVC pipe fragments, black irrigation lines.

All test trenches were negative for buried cultural remains and contained either a tripartite stratigraphic sequence or a four layer stratigraphic sequence. The four layer soil profile was comprised of two soil layers (Layers I and II), overlying a silty loam decomposing "saprolytic" basalt (Layer III) and bedrock (Layer IV). The three strata sequence consisted of Layers I-III where bedrock was absent. The project wide stratigraphic was as follows:

> **Layer I** is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".
>
> **Layer II** is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.
>
> **Layer III** is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".
>
> **Layer IV** is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer.

Trenches which exhibited the overall project stratigraphy comprised of four strata were TR's 1, 2, 4, 5 and BD1-2 and the tripartite soil profile was encountered at TR's 6, 10, 11, 15 and 17. The remaining trenches, with the exception of TR9, contained the above strata; however the overall sequence was interrupted by environmental or geological events such as alluvial deposition comprised of water worn pebbles and silt lenses, cinder (pyroclastic) lenses and coarse gravel lenses. TR9 contained a single disturbed layer overlying basalt bedrock (LIV). The stratum, identified at TR9 was Layer III of the overall stratigraphic record and therefore indicated the past disturbances of the area where Layers I and II were removed. Decomposing basalt and or bedrock was observed from 0.46 m (TR2) to 2.90 mbs (TR13) but averaged 0.80 m deep. Trenches 1-17 and BD1-2 are discussed below and stratigraphic profiles are presented in Appendix A.

