APPENDIX E

Archaeological Inventory Survey

(Part 2)

Figure 37. Site 7881 Feature 7 Sluice Gate in Foreground and Feature 8 Background (View to Northeast)

Site 7881 Feature 8

Feature 8 is another sluice gate associated with Features 2 and 7 located along the north side of the service access trail. It is an L-shaped structure comprised of formed concrete walls with large cobble inclusions and a modern sluice gate which empties towards Waikapū Stream. Indentions for former railroad rails are present along the out take chute to the east (Figures 38 and 39).

Figure 38. Photograph of Site 7881 Feature 8 showing Two Channels, Feature 2 Ditch continues East and Overflow beyond Sluice Gate to Waikapū Stream (View to North)

Figure 39. Up-Close Photograph of Feature 8 (View to east)

Site 7881Features 9-18

Features 9 through 18 are a series of culverts along the north side of the service access road which continue to divert water underground within the Feature 2 ditch system along the north side. These features, like Features 1-8 are either outside of the project area or area of potential effect (A.P.E.) and will not be disturbed during the development of the property. These features are briefly described below.

Site 7881 Feature 9

Feature 9 is a culvert associated with Feature 2 ditch. The intake chute on the west contains a 12" metal pipe, reinforced at the opening by the construction of a rock and mortared faced wall. The wall is comprised of basalt water-worn and sub-angular cobbles held together with mortar and concrete containing large grained sand and large angular gravel approximately 1.5 m wide and 0.95 m deep. Along the east side is an open earthen ditch which intersects with Feature 2 on the north and directs any excess flow of water into the Waikapū Stream.

Figure 40. Photograph of Site 7881 Feature 9 Intake on West side (View to East)

Figure 41. Photograph of Site 7881 Feature 9 Out take on East (View to North)

Site7881 Feature 10

Feature 10 is another culvert associated with Feature 2 east flowing ditch on the north side of the access service road. The water flows into an underground culvert on the west, approximately 15.5 long, and emerges on the east. It is constructed similarly to Feature 9 with a 12" metal pipe, and concrete basalt water-worn and sub-angular cobbles placed against the wall around the pipe and measures 1.4 m long by 0.90 m deep. Another earthen ditch, like Feature 9, is present along the west side for overflow of water which will be directed to Waikapū Stream.

Figure 42. Photograph of Site 7881 Feature 10 Intake on West (View to East)

Figure 43. Site 7881 Feature 2 Ditch along the north side of access road are remnant retention walls, mortar and water-worn cobbles and Sub-angular basalt cobbles, section before Site 7881 Feature 10, View to North

Figure 44. Feature 2 Ditch flowing into Site 7881 Feature 10 Culvert (View to West)

Site 7881 Feature 11

Feature 11 is another culvert on the north side of the access road constructed similarly to Features 9 and 10. The water from the west flows into an underground 12" metal pipe culvert approximately 14.5 long and emerges on the east (Figures 45 and 46). The intake (west) side contains the same reinforced wall of basalt water-worn and sub-angular cobbles with concrete faced 1.2 m wide and 1.0 m deep. An open earthen ditch is present on the east for overflow of high volume water which will empty into the Waikapū Stream.

Figure 45. Photograph of Site 7881 Feature 11 Intake on West (View to East)

Figure 46. Photograph of Site 7881 Feature 11 Out-take (View to West)

Site 7881 Feature 12

Feature 12 culvert is approximately 15.5 m long and comprised of a 12" metal pipe. The intake (west) side opening is faced with concrete and basalt water-worn and sub-angular cobbles which measures 1.4 m wide and 0.90 m deep (Figure 47). The overflow earthen ditch is present along the east out-take side and directs the high volume of water into the Waikapū Stream on the north.

Figure 47. Overview Photographs of Site 7881 Feature 12 Intake (View to East) left and Feature 12 Out-take (View to West) right

Site 7881 Feature 13

Feature 13 culvert for Feature 2 ditch on the north side of the access service road consists of a 12" PVC pipe which measures approximately 13.5 m long and emerges on the east (Figure 48). The pipe on the west side contains a concaved, concrete faced lining which measures 1.3 m wide by 0.70 m deep. The earthen open ditch is present on the east side and utilized for all excess water which will be re-directed to Waikapū Stream.

Figure 48. Photographs of Site 7881 Feature 13 Intake (View to East) left; Feature 13 Out-take (View to West) right

Site 7881 Feature 14

Feature 14 is another culvert situated along the north side of the dirt access road. This culvert, like Feature 13 is comprised of a 12" PVC pipe which runs underground for approximately 13.5 m. At the opening around the intake, the earth is reinforced and lined with concrete which measures 1.6 m wide and 0.80 m deep (Figure 49). The open earthen ditch is present along the east side and re-directs high volume water flow to the north into Waikapū Stream.

Figure 49. Overview Photographs of Site 7881 Feature 14 Intake (View to East) left; Feature 14 Out-take (View to West) right

Site 7881 Feature 15

Feature 15 culvert is situated on the north side of the service access road and runs underground for approximately 18.0 m. The culvert consists of a 12" PVC pipe with concrete and rock facing along the west intake side (Figure 50). The reinforced wall around the opening measures 1.4 m wide by 1.0 m deep. The out take side contains the open earthen ditch for overflow of excess water.

Figure 50. Photographs of Site 7881 Feature 15 In-take (View to East) left and Feature 15 Out-take View to West (right)

Site 7881 Feature 16

Feature 16 culvert is larger and comprised of a 24" metal pipe which runs underground for approximately 6.2 m and emerges on the east (Figure 51). This culvert does not contain a reinforced faced wall along the intake west side, but may have at one time. An open earthen ditch is present on the east for the over flow of water which will empty into Waikapū Stream.

Figure 51. Photographs of Site 7881 Feature 16 Intake, View to Southeast (left) Out-Take, View to West

Site 7881 Feature 17

Feature 17 is another culvert comprised of two intake PVC pipes, a 6' and 12' approximately 3.3 m long which emerges on the east into an open rectangular concrete drainage box that measures 1.55 m E/W long by 1.4 m wide N/S by 0.65 m high. Adjacent to the drainage box, the water is further channelized by aligned hollow-tile block walls which extend from the drainage box 1.27 m long by 1.3 m wide 0.25 m high (Figures 52 and 53). Approximately 5.0 m east from the out take east side are two 2 inch pipes with valves which are present within the ditch (Figure 54).

Figure 52. Overview Photographs of Site 7881 Feature 17 Intake (View to East) left and Feature 17 Out-take (View to East)

Figure 53. Photograph of Site 7881 Feature 17 Out-take (View to South)

Figure 54. Photograph of Site 7881 Feature 17 Valves (View to South)

Site 7881 Feature 18

Feature 18 is the last culvert in a series of underground drainage ditches associated with Feature 2 open ditch along the north side of the service access road. This culvert is comprised of a 12" metal pipe which runs approximately 11.0 m long emerging on the east. Feature 18 culvert also contains a 4-inch PVC pipe which extends from the west and goes through the metal pipe and extends out on the east side. The PVC pipe follows Feature 2 ditch for some distance and then extends out over the south bank of the ditch (Figure 55). The ditch and culvert on the west side are reinforced with a concrete, basalt water-worn and sub-angular cobbles faced wall that measures 1.4 m wide and 0.70 m deep. No open earthen overflow ditch was apparent and the PVC pipe may assist in excess flow. Atop the culvert is an access road utilized to cross Waikapū Stream.

Figure 55. Overview Photographs of Site 7881 Feature 18 and Faced Wall (left photo) (View to Northeast); Feature 18 East side (right photo) (View to East)

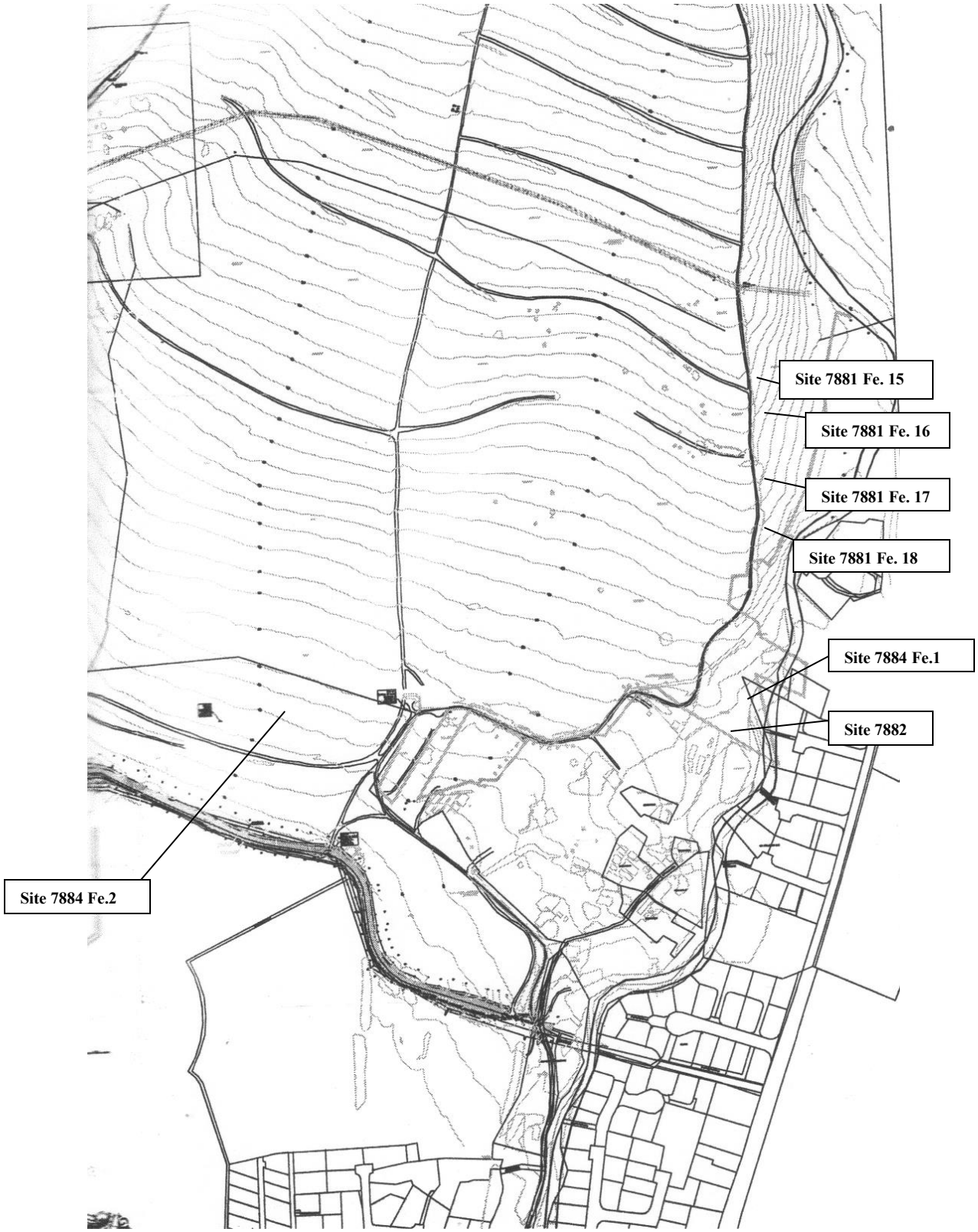

Figure 56. Plan View Map of Parcel 3 Mauka and Portions of Parcel 6 and 7 Showing Location of 7881 Features 15-18, Site 7882, 7883 Feature 2 and 3 and Site 7884 Features 1-2

SITE 7884 (TS2) FEATURE 1

Site 7884 Feature 1 is one of three secondarily deposited historic refuse scatters located adjacent to; south and west of Feature 2 ditch near the northeastern corner of Parcel 3 Mauka. The refuse deposit covers an area of approximately 4.0 m and appears to have been re-deposited by anthropomorphic or alluvial forces (Figures 56-59). Thus, the materials may have been tossed down slope from the dirt access road or it may have been washed down during heavy flow re-depositing the materials along the sides and within the ditch. Historic materials included bottle glass fragments and ceramic plate sherds. Features 2 and 3 of this Site number are discussed further below within sections Parcel 6 and Parcel 7.

Figure 57. Site 7884 Feature 1 Historic Scatter along Feature 2 Ditch, View to West

Figure 58. Site 7884 Feature 1 (TS2) Secondary Deposit of Historic Refuse

Figure 59. Overview Photograph of Site 7884 Feature 1 Historic Material

Figure 60. Photograph of Ceramic Assemblage

SITE 7882 (TS3)

Site 7882 is a remnant L-shaped retaining wall or rock-faced, soil-filled terrace located 5.0 m north of Site 7881 Feature 2 ditch and south of the Waikapū Stream near the boundary between Parcel 6 and Parcel 3 Mauka within LCA 2522. As presented in Table I, LCA 2522 claimed land use of kula and *lo`i kalo* (wetland taro). Site 7882 is constructed along the contour of the slope and retains a small level surface area to the north (Figures 61-64). It incorporates the outcrop into its construction on the east, and is stacked and faced, 6 courses high (1.5 m) with water-worn basalt small boulders and cobbles. The longer leg measures 4.0 m and is oriented east/west and the shorter leg is 1.5 m north/south retaining a level surface area measuring from 0.80 m to 1.0 m. Collapse is present on the east adjacent to the outcrop. Based on the former land use presented in Table I, Site 7882 is likely a remnant terrace formerly utilized during the historic period for the cultivation of taro. Additionally, this site may have initially been constructed during the pre-Contact period, and renovated during historic times.

Similar to Site 7881, Site 7882 is outside the currently proposed area of potential effect (A.P.E) and will not be adversely affected during development. Regardless, this historic property has been adequately documented and requires no further inventory level work. Archaeological monitoring will be performed in the area if future development occurs.

Figure 61. Overview Photograph of Site 50-50-04-7882 an L-shaped Retaining Wall, View to Southeast

Figure 62. Overview Photograph of Cross-Section of Site 7882, View to East

Figure 63. Site 7882 foreground and Site 7881 Feature 2 background, View to Southwest

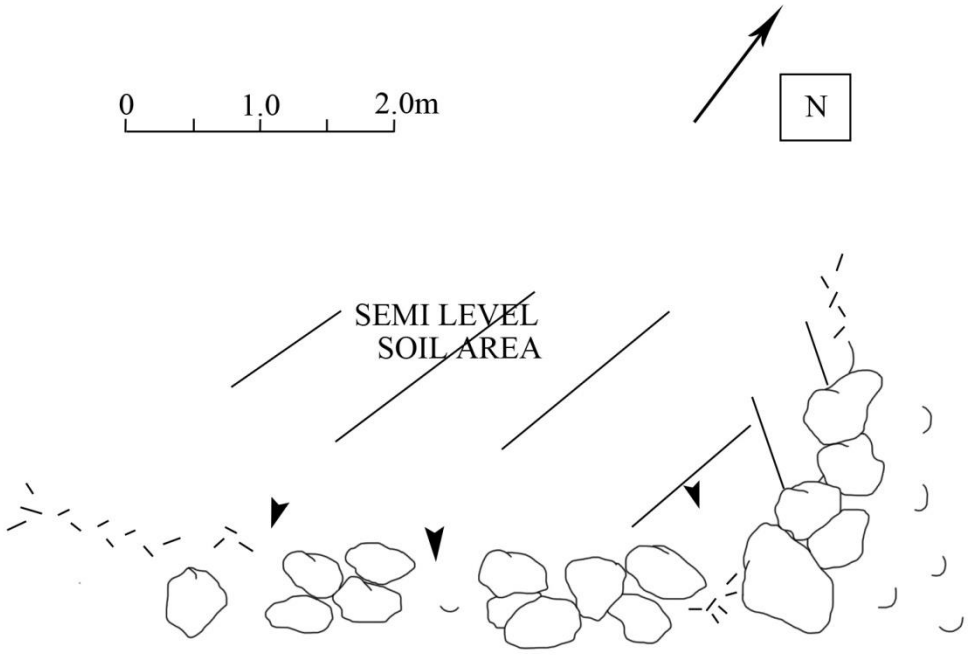

Figure 64. Plan View Map of Site 50-50-04-7882

Site 50-50-04-7883 (TS3)

Site 7883 consists of a World War II bunker situated mid-slope at approximately 740 AMSL along the south side of the main access road that bisects Parcel 3 Mauka east/west (see Figure 22). Site 7883 is a square-shaped enclosure constructed of formed concrete walls atop a concrete foundation and roof (Figures 65 and 66). The concrete contains large aggregate gravel inclusions and is reinforced with metal re-bars. The bunker is partially buried into the slope, with the eastern side nearly level with the existing ground surface, and the western portion almost completely buried. It appears that soil from the immediate area was pushed up around the exterior walls of the structure versus complete excavation for the foundation. Site 7883 measures 5.35 m (E/W) by 5.35 (N/S) along the exterior, with a height of 1.58 m above the existing surface on the northeast, 1.45 m on the southeast, 1.1 m along the northwest, and 0.8 m above surface on the southwest. The walls are 0.23 m thick bounding an interior area of 4.89 m ² with an interior ceiling height of 3.0 m. Centered atop the roof is a square concrete base measuring 0.50 m ² by

0.13 m thick with a threaded metal pipe 0.15m (diameter) extending through the center, 0.37 m above the concrete pedastal. The metal pipe also extends thru the roof to the interior and was possibly utilized to mount a firearm atop the roof of the bunker. The internal end of the pipe is threaded and contains large corroded bolts.

