

### 3.23 Test Excavation 128 (T-128)

<b>Ahupua'a:</b>	Honolulu
<b>LCA :</b>	7712:6
<b>TMK #:</b>	2-1-030:0001
<b>Elevation Above Sea Level:</b>	1.5 m
<b>UTM:</b>	618270 mE, 2355963 mN
<b>Max Length/Width/Depth:</b>	3.2 m / 1.0 m / 0.45 m
<b>Orientation:</b>	322 / 142° TN
<b>Targeted Project Component:</b>	Guideway Column
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation 128 (T-128) was located southwest of the Halekauwila and South Street intersection below the road cut and level with the parking lot surface. T-128 was located approximately 23.5 m north of its original layout to reposition it within the guideway column foot print. T-127 was located on privately owned property. A gas line was located approximately 1 m northeast of T-128, and an electrical utility was located approximately 1 m to the east.

**Summary of Background Research and Land Use:** The 1883 Baldwin map indicates that T-128 was once surrounded by natural landscape and included sand and small ponds overlaying natural marine clay above the coral shelf. The 1884 Bishop Honolulu Kewalo map indicates T-128 was in the middle of MA 61, awarded to B. Namakeha, Lele of Ili of Ka'alaea. According to the 1897 Monsarrat Honolulu map, T-128 was still located within a small pond and there is evidence of urban development in the surrounding areas. The 1919, 1933, and 1943 U.S. War Department Fire Control maps and the 1953 Army Mapping Service map indicated further urban development and show that ponds were filled in within the vicinity of T-128.

Previous archaeology within the vicinity of T-128 included several archaeological studies. During archaeological monitoring for the Kaka'ako Improvement District 1 project, Pfeffer et al. (1993) documented a cemetery (SIHP # 50-80-14-3712) and a single isolated burial (SIHP # 50-80-14-4533). The cemetery (SIHP # -3712) was encountered at the intersection of South Street and Quinn Lane 53.0 m northeast of T-128. SIHP # -3712 was associated with the historic Honuakaha Smallpox Cemetery and contained 31 sets of human remains. The isolated burial (SIHP # -4533) was observed along Halekauwila Street 73.0 m northwest of T-128. Avery and Kennedy (1993) observed a historic trash pit and six *in situ* burials (SIHP # -3712) during monitoring of excavations along South Street, 54.0 m northeast of T-128. Pammer, Fong, and Hammatt (in progress; 2011) identified four historic properties in the vicinity of T-128 during an archaeological inventory survey. The properties included historic building structures (SIHP # 50-80-14-7124), a burnt historic trash layer (SIHP # -7189), salt pan remnants (SIHP # -7190), and a late pre- early post-Contact cultural layer containing one pit feature (SIHP # -7197).

Additionally, T-128 was approximately 12.0 m south of a previous archaeological study conducted by Winieski and Hammatt (2001) that documented a remnant of the Light-Gauge Rail (SIHP# -5942).

**Documentation Limitations:** T-128 was excavated to a depth of 0.45 mbs. The excavation of T-128 was terminated due to the presence of subsurface utility lines.

**Stratigraphic Summary:** The stratigraphy of T-128 consisted of extremely gravelly silt loam (Ia) to the base of excavation. The observed stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** A total of three artifacts (Acc. # 128-A-1 to A-3, see following photographs) were collected from Stratum Ia at 0.0 – 0.45 mbs. The artifacts included one Asian hollowware bowl fragment with a bamboo motif, one dinnerware fragment with a painted floral design and one bottle fragment. The aqua bottle base fragment was made in a two piece-cup mold, the dominant mold used from the 1870s to the present; however, some cup molds were used as early as the 1860s. Due to the lack of datable attributes for the majority of artifacts and the possible range from the 1860s to present for the one datable artifact, it is difficult to designate an age for Stratum Ia.

**Features Discussion:** No features were observed.

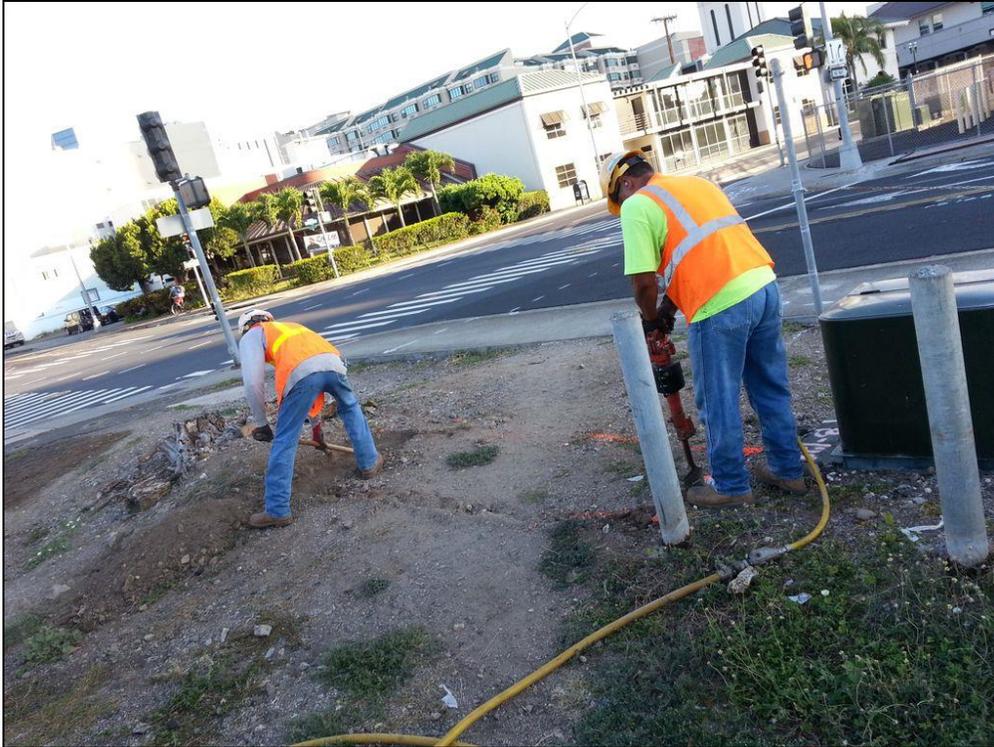
**Terrestrial Faunal Remains Collected During Excavation:** No terrestrial faunal remains were collected individually during excavation.

**Sample Results:** No sample analysis was conducted.

**GPR Discussion:** A review of amplitude slice maps indicated a linear which corresponds to the utility jacket and electrical line encountered during excavation. Reflectivity was relatively uniform throughout the grid. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.5 mbs.

GPR depth profiles for T-128 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.3 mbs. Several anomalies were observed in the profile and seem to correspond to the utility jacket and electrical lines encountered during excavation. The maximum depth of clean signal return was approximately 1.0 mbs.

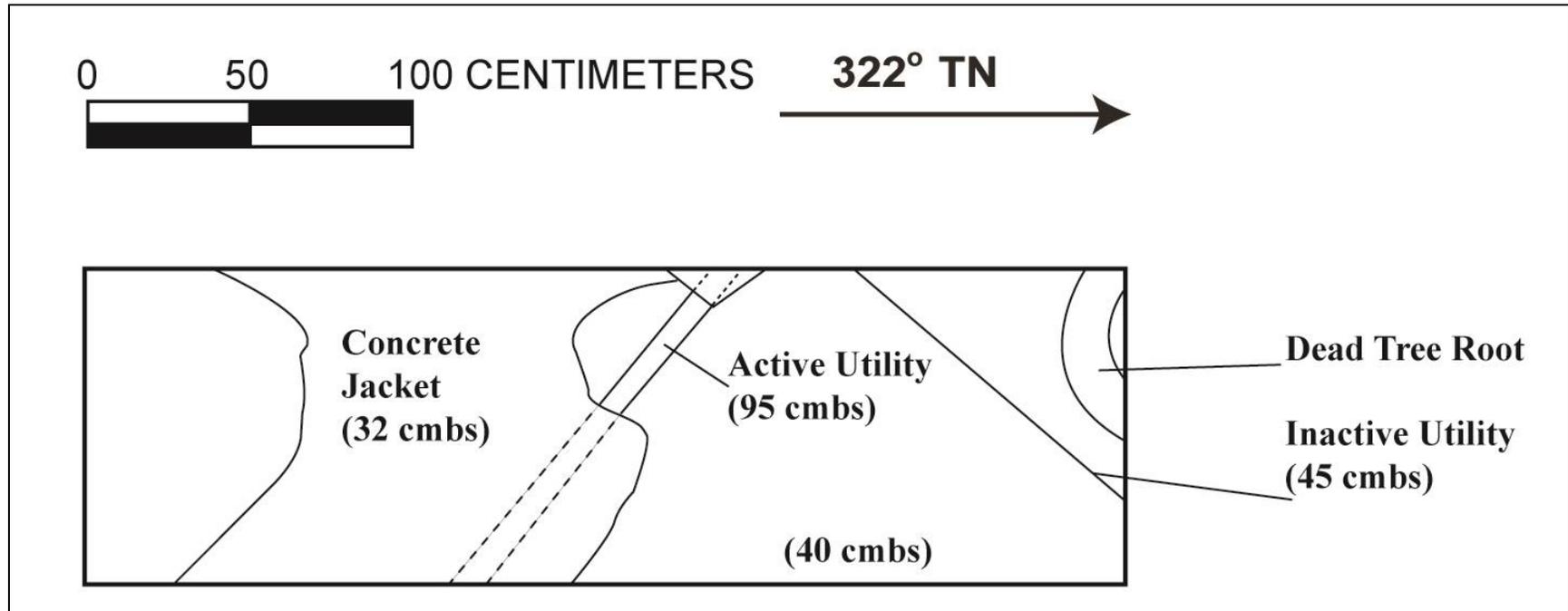
**Summary:** T-128 was excavated to a depth of 0.45 mbs. The excavation of T-128 was terminated due to the presence of subsurface utility lines. The stratigraphy of T-128 consisted of silt loam (Ia) to the base of excavation. The observed stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA). Three artifacts were collected from Stratum Ia. The majority of artifacts lacked datable attributes, with the possible range from the 1860s to present for the one datable artifact, it is difficult to designate an age for Stratum Ia. No natural sediments were observed. No cultural resources were identified.



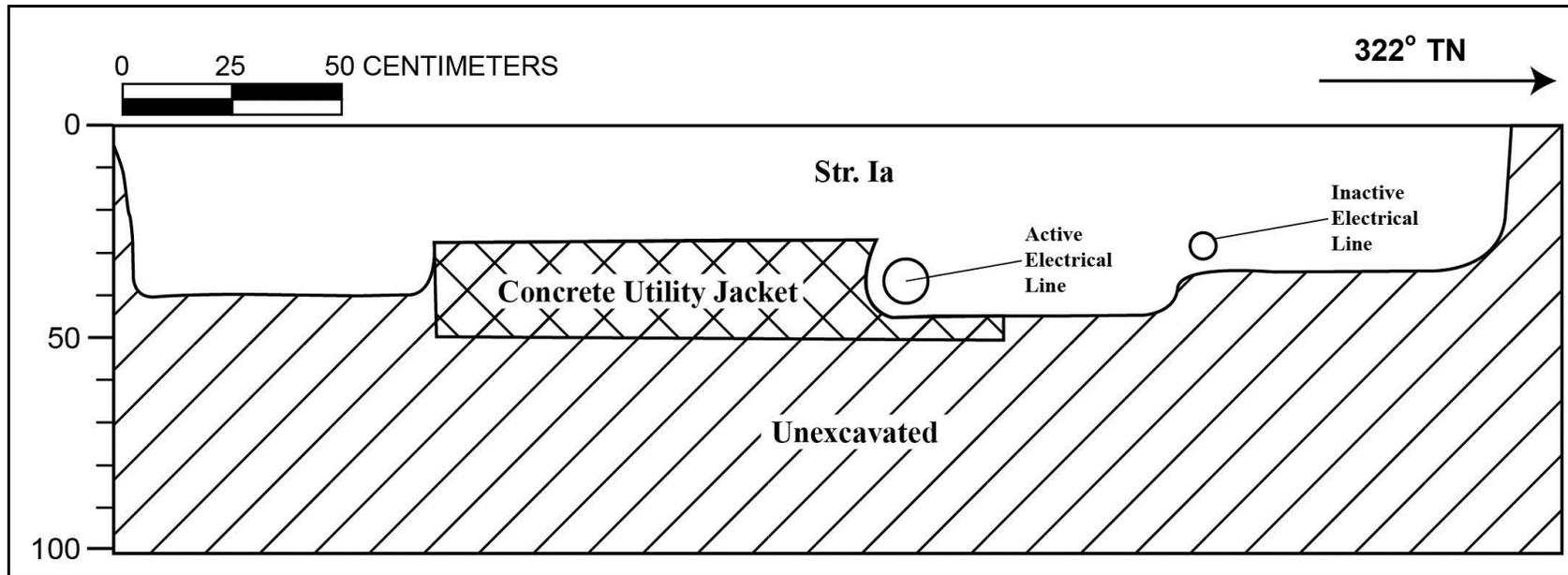
T-128 general location (view to north).



T-128 southwest profile wall (view to south).



T-128 plan view of the excavation floor in Stratum Ia



T-128 southwest wall profile

## T-128 stratigraphic summary

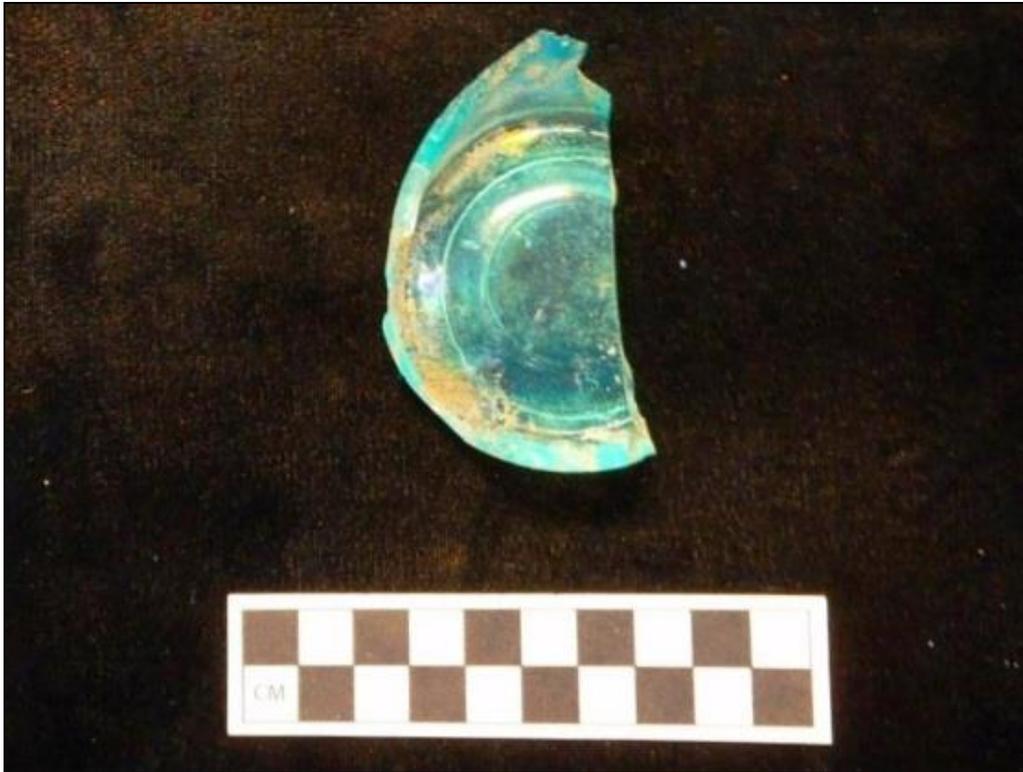
<b>Stratum</b>	<b>Depth (cmbs)</b>	<b>Description</b>
Ia	0-45	Fill; 10YR 5/3 (brown); extremely gravelly silt loam; structureless, single-grain; loose consistency; non-plastic; terrigenous origin; lower boundary not visible; few, very fine to large roots; contained ceramic pieces, glass shards



T-128 ceramic interior fragments (Acc. # 128-1 and 128-2) from Stratum Ia



T-128 ceramic exterior fragments (Acc. # 128-A-1 and 128-A-2) from Stratum Ia



T-128 glass bottle fragment (Acc. # 128-A-3) collected from Stratum Ia

### 3.24 Test Excavation 129 (T-129)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-031:030
<b>Elevation Above Sea Level:</b>	1.45 m
<b>UTM:</b>	618284 mE, 2355975 mN
<b>Max Length/Width/Depth:</b>	3.34 m / 0.92 m / 1.60 m
<b>Orientation:</b>	312 / 132° TN
<b>Targeted Project Component:</b>	Guideway Column
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation 129 (T-129) was located southeast of the Halekauwila and South Street intersection within the sidewalk and level with the surrounding surface. T-129 was repositioned approximately 6.5 m west of its original layout due to its proximity to an existing building. The test excavation was conducted on property owned by the City and County of Honolulu. An electrical utility was located within 1 m of T-129, and a sewer line was located 4 m to the southwest.

**Summary of Background Research and Land Use:** The 1883 Baldwin map indicates that T-129 was once surrounded by natural landscape and included sand and small ponds overlaying natural marine clay above the coral shelf. The 1884 Bishop Honolulu Kewalo map indicates T-129 was in the middle of MA 61, awarded to B. Namakeha, Lele of Ili of Ka'alaea. According to the 1897 Monsarrat Honolulu map, T-129 was still located within a small pond and there is evidence of urban development in the surrounding areas. The 1919, 1933, and 1943 U.S. War Department Fire Control maps and the 1953 Army Mapping Service map indicated further urban development and show that ponds were filled in within the vicinity of T-129.

Previous archaeology within the vicinity of T-129 included several archaeological studies. During archaeological monitoring for the Kaka'ako Improvement District 1 project, Pfeffer et al. (1993) documented a cemetery (SIHP # 50-80-14-3712) and a single isolated burial (SIHP # 50-80-14-4533). The cemetery (SIHP # -3712) was encountered at the intersection of South Street and Quinn Lane 35.0 m northeast of T-129. SIHP # -3712 was associated with the historic Honuakaha Smallpox Cemetery and contained 31 sets of human remains. The isolated burial (SIHP # -4533) was observed along Halekauwila Street 72.0 m north of T-129. Avery and Kennedy (1993) observed a historic trash pit and six *in situ* burials (SIHP # -3712) during monitoring of excavations along South Street, 40.0 north of T-129. Pammer, Fong, and Hammatt (in progress; 2011) identified four historic properties 14.0 m southwest of T-129 during an archaeological inventory survey. The properties included historic building structures (SIHP # 50-80-14-7124), a burnt historic trash layer (SIHP # -7189), salt pan remnants (SIHP # -7190), and a late pre- early post-Contact cultural layer containing one pit feature (SIHP # -7197).

Additionally, T-129 was approximately 8.0 m south of a previous archaeological study conducted by Winieski and Hammatt (2001) that documented a remnant of the Light-Gauge Rail (SIHP# -5942).

