

2.14 Test Excavation 103 (T-103)

Ahupua'a:	Honolulu
LCA :	N/A
TMK #:	1-7-002 [Plat]
Elevation Above Sea Level:	2.3 m
UTM:	617710.94 mE, 2357051.55 mN
Max Length/Width/Depth:	7.40 m / 0.80 m / 1.45 m
Orientation:	326 / 146° TN
Targeted Project Component:	Utility Relocation
USDA Soil Designation:	Fill land (FL)

Setting: Test Excavation 103 was located in the center lane of the south-bound side of Nimitz Highway, approximately 50 meters northwest of North Nimitz Highway and Maunakea Street intersection. T-103 was located on property owned by the State of Hawai'i. T-103 was located 1.5 m southwest of a gas line and 19 m northwest of a sewer line. The excavation surface was level with the surrounding land surface.

Summary of Background Research and Land Use: According to the 1847 Metcalf Downtown map, T-103 was 19 m southwest from the former shoreline. By 1887, T-103 was approximately 13 m inland (1887 Wall Honolulu map). According to the 1897 Monsarrat map, T-103 was located 6 m west of Queen Street and 280 m northeast (*mauka*) of the railway wharf. By 1919, T-103 was within the railway wharf and the surrounding area was built up with urban expansion. By 1953, T-103 was located within the road that is currently Nimitz Highway.

Previous archaeology in the area surrounding T-103 included several studies. T-103 was located within the site of a 2001 archaeological inventory survey for proposed Nimitz Highway water system improvements in the downtown Honolulu area. The study focused primarily on investigating Kawa Fish Pond (SIHP # 50-80-14-5966). The study determined the pond boundaries and test excavations were positive for fishpond sediments. A clear construction date for Kawa Fish Pond was not determined but sample analysis suggested fishpond sediments were accumulating since at least AD 1150-1350 (McDermott and Mann 2001). Approximately 50 m southwest of T-103, Wong, Smith, and Rosendahl (1990) conducted an historic assessment study of the proposed Aloha Tower Complex project site. The study determined that the area sat on historic period fill which had been placed in a formerly submerged area. It was determined there were no pre-Contact remains in the area, or if remains were present they were subsurface and brought in with fill.

Documentation Limitations: T-103 was excavated to the coral shelf at a depth of 1.45 mbs. There were no specific factors that limited documentation of T-103.

Stratigraphic Summary: The stratigraphy of T-103 consisted of fill strata to the coral shelf. Observed strata included asphalt (Ia), gravel base course fill (Ib), very gravelly sand (Ic), silt loam fill (Id) to the coral shelf. The stratigraphy conformed to the USDA soil survey designation of Fill land (FL).

Artifacts Discussion: No artifacts observed.

Feature Discussion: No features observed.

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

Sample Results: No bulk sediment samples were collected during the investigation of T-103.

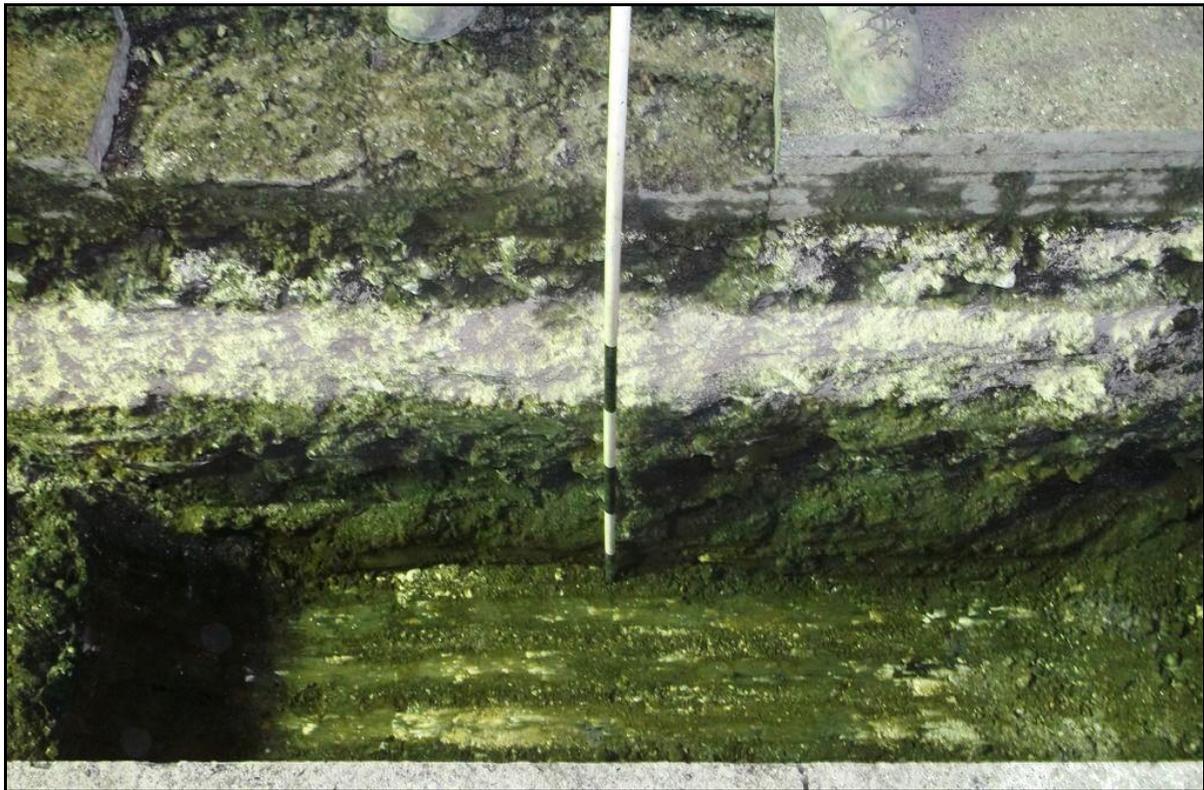
GPR Discussion: A review of amplitude slice maps indicated no linear features which might indicate the presence of utilities. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.25 mbs and increases again around 0.75 mbs.

GPR depth profiles for T-103 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 and again around 0.45 and 0.70 mbs. No utilities were observed in the profile. The maximum depth of clean signal return was approximately 1.0 mbs.

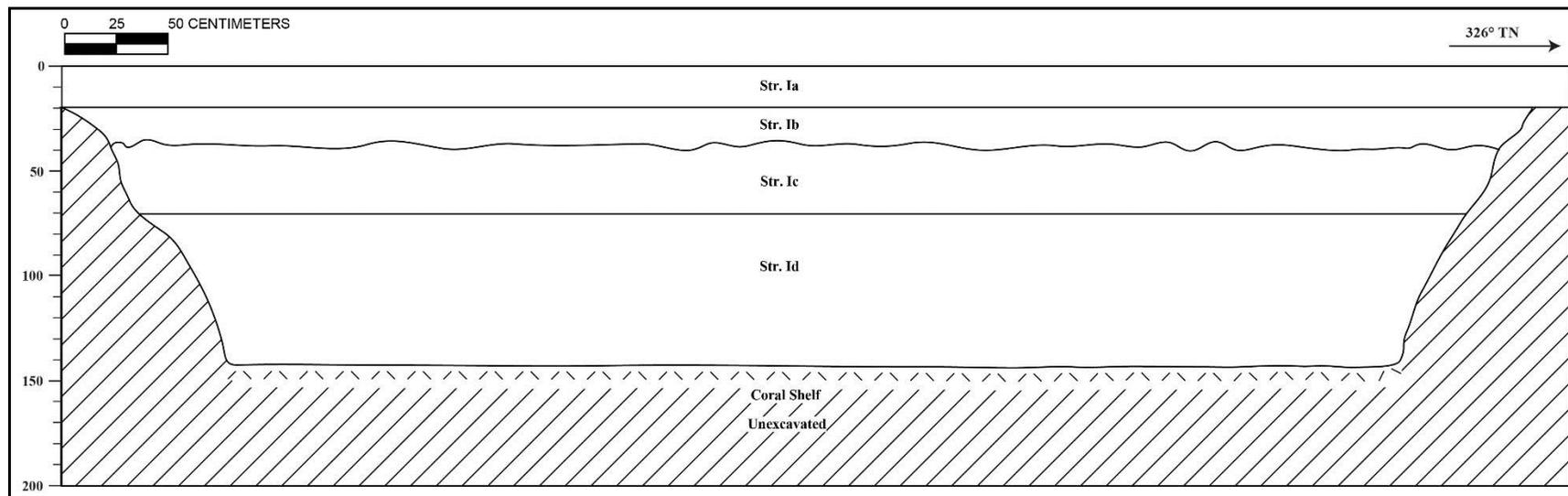
Summary: T-103 was excavated to the coral shelf at a depth of 1.45 mbs. The stratigraphy of T-103 consisted of fill strata (Ia-Id) to the coral shelf. The stratigraphy conformed to the USDA soil survey designation of Fill land (FL). No natural sediment was observed. No cultural resources were identified within T-103.



T-103 general location, view to west



T-103 southwest wall profile



T-103 southwest wall profile

T-103 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-20	Asphalt
Ib	20-40	Fill; 10 YR 5/1; (gray) gravel; structureless, single-grain; dry, loose consistency; non-plastic; terrigenous origin; abrupt, wavy lower boundary; base course with subangular cobbles
Ic	40-71	Fill; 10 YR 4/1 (pale yellow); very gravelly sand; structureless, single-grain; dry, loose consistency; non-plastic; marine origin; very abrupt, smooth lower boundary; crushed coral
Id	71-145	Fill; 2.5 YR 1/2 (dark olive brown); silt loam; structureless, single-grain; moist, loose consistency; slightly plastic; terrigenous origin; abrupt lower boundary; loam fill

2.15 Test Excavation 104 (T-104)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	1-7-002 [Plat]
Elevation Above Sea Level:	2.3 m
UTM:	617749.51 mE, 2357023.84 mN
Max Length/Width/Depth:	6.12 m / 0.76 m / 2.14 m
Orientation:	314 / 134° TN
Targeted Project Component:	Utility relocation
USDA Soil Designation:	Fill land (FL)

Setting: Test Excavation 104 (T-104) was located within the northbound bicycle lane of Nimitz Highway. T-104 was located on property owned by the State of Hawai'i. Utilities within the vicinity of T-104 which included a water line 2 m south, an telephone line 1 m west and a sewer line 2 m northeast of T-104. The excavation surface was level with the surrounding land surface.

Summary of Background Research and Land Use: Although T-104 was not within an LCA, T-104 was located 17 m southwest of LCA 256 (where one house lot was awarded to Kalukini) and 15 m LCA 2938 (where one vineyard (planted by Francisco Marin) was awarded to Juan Marin [grandson of Marin]). A small group of LCAs were located nearby T-104 and the land use was described as habitation. According to the 1847 Metcalf Downtown map, T-104 was 11.5 m east of the old shore line. The 1886 Wall map showed urban reclamation and development. The 1897 Monsarrat Honolulu map indicated continued urban and industrial development. The 1953 Army Mapping Service Honolulu map showed that T-104 was located within what is now modern day Nimitz Highway.

Several historic properties are located within the vicinity of T-104. SIHP # 50-80-14-04192 (documented four post-Contact trash pits, a brick and motor building foundation, and a single pre-Contact human burial) was located 150 m north of T-104. SIHP #50-80-14-04875 (post-contact skeletal remains) was 141 m east T-104. SIHP # 50-80-14-04494 which included 28 post-contact burials, as well as pre-contact and post-contact subsurface features (i.e. fire pits/structural remnants) was located 26 m southeast of T-104. Also T-104 was located within the area designated for the archaeological inventory survey for the Proposed Nimitz Highway Water System Improvement (McDermott and Mann 2001).

Documentation Limitations: T-104 was excavated to a depth of 2.14 mbs. Coral boulders were encountered near the base, but due to safety reasons, excavation was terminated. It could not be determined if the coral shelf was encountered or if it was a cluster of coral boulders.

Stratigraphic Summary: The stratigraphy of T-104 consisted of fill strata to coral boulders or the coral shelf. Observed strata included asphalt (Ia), very gravelly loam (Ib), very gravelly sand fill (Ie), sandy loam fill with brick fragments (Id), gravelly fine sand fill with faunal bone (Ie),

loamy sand fill (If), sandy loam fill (Ig), coarse loamy sand fill (Ih), gravelly fine to coarse grained sand fill (Ii), sandy clay loam fill (Ij), extremely gravelly sandy clay loam fill with boulder inclusions (Ik), overlying coral boulders or the coral shelf. The stratigraphy conformed to the USDA soil survey designation of Fill land (FL).

Artifacts Discussion: A total of 58 artifacts (Acc. # 104-A-1 to A-58) were collected from Strata Id, If, Ig, and Ij with the majority in If (see table). Artifacts collected from Stratum Id included brick fragments lacking datable attributes. Stratum If artifacts consisted of ceramic fragments, including part of one large Asian rice bowl, a celadon/wintergreen rice bowl with an Asian character on the base, and possibly parts of four vessels. A minimum of eight spirits and soda bottles collected in Stratum If are common to the late nineteenth century, and include portions of a Crystal Soda Works, Honolulu bottle dating from the 1880s to 1890s. Artifacts consisting of building material fragments lacking datable attributes were also collected from Stratum If. Stratum Ig artifacts included ceramic fragments and bottle fragments of at least four spirits bottles, all of a dark olive color, typical of pre-twentieth bottles. Artifacts collected from Stratum Ij consisted of bottle fragments of a possible mouth-blown or early dip-mold blown bottle, which could date to the mid-eighteenth century or earlier. The artifacts collected from Strata Id, If, Ig, and Ij are consistent with historic fill deposits from the mid to late nineteenth century.

Features Discussion: No features were observed.

Terrestrial Faunal Remains Collected During Excavation: Faunal remains were collected individually during excavation in Strata Ie (at 0.5 mbs), If (at 0.65-0.90, 0.80-0.84, and 0.87-1.12 mbs respectively), Ig (1.15-1.25 mbs) and Ik (1.9-2.14 mbs). Stratum Ie produced a single complete and unmodified *Bos taurus* phalanx. Stratum If remains included *Sus scrofa* fragments between 0.65 and 0.90 mbs; *Bos taurus*, *Sus scrofa* and Medium mammal between 0.80 and 0.84 mbs; and *Sus scrofa* and *Canis lupus familiaris* between 0.87 and 1.12 mbs. The species represented in Stratum Ig consisted of *Bos taurus*, *Sus scrofa*, *Canis lupus familiaris* and unidentified medium mammal. While Stratum Ik contained skeletal elements of *Sus scrofa*, *Carpa aegagrus hircus* and unidentified medium mammal.

The *Bos taurus* and *Sus scrofa* from If, *Bos taurus* from Ig, and medium mammal from Ik, were all butchered using a metal blade, indicating an historic origin, not traditional Hawaiian. Additionally, the *Bos taurus* ribs from Ig had butcher marks made by a non-metal blade. The other bones showed no signs of cultural modification. All of the strata containing faunal material (Ie, If, Ig and Ik) are of post-Contact origin based on the presence of metal blade butcher marks and introduced species (eg. *Bos taurus* and *Carpa aegagrus hircus*) in each layer. The presence of *Carpa aegagrus hircus* in Stratum Ik provides a late 1700s *terminus post quem*.

Sample Results: A total of three sediment samples were collected from T-104 Stratum If and screened in the field.

A 0.75-liter screened sample was collected from Stratum If at 0.47-0.9 mbs. The sample contained midden (69.8 g) and small rusted metal fragments (0.2 g). Midden collected included Tellinidae *Tellina palatum* (56.8 g), Conidae *Conus* sp. (6.0 g), Naticidae *Natica* sp. (3.0 g), burned shell (2.1 g), Ostreidae (0.9 g), Lucinidae *Ctena bella* (0.8 g), Echinodermata (0.1 g), and Mytilidae *Brachidontes crebristriatus* (0.1 g).

A 1-liter screened sample was collected from Stratum If at 0.65-0.90 mbs. The sample contained charcoal (3.6 g), midden (103.3 g), naturally deposited shell (0.2 g), metal nails (26.9 g), metal fragments (2.5 g), two holed prosser buttons (0.5 g), and coal and slag (22.6 g). Midden collected included Tellinidae *Tellina* sp. (32.6 g), Naticidae *Natica* sp. (2.7 g), Isognomidae *Isognomon* sp. (3.5 g), Ostreidae (2.7 g), Echinodermata *diadema* sp. and *mathaei* sp. (0.9 g), Conidae *Conus* sp. (59.0 g), Cypraeidae *Cypraea caputserpentis* (1.1 g), and Mytilidae *Brachidontes crebristriatus* (0.7 g).

A 0.5-liter screened sample was collected from Stratum If at 0.87-1.12 mbs. The sample contained midden (6.7 g), silver metal ball (0.9 g), metal fragments (63.6 g), glass fragments (45.1 g), and water rounded gravel (13.6 g). Midden collected included Tellinidae *Tellina palatum* (4.5 g), Ostreidae (1.5 g), Neritidae *Nerita picea* (0.5 g), Cypraeidae (0.1 g), and Echinodermata *diadema* sp. (0.1 g).

The results of sample analysis indicated the moderate use of the former landscape. The presence of shell midden materials suggests temporary habitation and/or food consumption activities.

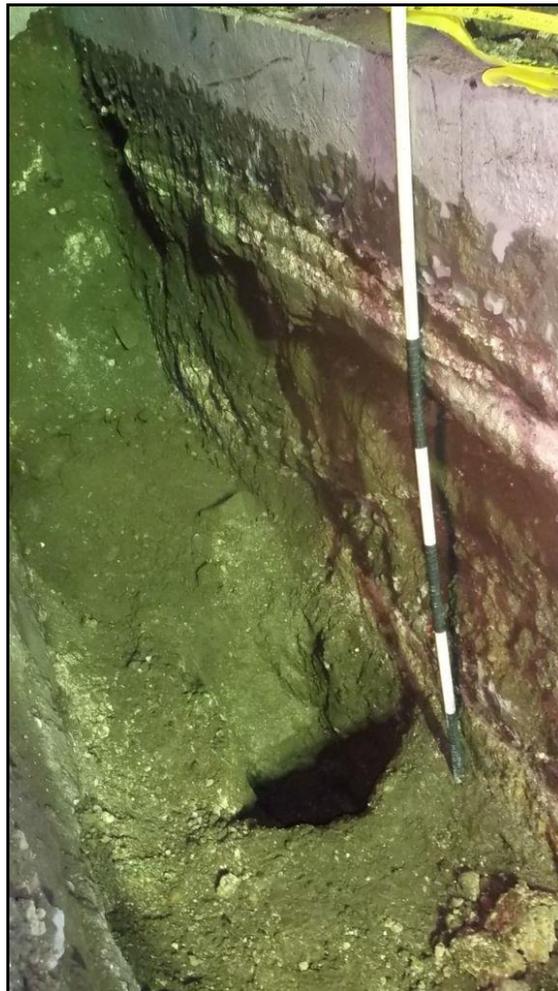
GPR Discussion: A review of amplitude slice maps indicated a linear feature but not within excavation boundaries. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.75 mbs.

GPR depth profiles for T-104 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. An anomaly was observed in the profile but not within excavation boundaries. The maximum depth of clean signal return was approximately 1.1 mbs.