Along the eastern exterior wall is a narrow opening or embrasure (opening for gun fire) that measures 0.91 m long by 0.23 m wide and 1.7 m above the existing surface (Figure 67). The architectural design and function of an embrasure allows weapons to be fired out from the interior while providing maximum coverage for the rifleman. Running along the northern edge of the embrasure is a concrete encased metal pipe, 0.22 m in diameter and 0.90 m above the existing surface and 0.18 m below the top of the roof. The pipe extends subterranean into the interior of the structure may have functioned as a possible intake/out-take vent.

Access to the interior of the structure is atop the southwest corner of the roof, measuring 0.75 m² square, and 0.80 m above the exterior existing surface, the interior floor is 2.5 m below the opening (Figure 68). The concrete hatch/door belonging to the opening has collapsed inside the bunker; however it was designed to be inset into the roof (Figure 66) and therefore level and or flush with the exterior roof. Presently the interior contains modern trash, the foundation is deteriorated and the interior walls contain modern graffiti.

Pursuant to discussions with former landowner Mr. Avery Chumbley, the bunker was constructed at this locality as it has commanding views and or a good vantage point of the isthmus and most importantly Kahului and Ma`alaea Bays (Figure 69). It is indeterminate whether Site 7883 was constructed before the December 7, 1941 attack on Pearl Harbor, after the invasion of Kahului Harbor on December 15, 1941, or during the years of 1943-44 when military presence on Maui was estimated to be 100,000+.

Figure 65. Overview Photograph of Site 7883 (TS3), View to West (top) View to East (bottom)

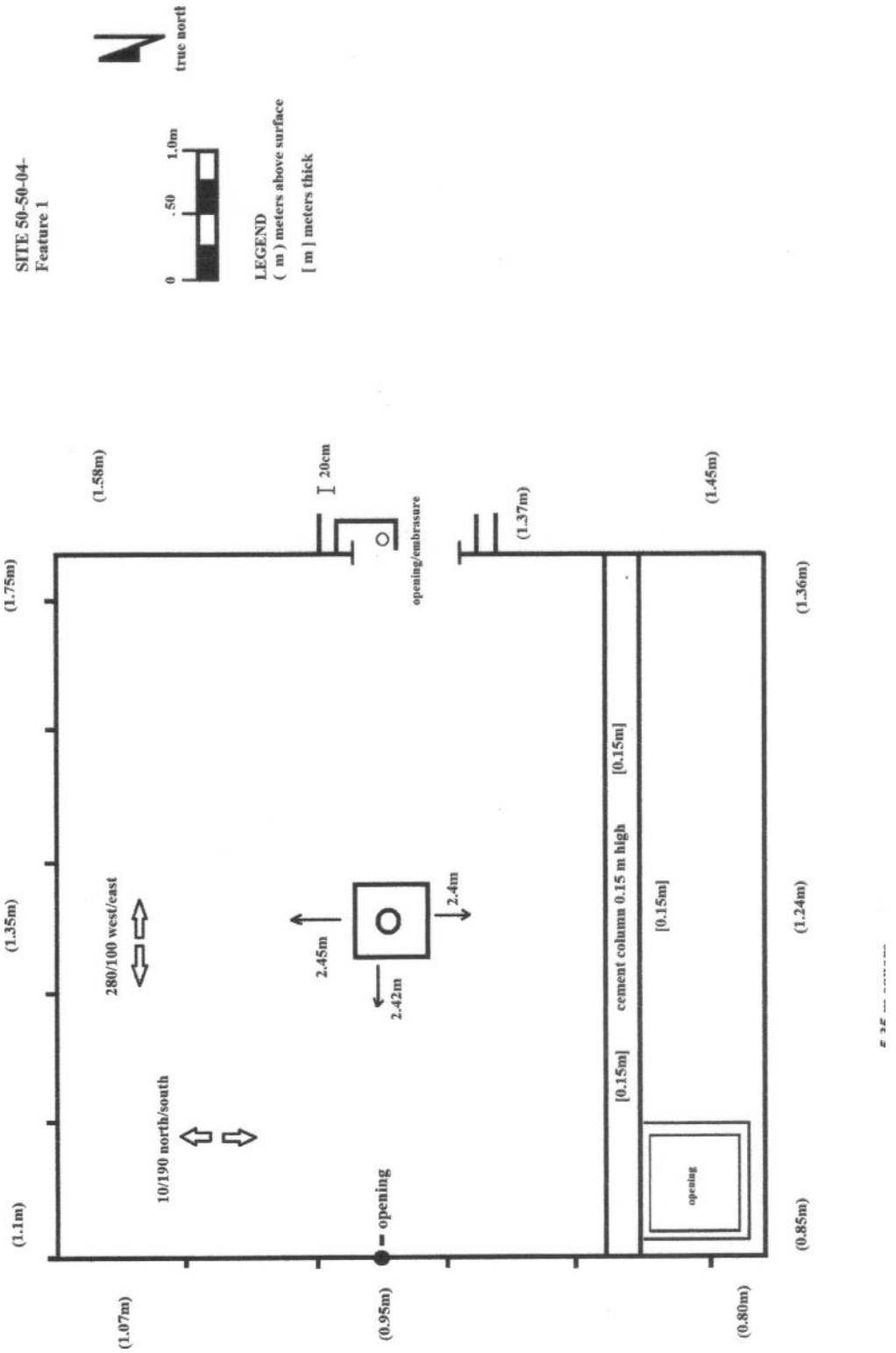

Figure 66. Plan View Map of Site 7883 World War II Bunker

Figure 67. Overview Photograph of Embrasure with Concrete Encased Pipe to Right (top) View to West; Photograph of Access into Site 7883 (TS3) (bottom) View to West

Figure 68. Overview Photograph of Isthmus from Site 7883 (TS3), View to East

Temporary Site 4

Temporary Site 4 is located within the subject parcel along the western portion of Parcel 3 Mauka at an elevation of 1017 AMSL orientated at 76° by and positioned 81.0 m east, *makai* of the reservoir (Site 7881 Feature 3) and west (*mauka*) of Site 7883. It consists of a rectangular shaped concrete slab atop CMU blocks on the downslope (east) side and flush with ground surface on the upslope (west) side (Figures 70 and 71). The slab is constructed of concrete with large aggregate gravel inclusions and likely dates to the early to mid-1900's (see Figures 9 and 22). TS4 measures 8.8 m long by 6.1 m wide by 0.53 high (east side) by 161 degrees. To the west and east of the slab are recent, add-on structures which contain CMU block encasing and encircling PVC piping and metal valves. The western modern structure is a circular enclosure and to the east is an additional slab. Discarded historic and modern materials were observed in the area and atop the concrete slab and consist of tar shingles, a "coke" bottle, metal pipe fittings and PVC pipe fragments (Figures 72 and 73). The shingles may represent the remains of a former roof although no indication of perimeter walls were evident within the slab. TS4 is centered atop the presumed, or former Site 7881 Feature 2b (Waikapū Ditch South) and may have housed a former water diversion structure; however this supposition is indeterminate as no structural remains are extant.

No formal SIHP number was assigned to TS4, an historic concrete slab, as it does not meet any of the significance criteria. TS4 has been adequately documented and requires no further work beyond construction monitoring if removed.

Figure 69. Overview Photograph of Site 7883 Feature 1, View to West

Figure 70. Overview Photograph of Site 7883 Feature 1 with Modern PVC Valves

Figure 71. Site 7883 Feature 1 Pipe Fittings

Figure 72. Photograph of Coca-Cola Bottle

Temporary Sites 21 and 22

Temporary Sites 21 and 22 are situated within Parcel 3 Mauka and consists of small and large rock and soil mounds presumed to be push/clearing piles for agricultural activities. Other rock mounds assigned Temporary Sites 23-25 are located within Parcel 3 Waena and are discussed further below. These mounds were not assigned a State site number as they do not meet any of the significance evaluations. Temporary Sites 21 and 22 appear to have been recently altered as exposed soil with no vegetation growth is present and pushed up against the rock mounds perimeter (Figures 73 and 74). These mounds are located within GR1704; however no land use information was available for this Grant. One backhoe trench, TR 401, was executed in close proximity to these mounds and contained a three layer stratigraphic sequence which was negative for cultural remains.

Temporary Site 21

Temporary Site 21 is one of two rock mounds associated with sugarcane clearing. It measures 13 m in diameter by 2.8 m in height and is comprised primarily of large and small boulders with soil and several small. The rocks are concentrated within the center of the pile and along the base of the rock mound, pushed up soil with discarded irrigation drip-lines and PVC pipes are mixed throughout (Figures 73 and 74). During the initial survey, discussions were undertaken in the field with a leasee of land in close proximity to the project area, Mr. Ron Riechers pointed in the direction of the rock mounds and stated that burials were located “over there” near the rock mounds. Further inquiries with local residents and the landowner ascertained that burials were present in the general vicinity of the rock mounds; however they were situated further east outside the subject parcel within private land. TS21 clearing pile is located at the eastern border of Parcel 3 Mauka near Parcel 6 western boundary approximately 2.0 m west of the access road and 10.0 m southeast of TS 22 rock mound. As previously discussed, these rock mounds are located within a portion of Grant 1704, yet no land use was available.

Temporary Site 22

Temporary Sites 22 is the second rock mound presumed to be a sugarcane clearing/push pile comprised primarily of large basalt boulders, cobbles and pushed soil (see Figure 75). This feature is smaller than TS21 and measures 8.0 m in diameter by approximately 1.5 m high.

Figure 73. Photograph of Temporary Site 21 Rock Mound and Temporary Site 22 in background within Parcel 3 Mauka, View to Northwest

Figure 74. Overview Photograph of Temporary Sites 21 and 22 within Parcel 3 Mauka, View to Northwest

Figure 75. Photograph of Temporary Site 22 Rock Mound within Parcel 3 Mauka, View to Northwest

PARCEL 3 MAUKA DISCUSSION

Parcel 3 Mauka contained four historic properties designated Sites 7881 Features 1-18, 7882, 7883 and Site 7884 Feature 1. Site 7881 Features 1-18 is comprised of agricultural water retention (reservoir), water transportation (concrete lined ditches, earthen ditches and culverts) and water diversion features (sluice gates) situated along the northern boundary of Parcel 3 Mauka. The water is transported through gravity flow and as such Features 1-4 begin at the uppermost, northwest (*mauka)* portion, outside Parcel 3 Mauka boundaries, and continue sequentially along the slope and northern property line terminating near the northeastern corner. Although these features are outside the proposed development boundaries, they were documented due to the close proximity to the subject parcel. Since Site 7881 is currently utilized by the landowner and lessees for continuing agricultural production; these water diversion and containment features shall remain in place. Site 7881 has been adequately recorded and requires no further inventory level work. In the event, that future alterations are planned for Site 7881, monitoring is warranted at those features situated within an LCA. Specifications pertaining to monitoring procedures and localities which will undergo monitoring will be presented in a detailed Monitoring Plan. Site 7882 is an L-shaped retaining wall or remnant rock-faced, soil-terrace situated within the northeastern corner of the subject parcel. It is within an LCA utilized for *kula* lands and *lo`i kalo.* Kula lands are generally referred to as open space which may be planted, and *lo`i kalo* for irrigated taro. Since this feature is located near Waikapū Stream and concrete lined ditch Site 7881 Feature 2, it likely functioned as a terrace for taro. Site 7882 is located outside the proposed development boundaries however it has been documented and requires only monitoring during development (if applicable). Site 7883 is a former WWII bunker which

may or may not be affected during development. Although this historic property has been adequately documented and may be removed, it is recommended that the development plan be re-reviewed to ascertain if the structure may be preserved in place with an interpretive plaque. In the event the bunker cannot remain in place, a bronze plaque commemorating the site should be erected. Site 7884 Feature 1 (scatter of historic materials) is situated along the northern edge of the parcel outside of the proposed development boundaries. It has been adequately documented and requires no further work.

BACKHOE TESTING RESULTS

During the subsurface testing, a total of 150 trenches were excavated, photographed and stratigraphically recorded within the five zones. Only one historic property was recovered during the trenching and assigned Site 7884. Site 7884 is comprised of secondarily deposited historic materials recorded at three localities (Features 1-3); Site 7884 Feature 1 is within Parcel 3 Mauka by the concrete ditch, Feature 2 is at Parcel 6 around Trench 218, Site 7884 and Feature 3 within Parcel 7 at Trenches 323 and 324. At Parcel 3 Mauka (pors. of TMK 3-6-004:003) situated within the north western portion of the project area, fifteen (15) trenches were executed within the eastern end and designated TR 400 -414. Within Parcel 3 Waena, also located within TMK 3-6-004:003 in the west central portion of the project area and bisected north-south by Site 5197 (Waihe`e Ditch) a total of forty-two (42) trenches, where twenty-seven (27) assigned TR 1-27 were located *mauka* (west) of Waihe`e Ditch and fifteen (15) designated TR 01-015 were located *makai* (east) of the ditch. For Parcel 6 located within TMK 3-6-004:003 in the north central section of the project area, twenty-six (26) trenches designated TR 200-225 were performed and for Parcel 7 at TMK 3-6-005:007 which is the Maui Tropical Plantation site, twenty-five (25) trenches assigned TR300-324 were excavated. Lastly, in Parcel 3 Makai within a portion of TMK 3-6-002:003, a total of forty (40) trenches designated TR 100-139 was executed. As discussed in the methods and procedures section, the placement of the trenches was determined by utilizing a combination of random and pre-determined sampling strategies. The goal of the testing was to sample the LCA's and Grants in the area while collecting information about the subsurface conditions across the project area, and not necessarily within the LCA's and Grants. The trenches averaged 4.8 m in length, by 1.45 m in width by 1.7 m in depth, and all terminated upon decomposing bedrock (saprolytic), and/or sterile sub-strata. A summary of the trench descriptions is presented below within each of the five (5) zones (Tables XI-XX).

PARCEL 3 MAUKA

Parcel 3 Mauka is comprised of approximately 210-acres of fallow sugarcane and currently utilized as pastureland for cattle. In 2007, SCS excavated thirty-one (31) stratigraphic trenches (ST), all of which were negative for cultural remains (see Figure 21). ST's 8-31 were located within Parcel 3 Mauka, and

ST's 1-7 were placed within Parcel 6. For the current undertaking, fifteen (15) trenches (TR 400-414) were excavated within the northeastern portion of the subject parcel as this area contained the majority of LCA's and Grants within Parcel 3 Mauka and was not subjected to intensive testing during the prior investigations by SCS (Figures 76 and 77).

TR's 400-411 were excavated within the eastern fenced portion of the parcel and TR 412-TR 414 were excavated within an open level fallow field outside the fenced area along the south side of Waikapū Stream (Figures 78-79 and Table XI). Most of the trenches exhibited a similar soil profile, TR's 400-402 and TR 405-410 contained a clay loam soil, and TR's 403, 404 and 411-414 consisted of a silty loam. A two to three layer stratigraphic sequence and Layer I was commonly the agricultural plow/till zone. The general stratigraphic sequence recorded at Parcel 3 Mauka is presented below.

OVERALL STRATIGRAPHY

Layer I consisted of an upper loamy silt layer, usually a dark brown, or a clay loam, usually a dark reddish brown (2.5YR 3/3) and varied from 60 to 70 cm thick. This was the plow zone from previous cultivation activities, currently the parcel is utilized as pastureland. Layer I was typically a disturbed layer with mixed with deteriorated black plastic drip-lines, plastic PVC irrigation pipes, and concrete with gravel aggregate pieces that had been used during the previous commercial sugarcane cultivation era. There was a low density of rocks in this layer and varied from high density to low density of roots from surface vegetation.

Layer II generally consisted of a silty clay or a clay loam and in a few identified trenches contained decomposing bedrock, and varied from a brown (7.5YR 4/4), to a dark reddish brown (5YR 3/4) with a low density of roots and a medium to high frequency of rocks, decomposing bedrock and saprolytic.

Layer III consisted of a clay loam to a silty clay and in a few identified trenches contained decomposing bedrock, and varied from a brown to strong brown (7.5YR 4/4-4/6) to a dark reddish brown (5YR 3/3-3/4) with the absence of roots and a medium to high frequency of rocks, decomposing bedrock and saprolytic bedrock.

Representative stratigraphic profiles with photos exemplifying the subsurface conditions are presented below for Trenches TR 400, TR 406, TR 409, and TR 412 of Parcel 3 Mauka.