**Documentation Limitations:** T-129 was excavated to a depth of 1.60 mbs, and beneath the water table at 1.57 mbs. A utility observed at 0.80 mbs prevented excavation along the northeast sidewall. A PVC utility at 0.59 mbs limited the complete excavation of the northwestern end of T-129.

**Stratigraphic Summary:** The stratigraphy of T-129 was composed of fill material overlying natural sediment. Observed strata included concrete (Ia), very gravelly sandy loam (Ib), very gravelly sandy loam (Ic), extremely gravelly sand (Id), extremely gravelly sand (Ie), silty clay (If), silty clay loam (II), and sandy clay (III). The stratigraphy generally conformed to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** Eight artifacts (Acc. # 129-A-1 to A-8) were collected from Stratum II and from a modern utility feature. The artifacts included bottles and bricks. The four bottles from Stratum II are all olive/dark olive green spirits bottles, all of which are made in a turn mold, used from the 1860s to the 1920s. The bottle in the modern utility feature is an aqua boot/leather polish bottle from the Frank Miller Co., New York, which was established in 1838. The brick fragment measurements are standard for bricks manufactured from 1886 to 1918. The artifacts collected indicate that Stratum II likely dates from 1886 to 1918.

**Features Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains were collected individually during excavation from Strata Id (at 0.4 mbs), Ie (at 0.6) and II (0.85-1.2 mbs). Species represented in Stratum Id consisted of *Bos taurus*, *Sus scrofa*, *Canis lupus familiaris* and unidentified medium mammal fragments. None of the remains from Id showed any signs of cultural modification. At 0.6 mbs, within Stratum Ie, many unmodified *Felis catus* skeletal fragments were collected, along with *Bos taurus* fragments which had been butchered with a metal blade, indicating an historic origin not traditional Hawaiian. Within Stratum II (0.85-1.2 mbs) unmodified skeletal elements of *Sus scrofa* and juvenile *Canis lupus familiaris* were collected.

Based on the presence of introduced species in Id (*Bos taurus*) and Ie (*Bos taurus* and *Felis catus*) these strata are of post-Contact origin; however, Stratum II (0.85-1.2 mbs) contained only Polynesian introductions common in both pre- and post-Contact contexts, thus the precise date of Stratum II is unclear.

**Sample Results:** A total of two bulk sediment samples were collected from within T-129. Both the samples were wet-screened.

A three-liter bulk sediment sample collected from Stratum II between 1.39 mbs and 1.45 mbs yielded charcoal (1.9 g), rusted metal (13.0 g), bottle glass (0.5 g), possible coal (0.1 g), unidentified fish remains (0.7 g), and medium mammal remains (0.7 g).

A two-liter bulk sediment sample collected from Stratum III between 1.55 mbs and 1.59 mbs yielded charcoal (0.2 g), various shell midden (1.8 g), naturally deposited shell (1.5g), burned *kukui* nut (0.4g), and *Ruppia maritime* seeds (0.2g). Midden collected consisted of *Tellina sp.*

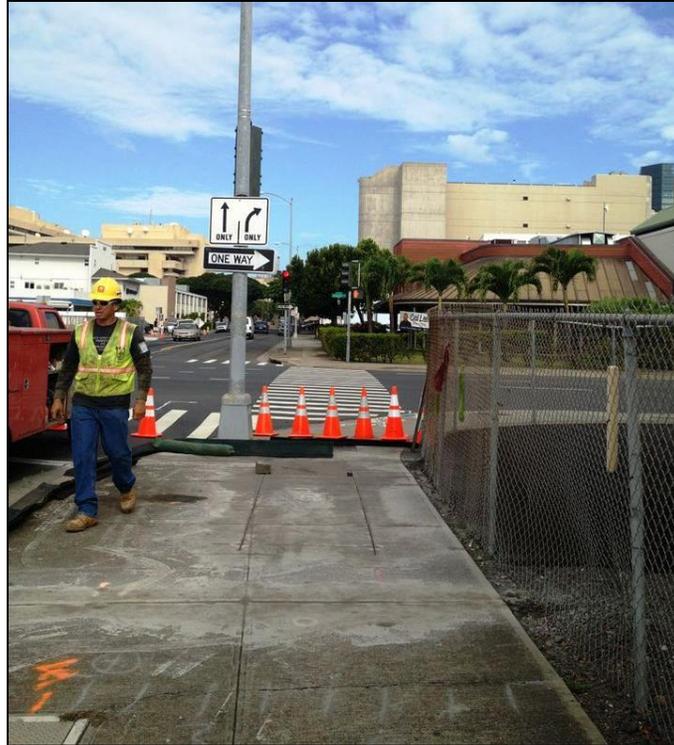
(0.7 g), *Brachidontes crebristriatus* (0.5 g) burned crustacean (0.4 g), Neritidae operculum (0.1 g), and *Tellina palatam* (0.1 g)

The results of sample analysis indicated that Stratum II contained materials consistent with historically impacted natural alluvial sediment with the presence of historic artifacts. Stratum III was consistent with natural wetland sediment with minimal cultural material present.

**GPR Discussion:** A review of amplitude slice maps indicated no linear features although a utility was encountered during excavation. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.25 mbs.

GPR depth profiles for T-129 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.2 mbs. No utilities were observed in the profile although a utility was encountered during excavation. The maximum depth of clean signal return was approximately 0.8 mbs.

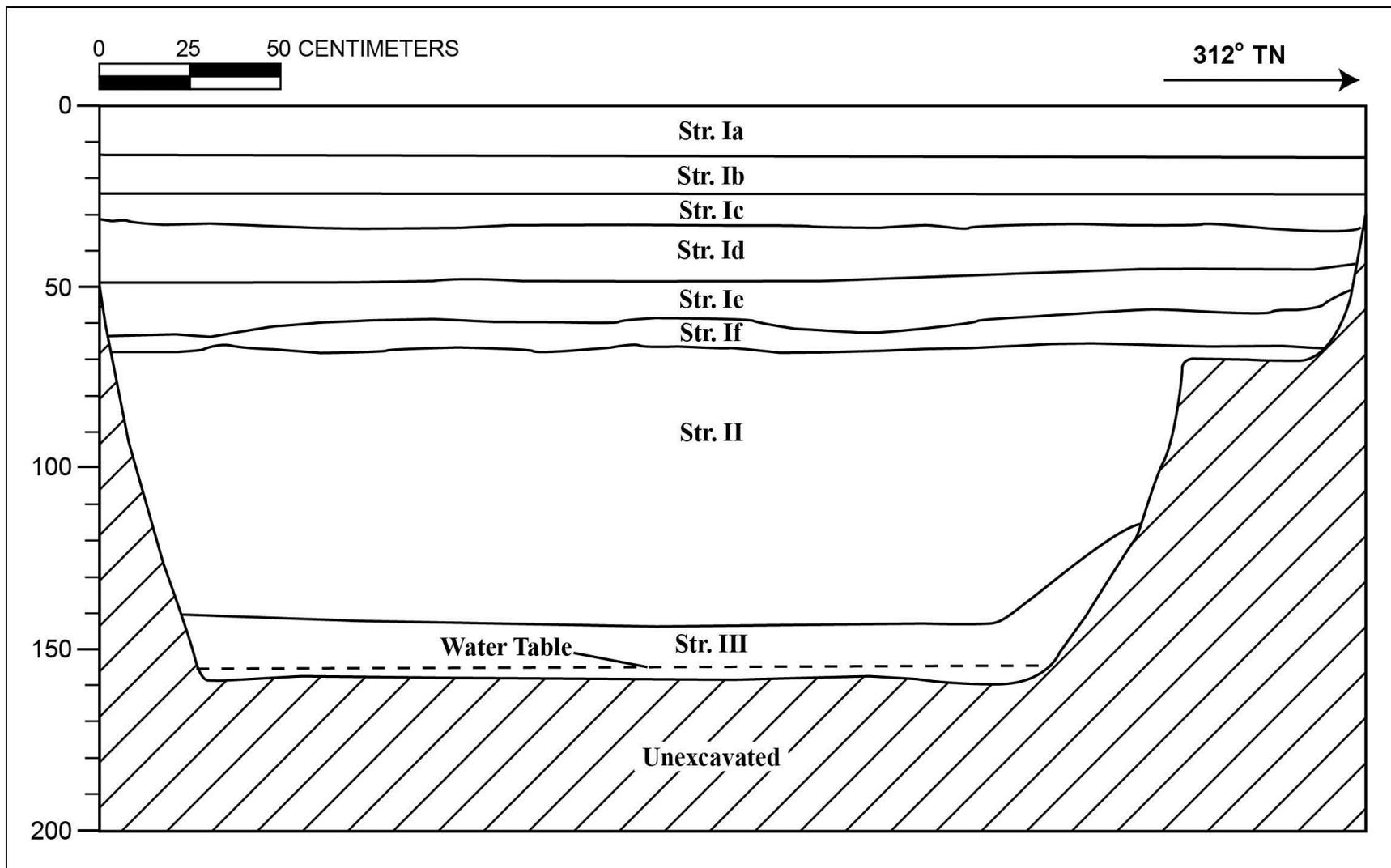
**Summary:** T-129 was excavated to a depth of 1.6 mbs and was halted when active utilities were encountered. The stratigraphy of T-129 was composed of fill material (Ia-If) overlying natural sediment (II-III). The stratigraphy generally conformed to the USDA soil survey designation of Ewa silty clay loam (EmA). The artifacts collected indicated that Stratum II likely dated from 1886 to 1918. The results of sample analysis indicated that Stratum II contained materials consistent with historically impacted natural alluvial sediment with the presence of historic artifacts. Stratum III was consistent with natural wetland sediment with minimal cultural material present.



T-129 general location (view to northwest).



T-129 southwest profile wall.



T-129 southwest wall profile

## T-129 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-14	Concrete; sidewalk
Ib	14-24	Fill; 10 YR 4/3 (brown); very gravelly sandy loam; structureless, single-grain; moist, firm consistency; slightly plastic; terrigenous origin; contained non-diagnostic materials only identifiable by color: aqua glass, brown glass, ferrous metal, white ceramics, olive green glass, aluminum piece, red brick, piece of plastic pipe, faunal, blue ceramic; utility trench fill
Ic	24-34	Fill; 10 YR 4/2 (dark grayish brown); very gravelly sandy loam; structureless, single-grain; dry, loose, weak consistency; non-plastic; mixed origins; clear, smooth lower boundary; utility trench fill with large gravel
Id	34-49	Fill; 5 Y 8/2 (pale yellow); extremely gravelly sand; structureless, single-grain; dry, loose, weak consistency; non-plastic; marine origin; clear, smooth lower boundary; contained faunal; crushed coral fill in a very fine silty sandy matrix
Ie	49-64	Fill; 10 YR 8/2 (very pale brown); extremely gravelly sand; structureless, single-grain; dry, loose to weak consistency; non-plastic; marine origin; clear, smooth lower boundary; crushed coral fill
If	51-64	Fill; 2.5 Y 7/2 (pale yellow); silty clay; weak, fine, crumb structure; moist, very friable consistency; plastic; mixed origin; very abrupt, smooth lower boundary
II	62-143	Natural; 7.5 YR 2.5/2 (very dark brown); silty clay loam; dry, weak, fine to medium, crumb structure; moist, friable consistency; plastic; terrigenous; abrupt, smooth lower boundary; contained glass bottles, ceramics, metal fragments, horseshoe; historically disturbed natural alluvial deposit
III	115-160	Natural; 10 YR 4/1 (dark gray); sandy clay; moderate, medium, blocky structure; firm consistency; slightly plastic; mixed origin; lower boundary not visible; common, medium roots; natural marine clay, freshwater snails

T-129 Artifacts Analysis Table

Acc. # 129-A-A	Provenience	Glass Bottle Type	Portion	No.	Color	Age; Origin	Comments
1	T-129, St. II	Bottle, Soda	Complete	1	Olive	1860-1920s	
2	T-129, St. II	Bottle, Soda	Complete	1	Olive, Dark	1860-1920s	
3	T-129, St. II	Bottle, Soda	Complete	1	Olive, Dark	1860-1920s	
4	T-129, St. II	Bottle, Soda	Complete	1	Olive, Dark	1860-1920s	
5	T-129, Fea. Utility	Vial, Medicine	Base-neck	1	Clear	1870s-post	
6	T-129, Fea. Utility	Bottle, Boot polish	Complete	1	Aqua	1838-late 1800s	Frank Miller's Crown Dressing, New York
Acc. # 129-A-A	Provenience	Miscellaneous Type	Portion	No.	Material	Age; Origin	Comments
7	T-129, St. II	Brick	Complete	1			Red color, machine-made, rectangular
8	T-129, St. II	Brick	Fragment	1		1886-1918	Red color, trailings, possibly extruded



T-129 glass bottles (Acc. #129-A-1 to A-4); collected from Stratum II)



T-129 glass bottles collected from Stratum II (Acc. #129-A-5 and A-6)

## T-129 Terrestrial vertebrate material collected individually during excavation

Acc. #	Stratum	Depth(cmbs)	Feature	Family/Class	Species	Element	Description	Modification
129-F-1	Id	40	-	Bovidae (cow)	<i>Bos taurus</i>	Vertebral facet; Vertebra (pieces mend)	Fragment	None
129-F-2	Id	40	-	Suidae (pig)	<i>Sus scrofa</i>	Rib	Fragment	None
129-F-3	Id	40	-	Canidae (dog)	<i>Canis lupus familiaris</i>	Rib	Fragment	None
129-F-4	Id	40	-	Mammalia	Medium mammal	Diaphysis section	Fragment	None
129-F-5	Ie	60	-	Bovidae (cow)	<i>Bos taurus</i>	Ribs (pieces mend); Proximal rib end	Fragments	Butchered (cut with metal blades)

Acc. #	Stratum	Depth(cmbs)	Feature	Family/Class	Species	Element	Description	Modification
129-F-6	Ie	60	-	Felidae (cat)	<i>Felis catus</i>	Right innominate (ala); Innominate (acetabulum); Right ulna (pieces mend); Left ulna; Distal ulna portion (might mend with right ulna); Radius (proximal portion); Right femoral epiphysis; Right femur; Femoral epiphysis; Femur diaphysis; Tibia diaphysis; Vertebrae; Caudal vertebra; Ribs; Irregular bones/diaphysis sections	Fragments	None
129-F-7	II	85-120	-	Suidae (pig)	<i>Sus scrofa</i>	Ribs; Diaphysis section; Mandible	Fragments	None
129-F-8	II	85-120	-	Canidae (dog)	<i>Canis lupus familiaris</i> (Juvenile)	Innominate (ala, unfused); Mandible	Fragments	None

### 3.25 Test Excavation 130 (T-130)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-030:001 [Plat]
<b>Elevation Above Sea Level:</b>	1.4 m
<b>UTM:</b>	618307 mE, 2355906 mN
<b>Max Length/Width/Depth:</b>	6.15 m / 0.73 m / 1.71 m
<b>Orientation:</b>	40 / 220° TN
<b>Targeted Project Component:</b>	Station Building
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation 130 (T-130) was located within a parking lot 11.5 m south (*makai*) of Halekauwila Street and 47 m northwest of the Keawe Street crosswalk. T-130 was located on private property owned by Bishop Estate (Waterpark Tower). The excavation was level with the surrounding land surface.

**Summary of Background Research and Land Use:** The natural landscape that surrounded T-130 included sand and three small ponds to the northwest overlying a natural marine clay over the coral shelf (1883 Baldwin map). The 1884 Bishop Honolulu Kewalo map shows T-130 in the middle of LCA 7712:6 which was awarded to V. Kamāmalu. The 1897 According to the 1897 Monsarrat Honolulu map, T-130 was still located within a small pond and there is evidence of urban development in the surrounding areas. The 1919, 1933, and 1943 U.S. War Department Fire Control maps and the 1953 Army Mapping Service map indicated further urban development and show that ponds were filled in within the vicinity of T-130.

Previous archaeology within the vicinity of T-130 included several archaeological studies. T-130 was within the boundaries of four historic properties identified during an archaeological inventory survey (Pammer et al 2011). The properties included historic building structures (SIHP # 50-80-14-7124), a burnt historic trash layer (SIHP # -7189), salt pan remnants (SIHP # -7190), and a late pre- early post-Contact cultural layer containing one pit feature (SIHP # -7197). During archaeological monitoring for the Kaka'ako Improvement District 3 for the Pohulani Elderly Rental Housing phase two groupings of burials were identified (Winieski and Hammatt 2000). Nine burials (SIHP # 50-80-14-4380) were encountered at the Pohulani Elderly Rental Housing and 11 burials in and around the historic Mother Waldron Park (SIHP # 50-80-14-5820). T-130 was 60.0 m northwest of two burials (SIHP # -5820) near the intersection of Halekauwila Street and Keawe Street, and a single burial (SIHP # -5820) 80.0 m to the southwest (Winieski and Hammatt 2000).

**Documentation Limitations:** T-130 was excavated to a depth of 1.71 mbs and beneath the water table at 1.58 mbs.

**Stratigraphic Summary:** The stratigraphy of T-130 consisted of fill strata overlaying natural sediment to the base of excavation. Observed strata included asphalt (Ia), very gravelly loam (Ib), extremely gravelly sand (Ic), very gravelly loam fill (Id), loamy sand (Ie), loamy sand fill

(If and Ig), loam fill (Ih), and a sandy loam (Ii), overlying previously disturbed natural loamy sand (II), sandy clay (III), and medium grained sand (IV) to the base of excavation. Stratum Ii was considered to be a burnt trash layer. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** A total of twenty-two artifacts (Acc. # 130-A-1 to A-22) were collected from Stratum Ii at 0.76-1.38 mbs. The artifacts included ceramics, glass bottles and miscellaneous finds. The ceramic artifacts included eight dinnerware fragments (from at least four vessels), two flatware, three hollowware, one crock, and one bottle. One dinnerware fragment was identified as Asian, one flatware was identified as English, and two hollowware were identified as Asian. The glass bottle artifacts included six complete bottles and two glass bottle fragments. The miscellaneous artifacts included one human shoe, one glass marble and one horse shoe. Datable attributes from the glass bottles and human shoe indicated a manufacture date between 1820 and 1926. Artifacts collected from Stratum Ii (burnt trash layer, SIHP# 50-80-14-7189) indicated that the stratum post dates the early twentieth century.

**Features Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains collected individually during excavation from Stratum Ii (0.76-1.38 mbs) consisted of *Carpa aegagrus hircus*, *Anas platyrhynchos domesticus*, and *Gallus gallus* skeletal elements. None of the bones showed evidence of cultural modification, but the presence of introduced species (*Carpa aegagrus hircus* and *Anas platyrhynchos domesticus*) indicates a post-Contact date for the deposition of Stratum Ii.

**Sample Results:** No sample analysis was conducted.

**GPR Discussion:** A review of amplitude slice maps indicated no linear features which might indicate the presence of utilities. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.5 mbs.

GPR depth profiles for T-130 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.25 mbs. No utilities were observed in the profile. The maximum depth of clean signal return was approximately 0.9 mbs.