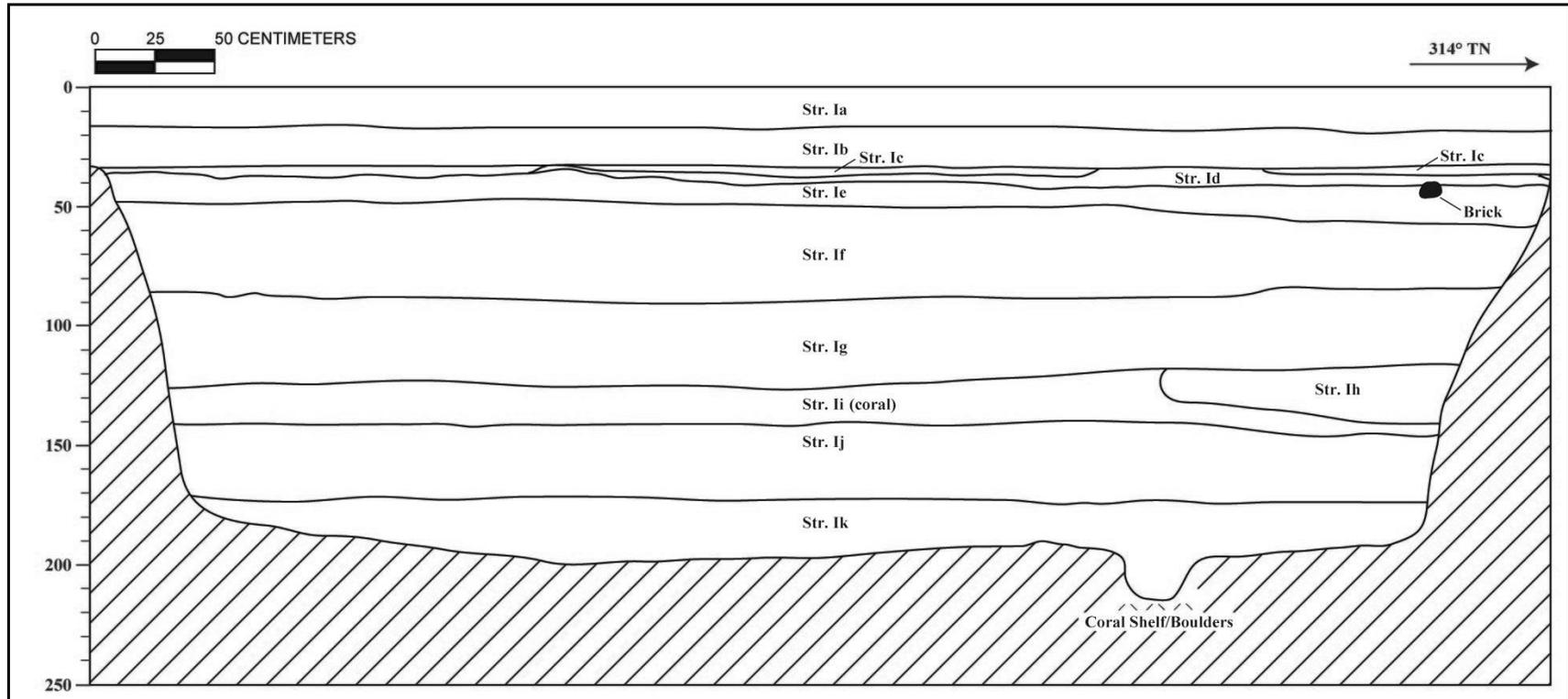
Summary: T-104 was excavated to a depth of 2.14 mbs. The stratigraphy of T-104 consisted of fill strata (Ia-Ik) to coral boulders or the coral shelf. The stratigraphy conformed to the USDA soil survey designation of Fill land (FL). The faunal remains collected from T-104 included *Bos taurus*, *Sus scrofa*, *Canis lupus familiaris*, *Carpa aegagrus hircus* and a few medium mammal species. The artifacts collected from Strata Id, If, Ig, and Ij are consistent with historic fill deposits from the mid-nineteenth century to the late nineteenth century. The results of sample analysis indicated the moderate use of the former landscape. The presence of shell midden materials suggests temporary habitation and/or food consumption activities.



T-104 general location (view to south).



T-104 southwest wall profile (view to south)



T-104 southwest wall profile

T-104 Stratigraphic Description

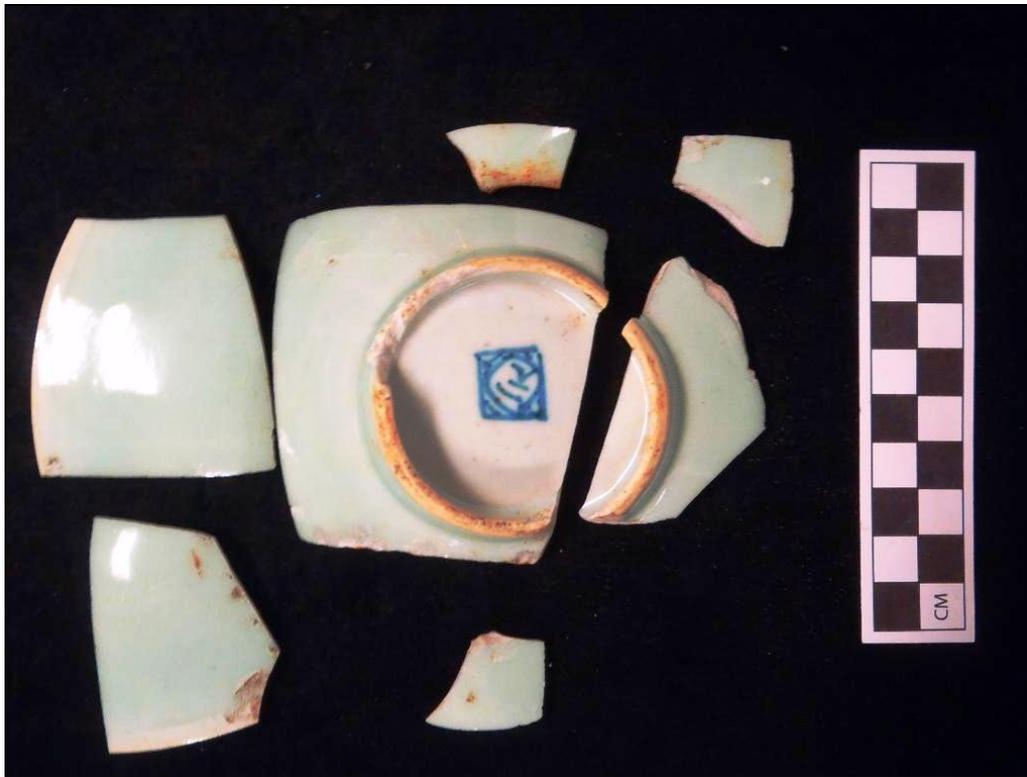
Stratum	Depth (cmbs)	Description
Ia	0–16	Asphalt
Ib	16–34	Fill; 10 YR 5/1 (gray); very gravelly loam; structureless, single-grain; moist; loose consistency; non-plastic; terrigenous origin; abrupt, smooth lower boundary; gravel base course
Ic	30–38	Fill; 10 YR 8/2 (very pale brown); very gravelly sand; structureless, massive; dry, very hard consistency; non-plastic; marine origin; abrupt, broken/discontinuous lower boundary; crushed coral
Id	34–41	Fill; 2.5 Y 3/2 (very dark grayish brown); sandy loam; structureless, massive; moist, firm consistency; slightly plastic; terrigenous origin; abrupt, smooth lower boundary; contained bricks
Ie	35–56	Fill; 2.5 YR 8/3 (pale yellow); gravelly fine sand; structureless, single-grain; moist, firm consistency; non-plastic; marine origin; abrupt, smooth lower boundary; contained faunal bone; slate/shale fragments, crushed coral
If	47–90	Fill; 2.5 Y 3/2 (very dark grayish brown); fine loamy sand; structureless, single-grain; moist, very friable consistency; non-plastic; mixed origin; clear, smooth lower boundary; contained faunal bone, historic (see sample chart); sandy alluvium, water worn cobbles
Ig	84–126	Fill; 10 YR 2/2 (very dark brown); sandy loam; structureless, massive; moist, friable consistency; slightly plastic; mixed origin; abrupt, smooth lower boundary; contained historic (see sample chart), faunal bone
Ih	115–143	Fill; 2.5 Y 5/3 (light olive brown) with burn band layers mottles GLEY 1 2.5/N (black); coarse loamy sand; structureless, single-grain; moist, friable consistency; non-plastic; mixed origin; abrupt, smooth lower boundary
Ii	117–145	Fill; 2.5 Y 7/2 (light gray); gravelly fine-coarse sand; structureless, single-grain; moist, very friable consistency; non-plastic; marine origin; abrupt, smooth lower boundary; crushed coral
Ij	140–174	Fill; 10 YR 2/2 (very dark brown); sandy clay loam; structureless, massive; moist, friable consistency; slightly plastic; mixed origin; clear, smooth lower boundary; contained glass, ceramic, basalt brick (see sample chart); shell
Ik	172–214	Fill; 10 YR 2/2 (very dark brown); extremely gravelly sandy clay loam; structureless, massive; wet, slightly sticky consistency; slightly plastic; mixed origin; lower boundary not visible; contained faunal bone, unstable coral gravels and boulders, water worn cobbles

T-104 Artifacts Analysis Table

Acc. # 104-A-	Prov.	Ceramic Vessel Type	Portion	No.	Paste; Decoration	Age; Origin	Comments
1	T-104, St. If	Hollowware - bowl	Base & body	20	Porcelain; Painted overglaze, incised, inlaid & gilded	Asian	Four Flowers; Asian shallow bowl; decoration on interior and exterior
2	T-104, St. If	Hollowware	Base to body	1	Earthenware		
3	T-104, St. If	Flatware	Base to body	1	Porcelain; Transfer- print	Asian	blue garland; Asian design; 10.0 (D)
4	T-104, St. If	Hollowware - bowl	Base to rim	7	Porcelain	Asian	Celadon; Asian characters on base
5	T-104, St. If	Dinnerware	Body	1	Porcelain; Painted underglaze		Black, white, green bands
6	T-104, St. If	Dinnerware	Body	1	Porcelain; Painted underglaze		
7	T-104, St. If	Dinnerware	Body	1	Porcelain; Painted underglaze		Blue band
8	T-104, St. If	Dinnerware	Base	1	Earthenware , Refined; Sponge, painted underglaze		Blue flowers?
9	T-104, St. If	Dinnerware	Body	1	Earthenware , Refined; Painted underglaze		Thick brown bands on exterior
10	T-104, St. If	Dinnerware	Body	1	Earthenware , Refined; Painted underglaze		
11	T-104, St. If	Dinnerware	Rim	1	Porcelain; Painted underglaze		Very thin, flow blue bands
12	T-104, St. Ig	Crock	Base to body	1	Earthenware ; Molded, painted underglaze		
13	T-104, St. Ig	Bottle	Base to body	1	Stoneware		Coiling noted on interior of cup
14	T-104, St. Ig	Flatware	Body to rim	1	Porcelain; Transfer- print		Large & small black flowers, including along rim interior
15	T-104, St. Ij	Crock	Body	1	Stoneware; Banded		White band on exterior side

Acc. # 104-A-	Prov.	Glass Bottle Type	Portion	No.	Color	Age; Origin	Comments
16	T-104, St. If	Bottle	Body	3	Amber		
17	T-104, St. If	Bottle	Body	1	Amber		
18	T-104, St. If	Bottle, Soda	Base- shoulder	4	Aqua	1880s- 1890s	Crystal Soda Works, Honolulu HI
19	T-104, St. If	Bottle, Soda	Body	3	Aqua	Possible 1880s- 1910s	Possible frags. of Crystal Soda Works
20	T-104, St. If	Bottle, Soda	Lip	1	Aqua	Possible 1880s	Possible Crystal Soda Works
21	T-104, St. If	Bottle	Body	1	Aqua		
22	T-104, St. If	Bottle	Body	1	Blue, Cobalt		
23	T-104, St. If	Bottle	Body	1	Clear	1870s- post	
24	T-104, St. If	Bottle, Beverage	Lip	1	Green, Light	1820 – 1890	
25	T-104, St. If	Bottle	Body	2	Green, Light		
26	T-104, St. If	Bottle, Spirits	Body	3	Olive, Dark		
27	T-104, St. If	Bottle	Body	2	Olive, Dark		
28	T-104, St. Ig	Bottle, Spirits	Base	1	Olive, Dark	pre- 1890s	Kick-up base
29	T-104, St. Ig	Bottle, Spirits	Base	1	Olive, Dark	pre- 1890s	Kick-up base
30	T-104, St. Ig	Bottle, Spirits	Base	1	Olive, Dark	pre- 1890s	Push-up base
31	T-104, St. Ig	Bottle, Spirits	Base	1	Olive	1800- post	Push-up base
32	T-104, St. Ig	Bottle	Body	1	Olive, Dark		
33	T-104, St. Ig	Bottle	Neck	1	Olive, Dark		
34	T-104, St. Ig	Bottle	Neck	2	Olive, Dark		
35	T-104, St. Ij	Bottle	Base (3); body (1)	4	Aqua	1810- post	Looks like open pontil on base; but bottle has embossing on body "...nk"
Acc. # 104-A-	Prov.	Misc. Type	Portion	No.	Material	Age; Origin	Description
36	T-104, St. Ig	Pipe Stem	Fragment	1	Kaolin		Two incised bands horizontally around tube; many vertical lines from the bands to the end; bore 0.2 (D)
37	T-104, St. Ig	Stone	Fragment	1	Stone		Large smooth limestone cobble with quartz inclusions; imported?

Acc. # 104-A-	Prov.	Misc. Type	Portion	No.	Material	Age; Origin	Description
38	T-104, St. Ij	Basalt	Complete	1	Stone		Gray color, cut/dressed basalt, rectangular
39	T-104, St. Id	Brick	Fragment	1	--		Red color, machine-made
40	T-104, St. Id	Brick	Fragment	1	--		Red color, machine-made
41	T-104, St. Id	Brick	Fragment	2	--		Red color, machine-made
42	T-104, St. Id	Brick	Fragment	1	--		Red color, machine-made
43	T-104, St. If	Basalt	Fragment	5	Stone		Gray color, cut/dressed basalt
44	T-104, St. If	Basalt	Fragment	1	Stone		Gray color, cut/dressed basalt
45	T-104, St. If	Basalt	Fragment	1	Stone		Basalt stone
46	T-104, St. If	Brick	Fragment	1	--		Red color
47	T-104, St. If	Brick	Fragment	1	--		Yellow color, machine-made
48	T-104, St. If	Brick	Fragment	1	--		Red color, machine-made
49	T-104, St. If	Brick	Fragment	1	--		Gray color
50	T-104, St. If	Metal	Fragment	1	Metal		
51	T-104, St. If	Metal frag	Fragment	1	Metal		Small, rusty metal piece
52	T-104, St. If	Metal frag	Fragment	1	Metal		Conglomerate with shell and stone on one end
53	T-104, St. If	Metal frag	Fragment	1	Metal		Rusty
54	T-104, St. If	Nail	Complete	1	Metal		Round head
55	T-104, St. If	Possible Slag	Fragment	1	Slag		Small brittle piece
56	T-104, St. If	Rock	Fragment	1	Crystalline - rock		Rock with crystalline structure and metallic luster. Fairly hard and light; probably NOT volcanic glass
57	T-104, St. If	Slag	Fragment	1	Slag		Factory slag
58	T-104, St. If	Slate	Fragment	1	Slate		Slate



T-104 ceramic artifact fragments (Acc. # 104-A-4) from Stratum Ic



T-104 ceramic artifact fragments (Acc. # 104-A-1) from Stratum Ic



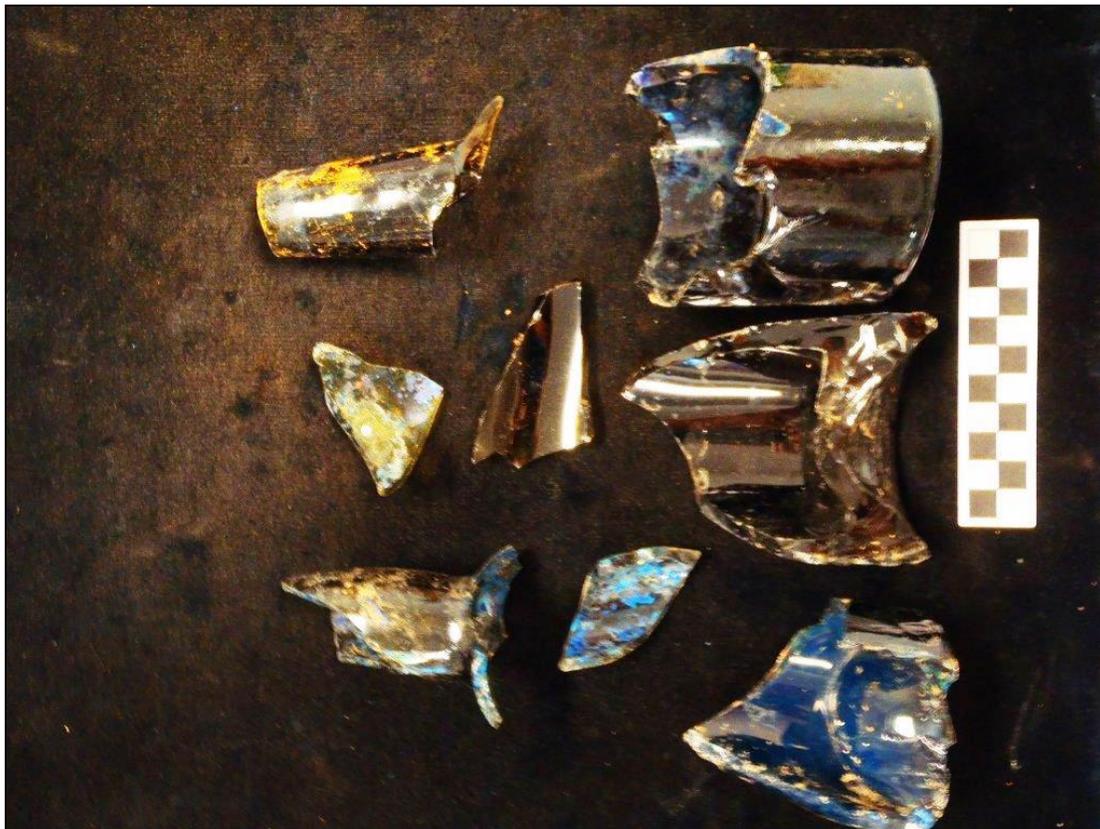
T-104 ceramic artifact (Acc. # 104-, A-5, A-8, A-9) from Stratum If



T-104 ceramic artifact (Acc. # 104-A-6, A-13, A-15) from Stratum If



T-104 glass bottle artifacts and glass fragments (Acc. # 104-A-18, A-20) from Stratum If



T-104 glass bottle artifact fragments (Acc. # 104-A-26 to A-34) from Stratum Ig

T-104 Terrestrial vertebrate material collected individually during excavation

Acc. #	Stratum	Depth (cmbs)	Feature	Family/ Class	Species	Element	Description	Modification
104-F-1	Ie	50	-	Bovidae (cow)	<i>Bos taurus</i>	Phalanx	Complete	None
104-F-2	If	65-90	-	Suidae (pig)	<i>Sus scrofa</i>	Molar; Diaphysis sections	Fragments	None
104-F-3	If	80-84	-	Bovidae (cow)	<i>Bos taurus</i>	Ribs	Fragments	Butchered (cut with metal saw blade)
104-F-4	If	80-84	-	Suidae (pig)	<i>Sus scrofa</i>	Femur diaphysis section; Femur diaphysis frag; Ribs; Large maxillary tusk	Fragments	Femur diaphysis section butchered (cut with metal saw blade)
104-F-5	If	80-84	-	Mammalia	Medium mammal	Unidentified	Fragments	None
104-F-6	If	87-112	-	Suidae (pig)	<i>Sus scrofa</i>	Diaphysis sections; Canine; Incisor	Fragments	None
104-F-7	If	87-112	-	Canidae (dog)	<i>Canis lupus familiaris</i>	Cranial; Intermediate phalanx	Complete/ fragments	None
104-F-8	Ig	115-125	-	Bovidae (cow)	<i>Bos taurus</i>	Scapula; Metatarsus (epiphyses absent); Ribs	Complete/ fragments	Scapula butchered (cut with metal saw blade); Butcher marks on ribs

Acc. #	Stratum	Depth (cmts)	Feature	Family/ Class	Species	Element	Description	Modification
104-F-9	Ig	115-125	-	Bovidae (cow)	<i>Bos taurus</i>	Metacarpus; possible vertebra; Diaphysis section; Diaphysis section frags	Complete/ fragments	Diaphysis section butchered (cut with metal saw blade)
104-F-10	Ig	115-125	-	Suidae (pig)	<i>Sus scrofa</i>	Humerus	Complete	None
104-F-11	Ig	115-125	-	Canidae (dog)	<i>Canis lupus familiaris</i>	Ulna; Ribs; Lt humerus	Complete/ fragments	None
104-F-12	Ig	115-125	-	Mammalia	Medium mammal	Diaphysis sections/irregular bone	Fragments; Pieces mend	None
104-F-13	Ig	115-125	-	Mammalia	Medium mammal	Diaphysis sections	Fragments	None
104-F-14	Ik	190-214		Suidae (pig)	<i>Sus scrofa</i>	Left humerus	Complete	None
104-F-15	Ik	190-214	-	Bovidae (goat)	<i>Capra aegagrus hircus</i>	Teeth	Complete	None
104-F-16	Ik	190-214	-	Mammalia	Medium mammal	Rib; Condyle	Fragments	Rib butchered (with metal saw blade)

2.16 Test Excavation 104A (T-104A)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	1-7-002 [Plat]
Elevation Above Sea Level:	2.3 m
UTM:	617745.03 mE, 2357034.37 mN
Max Length/Width/Depth:	7.4 m / 0.8 m / 1.41 m
Orientation:	341 / 161° TN
Targeted Project Component:	Utility Relocation
USDA Soil Designation:	Fill land (FL)

Setting: Test Excavation 104A (T-104A) was located approximately 15 meters northwest of the North Nimitz Highway and Maunakea Street intersection. T-104A was located on state-owned property. The original T-104 excavation could not be entered due to safety concerns and, therefore, it was never determined if the base of excavation was at the coral shelf or a coral boulder concentration. T-104A was an additional excavation added to further investigate the depth of the natural land surface and coral shelf in the area. T-104A also investigated a utility relocation. The excavation surface was level with the surrounding land surface.