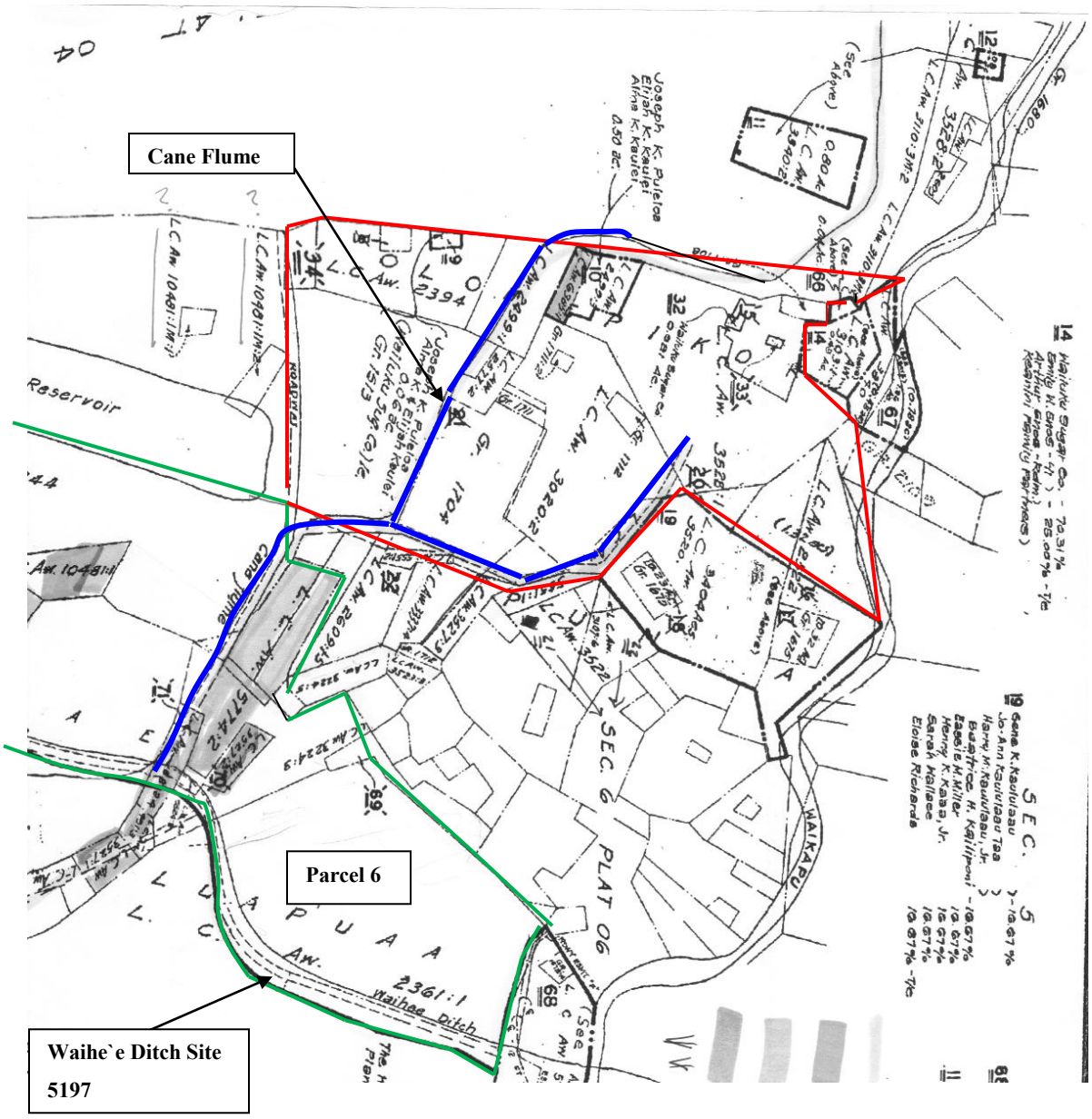

Figure 76. Plan View Map Showing Northeast Portion (Red) of Parcel 3 Mauka and LCA's and Grants

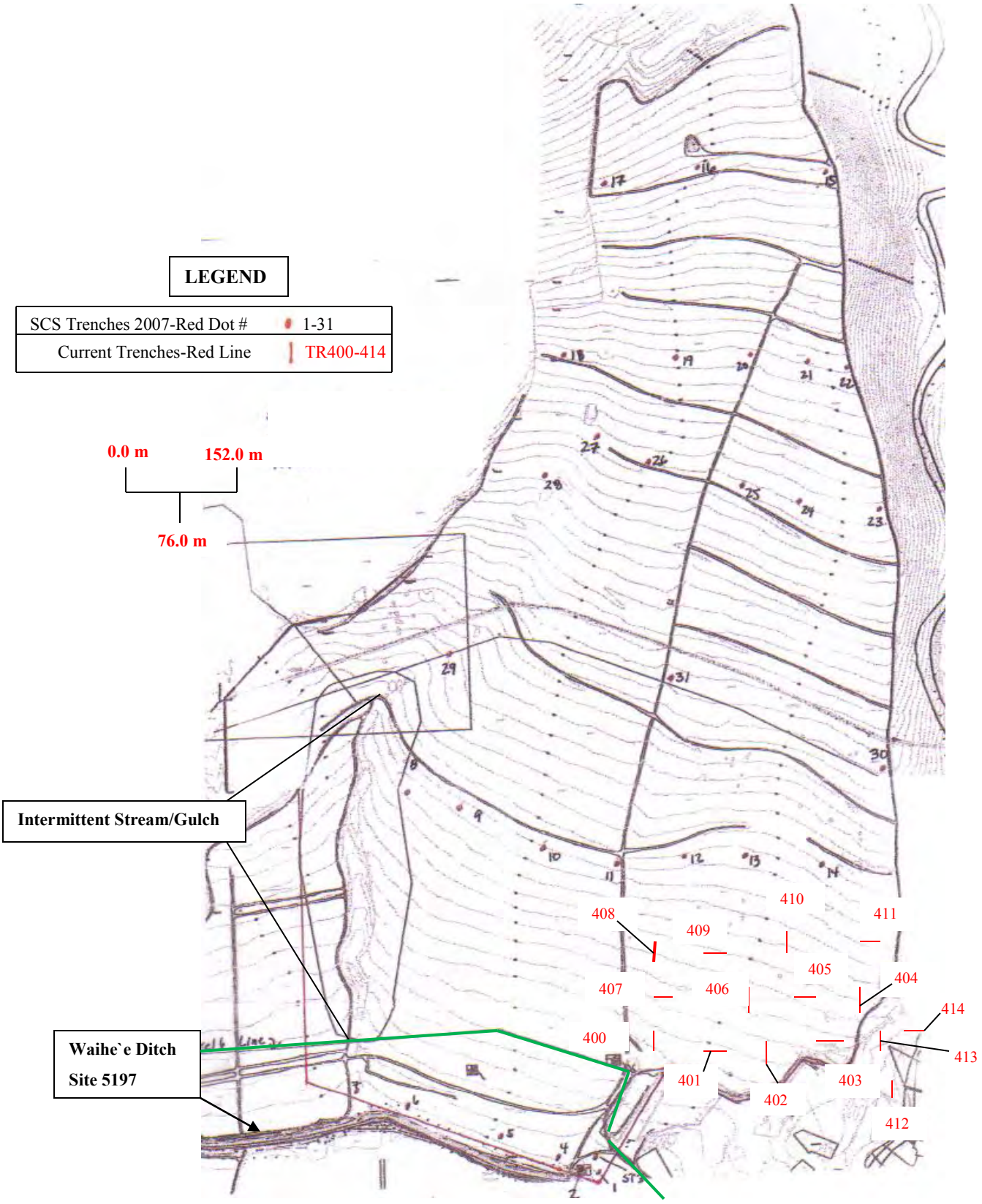

Figure 77. Plan View Map Showing Parcel 3 Mauka Northeast Portion and Trench Locations

Figure 78. Overview of Parcel 3 Mauka North from TR-401, View to Northeast

Figure 79. Overview Parcel 3 Mauka North, View to East

Table XI. Summary of Summary of Backhoe Trenches Parcel 3 Mauka North

TRENCH	LOCATION	DIMENSIONS	ORIENTATION	STRATIGRAPHY	COMMENTS
400	Base of Slope	4.9m x 1.45m x 1.81m	270° x 90°	Layer I-III	Non-Cultural
401	Base of Slope, within Grant 1704	4.8m x 1.44m x 1.76m	270° x 90°	Layer I-III	Non-Cultural
402	Base of Slope, within LCA 3020:2	4.8m x 1.45m x 1.77m	270° x 90°	Layer I-II	Non-Cultural
403	Base of Slope, within LCA 3520	4.9m x 1.43m x 1.75m	270° x 90°	Layer I-II	Non-Cultural
404	South of Waikapū Stream within LCA 3528:1	4.9m x 1.4m x 1.8m	270° x 90°	Layer I-III	Non-Cultural
405	Base of Slope, Grant 1712	4.8m x 1.45m x1.78m	360° x 180°	Layer I-II	Non-Cultural
406	Base of Slope, within LCA 3020:2 & Grant 1711	4.8m x 1.4m x 1.75m	270° x 90°	Layer I-II	Non-Cultural
407	Base of Slope	4.8m x 1.4m x 1.75	360° x 180°	Layer I-II	Non-Cultural
408	Along Slope, Western Portion of Test Area	4.9m x 1.45m x m	360° x 180°	Layer I-II	Non-Cultural
409	Along Slope, Near Grant 1513	4.8m x 1.41m x 1.8m	360° x 180°	Layer I-III	Non-Cultural
410	West of Waihe'e Ditch, within LCA 3528:1	4.6m x 1.4m x 1.75m	360° x 180°	Layer I-II	Non-Cultural
411	Within Grant 1708 and LCA 3109:1	4.6m x 1.45m x 1.75m	360° x 180°	Layer I-II	Non-Cultural
412	Within LCA 2522	4.9m x 1.44m x 1.81m	360° x 180°	Layer I-II	Historic clear glass bottle fragment found in Layer I
413	Within Grant 1675	4.7m x 1.45m x 1.86m	270° x 90°	Layer I-II	Non-Cultural
414	Within Grant 2109 LCA 2522 or LCA 3840	4.8m x 1.4m x 1.8m	360° x 180°	Layer I-II	Historic ceramics (2) found on surface

Trench 400

Trench 400 was positioned in the southeast corner of Parcel 3 Mauka at the base of the slope and south of Waikapū Stream (see Figure 77). No LCA or Grant designation information was present on the TMK map; thus no land use data was available. As exemplified on Figure 76, GR 1513 appears to fall within this area but is actually pointing to a smaller 0.06 acre lot near TR 409. TR 400 measured 4.9 m long by 1.4 m wide by 1.81 m deep and was oriented at 90°. It contained a tripartite stratigraphic sequence with

excavations terminating in sterile soil and saprolytic bedrock (Figure 80). No cultural materials were observed within TR 400.

> **Layer I** (0-56cmbs): is a dark reddish brown (2.5yr 3/3), clay loam, pastureland and previous agricultural plow zone, with deteriorated drip-lines, slightly-plastic, slightly-sticky, weak, fine to medium grain, slightly hard, blocky, with a low frequency of roots. Boundary was clear and wavy overlying Layer II. No cultural materials were observed in this layer.
> **Layer II (**56-158cmbs): is a dark reddish brown (2.5yr 3/4), clay loam, slightly-plastic, slightly-sticky, weak, fine to medium grain, blocky, slightly hard. No cultural materials were observed in this layer.
> **Layer III** (158-BOE) consisted of a clay loam strong brown (7.5YR 4/4) overlying decomposing bedrock.

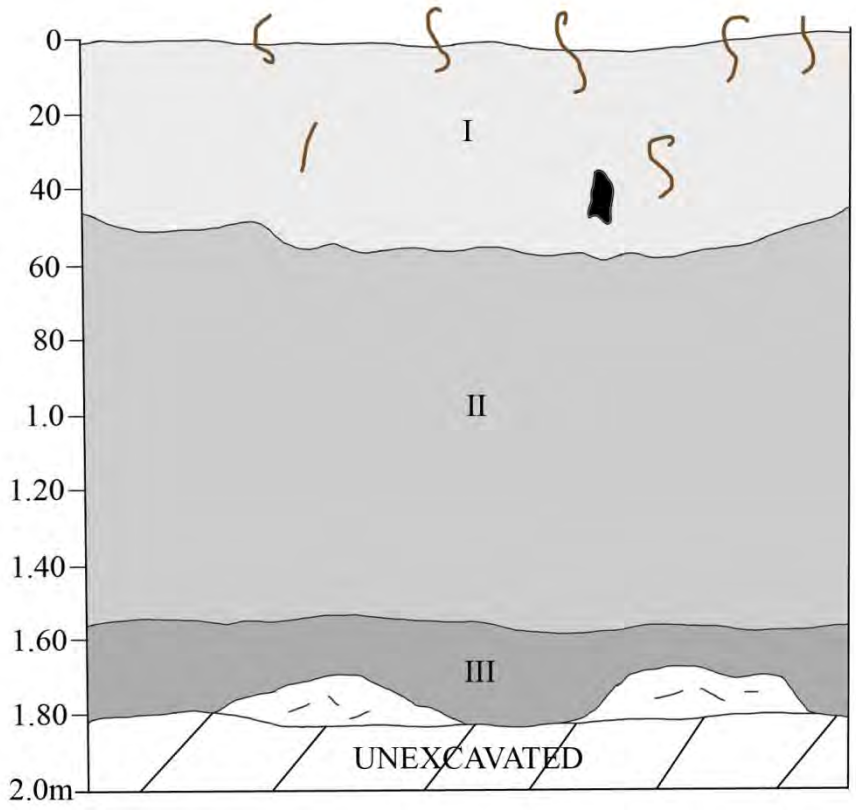

Figure 80. Stratigraphic Profile of TR 400 North Wall

Trench 406

Trench 406 was centrally located at the base of the slope in Parcel 3 Mauka, south of Waikapū Stream (see Figure 77). It was placed within LCA 3202:2 and possibly within GR 1711 (see Figure 76 and Table XI). LCA 3202:2 claimed land use of kula and *lo`i kalo*.; however no evidence of this land use was observed within the trench. TR 406 contained a two-layer stratigraphic sequence with excavations terminating in sterile soil (Figure 81). It measured 4.8 m long by 1.4 m wide by 1.75 m deep, and was oriented at 90°. No cultural materials were observed within TR 406.

> **Layer I** (0-62cmbs): is a dark reddish brown (2.5yr 3/3), clay loam, pastureland and previous agricultural plow zone, with deteriorated drip-lines, slightly-plastic, slightly-sticky, weak, fine to

medium grain, slightly hard, blocky, with a low frequency of roots. Boundary was clear and wavy overlying Layer II. No cultural materials were observed in this layer.
Layer II (59-175cmbs): is a dark reddish brown (2.5yr 3/4), clay loam, slightly-plastic, slightly-sticky, weak, fine to medium grain, blocky, slightly hard. No cultural materials were observed in this layer.

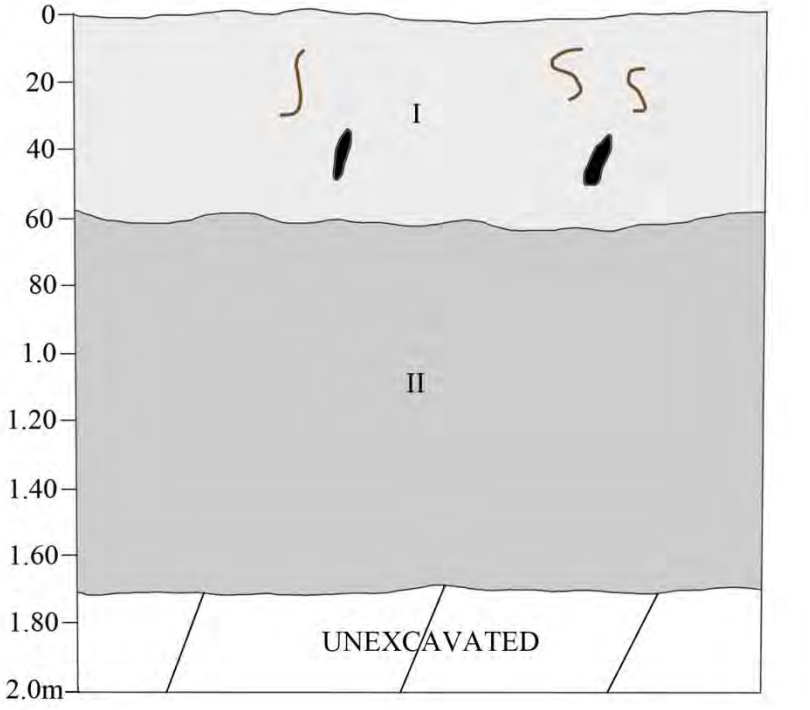

Figure 81. Photograph of TR406 South Wall (Top); Stratigraphic Profile of TR406 South Wall (Bottom)

Trench 409

Trench 409 was located in the southwest portion of Parcel 3 Mauka within GR 1513; south of Waikapū Stream (see Figures 76, 77). No land use data was available for this Grant, thus trench excavations were performed to ascertain presence/absence of cultural materials. TR 409 measured 4.8 m long by 1.4 m wide by 1.80 m deep and was oriented at 180°. It contained a three layer stratigraphic sequence with excavations terminating in sterile soil and saprolytic bedrock (Figure 82). No cultural materials were observed within TR 400.

Layer I (0-42cmbs): is a dark reddish brown (2.5yr 3/3), clay loam, pastureland and previous agricultural plow zone, with deteriorated drip-lines, slightly-plastic, slightly-sticky, weak, fine to medium grain, slightly hard, blocky, with a low frequency of roots. Boundary was clear and wavy overlying Layer II. No cultural materials were observed in this layer.
Layer II (42-121cmbs): is a dark reddish brown (2.5yr 3/4), clay loam, slightly-plastic, slightly-sticky, weak, fine to medium grain, blocky, slightly hard. No cultural materials were observed in this layer.
Layer III (121 cmbs-BOE) consisted of a clay loam strong brown (7.5YR 4/4) overlying decomposing bedrock.