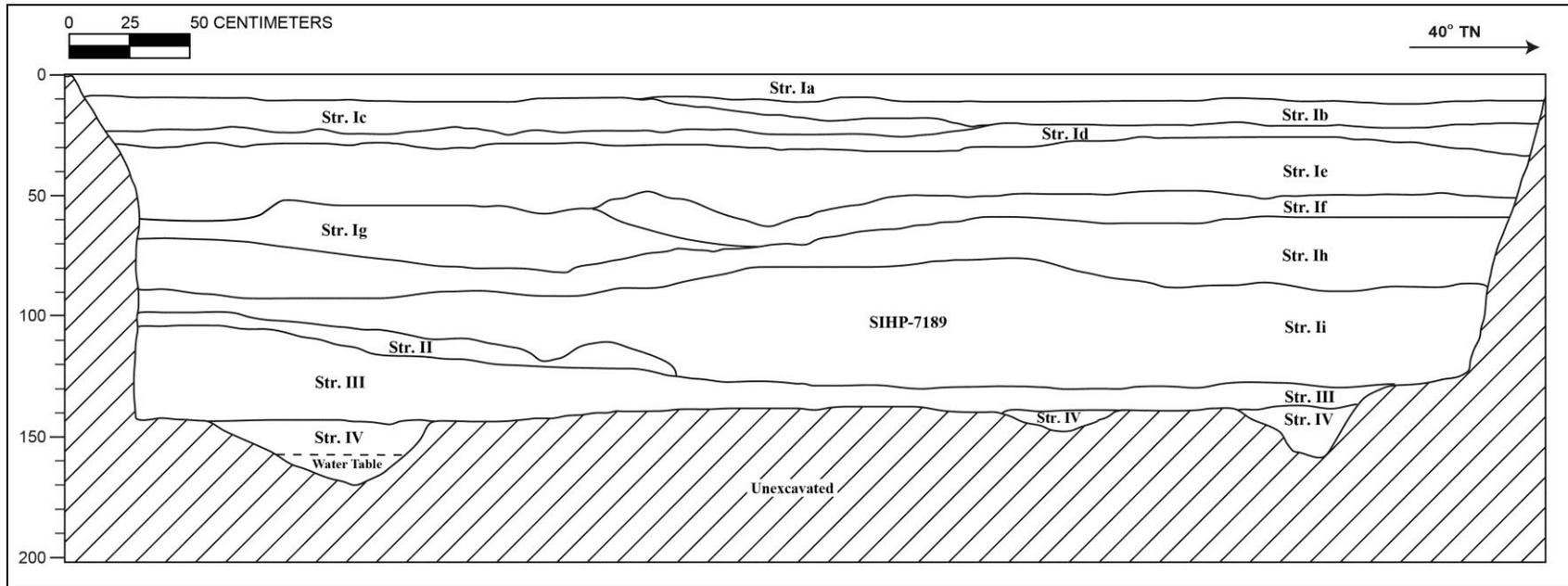
**Summary:** T-130 was excavated to a depth of 1.71 mbs and beneath the water table at 1.58 mbs. The stratigraphy of T-130 consisted of fill strata (Ia to Ii) overlaying natural sediment (II to IV) to the base of excavation. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA). A total of twenty-two (22) artifacts were collected from Stratum Ii (burnt trash layer, SIHP# 50-80-14-7189). Artifacts collected from Stratum Ii indicated that the stratum post dates the early twentieth century. Faunal remains collected from Stratum Ii of T-130 (0.76-1.38 mbs) suggest post-Contact deposition of Stratum Ii. The historic burnt trash layer (Stratum Ii) within T-130 has been designated as a component of SIHP# 50-80-14-7189, which is described in Volume I.



T-130 general location (view to east).



T-130 view of northwest profile



T-130 northwest wall profile

## T-130 stratigraphic description

Stratum	Depth (cmbs)	Description
Ia	0-10	Apshalt
Ib	10-20	Fill; 10 YR 3/2 (very dark grayish brown); very gravelly loam; structureless, single-grain; moist, loose consistency; non-plastic; terrigenous origin; abrupt, smooth lower boundary; gravel base course
Ic	10-25	Fill; 10 YR 8/2 (very pale brown); extremely gravelly sand; structureless, single-grain; moist, loose consistency; non-plastic; marine origin; abrupt, smooth lower boundary; crushed coral fill
Id	20-32	Fill; 10 YR 3/3 (dark brown); very gravelly loam; weak, medium, blocky structure; friable consistency; slightly plastic; terrigenous origin; abrupt, smooth lower boundary;
Ie	30-63	Fill; 10YR 2/2 (very dark brown); loamy sand; structureless, single-grain; loose consistency; non-plastic; terrigenous origin; abrupt, smooth lower boundary; imported cinder fill
If	48-70	Fill; 10YR 3/2 (very dark grayish brown); loamy sand; weak, fine, granular structure; moist, friable consistency; slightly plastic; mixed origin; clear, wavy lower boundary
Ig	54-75	Fill; 10YR 3/4 (dark yellowish brown); loamy sand; structureless, single-grain; loose consistency; non-plastic; mixed origin; abrupt, smooth, broken/discontinuous lower boundary
Ih	57-70	Fill; 10YR 2/1 (black); loam; weak, medium, blocky structure; friable consistency; slightly plastic; terrigenous origin; abrupt, smooth lower boundary; few, fine roots
Ii	76-138	Fill; 10YR 2/1 (black); sandy loam; structureless, single-grain; moist consistency; abrupt, wavy lower boundary; contains burnt trash layer; metal, glass, ceramic, faunal, horseshoe, shoe sole; designated as a component of SIHP# -7189
II	100-125	Natural; 10YR 6/4 (light yellowish brown); loamy sand; weak, fine, granular structure; moist, loose consistency; non-plastic; mixed origin; diffuse, smooth lower boundary; previously disturbed natural Jaucas sand
III	105-145	Natural; 5Y 5/1 (gray); sandy clay; strong, medium, blocky structure; firm consistency; plastic; marine origin; clear, smooth lower boundary; natural clay; possible lagoonal deposit
IV	135-171	Natural; Gley 1 4/N (dark gray); medium grained sand; single-grain, weak, medium, granular structure; loose, non-sticky consistency; non-plastic; lower boundary not visible; possible lagoonal deposit

T-130 Artifacts Analysis Table

Acc. # 130- A-	Provenience	Ceramic Vessel Type	Portion	No.	Paste; Decoration	Origin; Age	Comments
1	T-130, St. Ii	Flatware - plate	Body	1	Earthenware, Refined (Ironstone); Transfer- print		Brown flowers & leaves
2	T-130, St. Ii	Dinnerware	Body	1	Earthenware, Refined (Ironstone); Painted underglaze		Blue flowers; green leaves
3	T-130, St. Ii	Hollowware - saucer	Base to rim	1	Porcelain; Painted overglaze		Black flowers; 13.0 (D)
4	T-130, St. Ii	Hollowware - bowl	Base to rim	1	Porcelain; Appliqué; painted overglaze	Asian	Dark Green flowers; base: blue Asian character
5	T-130, St. Ii	Dinnerware	Body to rim	1	Porcelain; Painted underglaze; slip		Wide green band between two narrow brown bands
6	T-130, St. Ii	Crock	Body to rim	1	Stoneware		
7	T-130, St. Ii	Hollowware - cup	Complete	1	Porcelain; Painted underglaze	Asian	917 (D); 6.5 (H)); small green flowers; handle broken off
8	T-130, St. Ii	Bottle, Sake	Base to body	1	Stoneware	Asian	High gloss
9	T-130, St. Ii	Dinnerware	Base	1	Porcelain	Asian	Base: Asian characters painted under glaze
10	T-130, St. Ii	Ewer	Body (4); rim (1)	5	Porcelain; Molded	Anglo- American	Wheat Pattern
11	T-130, St. Ii	Flatware - plate	Base to rim	1	Earthenware, Refined (Ironstone)	English; 1862- 1891	E. & C Challinor – English pottery
Acc. # 130- A-	Provenience	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
12	T-130, St. Ii	Bottle, Soda	Complete	1	Green, Light	American; 1890s- 1910s	Hollister & Co., Honolulu
13	T-130, St. Ii	Bottle,	Complete	1	Amber	1890s- 1920s	
14	T-130, St. Ii	Bottle,	Base	1	Aqua	American; 1882- 1886	Belleville Glass Co., Belleville, Ill.
15	T-130, St. Ii	Bottle, Spirits	Complete	1	Green, Light	1820– 1890	Flask

Acc. # 130- A-	Provenience	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
16	T-130, St. Ii	Bottle, Medicine	Complete	1	Aqua	1870s- post	
17	T-130, St. Ii	Bottle, Spirits	Complete	1	Clear	American; 1870s- post	Dr. Jayne's Liniment Counterirritant, Philadelphia
18	T-130, St. Ii	Bottle, Medicine	Complete	1	Aqua	1870s- post	Gradation marks on side; base "V" in a circle
19	T-130, St. Ii	Bottle, Beer	Base- neck	1	Amber	American; 1876- 1902t	Buffalo Brewing Co., Sacramento, Calif. Bottler: San Francisco & Pacific Glass Works
Acc. # 130- A-	Provenience	Miscellaneous Type	Portion	No.	Material	Origin; Age	Description
20	T-130, St. Ii	Shoe, Human	Sole/ Heel	1	Leather	Pre-1926	Woman's or child's shoes; many holes for nails
21	T-130, St. Ii	Marble	Complete	1	Glass		blue opaque, pitted, with flat spots
22	T-130, St. Ii	Horseshoe	Complete	1	Metal		



T-130 ceramic exterior fragments (Acc. # 130-A-1 to A-6, shown from left to right and top to bottom) – exterior - collected from Stratum Ii



T-130 ceramic exterior fragments (Acc. # 130-A-1 to A-6, shown from left to right and top to bottom) – interior - collected from Stratum Ii



T-127 ceramic mug (Acc. # 130-A-7) collected from Stratum Ii



T-127 ceramic sake bottle (Acc. # 130-A-8), collected from Stratum Ii



T-127 ceramic ewer fragments (Acc. # 130-A-10) – exterior - collected from Stratum Ii



T-127 ceramic ewer fragments (Acc. # 130-A-10) – interior- collected from Stratum Ii



T-130 ceramic plate fragment (Acc. # 130-A-11) – interior - collected from Stratum Ii



T-130 ceramic plate fragment (Acc. # 130-A-11) –exterior - collected from Stratum Ii



T-130 glass bottles (Acc. # 130-A-12 to A-19, shown left to right) collected from Stratum Ii

### 3.26 Test Excavation 131 (T-131)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-030:001 [Plat]
<b>Elevation Above Sea Level:</b>	1.44 m
<b>UTM:</b>	618310 mE, 2355942 mN
<b>Max Length/Width/Depth:</b>	3.05 m / 0.92 m / 1.38 m
<b>Orientation:</b>	148 / 328° TN
<b>Targeted Project Component:</b>	Station Column
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation 131 (T-131) was located within the sidewalk of Halekauwila Street, approximately 50 m south of South Street and 75 m northwest of Keawe Street. T-131 was located on property owned by the City and County of Honolulu. T-131 was relocated approximately 2 m west of its original layout due to its proximity of an existing building. A telecommunications line and a storm drain utility were located 1 m east and south of T-131. The excavation surface was slightly elevated above the surrounding land surface.

**Summary of Background Research and Land Use:** The natural landscape that surrounds T-131 included sand and three small ponds to the northwest overlying natural marine clay to the coral shelf (1883 Baldwin map). The 1884 Bishop Honolulu Kewalo showed that T-131 was located in middle of LCA 7712:6 which was awarded to V. Kamāmalu. According to the 1897 Monsarrat Honolulu map, T-131 was still located within a small pond and there is evidence of urban development in the surrounding areas. The 1919, 1933, and 1943 U.S. War Department Fire Control maps and the 1953 Army Mapping Service map indicated further urban development and show that ponds were filled in within the vicinity of T-131.

Previous archaeology within the vicinity of T-131 included several archaeological studies. T-131 was 14.0 m east of four historic properties identified during an archaeological inventory survey (Pammer et al 2011). The properties included historic building structures (SIHP # 50-80-14-7124), a burnt historic trash layer (SIHP # -7189), salt pan remnants (SIHP # -7190), and a late pre- early post-Contact cultural layer containing one pit feature (SIHP # -7197). During archaeological monitoring for the Kaka'ako Improvement District 3 for the Pohulani Elderly Rental Housing phase two groupings of burials were identified (Winieski and Hammatt 2000). Nine burials (SIHP # 50-80-14-4380) were encountered at the Pohulani Elderly Rental Housing and 11 burials in and around the historic Mother Waldron Park (SIHP # 50-80-14-5820). T-131 was 75.0 m northwest of two burials (SIHP # -5820) near the intersection of Halekauwila Street and Keawe Street, and 100.0 m northwest of a single burial (SIHP # -5820) within Halekauwila Street (Winieski and Hammatt 2000).

**Documentation Limitations:** T-131 was excavated to the coral shelf at a depth of 1.38 mbs and beneath the water table at 1.3 mbs. A concrete jacket observed at 0.75 mbs limited excavation along the northeast sidewall of T-131.

**Stratigraphic Summary:** The stratigraphy at T-131 consisted of fill strata overlying natural sediment to the coral shelf. Observed strata included asphalt (Ia), very gravelly silty sandy loam fill (Ib), gravelly silty loam fill (Ic), and gravelly silty loam fill (Id) overlying previously disturbed natural silty clay loam (II) to the coral shelf. The stratigraphy generally conformed to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** A total of seventeen (17) artifacts (Acc. # 131-A-1 to A-16, see following table and photographs) were collected from Stratum Id, consisting of three Asian/English ceramic fragments from three vessels, 12 glass bottle/bottle fragments from 11 bottles, one earthenware planter/flowerpot and one plastic bucket. The artifacts included ceramics, glass bottles and miscellaneous items. Datable attributes from the glass bottles indicated an age range of manufacture from 1820 and 1920, with several within a narrower range of the 1860s to the 1920s. Artifacts collected from Stratum Id (gravelly silty loam) indicate that generally artifacts in the stratum date to the late nineteenth early twentieth century.

**Features Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains from T-131 were collected individually during excavation from the Strata Ic/II interface (0.54-1.33 mbs). The species represented were *Bos taurus*, *Sus scrofa*, *Felis catus*, *Meleagris gallopavo*, and unidentified medium mammal vertebra fragment. The *Bos taurus* fragment had been butchered by a metal blade, and the medium mammal vertebra fragment was fused to a piece of metal both of which indicate an historic origin, not a traditional Hawaiian context. This corresponds with the assemblage of identified species which includes historic introductions (*Bos taurus*, *Felis catus*, and *Meleagris gallopavo*).

**Sample Results:** One 2-liter bulk sediment sample was collected from Stratum II between 1.25-1.33 mbs. The bulk sediment sample contained an unidentified burnt shell fragment (0.1 g), a burned crustacean fragment (0.1 g), naturally-occurring marine shell (1.6 g), terrestrial snail shells (12.3 g), and *Ruppia maritima* seeds (0.4 g).

Terrestrial snails were submitted for additional analysis. Results of further identification of terrestrial snails indicated the presence of an estuarine, strandline, and shoreline-dwelling species, *A. parvula*, is consistent with a coastal location. A fresh- or brackish-water environment was present. The absence of *M. tuberculata* may indicate the water was not “permanent.” The abundant presence of a native snail, *T. porrecta*, and the absence of two Polynesian introduced species, *M. tuberculata* and *T. granifera*, suggests this sample may pre-date human settlement.

The results of sample analysis support the identification of Stratum II as a natural sediment with little significant cultural material present.

**GPR Discussion:** A review of amplitude slice maps indicated a linear feature which corresponds to a storm drain adjacent to the excavation. Reflectivity was relatively uniform throughout the grid and decreases with depth except for the storm drain. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.5 mbs.

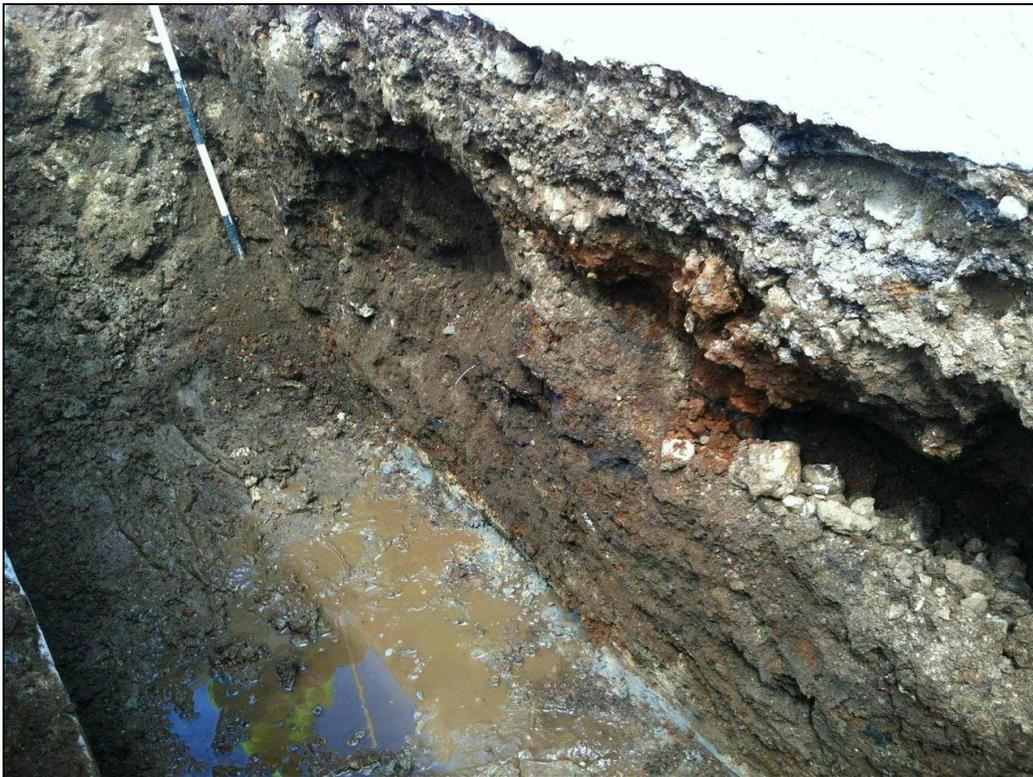
GPR depth profiles for T-131 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.25 mbs. An anomaly was observed in the profile that corresponds

to the storm drain adjacent to the excavation. The maximum depth of clean signal return was approximately 0.8 mbs.