Summary of Background Research and Land Use: According to the 1847 Metcalf Downtown map, T-104A was 15 m east of the historic shore line. Although T-104A was not within an LCA, T-104A was 8.6 m southwest of LCA 256 (which included one house lot and was awarded to Kalukini) and 13.6 m west of LCA 2938 (where one vineyard planted by Francisco Marin) was awarded to Juan Marin (grandson of Marin). A small group of LCAs were located nearby T-104A and the land use was described as habitation. The 1886 Wall map shows urban reclamation and development. The 1897 Monsarrat Honolulu map indicated continued urban and industrial development. The 1953 Army Mapping Service Honolulu map shows T-104A in the modern day Nimitz Highway.

Previous archaeology in the area surrounding T-104A included several studies. T-104A was located within the site of a 2001 archaeological inventory survey for proposed Nimitz Highway water system improvements in the downtown Honolulu area. The study focused primarily on investigating Kawa Fish Pond (SIHP # 50-80-14-5966) and identified the pond boundaries and test excavations were positive for fishpond sediments. A clear construction date for Kawa Fish Pond was not determined but sample analysis suggested fishpond sediments were accumulating since at least AD 1150-1350 (McDermott and Mann 2001). Approximately 50 m southwest of T-103, Wong, Smith, and Rosendahl (1990) conducted an historic assessment study of the proposed Aloha Tower Complex project site. The study determined that the area sat on historic period fill which had been placed in a formerly submerged area. It was determined there were no pre-Contact remains in the area, or if remains were present they were subsurface and brought in with fill.

Documentation Limitations: T-104A was excavated to the coral shelf at 1.41 mbs. There were no specific factors that limited documentation of T104A.

Stratigraphic Summary: The stratigraphy of T-104A consisted of fill strata overlying natural sediment to the base coral shelf. Observed strata included asphalt (Ia), gravel fill (Ib), extremely gravelly sand (Ic), gravelly sandy loam fill (Id), gravelly sandy loam fill (Ie), natural sandy loam (II), coral shelf (III). The stratigraphy conformed to the USDA soil designation of Fill land (FL).

Artifacts Discussion: A single machine-made brick fragment (Acc. # 104A-A-1) was collected from Stratum Id. The brick fragment from Stratum Id is consistent with historic fill deposits.

Features Discussion: No features were observed.

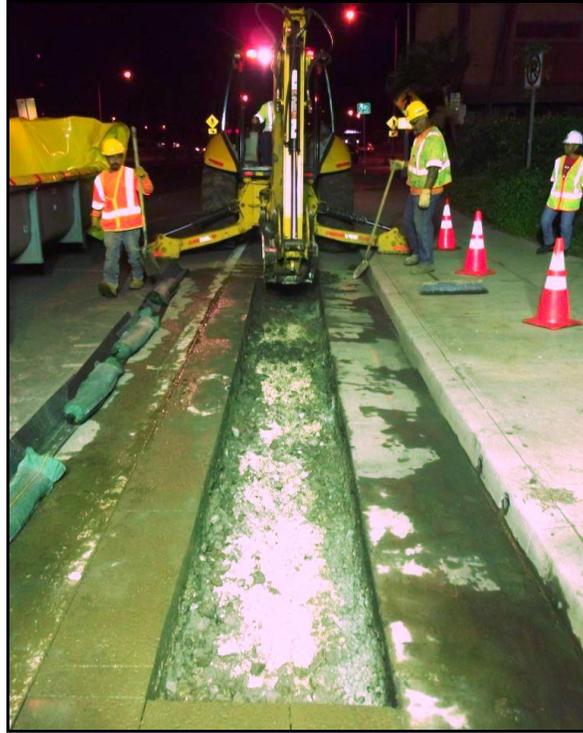
Terrestrial Faunal Remains Collected During Excavation: No terrestrial faunal remains were collected individually during excavation.

Sample Results: A total of two bulk sediment samples were collected from Stratum II at 1.38-1.48 mbs (2.0 L) and 0.8-1.08 mbs (2.0 L). All of the bulk samples were wet-screened. The bulk samples collected 0.8-1.08 mbs contained no significant material. The sample from Stratum II at 1.38-1.48 mbs contained naturally-deposited shell (0.1 g). The results of the analysis of bulk sediment samples documented no significant material with Stratum II.

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 and increases again around 0.75 mbs.

GPR depth profiles for T-104A 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 0.10 mbs and again around 0.40 mbs. No utilities were observed in the profile. The maximum depth of clean signal return was approximately 0.85 mbs.

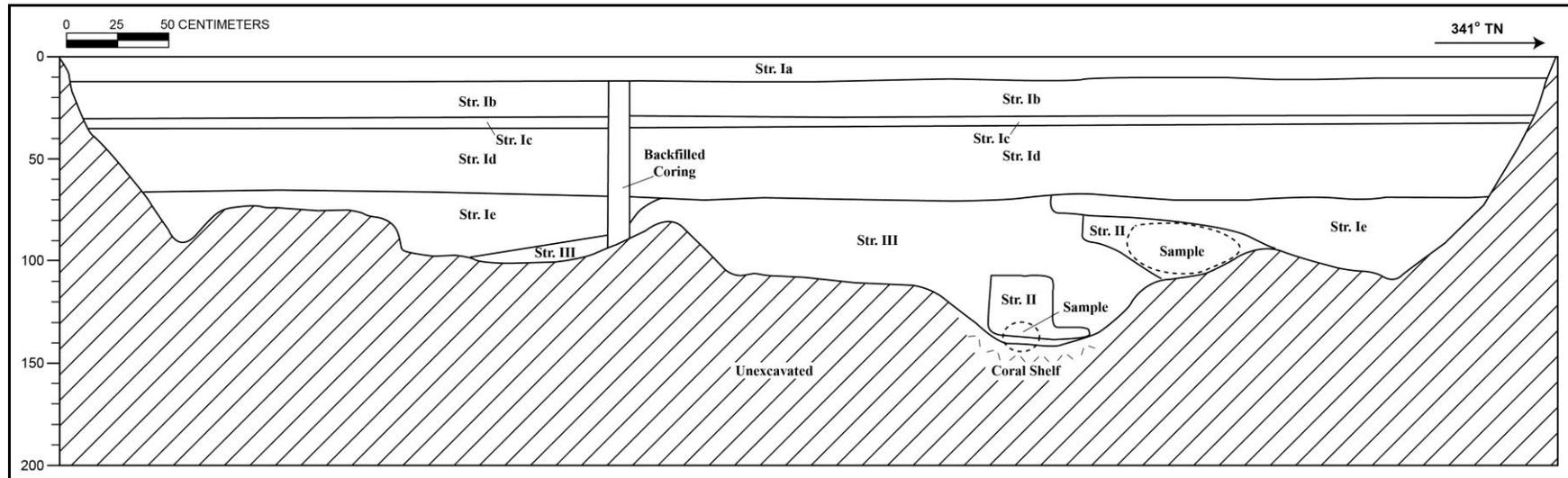
Summary: T-104A was excavated to the coral shelf at 1.41 mbs. The stratigraphy of T-104A consisted of fill strata (Ia-Ie) overlying natural sediment (II-III) to the base coral shelf. The stratigraphy conformed to the USDA soil designation of Fill land (FL). The brick fragment from Stratum Id is consistent with historic fill deposits. The results of the analysis of bulk sediment samples documented no significant material within Stratum II. No significant cultural resources were identified.



T-104A general location, view to the northeast



T-104A west wall profile, view to the west



T-104A east wall profile

T-104A Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-12	Asphalt
Ib	12-30	Fill; 10 YR 3/1 (very dark gray); gravel; structureless, single-grain; moist, loose consistency; non plastic; very abrupt, smooth lower boundary; basalt gravel base course imported fill
Ic	30-35	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; imported crushed coral fill
Id	35-71	Fill; 2.5 Y 3/2 (very dark grayish brown); gravelly sandy loam; structureless, single-grain; moist, loose consistency; non-plastic; terrigenous origin; clear, smooth lower boundary; contained brick; imported fill, gravel with cobble inclusions
Ie	71-110	Fill; 2.5 Y 4/2 (dark grayish brown); gravelly sandy loam; structureless, single-grain; moist, loose consistency; non-plastic; mixed origin; clear, wavy lower boundary; locally procured fill consisted of coral gravel mixed with natural alluvium
II	76-136	Natural; 2.5 Y 3/2 (very dark grayish brown); sandy loam; weak, fine, granular structure; moist, very friable consistency; non-plastic; terrigenous origin; clear, irregular boundary; natural alluvium found in pockets within coral shelf
III	70-141	Natural, coral shelf

2.17 Test Excavation 105 (T-105)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	1-7-002 [Plat]
Elevation Above Sea Level:	2.2 m
UTM:	617761 mE, 2356948 mN
Max Length/Width/Depth:	7.35 m / 0.74 m / 1.00 m
Orientation:	332 / 152° TN
Targeted Project Component:	Utility Relocation
USDA Soil Designation:	Fill land (FL)

Setting: Test Excavation 105 (T-105) was located approximately 15 meters southwest of North Nimitz Highway and the Smith Street intersection, within the center median. T-105 was located on property owned by City and County of Honolulu. T-105 was located directly on top of an electrical box and approximately 360 m south of Nu'uanu Stream. The excavation surface was level with the surrounding land surface.

Summary of Background Research and Land Use: According to the 1847 Metcalf Downtown map, T-105 was located approximately 40 m east of the previously existing shore line. The 1847 Metcalf Downtown map also indicated that T-105 was located approximately 35 m west of LCA 810 (awarded to Jones) and approximately 50 m west of LCA 38 (awarded to Grimes). According to the 1887 Monsarrat map of Honolulu, the vicinity around T-106 began to become developed with both urban and industrial developments. According to the 1943 War map of Honolulu, T-105 was in modern-day Nimitz Highway on the shoreline of Honolulu Harbor.

Archaeological study areas within the vicinity of T-105 included an inventory survey of the proposed Nu'uanu Court Project in which one history property was document (SIHP #50-80-14-2456), and a cultural layer containing both pre- and post-Contact features were documented (Dunn and Rosendahl 1993). Approximately 32 m east of T-105, Lebo and McGuirt (2000) conducted an inventory survey at 800 Nu'uanu Avenue in which one historic property (SIHP # 50-80-14-5496) was documented and a subsurface cultural layer containing both pre- and post-Contact archaeological features. T-105 was located in the immediate vicinity of an inventory-level archaeological survey for the proposed Nimitz Highway water system improvements (McDermott and Mann 2001).

Documentation Limitations: T-105 was excavated to a depth of 1.0 mbs. Excavation of T-105 could not proceed beneath 1.0 mbs due to the presence of a utility pipe.

Stratigraphic Summary: The stratigraphy of T-105 consisted of fill strata to the base of excavation. Observed strata included asphalt/concrete (Ia), extremely gravelly loam (Ib), extremely gravelly cobbly sand (Ic), sand fill (Id), and gravel fill (Ie). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL).

Artifacts Discussion: No artifacts were observed.

Features Discussion: No features were observed.

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

Sample Results: No bulk sediment samples were collected during the investigation of T-105

GPR Discussion: A review of amplitude slice maps indicated a linear feature although it does not correspond to the large utility that 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 0.50 mbs.

GPR depth profiles for T-105 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 0.20 mbs. An anomaly was observed in the profile but not within excavation boundaries and the large utility that was encountered is not observed in the profile. The maximum depth of clean signal return was approximately 1.0 mbs.

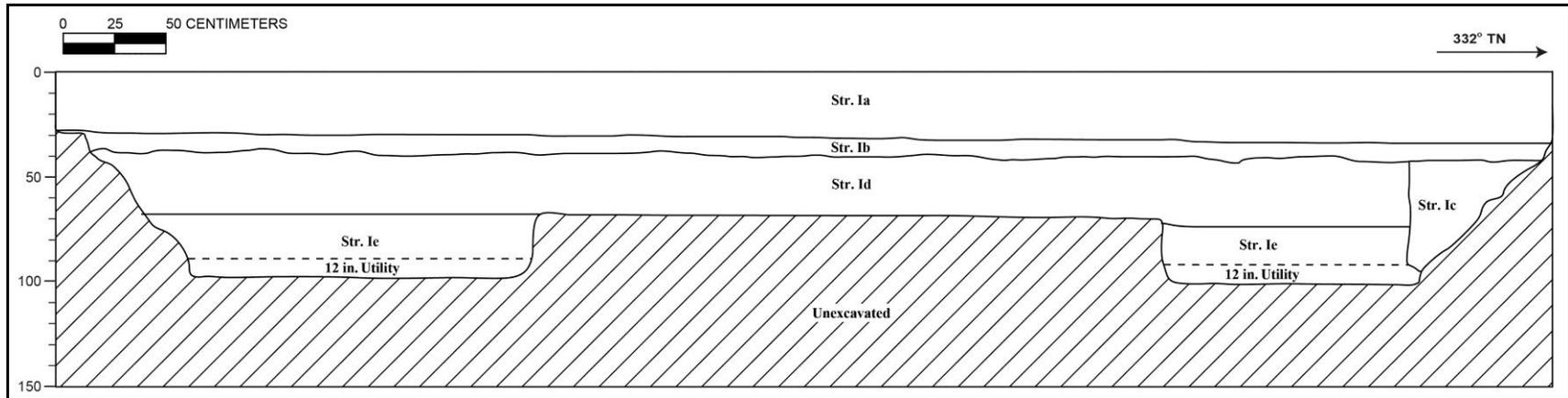
Summary: T-105 was excavated to a depth of 1.0 mbs. The stratigraphy of T-105 consisted of fill strata to the base of excavation (Ia-Ie). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL). No natural sediment was observed. No cultural resources were identified within T-105.



T-105 general location, view to southwest



T-105 northeast wall (opposite of profile wall)



T-105, southwest wall profile

T-105 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-30	Asphalt
Ib	30-40	Fill; 7.5 YR 6/0 (pinkish gray); extremely gravelly loam; structureless, single-grain; dry, loose consistency; non-plastic; terrigenous origin; abrupt, wavy lower boundary; base course-3B
Ic	40-72	Fill; 10 YR 4/1 (pale yellow); extremely gravelly cobbly sand; structureless, single-grain; loose consistency; non-plastic; marine origin; abrupt, smooth lower boundary; imported fill with 20% sub-angular cobble
Id	72-100	Fill; 10 YR 4/2 (pale yellow); sand; structureless, single-grain; dry, loose consistency; non-plastic; marine origin; lower boundary not visible; contained modern historic construction debris, metal pipe piece, utility pipe; imported sand
Ie	40-90	Fill; 10 YR 5/1; (gray); gravel; structureless, single-grain; dry, loose consistency; non-plastic; terrigenous origin; lower boundary not visible; manufactured fill, fine 3B gravel along northern section of T-105

2.18 Test Excavation 106 (T-106)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	1-7-002 [Plat]
Elevation Above Sea Level:	2.1 m
UTM:	617772.34 mE, 2356922.14 mN
Max Length/Width/Depth:	7.35 m / 0.75 m / 1.30 m
Orientation:	336 / 156° TN
Targeted Project Component:	Utility Relocation
USDA Soil Survey Soil:	Fill land (FL)

Setting: Test Excavation 106 (T-106) was located approximately 30 meters southwest of North Nimitz Highway and Smith Street intersection, within the southbound left lane of North Nimitz Highway. T-106 was located on property owned by the City and County of Honolulu. The excavation surface was level with the surrounding land surface.

Summary of Background Research and Land Use: According to the 1847 Metcalf Downtown map, T-106 was located approximately 40 m east of the previously existing shore line. The 1847 Metcalf Downtown map also indicated that T-106 was located approximately 30 m southwest of LCA 810 (awarded to Jones) and approximately 41 m west of LCA 38 (awarded to Grimes). The 1886 Wall Original Titles map indicated that T-106 was located approximately 25 m east of Queen Street. According to the 1887 Monsarrat map of Honolulu, the vicinity around T-106 began to become developed with both urban and industrial developments. According to the 1943 War map of Honolulu, T-106 was in modern-day Nimitz Highway on the shoreline of Honolulu Harbor.

Archaeological study areas within the vicinity of T-106 included an inventory survey of the proposed Nu'uaniu Court Project in which one history property was document (SIHP #50-80-14-2456), and a cultural layer containing both pre- and post-Contact features were documented (Dunn and Rosendahl, 1993). Approximately 35 m east of T-106, Lebo and McGuirt (2000) conducted an inventory survey at 800 Nu'uaniu Avenue in which one historic property (SIHP # 50-80-14-5496) was documented and a subsurface cultural layer containing both pre- and post-Contact archaeological features. T-106 was located in the immediate vicinity of an inventory-level archaeological survey for the proposed Nimitz Highway water system improvements (McDermott and Mann2001).

Documentation Limitations: T-106 was excavated to an 8 inch utility line at 1.30 mbs. T-106 was unexcavated beneath 1.30 mbs due to the presence of a utility line.

Stratigraphic Summary: The stratigraphy of T-106 consisted of fill strata to the base of excavation. Observed strata included asphalt (Ia), very gravelly loam (Ib), extremely gravelly sand (Ic), and silt loam (Id). The stratigraphy conformed to the USDA soil survey designation of Fill lands (FL).

Artifact Discussion: No artifacts were observed.

Feature Discussion: No features were observed.

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

Sample Results: No bulk sediment samples were collected during the investigation of T-106.

GPS Discussion: A review of amplitude slice maps indicated a linear feature but it was not encountered during excavation. Reflectivity was relatively uniform throughout the grid and decreases with depth except the linear feature. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.25 mbs.

GPR depth profiles for T-106 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 0.10 mbs. An anomaly was observed in the profile but was not encountered during excavation and the two utilities that were encountered are not observed in the GPR profile. The maximum depth of clean signal return was approximately 1.0 mbs.