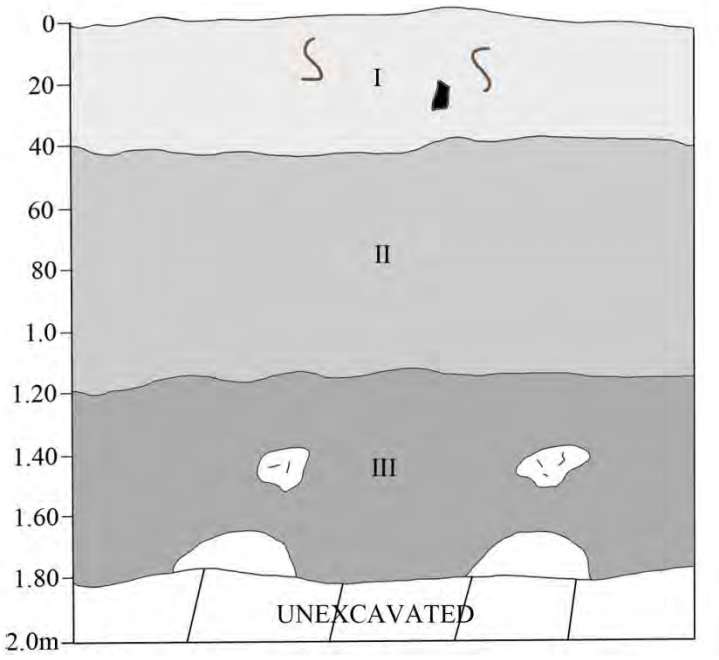

Figure 82. Stratigraphic Profile of TR 409 East Wall

Trench 412

Trench 412 (TR 412) was located in the northeastern portion of Parcel 3 Mauka, south of Waikapū Stream, within LCA 2577:2 and GR 1675 (see Figures 76, 77, 82 and Table XI). This section contained a

two layer stratigraphic sequence with excavations terminating within sterile soils containing medium and large sized boulders (Figures 83 and 84). A 4.9 m long by 1.44 m wide by 1.81 m deep, oriented 180° by 360° section of this area was recorded and is further described below. A single clear glass bottle fragment was recovered approximately 30 cmbs within TR 412.

Layer I (0-78cmbs): is a dark brown (7.5yr 3/3), silt loam, previous agricultural plow zone, with deteriorated drip-lines, slightly-plastic, slightly-sticky, weak, fine to medium grain, slightly hard, blocky, with a high frequency of roots. Boundary was clear and wavy overlying Layer II. A clear glass fragment was recovered.
Layer II (60-181cmbs): is brown (7.5yr 3/4), silt loam, slightly-plastic, slightly-sticky, friable, fine to medium grain, blocky, slightly hard. High frequency of decomposing bedrock and large boulders were noted at base of Layer II. No cultural materials were observed in this layer.

Figure 83. Overview of TR 412 within Parcel 3 Mauka, View to East

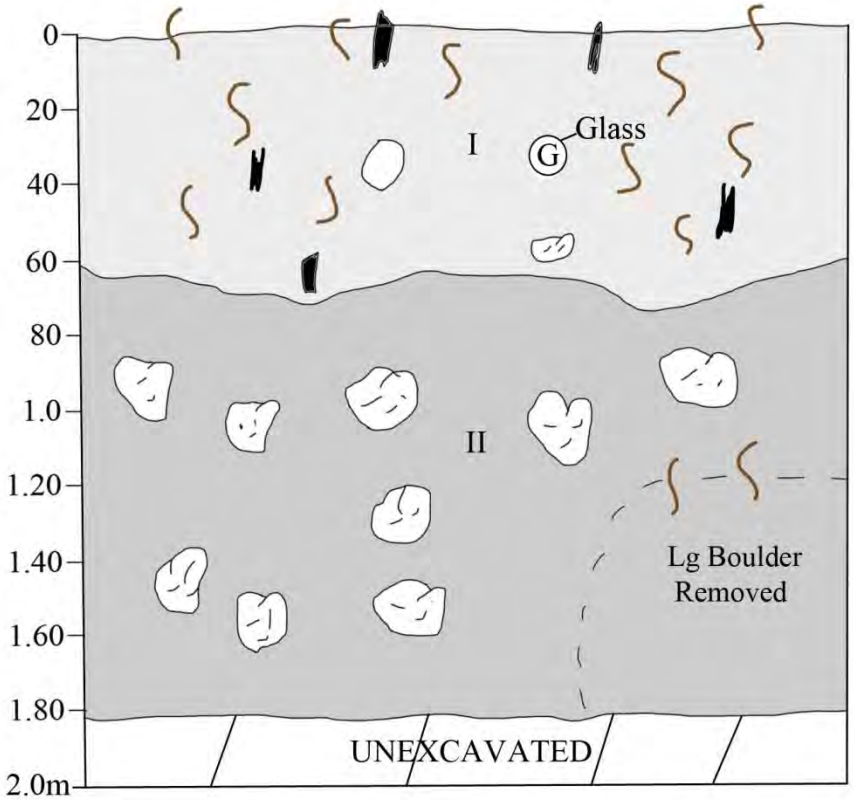

Figure 84. Photograph of TR 412 South Wall (top); and Stratigraphic Profile of TR 412 South Wall (bottom)

DISCUSSION PARCEL 3 MAUKA BACKHOE TRENCHING

Several LCA's and Grants were documented within this northeastern portion of Parcel 3 Mauka. Thus, eleven (11) trenches were excavated to ascertain presence/absence of buried remains. All trenches were negative for cultural materials with the exception of TR's 412 and 414, which contained sparse historic materials on the surface or close to the surface (TR 414) within Layer I (TR 412) and did not constitute a feature designation. Although the testing was negative within this locality of Parcel 3 Mauka, archaeological monitoring during future development is warranted for this northeastern section, and within other LCA's further west, if improvements occur within these small LCA's.

PARCEL 3 WAENA

Parcel 3 Waena (TMK 3-6-004:003 pors.) is comprised of approximately 72-acres and is situated adjacent to Honoa`pi`ilani Highway with Site 5197 (Waihe`e Ditch) bisecting this zone north-south, creating eastern and western sections (see Figures 6 and 7). The portion of land to the east of Waihe`e Ditch (eastern section) is comprised of fallow cane fields and small agricultural plots leased by individuals for various fruit and vegetable cultivation (Figure 85). A total of twenty-seven (27) trenches (TR 1-27) were excavated and stratigraphically recorded within this eastern section (Figure 86 and Tables XII and XIII). Since no LCA's and or Grants were noted in the eastern or western sections of Parcel 3 Waena, backhoe test trenches were spaced to provide a representative sample. Scattered fragments of concrete with large gravel aggregate inclusions were identified throughout the surface area and likely represent demolished foundations and/or irrigation ditches that were utilized during prior sugarcane operations by HC&S. These concrete fragments are the same material that was used in the construction of Site 7883 (pump houses). Three clearing piles Site 7884 Features 3-5 were noted in the eastern (Fes. 4 and 5) and the western (Fe.3) sections (Figure 87). The western section also contains a reservoir and is currently utilized for active sugarcane cultivation (Figure 88). A total of fifteen (15) trenches (TR 01-015) were excavated and stratigraphically recorded in this eastern portion (see Figure 86 and Table XIV).

Figure 85. Overview Photograph of Parcel 3 Waena Eastern Section with Clearing Pile Site 7884 Feature 3 in the background, View to Northwest

Temporary Sites 23-25

TS 23-25 are a continuation of the rock piles identified within Parcel 3 Mauka. TS 23 is a rock pile situated near the northwestern corner of Parcel 3 Waena western (*mauka*) section. It measures 38.10 m (125 ft.) long (E/W) by 27.45 m (90 ft.) wide (N/W) and is comprised of pushed cobbles, boulders soils and vegetation. TS 24 is located in the eastern (*makai*) section within the southwestern corner along the cane haul road. This feature measures 61.0 m (200 ft.) long (NE/SW) by 45.75m (150 ft.) wide and is comprised of the same materials as TS 23. TS 25 is an elongated rock pile consisting of two mounds pushed together. It is situated along the southern boundary of the western section and measures 500 ft. long and ranges from 15.24 m (50 ft) to 30.48 m (100 ft.) wide.

TS 23-25 are agricultural clearing/push mounds associated with sugarcane cultivation. As previously discussed, these rock piles do not meet any of the criteria under significance evaluations, and were not assigned a State site number.

Figure 86. Plan View Topographic Map Showing Trench`s 1-27 and 01-015 and TS 23-25 within Parcel 3 Waena

Figure 87. Overview Photograph of Parcel 3 Waena from TR 22 with Temporary Site 23 Rock Mound, View to Southeast

Figure 88. Overview Photograph of Parcel 3 Waena (Western Section) from Reservoir, View to South

During the testing program, the trenches within the eastern and western sections exhibited a similar stratigraphy. For the eastern portion, a two to seven layer/lens stratigraphic sequence was observed, and for the western section, a three to six layer/lens soil profile was recorded. Representative stratigraphic sequences are presented below for each section.

OVERALL STRATIGRAPHY FOR EASTERN SECTION OF PARCEL 3 WAENA

Layer I consisted of an upper loamy silt layer, that varied from a dark brown, brown or a very dark gray brown (7.5YR 3/2, 3/3 or 10YR 4/3), and varied from 50 to 60 cm thick. This was the plow zone from previous cultivation activities. Layer I was typically mixed with torn black plastic drip-lines, PVC plastic irrigation hoses, and concrete aggregate pieces that had been used during the previous commercial sugarcane cultivation. There was a low frequency of rocks in this layer, but a high frequency of roots from surface vegetation.

Layer II generally consisted to be a silt loam and/or stony silt loam, brown, dark brown, very dark gray brown (10YR 3/2, 4/3, 7.5YR 3/3, 3/4), and varied from 44-127 cm thick, with a low density of roots and a medium frequency of rocks and/or decomposing bedrock. Trenches excavated towards the northwestern end of the project area exhibited a color that tended to be browner or more yellow second layer, which ranged in color from dark brown (7.5 YR 3/4 loam to mottled dark (7.5YR 3/4) and dark reddish brown (5 YR 3/4) silt loam. There was usually a distinct transition between this layer and the plow zone above, as this layer never had any materials from commercial sugarcane cultivation mixed within it and generally appeared less disturbed and contained saprolytic rock.

Layer III was present in two of the trenches. Layer III generally ranged in color from brown to dark yellowish brown (7.5 YR 4/3, 4/4) to dark grayish brown (10 YR 4/2) silt loam, streambed gravel with silt, to gravel with a higher density of pebbles than the upper layers as a result of decomposing bedrock. Layer III has a low density of roots and with a higher density of pebbles than the upper layers as a result of streambed and storm-wash inclusions, along with decomposing bedrock mixed with saprolytic bedrock. No cultural materials were observed in this layer.

Six of the trenches exhibited a two layer profile, two (2) exhibited a tripartite sequence, thirteen (13) trenches contained a four layer sequence, seven (7) trenches a five layer sequence, and one (1) trench exhibited six strata. Representative stratigraphic profiles with associated photographs for TR's 1 are presented below to exemplify the results.

Table XII. Summary of Trench Description for Eastern Section of Parcel 3 Waena

TRENCH	LOCATION	DIMENSIONS	ORIENTATION	STRATIGRAPHY	COMMENTS
1	In the extreme southwest corner	4.7m x 1.4m x 1.4 m	360° x 180° x	I-IV/sand	Non-Cultural
2	In the extreme southern portion	4.6m x 1.41m x 1.66m	270° x 90° x	I-IV	Non-Cultural
3	In the extreme southwest corner	4.7m x 1.41m x 1.9m	360° x 180° x	I-IV	Non-Cultural Charcoal Flecks in Layer IV
4	In the extreme southeast corner	4.6m x 1.42m x 1.8m	270° x 90°	I-IV	Non-Cultural
5	In the western portion	4.6m x 1.42m x 1.9m	360° x 180°	I-IV Layer IV on the east	Non-Cultural
6	In the south central portion	4.7m x 1.41m x 2.3m	270° x 90°	I-V	Non-Cultural
7	In the south central portion	4.7m x 1.42m x 2.0m	360° x 180°	I-V	Non-Cultural
8	In the southeastern central portion	4.7m x 1.43m x 2.3m	270° x 90°	I-IV	Non-Cultural
9	In the southeastern portion	4.7m x 1.41m x 1.4m	360° x 180°	I-V	Non-Cultural
10	In the southwestern portion	4.6m x 1.45m x 2.24m	270° x 90°	I-IV	Non-Cultural
11	In the central southwestern portion	4.7m x 1.42m x 2.32m	270° x 90°	I-IV	Non-Cultural
12	In the central portion	4.6m x 1.42m x 2.08m	270° x 90°	I-IV	Non-Cultural
13	In the central portion	4.6m x 1.45m x 2.24m	360° x 180°	I-IV	Non-Cultural
14	In the eastern central portion	4.6m x 1.42m x 2.3m	270° x 90°	I-VI	Non-Cultural
15	In the northwestern portion	4.7m x 1.45m x 2.34m	360° x 180°	I-V	Non-Cultural
16	In the northwestern central portion	4.6m x 1.44m x 2.2m	270° x 90°	I-IV	Non-Cultural
17	In the northwestern central portion	4.7m x 1.45m x 2.0m	360° x 180°	I-IV	Non-Cultural
18	In the northeastern central portion	4.6m x 1.43m x 1.84m	270° x 90°	I-IV	Non-Cultural
19	In the northeastern portion	4.6m x 1.43m x 1.92m	360° x 180°	I-III	Non-Cultural
20	In the northeastern portion	4.6m x 1.45m x 2.2m	360° x 180°	I-IV	Non-Cultural

Table XIII. cont'd Summary of Trench Description for Eastern Portion of Parcel 3 Waena

TRENCH	LOCATION	DIMENSIONS	ORIENTATION	STRATIGRAPHY	COMMENTS
21	In the north central portion	4.6m x 1.45m x 1.96m	270° x 90°	I-III	Non-Cultural
22	In the northwestern portion	4.7m x 1.42m x 1.84m	270° x 90°	I-II	Non-Cultural
23	In the northwestern portion	4.7m x 1.4m x 1.76m	360° x 180°	I-II	Non-Cultural
24	In the northwestern portion	4.6m x 1.41m x 1.84m	360° x 180°	I-II	Non-Cultural
25	In the extreme northwestern portion	4.7m x 1.42m x 1.12m	360° x 180°	I-II	Non-Cultural
26	In the north central portion	4.7m x 1.41m x 1.85m	270° x 90°	I-II	Non-Cultural
27	In the extreme northeastern portion	4.7m x 1.42m x 1.84m	360° x 180°	I-II	Non-Cultural

Trench 1

Trench 1 (TR 1) was situated in the extreme southwestern portion of Parcel 3 Waena, east of Kamehameha Golf Course and north of the abandoned rock quarry (see Figure 86). It contained deep soil deposits consisting of a four layer soil profile with excavations terminating in sterile soils (Figure 89-91 and Tables XII and XIII). At 1.10mbs a sand lens was identified on the north and east wall directly below Layer III, the deposit was discontinuous and appears to be a previous disturbance or import. No buried pipes were in the vicinity which would utilize sand for pipe bedding. TR 1 measured 4.7 m long by 1.4 m wide by 1.4 m deep and was oriented 360°. No cultural materials were observed within TR 1.

> **Layer I** (0-52cmbs): is a very dark grayish brown (10yr 3/2), silt loam, currently a fallow cane field and previous agricultural plow zone, with deteriorated drip-lines, slightly-plastic, slightly-sticky, weak, fine to medium grain, slightly hard, blocky, friable, with a medium frequency of roots. Boundary was clear and wavy overlying Layer II. No cultural materials were observed in this layer.

Layer II (41-88cmbs): is a very dark grayish brown (10yr 3/2), stony silt loam, slightly-plastic, slightly-sticky, weak, fine to medium grain, blocky, slightly hard, friable with a medium frequency of rocks, cobbles and gravel. No cultural materials were observed in this layer.
Layer III (82-117cmbs): is a dark yellowish brown (10yr 4/4), riverbed stony silt, weakly coherent, non-plastic, non-sticky, loose, single grain to fine to medium grain, with a high frequency of rocks, cobbles and medium to large boulders. Boundary was clear and wavy overlying Layer IV and Layer IIIa along the north, northwest and west section (Figures 90 and 92) overlying Layer IV. No cultural materials were observed in this layer.
Lens/Layer IIIa at 110cmbs a light yellowish brown (10yr 6/4) a fine to medium grain sand deposit was observed in a disturbed context in the north/northeast corner, overlying a sandy gravel extending 1.5 mbs on the north and east, overlying Layer IV on the north, northwest, non-plastic, non-sticky, loose, single grain, structureless, boundary abrupt and broken. No cultural materials were observed in this layer.
Layer IV (115-140cmbs): is a dark yellowish brown (10yr 4/6), gravel silt, observed on the northwestern portion and western portion of trench profile (Figure 92), loose, structureless. No cultural materials were observed in this layer.