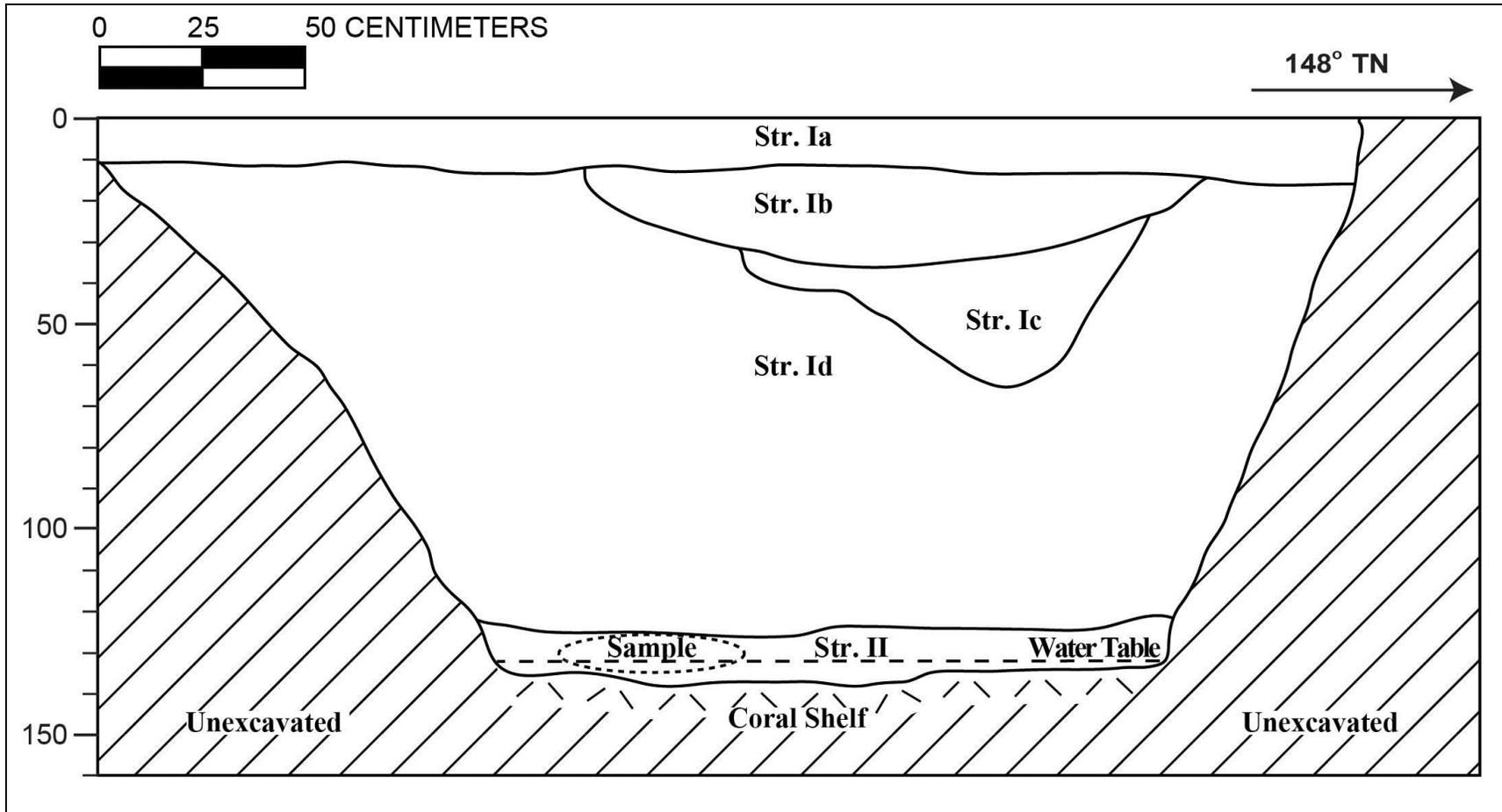
**Summary:** T-131 was excavated to the coral shelf at a depth of 1.38 mbs and beneath the water table at 1.3 mbs. The stratigraphy at T-131 consisted of fill strata overlying natural sediment to the coral shelf. The stratigraphy generally conformed to the USDA soil survey designation of Ewa silty clay loam (EmA). A total of seventeen (17) artifacts were collected from Stratum Id. Artifacts collected from Stratum Id (gravelly silty loam) indicated that generally artifacts in the stratum date to the late nineteenth early twentieth century. The presence of modern trash and the absence of burnt trash or evidence of burnt sediment, indicated that Stratum Id was not an extension of the adjacent burnt historic trash layer (SIHP# 50-80-14-7189) identified in the adjacent T-130 and T-132. Faunal remains indicated an historic origin, not a traditional Hawaiian context for Stratum Ic/II. The results of sample analysis support the identification of Stratum II as a natural sediment with little significant cultural material present. No cultural resources were identified within T-131.



T-131 general location (view to northwest).



T-131 northeast profile wall (view to north).



T-131 northeast wall profile

## T-131 stratigraphic description

<b>Stratum</b>	<b>Depth (cmbs)</b>	<b>Description</b>
Ia	0-13	Asphalt
Ib	13-35	Fill; 7.5 YR 4/1 (dark gray); very gravelly silty sandy loam; weak, medium, blocky structure; moist, friable consistency; non-plastic; terrigenous origin; abrupt, broken/discontinuous lower boundary; gravel base course
Ic	35-65	Fill; 7.5 YR 3/3 (dark brown); gravelly silty loam; weak, fine-medium, blocky structure; moist, friable consistency; slightly plastic; terrigenous origin; abrupt, broken/discontinuous lower boundary; contained faunal bone, ceramics, glass, bottles, inclusions; artifacts and faunal inclusions
Id	13-125	Fill; 10 YR 4/3 (brown); gravelly silty loam; weak, fine, crumb structure; moist, friable consistency; non-plastic; terrigenous origin; abrupt, broken lower boundary; contained faunal, glass fragments, glass bottles, plastic bucket, AA battery, charcoal inclusions; concrete jacket
II	125-138	Natural; 10 YR 4/1 (dark gray); silty clay loam; fine, blocky structure; firm consistency; slightly plastic; marine origin; lower boundary not visible; contained faunal bone; snail shell inclusions; previously disturbed natural sediment

## T-131 Artifacts Analysis

Acc. # 131-A-	Prov.	Ceramic Vessel Type	Portion	No.	Paste; Decor.	Origin; Age	Comments
1	T-131, St. Id	Hollowware - bowl	Base to rim	1	Porcelain; Transfer-print	Asian	Dashed-line transfer- print; Three Friends motif
2	T-131, St. Id	Hollowware - saucer	Body to rim	1	Porcelain; Painted overglaze	Asian	Four Flowers motif
3	T-131, St. Id	Flatware - plate	Rim	1	Porcelain; Cut Sponge underglaze	Great Britain	red flowers; interior rim has green geometric pattern
	Prov.	Glass Bottle Type	Portion	No.	Color	Age; Origin	Comments
4	T-131, St. Id	Bottle, Spirits	Complete	1	Black	1820–1890	Applied Lip
5	T-131, St. Id	Bottle, Spirits	Complete	1	Olive	1820–1890	Applied Lip
6	T-131, St. Id	Bottle, Spirits	Complete	1	Olive	1820–1890	Applied Lip
7	T-131, St. Id	Bottle, Spirits	Neck-lip	1	Aqua	1820–1890	
8	T-131, St. Id	Bottle, Condi- ment	Complete	1	Clear	American; 1850-1920	Lea & Perrins Worcestershire Sauce
9	T-131, St. Id	Bottle, Beverage	Complete	1	Clear	1840s- 1920s	Push-up base
10	T-131, St. Id	Bottle, Beverage	Base- body	1	Aqua	American; 1868-1893	Hollister & Co Honolulu, probably
11	T-131, St. Id	Bottle, Soda	Neck-lip	1	Clear	1890s- 1920s	
12	T-131, St. Id	Bottle, Beverage	Base- body	2	Olive	English; 1872-1913	Nuttall & Co. Lancashire, England base mark
13	T-131, St. Id	Jar, Extract	Complete	1	White	American	Armour & Co., Packers, Chicago; milk glass;
14	T-131, St. Id	Vial, Medicine	Complete	1	Clear	1800-1870	
	Prov.	Misc. Type	Portion	No.	Material	Age; Origin	Description
15	T-131, St. Id	Bucket	Complete	1	Plastic		Bucket with metal handle; ACL "CA..."
16	T-131, St. Id	Planter	Base	1	Ceramic		Base fragment - brown slip glaze



T-131 ceramic fragments (Acc. # 131 A-1 to A-3) – interior - from Stratum Id



T-131 ceramic fragments (Acc. # 131 A-1 to A-3) – exterior - from Stratum Id



T-131 glass bottles (Acc. # 131 A-4 to A-7) from Stratum Id



T-131 Glass bottles artifacts from Stratum Id

## T-131 Terrestrial vertebrate material collected individually during excavation

Acc. #	Stratum	Depth(cmbs)	Feature	Family/Class	Species	Element	Description	Modification
131-F-1	Ic-II	54-133	-	Bovidae (cow)	<i>Bos taurus</i>	Vertebra (pieces mend); Ribs; Long bone condyles	Fragments	Butchered (cut with metal blade)
131-F-2	Ic-II	54-133	-	Suidae (pig)	<i>Sus scrofa</i>	Humerus (distal portion)	Fragment	None
131-F-3	Ic-II	54-133	-	Felidae (cat)	<i>Felis catus</i>	Left scapula; Right calcaneus	Complete	None
131-F-4	Ic-II	54-133	-	Mammalia	Medium mammal	Vertebra (possible)	Fragment	Fused to metal matrix
131-F-5	Ic-II	54-133	-	Aves (Rio Grande wild turkey)	<i>Meleagris gallopavo</i>	Left tibiotarsus (distal portion)	Fragment	None

### 3.27 Test Excavation 132 (T-132)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-030:001
<b>Elevation Above Sea Level:</b>	1.56 m
<b>UTM:</b>	618288 mE, 2355920 mN
<b>Max Length/Width/Depth:</b>	6.12 m / 0.73 m / 1.51 m
<b>Orientation:</b>	142 / 322° TN
<b>Targeted Project Component:</b>	Station Building
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation 132 (T-132) was located within a paved parking lot approximately 18 m southwest of Halekauwila Street. T-132 was located on private property owned by the Bishop Estate (Waterpark Towers). T-132 was relocated approximately 2 m north of its original layout due to proximity to active utilities.

**Summary of Background Research and Land Use: Use:** The natural landscape that surrounds T-132 included sand and three small ponds to the northwest overlying natural marine clay to the coral shelf (1883 Baldwin map). The 1884 Bishop Honolulu Kewalo showed that T-132 was located in middle of LCA 7712:6 which was awarded to V. Kamāmalu. According to the 1897 Monsarrat Honolulu map, T-132 was still located within a small pond and there is evidence of urban development in the surrounding areas. The 1919, 1933, and 1943 U.S. War Department Fire Control maps and the 1953 Army Mapping Service map indicated further urban development and show that ponds were filled in within the vicinity of T-132.

Previous archaeology within the vicinity of T-132 included several archaeological studies. T-132 was within the boundaries of four historic properties identified during an archaeological inventory survey (Pammer et al 2011). The properties included historic building structures (SIHP # 50-80-14-7124), a burnt historic trash layer (SIHP # -7189), salt pan remnants (SIHP # -7190), and a late pre- early post-Contact cultural layer containing one pit feature (SIHP # -7197). During archaeological monitoring for the Kaka'ako Improvement District 3 for the Pohulani Elderly Rental Housing phase two groupings of burials were identified (Winieski and Hammatt 2000). Nine burials (SIHP # 50-80-14-4380) were encountered at the Pohulani Elderly Rental Housing and 11 burials in and around the historic Mother Waldron Park (SIHP # 50-80-14-5820). T-132 was 80.0 m northwest of two burials (SIHP # -5820) near the intersection of Halekauwila Street and Keawe Street, and 99.0 m northwest of a single burial (SIHP # -5820) within Halekauwila Street (Winieski and Hammatt 2000).

**Documentation Limitations:** T-132 was excavated to a depth of 1.51 mbs beneath the water table at 1.47 mbs.

**Stratigraphic Summary:** The stratigraphy of T-132 consisted of fill strata overlying natural sediment to the base of excavation. Observed strata included asphalt (Ia), very gravelly sandy clay (Ib), extremely gravelly sand (Ic), gravelly stony clay (Id), clay loam (Ie), overlying natural

sediment sandy silty clay (II) to the base of excavation. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** A total of 73 historic artifacts were collected from T-132 within Stratum Id and Ie. The artifacts are comprised of 25 ceramic fragments from a minimum of 25 vessels, 31 bottle/bottle fragments from 29 bottles, and 17 miscellaneous items. Four ceramic fragments and three bottle fragments were recovered from Stratum Id; these could not be dated. Four brick fragments from Stratum Id were made between 1918 and 1978. The majority of ceramics from Stratum Ie are Asian wares. The bottles from Stratum Ie are dominated by medicine bottles, but also include, soda, beer, spirits, condiments, and non-food bottles. The artifacts generally date between the 1870s to the 1920s, indicating a late nineteenth to early twentieth century fill event.

**Features Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains were collected individually during excavation from Strata Id (0.5-1 mbs) and Ie (1.2-1.39 mbs). A *Felis catus* left humerus fragment was retrieved from Id, and the species represented in Ie consisted of *Sus scrofa*, *Canis lupus familiaris*, *Gallus gallus* and an unidentified Aves (bird) fragment. None of the bones exhibited evidence of cultural modification. The presence of the introduced species *Felis catus* is indicative of a post-Contact origin for Stratum Id, while the identified species present in Ie (*Sus scrofa*, *Canis lupus familiaris*, *Gallus gallus*) are Polynesian introductions common in both pre- and post-Contact contexts, and therefore inconclusive.

**Sample Results:** One bulk sediment sample (3 L) was collected from Stratum II between 1.35-1.49 mbs. The sample was wet-screened and contained naturally-deposited shell (176.2 g), *Ruppia maritima* seeds (0.1g), and historic items including rusted metal fragments (0.8g), glass fragments (0.1g), and wood fragments (0.1g).

A total of three column samples were submitted for pollen analysis from Stratum II between 1.37-1.39 mbs, 1.42-1.44 mbs, and 1.47-1.49 mbs. Results of pollen analysis indicated that samples were dominated by Poaceae pollen with smaller amounts of Cyperaceae pollen. Typha and *Cocos nucifera* pollen were observed in the uppermost sample while Acacia pollen was present in both the upper and lowermost samples. All three samples contained Prosopis pollen. Small amounts of foraminifera and a scolecodont were in the lowest sample.

The results of sample analysis indicated the presence of non-midden shells, organics, and historic items.

**GPR Discussion:** A review of amplitude slice maps indicated a linear feature but not within excavation boundaries. Reflectivity was relatively uniform throughout the grid and decreases with depth except for the linear feature. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.75 mbs.

GPR depth profiles for T-132 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.1 mbs and again around 0.4 mbs. An anomaly was observed in the profile but not within excavation boundaries. The maximum depth of clean signal return was approximately 1.15 mbs.

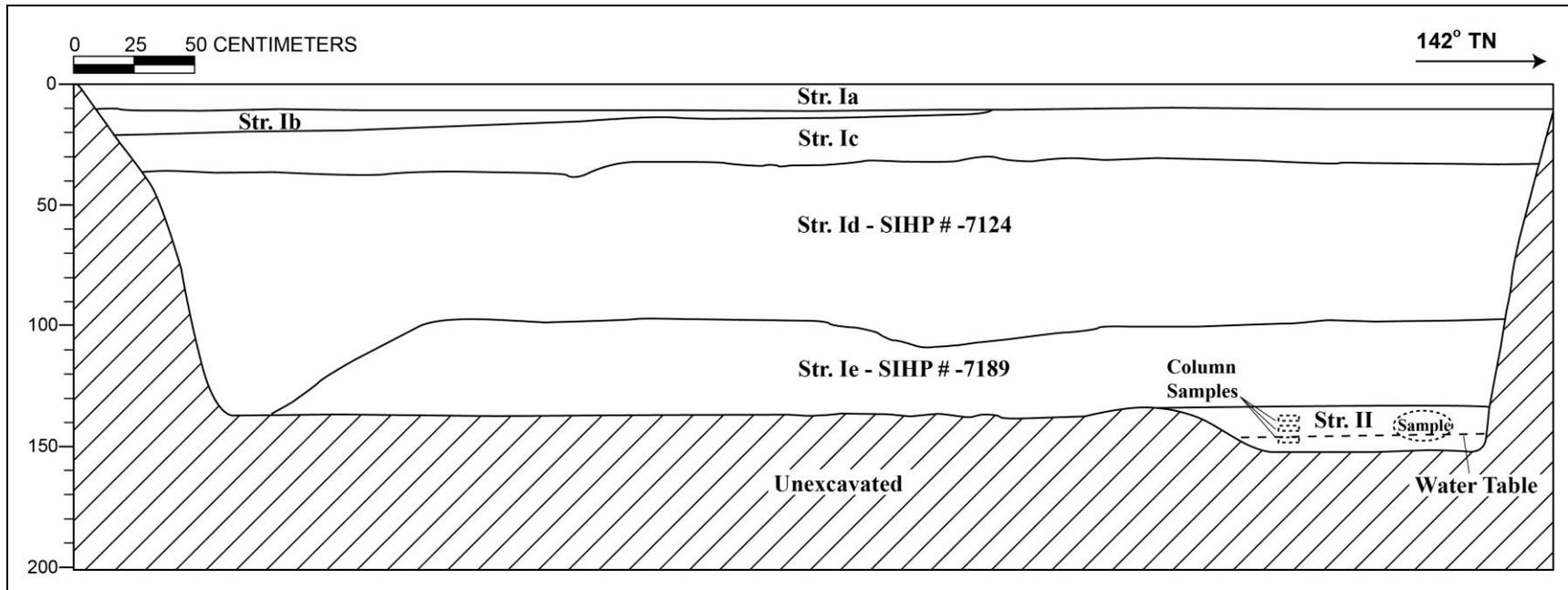
**Summary:** T-132 was excavated to a depth of 1.51 mbs beneath the water table at 1.47 mbs. The stratigraphy of T-132 consisted of fill strata (Ia-Ie) overlying natural sediment (II) to the base of excavation. The stratigraphy does not conform to the USDA soil survey designation of Ewa silty clay loam (EmA) except for one natural sediment layer. The bottles from Stratum Ie are dominated by medicine bottles, but also include, soda, beer, spirits, condiments, and non-food bottles. Artifacts collected generally date between the 1870s to the 1920s, indicating a late nineteenth to early twentieth century fill event. Faunal remains collected indicate a post-Contact origin for Stratum Id, while the identified species present in Ie are Polynesian introductions common in both pre- and post-Contact contexts. Results of pollen analysis indicated the area was a wetland setting with possible intermittent inundations of marine water. The results of sample analysis indicated the presence of non-midden shells, organics, and historic. Stratum Id was considered to be a component of SIHP# 50-80-14-7124 and Stratum Ie was considered to be a component of SIHP# 50-80-14-7189 (see Volume I for descriptions of the sites).



T-132 general location (view to northeast).



T-132 northeast profile wall (view to north).