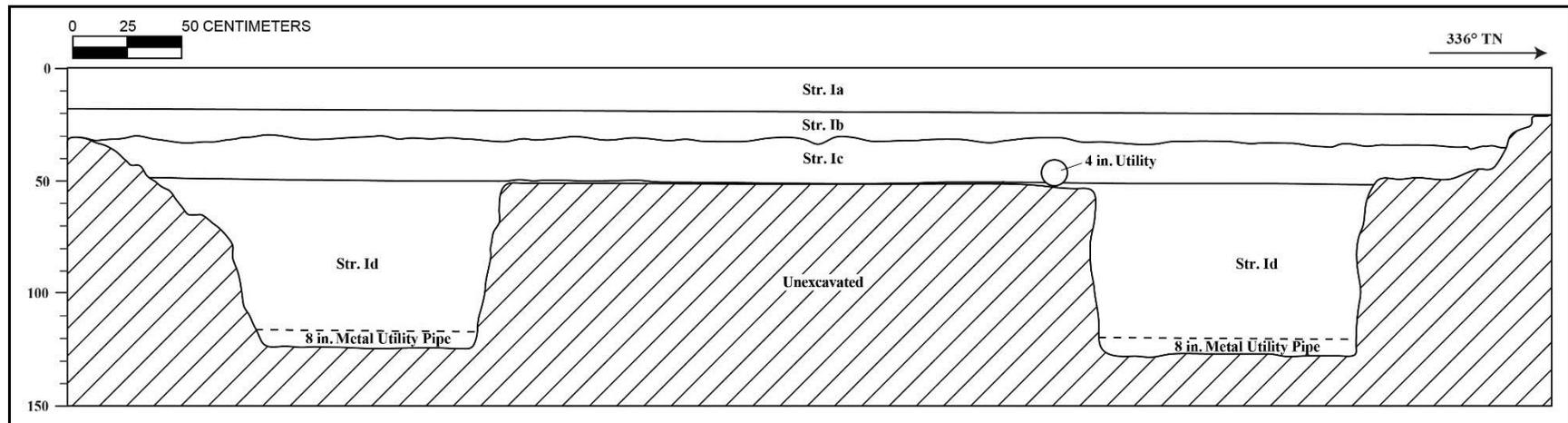
Summary: T-106 was excavated to an 8 inch utility line at 1.30 mbs. The stratigraphy of T-106 consisted of fill strata to the base of excavation (Ia-Id). The stratigraphy conformed to the USDA soil survey designation of Fill lands (FL). No natural sediment was observed. No cultural resources were identified within T-106.



T-106 general location, view to the southeast



T-106 southwest wall profile



T-106 southwest wall profile

T-106 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-22	Asphalt
Ib	22-35	Fill; 7.5 YR 6/0 (pinkish gray); very gravelly loam; structureless, single-grain; dry, loose consistency; non-plastic; terrigenous origin; abrupt wavy boundary; base course, imported fill
Ic	35-54	Fill; 10 YR 4/1 (pale yellow); extremely gravelly sand; structureless, single-grain; dry, loose consistency; non-plastic; marine origin; abrupt, smooth lower boundary; 10% cobble material
Id	54-130	Fill; 10 YR 4/3 (dark brown); silt loam; structureless, single-grain; dry, loose consistency; non-plastic; terrigenous origin; lower boundary not visible; contained metal debris, large terra cotta pipe fragments; boulders, 8-inch utility line encountered; minor amounts historic construction debris

2.19 Test Excavation 107 (T-107)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	2-1-001 [Plat]
Elevation Above Sea Level:	2.1 m
UTM:	617790.64 mE, 2356851.75 mN
Max Length / Width / Depth:	7.35 m / 0.76 m / 1.30 m
Orientation:	170 / 350° TN
Targeted Project Component:	Utility Relocation
USDA Soil Designation:	Fill land (FL)

Setting: Test Excavation 107 (T-107) was located within the south-bound side of Nimitz Highway, approximately 20 m southwest of Nu'uuanu Avenue and Nimitz Highway intersection. T-107 was located on state owned property. T-107 was 2.7 m north of a sewer line and 2.4 m west of a gas line. The excavation surface was level with the surrounding land surface.

Summary of Background Research and Land Use: A small cluster of three LCAs were located 35 m northeast of T-107 and were awarded to Reynolds and Kamāmalu. The 1847 Metcalf map showed T-107 partially lying within Government Wharf property and partially within LCA 626:2, which was approximately 10 m from the shoreline and awarded to Stephen Reynolds. According to the 1887 Wall map, T-107 was 16 m west of the police court. By 1897, T-107 was 8 m west of Queen Street (1897 Monsarrat map) and by 1904 the test excavation lay within Brewer's Wharf (1904 Newton map). The 1933 War map showed T-107 to be 1 m south of the shoreline and by 1953 it was within Nimitz Highway (1953 Army map Service map).

Several archaeological studies were conducted in the vicinity of T-107. T-107 was located within the site of an archaeological monitoring project done for the Nimitz Highway re-constructed sewer project (Winieski and Hammatt 2001). T-107 was also located within the site of an archaeological inventory survey for proposed Nimitz Highway water system improvements in the downtown Honolulu area. The study focused primarily on investigating Kawa fish pond (SIHP # 50-80-14-5966). The pond boundaries were determined and test excavations were positive for fishpond sediments. A clear construction date for Kawa fish pond was not determined, but sample analysis suggested fishpond sediments were accumulating since at least AD 1150-1350 (McDermott and Mann 2001). Approximately 15 m west of T-107, Wong, Smith, and Rosendahl (1990) conducted an historic assessment study of the proposed Aloha Tower Complex project site. The study determined that the area sat on historic period fill which had been placed in a formerly submerged area. It was determined there were no pre-Contact remains in the area, or if remains were present they were subsurface and brought in with fill. About 30 m east of T-107 was the site of an archaeological recovery project that uncovered Contact period deposits and historic structural remains (SIHP # 50-80-14-02456) (Hurst 1991). An archaeological inventory survey of the same area uncovered a cultural deposit also found at SIHP

50-80-14-02456, stratigraphic layers with cultural material and several horizontal features (Dunn and Rosendahl 1993).

Documentation Limitations: T-107 was excavated to a depth of 1.30 mbs. T-107 was unexcavated beneath 1.30 mbs due to the presence of utility box culverts.

Stratigraphic Summary: The stratigraphy of T-107 consisted of fill strata to the base of excavation. Observed strata included asphalt (Ia), very gravelly loam (Ib), extremely gravelly sand (Ic), and fine sandy clay fill (Id). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL).

Artifact Discussion: No artifacts were observed.

Feature Discussion: No features were observed.

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

Sample Results: No bulk sediment samples were collected during the investigation of T-107.

GPR Discussion: A review of amplitude slice maps indicated no linear features although two culverts were encountered but below clean signal return. 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 and increases again around 0.75 mbs.

GPR depth profiles for T-107 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 although two culverts were encountered during excavation. The maximum depth of clean signal return was approximately 1.1 mbs.

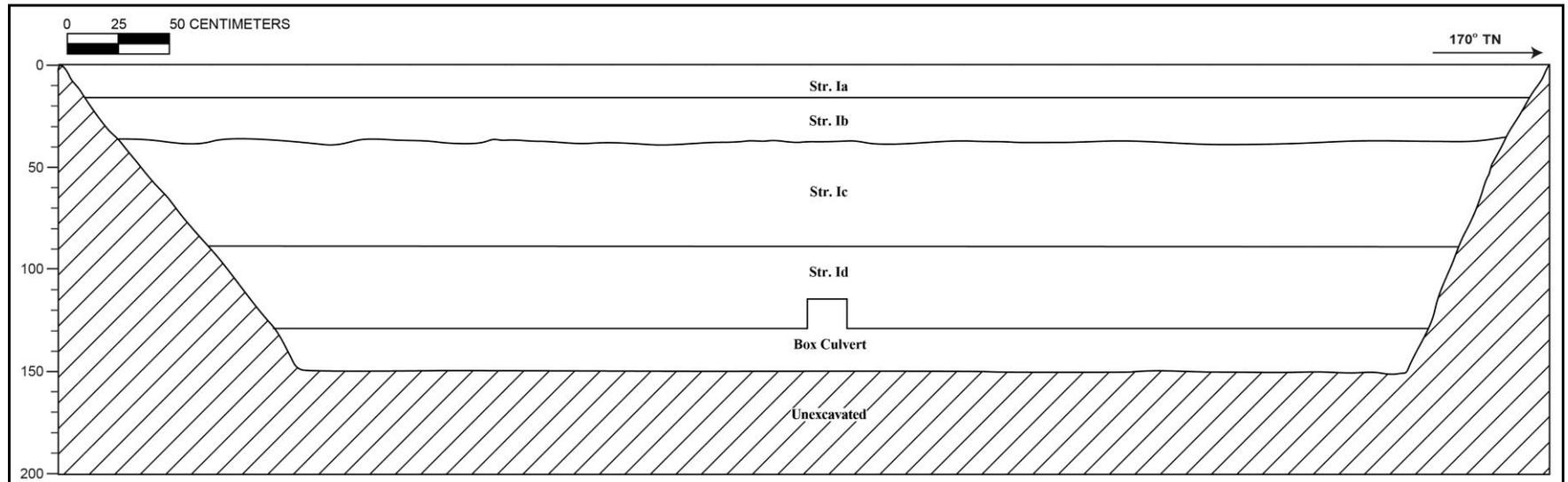
Summary: T-107 was excavated to a depth of 1.30 mbs. The stratigraphy of T-107 consisted of fill strata to the base of excavation (Ia-Id). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL). No natural sediments were observed. No cultural resources were identified.



T-107 general location, view to northwest



T-107 west wall (opposite from profile wall)



T-107 east wall profile

T-107 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-17	Asphalt
Ib	17-37	Fill; 10 YR 5/1 (gray); very gravelly loam; structureless, single-grain; moist, loose consistency; non-plastic; terrigenous origin; abrupt, smooth lower boundary; gravel base course
Ic	37-89	Fill; 10 YR 4/1 (pale yellow); extremely gravelly sand; structureless, single-grain; dry, loose consistency; non-plastic; marine origin; very abrupt lower boundary; imported compaction fill with coral cobbles
Id	89-130	Fill; 10 YR 6/2 (gray); fine sandy clay; weak, very fine, crumb structure; moist, loose consistency; non-plastic; mixed origin; lower boundary not visible; manufactured fill overlaying box culverts

2.20 Test Excavation 108 (T-108)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	1-7-002 [Plat]
Elevation Above Sea Level:	2.1 m
UTM:	617805 mE, 2356815 mN
Max Length/Width/Depth:	5.30 m / 0.80m / 1.35 m
Orientation:	178 / 358° TN
Targeted Project Component:	Guideway Column
USDA Soil Designation:	Fill land (FL)

Setting: Test Excavation (T-108) was located approximately 15 meters west of South Nimitz and Bethel Street intersection, within Nimitz Highway median. T-108 was on state owned property. T-108 was located 1.0m west of an active gas utility line and 1.0m north of an active cable utility line. The excavation surface was slightly below the southbound Nimitz Highway lanes, and slightly elevated with the north bound Nimitz Highway lanes.

Summary of Background Research and Land Use: Although T-108 was not located within an LCA, several LCAs were clustered nearby. T-108 was 40 m southwest from LCA 186B, which was a house lot award to Kamamalu. This place was said to originally belong to Ke'eaumoku and on his death it went to Kaahumanu and on her death it went to Kina'u and on her death it went to Victoria Kamāmalu. T-108 was also 75 m northwest of LCA 247, which was one of twelve house lots and store lots claimed for Wm. C. Lunalilo by Kanaina. As early as 1847 the shoreline in area surrounding T-108 had been developed to accommodate industry. The 1847 Metcalf map showed T-108 8 m directly east of the "Gov't Wharf." According to the 1887 Wall Honolulu map, T-108 was 15 m west of the police court and 60 m east of the end of a pier. According to the 1905 Newton Honolulu Map, T-108 was 80 m east from of the end of Brewer's Wharf (formerly the Government Wharf). The pier was extended sometime before 1919 (Honolulu War map 1919, 1933, and 1943; and 1953 Army Mapping Service).

Several historic properties are located within the vicinity of T-108. SIHP #50-80-14-02456 was 29 m northeast and 23 m southeast of T-108. Three archaeological studies of 50-80-14-02456 have been conducted (Hurst and Allen 1992; Dunn and Rosendahl 1993; Lebo 1997) and a subsurface cultural layer containing both pre and post- Contact elements have been documented. Also, T-108 was approximately 75 m northwest of the Historic Pier 8-11. No SIHP has been assigned to this property, but it was the location of LCAs 784 and 9971 (The wharf commonly called The Point and was granted to James Robinson and William Pitt by Karaimoku).

Documentation Limitations: T-108 was excavated to a depth of 1.35 mbs. Excavation of T-108 was unexcavated beneath 1.35 mbs due to the presence of a 12 inch utility line.

Stratigraphic Summary: The stratigraphy of T-108 consisted of fill strata to the base of excavation. Observed strata included silt loam top soil fill (Ia), concrete (Ib), extremely gravelly

sand (Ic), sandy silt loam (Id). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL).

Artifacts Discussion: A total of seven artifacts (Acc. # 108-A-1 to A-7) were collected from Stratum Id. The artifacts included five ceramic fragments from a minimum of four vessels, and construction material fragments. None of the artifacts retained datable attributes. The artifacts collected from Stratum Id are consistent with historic fill deposits.

Features Discussion: No features were observed.

Terrestrial Faunal Remains Collected During Excavation: Faunal remains were collected individually during excavation from Stratum Id: an *Ovis aries* distal metatarsal shaft with perimortem breakage at 0.68 mbs; and *Bos taurus* (juvenile) and medium mammal skeletal elements at 1 mbs. None of the bones showed evidence of cultural modification. The presence of introduced species (*Ovis aries* and *Bos taurus*) indicates that Stratum Id was deposited in the post-Contact period.

Sample Results: A single bulk sediment sample was collected from Stratum II at 1.4-1.48 mbs (3.0 L). The sample was wet-screened and contained charcoal (2.3 g), midden (2.2 g), naturally deposited shell (3.0 g), wood (5.4 g), metal fragments (32.9 g), ceramics (0.4 g), bottle glass fragments (0.1 g), and Aves remains (0.3 g). The midden collected included Cypraeidae *Cypraea* sp. (2.1 g), and Echinodermata *diadema* sp. (0.1 g).

The results of sample analysis indicated the minor use of the former landscape. The presence of shell midden materials suggests temporary habitation and/or food consumption activities. The presence of post-Contact materials found within Stratum II indicates previous disturbance to the stratum.

GPR Discussion: A review of amplitude slice maps indicated a linear features but not within excavation boundaries. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.50 mbs.

GPR depth profiles for T-108 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 and again around 0.75 mbs. An anomaly was observed in the profile but does not correspond to the utilities encountered during excavation. The maximum depth of clean signal return was approximately 1.0 mbs.

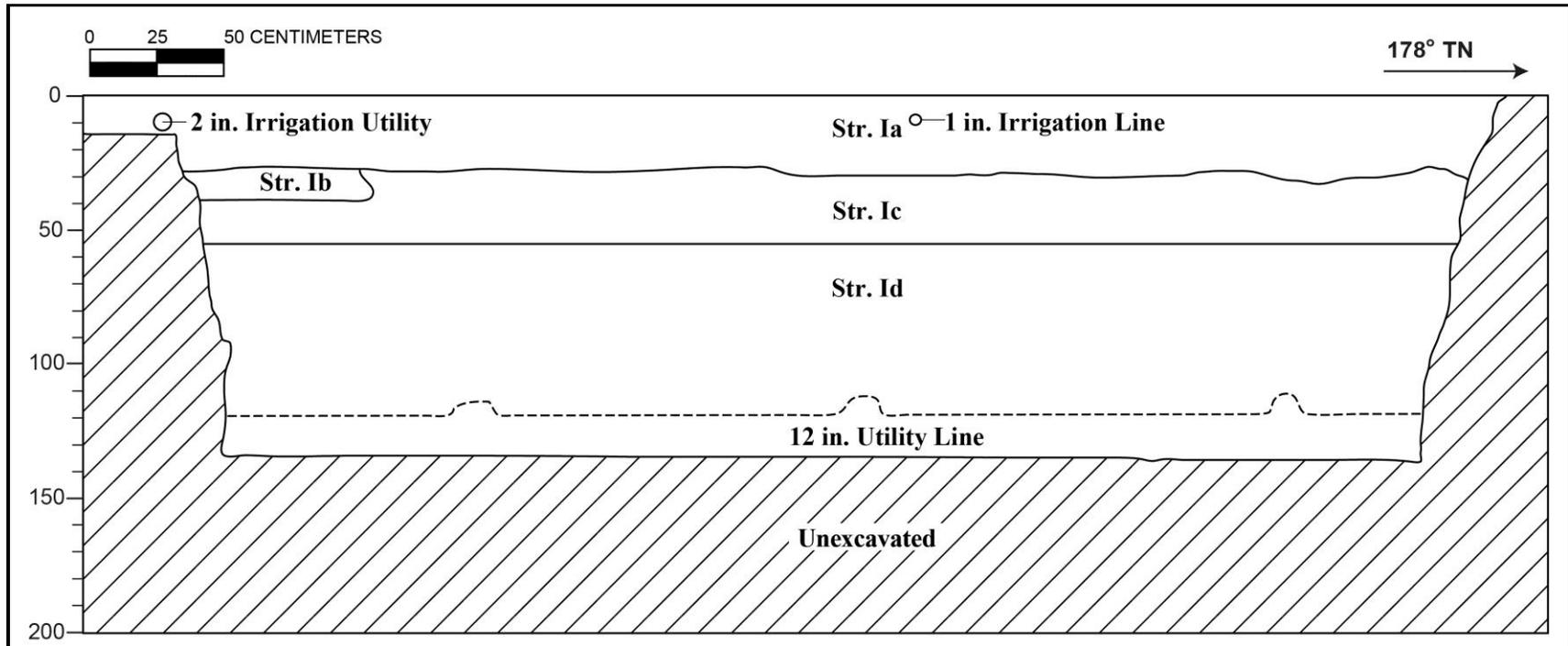
Summary: T-108 was excavated to a depth of 1.35 mbs. The stratigraphy of T-108 consisted of fill strata to the base of excavation (Ia-Id). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL). The artifacts collected from Stratum Id are consistent with historic fill deposits. Faunal remains, collected from Stratum Id (0.56-1.35 mbs) of T-108, included *Ovis aries*, *Bos taurus*, and medium mammal skeletal remains. The results of sample analysis indicated the minor use of the former landscape. The presence of shell midden materials suggests temporary habitation and/or food consumption activities. The presence of post-Contact materials found within Stratum II indicates previous disturbance to the stratum. No cultural resources were identified.



T-108 general location, view to the south



T-108 west wall (opposite of profile wall)



T-108 east profile

T-108 Stratigraphy Description

Stratum	Depth (cmbs)	Description
Ia	0-30	Fill; 10 YR (dark brown); silt loam; structureless, single-grain; dry, weakly coherent consistency; non-plastic; terrigenous origin; abrupt, wavy lower boundary, fine/medium roots; top soil, imported fill
Ib	30-40	Concrete; 0-120 cm in from S edge of T-108
Ic	30-56	Fill; 7.5 YR 6/2 (pinkish gray); extremely gravelly sand; structureless, single-grain; dry, loose consistency; non-plastic; mixed origin; abrupt, smooth lower boundary; many fine to medium roots; crushed coral imported fill
Id	56-135	Fill; 10 YR 3/2 (very dark grayish brown); sandy silt loam; structureless, single-grain; dry, loose consistency; non-plastic; terrigenous origin; lower boundary non visible; few fine/medium roots; contained mammal faunal, ceramic fragments, metal nail, red brick; imported fill, large pipe running parallel with T-108 at 1.20 mbs

T-108 Artifact Analysis Table

Acc. # 108-A	Prov.	Ceramic Vessel Type	Portion	No.	Paste; Decoration	Origin; Age	Comments
1	T-108, St. Id	Dinnerware	Body to rim	1	Earthenware, Refined		Bluish white; blue shell-edged (interior)
2	T-108, St. Id	Hollowware - bowl	Base to body	7	Earthenware, Refined		Yellow; Rim band; shallow bowl
3	T-108, St. Id	Flatware - saucer, probably	Base to body	1	Earthenware, Refined		White
4	T-108, St. Id	Hollowware - bowl	Base to rim	1	Porcelain		White
5	T-108, St. Id	Dinnerware	Body	1	Porcelain		White
Acc. # 108-A	Prov.	Misc. Type	Portion	No.	Material	Origin; Age	Description
6	T-108, St. Id	Brick	Fragment	1	--		Red color, machine- made
7	T-108, St. Id	Corroded Metal	Fragment	1	Metal		



T-108 ceramic artifact fragments (Acc. # 108-A-1 to A-5) from Stratum Id

2.21 Test Excavation 109 (T-109)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	2-1-001 [Plat]
Elevation:	2.1 m
UTM:	617794.79 mE, 2356756.22 mN
Max Length/Width/Depth:	7.35 m / 0.79 m / 2.50 m
Orientation:	358 / 168° TN
Targeted Project Component:	Utility relocation
USDA Soil Designation:	Fill land (FL)

Setting: Test Excavation 109 (T-109) was located in the south-bound lane of Nimitz Highway, approximately 30 m east of the shoreline. T-109 was located on state-owned property. A sewer line was located 12.5 m west of T-109 and a water line was 7 m south of T-109. The excavation surface was level with the surrounding land surface.

