

Section 9 Sampling Strategy

9.1 Excavation Sampling Strategy

In general, the planned archaeological subsurface test excavations are distributed throughout the study area to provide representative coverage and assess the stratigraphy and potential for subsurface cultural resources for the entire area of Construction Phase 4. The proposed sampling strategy was developed in consideration of the following:

- Sediment types
- Natural geographic features, such as streams and ponds
- Background research, including information from historic maps and Land Commission Awards (LCA) documents
- Results of previous archaeological studies in the vicinity
- Results of consultation with the Native Hawaiian community
- Assessment of the impact of prior land development
- Consideration of safety concerns for actually carrying out the archaeological work

Selection of the sample of test locations to undergo subsurface testing is primarily based on the relationship to *kuleana* LCAs as indicators of areas of intensive traditional Hawaiian activity. A secondary factor in selection is consideration of the proximity of landscape features, particularly streams, springs, and ponds, which also would have been locales of intensive traditional Hawaiian activity. Subsurface testing is also focused on the transit station locations due to the relatively high density of subsurface impacts related to the stations' construction and also because the stations would be problematic to relocate owing to geographical and engineering constraints. The greatest factors limiting the survey effort are as follows:

- The survey area's large (13.87 acres), dispersed (4.3 miles) area
- The survey area's highly developed and highly active setting (in-use city streets, sidewalks, and buildings)
- The dense, complex array of existing subsurface utilities in the survey area

The proposed 232 test trenches within the 13.87-acre project footprint represent a sample size of approximately 1.25 percent. It is likely that based on implementation of these proposed 232 trenches, additional test trenches will be needed to document finds. These additional test trenches will increase the testing sample size.

9.1.1 Excavation Sampling Strategy—Transit Stations

This archaeological inventory survey (AIS) plan addresses sampling at nine proposed transit stations. Subsurface testing will occur following the pedestrian survey of the study area and the ground-penetrating radar survey of the specific testing areas. Additional testing may be warranted in areas adjacent to any test trench where significant cultural resources are identified. The extent of additional testing will be made in consultation with SHPD. The proposed testing

strategy at the nine transit stations is summarized in Table 12 and is discussed in greater detail by station, below.

Table 12. Proposed Sampling Strategy at Transit Station and Ancillary Facility Locations

Location	Planned Subsurface Testing
Middle Street Transit Center Station	<p>Test four 2' by 20' excavations and two 3' by 10' excavations at station column foundations and an off-set test (2' by 20' excavation) at a nearby <i>makai</i> sewer relocation;</p> <p>No test trenches at (<i>mauka</i>) Station Entrance Building due to prior soil remediation work that completely removed the former sediments of this area;</p> <p>Four 2' by 20' test trenches at (<i>makai</i>) Station Ancillary Building</p>
Kalihi Station	<p>Test three out of three station column foundations (with 3' by 10' excavations);</p> <p>Four 2' by 20' test trenches at (<i>mauka</i>) Station Entrance Building;</p> <p>Six 2' by 20' test trenches at (<i>makai</i>) Station Entrance Building</p>
Kapālama Station	<p>No testing of three station column foundations due to utility constraints; test one off-set trench (3' by 10' excavation) at a <i>makai</i> storm drain catch basin;</p> <p>Five 2' by 20' test trenches at (<i>mauka</i>) Station Entrance Building and one test trench (with 2' by 20' excavation) at small <i>mauka</i> touchdown;</p> <p>Four 2' by 20' test trenches at (<i>makai</i>) Station Entrance Building and one test trench (with 2' by 20' excavation) at small <i>makai</i> touchdown</p>
Iwilei Station	<p>No testing of seven station column foundations due to their location in a former fishpond and constraints;</p> <p>Four 2' by 20' test trenches at Station Entrance Building</p>
Chinatown Station	<p>No testing of four station column foundations due to their location seaward of the former shoreline and constraints;</p> <p>Three 4' by 20' test trenches at (<i>mauka</i>) Station Entrance Building;</p> <p>One 4' by 20' test trench and two 2' by 20' test trenches at (<i>mauka</i>) Station Ancillary Building;</p> <p>No testing at (<i>makai</i>) HECO transformer due to its being located seaward of the former shoreline and constraints</p>
Downtown Station	<p>Test two of 14 station column foundations with a single 2' by 20' test trench in consideration of their being located</p>

Location	Planned Subsurface Testing
	seaward of the former shoreline and constraints; One 2' by 20' test trench at (<i>mauka</i>) Station Entrance Building due to its being located seaward of the former shoreline and constraints; No testing at (<i>makai</i>) Station Entrance Building due to its location seaward of the former shoreline and constraints
Civic Center Station	Test four out of eight station column foundations (with 3' by 10' excavation) due to constraints; Five 2' by 20' test trenches at (<i>makai</i>) Station Entrance Building to supplement 3½ previous test trenches within building footprint; One test trench (with 3' by 10' excavation) at <i>mauka</i> elevator
Kaka'ako Station	Test three out of three station column foundations (with two 3' by 10' excavations and one 2' by 20' excavation), Six 2' by 20' test trenches at Station Entrance Building
Ala Moana Center Station	Test eight out of eight station column foundations (with 3' by 10' excavations); Four 2' by 20' test trenches at (<i>mauka</i>) Station Ancillary Building; Three 2' by 20' and three 3' by 10' test trenches at (<i>makai</i>) Station Entrance Building

9.1.1.1 Middle Street Transit Center

The Middle Street Transit Center Station (see Figure 86 through Figure 91) straddles Kalihi Stream and two areas of prior archaeological study. Dega and Davis (2005) identified SIHP # 50-80-14-6683, a subsurface historic refuse pit and material remains associated with a slaughterhouse.

Testing will include four 2' by 20' excavations and two 3' by 10' excavations at station column foundations and an off-set test (2' by 20' excavation) at a nearby *makai* sewer relocation (see Figure 91). No test trenches are indicated for the (*mauka*) Station Entrance Building (Figure 92) due to prior soil remediation work that we understand removed all potentially culture-bearing sediments under the footprint of the (*mauka*) Station Entrance Building. This information regarding the past soil remediation work was provided by project engineers. Four 2' by 20' test trench excavations are proposed at the (*makai*) Station Ancillary Building (Figure 93).

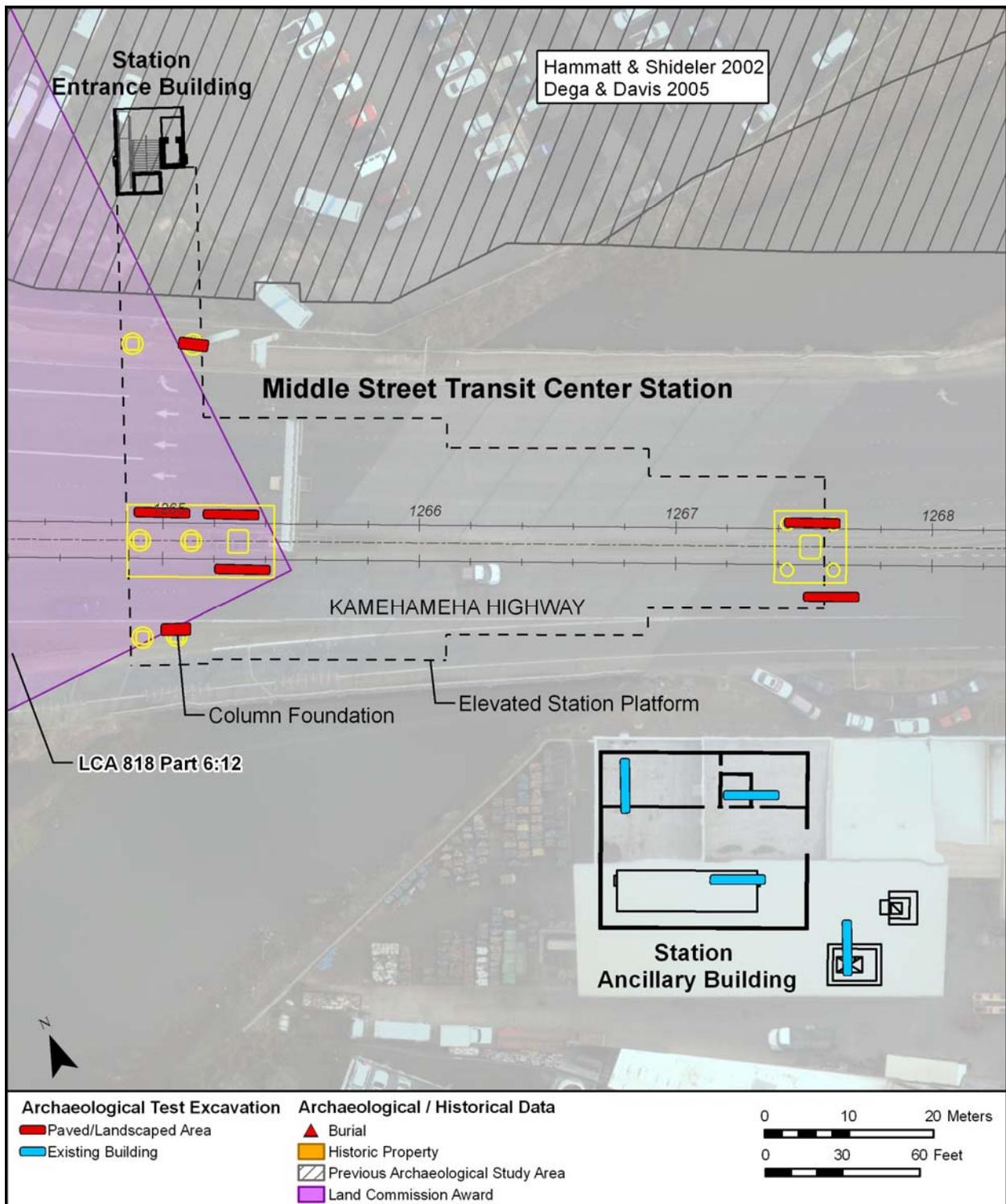


Figure 86. Middle Street Transit Center Station (Kamehameha Highway just east of Middle Street), aerial photograph showing overlay of transit center station infrastructure (see following figures for details)



Figure 87. General view of Middle Street Transit Center Station, (*mauka*) Station Entrance Building location (subject of recent soil remediation work), view to north



Figure 88. General view of Middle Street Transit Center Station, western column foundations at Kamehameha Highway (Kalihi Stream in background at left), view to southwest



Figure 89. General view of Middle Street Transit Center Station, Station Ancillary Building location (present Gas Pro buildings), view to southwest



Figure 90. General view of Middle Street Transit Center Station, eastern column foundations in median of Kamehameha Highway, view to southwest

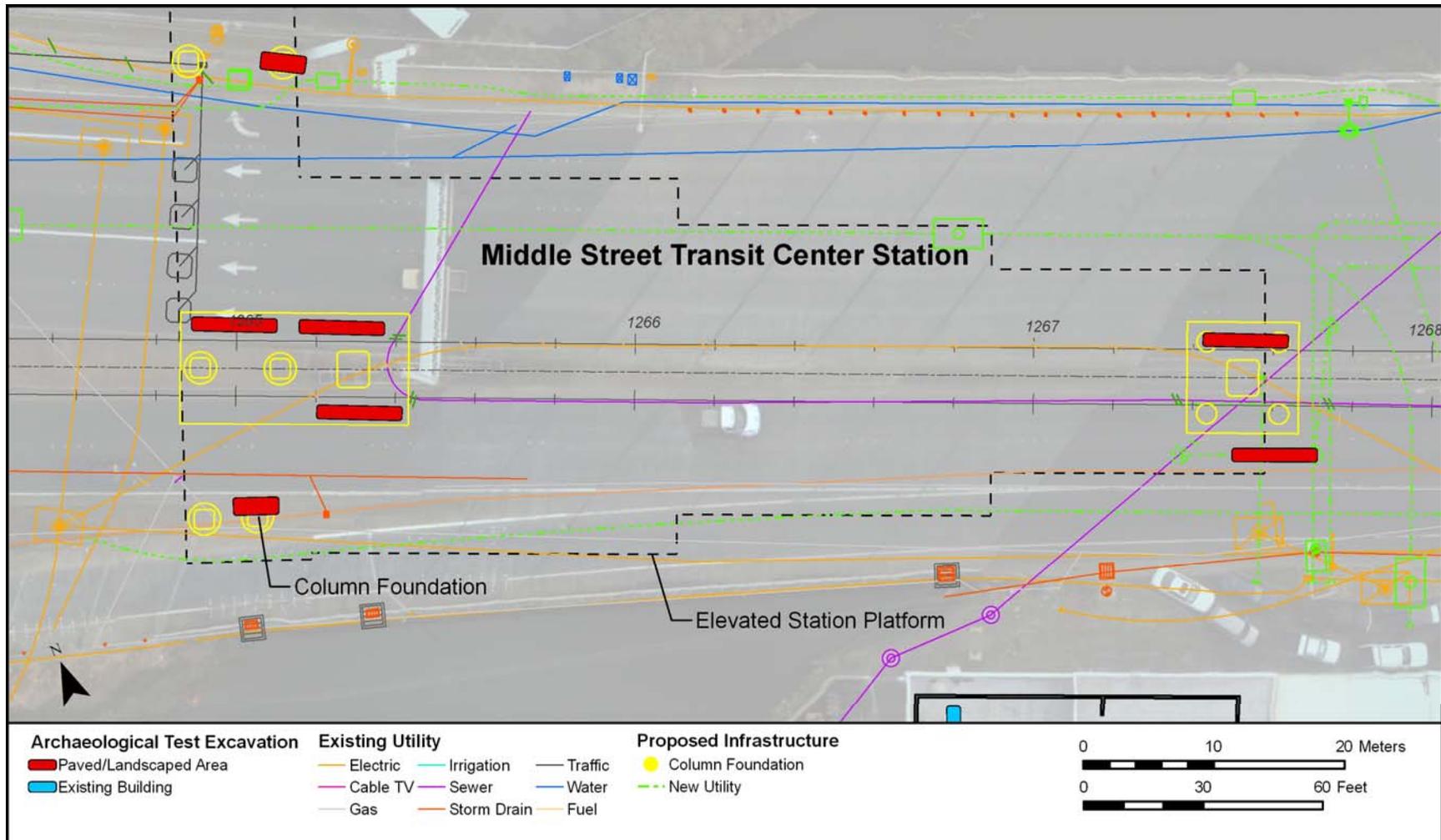


Figure 91. Middle Street Transit Center Station, detail of column foundation layout at Kamehameha Highway, showing proposed locations for archaeological inventory survey testing, including four 2' by 20' excavations and two 3' by 10' excavations at column foundations and an off-set test (2' by 20' excavation) at a sewer relocation

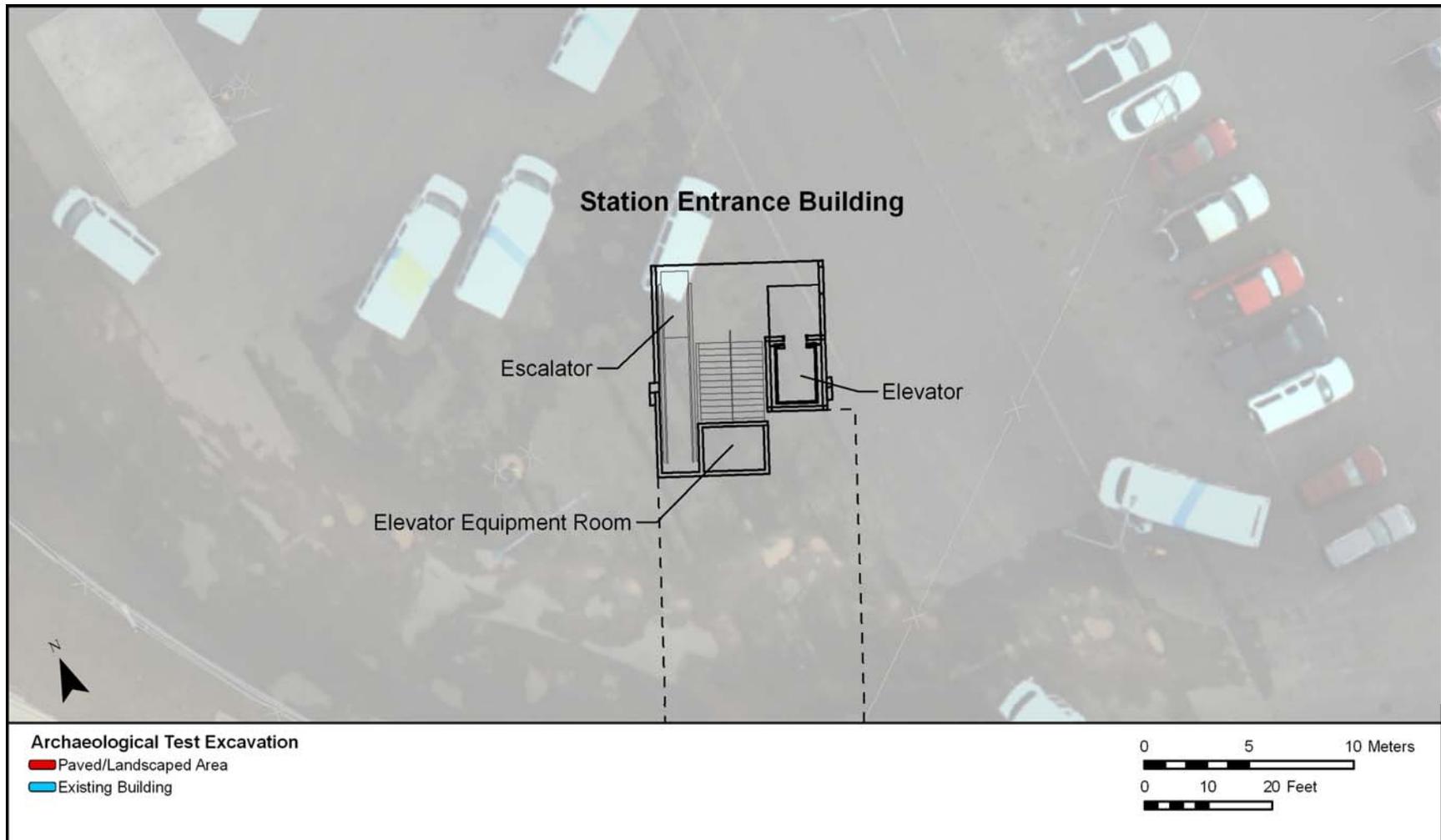


Figure 92. Middle Street Transit Center Station, detail of (*mauka*) Station Entrance Building (no test trenches at *mauka* Station Entrance Building due to prior soil remediation work)