T-132 northeast wall profile

## T-132 Stratigraphic description

Stratum	Depth (cmbs)	Description
Ia	0-10	Asphalt
Ib	10-20	Fill; 10 YR 4/2 (dark grayish brown); very gravelly sandy clay; weak, fine, crumb structure; dry, loose consistency; slightly plastic; terrigenous origin; very abrupt, broken/discontinuous lower boundary; base course, present only in northwestern half, crushed basalt in clay loam matrix
Ic	10-38	Fill; 10 YR 8/2 (very pale brown); extremely gravelly sand; structureless, single-grain; dry, weakly coherent consistency; non-plastic; marine origin; very abrupt, smooth lower boundary; crushed coral fill
Id	30-136	Fill; 7.5 YR 3/3 (dark brown); gravelly to stony clay; weak, fine, blocky structure; moist, firm consistency; very plastic; terrigenous origin; clear, smooth lower boundary; contained many burnt red bricks and basalt gravel to cobbles; red bricks likely from historic building (SIHP #50-80-14-7124); contained bands, striations black mixed fill
Ie	97-139	Fill; 10 YR 2/1 (black); clay loam, medium, blocky structure; moist, friable consistency; plastic; terrigenous origin; lower boundary not visible; contained ceramic fragments, shoes, glass bottles, leather pouch, coconut husks, round wooden bases, non-diagnostic metal pieces, cut wood, synthetic roof tile, old telephone wire; contained burnt trash (SIHP #-7189) used to cover Kaka'ako wetlands from late 1800s-early 1900s: faunal bones, lauhala mat at Ie/II
II	139-151	Natural; 2.5 Y 5/1 (gray); sandy silty clay; weak, medium, blocky structure; wet, sticky consistency; plastic; marine origin; lower boundary not visible; marine sediment contained organics, shells

T-132 Artifact Analysis Table

Acc. # 132-A-	Provenience	Ceramic Vessel Type	Portion	No.	Paste; Decoration	Origin; Age	Comments
1	T-132, St. Id	Hollowware - bowl	Base	1	Porcelain		White; No foot
2	T-132, St. Id	Dinnerware	Body	1	Porcelain; Painted underglaze		Bluish-white; Blue lines and flowers
3	T-132, St. Id	Dinnerware	Body	1	Earthenwar e, Coarse		Tan
4	T-132, St. Id	Dinnerware	Rim	1	Earthenwar e		Dark Brown
5	T-132, St. Ie	Hollowware - bowl	Base to rim	1	Porcelain; Painted underglaze	Asian	White; Two Asian people in Kimonos?;
6	T-132, St. Ie	Flatware - plate/ saucer	Body to rim	1	Earthenwar e, Refined; Painted underglaze		White; Blue band near bowl bottom; some cut sponge
7	T-132, St. Ie	Hollowware - bowl	Body to rim	1	Earthenwar e		Brown; Indention in rim for cover?
8	T-132, St. Ie	Dinnerware	Body to rim	1	Earthenwar e; Sponge underglaze		White; Red flowers, blue & green leaves;
9	T-132, St. Ie	Hollowware - bowl	Base	2	Porcelain	Asian	Celadon; Base: Asian character -
10	T-132, St. Ie	Hollowware - cup	Base to rim	1	Porcelain; Transfer- print	Asian	Dashed-line transfer-print; white leaves; Asian character on base; pendant pattern on rim (7.3 D)
11	T-132, St. Ie	Hollowware - bowl	Body to rim	1	Porcelain; Transfer- print	Asian	Dashed -line transfer print; garden scenes; pendant pattern rim
12	T-132, St. Ie	Hollowware - bowl	Base to body	1	Porcelain; Transfer print	Asian	Asian wave pattern; white leaf designs.
13	T-132, St. Ie	Jar, Spouted	Body	2	Stoneware, slip glaze	Asian	Spout broken; Asian design
14	T-132, St. Ie	Flatware - saucer	Body to rim	1	Porcelain; Transfer- print, molded		Molded flutes; dark green flowers

Acc. # 132-A-	Provenience	Ceramic Vessel Type	Portion	No.	Paste; Decoration	Origin; Age	Comments
15	T-132, St. Ie	Hollowware	Base to body	1	Porcelain; Painted overglaze		Four Flowers motif; red Asian character on base
16	T-132, St. Ie, 100-135	Hollowware - cup	Body	1	Porcelain	Asian	Celadon; 7.3 (D) x 3.5 (H); green color on exterior only
17	T-132, St. Ie, 100-135	Hollowware - cup	Base	1	Porcelain; Incised, painted underglaze	Asian	Red-brown; Incised pattern; base: Asian pattern stamp
18	T-132, St. Ie, 100-135	Hollowware - bowl	Base to body	2	Porcelain; Transfer- print	Asian	Dashed-line transfer-print – panels; triangular patterns; Asian character on base
19	T-132, St. Ie, 100-135	Crock	Rim	1	Stoneware; salt glaze		Yellow; impressed
20	T-132, St. Ie, 100-135	Hollowware - bowl	Base to rim	2	Porcelain	Asian	Celadon; Asian character stamped on bottom on both sides
21	T-132, St. Ie, 100-135	Hollowware - cup	Base to Body	1	Porcelain; transfer- print	Asian	Dashed line transfer print – rectangular panels; high foot
Acc. # 132-A-	Provenience	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
22	T-132, St. Id	Bottle	Lip	2	Brown	1820 – 1890	
23	T-132, St. Id	Bottle	Body	1	Green		
24	T-132, St. Ie	Jar, Medicine	Base-neck	1	Clear	American 1903-post	Whittal, Tatum & Co. Millville, N.J. base mark
25	T-132, St. Ie	Bottle, Medicine	Complete	1	Green, Light	English 1820 – 1890	Stephen Sons & Co., Gloucester, England; bottled food and drugs
26	T-132, St. Ie	Bottle, Ink	Complete	1	Aqua	1880s- 1910 ca.	Cone-shaped ink
27	T-132, St. Ie	Bottle, Spirits	Base- shoulder	1	Green, Light	1860- 1920s	Push-up base
28	T-132, St. Ie	Bottle, Beverage	Neck-lip	1	Clear	1907-post	

Acc. # 132-A-	Provenience	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
29	T-132, St. Ie	Bottle, Spirits	Base-body	1	Olive	1860- 1920s	Push-up base
30	T-132, St. Ie	Bottle, Spirits	Shoulder- lip	1	Green, Light	pre-1920	
31	T-132, St. Ie	Bottle, Beer	Base-neck	1	Amber	American 1905-1929	American Bottle Co. Base mark
32	T-132, St. Ie	Bottle, Beer	Complete	1	Amber	American 1881-1905	Streator Bottle and Glass Co., Streator, Ill base mark
33	T-132, St. Ie	Bottle, Soda	Complete	1	Aqua	American 1894-1910	Consolidated Soda Works, Honolulu
34	T-132, St. Ie	Bottle, Condiment	Complete	1	Clear	English 1858-1880	Yorkshire Relish, Goodall Backhouse & Co., England
35	T-132, St. Ie	Bottle	Complete	1	Blue, Cobalt	1870-1906	"5" - embossed on base
36	T-132, St. Ie	Bottle	Complete	1	Blue, Cobalt	1870-1906	"Y / 2 / 12" - embossed on base
37	T-132, St. Ie	Bottle, Medicine	Complete	1	Amber	American 1870- 1920s	Parke Davis & Co. pharmaceutical co. Base mark
38	T-132, St. Ie	Bottle, Medicine	Complete	1	Green, Light	English 1880- 1890	Eno's Fruit Salt; antacid; bottled at Woods Bros., Barnsley, England
39	T-132, St. Ie	Bottle, Medicine	Complete	1	Green, Light	American 1884- 1901s	Healy & Bigelow Indian Sagwa – patent medicine
40	T-132, St. Ie	Bottle, Cologne	Complete	1	Aqua	American 1820- 1890	Florida Water, Murray & Lanman Druggists, New York
41	T-132, St. Ie	Bottle	Complete	1	Clear	1890s- 1920s	Possibly a barber- shop bottle
42	T-132, St. Ie	Bottle	Complete	1	Green, Light	1820- 1890	Possibly ketchup bottle
43	T-132, St. Ie	Bottle, Medicine	Base- body		Aqua	American 1857-1901	Healy & Bigelow
44	T-132, St. Ie	Bottle, Medicine	Complete	1	Green, Light	American 1890s- 1920s	Dr. Thompson's Eye Water, New London, Conn.
45	T-132, St. Ie	Bottle, Medicine	Complete	1	Clear	American 1890s-late	Hollister Drug Co., Fort St., Honolulu
46	T-132, St. Ie	Bottle, Medicine	Complete	1	Clear	American 1885- 1920s	Candy Brothers Mfg. Co., St. Louis, Mo. – drugstore

Acc. # 132-A-	Provenience	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
49	T-132, St. Ie	Bottle	Complete	2	Clear	1870s-post	"Cre . . ." - embossed on body
47	T-132, St. Ie	Bottle, Medicine	Complete	1	Clear	1870s-post	Wide mouth
49	T-132, St. Ie	Bottle	Complete	1	Brown- Dark	1820– 1890	Lip covered with metal cap
50	T-132, St. Ie	Bottle, Soda	Base- body	1	Aqua	American 1900-1908	Hollister & Co. Soda bottle
51	T-132, St. Ie	Bottle, Gin?	Shoulder- lip	1	Olive	1820 – 1890	
52	T-132, St. Ie	Bottle, Boot polish	Complete	1	Aqua	American 1838-late 1800s	Frank Miller's Crown Dressing – leather polish
Acc. # 132-A-	Provenience	Miscellaneous Type	Portion	No.	Material	Origin; Age	Description
53	T-132, St. Id	Brick	Fragment	1		1918-1978	Orange color, machine-made
54	T-132, St. Id	Brick	Fragment	1		1918-1978	Red color, machine-made
55	T-132, St. Id	Brick	Fragment	1		1918-1978	Red color, machine-made
56	T-132, St. Id	N/A	Fragment	2			Not brick
57	T-132, St. Id	Bag	Complete	1	Leather		Pinched and tied with string on each end
58	T-132, St. Id	Milled Wood Disk	Complete	1	Wood		Circular disk- unknown function
59	T-132, St. Id	Shoe, Human	Sole	1	Leather	ca. pre 1926	A few holes for nails
60	T-132, St. Id	Strap? Handle?	Complete	1	Metal		Hole at end
61	T-132, St. Id	Planter?	Fragment	1	Body		Brown slip glaze
62	T-132, St. Id	Machine part - rod	Fragment	1	Metal		Solid tubular object - Unknown function
63	T-132, St. Ie	Unknown	Fragment	5	Composite		Wood and cloth; dyed red on exterior with mesh pattern
64	T-132, St. Ie/II	Lauhala mat	Fragment s.	1	Lauhala		



T-132 ceramic fragments (Acc. # 132-A-1 to A-2) collected from Stratum Id



T-132 ceramic fragments collected (Acc. # 132-A-5- to A-9, from top to bottom) –interior - from Stratum Ie., 1.0 to 1.35 mbs



T-132 ceramic fragments collected (Acc. # 132-A-5- to A-9, from top to bottom) – exterior - from Stratum Ie., 1.0 to 1.35 mbs.



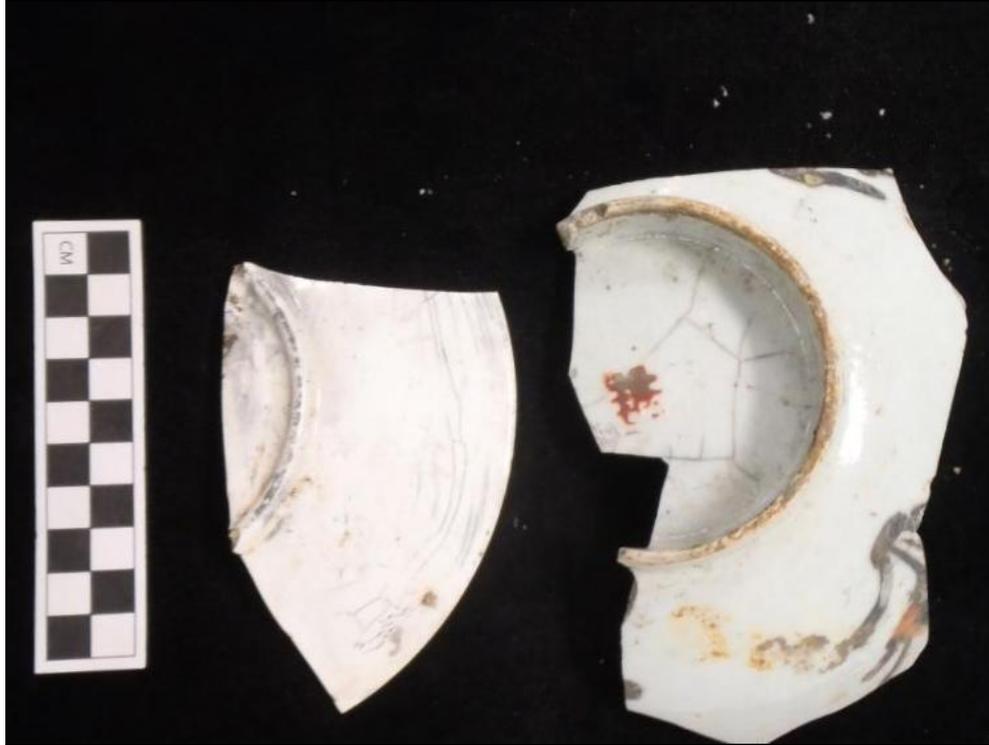
T-132 ceramic fragments collected (Acc. # 132-A-10 to A-15, from left to right) – interior- from Stratum Ie, 1.2-1.4 mbs



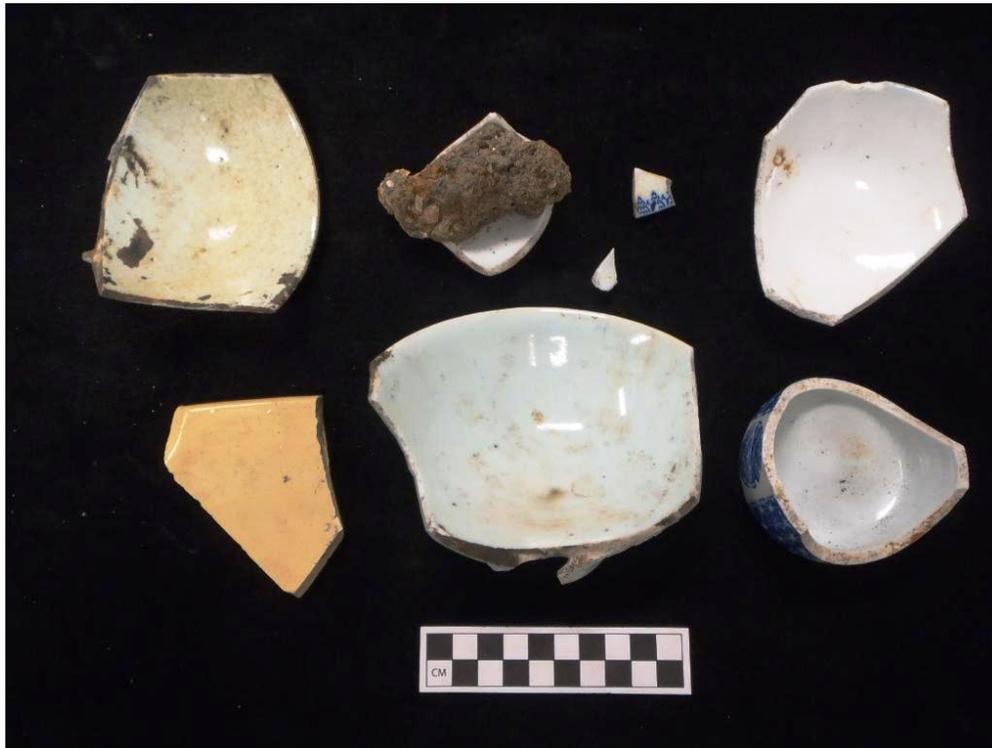
T-132 stoneware spouted jar (Acc. # 132-A-13) – exterior - from Stratum Ie, 1.2-1.4 mbs



T-132 ceramic fragments collected (Acc. # 132-A-10 to A-12) – exterior - from Stratum Ie, 1.2-1.4 mbs



T-132 ceramic fragments collected (Acc. # 132-A-14 to A-15) – exterior from Stratum Ie.



T-132 ceramic fragments collected (Acc. # 132-A-16 to A-21, shown from left to right and top to bottom) from Stratum Ie, 1.2-1.4 mbs.



T-132 ceramic fragments collected (Acc. # 132-A-16 to A-21, shown from left to right and top to bottom) from Stratum Ie, 1.2-1.4 mbs



T-132 ceramic fragment collected (Acc. # 132-A-17) from Stratum Ie, 1.2-1.4 mbs



T-132 ceramic fragment collected (Acc. # 132-A-18) from Stratum Ie, 1.2-1.4 mbs



T-132 ceramic fragment collected (Acc. # 132-A-20) from Stratum Ie, 1.2-1.4 mbs



T-132 glass bottles (Acc. # 132-A-24 to A-26, shown left to right) collected from Stratum Ie



T-132 glass bottles (Acc. # 132-A-27 to A-31) collected from Stratum Ie



T-132 glass bottles (Acc. # 132-A-32 to A-37, shown left to right) collected from Stratum Ie



T-132 glass bottles (Acc. # 132-A-33) collected from Stratum Ie



T-132 glass bottles (Acc. # 132-A-34) collected from Stratum Ie



T-132 glass bottles (Acc. # 132-A-38 to A-40) collected from Stratum Ie



T-132 glass bottles (Acc. # 132-A-41 and A-42) collected from Stratum Ie



T-132 glass bottles (Acc. # 132-A-43 to A-45) collected from Stratum Ie



T-132 glass bottles (Acc. # 132-A-46 to A-49) collected from Stratum Ie



**Bold** - T-132 glass bottles (Acc. # 132-A-50 and A-51) collected from Stratum Ie



T-132 glass bottles (Acc. # 132-A-52) collected from Stratum Ie/II

## T-132 Terrestrial vertebrate material collected individually during excavation

Acc. #	Stratum	Depth(cmbs)	Feature	Family/Class	Species	Element	Description	Modification
132-F-1	Id	50-100	-	Felidae (cat)	<i>Felis catus</i>	Left humerus (distal portion)	Fragment	None
132-F-2	Ie	120-139	-	Suidae (pig)	<i>Sus scrofa</i>	Tibia diaphysis section; Metatarsal (proximal portion)	Fragments	None
132-F-3	Ie	120-139	-	Canidae (dog)	<i>Canis lupus familiaris</i>	Humerus diaphysis section	Fragment	None
132-F-4	Ie	120-139	-	Aves (chicken)	<i>Gallus gallus</i>	Left humerus	Complete	None
132-F-5	Ie	120-139	-	Aves (bird)	Unidentified	Tibiotarsus (distal portion)	Fragment	None

## T-132 Pollen Analysis Results

<b>Exc. #</b>	<b>Column Sample No.</b>	<b>Depth (cmbs)</b>	<b>Stratum</b>	<b>Description/Provenience</b>	<b>Analysis</b>
T-132	1	140-143	II	Silty clay sediment containing freshwater snails, wood and grass (Stratum II) – possibly representative of rice field deposits overlying previous Hawaiian wetland cultivation and/or natural wetlands	Pollen
	4	163-167			Pollen
	6	185-188			Pollen

### 3.28 Test Excavation 133 (T-133)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-030:001 [Plat]
<b>Elevation Above Sea Level:</b>	1.35 m
<b>UTM:</b>	618301 mE, 2355913 mN
<b>Max Length/Width/Depth:</b>	6.1 m / 0.7 m / 1.80 m
<b>Orientation:</b>	226 / 46° TN
<b>Targeted Project Component:</b>	Station Building
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation 133 (T-133) was located within a parking lot 15 m south (*makai*) of Halekauwila Street and 60 m northwest of the Keawe Street. T-133 was located on private property owned by Bishop Estate (Waterpark Tower). An electric line was located 10 m east of T-133 and a sewer line was located 5 m north of T-133. The surrounding topography of T-133 was level.