Figure 89. Overview Photograph of TR 1 North Wall Profile

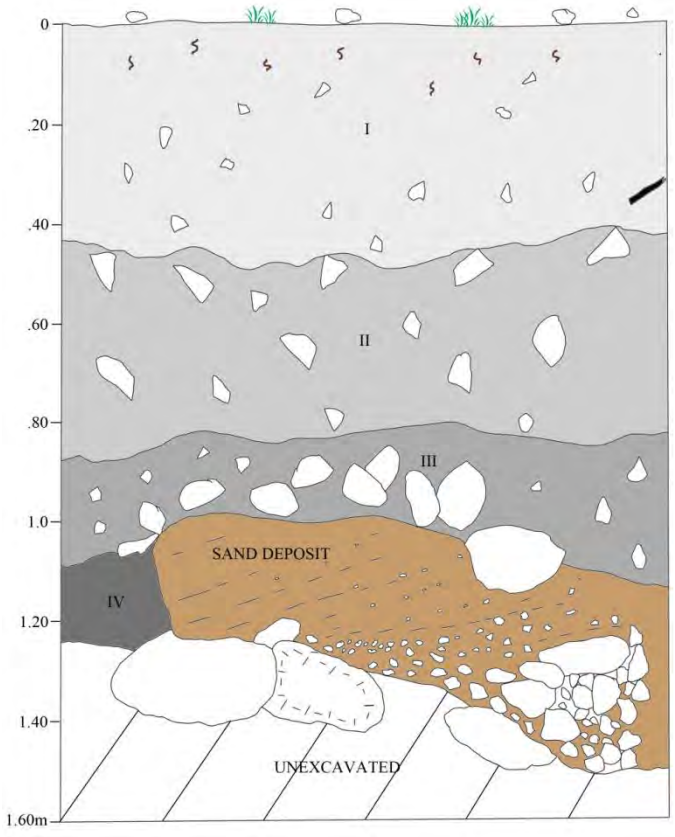

Figure 90. Stratigraphic Profile of TR 1 North Wall Profile

Figure 91. Up Close Photograph of Sand Deposit within TR 1, View to North

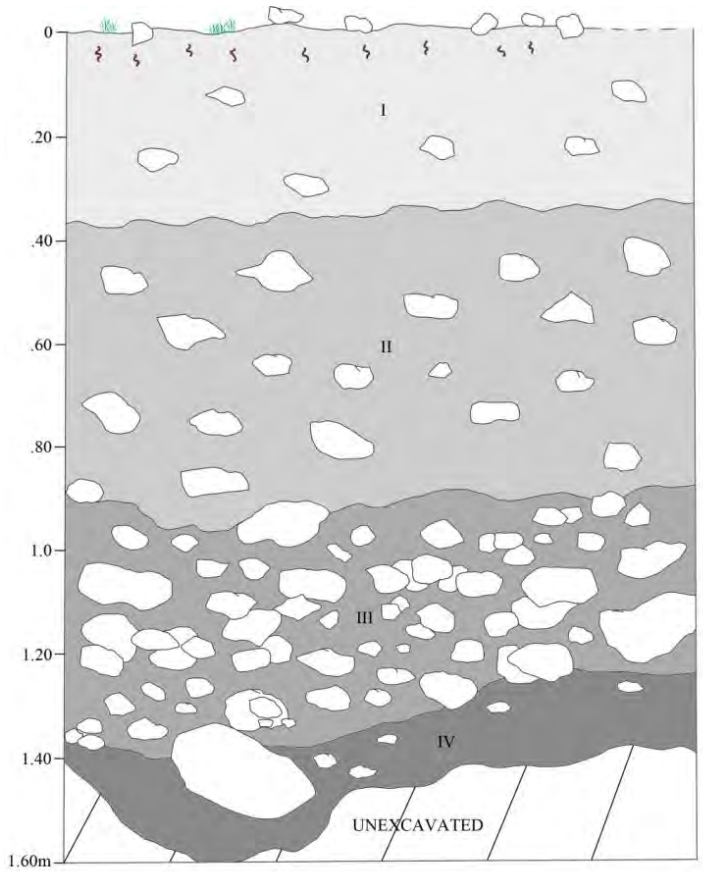

Figure 92. Stratigraphic Profile of TR 1 West Wall Profile

Trench 11

Trench 11 (TR 11) was situated in the central southwestern portion of Parcel 3 Waena, east of Kamehameha Golf Course and west of Site 5197 (Waihe`e Ditch) in an area currently utilized for individual agricultural pursuits. It contained a four layer stratigraphic sequence with excavations terminating within sterile streambed soils (Figure 93 and 94). TR 11 measured 4.7 m long by 1.42 m wide by 2.32 m deep, oriented 190°. No cultural materials were observed within Trench 11 (TR 11).

Layer I (0-60cmbs): is a dark brown (7.5yr 3/2), silt loam, currently a fallow cane field and previous agricultural plow zone, with deteriorated drip-lines, slightly-plastic, slightly-sticky, weak, fine to medium grain, slightly hard, blocky, with a medium frequency of roots and rocks. Boundary was clear and wavy overlying Layer II. No cultural materials were observed in this layer.
Layer II (58-121cmbs): is a dark brown (10yr 3/3), silt loam, slightly-plastic, slightly-sticky, weak, fine to medium grain, blocky, slightly hard, friable, with a medium frequency of rocks, cobbles and gravel. Boundary was clear and smooth overlying Layer III. No cultural materials were observed in this layer.
Layer III (116-212cmbs): is a brown (10yr 4/3), silt loam, weak, slightly hard, slightly-plastic, slightly-sticky, single grain with a high frequency of medium to large boulders. Boundary was clear and wavy overlying Layer IV streambed. No cultural materials were observed in this layer.
Layer IV (202-232cmbs): is a dark grayish brown (10yr 4/2), streambed, gravel silt, loose, fine to large grain, structureless, cobbles, pebbles and gravel. No cultural materials were observed in this layer.

Figure 93. Photograph of Stratigraphic Profile of TR 11 South Wall

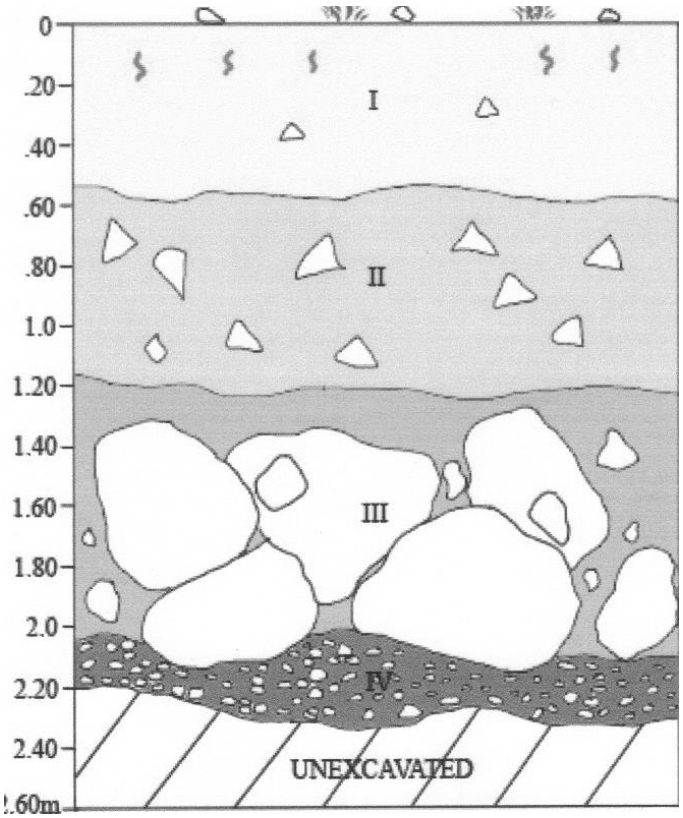

Figure 94. Stratigraphic Profile of TR 11 South Wall

Trench 14

Trench 14 (TR 14) was situated along the eastern boundary of Parcel 3 Waena, west of Waihe`e Ditch and the associated access road (see Figure 86). It contained a six layer/lens stratigraphic sequence with excavations terminating in sterile soils (Figures 95 and 96). Storm wash episodes were identified between 0.65-1.46 mbs and designated Layers Va-Vc. TR14 measured 4.6 m long by 1.42 m wide by 2.3 m deep, oriented 270°. No cultural materials were observed within Trench 14.

Layer I (0-25cmbs): is a dark brown (7.5yr 3/3), silt loam, currently a fallow cane field and previous agricultural plow zone, with deteriorated drip-lines, slightly-plastic, slightly-sticky, weak, fine to medium grain, slightly hard, blocky, friable with a medium frequency of roots. Boundary was clear and wavy overlying Layer II. No cultural materials were observed in this layer.

Layer II (24-48cmbs): is a brown (10yr 4/3), silt loam, slightly-plastic, slightly-sticky, weak, very fine to fine grain, blocky, slightly hard, friable with a medium frequency of rocks, cobbles and gravel. Boundary was abrupt and wavy overlying Layer III. No cultural materials were observed in this layer.

Layer III (44-56cmbs): is a dark grayish brown (10yr 4/2), stony silt, storm wash, weakly coherent, non-plastic, non-sticky, loose, fine to medium grain, with a high frequency of rounded cobbles, pebbles and gravel. Boundary was abrupt and wavy overlying Layer IV. No cultural materials were observed in this layer.

Layer IV (52-70cmbs) is a brown (10yr 4/3) silt loam, slightly-plastic, slightly-sticky, very fine grain, non-plastic, non-sticky, loose, single grain, structureless, boundary was abrupt and wavy overlying Layer Va. No cultural materials were observed in this layer.

Layer/lens Va (65-98cmbs): is a dark grayish brown (10yr 4/2), riverbed stony silt, weakly coherent, non-plastic, non-sticky, compact, medium to coarse grain, structureless, with a low to medium frequency of bedded rounded cobbles, pebbles and gravel overlying Layer Vb storm wash episode. Boundary was clear and wavy. No cultural materials were observed in this layer.
Layer Vb (90-130cmbs): is a dark grayish brown (10yr 4/2), riverbed stony silt, non-plastic, non-sticky, structureless, with medium frequency of bedded rounded cobbles, pebbles and gravel overlying Layer Vc storm wash episode, boundary was clear and wavy. No cultural materials were observed in this layer.
Layer Vc (106-146cmbs): is a dark grayish brown (10yr 4/2), riverbed stony silt, non-plastic, non-sticky, structureless, with a high frequency of bedded rounded cobbles, pebbles and gravel overlying Layer VI. Boundary was abrupt and wavy. No cultural materials were observed in this layer.
Layer VI (138-230cmbs): At 110cmbs is a brown (10yr 4/3), silt loam, weak, blocky, slightly-plastic, slightly-sticky, compact, fine grain. No cultural materials were observed in this layer.

Figure 95. Photograph of Stratigraphic Profile of TR 14 South Wall

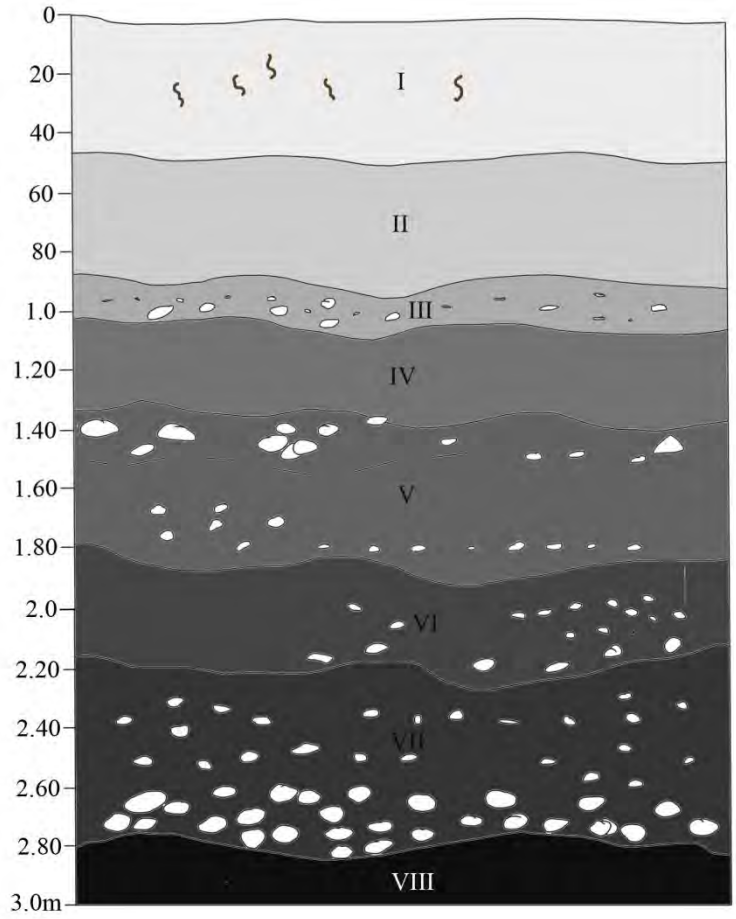

Figure 96. Stratigraphic Profile of TR 14 South Wall

Trench 23

Trench 23 (TR 23) was situated in the extreme northeastern portion of Parcel 3 Waena, juxtaposed by Parcel 3 Mauka and Parcel 6 to the north (see Figure 86). It contained a two layer stratigraphic sequence with excavations terminating in decomposing bedrock (Figures 97 and 98). Trench 23 measured 4.7 m long by 1.4 m wide by 1.76 m deep, oriented 360° by 180° section of this area was recorded and is further described below. No cultural materials were observed within Trench 23 (TR 23).

> **Layer I** (0-64cmbs): is a dark brown (7.5yr 3/3), silt loam, within a previous agricultural plow zone, with deteriorated drip-lines, slightly-plastic, slightly-sticky, weak, fine to medium grain, slightly hard, blocky, friable with a medium frequency of roots. Boundary was clear and wavy overlying Layer II. No cultural materials were observed in this layer.
>
> **Layer II** (64-184cmbs): is a dark brown (7.5yr 3/4), stony silt, slightly-plastic, slightly-sticky, weak, fine to medium grain, blocky, slightly hard, friable with a medium frequency of rocks, and decomposing bedrock. No cultural materials were observed in this layer.

Figure 97. Photograph of Stratigraphic Profile of TR 23 East Wall

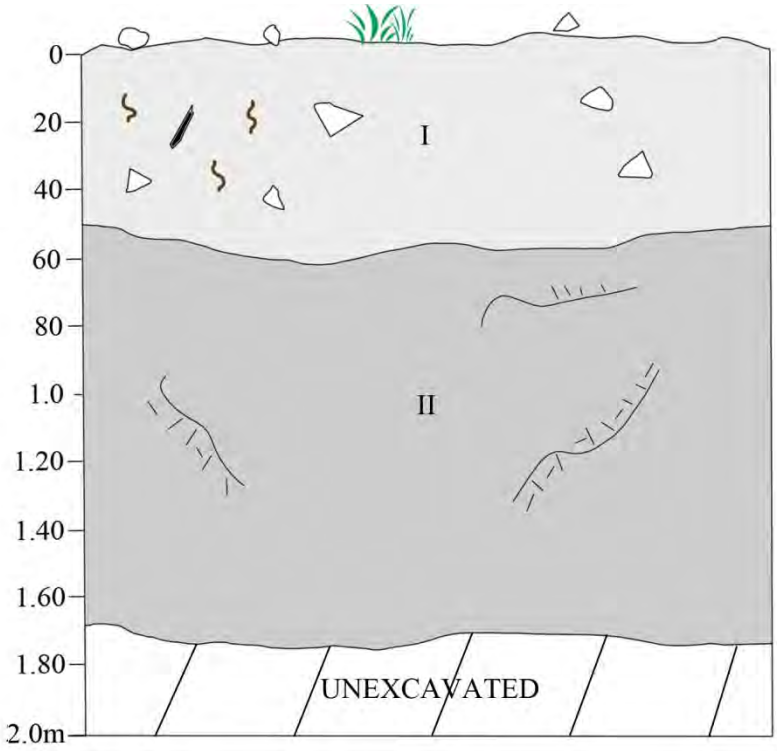

Figure 98. Stratigraphic Profile of TR 23 East Wall

OVERALL STRATIGRAPHY FOR WESTERN SECTION OF PARCEL 3 WAENA

Layer I generally consisted of an upper loamy silt layer, usually a dark brown, or a very dark grayish brown (10 YR 3/3, 3/2), and varied from 30 to 40 cm thick. This was the plow zone from current and previous sugarcane cultivation activities. Layer I was typically a disturbed layer mixed with deteriorated black plastic drip-lines, plastic PVC irrigation pipes, and concrete with gravel aggregate pieces that had been used during the previous commercial sugarcane cultivation era. There was a low frequency of rocks in this layer, but a high frequency of roots from surface vegetation.
Layer II generally consisted of a silt loam, silt or a storm wash stony silt layer, usually a brown to dark brown (7.5yr 4/2, 3/2), and varied from 20 to 140 cm thick and in a few identified trenches contained a dark brown (10YR 2/2 to 7.5YR 3/2) stony silt deposit that varied 60 to 150 cm thick, to a dark reddish brown (5YR 3/3, 3/4) with a low density to absence of roots and a medium to high frequency of rocks. These trenches exhibited the same stratigraphy with a few trenches exhibiting slight variations in color hues.
Layer III ranges from a grayish brown (10YR5/2), silt loam, slightly-plastic, slightly-sticky, blocky, slightly hard, fine to medium grain, with a low frequency of rounded pebbles and gravel. No cultural materials observed in this layer. To a streambed, non-plastic, non-sticky, medium to coarse grain, with a low frequency of roots. structureless, weakly coherent with a high frequency of rounded cobbles, pebbles and gravel No cultural materials observed in this layer.