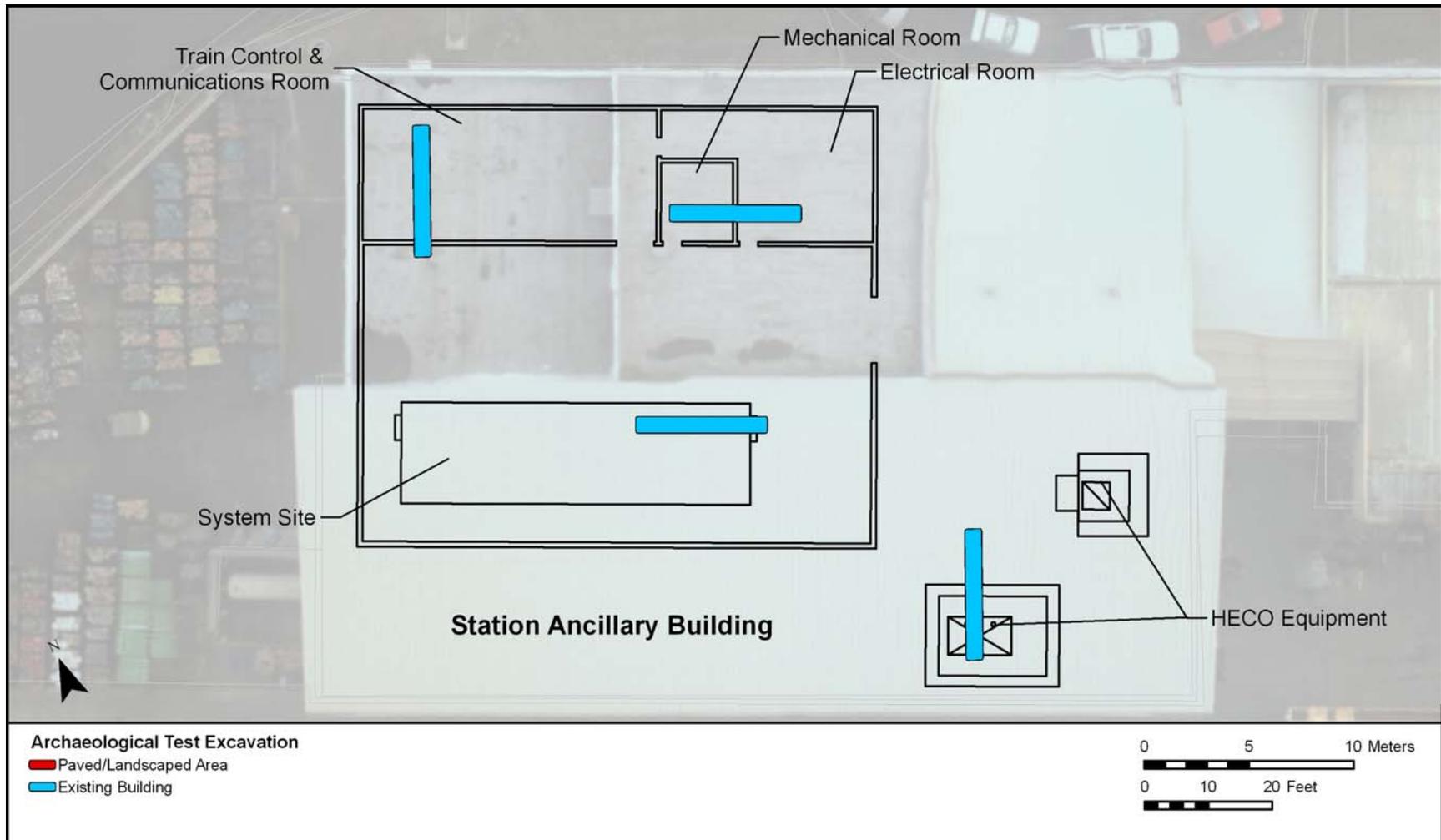


Figure 93. Middle Street Transit Center Station, detail of (*makai*) Station Ancillary Building showing proposed locations for archaeological inventory survey testing (four 2' by 20' test trenches)

9.1.1.2 Kalihi Station

Testing at Kalihi Station (see Figure 94 through Figure 101) will include three out of three station column foundations (with 3' by 10' excavations) (see Figure 99), four 2' by 20' test trenches at the (*mauka*) Station Entrance Building (see Figure 100) and six 2' by 20' test trenches at the (*makai*) Station Entrance Building (see Figure 101).

9.1.1.3 Kapālama Station

Kapālama Station (see Figure 102 through Figure 109) lies just east of Kapālama Stream. No testing will be carried out at the three station column foundations due to utility constraints (see Figure 107), but one off-set trench (3' by 10') will be excavated at a *makai* storm drain catch basin. Five 2' by 20' test trenches will be excavated at the (*mauka*) Station Entrance Building, and one test trench (2' by 20') will be excavated at the small *mauka* eastern touchdown (see Figure 108). Four (2' by 20') test trenches will be excavated at the (*makai*) Station Entrance Building and one test trench (2' by 20') will be excavated at the small *makai* touchdown (see Figure 109).

9.1.1.4 Iwilei Station

Iwilei Station (see Figure 110 through Figure 116) largely lies within the former open water of a fishpond. No testing will be conducted at the seven station column foundations due to their being located in the former fishpond and constraints (see Figure 115). (Appropriate investigation and documentation of preserved fishpond sediments will be carried out in other test trenches within the former fishpond.) Four (2' by 20') test trenches will be excavated at the Station Entrance Building (see Figure 116).

9.1.1.5 Chinatown Station

Chinatown Station (see Figure 117 through Figure 123) is located on the east side of the mouth of Nu'uuanu Stream. No testing will be conducted at the four station column foundations due to their being located seaward of the former shoreline and constraints (see Figure 122). The (*mauka*) Station Entrance Building (see Figure 123) will be a major focus of archaeological testing with three 4' by 20' test trenches excavated there and one 4' by 20' test trench and two 2' by 20' test trenches excavated at the adjacent *mauka* Station Ancillary Building (see Figure 123). No testing will be conducted at the (*makai*) HECO transformer due to its being located seaward of the former shoreline and constraints (see Figure 122).

9.1.1.6 Downtown Station

The Downtown Station is located at the intersection of Nimitz Highway and Alakea Street (see Figure 124 through Figure 131). Testing will be carried out at two of the 14 station column foundations (with a single 2' by 20' trench). Testing will be limited as the columns are being located seaward of the former shoreline and due to constraints (see Figure 129). One 2' by 20' test trench is proposed at the *mauka* Station Entrance Building (see Figure 130). While this station is located seaward of the former shoreline, this was one of the earliest portions of the Honolulu Harbor frontage to be filled in. No testing is proposed at the *makai* Station Entrance Building (see Figure 131) due to its being located seaward of the former shoreline and constraints.

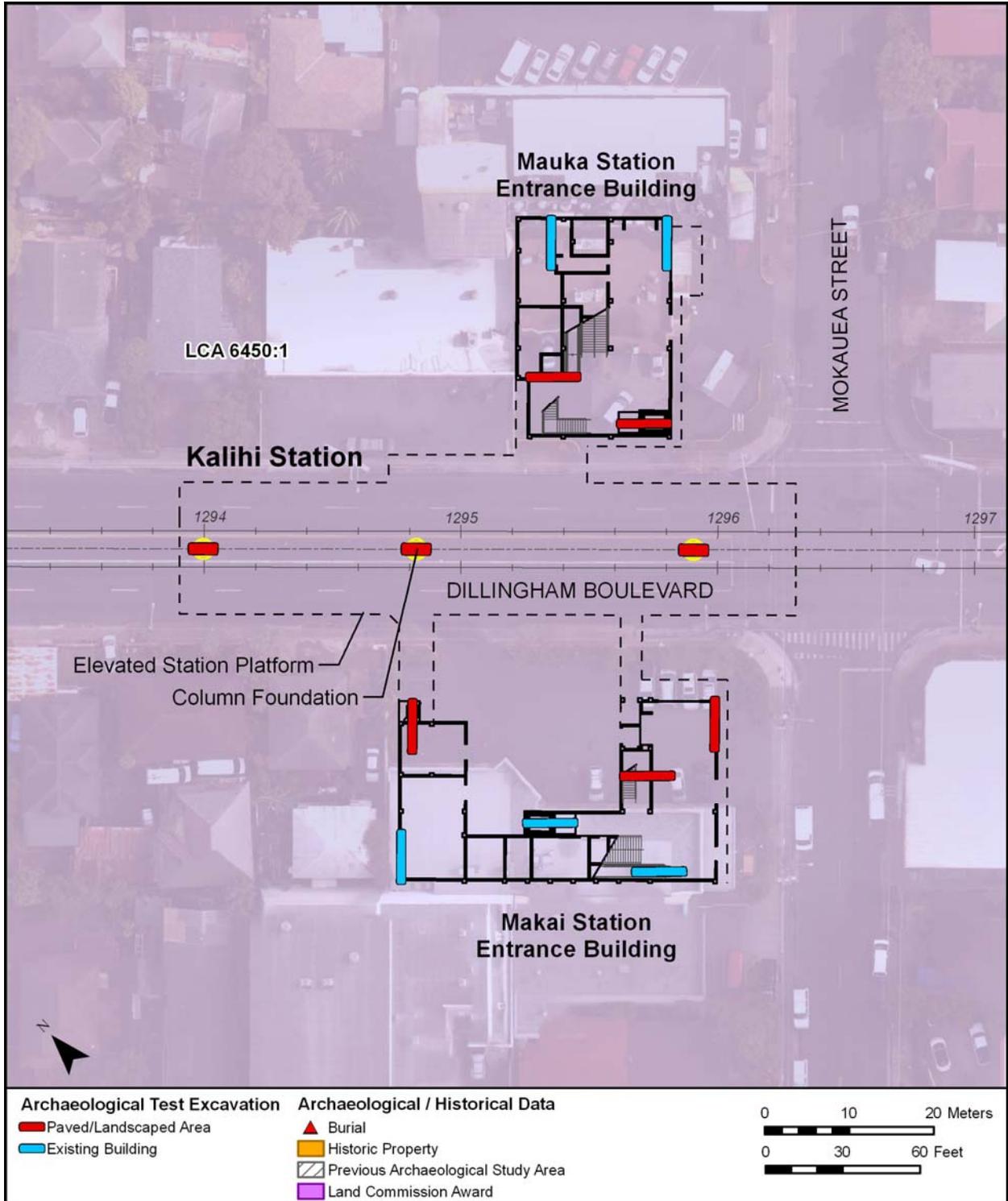


Figure 94. Kalihi Station (Dillingham Boulevard just west of Mokauea Street), aerial photograph showing overlay of transit station infrastructure (see following figures for details)



Figure 95. General view of Kalihi Station, southeast side of (*makai*) Station Entrance Building, (parking lot and Salon Del Mar hair styling), view to southwest



Figure 96. General view of Kalihi Station, southwest side of (*makai*) Station Entrance Building, (parking lot and Dillingham Cafe), view to southwest



Figure 97. General view of Kalihi Station, column foundations location, middle of Dillingham Boulevard, view to northwest



Figure 98. General view of Kalihi Station, (*mauka*) Station Entrance Building (parking lot and 7-Eleven convenience store), view to northeast

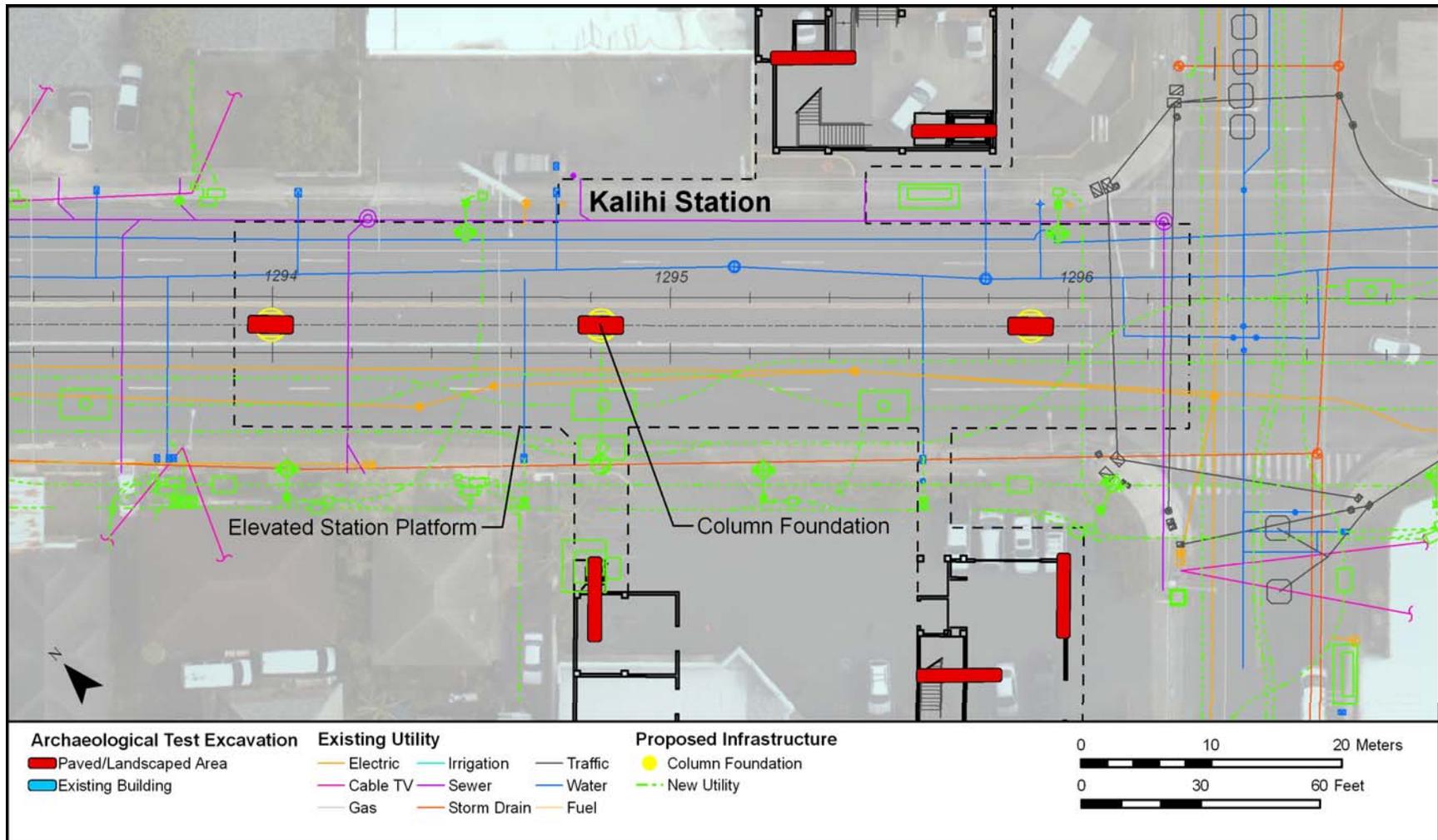


Figure 99. Kalihi Station, detail of column foundation layout at Dillingham Boulevard showing proposed locations for archaeological inventory survey testing (test three out of three station foundations with 3' by 10' test trench excavations)

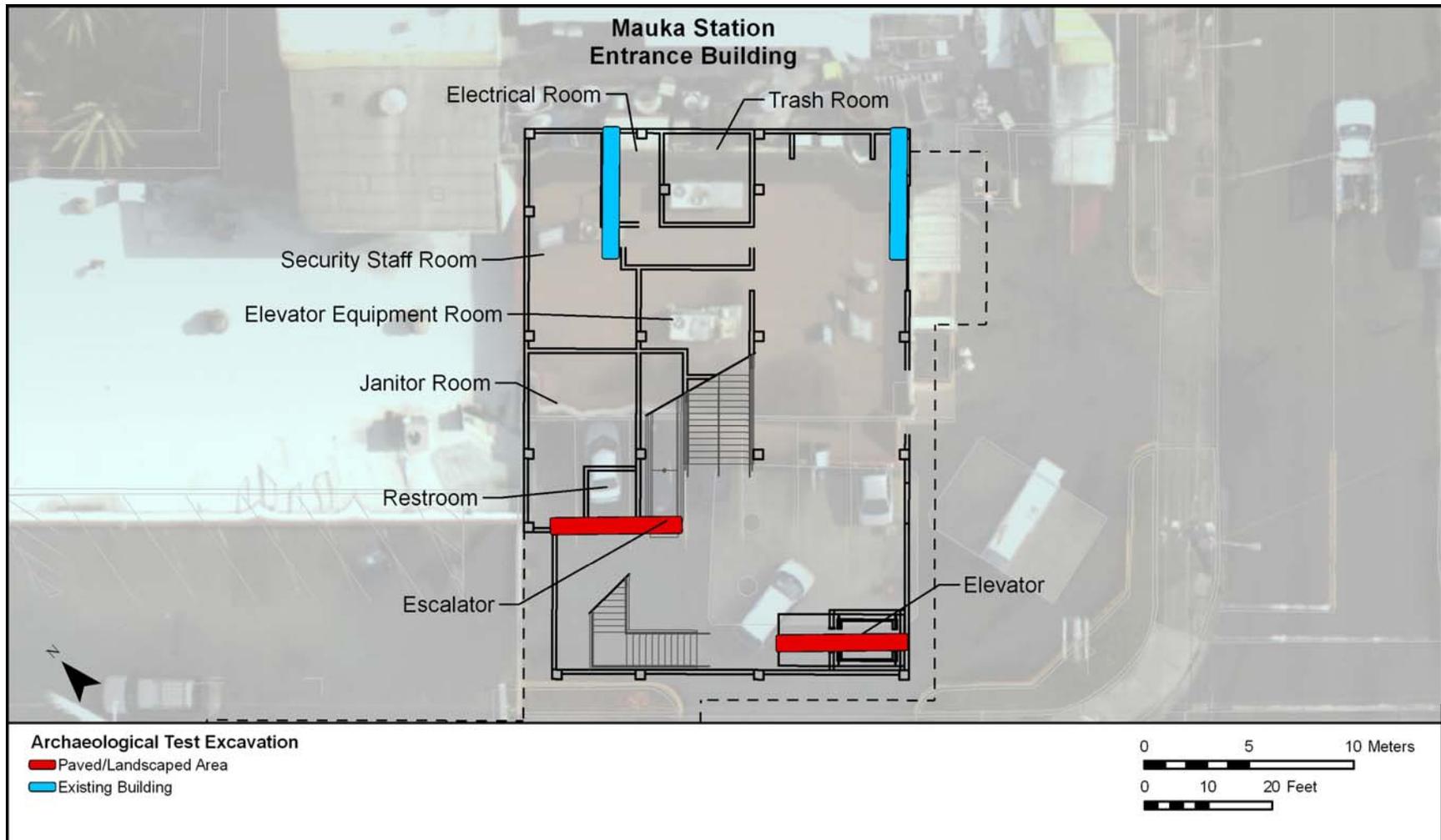


Figure 100. Kalihi Station, detail of (*mauka*) Station Entrance Building showing proposed locations for archaeological inventory survey testing (four 2' by 20' test trenches)