**Summary of Background Research and Land Use:** The natural landscape that surrounds T-133 included sand and three small ponds to the northwest overlying natural marine clay to the coral shelf (1883 Baldwin map). The 1884 Bishop Honolulu Kewalo showed that T-133 was located in middle of LCA 7712:6 which was awarded to V. Kamāmalu. According to the 1897 Monsarrat Honolulu map, T-133 was still located within a small pond and there is evidence of urban development in the surrounding areas. The 1919, 1933, and 1943 U.S. War Department Fire Control maps and the 1953 Army Mapping Service map indicated further urban development and show that ponds were filled in within the vicinity of T-133.

Previous archaeology within the vicinity of T-133 included several archaeological studies. T-133 was within the boundaries of four historic properties identified during an archaeological inventory survey (Pammer et al 2011). The properties included historic building structures (SIHP # 50-80-14-7124), a burnt historic trash layer (SIHP # -7189), salt pan remnants (SIHP # -7190), and a late pre- early post-Contact cultural layer containing one pit feature (SIHP # -7197). During archaeological monitoring for the Kaka'ako Improvement District 3 for the Pohulani Elderly Rental Housing phase two groupings of burials were identified (Winieski and Hammatt 2000). Nine burials (SIHP # 50-80-14-4380) were encountered at the Pohulani Elderly Rental Housing and 11 burials in and around the historic Mother Waldron Park (SIHP # 50-80-14-5820). T-133 was 70.0 m northwest of two burials (SIHP # -5820) near the intersection of Halekauwila Street and Keawe Street, and 88.0 m northwest of a single burial (SIHP # -5820) within Halekauwila Street (Winieski and Hammatt 2000).

**Documentation Limitations:** T-133 was excavated to the coral shelf at a depth of 1.8 mbs. There were no factors that limited the documentation of T-133.

**Stratigraphic Summary:** The stratigraphy of T-133 consisted of fill strata overlying natural sediment to the decomposing coral shelf. Observed strata included asphalt (Ia), very gravelly

silty sand (Ib), fine to coarse sandy clay loam (Ic), sandy loam (Id), sandy loam (Ie), sandy clay (If), sandy clay (Ig) overlying silty sand (II) to the decomposing coral shelf. The stratigraphy does not conform to the USDA soil survey designation of Ewa silty clay loam (EmA) except for one natural sediment layer.

**Artifacts Discussion:** A total of four (4) artifacts (Acc. # 133-A-1 to A-4) were collected from several of the fill layers of T-133. Artifacts were collected from the backdirt pile, but artifacts were observed from Stratum Ic, Id, Ie, If, and Ig between 0.15 and 1.45 mbs. The items collected were three glass bottles (two complete) and one red, machine-made brick. Datable attributes on the glass bottles indicated an age range of manufacture between the 1870s-1890s, which suggests a late nineteenth century date for the fill in T-133.

**Features Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains were collected individually during excavation from Stratum Ic between 0.15 mbs and 0.7 mbs. Faunal remains included butchered *Sus scrofa* rib fragments. These bones were butchered using a metal blade, which indicates an historic (not traditional Hawaiian) origin.

**Sample Results:** A total of two bulk sediment samples and two column samples were collected from T-133. All bulk sediment samples were wet-screened. The two column samples were not submitted for further analysis.

A 1.5-liter bulk sediment sample was collected from Stratum Ig between 1.10-1.45 mbs. The sample contained burned crustacean midden (1.4 g), naturally-deposited shell (2.6 g), and *Ruppia maritima* seeds (0.1 g).

A 1.5-liter bulk sample was collected from Stratum II between 1.40-1.80 mbs. The sample contained shell midden (21.0 g), naturally-deposited shell (5.6 g), and wood (0.7 g). Midden material collected included Tellinidae *Tellina* sp. (4.2 g), burned Tellinidae *Tellina* sp. (4.2 g), Tellinidae *Tellina palatum* (0.2 g), Mytilidae *Brachidontes crebristriatus* (7.8 g), Naticidae *Natica* sp. (2.7 g), crustacean (0.3 g), burned crustacean (0.3 g), Echinodermata *diadema* sp. and *mathaei* sp. (0.3 g), and burned Echinodermata *mathaei* sp. (0.6 g).

The results of the sample analysis documented the presence of shell midden, naturally deposited shell, organics, and historic items.

**GPR Discussion:** A review of amplitude slice maps indicated no linear features which might indicate the presence of utilities. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.25 mbs.

GPR depth profiles for T-133 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.3 mbs. An anomaly was observed in the profile but not within excavation boundaries. The maximum depth of clean signal return was approximately 1.10 mbs.

**Summary:** T-133 was excavated to the coral shelf at a depth of 1.75 mbs. The stratigraphy of T-133 consisted of fill strata (Ia-Ig) overlying natural sediment (II) to the decomposing coral shelf. The stratigraphy does not conform to the USDA soil survey designation of Ewa silty clay loam

(EmA) except for one natural sediment layer. Datable attributes on the glass bottles indicated an age range of manufacture between the 1870s-1890s, which suggests a late nineteenth century date for the fill in T-133. The faunal remains were butchered using a metal blade, which indicates an historic (not traditional Hawaiian) origin. The results of the sample analysis documented the presence of shell midden, non-midden shell, organics, and historic. No cultural resources were identified.



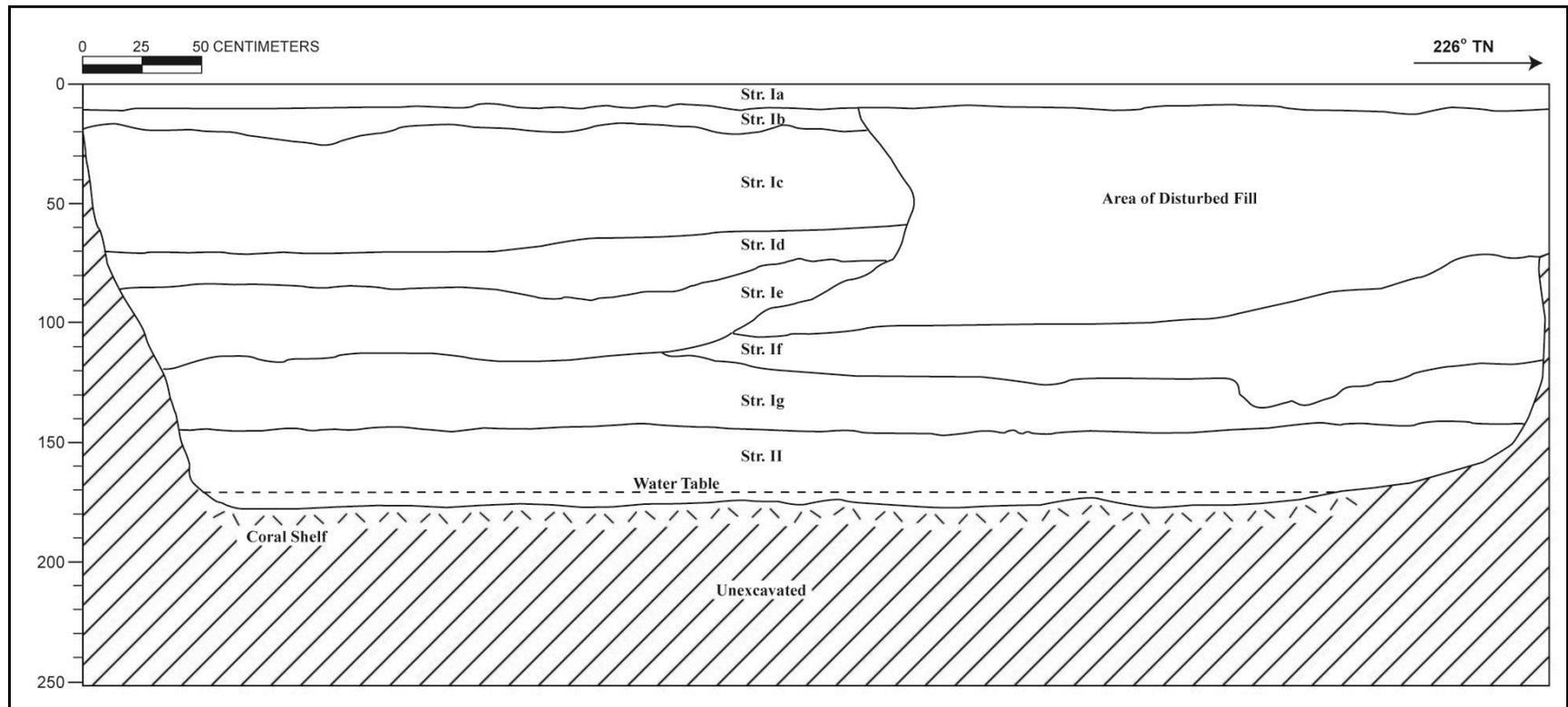
T-133 general location (view to north).



T-130 southeast profile wall (view to south).



T-133 miscellaneous historic debris observed but not collected



T-133 southeast wall profile

## T-133 stratigraphic description

Stratum	Depth (cmbs)	Description
Ia	0-10	Asphalt
Ib	8-25	Fill; 10 YR 6/2 (light brownish gray); very gravelly silty sand; structureless, single-grain; moist, loose consistency; non-plastic; mixed origin; abrupt, broken/discontinuous lower boundary; few, fine roots; very gravelly fill material w/ concrete chunks
Ic	15-70	Fill; 10 YR 2/2 (very dark brown); fine to coarse sandy clay loam; weak, fine, crumb structure; moist, friable consistency; slightly plastic; terrigenous; abrupt, smooth lower boundary; few, fine roots; historic, refuse; import fill material, cinder and colluvial loam
Id	60-90	Fill; 10 YR 3/1 (very dark gray); sandy loam; weak, medium, blocky structure; moist, friable consistency; non-plastic; terrigenous origin; abrupt, broken/discontinuous lower boundary; few, fine roots; historic debris; imported fill material containing historic refuse
Ie	73-120	Fill; 10 YR 3/2 (very dark grayish brown); sandy loam; weak, medium, blocky structure; moist, friable consistency; non-plastic; terrigenous origin; abrupt, broken/discontinuous lower boundary; historic debris; imported fill material contained historic refuse
If	70-135	Fill; 10 YR 8/2 (very pale brown); sandy clay; weak, coarse, blocky structure; moist, friable consistency; non-plastic; marine origin; abrupt, broken/discontinuous lower boundary; common, fine roots; historic debris; hydraulic clay blend with historic debris
Ig	110-145	Fill; 10 YR 4/1 (dark gray); sandy clay; weak, coarse, blocky structure; moist, friable consistency; non-plastic; marine origin; abrupt, broken/discontinuous lower boundary; common, fine roots; historic debris; hydraulic clay blend with historic debris
II	140-175	Natural; 10 YR 5/1 (gray); silty sand; structureless, single-grain; wet, non-sticky consistency; non-plastic; marine origin; lower boundary not observed



T-133 glass bottles (Acc. # 133-A-1 to A-3) collected from Stratum II

### 3.29 Test Excavation 134 (T-134)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-031 [Plat]
<b>Elevation Above Sea Level:</b>	1.26 m
<b>UTM:</b>	618325 mE, 2355926 mN
<b>Max Length/Width/Depth:</b>	3.07 m / 0.92 m / 1.45m
<b>Orientation:</b>	138 / 318° TN
<b>Targeted Project Component:</b>	Station Column
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation T-134 (T-134) was located within the north (*mauka*) side walk on Halekauwila Street, 53 m northwest of the Keawe Street. T-134 was located on property owned by City and County of Honolulu. The original location of T-134 was offset 3.2 m southeast, due to the original location being set inside of an existing private property structure. Utilities that surrounded T-134's location are as follows, an electrical line 1 m south and telecommunications line 2 m southwest. The excavation surface was elevated 0.14 m above the surrounding land surface.

**Summary of Background Research and Land Use:** The natural landscape that surrounded T-134 included sand and three small ponds to the northwest overlying natural marine clay to the coral shelf (1883 Baldwin map). The 1884 Bishop Honolulu Kewalo showed that T-132 was located in middle of LCA 7712:6 which was awarded to V. Kamāmalu. According to the 1897 Monsarrat Honolulu map, T-134 was still located within a small pond and there is evidence of urban development in the surrounding areas. The 1919, 1933, and 1943 U.S. War Department Fire Control maps and the 1953 Army Mapping Service map indicated further urban development and show that ponds were filled in within the vicinity of T-134.

Previous archaeology within the vicinity of T-134 included several archaeological studies. T-134 was 14.0 m east of four historic properties identified during an archaeological inventory survey (Pammer et al 2011). The properties included historic building structures (SIHP # 50-80-14-7124), a burnt historic trash layer (SIHP # -7189), salt pan remnants (SIHP # -7190), and a late pre- early post-Contact cultural layer containing one pit feature (SIHP # -7197). During archaeological monitoring for the Kaka'ako Improvement District 3 for the Pohulani Elderly Rental Housing phase two groupings of burials were identified (Winieski and Hammatt 2000). Nine burials (SIHP # 50-80-14-4380) were encountered at the Pohulani Elderly Rental Housing and 11 burials in and around the historic Mother Waldron Park (SIHP # 50-80-14-5820). T-134 was 53.0 m northwest of two burials (SIHP # -5820) near the intersection of Halekauwila Street and Keawe Street, and 78.0 m northwest of a single burial (SIHP # -5820) within Halekauwila Street (Winieski and Hammatt 2000).

**Documentation Limitations:** T-134 was excavated to a depth of 1.45 mbs beneath the water table at 1.36 mbs. Archaeologists collected a bulk sediment soil sample of Stratum II.

**Stratigraphic Summary:** The stratigraphy of T-134 consisted of fill strata overlying natural sediment to the base of excavation. Observed strata included concrete (Ia), very gravelly sandy loam (Ib), silty sand (Ic), silty sandy loam (Id), very gravelly sandy clay loam (Ie), silty sandy clay fill (If), and a natural silty sandy clay (II) to the base of excavation. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** A total of thirty-two (32) artifacts (Acc. # 134-A-1 to A-30) were collected from the fill layers (Ib, Ic, Ie, and If) of T-134. The artifacts included ceramics, glass bottles and miscellaneous items. There were two hollowware (both Asian) ceramics, six bottle fragments (minimum of 5 bottles), one complete bottle, nail fragment and a flower pot fragment collected from Stratum Ib 0.15 to 0.65 mbs. Datable attributes from the bottles indicated an age range of manufacture between 1870s to the 1920s, which suggests that Stratum Ib represents a late-nineteenth early-twentieth century fill. One ceramic marble was collected from Stratum Ic at 0.61 mbs. Two Asian hollowware fragments, two flatware fragments, one dinnerware fragment, one stoneware bottle fragment, one glass bottle fragment and one ceramic flower pot fragment collected from Stratum Ie at 0.65-1.19 mbs. Datable attributes from the glass bottle fragment indicate an age range of manufacture between 1860s and 1920 which suggests that Stratum Ie is similar to Stratum Ib. There was one dinnerware fragment, five glass bottle fragments (minimum four bottles), two complete glass bottles, two flower pot bases and one toothpaste jar fragment collected from Stratum If at 0.95-1.17 mbs. Datable attributes on the glass bottles indicated an age range of manufacture between 1820 and 1890 which suggests that the Stratum If was deposited in the nineteenth century.

**Features Discussion:** No features were observed.

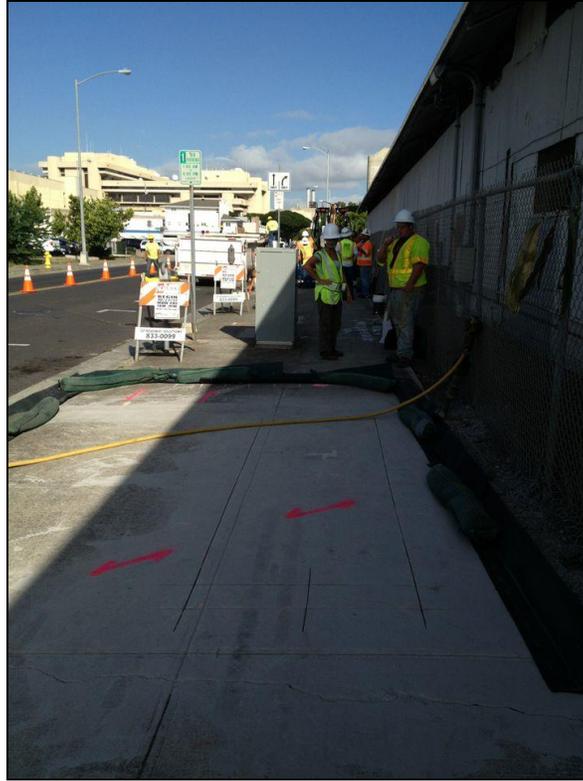
**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains were collected individually during excavation from Stratum Ib (0.15-0.6 mbs) and from the Ib/Ic interface (0.6 mbs). The remains from Ib consisted of fragmentary *Bos taurus*, *Sus scrofa* and medium mammal skeletal elements, none of which showed any cultural modification. The remains from the Ib/Ic interface consisted of a single *Bos taurus* tibia fragment with butcher marks from a metal blade, indicating an historic (not traditional Hawaiian) origin; an unmodified medium mammal cranial fragment; and an unmodified irregular bone from a medium mammal. It can be concluded from the presence of introduced species (*Bos taurus*) that these are post-Contact strata and not of traditional Hawaiian origin.

**Sample Results:** A total of one bulk sediment sample was collected from Stratum II between 1.15-1.45 mbs. The sample was wet-screened. The sample contained shell midden (15.2 g), naturally-deposited shell (2.9 g), *Ruppia maritime* seeds (3.3 g), fish remains (0.1 g), and small mammal remains (0.1 g). Midden material collected included burned Mytilidae *Brachidontes crebristriatus* (4.3 g), burned Naticidae *Natica* sp. (3.3 g), burned crustacean (2.8 g), burned Tellinidae *Tellina* sp. (2.4 g), Trochidae *Trochus* sp. (1.5 g), and Echinodermata *diadema* sp. and *mathaei* sp. (0.9 g).

**GPR Discussion:** A review of amplitude slice maps indicated no linear features which might indicate the presence of utilities. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.25 mbs.

GPR depth profiles for T-134 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.15 mbs. No utilities were observed in the profile. The maximum depth of clean signal return was approximately 1.0 mbs.