Table XIV. Summary of Trench Description for Western Portion of Parcel 3 Waena

TRENCH	LOCATION	DIMENSIONS	ORIENTATION	STRATIGRAPHY	COMMENTS
01	Southeast Portion	4.7m x 1.42m x 1.76m	360° x 180°	I-IV	Non-Cultural
02	North of TR-01	4.6m x 1.41m x 1.52m	270° x 90°	I-IV	Non-Cultural
03	North of TR-01 & TR-02	4.6m x 1.42m x 1.8m	360° x 180°	I-III	Non-Cultural
04	East of Reservoir	4.6m x 1.42m x 1.86 m	270° x 90°	I-II	Non-Cultural
05	East of Reservoir	4.6m x 1.41m x 2.04m	270° x 90°	I-II	Non-Cultural
06	South of Reservoir	4.7m x 1.51m x 1.7m	360° x 180°	I-II Terminated / Irrigation Lines	Non-Cultural 8" H2O PVC Irrigation Line Present
07	East of Rock Quarry	4.6m x 1.42m x 1.08m	360° x 180°	I-II	Non-Cultural
08	East of Reservoir	4.6m x 1.43m x 1.58m	360° x 180°	I-IV	Non-Cultural
09	East of Reservoir	4.7m x 1.65m x 1.48m	360° x 180°	I-III	Non-Cultural 12" H2O PVC Irrigation Line Present
010	East of Waihe'e Ditch	4.6m x 1.4m x 1.84m	360° x 180°	I-III	Non-Cultural
011	East of Waihe'e Ditch	4.6m x 1.41m x 1.8m	270° x 90°	I-III	Non-Cultural
012	East of Waihe'e Ditch	4.6m x 1.4m x 1.74m	270° x 90°	I-III	Non-Cultural

013	West of State Highway 30	4.7m x 1.42m x 1.6m	270° x 90°	I-III	Non-Cultural
014	West of State Highway 30	4.6m x 1.41m x 1.83m	270° x 90°	I-II	Non-Cultural
015	West of State Highway 30	4.6m x 1.41m x 1.8m	270° x 90°	I-IV	Non-Cultural

Trench 08

Trench 08 (TR 08) was centrally located within the project area and contained a four layer/lens stratigraphic sequence with an alluvium layer noted at Layer II (Figures 86, 99 and 100). It measured 4.6 m long by 1.41 m wide by 1.8 m deep and was oriented at 270°. Excavations were terminated within a sterile stratum and no cultural materials were observed within TR 08.

Layer I (0-36cmbs): is a dark brown (7.5yr 3/2), silt loam, agricultural plow zone, slightly-plastic, slightly-sticky, blocky, fine to medium grain, with a medium frequency of roots. No cultural materials were observed in this layer. Boundary was clear and broken overlying Layer IIa on the north and Layer III on the south.
Layer IIa (29-56cmbs): is a brown (7.5yr 3/2), streambed, non-plastic, non-sticky, medium to coarse grain, with a low frequency of roots, structureless, weakly coherent with a high frequency of rounded cobbles, pebbles and gravel. No cultural materials observed in this layer. Boundary was clear and broken overlying Layer III.
Layer IIb (60-104cmbs): is a brown (7.5yr 3/2), streambed, non-plastic, non-sticky, medium to coarse grain, with a low frequency of roots. structureless, weakly coherent with a high frequency of rounded cobbles, pebbles and gravel . No cultural materials observed in this layer. Boundary was clear and broken overlying Layer III on the north and Layer IV on the south.
Layer III (24-100cmbs): is a brown (7.5yr 3/2), streambed, non-plastic, non-sticky, medium to coarse grain, with a low frequency of roots. structureless, weakly coherent with a high frequency of rounded cobbles, pebbles and gravel . No cultural materials observed in this layer. Boundary was clear and a plane overlying Layer IV.
Layer IV (92-160cmbs): is a brown (7.5yr 4/2), silt, slightly-plastic, slightly-sticky, blocky, slightly hard, medium grain, with a low frequency of rock and the absence of roots. No cultural materials observed in this layer.

Figure 99. Photograph of Stratigraphic Profile of TR 08 West Wall

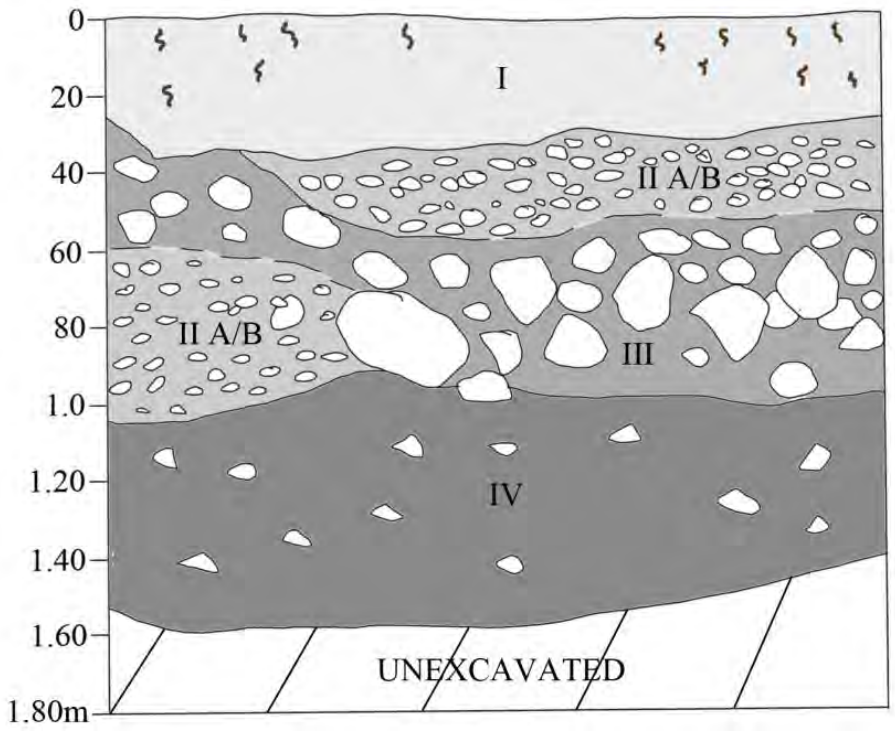

Figure 100. Stratigraphic Profile of TR 08 West Wall

Trench 011

Trench 011 (TR 011) was situated within the central portion of the project area and contained a tripartite stratigraphic sequence (see Figures 86, 101, 102 and Table XIV). It measured 5.0 m long by 1.41 m wide by 1.8 m deep, oriented at 270° where no cultural materials were observed. A section along the south wall was recorded and further described below.

> **Layer I** (0-30cmbs): is a dark brown (7.5yr 3/2), silt loam, agricultural plow zone, slightly-plastic, slightly-sticky, blocky, fine to medium grain, with a medium frequency of roots. No cultural materials were observed in this layer. Boundary was clear and broken overlying Layer IIa on the north and Layer III on the south.
> **Layer II** (28-157cmbs): is a brown (7.5yr 4/2), silty loam, slightly-plastic, slightly-sticky, blocky, slightly hard, medium to coarse grain, with a high frequency of rounded pebbles and gravel. No cultural materials observed in this layer. Boundary was clear and wavy overlying Layer III.
> **Layer III** (157-180cmbs): is a brown (7.5yr 3/2), streambed, non-plastic, non-sticky, medium to coarse grain, with a low frequency of roots. structureless, weakly coherent with a high frequency of rounded cobbles, pebbles and gravel . No cultural materials observed in this layer.

Figure 101. Photograph of Stratigraphic Overview of TR 011 South Wall

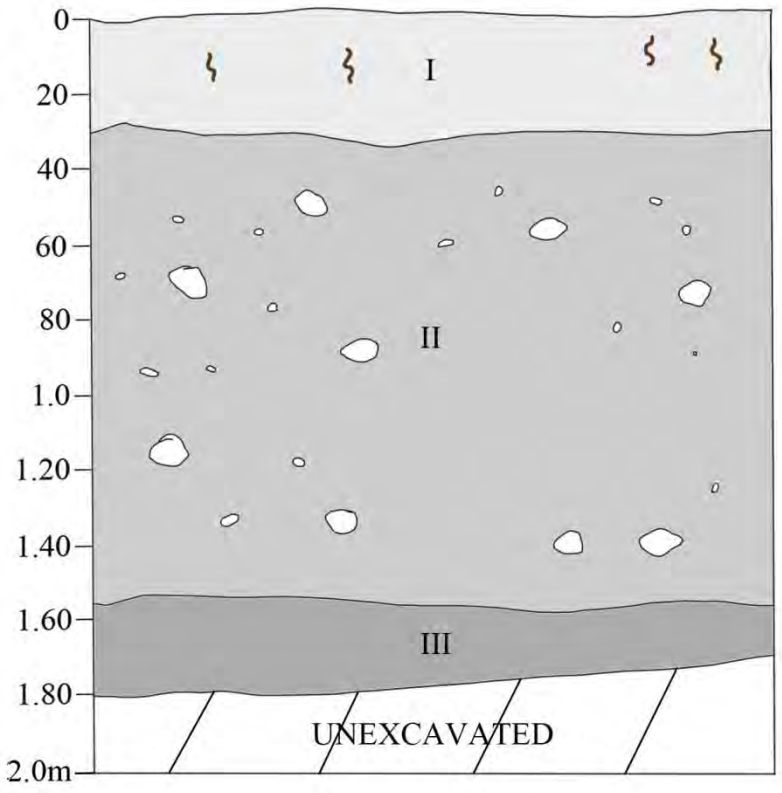

Figure 102. Stragraphic Profile of TR 011 South Wall

Trench 015

Trench 015 (TR 015) was situated within the northwestern portion of the project area adjacent to the western edge of an active sugarcane field (see Figure 86). A four layer stratigraphic sequence which contained alluvial episodes and sterile soils was recorded for TR 015. It measured 4.8 m long by 1.41 m wide by 1.8 m deep and was oriented at 270°.

Layer I (0-32cmbs): is a very dark brown (7.5yr 2.5/2), silt loam, agricultural plow zone, slightly-plastic, slightly-sticky, blocky, fine to medium grain, with a medium frequency of roots. No cultural materials were observed in this layer. Boundary was clear and wavy overlying Layer III on the north and Layer III on the south.
Layer IIa (24-90cmbs): is a brown (7.5yr 4/2), silty loam, slightly-plastic, slightly-sticky, blocky, friable, fine grain, with a low frequency of rounded pebbles and gravel. No cultural materials observed in this layer. Boundary was clear and a plane overlying Layer IIb.
Layer IIb (90-110cmbs): is a dark grayish brown (10yr 4/2), streambed, non-plastic, non-sticky, medium to coarse grain, with an absence of roots, structureless, with a high frequency of rounded cobbles, pebbles and gravel. No cultural materials observed in this layer. Boundary was clear and a plane overlying Layer III.
Layer III (100-180cmbs): is a grayish brown (10yr 5/2), silt loam, slightly-plastic, slightly-sticky, blocky, slightly hard, fine to medium grain, with a low frequency of rounded pebbles and gravel. No cultural materials observed in this layer. No cultural materials observed in this layer.

Figure 103. Photograph of Stratigraphic Profile of TR 015 North Wall Profile

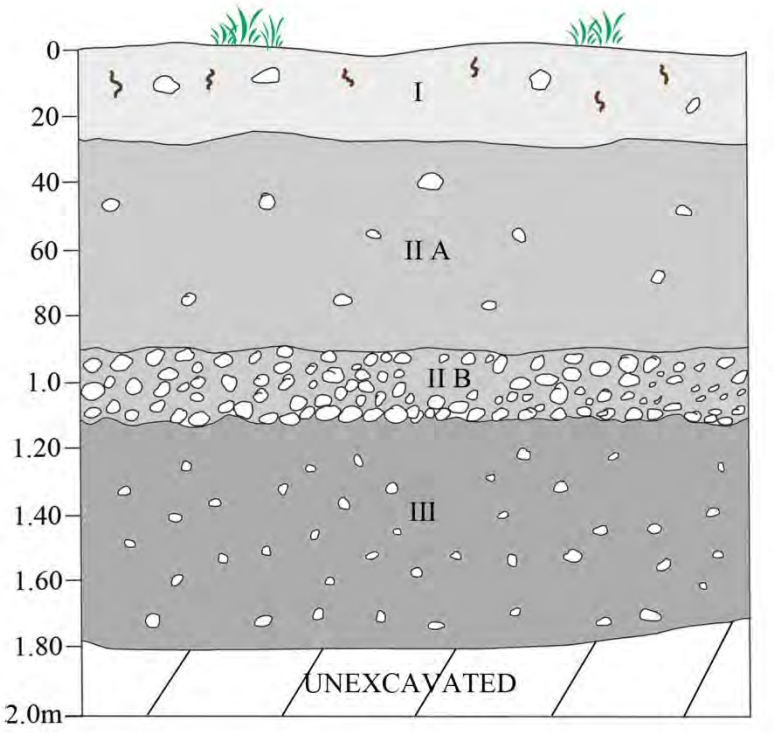

Figure 104. Stratigraphic Profile of TR 015 North Wall Profile

DISCUSSION PARCEL 3 WAENA BACKHOE TRENCHING

No cultural materials were recovered within the 27 trenches excavated within the eastern half of Parcel 3 Waena. Although the absence of material is noteworthy, most of the information is geologically related. Ten (10) trenches exhibited an alluvium stratum (water deposited layer and/or lens). TR`s 5, 6, 11 in the southern portion and TR`s 15, 16, 18 located to the north contained a deep streambed layer. TR`s 9, 10, 12, and 14 contained episodic storm wash activity or periodic flood episodes in the form of water affected pebbles and gravel layers and/or lens, juxtaposed by silt layers above and below. These trenches are located in the central portion of the parcel between the identified streambed trenches, and are oriented west/east. Six (6) trenches (TR 22-27) excavated along the northwestern portion of the project area, adjacent to large agricultural clearing piles exhibited a distinct stratigraphy consisting of a much grayer colored, extremely rocky Layer I and Layer II, particularly within the lower undisturbed stratum. Although these trench profiles show an upper plow-zone layer and a distinct lower layer, these layers consist of mainly of decomposing bedrock and/or saprolytic rock. These trenches are probably in areas that have either been very extensively bulldozed or previously mined of topsoil, leaving the underlying layers closer to the surface. Additionally, these trenches are located near a fairly deep ravine or gulch that was devoid of water. The remaining eleven (11) trenches, (TR 1-4, TR 7, TR 8, TR 13, TR 17, TR 19, TR 21, and TR 2) contained a deep soil deposit, with TR 1 containing a fairly thick sand deposit approximately 1.0 mbs (see Figure 86). No buried utility lines were noted in the area where the sand would be interpreted as pipe bedding. Although, the sand layer does not appear to be native, it contained the cross-bedding lines indicative of aeolian deposition.

A total of 15 trenches were undertaken on the western side of the parcel, which were also negative for buried remains. Five (5) trenches (TR 07-010 and TR 015) excavated along the western boundary, parallel with Site 5197 (Waihe`e Ditch) exemplified storm wash episodes in the form of water-affected basalt cobbles, pebbles and gravel, identified as a layer and/or lens (see Figure 86). Five (5) trenches (TR 01-03, TR 012 and TR 013) excavated along the eastern boundary, parallel with State Highway 30 (RT30) exhibited a high frequency of rock in both Layers II and Layer III silty loam. Trenches (TR 04-06, and TR 011) contained a deep soil deposit. Underground irrigation utilities were encountered in Trenches (TR0 6 and TR 09) and exhibited previous disturbances.

PARCEL 3 MAKAI

Parcel 3 Makai (TMK 3-6-002:003) comprises a total of 250 acres that is bounded on the east by Honoa`pi`ilani Highway (RT 30). Waikapū Stream and Waiko Road are located on the north and an active sand mining borrow pit and Kuihelani Highway (RT 380) are located on the east. Parcel 3 Makai is

currently cultivated in HC&S commercial sugarcane cultivation. One Grant formerly utilized for sugarcane, and a former reservoir were also noted in the central portion of the project area (Figure 105). Six trenches (TR's 110, 113, 116, 119, 127 and 140) were excavated within the Grant, and a total of forty-two (42) trenches (TR 100-141) were excavated and documented (Figure 105 and Tables XV and XVI). Most of the trenches excavated exhibited a similar stratigraphy. Generally, a three to four stratigraphic layer sequence was observed throughout the parcel with Layer I being the agricultural plow zone. All trenches were non-cultural.

OVERALL GENERAL STRATIGRAPHY

Layer I generally consisted of an upper loamy silt layer, usually a dark brown, or a very dark grayish brown (10 YR 3/3, 3/2), and varied from 50 to 80 cm thick. This was the plow zone from previous cultivation activities. Layer I was typically a disturbed layer mixed with deteriorated black plastic drip-lines, plastic PVC irrigation pipes, and concrete with gravel aggregate pieces that had been used during the previous commercial sugarcane cultivation era. There was a low density of rocks in this layer, but a high density of roots from surface vegetation.