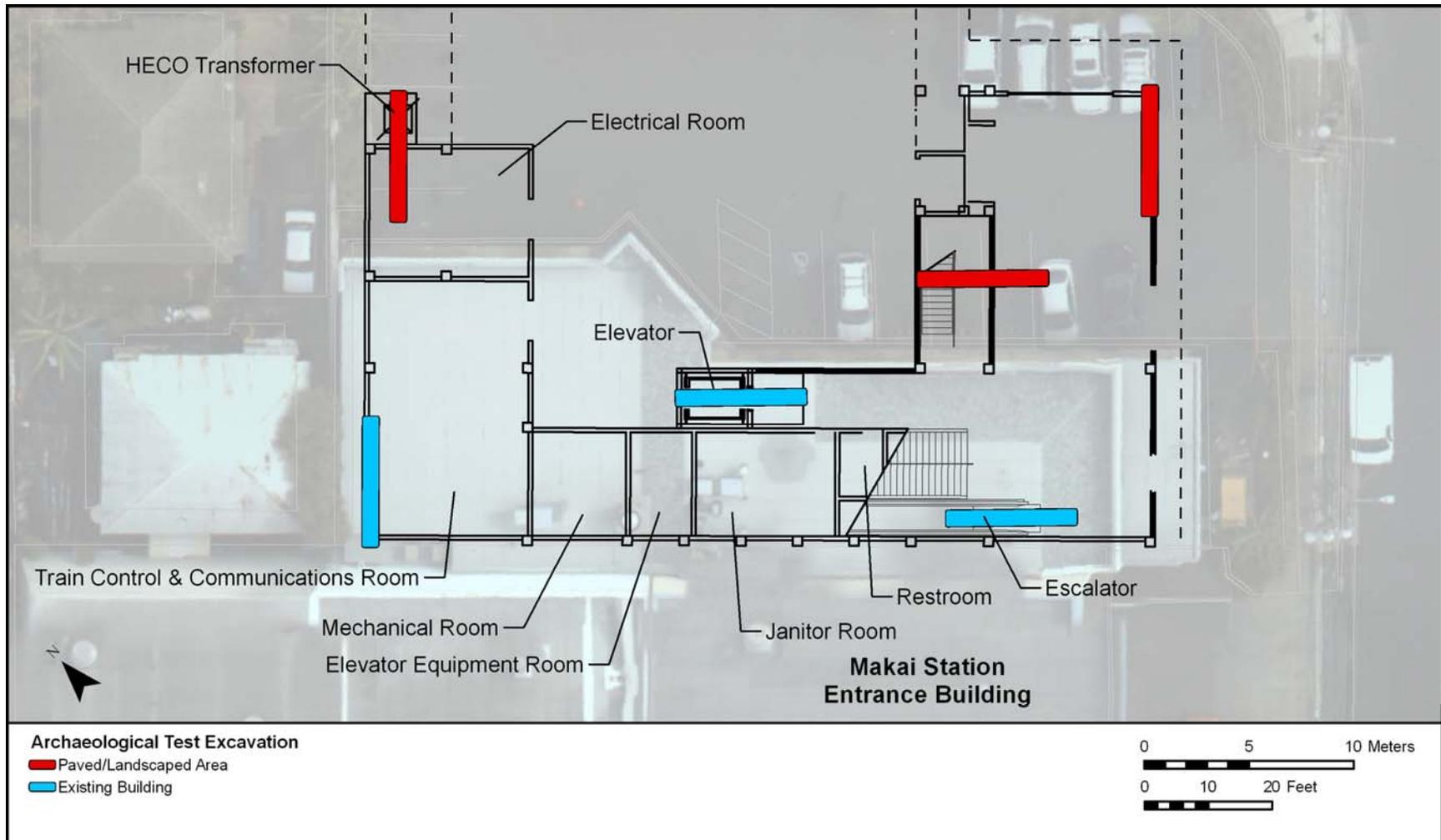


Figure 101. Kalihi Station, detail of (*makai*) Station Entrance Building showing proposed locations for archaeological inventory survey testing (six 2' by 20' test trenches)

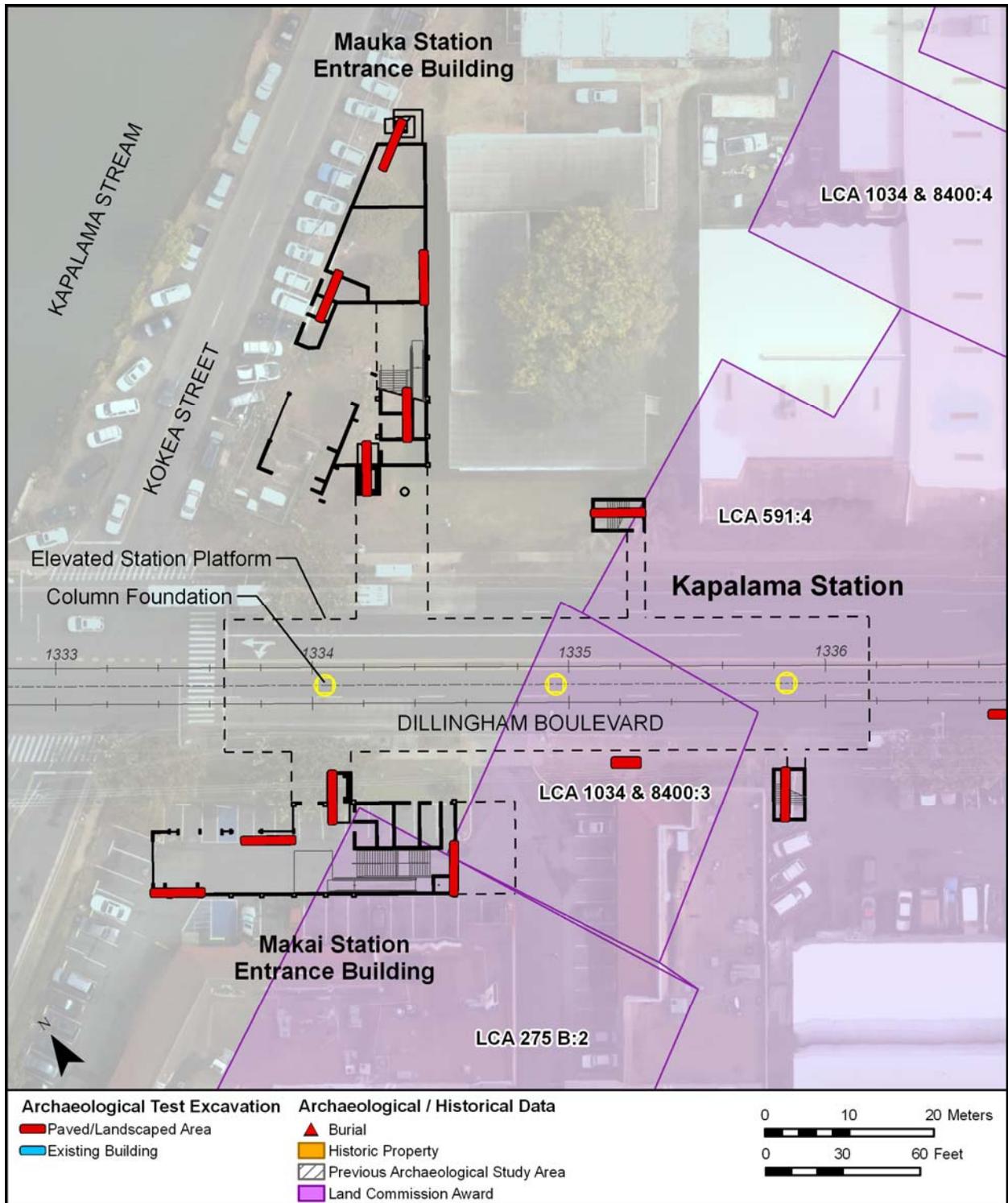


Figure 102. Kapalama Station (Dillingham Boulevard just east of Kokea Street and *makai* of Honolulu Community College), aerial photograph showing overlay of transit station infrastructure (see following figures for details)



Figure 103. General view of Kapālama Station, (*mauka*) Station Entrance Building location, (northwest side of Honolulu Community College campus, Kapālama Canal at upper left), view to northeast



Figure 104. General view of Kapālama Station, (*mauka*) Station Entrance Building, secondary *mauka* entry/exit location, view to northeast



Figure 105. General view of Kapālama Station, (*makai*) Station Entrance Building location (parking lot), view to southwest



Figure 106. General view of Kapālama Station, (*makai*) Station Entrance Building location (parking lot), view to southeast

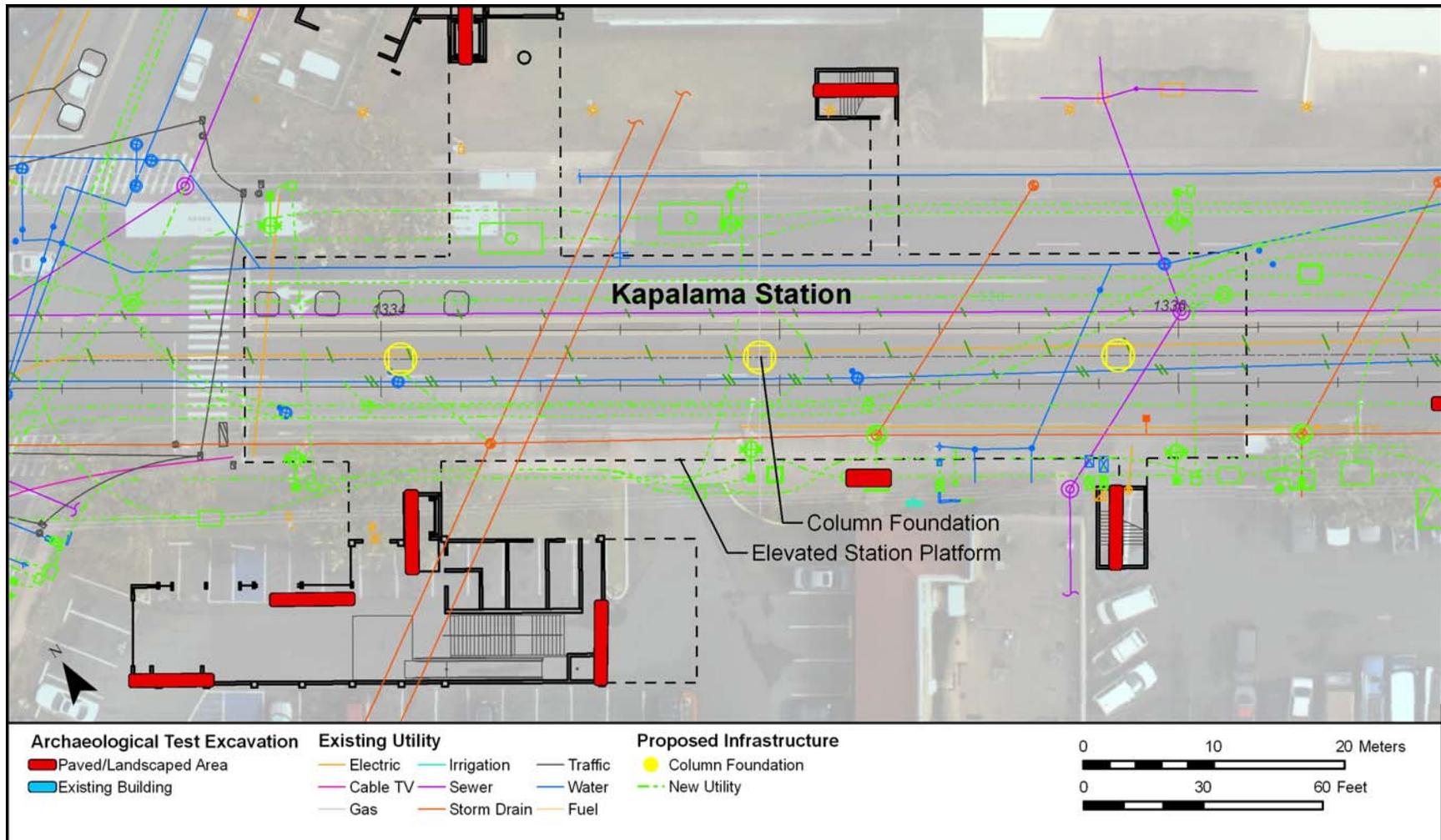


Figure 107. Kapālama Station, detail of column foundation layout at Dillingham Boulevard (no testing of three station foundations due to utility constraints; one off-set trench excavation of 3' by 10' at a future *makai* storm drain catch basin)

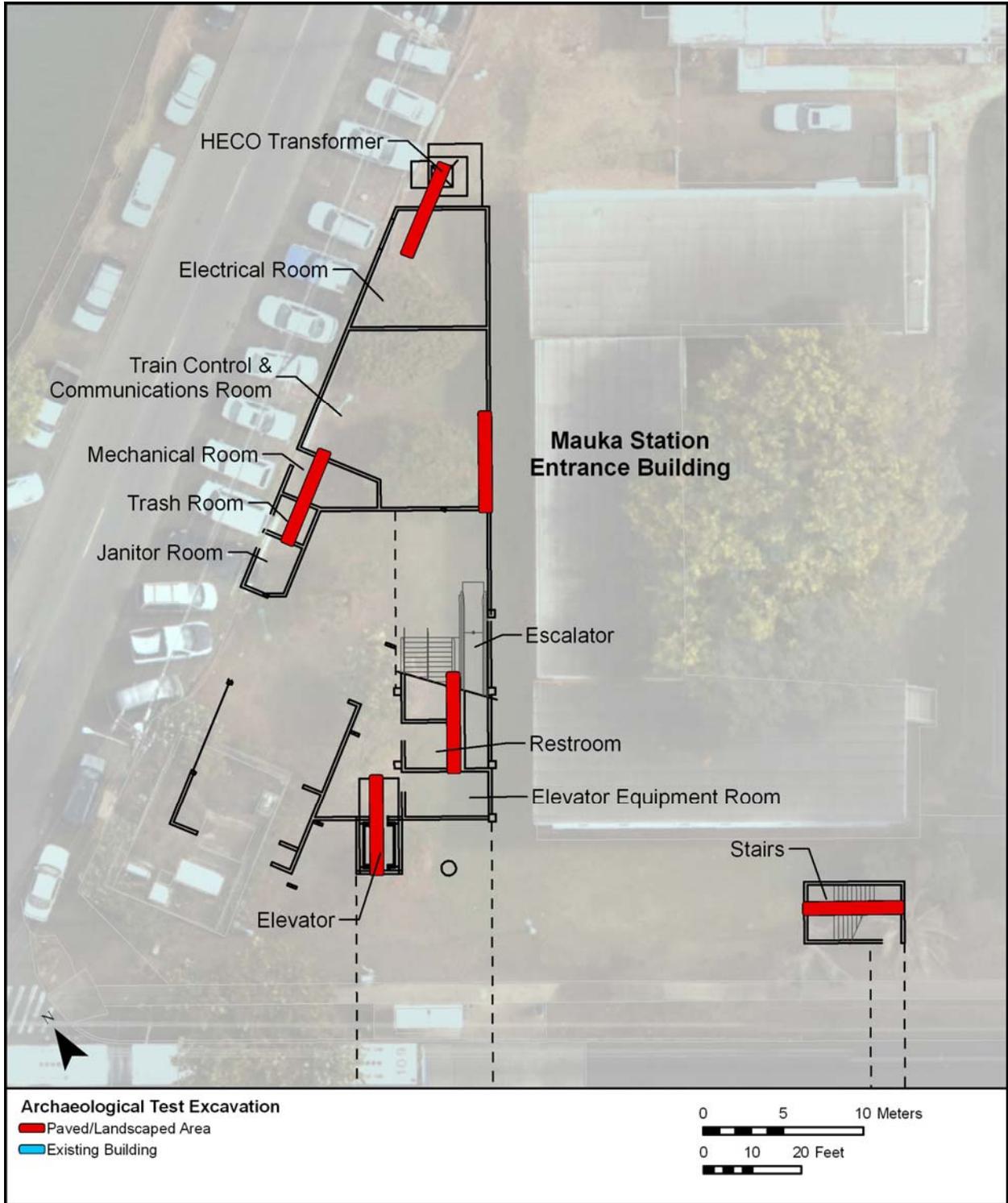


Figure 108. Kapālama Station, detail of (*mauka*) Station Entrance Building showing proposed locations for archaeological inventory survey testing (five 2' by 20' test trenches at *mauka* Station Entrance Building and one test trench with a 2' by 20' excavation at small eastern *mauka* touchdown)

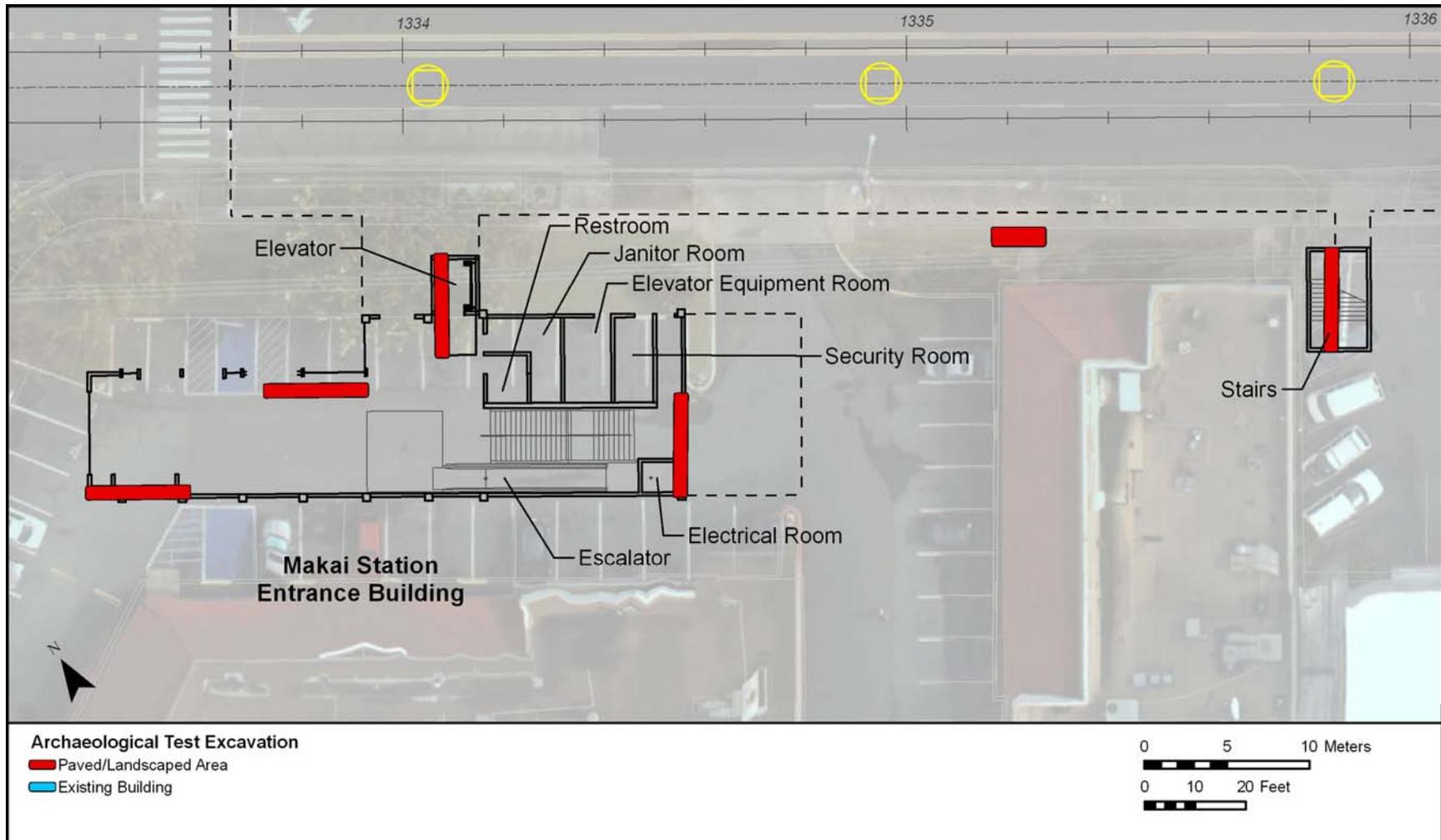


Figure 109. Kapālama Station, detail of (*makai*) Station Entrance Building showing proposed locations for archaeological inventory survey testing (four 2' by 20' test trenches at *makai* Station Entrance Building and one test trench with a 2' by 20' excavation at the small southeast *makai* touchdown)