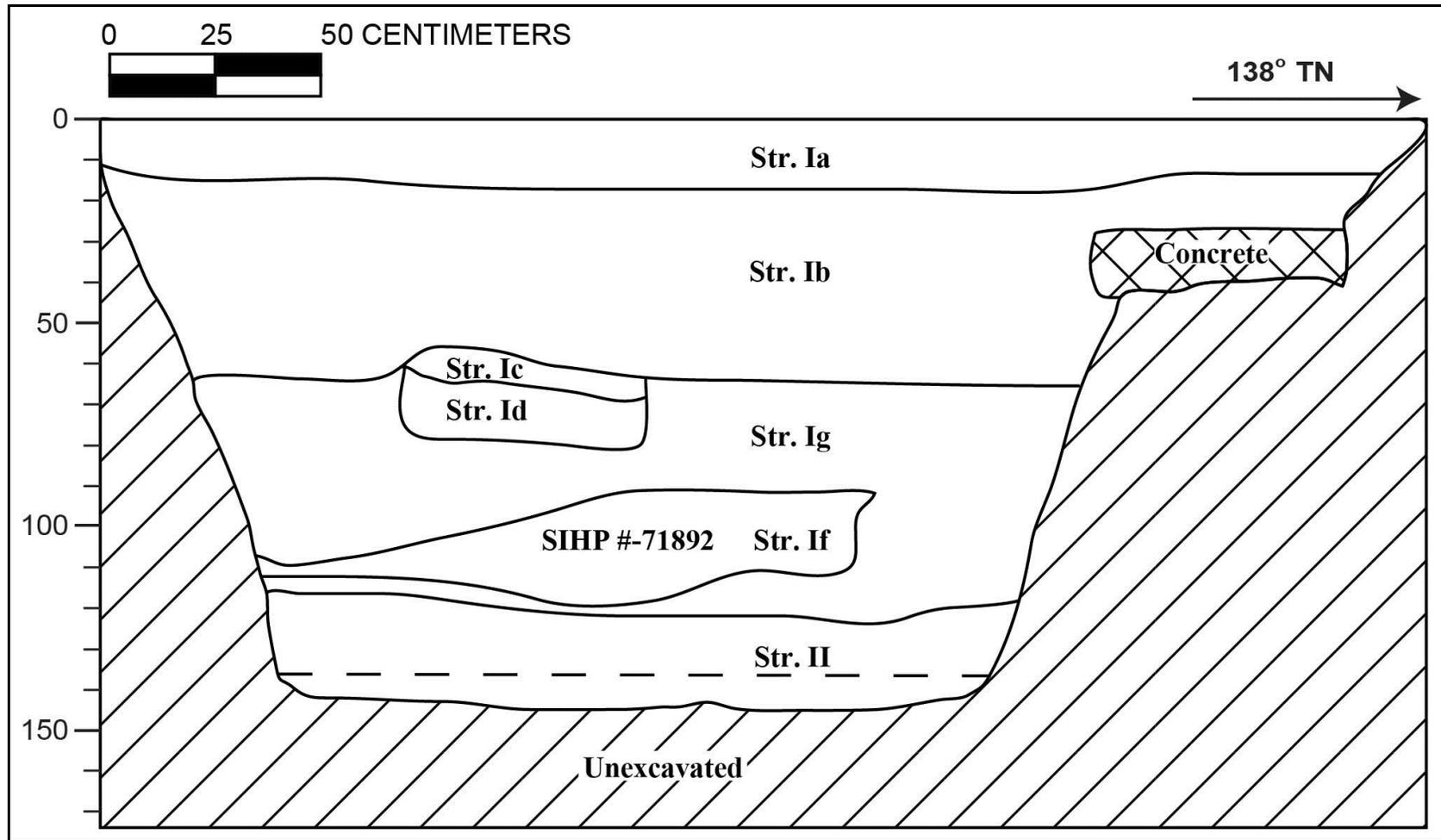
**Summary:** T-134 was excavated to a depth of 1.45 mbs. beneath the water table at 1.36 mbs. The stratigraphy of T-134 consisted of fill strata (Ia-Ie) overlying natural sediment (II) to the base of excavation. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA). Datable attributes of bottles collected from Stratum Ib suggest the stratum represents a late-nineteenth early-twentieth century fill. Artifacts collected from Stratum Ie indicate it also a late-nineteenth to early-twentieth century fill. Datable attributes on the glass bottles collected from Stratum If the stratum was deposited in the nineteenth century. Faunal remains were considered to be part of post-Contact strata and not of traditional Hawaiian origin. The results of the sample analysis indicate that shell midden (15.2 g), non-midden shell (2.9 g), organics (3.3 g), and faunal remains (0.2 g) were identified in Stratum II. Stratum If was considered to be a component of SIHP# 50-80-14-7189.



T-134 general location (view to northwest).



T-134 northeast wall profile.



T-134 view north wall profile

## T-134 stratigraphic description

<b>Stratum</b>	<b>Depth (mbs)</b>	<b>Description</b>
Ia	0-15	Concrete, sidewalk
Ib	15-65	Fill; 10 YR 3/2 (very dark grayish brown); very gravelly sandy loam; moderate, fine, crumb structure; moist, loose, weak consistency; non-plastic; terrigenous origin; clear, irregular lower boundary; contained green glass, blue/white broken dish, small bottle, faunal; utility/sidewalk fill with coral inclusions
Ic	55-70	Fill; 10 YR 8/2 (very pale brown); silty sand; very fine, crumb structure; moist, friable consistency; non-plastic; marine origin; abrupt, broken/discontinuous lower boundary
Id	65-80	Fill; 10 YR 4/1 (dark gray); silty sandy loam; weak, fine, crumb structure; moist, friable consistency; non-plastic; terrigenous origin; abrupt, broken/discontinuous lower boundary
Ie	65-117	Fill; 10 YR 4/3 (brown); very gravelly sandy clay loam; moderate, fine, crumb structure; moist, friable consistency; slightly plastic; terrigenous origin; abrupt, broken/discontinuous lower boundary
If	95-115	Fill; 10 YR 2/1 (black); silty sandy clay; weak, fine, blocky structure; moist, firm consistency; slightly plastic; terrigenous origin; abrupt, broken/discontinuous lower boundary, contained ceramics and glass; SIHP # -7189
II	115-145	Natural; 10 YR 5/1 (gray); silty sandy clay; moderate, fine, crumb structure; moist, firm consistency; plastic; mixed origin; lower boundary not visible; snail shells inclusions, natural waterlogged material

T-134 Artifact Analysis Table

Acc. # 134- A-	Provenience	Ceramic Vessel Type	Portion	No.	Paste; Decoration	Origin; Age	Comments
1	T-134, St. Ib	Crock	Rim	1	Stoneware- slip glaze		
2	T-134, St. Ib	Hollowware - bowl	Base to body	1	Porcelain; Celadon green	Asian	High Foot
3	T-134, St. Ib	Hollowware - bowl	Base to rim	1	Porcelain; Transfer- print	Asian	Dashed-line transfer- print; high foot; Three- Friends motif in interior
4	T-134, St. Ie	Hollowware - bowl	Base to body	1	Porcelain; Painted overglaze	Asian	Probably Four Flowers motif; green leaves; red chrysanthemum in center
5	T-134, St. Ie	Hollowware - bowl	Base to rim	1	Porcelain; Painted overglaze	Asian	Four Flowers motif; Chrysanthemum with yellow star; One exterior gold band; large Asian bowl
6	T-134, St. Ie	Flatware	Base	2	Porcelain; Painted overglaze		Small blue & red flowers, red stems; flatware; very thin
7	T-134, St. Ie	Hollowware - cup	Base to rim	1	Porcelain; Transfer- print	Asian	Dashed line transfer-print with calligraphy panels; interior rim with pendant pattern
8	T-134, St. If	Flatware	Base	1	Earthenware, Refined (Stoneware)e		
9	T-134, St. Ie	Bottle, Sake	Base to neck	1	Stoneware	Asian	Stoneware; bottom unglazed; white glaze
10	T-134, St. If	Crock	Base	1	Stoneware		Unglazed

Acc. # 134- A-	Provenience	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
11	T-134, St. Ib	Bottle	Body	2	Green, Light		Fragments from same vessel
12	T-134, St. Ib	Bottle, Spirits	Base	1	Olive, Dark	1800-post	Push - up
13	T-134, St. Ib	Bottle	Body	1	Brown		
14	T-134, St. Ib	Bottle, Soda	Body	1	Aqua	American; 1910- 1916	Honolulu Soda Water Co. , Honolulu
15	T-134, St. Ib	Bottle	Body	1	Clear	1870s- post	
16	T-134, St. Ib	Vial, Medicine	Complete	1	Aqua	1870s- post	
17	T-134, St. Ie	Bottle, Beverage	Base- neck	1	Green	1860- 1920s	
18	T-134, St. If	Bottle	Body	1	Amber		Mass of glass
19	T-134, St. If	Bottle	Body	1	Green		
20	T-134, St. If	Bottle	Body	1	Green, Light		
21	T-134, St. If	Bottle, Beverage	Complete	1	Olive, Dark	1820- 1890	Push-up
22	T-134, St. If	Bottle, Beverage	Complete (almost)	2	Olive, Dark	1820- 1890	
23	T-134, St. If	Bottle, Medicine	Complete	1	Green, Light	English; Mid- later 1870s	Keating's Cough Lozenges, St. Paul's Churchyard, London
Acc. # 134- A-	Provenience	Miscellaneous Type	Portion	No.	Material	Origin; Age	Description
24	T-134, St. If	Lid	Fragment	1	Ceramic	English; 1853- 1914	Cherry Toothpaste; jar by Gosnell & J Co., London)
25	T-134, St. Ib	Flowerpot/ planter	Rim	1	Ceramic		Rim fragment - glazed
26	T-134, St. Ic	Marble	Complete	1	Ceramic	--	Refined earthenware marble - spattered glaze
27	T-134, St. Ie	Flower pot/ planter	Base	1	Ceramic		Base fragment - unglazed
28	T-134, St. If	Flower pot/ planter	Base	1	Ceramic		Base fragment - unglazed
29	T-134, St. If	Flowerpot/ planter	Base	1	Ceramic		Base fragment - unglazed
30	T-134, St. Ib	Nail	Fragment	1	Metal	--	



T-134 ceramic fragments (Acc. # 134-A-1 to A-3) – interior - collected from Stratum Ib



T-134 ceramic fragments (Acc. # 134-A-1 to A-3) – exterior - collected from Stratum Ib



T-134 ceramic fragments (Acc. # 134-A-4 to A-9) – exterior collected from Stratum Ie



T-134 ceramic fragments (Acc. # 134-A-4 to A-9) – interior collected from Stratum Ie



T-134 stoneware fragment (Acc. # 134-A-10) collected from Stratum If



T-134 glass bottle fragments (Acc. # 134-A-11 to A16, shown from left to right) collected from Stratum Ib



T-134 glass bottle (Acc. # 134-A-17) collected from Stratum Ie



T-134 glass bottles and fragments (Acc. # 134-A-18-A-22) collected from Stratum If



T-134 ceramic toothpaste container (Acc. # 134-A-24) collected from Stratum If



T-134 ceramic toothpaste container collected from Stratum If

## T-134 Terrestrial vertebrate material collected individually during excavation

Acc. #	Stratum	Depth(cmbs)	Feature	Family/Class	Species	Element	Description	Modification
134-F-1	Ib	15-60	-	Bovidae (cow)	<i>Bos taurus</i>	Right femoral head (pieces mend)	Fragments	None
134-F-2	Ib	15-60	-	Suidae (pig)	<i>Sus scrofa</i>	Right femoral diaphysis section with femoral head (pieces mend)	Fragments	None
134-F-3	Ib	15-60	-	Mammalia	Medium mammal	Epiphysis portions; Diaphysis sections	Fragments	None
134-F-4	Ib/Ic	60	-	Bovidae (cow)	<i>Bos taurus</i>	Tibia diaphysis section	Fragment	Butchered both ends (cut with metal blade)
134-F-5	Ib/Ic	60	-	Mammalia	Medium mammal	Cranial	Fragment	None
134-F-6	Ib/Ic	60	-	Mammalia	Medium mammal	Irregular bone	Fragment	None

### 3.30 Test Excavation 135 (T-135)

<b>Ahupua'a:</b>	Honolulu
<b>LCA :</b>	7712:6
<b>TMK #:</b>	2-1-031: 030 [Plat]
<b>Elevation Above Sea Level:</b>	1.4 m
<b>UTM:</b>	618331.45 mE, 2355926.15 mN
<b>Max Length/Width/Depth:</b>	6.0 m / 0.6 m / N/A
<b>Orientation:</b>	140 / 320° TN
<b>Targeted Project Component:</b>	Station Building
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation 135 (T-135) was located within a building on the northeast (*mauka*) side of Halekauwila Street between South Street and Keawe Street. T-135 was located on private property. T-135 was abandoned because the location had been chosen based on a prior design of the station building footprint.

### 3.31 Test Excavation 136 (T-136)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-031:030
<b>Elevation Above Sea Level:</b>	1.22 m
<b>UTM:</b>	618330 mE, 2355920 mN
<b>Max Length/Width/Depth:</b>	7.03 m / 0.74 m / 1.85 m
<b>Orientation:</b>	142 / 322° TN
<b>Targeted Project Component:</b>	Station Column
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation 136 (T-136) was located parallel with Halekauwila Street between South and Keawe Streets within the eastern sidewalk surface. T-136 was located on public property owned by the City and County of Honolulu. T-136 was relocated approximately 2 m west and extended by approximately three meters in order to compensate for the abandonment of T-135, which was located within an existing building. Telecommunications, electrical and storm drain lines were located within 2 m of T-136. The excavation surface was elevated from the roadway.

**Summary of Background Research and Land Use:** The 1883 Baldwin map indicates that the landscape surrounding T-136 was undeveloped and included three small ponds to the northwest of the excavation area. The 1884 Bishop Honolulu to Kewalo map showed T-136 within LCA 7712:6 which was awarded to V. Kamāmalu. The 1897 Monsarrat Honolulu map showed T-136 still located southeast of three small ponds and with urban development present in the vicinity. According to the 1919-1953 War Honolulu maps, the three small ponds that were present near the location of T-136 had been filled, and urban development had increased to present-day.

Previous archaeological investigations within the vicinity of T-136 included several studies, including archaeological investigations at the Honuakaha cemetery which identified 152 burials (SIHP # 50-80-14-4531 and SIHP # 50-80-14-3712) approximately 40 m northeast of T-136 (Pfeffer, Borthwick, Hammatt 1993, and Avery and Kennedy 1993). T-136 was located approximately 20 m east of an archaeological inventory survey conducted by Pammer, Fong, and Hammatt (2011, in progress) where four historic properties were identified, including SIHP # 50-80-14-7124, historic building structures, a burnt historic trash layer (-7189), salt pan remnants (-7190), and a late pre-Contact/post-Contact cultural layer containing one pit feature (-7197). Additionally, T-136 was approximately 85 m southwest of a previous archaeological study by Winieski and Hammatt (2001), which documented a remnant of the Light-Gauge Rail (-5942). An archaeological study conducted by Leidemann (1988), approximately 150 m northwest of T-136, identified one post-Contact subsurface cultural deposit (-1973). During archaeological monitoring for the Pohulani Elderly Rental Housing area (Winieski and Hammatt 2000), located within 5 m from T-136, two groupings of human burials were identified including nine burials at

the Pohulani Elderly Rental Housing (SIHP #- 4380) where three burials were preserved in place. Eleven burials were disinterred around Mother Waldren Park (SIHP #- 5820).

**Documentation Limitations:** T-136 was excavated to a depth of 1.85 mbs and beneath the water table at 1.33 mbs. A concrete jacket encountered in the northwest end of T-136 at approximately 1.10 mbs limited documentation of T-136.

**Stratigraphic Summary:** The stratigraphy of T-136 consisted of fill strata overlying natural sediment to the base of excavation. Observed strata included concrete (Ia), very gravelly sandy loam (Ib), extremely gravelly sand (Ic), silty sand fill (Id), silty loam fill (Ie), silty sandy loam fill (If), sandy loam fill (Ig), and sandy clay loam fill (Ih) overlying natural gravelly clay (II) to the water table. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** Three (3) artifacts (Acc. # 136-A-1 to A-3, see following photographs) were collected from Stratum Ih at 1.04 mbs. The artifacts included two complete glass bottles (Acc. # 136-A-1 and A-2) and one human shoe (Acc. # 136-A-3). One beer bottle was manufactured between 1905 and 1929, which suggests an early twentieth century fill event for Stratum Ih.

**Features Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** A single *Bos taurus* scapula fragment was collected individually during excavation from Stratum Ih (at 0.86 mbs). This bone showed marks from being butchered by a metal blade.

**Sample Results:** One bulk sediment sample (3.8 L) was collected from Stratum II at 1.85 mbs. The sediment sample was wet-screened. The sample contained Tellinidae *Tellina* sp. (37.1 g), Mytilidae *Brachidontes crebristriatus* (19.9 g), Echinodermata diadema sp. and mathaei sp. (9.2 g), Naticidae spp. (5.7 g), crustacean (3.9 g), Tellinidae *Tellina palatum* (0.9 g), burned shell (0.8 g), Trochidae sp. (0.5 g), Lucinidae *Ctena bella* (0.1 g), and Neritidae operculum (0.1 g).

Sample results documented the presence of numerous marine shell species within Stratum II. The marine shell is considered to be possible traditional food refuse (shell midden).

**GPR Discussion:** A review of amplitude slice maps indicated no linear features which might indicate the presence of utilities. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.5 mbs.

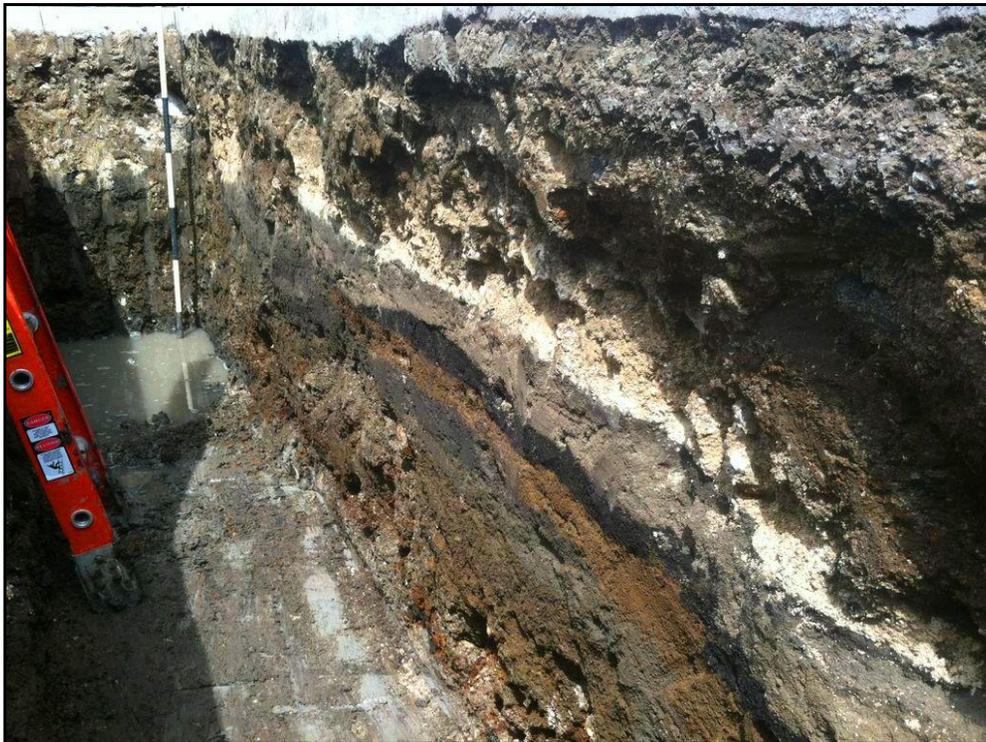
GPR depth profiles for T-136 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.25 mbs. An anomaly was observed in the profile but was not encountered during excavation. The maximum depth of clean signal return was approximately 0.8 mbs.