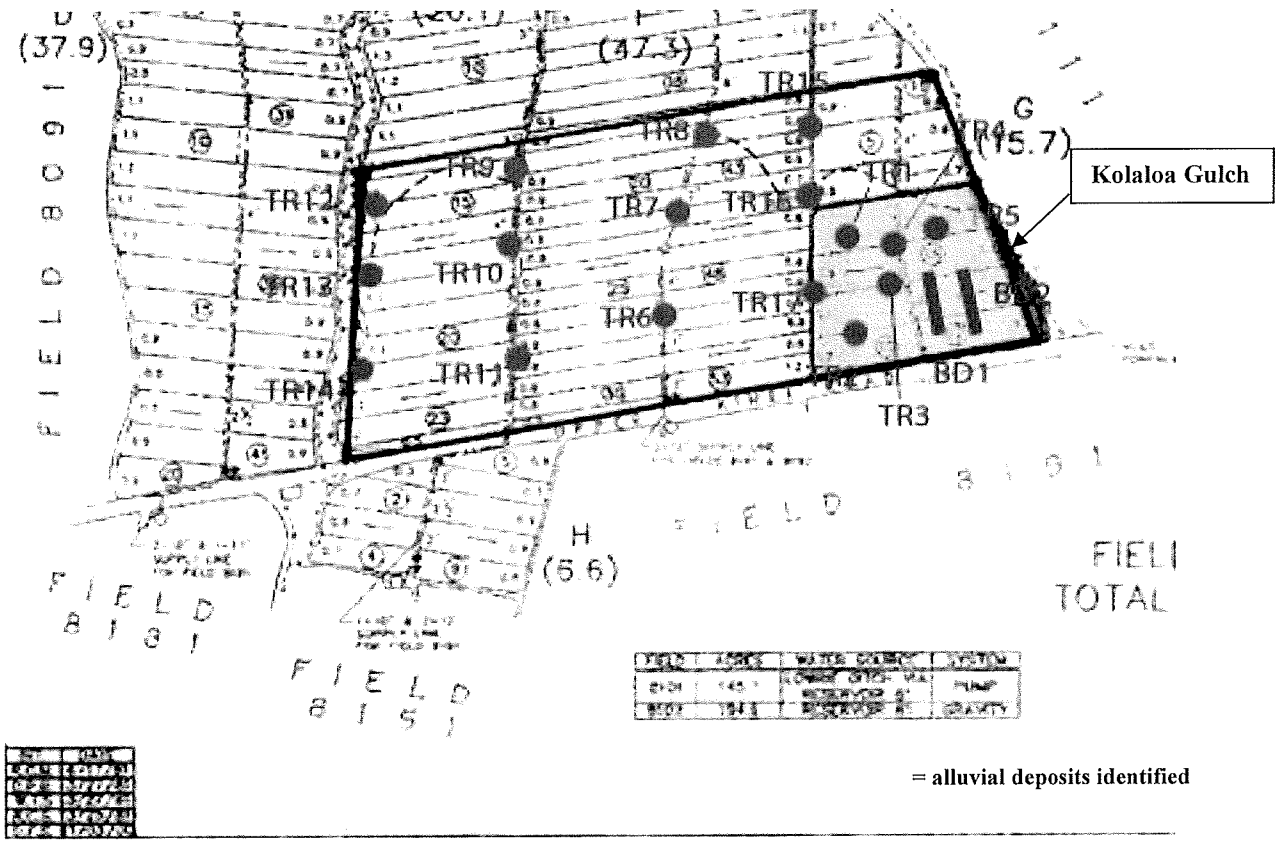

Figure 11. Enlarged Map Showing Location of TR's 1-17 and BD 1-2

Table I. Summary of Backhoe Trenches 1-17 and BD's 1 and 2

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENT TR / Profile	LAYER I	LAYER II	LAYER III	LAYER IV	LAYER V	LENS	COMMENTS
1	8	1.5	1.6	360° 90°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	sterile
2	7	1.5	1.6	360° 90°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	sterile
3	9	1.5	2	360° 270°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/4	10yr5/1	gravel	sterile
4	5	1.5	2	340° 70°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	irrigation
5	9	1.5	2	360° 90°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	sterile
BD 1	12	5	1.4	270° 180°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	irrigation
BD2	15	5	1.6	270° 180°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	irrigation
6	4.1	1.5	1.6	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	Sterile
7	3.9	1.5	2	270° 360°	7.5YR 3/3	5YR 3/4	7.5yr 2.5/1	n/a	n/a	NO	Sterile
8	4	1.5	1.8	270° 360°	7.5YR 3/3	7.5yr 3/1	5YR 3/4	7.5yr 3/1	10yr5/4	alluvial	Sterile
9	3.9	1.5	0.8	270° 360°	10YR 5/4	n/a	n/a	n/a	n/a	NO	Sterile
10	4	1.5	2	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	Sterile
11	4	1.5	2.2	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	sterile
12	4	1.5	2.6	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	7.5yr 2.5/1	10yr5/1	gravel/alluvial cinder	sterile
13	4	1.5	3	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/1	n/a	n/a	NO	Sterile
14	4	1.5	2.05	270° 360°	7.5YR 3/3	5YR 3/4	5YR 4/6	5YR 3/4	10YR 5/4	alluvial /gravel	Sterile
15	4	1.5	1.2	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	sterile
16	4	1.5	1.45	270° 360°	7.5YR 3/3	5YR 3/4	7.5yr 2.5/1	n/a	n/a	NO	sterile
17	4	1.5	1	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	sterile

TRENCH 1

TR-1 was placed within the 8.8 acre area in the NE corner of the project area (see Figure 11, Table I and Appendix A). It measured 8.0 m long by 1.5 m wide by 1.60 m deep and was oriented 360° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figures 12 and 13). No cultural materials were observed.

Layer I (0-40cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (39-70cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (68-140cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV (136-160cmbs+) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer.

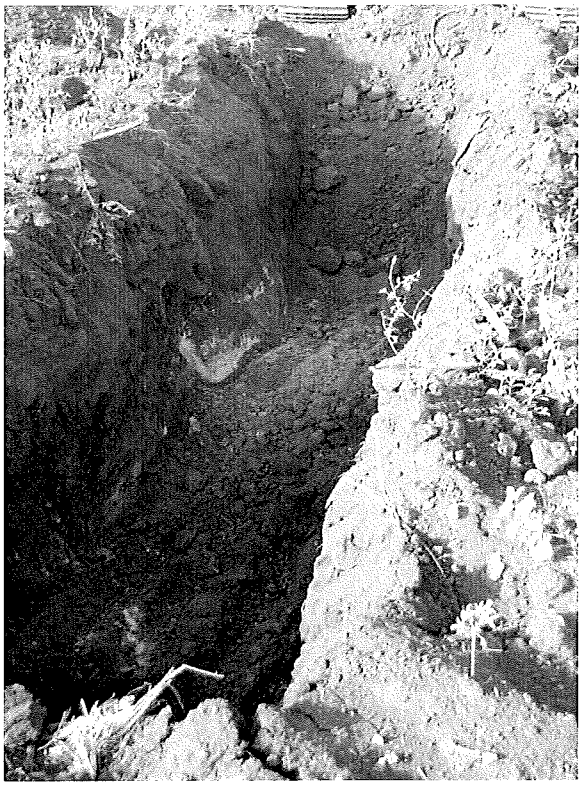

Figure 12. Overview Photograph of Trench 1 (View to North)

Figure 13. Photograph of Trench 1 West Wall

TRENCH 2

TR-2 was placed within the 8.8acre area in the NW corner of the project area (see Figure 11, Table I and Appendix A). It measured 7.0 m long by 1.5 m wide by 1.60 m deep and was oriented 360° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figure 14). No cultural materials were observed.

Layer I (0-38cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone"..

Layer II (38-40cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer appears to be disturbed.

Layer III (46-100cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV (100-160cmbs+) is a gray (10yr 5/1), basalt layer, non plastic, non sticky, massive, indurated. This layer is the bedrock layer.

Figure 14. Photograph of Trench 2 East Wall

TRENCH 3

TR-3 was placed within the 8.8acre area in the central portion of the project area (see Figure 11, Table I and Appendix A). It measured 9.0 m long by 1.5 m wide by 2.0 m deep and was oriented 360° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a five layer stratigraphic sequence (Figures 15 and 16). No cultural materials were observed.

Layer I (0-40cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (38-84cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer appears to be disturbed.

Layer III (82-160cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Lens/Layer IV (159-200cmbs+) is a yellowish brown (10yr 5/4), gravelly sub-angular layer, non plastic, non sticky, medium grain, firm. This layer occurs in pockets and in some cases as lenses throughout the region.

Layer V (160-200cmbs+) is a gray (10yr 5/1), basalt layer, non plastic, non sticky, massive, indurated. This layer is the bedrock layer and is the target material for the mining operations.

Figure 15. Overview Photograph of Trench 3 (View to East)

Figure 16. Photograph of TR-3 North Wall