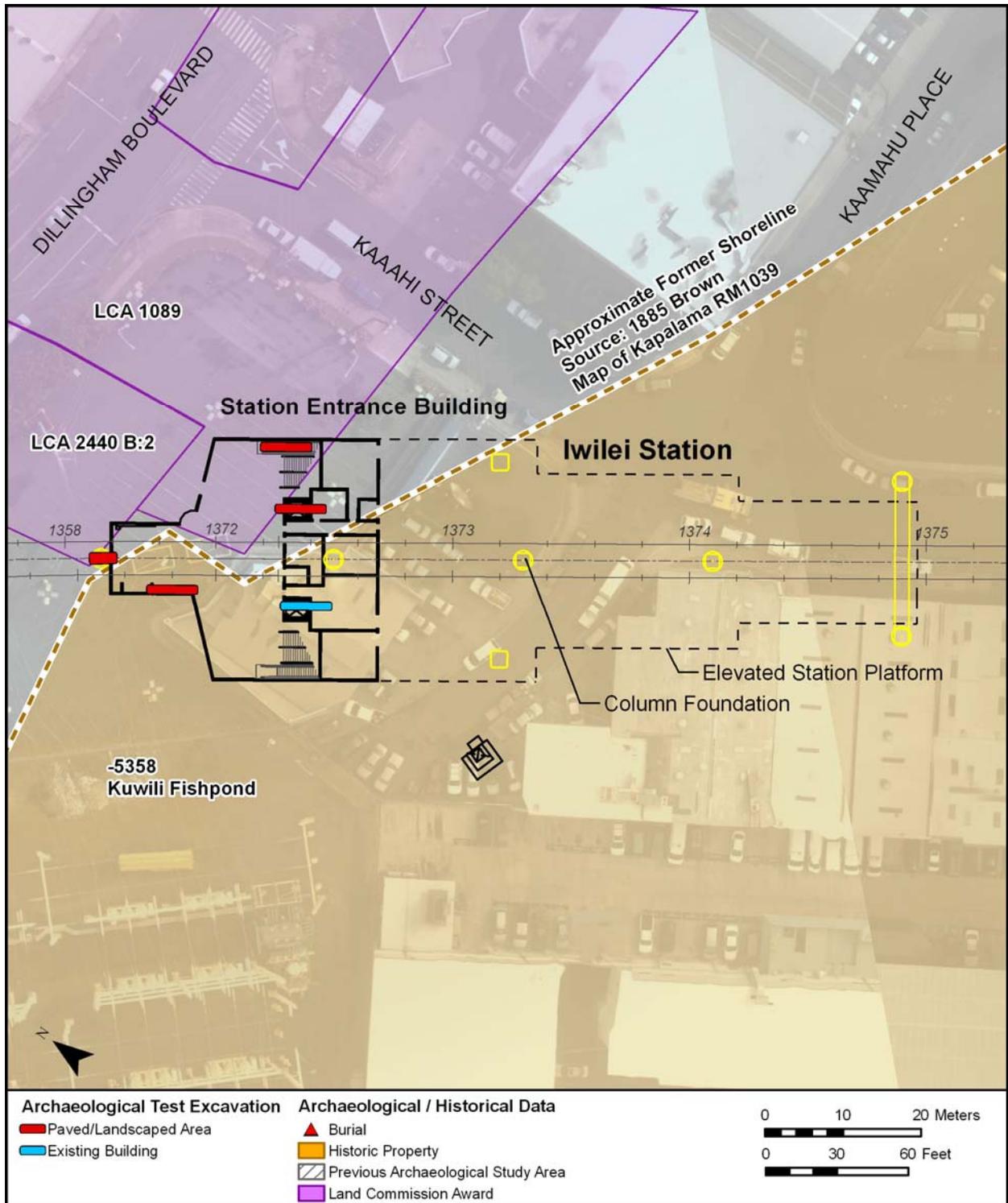


Figure 110. Iwilei Station (*makai* of Ka'a'ahi Street and Ka'amahu Place), aerial photograph showing overlay of transit station infrastructure (see following figures for details)



Figure 111. General view of north side of Iwilei Station (parking lot and Nu‘uanu Auto Co.), from Dillingham Boulevard, view to south



Figure 112. General view of south side of Iwilei Station (Nu‘uanu Auto Co.), from across Ka‘amahu Place, view to north



Figure 113. General view of Iwilei Station, location of central column foundations (Da Kine's Sports Bar at upper right, Ka'a'ahi Street at left), view to south



Figure 114. General view of Iwilei Station, location of southeastern saddle column foundations on Ka'a'ahi Street, view to northwest

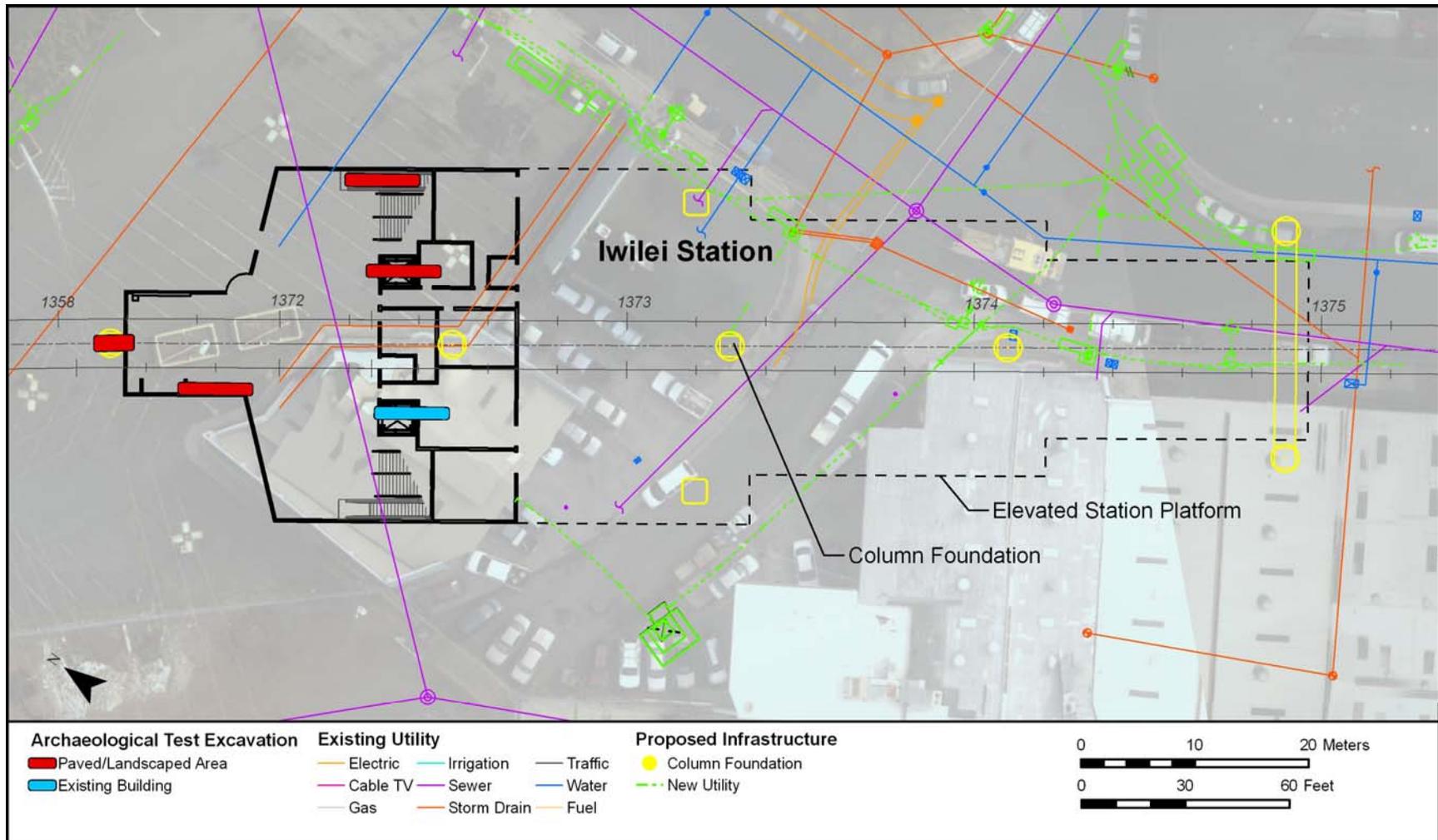


Figure 115. Iwilei Station, detail of column foundation layout (no testing of seven station column foundations due to their location in a former fishpond and constraints)

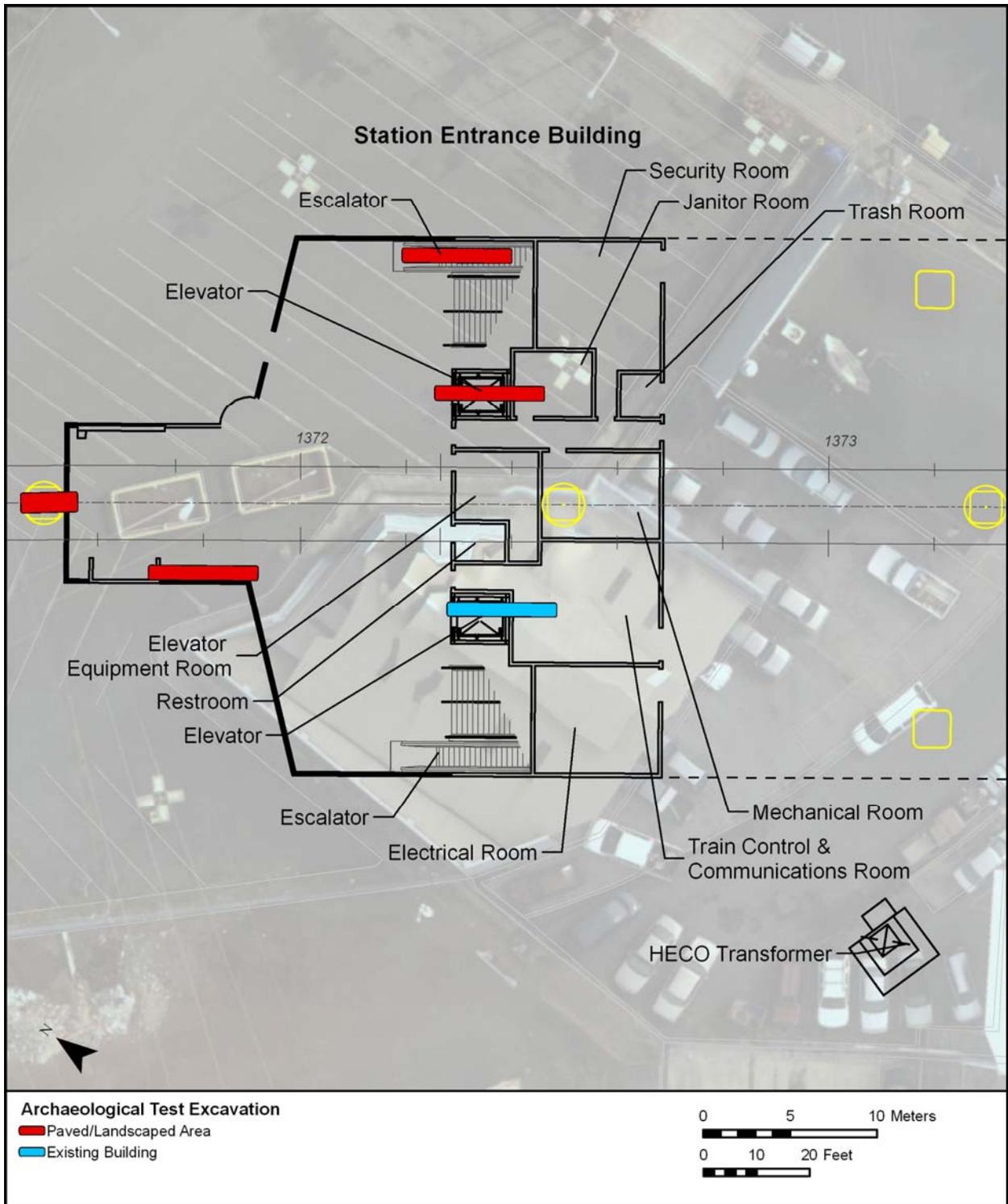


Figure 116. Iwilei Station, detail of Station Entrance Building showing proposed locations for archaeological inventory survey testing (four 2' by 20' test trenches at Station Entrance Building)

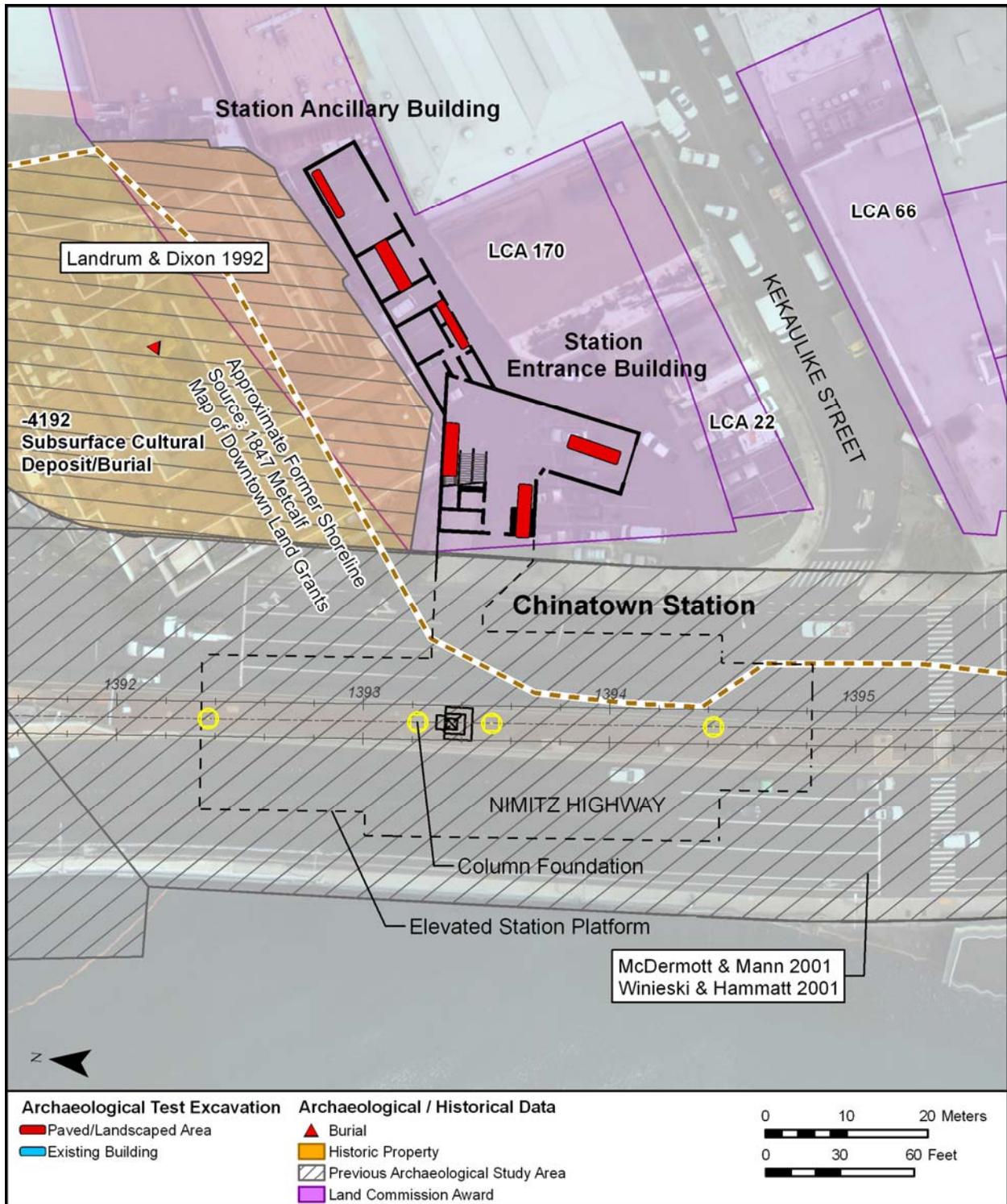


Figure 117. Chinatown Station, aerial photograph showing overlay of transit station infrastructure (see following figures for details)



Figure 118. General view of Chinatown Station, Station Entrance Building location, view from *mauka* side of Nimitz Highway, view to northeast



Figure 119. General view of Chinatown Station, Station Entrance Building location, view from *mauka*/^sEwa corner of Nimitz Highway and Kekaulike Street, view to north



Figure 120. General view of Chinatown Station, view of southern column foundation locations in median of Nimitz Highway, view to north



Figure 121. General view of Chinatown Station, view of infrastructure location and northern column foundation locations in median of Nimitz Highway, view to north