**Summary:** T-136 was excavated to a depth of 1.85 mbs, and the water table was located at 1.33 mbs. The stratigraphy of T-136 consisted of fill strata (Ia-Ih) overlying natural sediment to the base of excavation (II). The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EwA). A single *Bos taurus* scapula fragment was collected individually

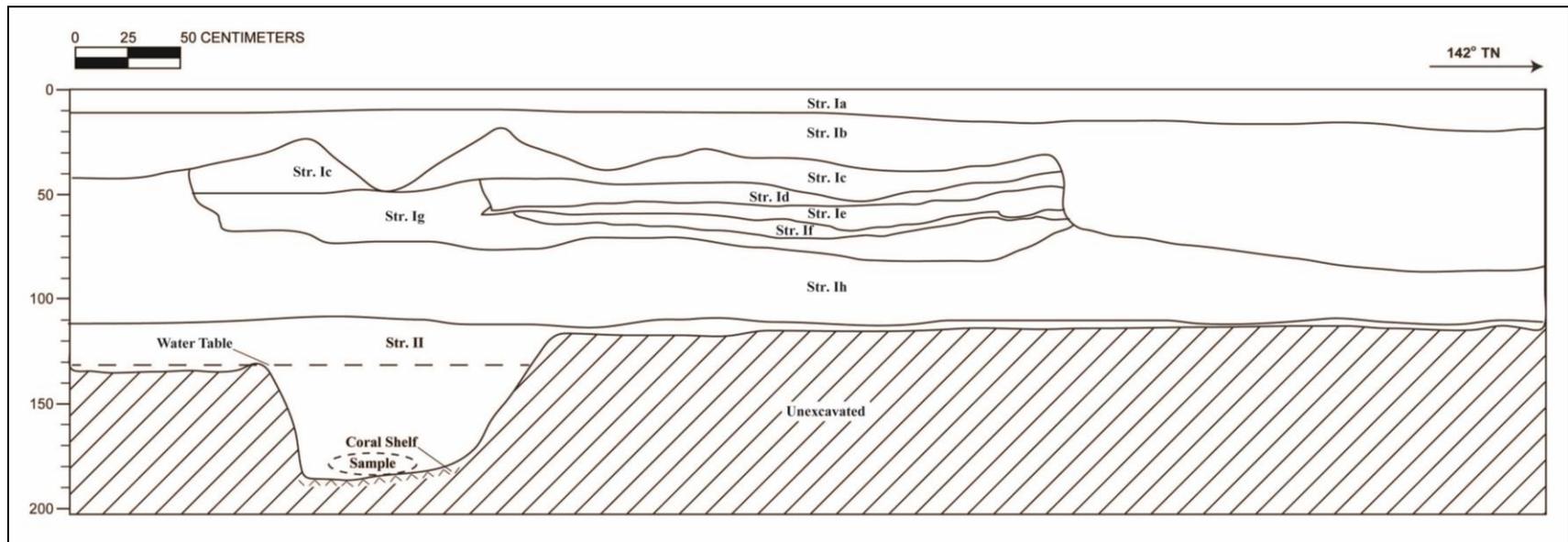
during excavation from Stratum I<sub>h</sub> (at 0.86 mbs). This bone showed marks from being butchered by a metal blade. One bulk sediment sample (3.8 L) was collected from Stratum II at 1.85 mbs. The sediment sample was wet-screened. Sample results documented the presence of numerous marine shell species within Stratum II. The marine shell is considered to be possible traditional food refuse (shell midden).



T-136 general location, view to southeast



T-136 northeast profile wall, view to north



T-136 northeast wall profile

## T-136 Stratigraphic description

<b>Stratum</b>	<b>Depth (cmbs)</b>	<b>Description</b>
Ia	0-16	Concrete sidewalk surface
Ib	10-84	Fill; 10 YR 4/3 (brown); very gravelly sandy loam; structureless, single-grain; moist, loose consistency; non-plastic; mixed origin; clear lower boundary; contained oxidized metal fragments; fill
Ic	20-52	Fill; 10 YR 7/3 (very pale brown); extremely gravelly sand; structureless, single-grain; moist, loose consistency; non-plastic; marine origin; abrupt lower boundary
Id	40-58	Fill; 10 YR 5/2 (grayish brown); silty sand; structureless, single-grain; moist, loose, non-sticky consistency; non-plastic; marine origin; broken/discontinuous lower boundary
Ie	46-68	Fill; 10 YR 2/1 (black); silty loam; structureless, single-grain; moist, loose, non-sticky consistency; non-plastic; very abrupt, broken lower boundary
If	57-70	Fill; 7.5 YR 4/4 (brown); silty sandy loam; structureless, single-grain; moist, loose consistency; non-plastic; mixed origin; abrupt lower boundary;
Ig	44-78	Fill; 7.5 YR 3/1 (very dark gray); sandy loam; structureless, single-grain; moist, very friable consistency; slightly plastic; mixed origin; abrupt, broken/discontinuous lower boundary
Ih	40-114	Fill; 10 YR 3/3 (dark brown); sandy clay loam; structureless, single-grain; moist, firm consistency; slightly plastic; mixed origin; clear boundary; contained brown and green milk glass, earthenware
II	108-185	Natural; 10 YR 5/1 (gray); gravelly clay; structureless, massive; wet, sticky consistency; slightly plastic; marine origin, lower boundary not visible; natural marine clay and decomposing coral shelf.



T-136 glass bottle (Acc. # 136-A-1) collected from Stratum Ih



T-136 glass bottle (Acc. # 136-A-2) collected from Stratum Ih

### 3.32 Test Excavation 137 (T-137)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-031:030
<b>Elevation Above Sea Level:</b>	1.33 m
<b>UTM:</b>	618342.63 mE, 2355904.69 mN
<b>Max Length/Width/Depth:</b>	3.03 m / 0.92 m / 1.45 m
<b>Orientation:</b>	314 / 134° TN
<b>Targeted Project Component:</b>	Station Column
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation 137 (T-137) was parallel with Halekauwila Street between South and Keawe Streets within the eastern sidewalk surface. T-137 was located on property owned by the city of Honolulu. T-137 was relocated approximately 2 m west due to its proximity to an existing building. The excavation surface was slightly elevated from the surrounding land surface.

**Summary of Background Research and Land Use:** The 1883 Baldwin map indicates that the landscape surrounding T-137 was undeveloped and included three small ponds to the northwest of the excavation area. The 1884 Bishop Honolulu to Kewalo map showed T-137 within LCA 7712:6 which was awarded to V. Kamāmalu. The 1897 Monsarrat Honolulu map showed T-137 still located southeast of three small ponds and with urban development present in the vicinity. According to the 1919-1953 War Honolulu maps, the three small ponds that were present near the location of T-137 had been filled, and urban development had increased to present-day.

Previous archaeological investigations within the vicinity of T-137 included several studies, including archaeological investigations at the Honuakaha cemetery which identified 152 burials (SIHP # 50-80-14-4531 and SIHP # 50-80-14-3712) approximately 120 m northeast of T-137 (Pfeffer, Borthwick, Hammatt 1993, and Avery and Kennedy 1993). T-137 was located within 20 m east of an archaeological inventory survey conducted by Pammer, Fong, and Hammatt (in progress-2011) where four historic properties were identified, including SIHP # 50-80-14-7124, historic building structures, a burnt historic trash layer (-7189), salt pan remnants (-7190), and a late pre-Contact/post-Contact cultural layer containing one pit feature (-7197). Additionally, T-137 was approximately 105 m southwest of previous archaeological study by Winieski and Hammatt (2001), which documented a remnant of the Light-Gauge Rail (SIHP# -5942). During archaeological monitoring for the Pohulani Elderly Rental Housing and surrounding areas within 10 m from T-137, two groupings of human burials were identified including nine burials at the Pohulani Elderly Rental Housing (SIHP #- 4380) where three burials were preserved in place. Eleven burials were disinterred around Mother Waldren Park (SIHP #- 5820).

**Documentation Limitations:** T-137 was excavated to a depth of 1.45 mbs and beneath the water table at 1.41 mbs. There were no specific factors that limited documentation of T-137.

**Stratigraphic Summary:** The stratigraphy of T-137 consisted of fill strata over natural sediment to the water table. Observed strata included sidewalk concrete (Ia), very gravelly loamy sand

(Ib), and silty sandy clay fill (Ic), overlying natural silty sandy clay (II) to the water table. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** A total of nine (9) artifacts (Acc. # 137-A-1 to A-9, see following table and photographs) were collected from Stratum Ib at 1.0-1.10 mbs. The artifacts included one white hollowware fragment, one complete glass bottle, one red, machine-made brick, a human shoe, and other miscellaneous items. Datable attributes from the glass bottle indicated an age range of manufacture between 1900 and 1920, which suggests that the stratum (very gravelly loamy sand) post-dates the early twentieth century. A crushed soda bottle made of PET plastic, which was invented in 1973, was also found in the stratum, indicating mixture with modern materials.

**Features Discussion:** No features were observed.

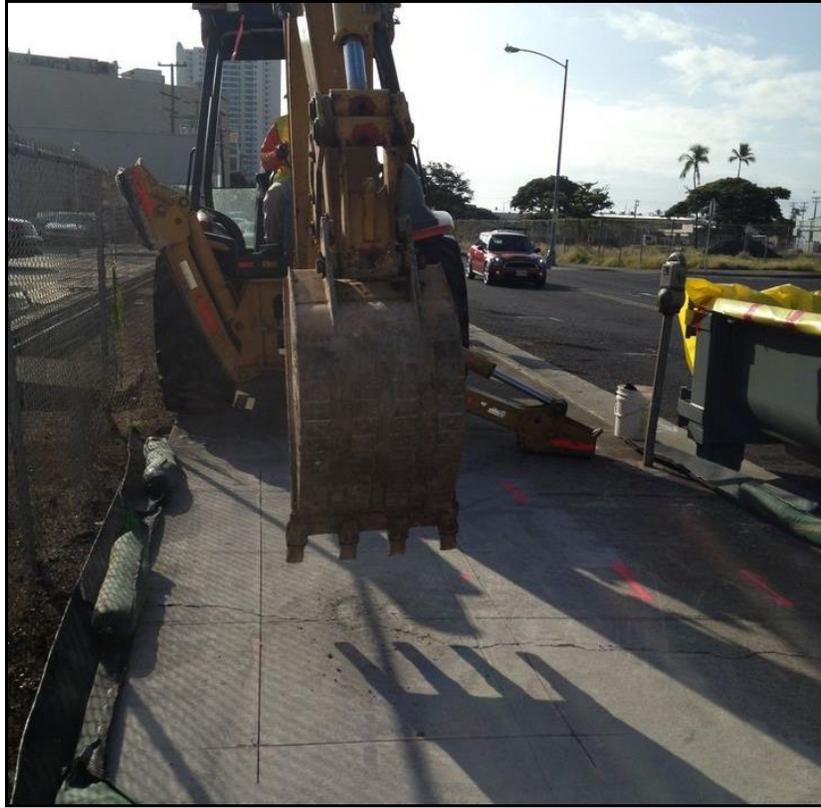
**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains collected individually during excavation from Stratum Ib (at 1 mbs) consisted of a *Bos taurus* rib fragment, and a *Canis lupus familiaris* (possible) ulna fragment. The *Bos taurus* rib showed marks from being butchered by a metal blade.

**Sample Results:** No sample analysis was conducted.

**GPR Discussion:** A review of amplitude slice maps indicated no linear features which might indicate the presence of utilities. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.5 mbs.

GPR depth profiles for T-137 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.3 mbs. An anomaly was observed in the profile but was not encountered during excavation. The maximum depth of clean signal return was approximately 0.8 mbs.

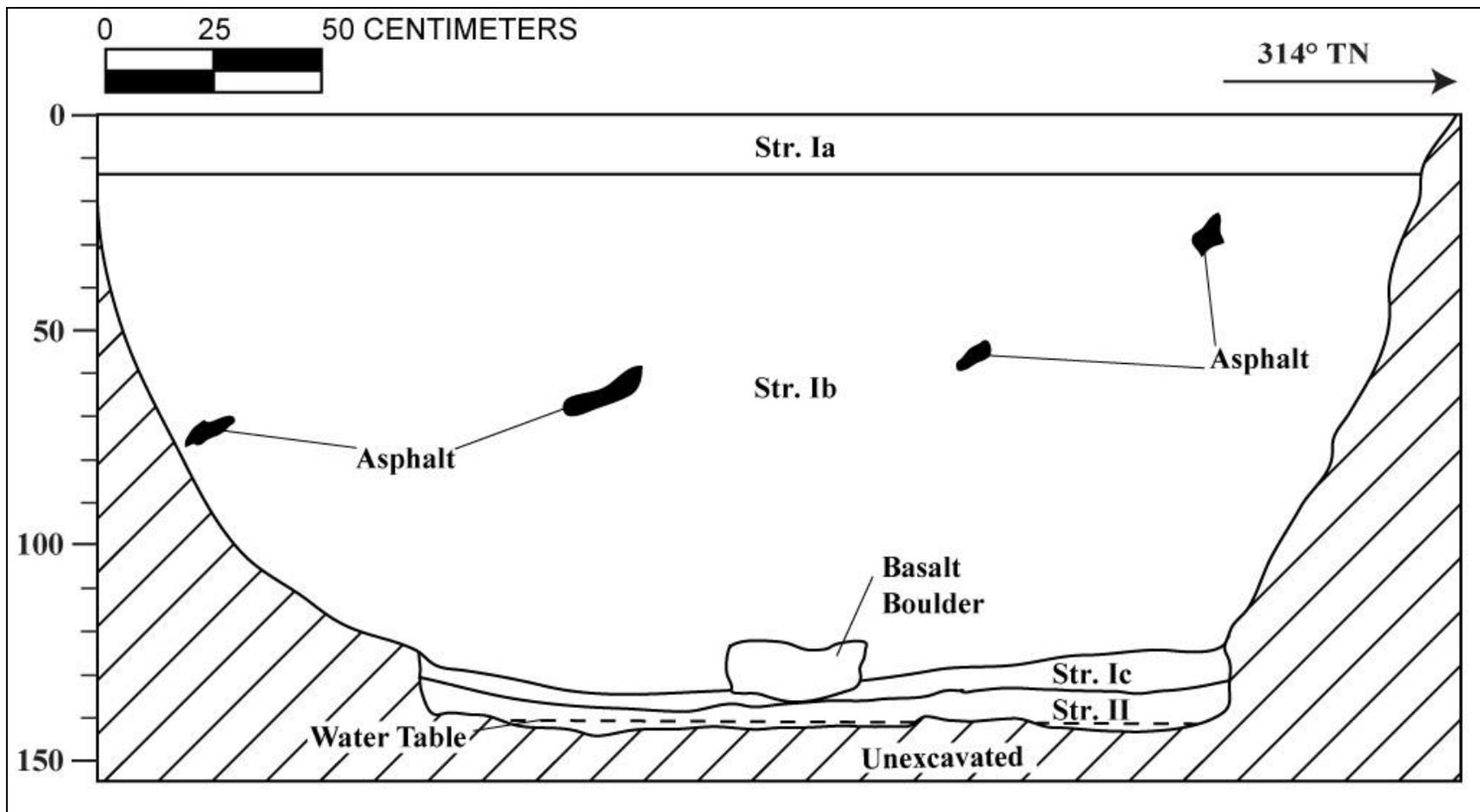
**Summary:** T-137 was excavated to a depth of 1.45 mbs and beneath the water table at 1.41 mbs. The stratigraphy of T-137 consisted of fill strata (Ia-Ic) over natural sediment (II) to the water table. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA). Faunal remains collected individually during excavation from Stratum Ib (at 1 mbs) consisted of a *Bos taurus* rib fragment, and a *Canis lupus familiaris* (possible) ulna fragment. The *Bos taurus* rib showed marks from being butchered by a metal blade. No cultural resources were identified within T-137.



T-137 general location, view to southeast



T-137 southwest profile wall



T-137 southwest wall profile

## T-137 Stratigraphic Description

<b>Stratum</b>	<b>Depth (cmbs)</b>	<b>Description</b>
Ia	0-15	Concrete
Ib	15-135	Fill; 10 YR 4/2 (dark grayish brown); very gravelly loamy sand; weak, fine, crumb structure; moist, loose consistency; non-plastic; terrigenous origin; abrupt lower boundary; contained faunal, wood, clear glass pieces, ceramic, green glass, road asphalt, large concrete slab; base coarse fill for sidewalk
Ic	121-136	Fill; 10 YR 2/1 (black); silty sandy clay; weak, fine, blocky structure; moist, friable consistency; non-plastic; terrigenous origin; abrupt, irregular lower boundary; contained basalt curb stone, glass fragments; historic trash layer with minor charcoal
II	134-145	Natural; 10 YR 5/1 (gray); silty sandy clay; moderate, fine crumb structure; moist, firm consistency; plastic; lower boundary not visible; natural marine clay

T-137 Artifacts Analysis Table.

Acc. # 137-A-	Provenience	Ceramic Vessel Type	Portion	No.	Paste; Decoration	Origin; Age	Comments
1	T-137, St. Ib	Hollowware	Body to rim	1	Porcelain		White; molded; 7.8 (D)
Acc. # 137-A-	Provenience	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
2	T-137, St. Ib	Bottle, Spirits	Complete	1	Olive	1900- 1920	Kick-up base; beveled champagne lip
Acc. # 137-A-	Provenience	Miscellaneous Type	Portion	No.	Material	Origin; Age	Comments
3	T-137, St. Ib	Flowerpot/ planter	Base to rim	1	Ceramic		Base to rim fragment - glazed with molded flutes
4	T-137, St. Ib	Brick	Fragment	1			red color, machine-made
5	T-137, St. Ib	Fuse	Fragment	1	Composite		Ceramic and metal
6	T-137, St. Ib	Mother-of- pearl disk	Complete	1	Shell		Thin disk; unknown function
7	T-137, St. Ib	Soda bottle	Complete	1	Plastic	1973- post	Crushed soda bottle, white plastic screwtop; the PET bottle was patented in 1973
8	T-137, St. Ib	Machine Part - Rod	Fragment	1	Metal		
9	T-137, St. Ib	Shoe, Human	Heel	1	Leather		No holes along sides(glued; post 1926; IMACS 1992)



T-137 ceramic fragment (Acc. # 137-A-1) collected from Stratum Ib



T-137 glass bottle (Acc. # 137-A-2) collected from Stratum Ib



T-137 ceramic fragment (interior) (Acc. # 137-A-3) collected from Stratum Ib



T-137 ceramic fragment (exterior) (Acc. # 137-A-3) collected from Stratum Ib