Summary of Background Research and Land Use: The 1847 Metcalf map indicated that T-109 was located approximately 40.0 m east of the old shoreline and 20 m northeast of LCA 784 and 9971: 1 & 2, awarded to James Robinson & William Pitt by Kalaimoku. The 1886 Wall map showed T-109 located inside of a wharf still within LCA 784 & 9971. The 1887 Wall map indicated the beginning of urban development within the surrounding area. By 1904 the Newton Honolulu map showed the area of T-109 still within a wharf but belonging to Allen and Robinson. Between 1919 through 1943, the Honolulu War maps showed little variation in T-109's location with continued development in the area. Modern developments with additions such as Aloha Tower are shown in the 1953 Army Mapping Service Honolulu map with T-109 still within a wharf.

Previous archaeology within the vicinity of T-109 included post-Contact historic piers 8-11 (Wong, Smith, and Rosendahl 1990) with no SIHP assigned, located 16.3 m west of T-109. Located approximately 29.7 m northeast of T-109 was a post-Contact remnant of a trolley rail (SIHP # 50-80-14-5942) (Winieski and Hammatt 2001).

Documentation Limitations: T-109 was excavated to a depth of 2.50 mbs, and beneath the water table at 2.25 mbs. The water table rose quickly, preventing archaeologists from entering the T-109 and requiring a soil sample to be taken from the machine bucket scoop.

Stratigraphic Summary: The stratigraphy of T-109 consisted of fill strata to the base of excavation. Observed strata included asphalt (Ia), gravel fill (Ib), very gravelly sand fill (Ic), silty loam imported fill (Id) and coarse sand fill (Ie). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL).

Artifacts Discussion: No artifacts were observed.

Features Discussion: No features were observed.

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

Sample Results: One bulk sediment sample (1 L) was collected from the backhoe bucket. The sample originated from Stratum Ie at an approximate depth of 2.20 mbs. The sample was wet-screened and contained charcoal (0.3 g), midden (18.5 g), naturally deposited shell (3.7 g), burned wood (19.7 g), medium sized seeds (0.9 g), bottle glass fragments (1.1 g), medium mammal remains (11.0 g), and fish remains (0.7 g). Midden collected included Veneridae *Periglypta heiroglyphica* (4.4 g), Ostreidae (2.7 g), Neritidae *Nerita picea* (1.2 g), Isognomidae *Isognomon* sp. (1.1 g), Mytilidae *Brachidontes crebristriatus* (1.1 g), Echinodermata *diadema* sp. (1.0 g), Nassariidae *Nassarius gaudiosus* (1.0 g), Cymatiidae *Cymatium* sp. (0.6 g), crustacean (0.2 g), and Turbinidae *Turbo sandwicensis* (1.5 g). Results of analysis indicated moderate amounts of organics and 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 0.75 mbs.

GPR depth profiles for T-109 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 0.10 mbs. An anomaly was observed in the profile but was not encountered during excavation. The maximum depth of clean signal return was approximately 1.0 mbs.

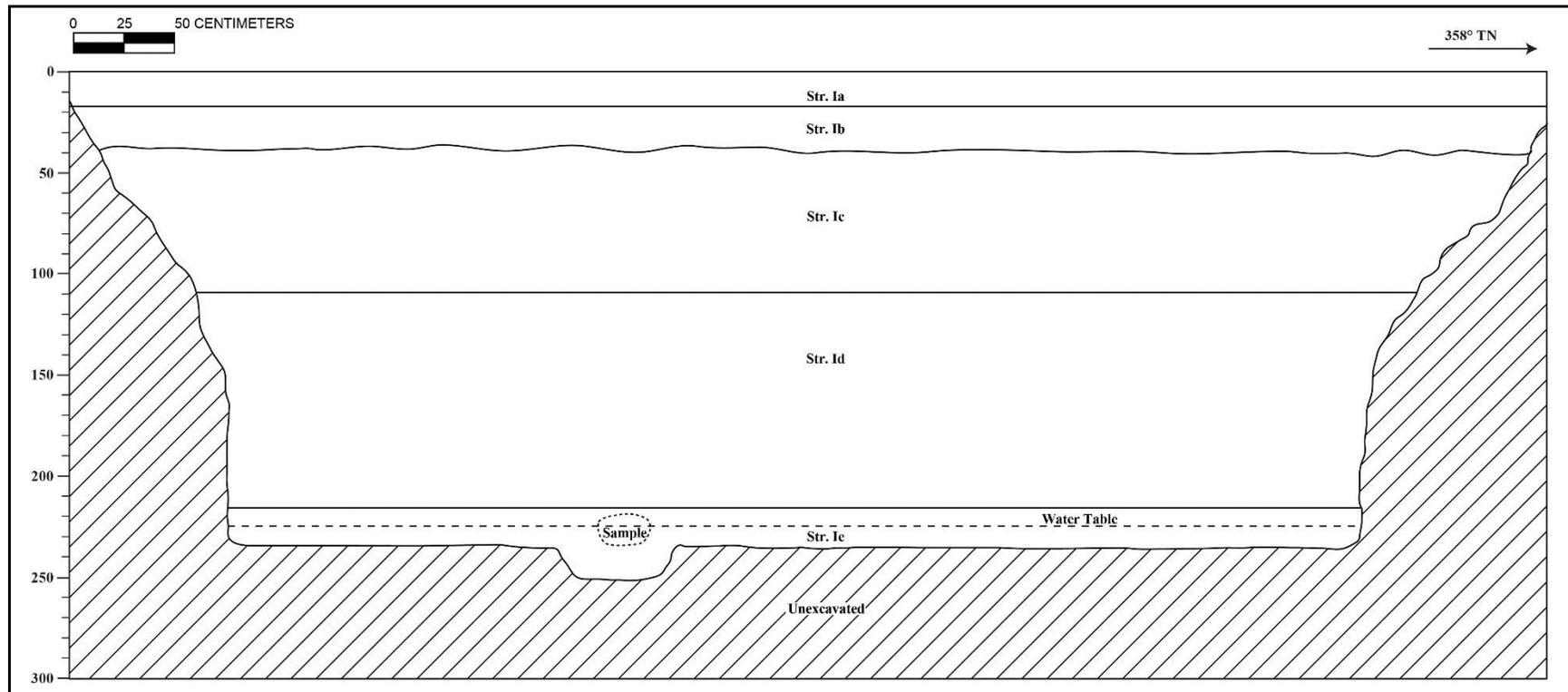
Summary: T-109 was excavated to a depth of 2.50 mbs, and beneath the water table at 2.25 mbs. The stratigraphy of T-109 consisted of fill strata to the base of excavation (Ia-Ie). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL). No natural sediment was observed. Results of analysis indicated moderate amounts of organics and shell midden. No significant cultural resources were identified within T-109.



T-109 general location, view to the north



T-109 west wall profile, view to west



T-109 west wall profile

T-109 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-18	Asphalt
Ib	18-40	Fill; 7.5 YR 6/0 (pinkish gray); gravel; structureless, single-grain; dry, loose consistency; non-plastic; terrigenous origin; abrupt, wavy lower boundary; base course 3B, imported fill
Ic	40-110	Fill; 10 YR 4/1 (pale yellow); very gravelly sand; structureless, single-grain; dry, loose consistency; non-plastic; marine origin; abrupt lower boundary; few, medium roots; likely crushed coral fill
Id	110-219	Fill; 10 YR 4/3 (dark brown); silty loam; structureless, single-grain; moist, friable consistency; terrigenous origin; abrupt lower boundary; few, medium-coarse roots; contained modern historic debris—metal scraps, ceramic insulator; basalt boundaries pulled from layer; possible cultural material associated with wharf that existed in area; 10% boulders
Ie	219-250	Fill; 10 YR 1/2 (black); coarse sand; structureless, single-grain; wet, slightly sticky consistency; non-plastic; lower boundary not visible; water table at 225 cmbs; imported cinder fill

2.22 Test Excavation 110 (T-110)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	2-1-002 [Plat]
Elevation Above Sea Level:	2.2 m
UTM:	617811.76 mE, 2356686.82 mN
Max Length/Width/Depth:	7.30 m / 0.90 m / 1.20 m
Orientation:	310 / 130° TN
Targeted Project Component:	Utility Relocation
USDA Soil Survey Soil	Fill land (FL)

Setting: Test Excavation 110 (T-110) was located in Nimitz Highway in the east edge of the north-bound lane. T-110 was located on state-owned property. The excavation surface was level with the surrounding land surface.

Summary of Background Research and Land Use: The 1847 Metcalf map indicated that T-110 was located approximately 65 m east of the old shoreline, 60 m southwest of Queen Street, and 55 m east of LCA 784:1/2, directly within The Fort. The 1886 Wall Original Titles map of Honolulu indicated that T-110 was located 15 m west of the Hawaiian Lodge and approximately 60 m southwest of LCA 247:2. According to the 1897 Monsarrat map of Honolulu, T-110 was situated approximately 7 m north of Fort Street and the map also indicated heavy urban and industrial development in the Waterfront area. By 1953, according to the Army Mapping Service Honolulu map, T-110 was situated in modern day Nimitz Highway.

Previous archaeological investigations in the Waterfront area included a monitoring report for the Nimitz Highway Reconstructed Sewer by Winieski and Hammatt (2001), approximately 60 m east of T-110. This survey identified one historic property and a remnant of a light-gauge rail (SIHP # 50-80-14-5942) associated with the historic Honolulu Rapid Transit trolley system. An archaeological monitoring project of the Nimitz Highway and Ala Moana Boulevard Resurfacing Project was completed by Petrey et al. (2009) where no historic properties or archaeological features were documented.

Documentation Limitations: T-110 was excavated to the coral shelf at 1.20 mbs. There were no specific factors that limited documentation of T-110.

Stratigraphic Summary: The stratigraphy of T-110 consisted of fill strata to the coral shelf. Observed strata included asphalt (Ia), gravel fill (Ib), and sandy silt loam (Ic) overlying coarse sand fill (II) to the coral shelf. The stratigraphy conformed to the USDA soil survey designation of Fill land (FL).

Artifacts Discussion: A minimum of four artifacts (Acc. # 110-A-1 to A-4) were observed but not collected from Stratum Ic. The artifacts consisted of construction debris including two rusted circular nails that date from ca. 1850 to the present, a utility line fragment, and rusted metal components. The artifacts observed within Stratum Ic are consistent with historic fill deposits.

Feature 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 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-110 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 0.90 mbs.

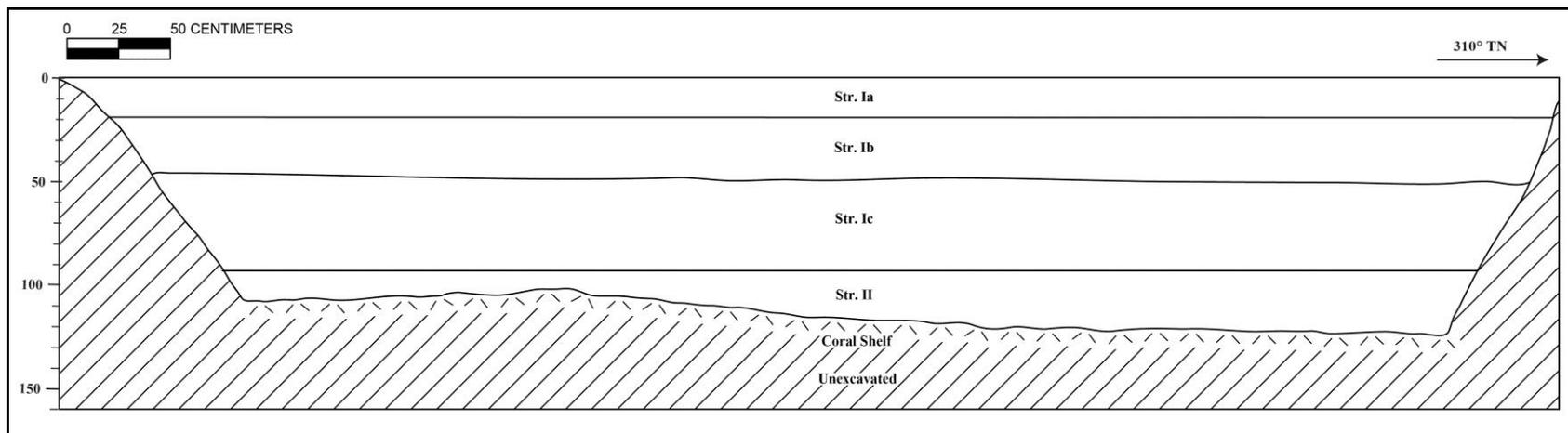
Summary: T-110 was excavated to the coral shelf at 1.20 mbs. The stratigraphy of T-110 consisted of fill strata to the coral shelf (Ia-II). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL). The artifacts observed within Stratum Ic are consistent with historic fill deposits. No natural sediment was observed. No significant cultural resources were identified within T-110.



T-110 general location, view to the west



T-110 east wall profile, view to east



T-110 east wall profile

T-110 Stratigraphic Description

Stratum	Depth(cmbs)	Description
Ia	0-17	Asphalt
Ib	17-47	Fill; 10 YR 6/2 (light brownish gray); gravel; structureless, single-grain; dry, loose consistency; non-plastic; terrigenous origin; abrupt, wavy lower boundary; base course with sub-angular basalt pebbles present
Ic	47-94	Fill; 10 YR 3/3 (dark brown); sandy silt loam; structureless, single-grain; loose consistency; non-plastic; terrigenous origin; very abrupt lower boundary; few, fine-medium roots; contained historic construction debris, utility line fragments, 2 nails, rusted metal components; re-worked alluvial re-deposited as fill.
II	94-120	Fill; 2.5 Y 3/1 (very dark gray); coarse sand; structureless, single-grain; dry, loose consistency; non-plastic; very abrupt, smooth lower boundary; volcanic cinder associated with Punchbowl eruption; re-worked and re-deposited volcanic cinder as fill; evidence of mixing at the upper boundary

2.23 Test Excavation 111 (T-111)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	2-1-013[Plat]
Elevation Above Sea Level:	2.0m
UTM:	617803.43 mE, 2356638.96 mN
Max Length/Width/Depth:	7.30 m / 0.80 m / 1.05 mbs
Orientation:	328 / 148° TN
Targeted Project Component:	Utility Relocation
USDA Soil Survey Designation:	Fill land (FL)

Setting: Test Excavation 111 (T-111) was located within the southeast-bound lane of Nimitz Highway, 100 m northwest of Bishop Street. T-111 was located on property owned by the State of Hawaii. T-111 was located 16 m north of a sewage utility and 12 m south of a water utility. The excavation surface was level with the surrounding land surface.

Summary of Background Research and Land Use: The 1810 Rockwood map showed T-111 was located near “The Fort.” The 1847 Metcalf Downtown Honolulu map illustrated T-111 25 m east of the shoreline and it was within “The Fort.” Between 1887 and 1943, T-111 was located in the corner Fort Street and Halekauwila Street, and some urbanization had occurred (1887 Wall Honolulu Map, 1897 Monsarrat Honolulu Map, 1904 Newton Honolulu map, and the 1919, 1933, and 1943 Honolulu War maps). By 1953, the present day Nimitz Highway and a park (now The Irwin Memorial park) were constructed and the area had undergone massive industrialization (Army Mapping Service Honolulu Map). The 1886 Wall map showed T-111 located near three other LCAs. T-111 was located 44 m southeast of LCA 784 and 9971, where the wharf commonly called The Point was granted to James Robinson and William Pitt by Karaimoku. T-111 was located 105 m southwest of LCA 247, one of 12 house lots and store lots claimed for Wm. C. Lunalilo by C. Kanaina. T-111 was 80 m northwest of LCA 164 which included one house lot awarded to Mataio Kekūanao‘a for Victoria Kamāmalu.

Several historic properties were located near T-111. The Historic Piers 8-11 (No SIHP # assigned) were located about 45 m northwest of T-111. The Irwin Memorial Park was 20 m southwest of T-111. T-111 was located within an area monitored for the Nimitz Highway and Ala Moana Boulevard Resurfacing Project (Petrey et al 2009). No historic properties were encountered during this monitoring project.

Documentation Limitations: T-111 was excavated to depth of 1.05 mbs. Three large concrete boulders observed at 0.47 mbs prevented safe excavation of the south end of T-111. Three more large concrete boulders were observed in the north end of T-111 between 0.7-0.9 mbs. To preserve the integrity of the sidewalls further excavation of T-111 was prevented. Excavation was terminated at 1.05 mbs due to the unsafe conditions.

Stratigraphic Summary: The stratigraphy of T-111 consisted of fill strata to the base of excavation. Observed strata included asphalt (Ia), and sandy loam fill (Ib). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL).

Artifacts Discussion: No artifacts were observed.

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 several linear features but not within excavation boundaries and none correspond to the utility pipe encountered during excavation. Reflectivity was relatively uniform throughout the grid and decreases with depth except for the linear features. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.75 mbs.

GPR depth profiles for T-111 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 and again around 0.40 mbs. An anomaly was observed in the profile and it corresponds to the utility that was encountered during excavation. The maximum depth of clean signal return was approximately 1.25 mbs.

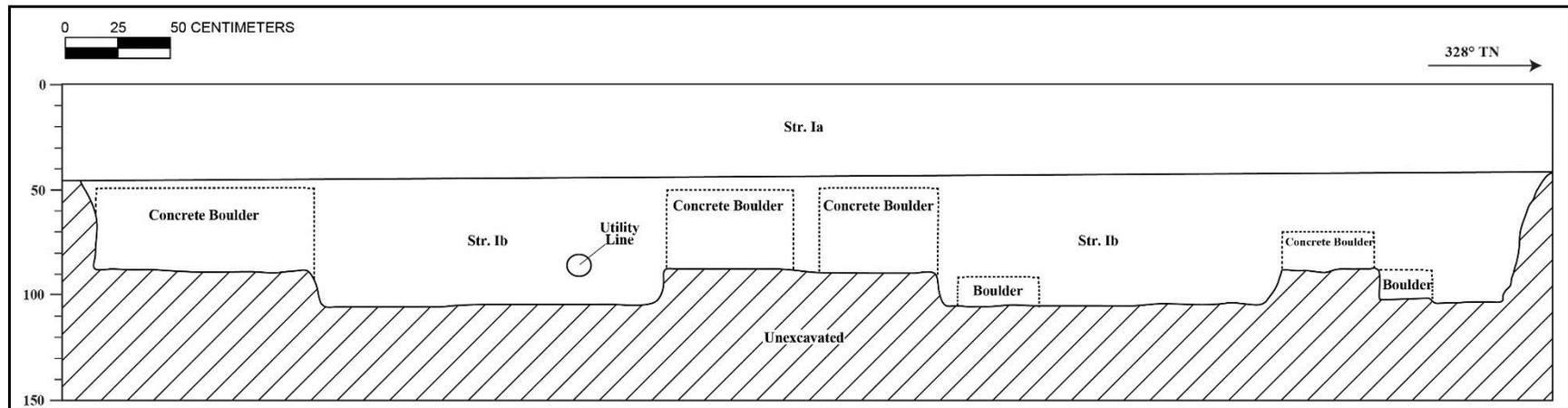
Summary: T-111 was excavated to depth of 1.05 mbs. The stratigraphy of T-111 consisted of fill strata to the base of excavation (Ia-Ib). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL). No natural sediments were observed. No cultural resources were encountered.



T-111 general location, view to northwest



T-111 southwest profile wall, concrete boulders visible to the right



T-111 southwest profile wall

Test Excavation 111, Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-44	Asphalt/concrete, road surface
Ib	44-105	Fill; 10 YR 3/3 (dark brown); sandy loam; structureless, single-grain; dry, loose consistency; non-plastic; mixed origin; lower boundary not visible; contained red brick, construction debris, metal pieces; inclusions of concrete boulders

2.24 Test Excavation 111A (T-111A)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	2-1-013 [Plat]
Elevation Above Sea Level:	2.06 m
UTM:	617830.76 mE, 2356638.19 mN
Max Length/Width/Depth:	6.7m / 0.60 m / 0.39 m
Orientation:	152 / 332° TN
Targeted Project Component:	Utility relocation
USDA Soil Survey Designation:	Ewa silty clay loam (EmA)

Setting: Test Excavation 111A (T-111A) was located within the sidewalk adjacent to the northeast (*mauka*) side of Nimitz Highway, approximately 0.15 m from Nimitz Highway. The original T-111 was terminated early due to safety concerns. T-111A was added to further investigate the “Honolulu Fort” area as the nearby test excavations (T-111 and T-112) did not encounter any deposits associated with this historically documented landmark. T-111A also investigated a utility relocation. A sewer line was 6.5 m northeast (*mauka*), two utility boxes were located approximately 2.5 m and 3.5 m southeast, and a telephone line was located approximately 2.6 m southwest (*makai*) of T-111A. The excavation surface was level with the surrounding landscape.