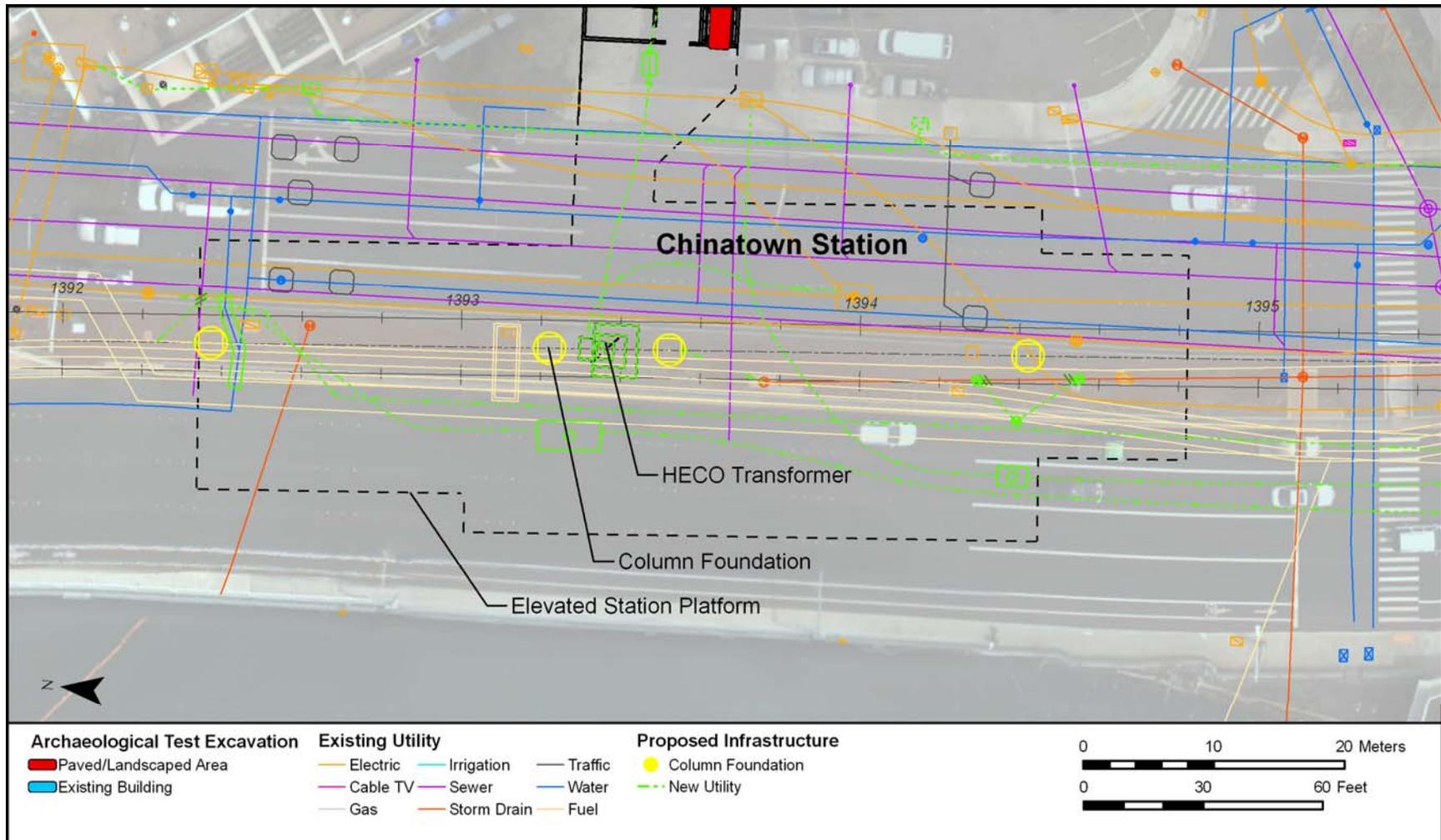


Figure 122. Chinatown Station detail of column foundation layout (no testing of four column foundations due to their location seaward of the former coastline and constraints)

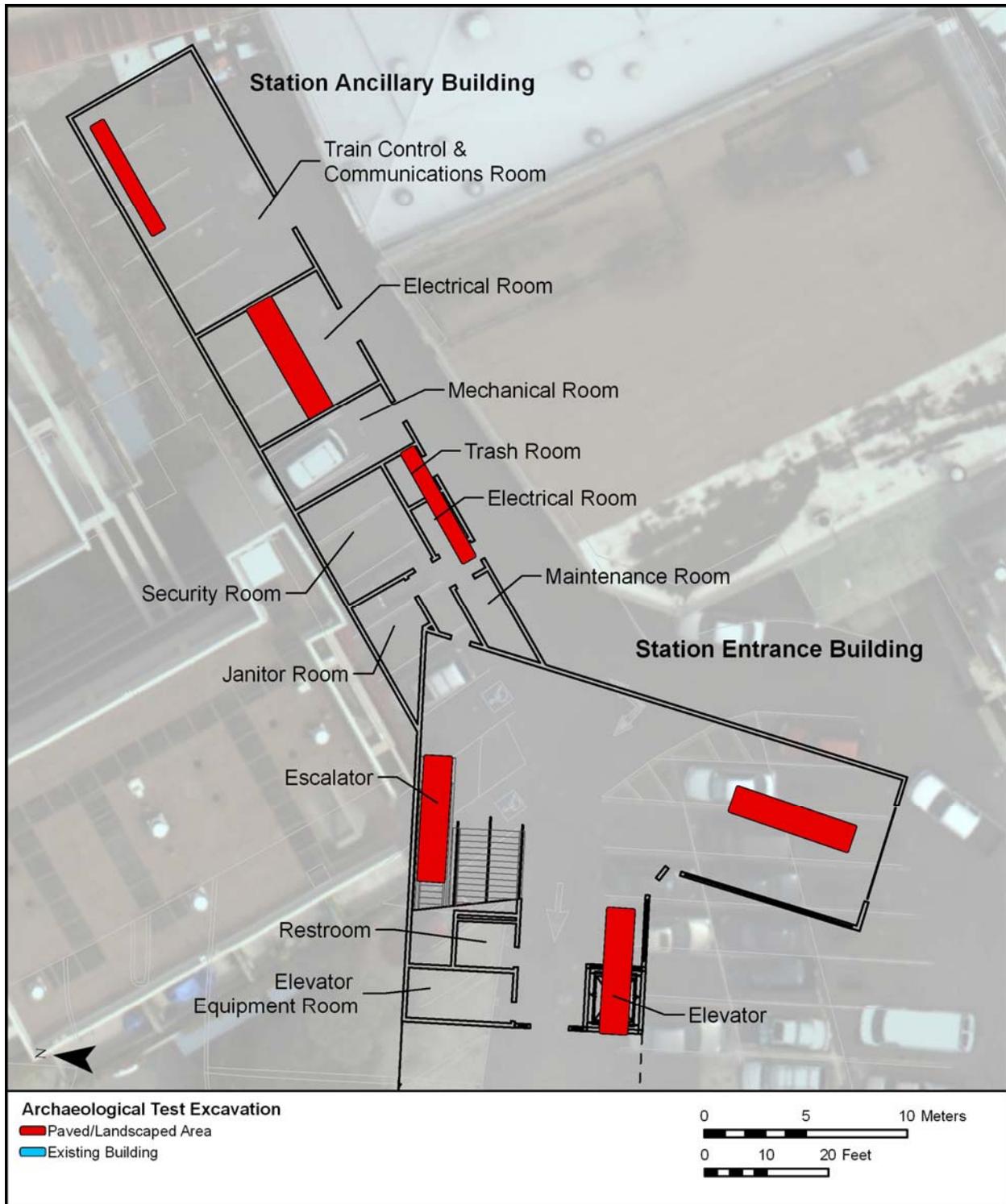


Figure 123. Chinatown Station detail of (*mauka*) Station Entrance Building and Station Ancillary Building layout showing proposed locations for archaeological inventory survey testing (three 4' by 20' test trenches at *mauka* Station Entrance Building and one 4' by 20' test trench and two 2' by 20' test trenches at *mauka* Station Ancillary Building)

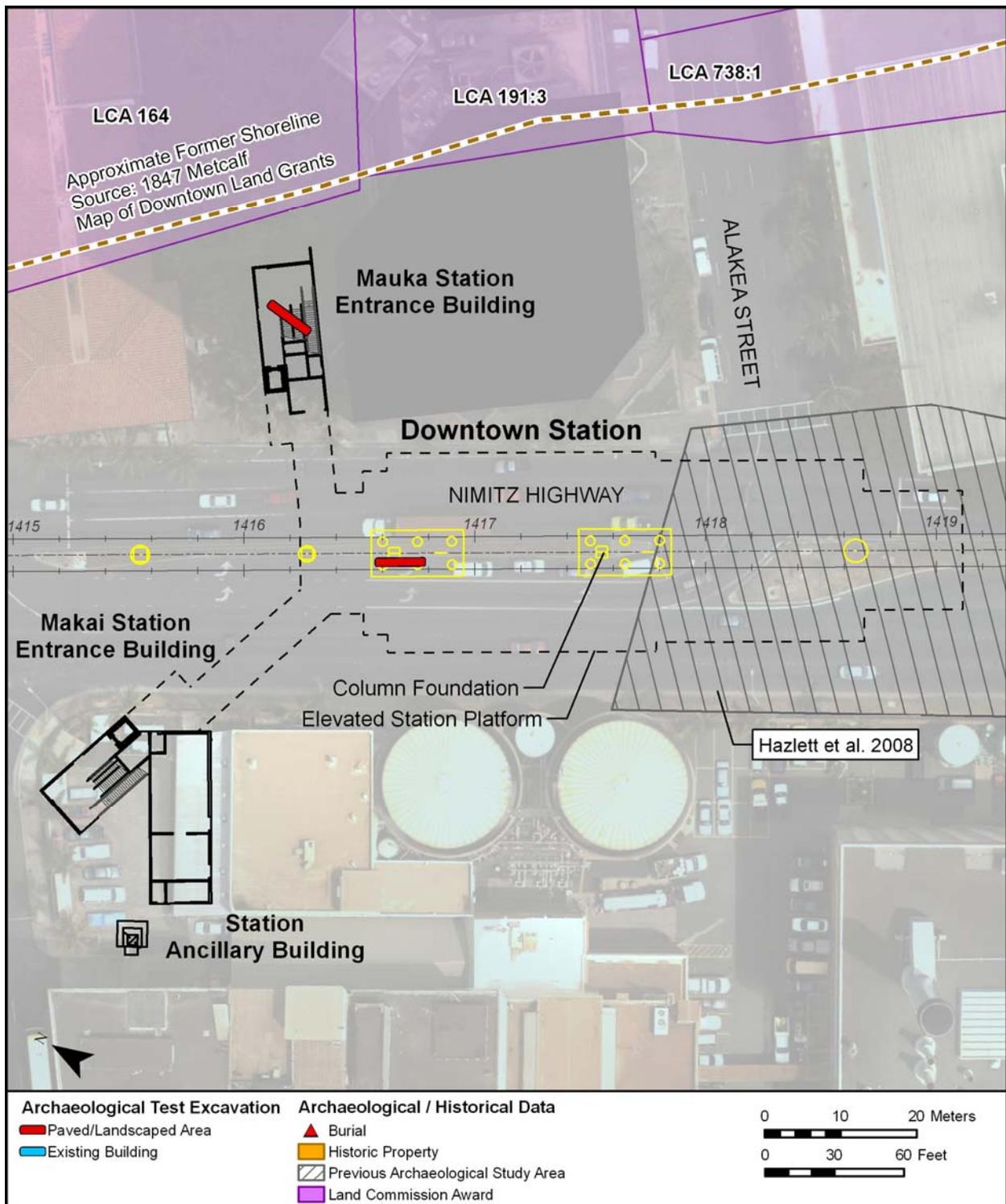


Figure 124. Downtown Station (northwest of the intersection of Alakea Street and Nimitz Highway), aerial photograph showing overlay of transit station infrastructure (see following figures for details)



Figure 125. Downtown Station, (*mauka*) Station Entrance Building location, Pacific Guardian Center west plaza, view to northeast



Figure 126. Downtown Station, (*mauka*) Station Entrance Building location, Pacific Guardian Center west plaza, view to southwest



Figure 127. Downtown Station, column locations in median of Nimitz Highway, (HECO facility at upper left) from *mauka*/'Ewa corner of Alakea Street and Nimitz Highway, view to northwest



Figure 128. Downtown Station, (*makai*) Station Entrance Building location and column location in median of Nimitz Highway, (HECO facility), from across Nimitz Highway, view to west

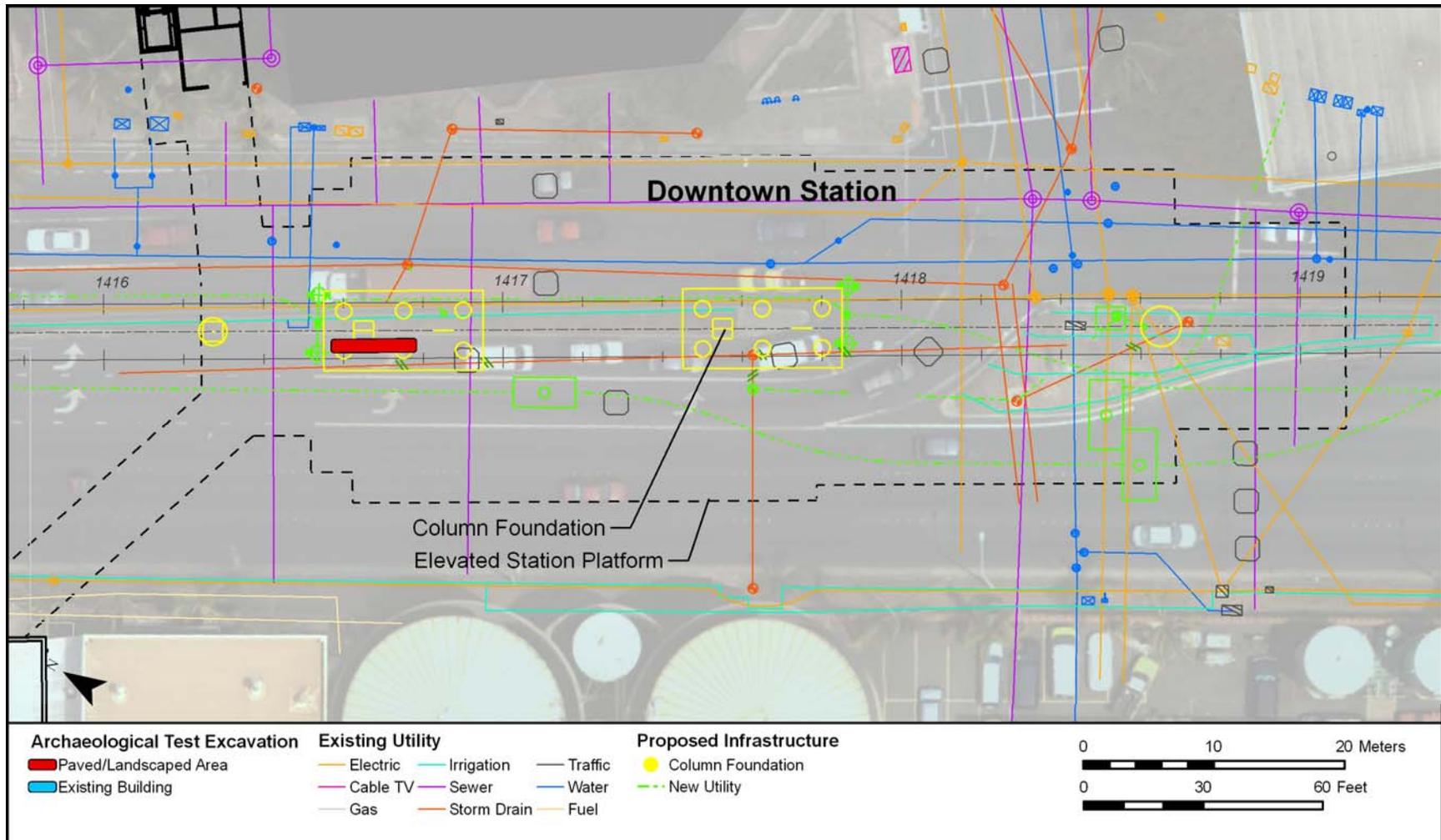


Figure 129. Downtown Station, detail of column foundation layout at Nimitz Highway (no testing at 14 station column foundations due to their location seaward of the former shoreline and constraints)

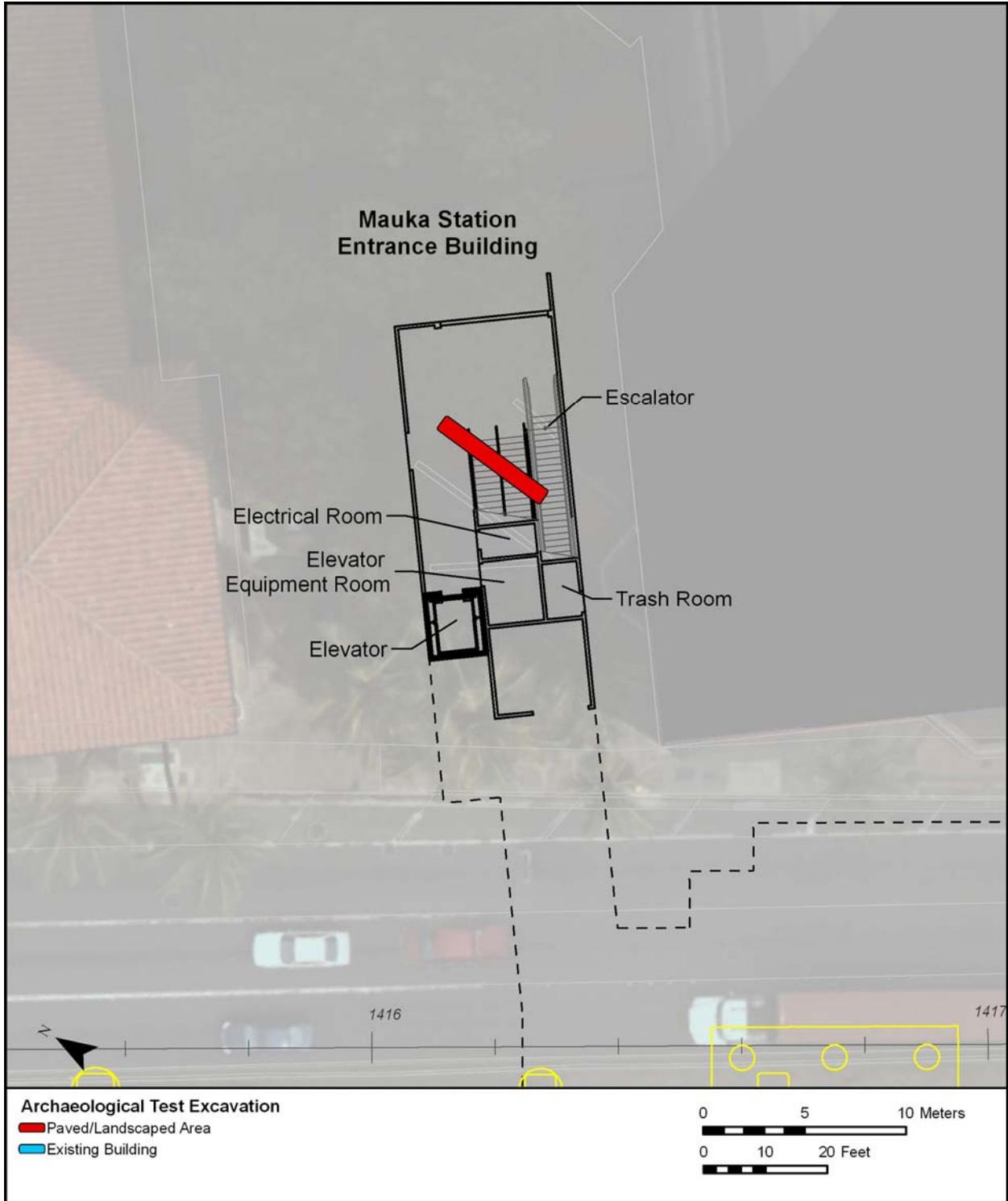


Figure 130. Downtown Station, detail of (*mauka*) Station Entrance Building at *mauka* side of Nimitz Highway showing proposed locations for archaeological inventory survey testing (one 2' by 20' test trench at (*mauka*) Station Entrance Building due to its location seaward of the former shoreline and constraints)