Layer II generally consisted of a fine silt, loamy silt, and in a few identified trenches contained a silt clay and/or a silt gravel, and varied from a brown, dark brown, very dark grayish brown, and a dark grayish brown (10YR 4/3, 3/2, 3/2, 4/2) or a dark reddish brown (5YR 3/3) and/or brown, dark brown, strong brown (7.5YR 3/2, 3/4, 4/3,4/6) with a low density of roots and medium-sized cobbles to medium-sized boulders.

Layer III generally consisted to be very fine silt loam and/or clay with a low density of roots and medium-sized cobbles to large-sized boulders. Trenches excavated along the north eastern end of the project area exhibited an orange or strong brown layers, which ranged in color from dark brown (7.5YR 3/4, 5/6, 4/6) that may be a result of soil oxidation or chemicals used in sugarcane cultivation.

Eleven (11) trenches exhibited a two layer sequence, sixteen (16) trenches exhibited a three layer sequence, ten (10) trenches exhibited a four layer sequence, four (4) trenches exhibited a five layer sequence and one (1) trench exhibited a six layer sequence.

Representative stratigraphic profiles with photos for Trenches 100, 102, 110, 116, 121, 125 and 137 are presented below to exemplify the results.

Table XV. Summary of Backhoe Trenches Parcel 3 Makai East of State Highway 30

TRENCH	LOCATION	DIMENSIONS	ORIENTATION	STRATIGRAPHY	COMMENTS
100	Northeastern Boundary	4.7m x 1.41m x 1.5m	270° x 90°	Layer I-IV	Non-Cultural
101	Northeastern Boundary	4.7m x 1.40m x 1.36m	270° x 90°	Layer I-III	Non-Cultural
102	Northeastern Portion	4.7m x 1.42m x 1.5m	270° x 90°	Layer I-III	Non-Cultural
103	Northeastern Portion	4.7m x 1.41m x 1.8m	360° x 180°	Layer I-III	Non-Cultural
104	East of TR-103	4.6m x 1.43m x 1.5m	270° x 90°	Layer I-III	Non-Cultural
105	Northeastern Boundary	4.7m x 1.42m x 1.32m	270° x 90°	Layer I-III	Non-Cultural
106	North Central	4.6m x 1.41m x 0.92m	270° x 90°	Layer I-II	Non-Cultural
107	East of TR-106	4.7m x 1.42m x 1.2m	270° x 90°	Layer I-II	Non-Cultural
108	Northeastern Portion	4.7m x 1.41m x 1.8m	270° x 90°	Layer I-III	Non-Cultural
109	Northeastern Boundary	4.6m x 1.42m x 2.0m	270° x 90°	Layer I-III	Non-Cultural
110	Central	4.7m x 1.43m x 1.6m	270° x 90°	Layer I-IV	Non-Cultural
111	East of TR-110	4.7m x 1.42m x 1.64m	270° x 90°	Layer I-IV	Non-Cultural
112	Central Eastern Boundary	4.7m x 1.41m x 1.76m	270° x 90°	Layer I-III	Non-Cultural
113	Central	4.7m x 1.43m x 1.8m	270° x 90°	Layer I-II	Non-Cultural
114	East of TR-113	4.7m x 1.45m x 1.7m	270° x 90°	Layer I-VI	Non-Cultural
115	Central Eastern Boundary	4.6m x 1.44m x 1.6m	270° x 90°	Layer I-II	Non-Cultural
116	Central Southern Grant 2747:2	4.7m x 1.45m x 2.0m	360° x 180°	Layer I-III	Non-Cultural
117	East of TR-116	4.7m x 1.46m x 1.8m	270° x 90°	Layer I-IIa	Non-Cultural
118	Southeastern Boundary	4.7m x 1.43m x 1.6m	270° x 90°	Layer I-IV	Non-Cultural
119	South Central	4.6m x 1.45m x 1.6m	270° x 90°	Layer I-III	Non-Cultural
120	East of TR-119	4.7m x 1.44m x 1.6m	270° x 90°	Layer I-III	Non-Cultural

Table XVI. cont'd Summary of Backhoe Trenches Parcel 3 Makai East of State Highway 30

TRENCH	LOCATION	DIMENSIONS	ORIENTATION	STRATIGRAPHY	COMMENTS
121	Southeastern Boundary	4.7m x 1.44m x m	270° x 90°	Layer I-IV	Charcoal Lens in Layer III
122	Southeastern Boundary	4.8m x 1.43m x m	270° x 90°	Layer I-V	Non-Cultural
123	Southeastern Boundary	4.7m x 1.44m x m	270° x 90°	Layer I-V	Non-Cultural
124	Southern Boundary	4.8m x 1.44m x m	360° x 180°	Layer I-V	Non-Cultural
125	Southern Boundary	4.9m x 1.43m x m	360° x 180°	Layer I-IV	Non-Cultural
126	Southwestern Boundary	4.9m x 1.45m x m	270° x 90°	Layer I-IIa	Non-Cultural
127	Western Boundary	4.7m x 1.43m x m	270° x 90°	Layer I-II	Non-Cultural
128	West of TR-110	4.8m x 1.44m x m	270° x 90°	Layer I-IV	Non-Cultural
129	East of TR-138	4.8m x 1.42m x 1.62m	270° x 90°	Layer I-III	Non-Cultural
130	East of TR-137	4.7m x 1.41m x 1.45m	270° x 90°	Layer I-III	Non-Cultural
131	Southeast of TR-133	4.8m x 1.42m x 1.31m	270° x 90°	Layer I-II	Non-Cultural
132	Northern Boundary	4.8m x 1.45m x 1.75m	270° x 90°	Layer I-V	Charcoal lens in Layer II
133	Northern Boundary	4.6m x 1.41m x0.81 m	270° x 90°	Layer I-II	Non-Cultural
134	South of TR-135	4.7m x 1.42m x 1.41m	270° x 90°	Layer I-II	Non-Cultural
135	Northern Boundary	4.7m x 1.41m x 1.21m	270° x 90°	Layer I-III	Non-Cultural
136	Northwestern Boundary	4.8m x 1.43m x 1.39m	270° x 90°	Layer I-II	Non-Cultural
137	Southeast of TR-138	4.8m x 1.44m x 1.52m	270° x 90°	Layer I-IV	Non-Cultural
138	Western Boundary	4.7m x 1.41m x 1.17m	360° x 180°	Layer I-III	Non-Cultural
139	Western Boundary	4.8m x 1.40m x 1.65m	270° x 90°	Layer I-IV	Non-Cultural
140	Western Boundary	4.8m x 1.45m x 1.29m	270° x 90°	Layer I-IV	Non-Cultural
141	East of TR-40	4.9m x 1.44m x 1.8m	270° x 90°	Layer I-III	Non-Cultural

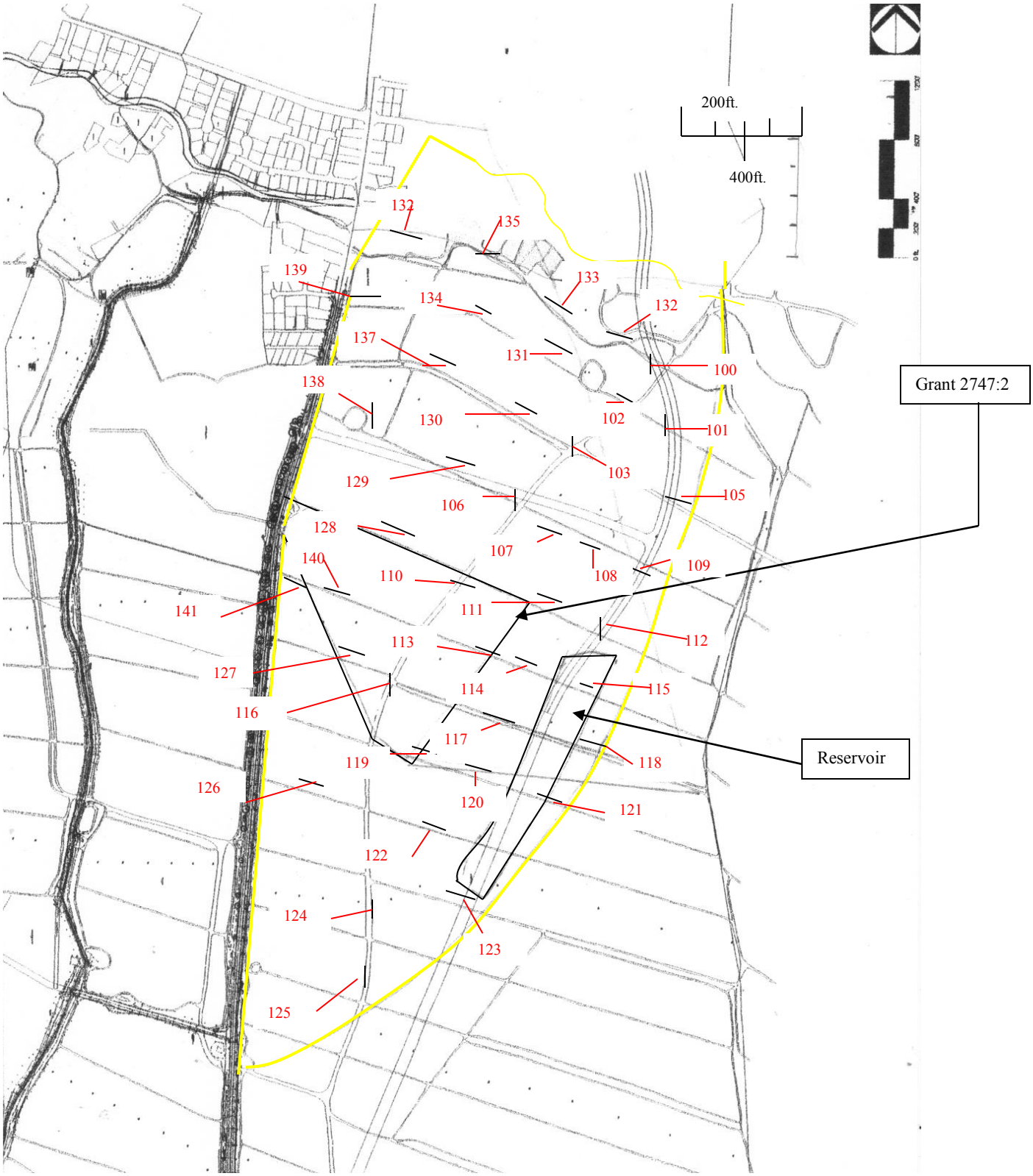

Figure 105. Plan View Topographic Map of Parcel 3 Makai (Yellow) Showing Location of Trenches 100-141, Grant and Reservoir

Trench 100

Trench 100 (TR 100) was situated in the northeastern portion of the project area along the western edge of a cultivated sugarcane field (see Figure 86). This section contained a four layer stratigraphic sequence with excavations terminating in sterile streambed soils (Figures 106 and 107). No cultural materials were observed within TR 100 which measured 4.7 m long by 1.41 m wide by 1.5m deep.

Layer I (0-68cmbs): is a dark brown (10yr 3/3), loamy silt, plow zone, non-plastic, non-sticky, fine to medium grain, with a medium frequency of roots. No cultural materials were observed in this layer. Boundary was clear and wavy overlying Layer II on the east and Layer III streambed on the west.
Layer II (33-132cmbs): is a very dark brown (10yr 3/2-3/3), silty loam, non-plastic, slightly-sticky, very fine grain. No cultural materials observed in this layer. Boundary was clear and abrupt overlying Layer IV on the east and Layer III on the west.
Layer III (58-150cmbs): is a dark yellowish brown 10 YR 3/6), imported gravelly silt, non-plastic, slightly-sticky, medium to coarse grain. No cultural materials observed in this layer. Boundary was clear and abrupt overlying Layer II.
Layer IV (130-150cmbs): is a dark brown (7.5yr 3/3) sandy loam with sub-rounded small basalt cobbles and lithified sand stone peds, non-plastic, slightly-sticky, fine to medium grain, with a low frequency of roots. No cultural materials were observed in this layer. Boundary was clear and broken abutting Layer III on the west.

Figure 106. Photograph of Stratigraphic Profile of Trench 100 South Wall with Streambed Deposit

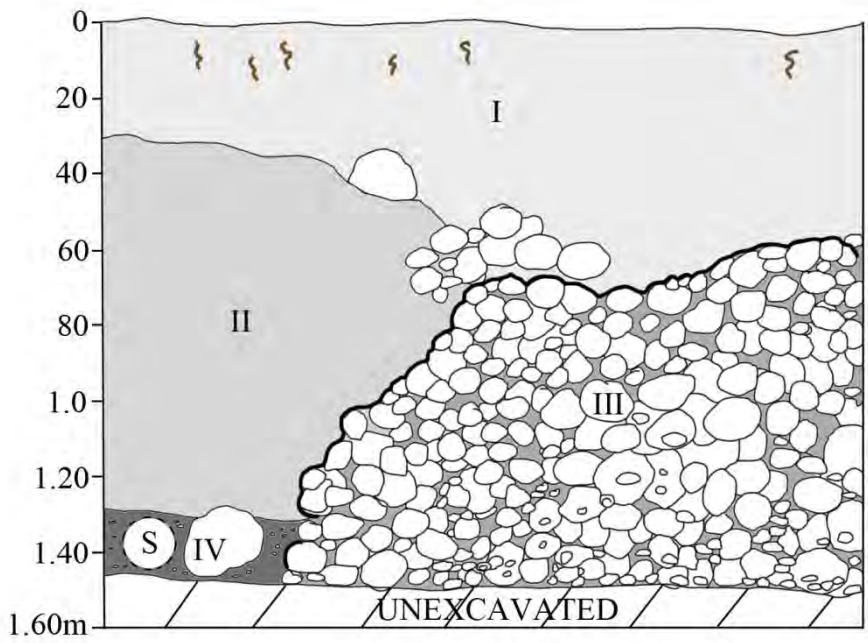

Figure 107. Stratigraphic Profile of Trench 100 South Wall

Trench 102

Trench 102 (TR 102) was located in the northeastern portion of the project area within an access road and the edge of a cultivated sugarcane field (see Figure 86). This trenched contained a three layer stratigraphic sequence with excavations terminating in sterile silty soil (Figures 108 and 109). Trench 102 was non-cultural and measured 4.7 m long by 1.42 m wide by 1.5m deep.

Figure 108. Photograph of Stratigraphic Profile of Trench 102 with Streambed Deposit, View to West

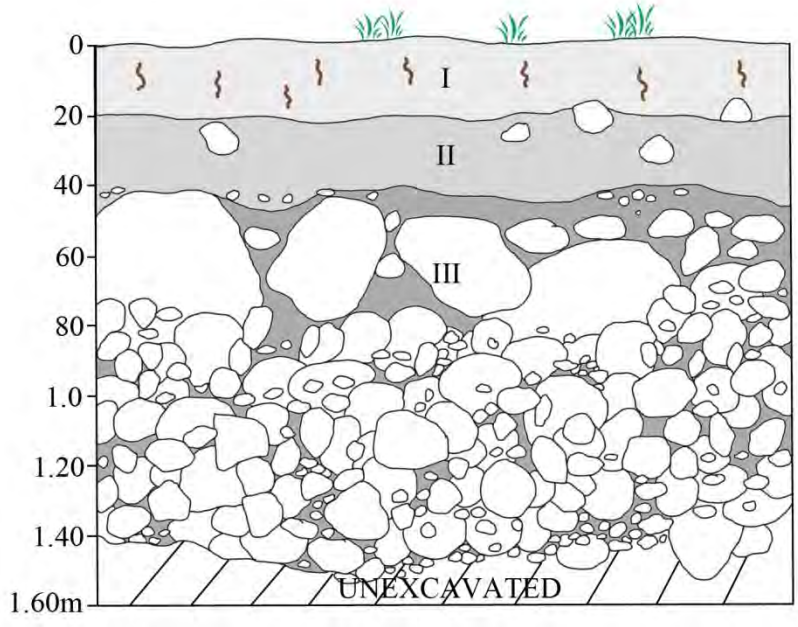

Figure 109. Stratigraphic Profile TR 102 South Wall

Trench 110

Trench 110 (TR 110) was situated in the central portion of the project area within Grant 2747:2 to Eugene Bal (see Figure 86 and Table IX). Land use for the grant was listed as sugarcane and a reservoir. The stratigraphic record for TR110 contained four layers which were the similar to TR's 108-109 (Figures 110 and 111). No cultural materials or evidence of the reservoir were observed within the trench which measured 4.7 m long by 1.43 m wide by 1.6 m deep.

Layer I (0-38cmbs) is the till zone it is a dark grayish brown (10YR5/2), loamy silt, non-plastic, non-sticky, fine to medium grain, with medium frequency of roots, and black plastic irrigation. No cultural materials were observed in this layer. Layer I has a clear, smooth boundary with underlying Layer II.
Layer II (38-78 cmbs) consisted of a dark grayish brown (10YR5/2), loamy silt with cobble inclusions, non-plastic, non-sticky, fine to medium grain, low frequency of fine roots. Layer II is similar to Layer I but contains small cobble sub angular rocks and devoid of irrigation piping. Layer II is non-cultural. Boundary is abrupt and smooth.
Layer III (78-101/118 cmbs) is a reddish brown silty clay (5YR3/3), compact, non-plastic slightly sticky, with gravel inclusions. Layer III is non-cultural and has an abrupt, smooth boundary.
Layer IV (118-BOE cmbs**)** is a dark reddish brown (7.5YR4/6) gravelly silty clay with mottling of Layer III saprolytic rock. No roots, linear gravel inclusions and sub angular rock. Layer IV is non-cultural and excavations terminated within this layer.