Summary of Background Research and Land Use: The 1810 Rockwood map showed T-111A was located near “The Fort.” The 1847 Metcalf Downtown Honolulu map illustrated T-111A 45 m east of the shoreline and it was within the southeast wall of “The Fort.” Between 1887 and 1943, T-111A was located in Halekauwila Street and some urbanization had occurred (1887 Wall Honolulu Map, 1897 Monsarrat Honolulu Map, 1904 Newton Honolulu map, and the 1919, 1933, and 1943 Honolulu War maps). By 1953, the present-day Nimitz Highway and a park (now The Irwin Memorial park) were constructed and the area had undergone massive industrialization (Army Mapping Service Honolulu Map).

The 1886 Wall map showed T-111A located near three LCAs. T-111A was 81 m southeast of LCA 784 and 9971, where the wharf commonly called “The Point” was granted to James Robinson and William Pitt by Karaimoku. T-111A was 90 m southwest of LCA 247, one of 12 house lots and store lots claimed for Wm. C. Lunalilo by C. Kanaina. T-111A was 60 m northwest of LCA 164 which included one house lot was awarded to Mataio Kekūānāo‘a for Victoria Kamāmalu.

Several historic properties were located near T-111A. The Historic Piers 8-11 (No SIHP # assigned) were located about 70 m northwest of T-111A. The Irwin Memorial Park was 45 m southwest of T-111A. The Dillingham Transportation Building (SIHP# 50-80-14-09900) was located 100 m southeast of T-111A. T-111A was located within an area monitored for the Nimitz Highway and Ala Moana Boulevard Resurfacing Project (Petrey et al. 2009). No historic properties were encountered during this monitoring project.

Documentation Limitations: T-111A was excavated to a depth of 0.39 mbs. T-111A was unexcavated bellow 0.39 mbs due to the identification of a live communication line.

Stratigraphic Summary: The stratigraphy of T-111A consisted of fill strata to the base of excavation. Observed strata included asphalt (Ia) and extremely gravelly loam base course fill (Ib). The stratigraphy did not conform to the USDA soil survey for Ewa silty clay loam (EmA).

Artifacts Discussion: No artifacts were observed.

Features Discussion: No features were observed

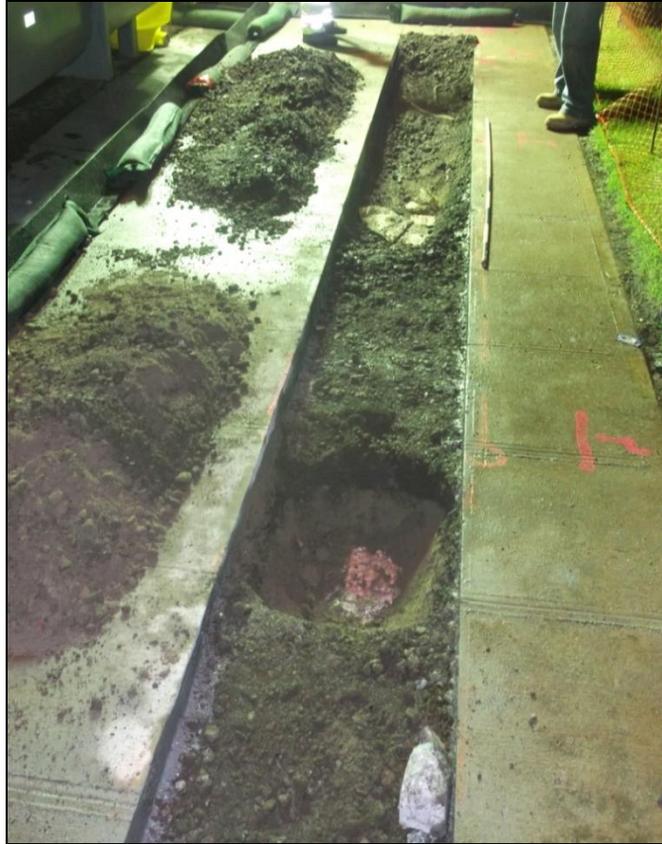
Terrestrial Faunal Remains Collected During Excavation: No terrestrial faunal remains were collected individually during excavation.

Sample Results: No samples were collected.

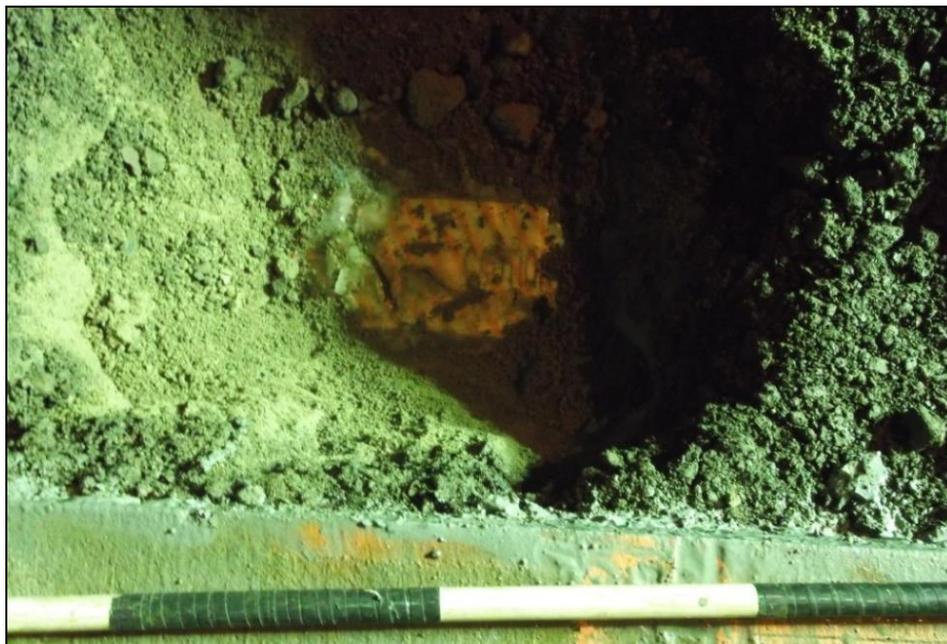
GPR Discussion: A review of amplitude slice maps indicated no linear features although a utility jacket was encountered. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.50 mbs.

GPR depth profiles for T-111A 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 0.10 mbs. Several anomalies were observed in the profile and two corresponds to the utility jacket and pipes that were encountered during excavation. The maximum depth of clean signal return was approximately 0.75 mbs.

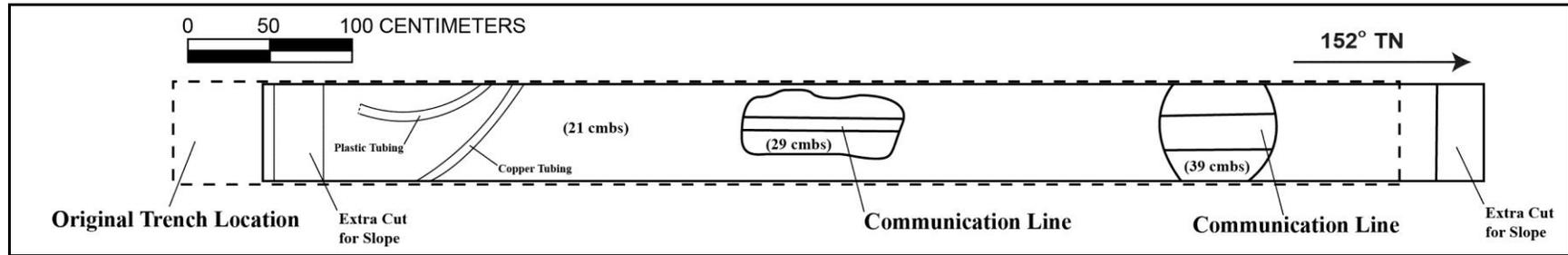
Summary: T-111A was excavated to a depth of 0.39 mbs. The stratigraphy of T-111A consisted of fill strata to the base of excavation (Ia-Ib). The stratigraphy did not conform to the USDA soil survey for Ewa silty clay loam (EmA). No natural sediments were observed. No cultural resources were identified.



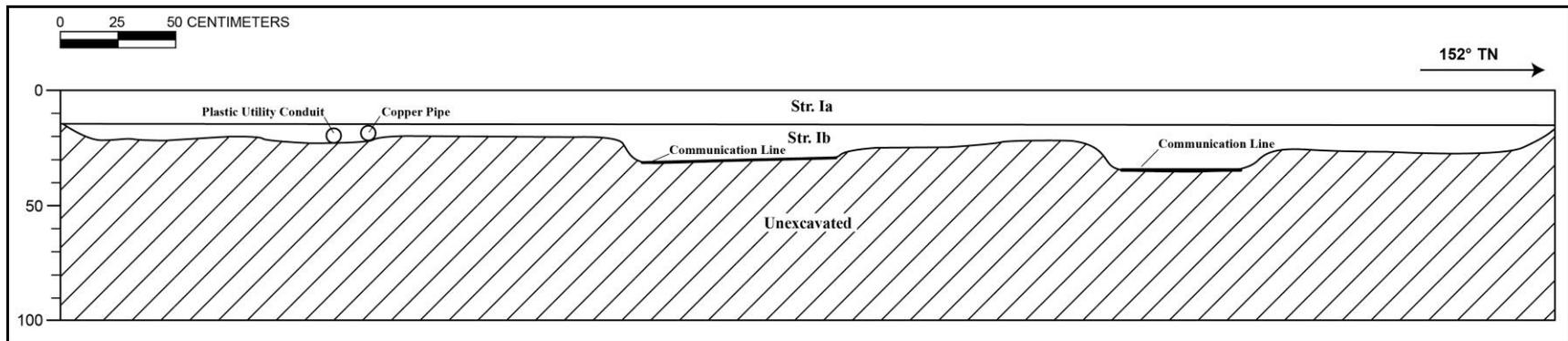
T-111A post-excavation, view to the northwest



T-111A, utility line, view to southwest



T-111A plan view of excavation floor at Stratum Ib



T-111A northeast wall profile

T-111 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-15	Asphalt
Ib	21-39	Fill; 10 YR 5/2 (grayish brown); extremely gravelly loam; structureless, single-grain; loose consistency; non-plastic; terrigenous origin; lower boundary not visible; utilities were encountered; imported base course fill

2.25 Test Excavation 112 (T-112)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	N/A
Elevation:	2.0 m
UTM:	617822 mE, 2356610 mN
Max Length/Width/Depth:	7.27 m / 0.73 m / 2.60 m
Orientation:	326 / 146° TN
Targeted Project Component:	Utility Relocation
USDA Soil Designation:	Fill land (FL)

Setting: Text Excavation (T-112) was located approximately 70 m northwest of South Nimitz Highway and Bishop Street intersection. Utilities located within the vicinity included an electric line located approximately 7.3 m east of T-112. T-112 was located on property owned by the City and County of Honolulu. The excavation surface was level with the surrounding land surface.

Summary of Background Research and Land Use: The 1810 Rockwood map indicated that T-112 was located near the shoreline and in proximity of the residences of Namahana and Liliha. The 1847 Metcalf downtown Honolulu map showed that the location of T-112 was approximately 3 m north of the shoreline and 8.0 m south of a fort. The shoreline was extended or filled in according to the 1883 Baldwin map showing T-112 approximately 138.8 m east of the shoreline. In relation to the 1884 Bishop Honolulu map T-112 was located within Halekauwila Street. The 1887 Wall map indicated industrial development in the surrounding area. The 1904 Newton Honolulu map indicated that T-112 was located within a warehouse named GT 3447 to J.A. Hopper. By 1933 T-112 was no longer within a warehouse and continued development was present within the surrounding area. According to the 1953 Army Mapping Service Honolulu map T-112 was located 5.0 m west of Irwin Memorial Park (SIHP 50-80-14-09829).

The 1810 Rockwood map showed T-111 was located near “The Fort.” The 1847 Metcalf Downtown Honolulu map illustrated T-111 25 m east of the shoreline and it was within “The Fort.” Between 1887 and 1943, T-111 was located in the corner Fort Street and Halekauwila Street, and some urbanization had occurred (1887 Wall Honolulu Map, 1897 Monsarrat Honolulu Map, 1904 Newton Honolulu map, and the 1919, 1933, and 1943 Honolulu War maps). By 1953, the present day Nimitz Highway and a park (now The Irwin Memorial park) were constructed and the area had undergone massive industrialization (Army Mapping Service Honolulu Map). The 1886 Wall map showed T-111 located near three other LCAs. T-111 was located 44 m southeast of LCA 784 and 9971, where the wharf commonly called The Point was granted to James Robinson and William Pitt by Karaimoku. T-111 was located 105 m southwest of LCA 247, one of 12 house lots and store lots claimed for Wm. C. Lunalilo by C. Kanaina. T-

111 was 80 m northwest of LCA 164 which included one house lot awarded to Mataio Kekūānao‘a for Victoria Kamāmalu.

Several historic properties were located near T-112. The Historic Piers 8-11 (No SIHP # assigned) were located about 70 m northwest of T-112. The Irwin Memorial Park was 20 m southwest of T-112. T-112 was located within an area monitored for the Nimitz Highway and Ala Moana Boulevard Resurfacing Project (Petrey et al 2009). No historic properties were encountered during this monitoring project.

Documentation Limitations: T-112 was excavated to a depth of 2.6 mbs, and beneath the water table at 2.4 mbs. The northern portion of T-112 was unexcavated beneath 0.44 mbs due to the presence of a large boulder, and the southern portion was unexcavated below 0.65 mbs due to the presence of a utility pipe.

Stratigraphic Summary: The stratigraphy of T-112 consisted of fill strata overlaying natural sediment to the coral shelf. Observed strata included asphalt (Ia), very cobbly sandy silt fill (Ib), and compacted natural sand (II). Stratum Ib had a sand pocket that contained a concentration of faun remains (goat). Stratum II was a compacted, natural cinder with sand inclusions and shells. The stratigraphy generally conformed to the USDA soil survey designation of Fill land (FL).

Artifacts Discussion: A total of 12 artifacts (Acc. # 112-A-1 to A-12) were collected from Stratum Ib. The artifacts included a minimum of two ceramic vessels, one with a fleur-de-lis design, possibly indicating a European or American origin. Glass fragments were from a minimum of three bottles; at least two of the bottles are the typical dark olive bottles with push-up/kick-up bases made in a turn mold, manufactured from 1860 to the 1920s. Two of the lips, probably part of the same bottles have an applied finish, indicating a date of 1820-1890. One composite fragment of mortar was also collected. Artifacts collected from Stratum Ib are consistent with late 1800s fill deposits.

Features Discussion: No features were observed.

Terrestrial Faunal Remains Collected During Excavation: Faunal remains were collected individually during excavation from the spoil bin, as well as in context from Stratum Ib. The spoil bin collection consisted of *Carpa aegagrus hircus*, *Canis lupus familiaris* and other medium mammal fragments. *Bos taurus* fragments were found throughout Stratum Ib (0.47-2.5 mbs) and a concentration of *Bos taurus*, *Sus scrofa*, *Carpa aegagrus hircus* and *Canis lupus familiaris* skeletal elements was collected from Stratum Ib at 1.97 mbs. Most of the *Bos taurus* fragments from Ib had been butchered with a metal blade (indicating an historic origin, not traditional Hawaiian), the rest of the bones showed no signs of cultural modifications.

Sample Results: No bulk sediment samples were collected during the investigation of T-112.

GPR Discussion: A review of amplitude slice maps indicated a linear features which could correspond to the utility 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 0.75 mbs.

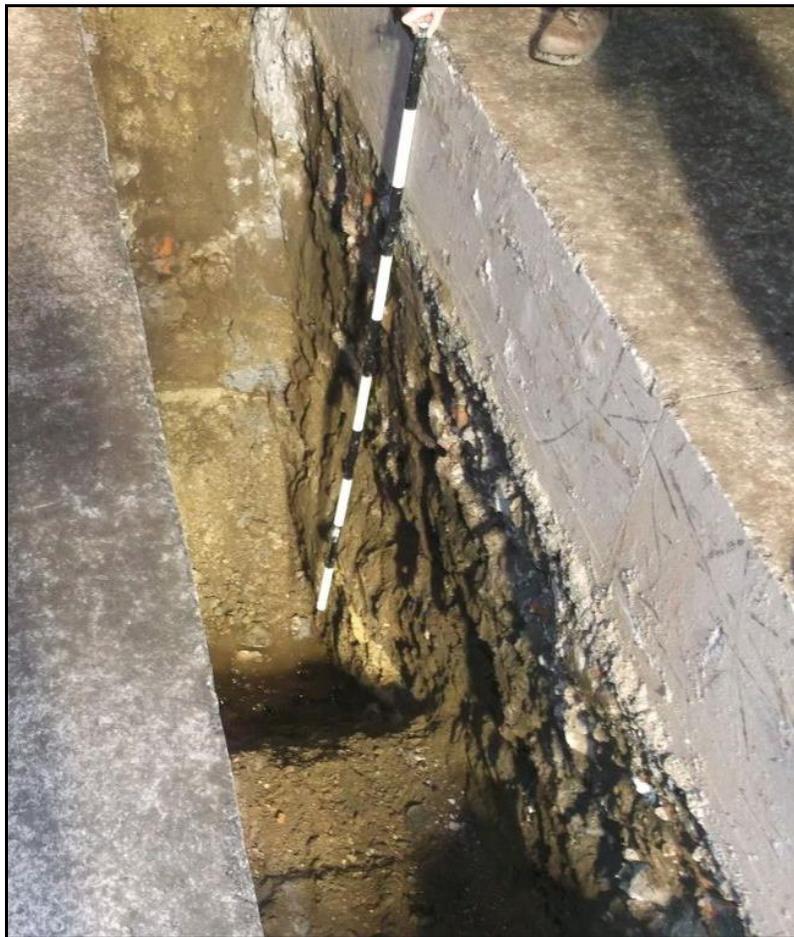
GPR depth profiles for T-112 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in

reflectivity occurring around 0.15 mbs and again around 0.35 mbs. Several Anomalies were observed in the profile and one corresponds to the utility encountered during excavation and the others are not within the excavation boundaries. The maximum depth of clean signal return was approximately 1.15 mbs.