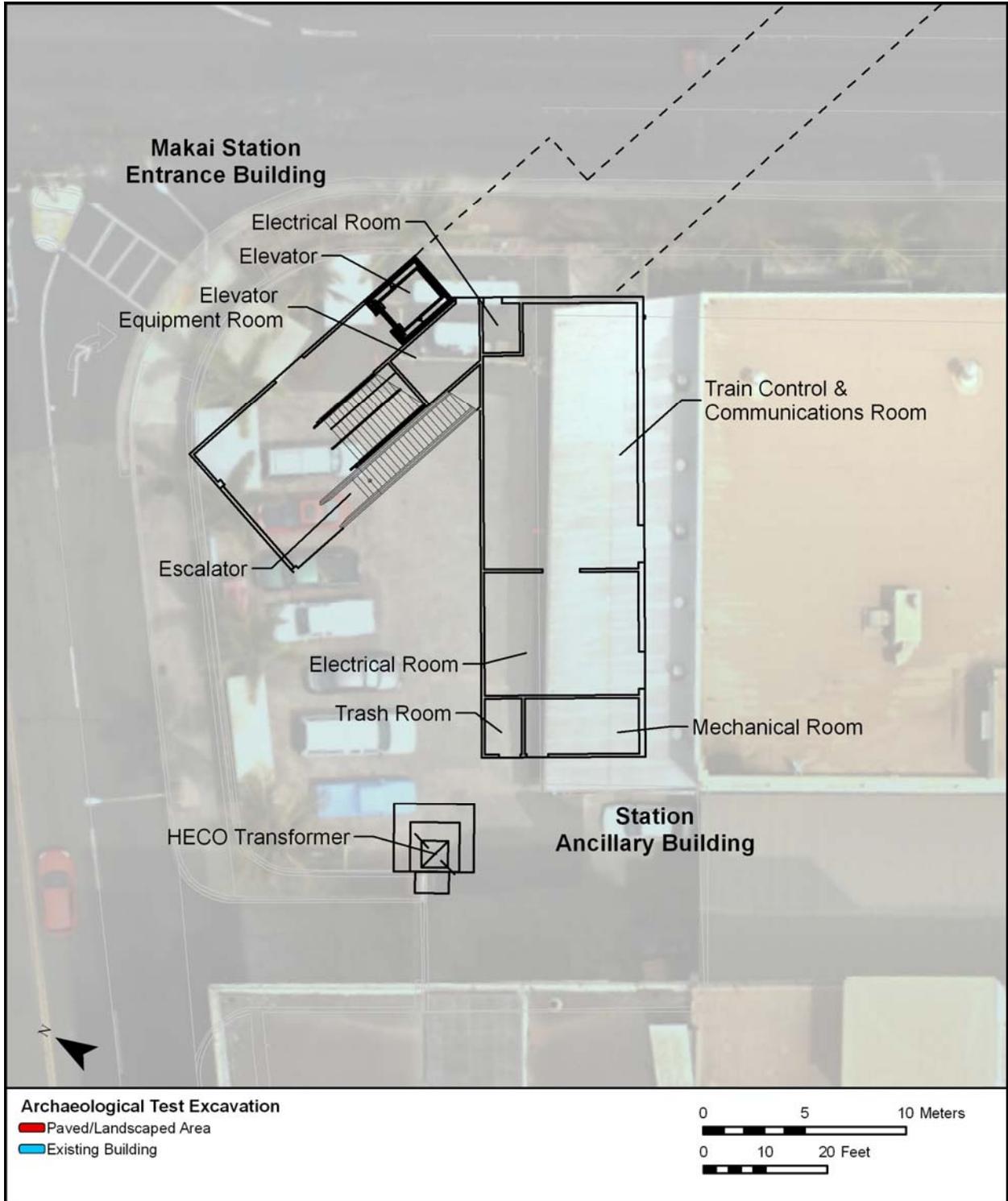


Figure 131. Downtown Station, detail of (*makai*) Station Entrance Building at *makai* side of Nimitz Highway (no testing at (*makai*) Station Entrance Building due to its location seaward of the former shoreline and constraints)

9.1.1.7 Civic Center Station

Civic Center Station is located at Halekauwila Street, just northwest of Keawe Street (see Figure 132 through Figure 138). Due to constraints, testing is proposed at four out of eight station column foundations (with 3' by 10' excavation) (see Figure 137). Five (2' by 20') test trenches are proposed at the (*makai*) Station Entrance Building to supplement 3½ recent archaeological inventory survey test trenches within the building footprint (see Figure 138). One test trench (with a 3' by 10' excavation) is proposed for the elevator location *mauka* of Halekauwila Street (see Figure 137).

9.1.1.8 Kaka'ako Station

Kaka'ako Station is located just east of Ward Avenue and just south of Queen Street (the relatively new Queen Street extension) (see Figure 139 through Figure 143). Testing is proposed for all three station column foundations—two with 3' by 10' excavations and the easternmost column with a 2' by 20' excavation so as to also address a small touchdown (see Figure 142). Six 2' by 20' test trenches are proposed for the Station Entrance Building (see Figure 143).

9.1.1.9 Ala Moana Center Station

Ala Moana Center Station is located on the northwest side of Ala Moana Shopping Center (see Figure 144 through Figure 151). Testing is proposed for all eight station column foundations with 3' by 10' excavations (see Figure 149). Four 2' by 20' test trenches are proposed at the (*mauka*) Station Ancillary Building (see Figure 150). Three 2' by 20' and three 3' by 10' test trenches are proposed at the (*makai*) Station Entrance Building (see Figure 151).

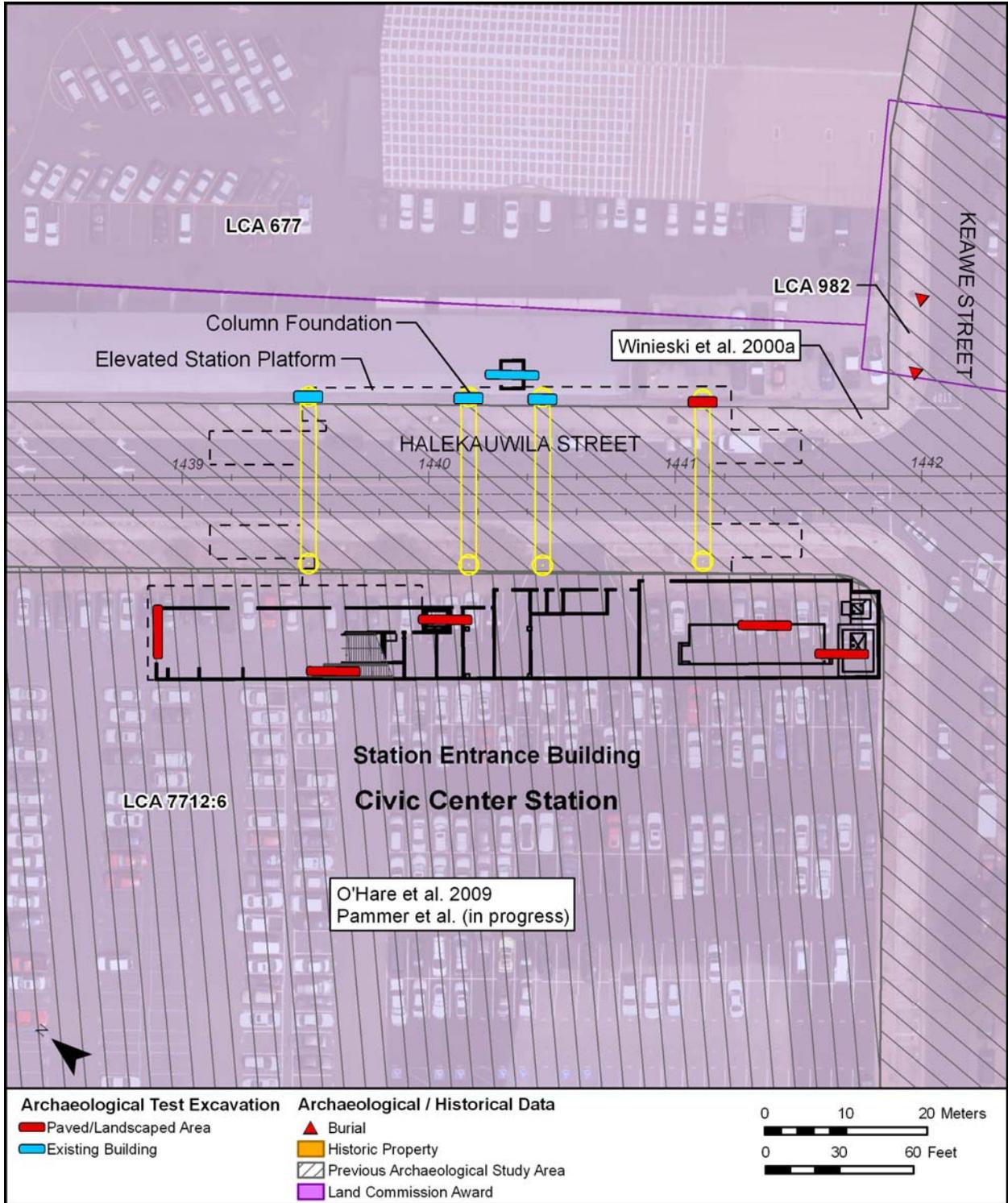


Figure 132. Civic Center Station (at Halekauwila Street just northwest of Keawe Street), aerial photograph showing overlay of transit station infrastructure (see following figures for details)



Figure 133. Civic Center Station location of *mauka* column foundations and infrastructure, Halekauwila Street at left, view to northwest



Figure 134. Civic Center Station location of *makai* column foundations, Halekauwila Street at right, view to northwest



Figure 135. Civic Center Station, (*makai*) Station Entrance Building location (note: repaved rectangles of recent archaeological test excavations), view to northwest



Figure 136. Civic Center Station, (*makai*) Station Entrance Building location (note: repaved rectangles of recent archaeological test excavations, Halekauwila Street at upper left), view to southeast

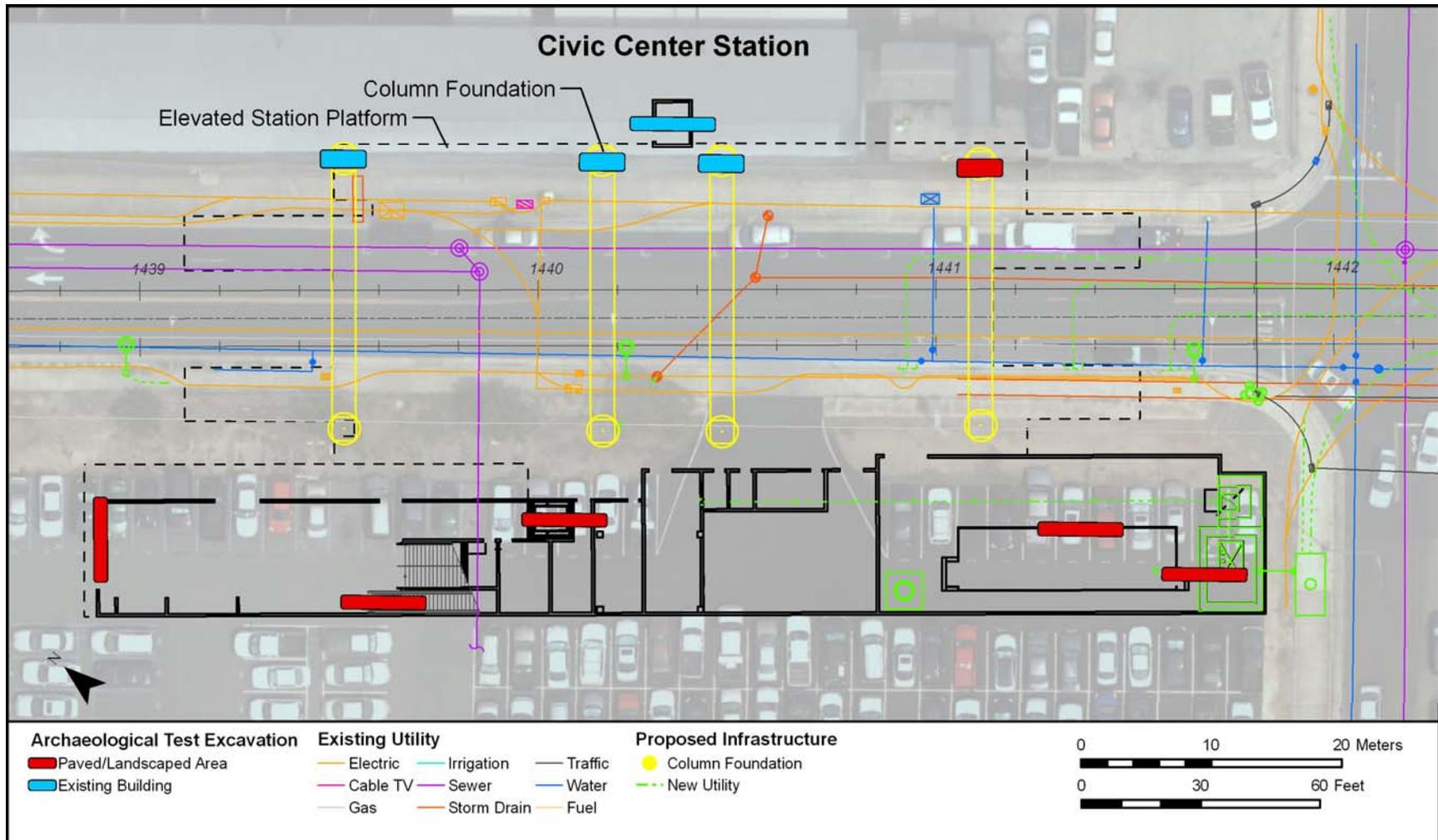


Figure 137. Civic Center Station, detail of column foundation layout showing proposed locations for archaeological inventory survey testing (due to constraints, test four out of eight station column foundations with 3' by 10' excavations); one test trench with 2' by 20' excavation at *mauka* elevator

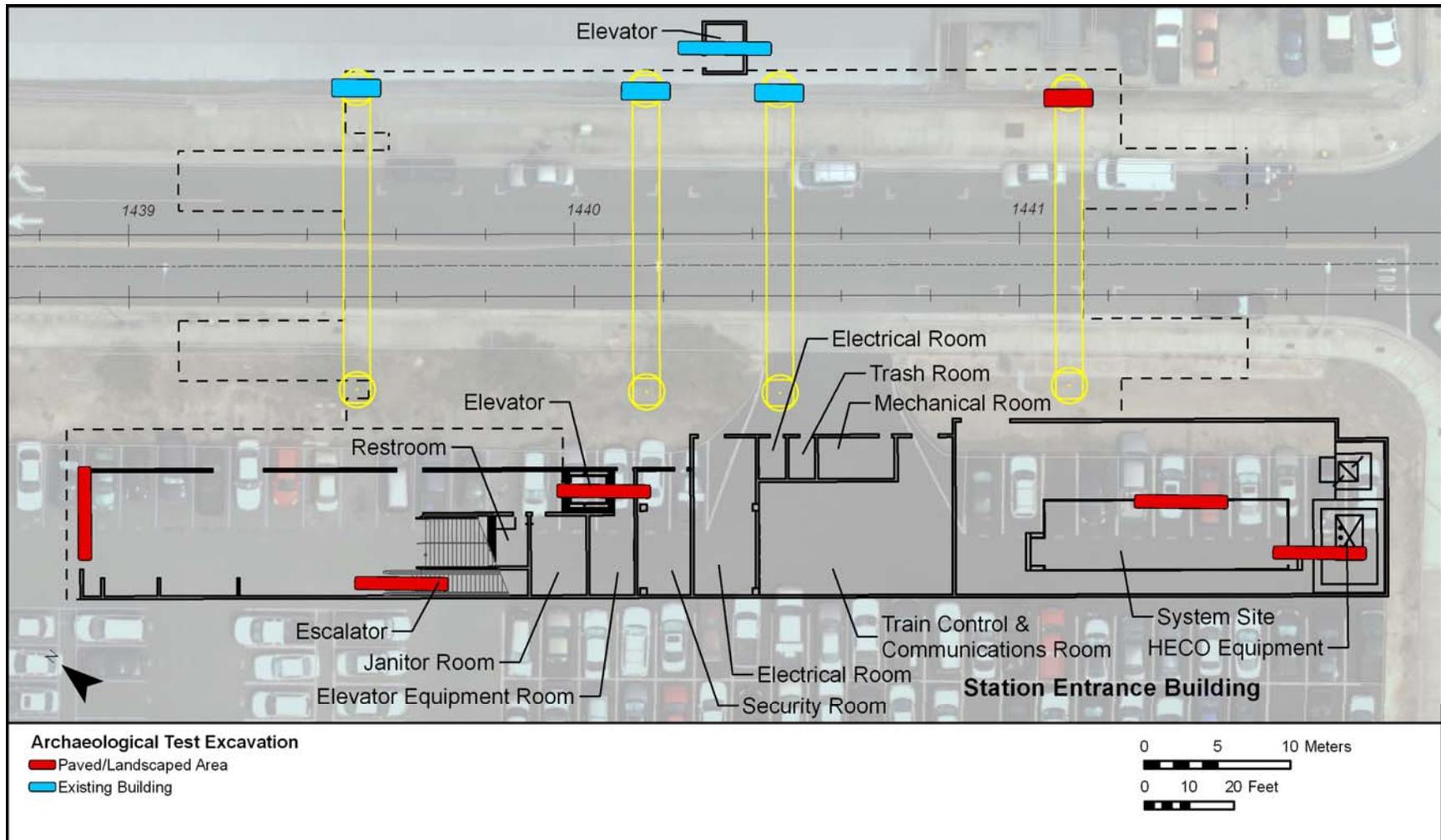


Figure 138. Civic Center Station, detail of (*makai*) Station Entrance Building (at *makai* side of Halekauwila Street northwest of Keawe Street), showing proposed locations for archaeological inventory survey testing (five 2' by 20' test trenches at (*makai*) Station Entrance Building to supplement 3½ previous test trenches within building footprint;