Figure 110. Photograph of South Wall of Trench 110

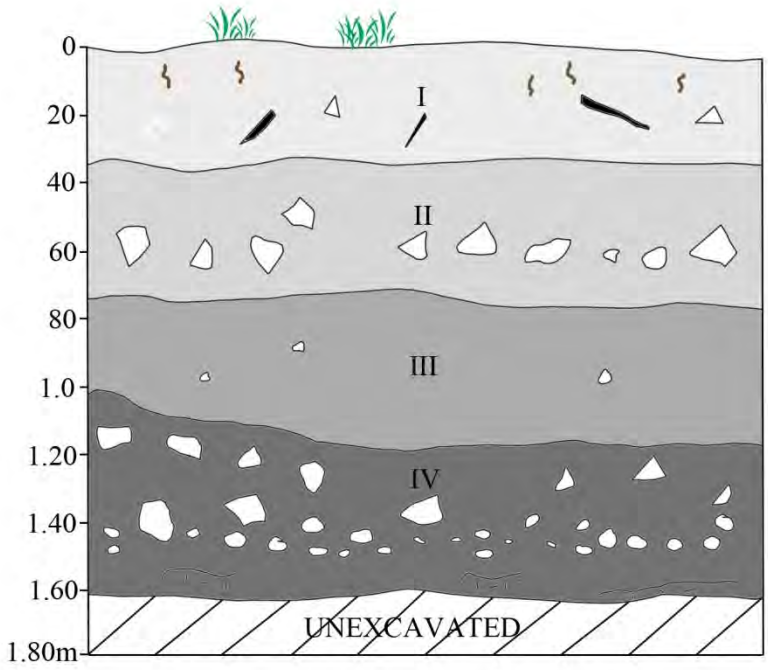

Figure 111. Stratigraphic Profile of South Wall of Trench 110

Trench 116

Trench 116 (TR 116) was situated in the central portion of the project area also within Grant 2747:2 which was formerly utilized as sugarcane and a reservoir (see Figure 86 and Table IX). The stratigraphic record for TR116 contained four layers including one sand lens which interrupted the upper portion of Layer II (Figures 112 and 113). No cultural materials were observed within this trench which measured 4.7 m long by 1.45 m wide by 2.0m deep.

> **Layer I** (0-25cmbs) is a light grayish brown (10YR5/2), loamy silty clay with gravel for access road, non-plastic, non-sticky, fine to medium grain, with low to medium frequency of roots. No cultural materials were observed in this layer. Layer I has abrupt clear boundary with underlying sand lens (Layer Ia).
> **Layer II** (25-160) generally consisted of a fine silty clay, dark reddish brown (5YR 3/3) with grayish brown and gravel inclusions, non-plastic, non-sticky, fine to medium grain, low quantity of fine roots with clay ped inclusions. Layer II is non-cultural. Boundary is clear and wavy and overlies Layer III.
> **Layer IIa** (42/45-55/57 cmbs) is a sand lens which was likely aeolian deposited. Layer IIa is non-cultural.
> **Layer III (**150-200 cmbs**)** is a dark brown, strong brown (7.5YR3/2, 4/3, 4/6) very fine silt loam, non-plastic, non-sticky, fine to medium grain, with a low density of roots. Layer III is non-cultural and excavations terminated within this layer.

Figure 112. Photograph of West Wall of Trench 116, View to West

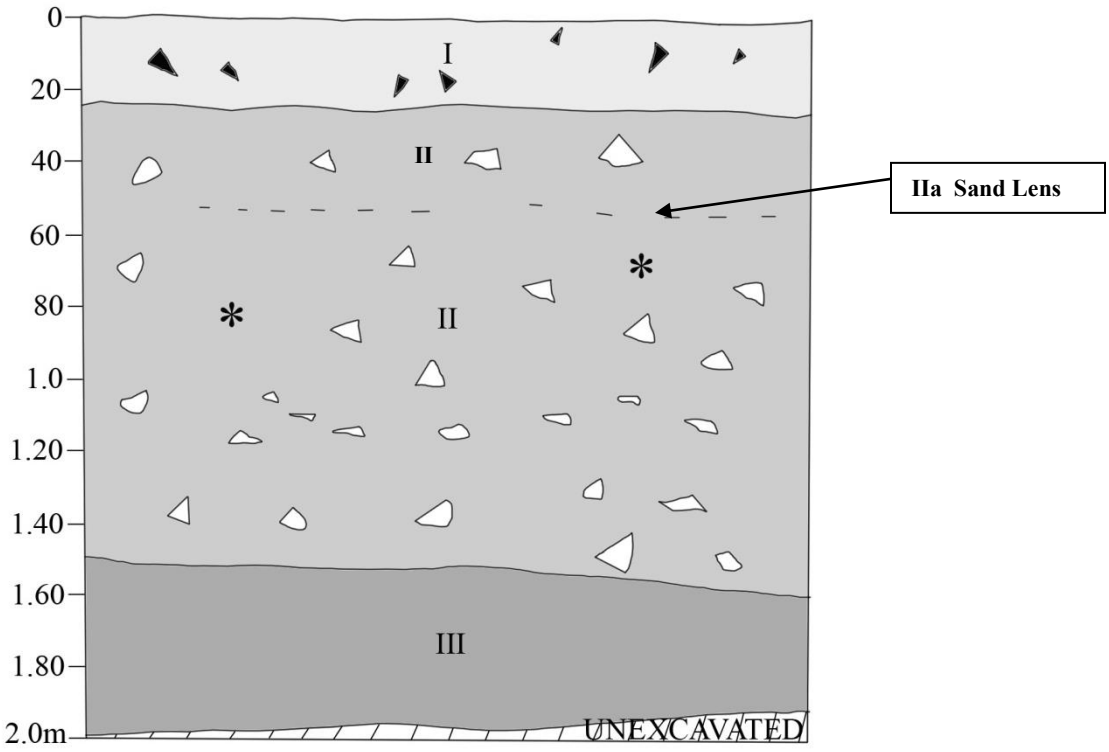

Figure 113. Stratigraphic Profile TR 116 West Wall

Trench 121

Trench 121 (TR 121) was located along the eastern edge of the parcel in the southeast portion along an east-west trending cane haul access road (see Figure 86 and Tables XV and XVI). This trench contained a four-layer stratigraphic sequence with a gravel lens indicative of alluvial deposition, as well as a charcoal stained lens near the base of the trench (Figures 114-116). All layers were non-cultural with the charcoal staining likely due to past cane burning activities. Excavations terminated within Layer IV and TR 121 measured 4.7 m long by 1.45 m wide by 1.66 m deep.

Layer I (0-22 cmbs) consisted of the till zone and is a grayish brown (10YR5/2) loamy silt layer, non-plastic, non-sticky, fine to medium grain. It is disturbed with deteriorated black plastic drip-lines. Layer I contains medium density of rootles with few rocks. Layer I was non-cultural with clear, smooth boundary overlying Layer II.
Layer II (22-60/75 cmbs) comprised of a loamy silt, brown (10YR 4/3) non-plastic, non-sticky, fine to medium grain, with sparse gravel and a low density of roots and medium-sized cobbles to medium-sized boulders. Layer II is non-cultural and contains a clear wavy boundary overlying Layer III.
Layer III (60/75-148) is a very fine silt, dark brown (10YR 4/2. 4/3) few to no roots, non-plastic, non-sticky, fine to medium grain, with gravel lenses identified at 90, 100 and 140 cmbs. No cobble inclusions. Near the bottom of Layer III, the soil becomes finer with depth and charcoal stained lens is apparent at 144 to 148 cmbs, which is the beginning of Layer IV. Layer III is non-cultural with a clear abrupt boundary.
Layer IIIa (148-BOE) is similar to Layer III but appears to be a finer material. It is comprised of dark brown (10YR 4/2.5) very fine silt and contains the linear charcoal staining at the transition with Layer III. Layer IIIa is non-cultural.

Figure 114. Overview Photograph of Trench 121, View to South

Figure 115. Close-up Photograph of South Wall of TR 121 Showing Charcoal Staining

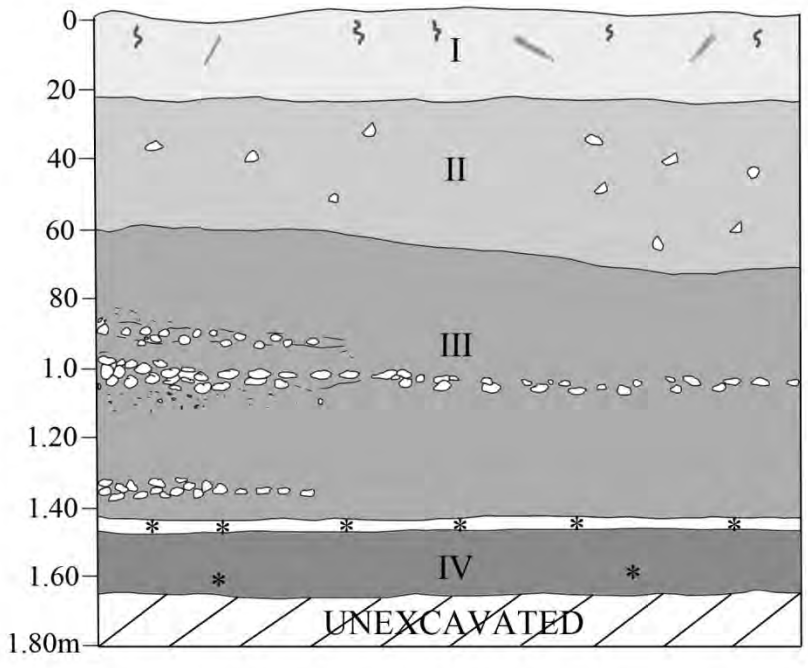

Figure 116. Stratigraphic Profile of South Wall of Trench 121

Trench 125

Trench 125 (TR 125) was located in the southeastern corner the northern side of a cane haul access road (see Figure 86 and Tables XV and XVI). It contained a four-layer stratigraphic sequence with a storm/flood wash layer represented in stratum 2 (Figures 117 and 118). TR 125 was oriented at 360 and measured 4.9 m long by 1.43 m wide by 1.80 m deep and was non cultural.

Layer I (0-20/30 cmbs) is the edge of roadbed and consisted of a light gray imported (10YR5/2) gravel layer. Layer I was non-cultural with clear, smooth boundary overlying Layer II.
Layer II (20/30-60/70 cmbs) is a light grey, non-plastic, non-sticky, fine to medium grain, alluvial deposit comprised of silt and rounded pebbles and small cobbles. Layer II appears to be an *in situ* alluvial deposit which has been utilized as the sub-base for the road bed. It is non-cultural and has an abrupt, smooth boundary overlying Layer III.
Layer III (60/70-142/160 cmbs) is a reddish brown (7.5YR4/6) compact silty clay, non-plastic, slightly-sticky, fine to medium grain, with a few sub-angular and rounded small cobbles. Layer III is non cultural with no roots and has a clear, smooth boundary with Layer IV.
Layer IV (142/160-BOE) is similar to Layer III but is more compact, and comprised of a very fine, reddish brown silt which is devoid of rock inclusions. Layer IV is non-cultural and B.O.E. is at 180 cmbs.

Figure 117. Photograph of West Wall of Trench 125, View to West

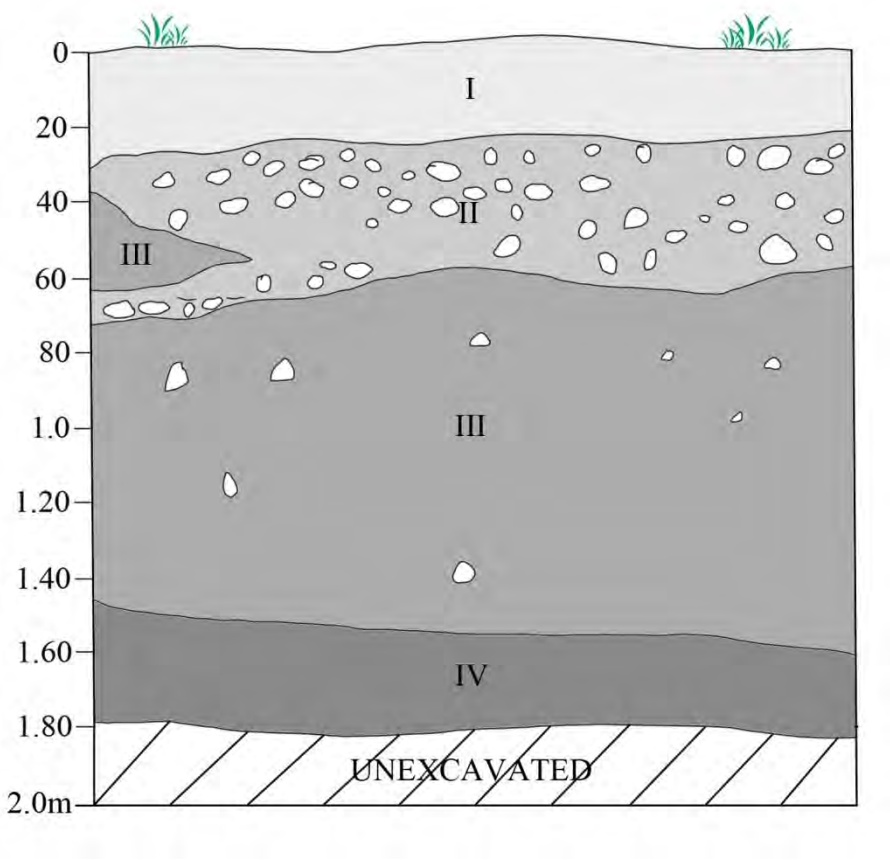

Figure 118. Stratigraphic Profile of West Wall of Trench 125

Trench 137

Trench 137 (TR 137) was located in the northwestern corner near a utility storage shed along the northern side of an access road (see Figure 86 and Tables XV and XVI). It contained a four-layer stratigraphic sequence comprised of alluvial deposition that terminated in decomposing basalt (Figures 119 and 120). TR 137 measured 4.8 m long by 1.44 m wide by 1.50 m deep and was non cultural.

Layer I (0-18/22 cmbs) is the till zone and consisted of a grayish brown (10YR5/2) loamy silt layer with a few rounded pebble and cobbles inclusions. It is disturbed and contains few roots and Layer I was non-cultural with clear, smooth boundary overlying Layer II.
Layer II (22-30/60 cmbs) comprised of a dark reddish brown (5YR 3/3) (7.5YR 3/2, ¾) loamy silt non-plastic, slightly sticky, fine to medium grain, with large cobble inclusions. Layer II is non-cultural and contains a clear wavy boundary overlying Layer III.
Layer III (30/60-122) is a yellowish brown (10YR4/3) gravelly silt with pockets of reddish brown silty clay. Many small and large cobbles with a few medium sized boulders and saprolytic rock, non-plastic, non-sticky, fine to medium grain. Layer III is non cultural with no roots. Layer III is non-cultural has a clear, smooth boundary with Layer IV.
Layer IV (122-BOE) is comprised of decomposing bedrock and smaller cobbles and pebbles with yellowish brown (10YR4/3) fine silt.

Figure 119. Photograph of South Wall of Trench 137

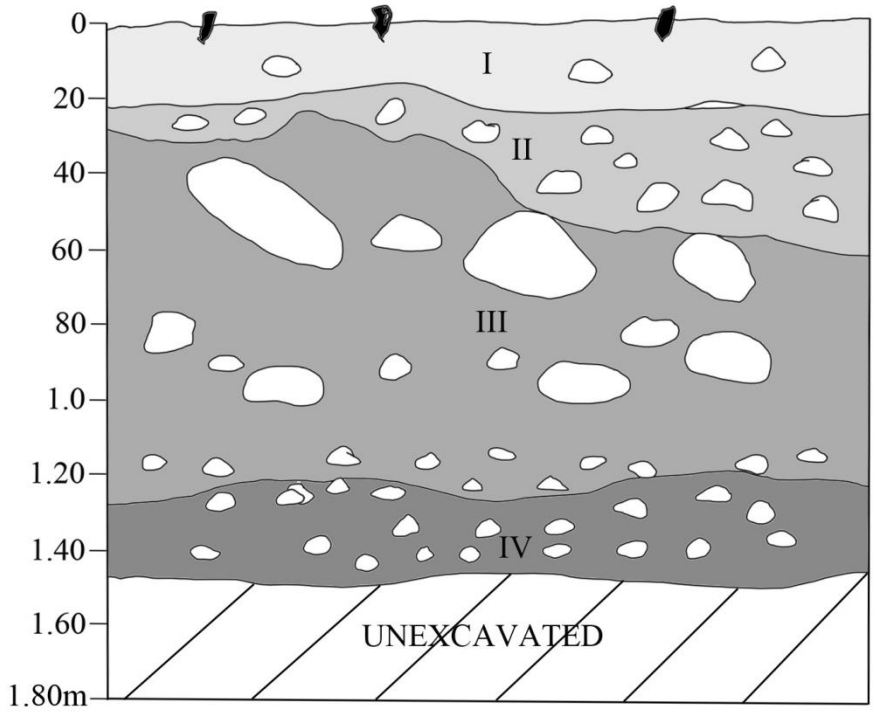

Figure 120. Stratigraphic Profile of Trench 137 South Wall