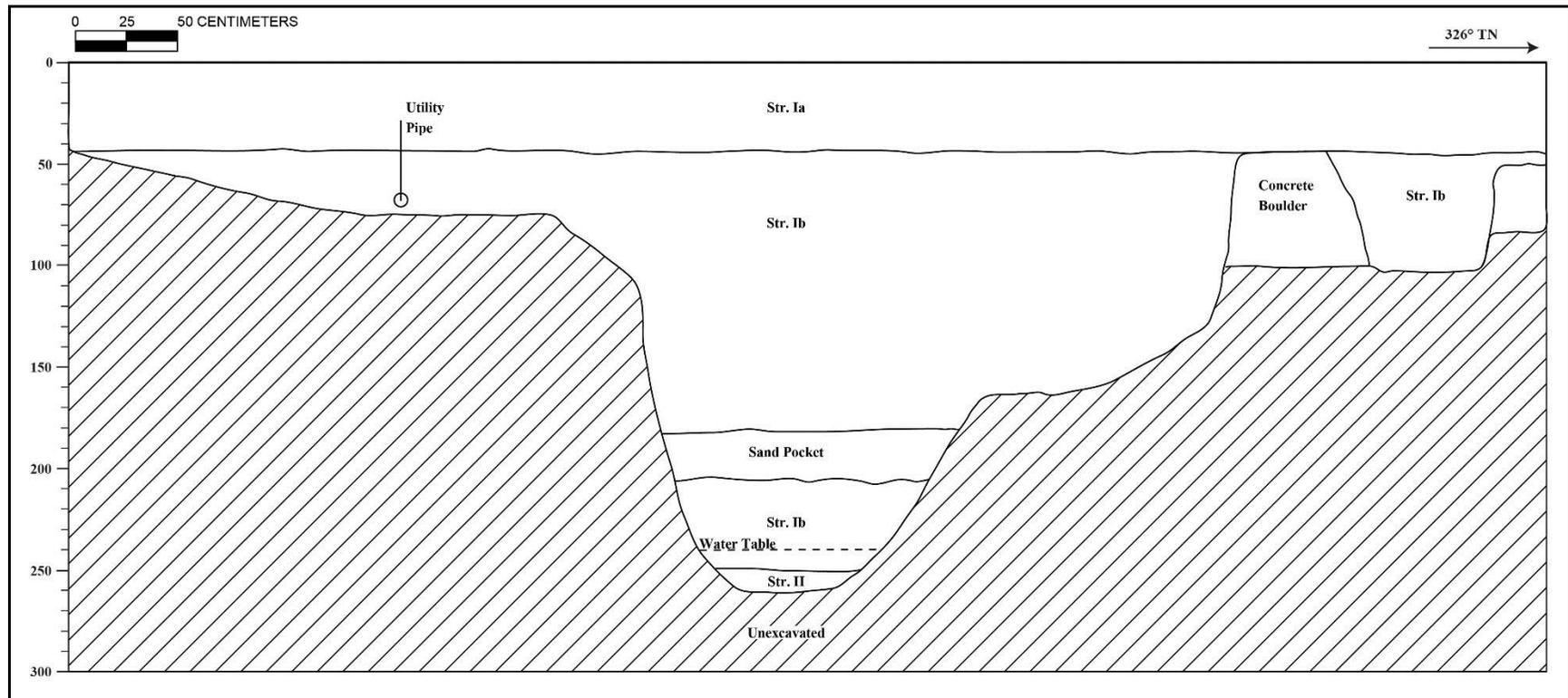
Summary: T-112 was excavated to a depth of 2.6 mbs, and beneath the water table at 2.4 mbs. The stratigraphy of T-112 consisted of fill strata (Ia-Ib) overlaying natural sediment (II) to the coral shelf. The stratigraphy generally conformed to the USDA soil survey designation of Fill land (FL). Artifacts collected from Stratum Ib are consistent with late 1800s fill deposits. Faunal remains were considered to be food remains part of fill deposits. No cultural resources were identified.



T-112 general location (view to southeast)



T-112 southwest wall profile (view to south).



T-112 southwest wall profile

T-112 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-45	Asphalt, road surface
Ib	45-250	Fill; 10 YR 3/1-3/2 (very dark gray brown); very cobbly sandy silt; structureless, single-grain; moist, loose consistency; non-plastic; mixed origin; abrupt, smooth lower boundary; contained historic of red brick, large chunk of conglomerate brick and concrete, (1) nail, (1) button, glass bottle fragments, ceramic fragments, cut faunal bone, also pockets of sand, contained concentration of goat bone fragments within sand pocket
II	250-260	Natural; 10 YR 2/1 (black); sand; structureless, single-grain; moist, extremely firm consistency; non-plastic; mixed origin; lower boundary not visible; highly compacted volcanic cinder from Punchbowl with sand inclusions and shells

T-112 Terrestrial vertebrate material collected individually during excavation

Acc. #	Stratum	Depth(cmbs)	Feature	Family/Class	Species	Element	Description	Modification
112-F-1	Spoil bin	-	-	Bovidae (goat)	<i>Capra aegagrus hircus</i>	Left mandible	Fragments	None
112-F-2	Spoil bin	-	-	Canidae (dog)	<i>Canis lupus familiaris</i>	Fibula; Proximal rib; Radius	Fragments	None
112-F-3	Spoil bin	-	-	Mammalia	Medium mammal	Possible facial bones	Fragments	None
112-F-4	Ib	47-250	-	Bovidae (cow)	<i>Bos taurus</i>	Ribs; Scapula; femur (possible); Diaphysis sections; Diaphysis sections/irregular bones	Fragments	Butchered (cut with metal blade)
112-F-5	Ib	197	-	Bovidae (cow)	<i>Bos taurus</i>	Innominate; Ribs	Fragments	Ribs butchered (with metal blade)
112-F-6	Ib	197	-	Suidae (pig)	<i>Sus scrofa</i>	Tibia diaphysis (distal portion); Proximal rib	Fragments	None
112-F-7	Ib	197	-	Bovidae (goat)	<i>Capra aegagrus hircus</i>	Left mandible with molars; Scapular spine	Fragments	None
112-F-8	Ib	197	-	Canidae (dog)	<i>Canis lupus familiaris</i>	Tibial condyle	Fragment	None

T-112 Artifacts Analysis Table

Acc. 112-A-	Prov.	Ceramic Vessel Type	Portion	No.	Paste; Decoration	Age; Origin	Comments
1	T-112, St. Ib	Dinnerware (European)	Rim	1	Porcelain; Transfer-print		Bluish; white; Fleu-de-lis along rim
2	T-112, St. Ib	Dinnerware	Body to rim	1	Earthenware, Refined; Transfer-print		Bluish white; Small flowers
3	T-112, St. Ib	Flatware	Base	1	Earthenware, Refined; Painted underglaze		Bluish white; flow blue daisies
4	T-112, St. Ib	Flatware	Rim	1	Earthenware, Refined		Bluish-white; shell-edged
Acc. 112-A-	Prov.	Glass Bottle Type	Portion	No.	Color	Age; Origin	Comments
5	T-112, St. Ib	Bottle	Body	1	Brown		
6	T-112, St. Ib	Bottle	Body	1	Olive		
7	T-112, St. Ib	Bottle, Spirits	Base-body	1	Olive, Dark	1860-1920s	Kick-up
8	T-112, St. Ib	Bottle, Spirits	Base-body	1	Olive, Dark	1860-1920s	Kick-up
9	T-112, St. Ib	Bottle, Beverage	Neck-lip	1	Olive, Dark		
10	T-112, St. Ib	Bottle	Neck-lip	1	Olive, Dark	1820-1890	
11	T-112, St. Ib	Bottle, Beer	Neck-lip	1	Olive, Dark	1820-1890	
Acc. 112-A-	Prov.	Miscellaneous Type	Portion	No.	Material	Age; Origin	Comments
12	T-112, St. Ib	Mortar	Fragment	1	Composite		Whitish/brown



T-112 glass ceramic fragments (Acc. # 112-A-1 to A-4) from Stratum Ib



T-112 glass bottle fragments (Acc. # 112-A-7, A-9, A-10) from Stratum Ib

2.26 Test Excavation 113 (T-113)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	2-1-013 plat
Elevation Above Sea Level:	1.98 m
UTM:	617851 mE, 2356564 mN
Max Length/Width/Depth:	7.65 m / 0.72 m / 2.65 m
Orientation:	332 / 152° TN
Targeted Project Component:	Utility relocation
USDA Soil Designation:	Fill land (FL)

Setting: Test Excavation 113 (T-113) was located in the far left, southeast-bound lane of Nimitz Highway, approximately 10 m northwest of the Nimitz Highway and Bishop Street intersection. T-113 was 2.5 m *makai* of a fuel line and 14.5 m southeast of a sewer line. The test excavation was level with the surrounding road surface.

Summary of Background Research and Land: LCA 164 was located approximately 30 m northeast of T-113 and was awarded to Mataio Kekūānāo'a for Victoria Kamāmalu. The award contents included one house lot. According to the 1847 Metcalf map, T-113 was in a submerged area 30 m *makai* of the historic shoreline. By 1883 the area had been filled in and T-113 was 260 m inland (1883 Baldwin map). By 1884 T-113 was within Halekauwila Street and by 1887 T-113 was located 270 m *mauka* of PMSS Co. Wharf (1884 Bishop and 1887 Wall maps). The 1953 Army Mapping Service map showed T-113 in the road that is currently Nimitz Highway, approximately 5 m northeast of a park.

Few archaeological studies had been conducted in the vicinity of T-113. The test excavation was within a 2009 archaeological monitoring project for resurfacing along Nimitz Highway and Ala Moana Boulevard. No historic properties were observed but it was determined that further excavation may reveal cultural deposits or burials (Petrey et al. 2009). In 1990, 20 m *makai* of T-113, Wong, Smith, and Rosendahl conducted an historic assessment study of the proposed Aloha Tower Complex project site. The study determined that the area sat on historic period fill which had been placed in a formerly submerged area. It was determined there were no pre-Contact remains in the area, or if remains were present they were subsurface and brought in with fill (Wong, Smith, and Rosendahl, 1990). T-113 was 19 m *mauka* from Irwin Memorial Park (SIHP # 50-80-14-09829). The Dillingham Transportation Building (SIHP # 50-80-14-09900) was 35 m southeast of T-113.

Documentation Limitations: T-113 was excavated to a depth of 2.65 mbs, and beneath the water table at 2.45 mbs. There were no specific factors that limited the documentation of T-113.

Stratigraphic Summary: The stratigraphy consisted of fill material overlying a single natural layer. Observed stratigraphy included asphalt (Ia), sandy loam fill with historic debris (Ib), silty

clay loam fill (Ic), silty clay loam fill (Id), sandy clay loam fill (Ie), natural loamy sand with abundant marine shell and coral intermixed with volcanic cinder (II). Stratigraphy generally conformed to the USDA soil survey designation of Fill land (FL).

Artifacts Discussion: No artifacts were collected.

Feature 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 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-113 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 0.10 mbs and again around 0.50 mbs. No utilities were observed in the profile. The maximum depth of clean signal return was approximately 1.0 mbs.

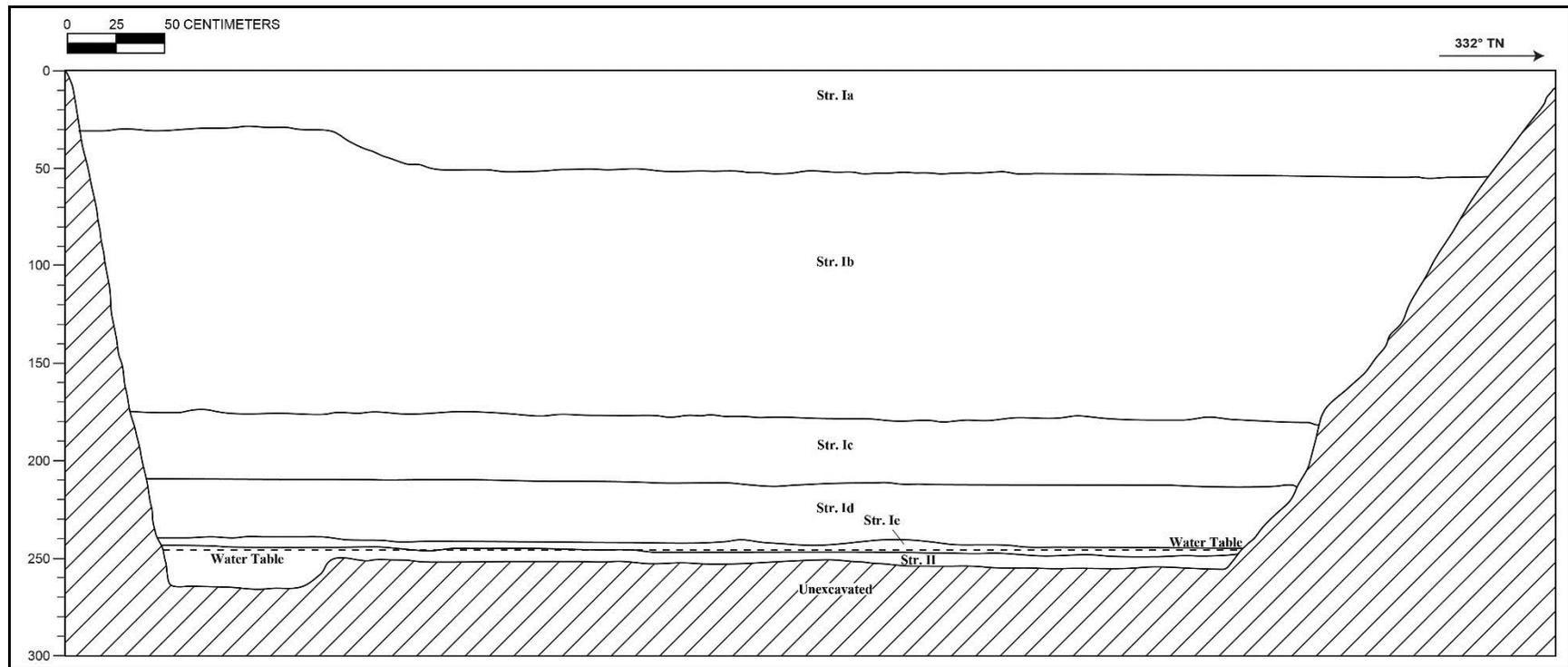
Summary: T-113 was excavated to a depth of 2.65 mbs and encountered the water table at 2.45 mbs. The stratigraphy consisted of fill material (Ia-Ie) overlying a single natural layer (II). Stratigraphy generally conformed to the USDA soil survey designation of Fill land (FL). No cultural resources were identified.



T-113 general location, view to southeast



T-113 southwest wall profile



T-113 southwest wall profile

T-113 Stratigraphic Description

Stratum	Depth (cmts)	Description
Ia	0-50	Asphalt
Ib	30-176	Fill; 10YR 3/3 (dark brown); sandy loam; structureless, single-grain; moist, loose consistency; non-plastic; mixed origin; abrupt, smooth lower boundary; loose fill with red brick, glass, ceramic fragments, 1 round-headed nail, cane slag, coral inclusions, 2 cut boulders
Ic	176-210	Fill; 10YR 4/3 (brown); silty clay loam; weak, fine, blocky structure; moist, friable consistency; plastic; terrigenous origin; very abrupt, smooth lower boundary; contains abundant remnants of oxidized organic filaments; intermixed with Stratum Id, possible mixing of reworked EmA
Id	210-242	Fill; GLEY 1 3/10Y (very dark greenish gray); silty clay loam; weak, fine, blocky structure; moist, firm consistency; plastic; very abrupt, smooth lower boundary; fill
Ie	242-245	Fill; 2.5Y 4/1 (dark gray); sandy clay loam; weak, fine, crumb structure; moist friable consistency; plastic; mixed origin; very abrupt, smooth lower boundary; thin stratum layer at the water table, very abrupt boundary indicates fill
II	245-265	Natural; 2.5Y 5/3 (light olive brown); loamy sand; structureless, single-grain; wet, slightly sticky consistency; slightly plastic; lower boundary not visible; compacted sand with abundant marine shell and coral with volcanic cinder; natural sandy bay sediment with cinder derived from Punchbowl Crater

2.27 Test Excavation 114 (T-114)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	2-1-014: 003
Elevation Above Sea Level:	1.89 m
UTM:	617915.28 mE, 2356525.05 mN
Max Length/Width/Depth:	3.12 m / 0.98 m / 1.0 m
Orientation:	196 / 16° TN
Targeted Project Component:	Station Building
USDA Soil Survey Designation:	Ewa silty clay loam (EmA)

Setting: Test Excavation 114 (T-114) was located within the Pacific Guardian Center courtyard, approximately 15 m northeast of South Nimitz Highway. The excavation surface was level with the surrounding land surface.

Summary of Background Research and Land Use: According to the Metcalf 1847 map, T-114 was located 16.6 m east of the former shoreline. The 1883 Baldwin and the 1884 Bishop map indicate the shoreline had been extended to accommodate growth of the downtown and Chinatown area. The 1887 Wall Honolulu map depicted T-114 within parcel of land northeast of Halekauwila Street. Monsarrat's 1897 map indicated that the shoreline had been extended to the south and several buildings had been constructed. T-114 was located between two one-story brick warehouses. The 1919 War map had illustrated more buildings within the area, and urban development had occurred. Between 1933 and 1953 the smaller buildings had been replaced with larger structures (1933 and 1943 War map and 1953 Army Mapping Service map).

Few archaeological studies had been conducted in the vicinity of T-114. The test excavation was within a 2009 archaeological monitoring project for resurfacing along Nimitz Highway and Ala Moana Boulevard. No historic properties were observed, but it was determined that further excavation may reveal cultural deposits or burials (Petrey et al. 2009). In 1990, 85 m southeast (*makai*) of T-114, Wong, Smith, and Rosendahl (1990) conducted a historic assessment study of the proposed Aloha Tower Complex project site. T-114 was located within The Dillingham Transportation Building (SIHP # 50-80-14-09900) footprint. T-114 was 90 m north east (*mauka*) from Irwin Memorial Park (SIHP # 50-80-14-09829).

Documentation Limitations: T-114 was excavated to a depth of 1.0 mbs. During pre-excavation, T-114 was shortened from 3.5 m to 3.12 m in length. T-114 could not be excavated to the water table or coral shelf due to the presence of utilities and concrete jackets.

Stratigraphic Summary: The stratigraphy of T-114 consisted of fill strata to the base of excavation. Observed strata included tile with grout, concrete, and granite (Ia), loamy sand fill (Ib), extremely gravely silt loam fill with construction debris (Ic). The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA).

Artifacts Discussion: A total of nine artifacts (Acc. # 114-A-1 to A-9) were collected from Stratum Ic. The artifacts included glass fragments from a minimum of two bottles one of black glass (pre-1890s), with an applied lip finish, which dates from 1820-1890. The clear bottle fragment dates to post-1870s. Construction debris including a wire nail dating from 1850-present was also collected. Artifacts collected from Stratum Ic are consistent with late 1800s fill deposits.

Features Discussion: No features were observed.

Terrestrial Faunal Remains Collected During Excavation: A single *Bos taurus* rib fragment was collected individually during excavation from Stratum Ic (at 0.48 mbs). This bone showed marks from being butchered by a metal blade, which (in addition to being an introduced species) indicates that Stratum Ic is of historic origin, not traditional Hawaiian.

Sample Results: No bulk sediment samples were collected from T-114, however, a single shell fragment (1.5 g) was collected from Stratum Ic at 0.48 mbs. The results of the sample analysis identified the shell as a burned fragment from Cypraeidae *Cypraea caputserpentis*.

GPR Discussion: A review of amplitude slice maps indicated a linear feature that corresponds to a drain but none of the utilities or the concrete jacket were observed in the slice maps. Reflectivity was relatively uniform throughout the grid and decreases with depth except for the drain. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.50 mbs.

GPR depth profiles for Excavation 114 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 0.30 mbs. An anomaly was observed in the profile that corresponds to the drain but the utilities and concrete jacket were not observed in the GPR profile. The maximum depth of clean signal return was approximately 1.0 mbs.