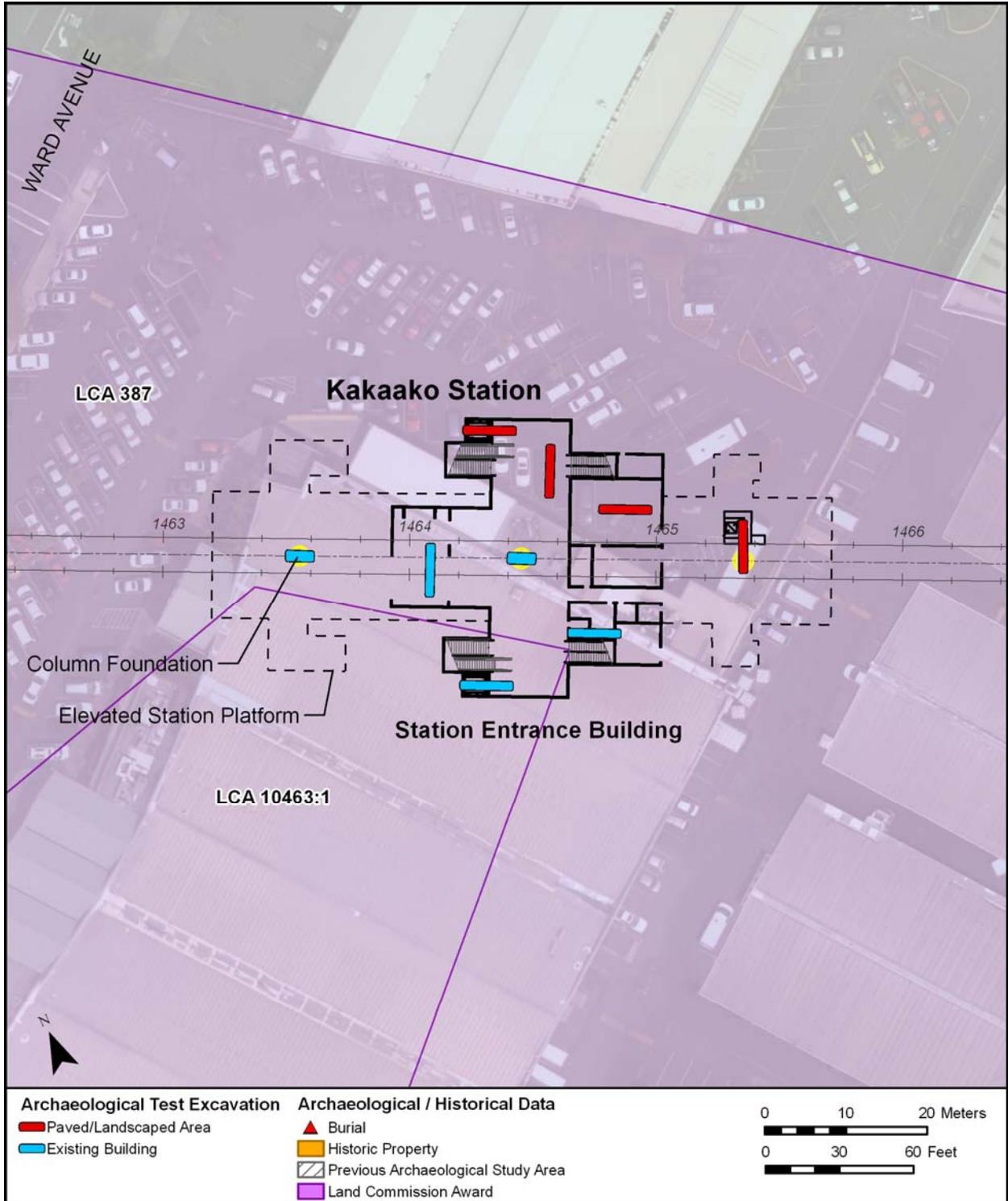


Figure 139. Kaka‘ako Station (just southeast of Ward Avenue and southwest of Queen Street), aerial photograph showing overlay of transit station infrastructure (see following figures for details)



Figure 140. Kaka'ako Station, view toward western column foundation location (presently within Ross Dress for Less), view to south



Figure 141. Kaka'ako Station, view of northeast portion of station (parking lot), Ross Dress for Less (presently overlying most of the station) at right, view to south

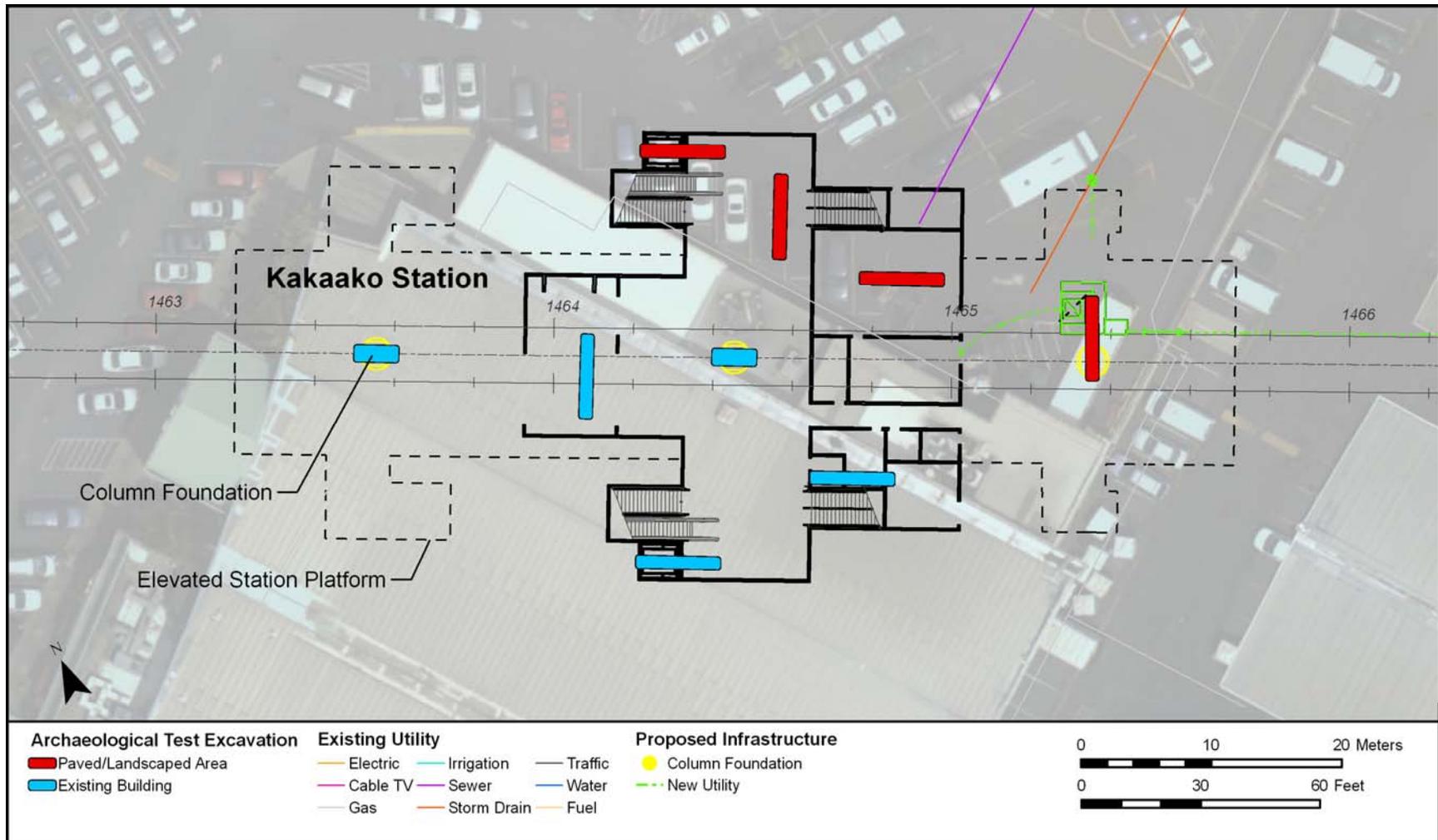


Figure 142. Kaka'ako Station, detail of column foundation layout showing proposed locations for archaeological inventory survey testing (test all three station column foundations with 3' by 10' excavations)

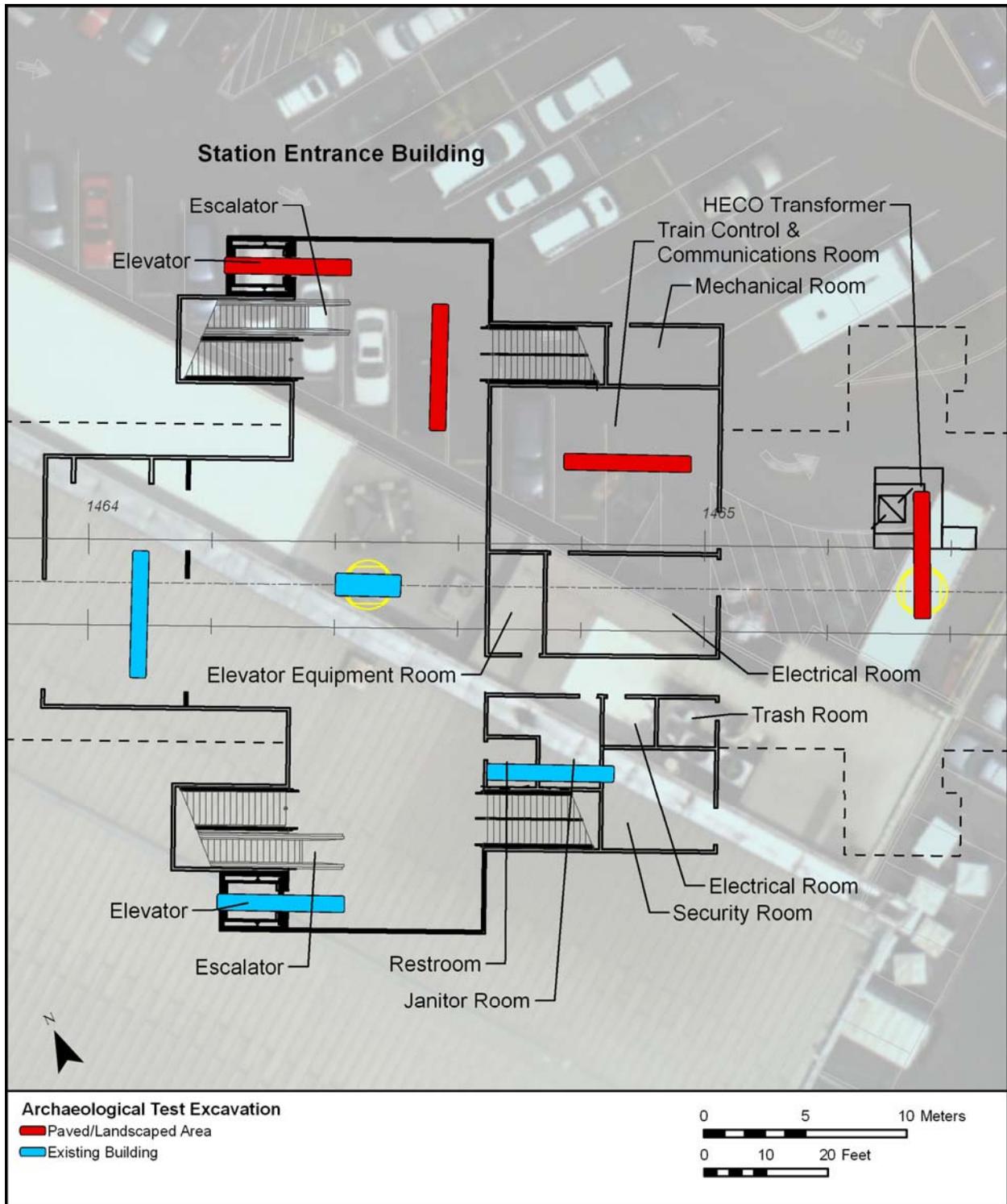


Figure 143. Kaka'ako Station, detail of building foundation layout showing proposed locations for archaeological inventory survey testing (six 2' by 20' test trenches at Station Entrance Building)

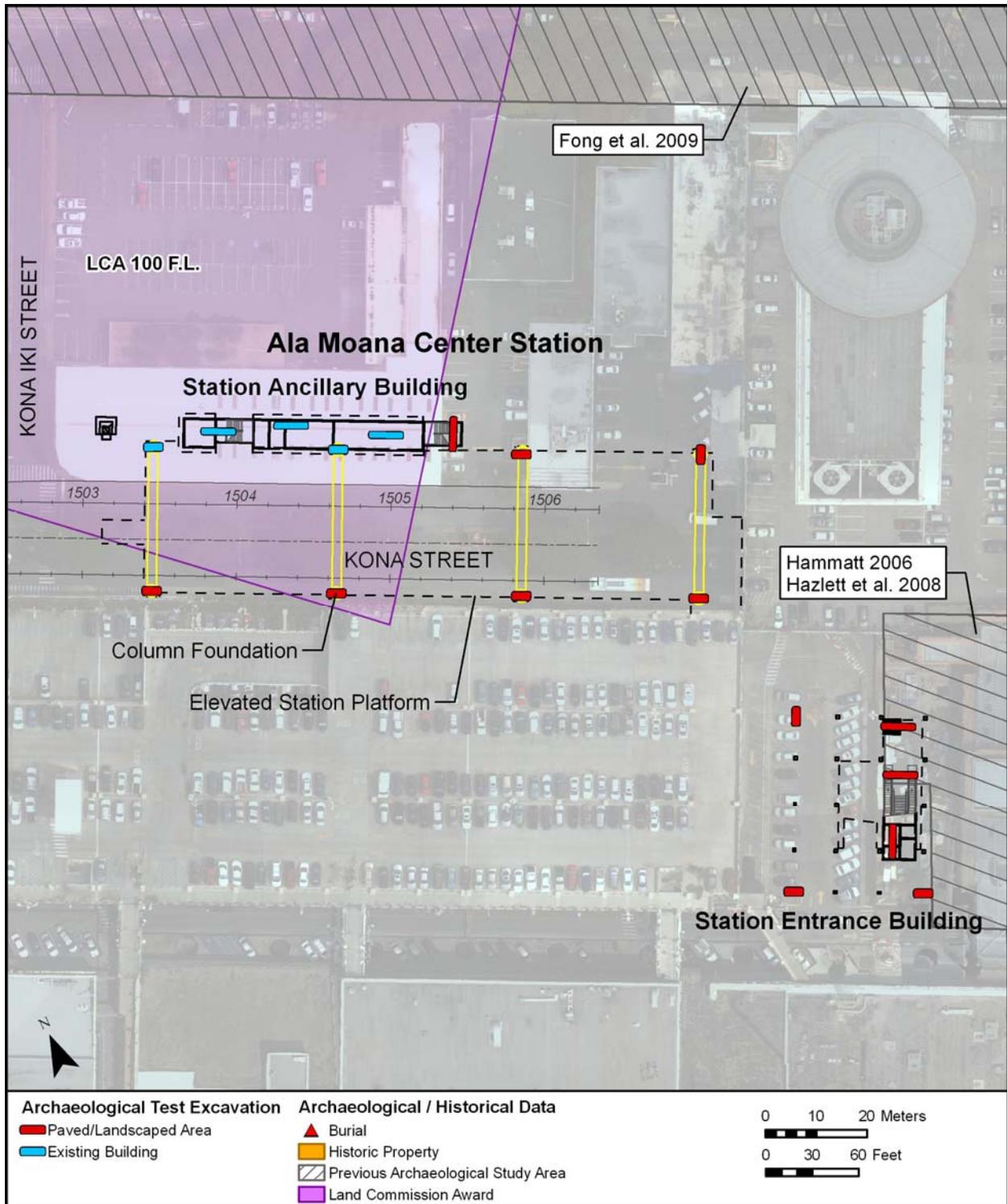


Figure 144. Ala Moana Center Station (at Kona Street just southeast of Kona Iki Street), aerial photograph showing overlay of transit station infrastructure (see following figures for details)



Figure 145. General view of Ala Moana Center Station, saddle column foundation locations flanking Kona Street (from Kona Iki Street intersection), view to southeast



Figure 146. General view of Ala Moana Center Station, Station Ancillary Building location (presently recycling warehouse) from intersection of Kona Street and Kona Iki Street, view to east



Figure 147. Ala Moana Center Station, column foundation location (in front of Tattoo Hawai'i), view to east

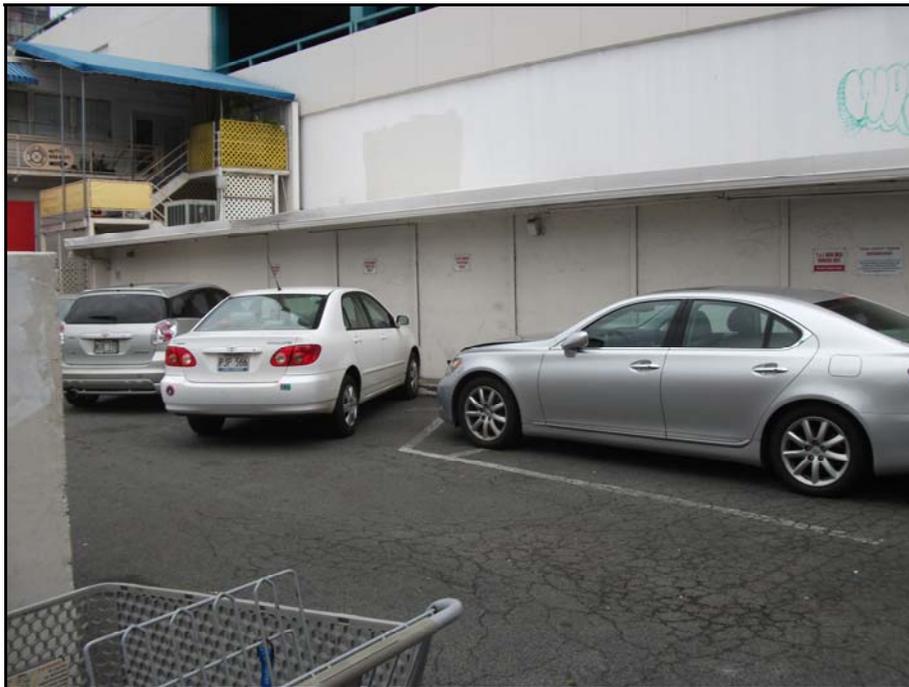


Figure 148. Ala Moana Center Station, column foundation location (in side lot by Nail Boutique), view to east