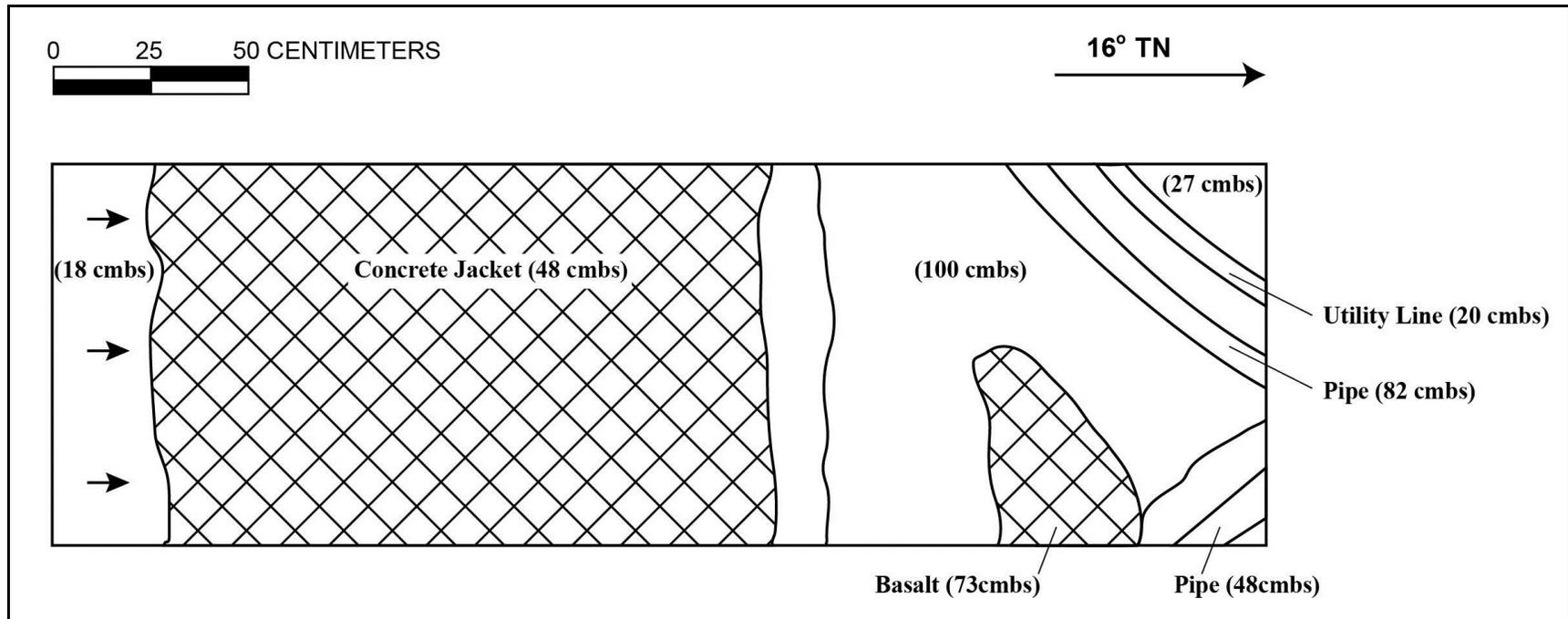
Summary: T-114 was excavated to a maximum depth of 1.0 mbs. T-114 could not be completed due to the presence of utilities and concrete jackets. The stratigraphy of T-114 consisted of fill strata to the base of excavation (Ia-Ic). The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA). Artifacts collected from Stratum Ic are consistent with late 1800s fill deposits. The faunal remains collected from Ic had butcher marks and were considered food remnants. The results of the sample analysis identified the shell as a burned fragment from Cypraeidae *Cypraea caputserpentis*. No natural sediments were observed. No cultural resources were identified.



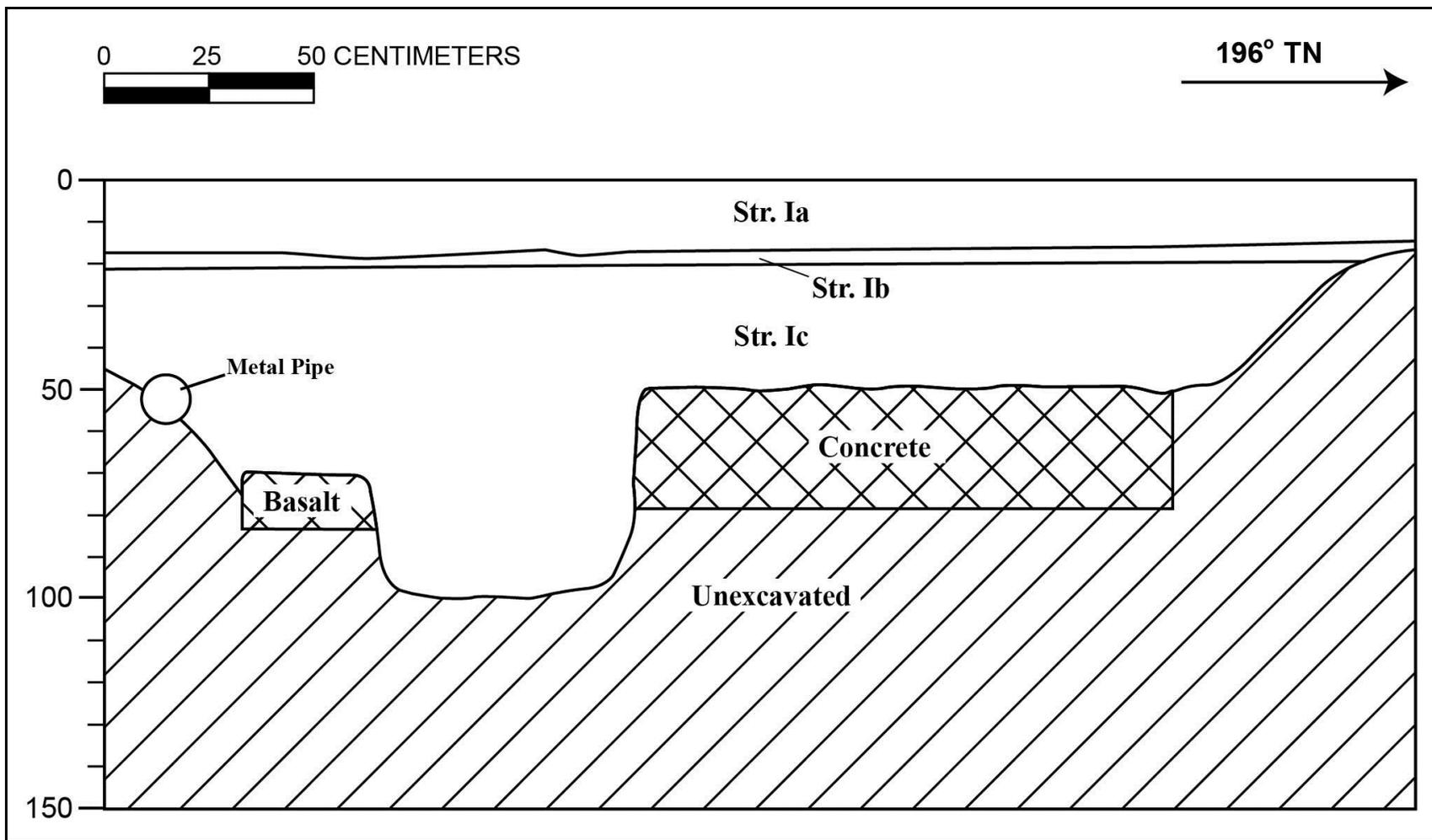
T-114: General location (view to north)



T-114: East profile wall with various utilities and obstructions



T-114 planview



T-114 east wall profile

T-114 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-17	Tiled concrete
Ib	17-20	Fill; 10 YR 8/3 (very pale brown); loamy sand; structureless, single-grain; dry, loose consistency; non-plastic; mixed origin; abrupt, smooth lower boundary; imported fill/base
Ic	20-100	Fill; 10 YR 4/3 (brown); extremely gravelly silt loam; structureless, single-grain; dry, loose consistency; non-plastic; terrigenous origin; lower boundary not visible; few, medium, coarse roots; contained brick, rebar, and concrete; subangular basalt cobble, boulders, imported fill, foundational structure

T-114 Artifacts Analysis Table

Acc. # 114-A-	Prov.	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
1	T-114, St. Ic	Bottle, Beverage	Neck-lip	1	Black	1820 – 1890	
2	T-114, St. Ic	Bottle	Body	1	Black	pre- 1890s	
3	T-114, St. Ic	Bottle, Beverage	Body	1	Black		
4	T-114, St. Ic	Bottle	Body	2	Clear	1870s- post	
Acc. # 114-A-	Provenience	Type	Portion	No.	Material	Origin; Age	Description
5	T-114, St. Ic	Can	Fragment	1	Metal		Aluminum, red ACL at top "Little Old ... "
6	T-114, St. Ic	Nail, wire	Complete	1	Metal	1850- present	Corroded
7	T-114, St. Ic	Tile	Fragment	1	Tile		Grayish white, glazed on one side
8	T-114, St. Ic	Unknown	Fragment	1	Plastic		Red, flat, with cloth at one end
9	T-114, St. Ic	Window glass	Fragment	1	Glass		



T-114 glass bottle fragments (Acc. # 114-A-1 to A-4) from Stratum Ic

2.28 Test Excavation 115 (T-115)

Ahupua'a:	Honolulu
LCA:	N/A
TMK #:	2-1-014 [Plat]
Elevation Above Sea Level:	1.96 m
UTM:	617896 mE, 2356497 mN
Max Length/Width/Depth:	7.27 m / 0.74 m / 2.40 m
Orientation:	142 / 322° TN
Targeted Project Component:	Station Column
USDA Soil Survey Designation:	Ewa silty clay loam (EmA); Fill land (FL)

Setting: Test Excavation 115 (T-115) was located in Nimitz Highway on State owned property between Bishop Street and Alakea Street. The closest utilities to T-115 included an irrigation line 1.8 m northeast (*mauka*) and a HECO line 1.8 m southwest (*makai*). The topography surrounding T-115 was level.

Summary of Background Research and Land Use: According to the 1847 Metcalf Downtown map, T-115 was located in Honolulu Harbor. By 1884, T-115 was located in Halekauwila Street, (the bay had been filled in) and T-115 was then located 44 m southeast of LCA 191. According to the 1887 Wall Honolulu map, T-115 was located approximately 315 m northeast of the shoreline of Honolulu Harbor. The 1953 War map indicated T-115 was located in modern day Nimitz Highway.

Previous archaeological investigations in the Waterfront included a 2001 monitoring report for the Nimitz Highway Reconstructed Sewer by Winieski and Hammatt approximately 150 m east of T-115. The survey determined one historic property and a remnant of a light-gauge rail associated with the historic Honolulu Rapid Transit trolley system. An archaeological monitoring report was completed in 2008 (Hazlett et al.) in which thick fill and reclamation layers were encountered, but no historic properties or archaeological features were documented. T-115 is located in an area that was monitored in 2009 (Petrey et al.) for the Nimitz Highway and Ala Moana Boulevard Resurfacing Project. No historic properties or archaeological features were documented.

Documentation Limitations: T-115 was excavated to a depth of 2.40 mbs, and beneath the water table at 2.31 mbs. There were no specific factors that limited documentation of T-115.

Stratigraphic Summary: The stratigraphy of T-115 consisted of fill strata overlying natural sediment to the coral shelf. The observed strata for T-115 included asphalt (Ia), gravelly sandy clay loam (Ib), gravelly sandy silt fill (Ic), sandy loam fill (Id), and natural, highly compacted sand (II). T-115 was located along the boundary of Ewa silty clay loam soils (EmA) and Fill land (FL). The stratigraphy did not conform to the USDA soil survey designation for Ewa silty clay loam (EmA). The stratigraphy generally conformed to the USDA soil survey designation for Fill land (FL).

Artifacts Discussion: A total of five artifacts (Acc. # 115-A-1 to A-5) were collected from Stratum Id. The artifacts consisted of a stoneware bottle and glass bottle fragments. The stoneware bottle with a tan/cream Bristol-type two-tone glaze generally dates from around 1835 to 1900. Early bottles were made in Great Britain, but later ones were also made in America. A minimum of four bottles were collected. One black glass fragment dates to the pre-1890s and a dark olive base fragment for a spirits bottle with a push-up base, made in a turn mold, can be dated to 1860-1920s. Artifacts collected from Stratum Id were consistent with late 1800s fill deposits.

Feature Discussion: No features were observed.

Terrestrial Faunal Remains Collected During Excavation: A single *Bos taurus* rib fragment was collected individually during excavation from Stratum Id (between 1.7-2.35 mbs). This bone showed marks from being butchered by a metal blade, which (in addition to it belonging to an introduced species) indicates that Stratum Id is of historic origin, not traditional Hawaiian.

Sample Results: No sample analysis was conducted.

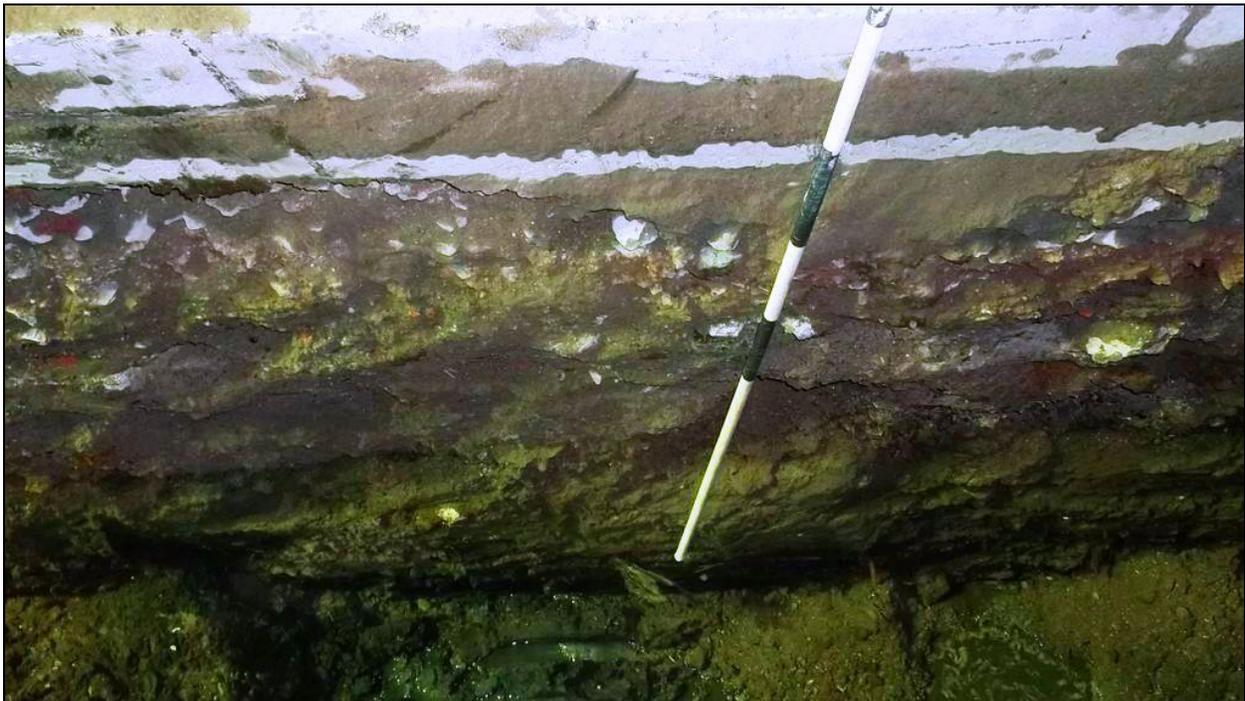
GPR Discussion: A review of amplitude slice maps indicated no linear features which might indicate the presence of utilities. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.25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

GPR depth profiles for T-115 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 and again around 0.50 mbs. No utilities were observed in the profile. The maximum depth of clean signal return was approximately 1.15 mbs.

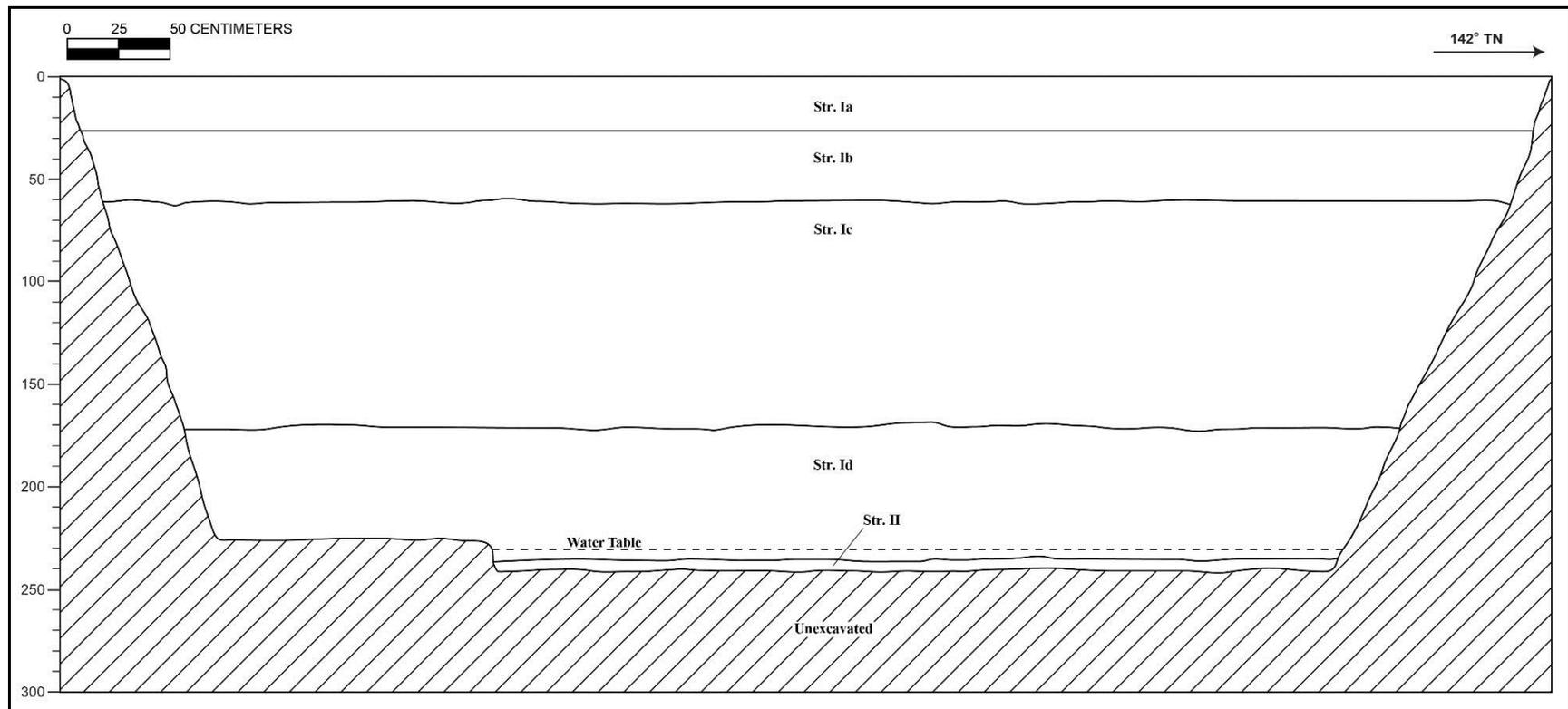
Summary: T-115 was excavated to a depth of 2.40 mbs, and beneath the water table at 2.31 mbs. The stratigraphy of T-115 consisted of fill strata overlying natural sediment to the coral shelf. The stratigraphy generally conformed to the USDA soil survey designation for Fill land (FL). Artifacts collected from Stratum Id were consistent with late 1800s fill deposits. The single faunal rib collected had butcher marks and was considered to be a food remnant. The findings of T-115 suggest fill events associated with the development of the Waterfront area. No cultural resources were identified.



T-115 general location, view to the northwest



T-115 northeast wall profile



T-115 northeast wall profile

T-115 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-26	Asphalt
Ib	26-60	Fill; 10 YR 4/4 (dark yellow brown) with common, fine to coarse mottles of 10 YR 8/1 (white); gravelly sandy clay loam; weak, fine, crumb structure; moist, friable consistency; slightly plastic; mixed origin; v. abrupt, smooth lower boundary; few, fine roots; gravelly fill material deposited during paving
Ic	60-170	Fill; 2.5 Y 4/1 (dark gray); gravelly sandy silt; structureless, single-grain; moist, loose consistency; non-plastic; terrigenous origin; clear, smooth lower boundary; contained 5-10% ferrous material present, brick
Id	170-235	Fill; 10 YR 3/1 (very dark grayish brown) sandy loam; structureless, single-grain; moist, very friable; slightly plastic; mixed origin; clear, smooth lower boundary; contained wood, metal pipes, ceramic fragments, glass fragments, ceramic pipe fragments, faunal remains.
II	235-240	Natural; 5 Y 8/1 (white) with common mottles of 10 YR 5/1 (gray); silty sand; structureless, single-grain; moist, firm consistency; non-plastic; mixed origin; lower boundary not visible; very highly compacted sand with some silt and shells and tubular voids

T-115 Artifacts Analysis Table

Acc. # 115-A-1	Prov.	Ceramic Vessel Type	Portion	No.	Paste; Decoration	Origin; Age	Comments
1	T-115, St. Id	Bottle	Complete	1	Stoneware	Anglo/ American 1835- 1900	Bristol-type two-tone stoneware; bottom unglazed
Acc. # 115-A-1	Prov.	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
2	T-115, St. Id	Bottle, Beer	Body	1	Amber		
3	T-115, St. Id	Bottle, Beverage	Body	1	Black	pre- 1890s	
4	T-115, St. Id	Bottle	Body	2	Green, Light		
5	T-115, St. Id	Bottle, Spirits	Base- body	1	Olive, Dark	1860- 1920s	Push-up base



T-115 ceramic bottle artifact (Acc. # 115-A-1) from Stratum Id