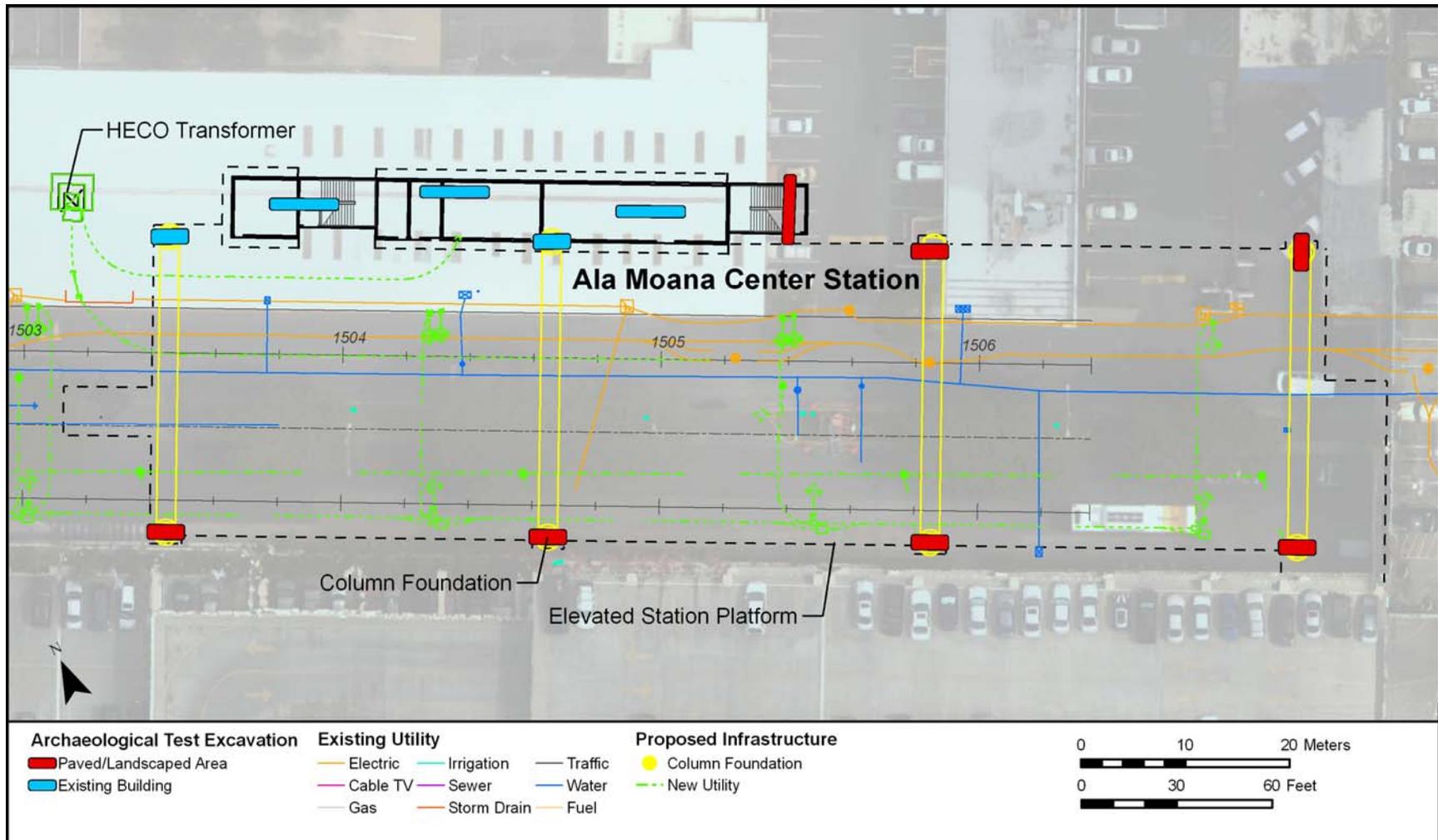


Figure 149. Ala Moana Center Station, detail of column foundation layout showing proposed locations for archaeological inventory survey testing (test all eight station column foundations with 3' by 10' excavations)

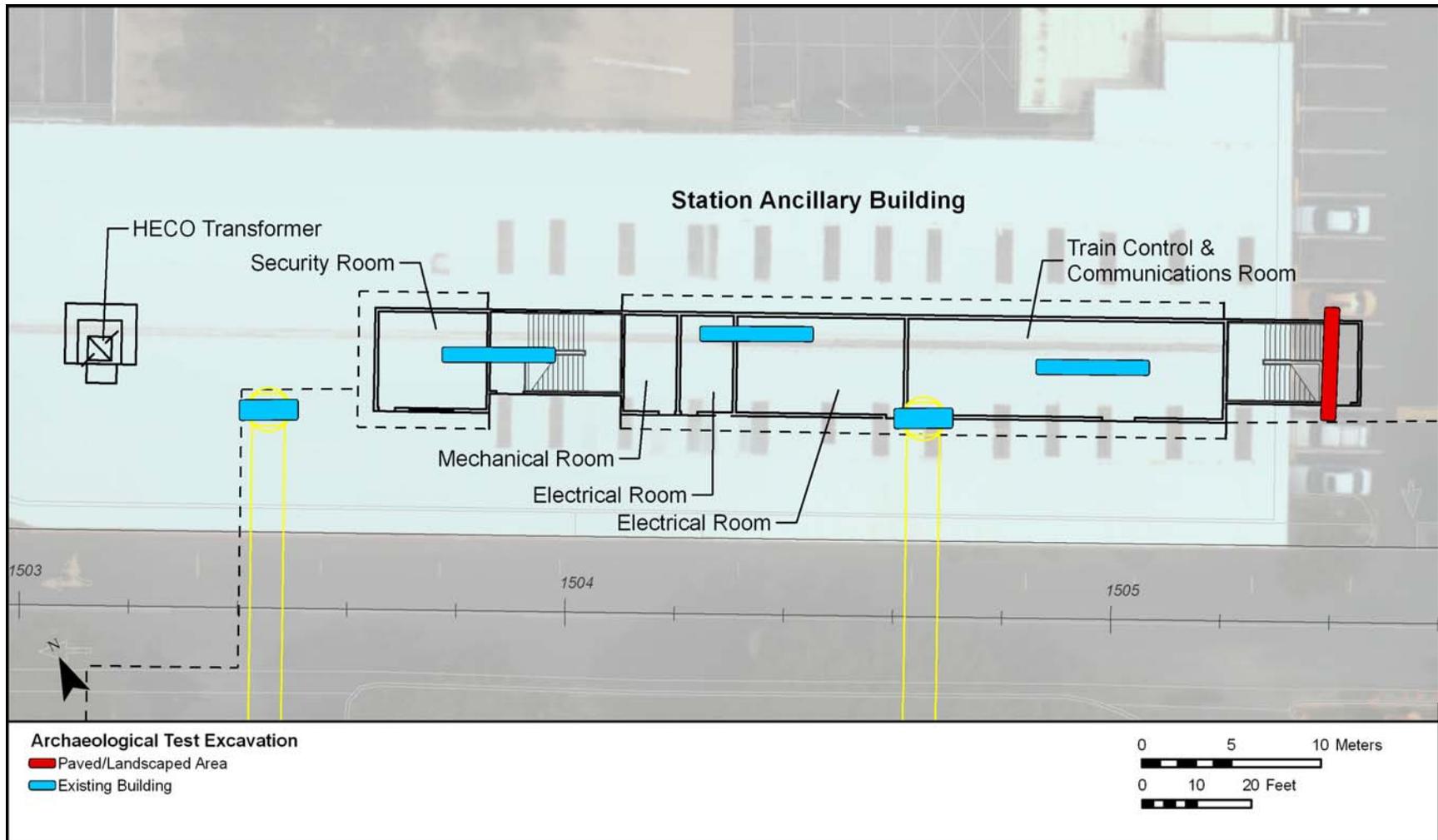


Figure 150. Ala Moana Center Station, detail of (*mauka*) Station Ancillary Building foundation layout showing proposed locations for archaeological inventory survey testing (Four 2' by 20' test trenches at *mauka* Station Ancillary Building)

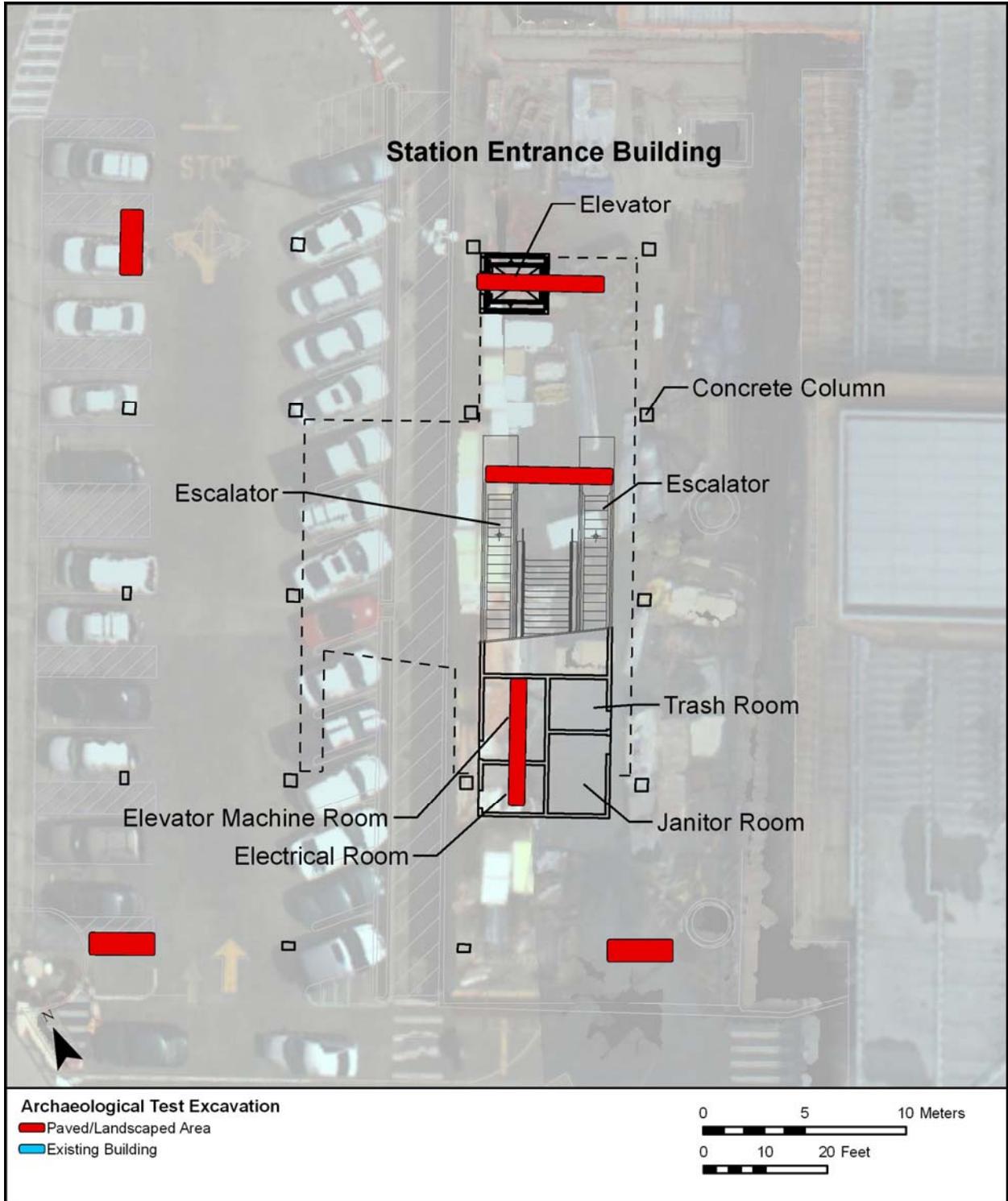


Figure 151. Ala Moana Center Station, detail of (*makai*) Station Entrance Building foundation layout showing proposed locations for archaeological inventory survey testing (three 2' by 20' and three 3' by 10' test trenches at *makai* Station Entrance Building

9.1.2 Excavation Sampling Strategy—Guideway Column Foundation Locations and Utility Relocations

The current AIS study area, which consists of Construction Phase 4 and the easternmost portion of Construction Phase 3 (east of Kalihi Stream), includes approximately 163 guideway column foundations, generally spaced approximately 120 feet apart over the approximately 4.3-mile-long study area.

Many column foundations directly associated with the nine stations in Construction Phase 4 will be tested as described in detail in Section 8.2.1 and Table 12. An additional 72 column foundations will be tested as detailed below. Additionally, 69 test trenches will target areas of utility relocations. Subsurface testing will occur following the pedestrian survey of the study area and ground-penetrating radar survey of the specific testing areas (refer to the earlier Research Design and Methods Section). Additional testing may be warranted in areas near any test excavation where archaeological cultural resources are identified, or where testing results indicated the likelihood of archaeological cultural resources. The extent of additional testing will be made in consultation with the SHPD and project engineers, see discussion below. The planned test excavations for guideway column foundations are distributed throughout the study area and also are focused on areas of intensive traditional Hawaiian activity.

Table 13 and Figure 152 through Figure 178 provide a high level of detail regarding the planned guideway column foundation and utility relocation test excavations in the study area. The locations selected for test excavations are generally concentrated in low-lying areas near sources of fresh water, which were ideal locales for pre-contact and early post-contact agricultural development and associated habitation. Less subsurface testing is planned for areas that were less suitable for traditional agricultural development and/or habitation.

Table 13. Summary of Proposed Approach for Archaeological Inventory Survey Testing of Column Foundations and Utility Relocations by Construction Sheet

Portion of Route (Construction Sheet #)	Proposed Testing Locations (from West to East)	Comments
Map 30 (Kamehameha Hwy. immediately east of Middle Street Transit Center Station to WB 1269+00)	No column foundation testing on this sheet (other than at station columns of the Middle Street Transit Center Station) Only one proposed utility excavation (2' by 20') straddling the match line at WB 1269+00 to test a proposed 12" sewer line relocation	Straddles Kalihi Stream Utility line constraints for four western column foundations Note extensive testing at Middle Street Transit Center Station
Map 31 (Kamehameha Hwy. east of Middle Street Transit Center Station to WB 1279+00)	Column foundation testing includes: 3' by 10' trenches at three column foundation locations: the mauka straddle bent column foundation at WB 1269+90, at the column foundation at WB 1275+80, and at the column foundation at WB 1278+40 Utility relocation testing includes: 3' by 10' trench at a storm drain catch basin at WB 1271+20; a 2' by 20' trench at a 12" sewer line relocation at WB 1272+80; and a 2' by 20' trench at a 24" waterline relocation at WB 1274+20 and at a 24" waterline relocation at WB 1277+10	In area of LCAs Utility line constraints for other column foundations
Map 3 Dillingham Blvd. (near Laumaka St. and Pu'uhale Rd. to WB 1289+00)	Column foundation testing includes: a 3' by 10' trench at the column foundations at WB 1279+80, WB 1284+00, WB 1285+50, WB 1286+50, and WB 1287+70 Utility relocation testing includes: a 2' by 20' trench at the 6" gas line relocations at WB 1281+10 and WB 1282+80	In area of LCAs Utility line constraints
Map 4 (Dillingham Blvd. near Kalihi Station to WB 1299+00)	Column foundation testing (in addition to that for the Kalihi Station) includes: a 3' by 10' trench at the column foundations at WB 1290+30, WB 1291+80, WB 1293+10, and WB 1297+30 No utility relocation testing on this sheet	In area of LCAs Relatively free of utility constraints Note extensive testing at the Kalihi Station
Map 5 (Dillingham	Column foundation testing includes: a 3'	In area of LCAs

Portion of Route (Construction Sheet #)	Proposed Testing Locations (from West to East)	Comments
Blvd. near Kalihi St. to WB 1309+00)	by 10' trench at the column foundations at WB 1300+30, WB 1301+80, and WB 1303+00 Utility relocation testing includes: 3' by 10' trenches at storm drain catch basins at WB 1300+10, WB 1306+90, and WB 1308+00	Utility line constraints
Map 6 (Dillingham Blvd. near McNeil St. to WB 1319+00)	No column foundation testing on this sheet Utility relocation testing includes: a 3' by 10' trench at a proposed electric box at WB 1312+40 and a 3' by 10' trench at storm drain catch basins at WB 1313+80 and WB 1317+20	Utility line constraints for all seven column foundations
Map 7 (Dillingham Blvd. near Waiakamilo Rd. and Colburn St. to WB 1329+00)	Column foundation testing includes: a 3' by 10' trench at the column foundation at WB 1324+20 Utility relocation testing includes: a 3' by 10' trench at storm drain catch basins at WB 1319+60 and WB 1325+10 on Colburn Street, WB 1327+50, and WB 1328+40, and a 2' by 20' trench at a 42" water line relocation at WB 1325+70	In area of LCAs Utility line constraints for all seven column foundations
Map 8 (Dillingham Blvd. west of Kapālama Station to WB 1339+00)	No column foundation testing on this sheet Utility relocation testing includes: 2' by 20' trenches at 42" water line relocations at WB 1329+80 and WB 1336+80	Adjacent to Kapālama Stream and an area of LCAs Utility line constraints Note extensive testing at Kapālama Station
Map 9 (Dillingham Blvd. near Ala Kawa St. to WB 1349+00)	Column foundation testing includes: a 3' by 10' trench at the column foundation at WB 1348+50 Utility relocation testing includes: 2' by 20' excavations at a 42" water line relocation at WB 1339+60, and for a 36" sewer line relocation at WB 1341+20, WB 1342+80, WB 1344+00, and WB 1345+70, and at an 8" sewer relocation at WB 1347+00	Dense area of LCAs Utility line constraints for all seven column foundation
Map 10 (Dillingham	Column foundation testing includes: a 3'	Dense area of LCAs

Portion of Route (Construction Sheet #)	Proposed Testing Locations (from West to East)	Comments
Blvd. just west of Iwilei Station to WB 1358+00)	by 10' trench at the column foundation at WB 1351+50, WB 1354+50, the straddle bents at WB 1355+90 and WB 1356+00, and the column foundation at WB 1357+20 Utility relocation testing includes: 3' by 10' trenches for storm drain catch basins at WB 1349+50 and WB 1350+40, and a 2' by 20' excavation at a Tel Com manhole at WB 1352+90	Former Kūwili Fishpond at SE end Utility line constraints for two other foundations Note extensive testing at Iwilei Station
Map 11 (Dillingham Blvd. just east of Iwilei Station to WB 1381+00)	Column foundation testing includes: 3' by 10' trenches at the column foundations at WB 1376+30 and WB 1380+40 No utility relocation testing on this sheet	Mostly within former Kūwili Fishpond All eight relatively free of utility constraints Note extensive testing at Iwilei Station
Map 12 (Nimitz Hwy. near Iwilei Rd. and the west side of Nu'uanu Stream to WB 1391+00)	Column foundation testing includes: a 3' by 10' trench at the column foundation at WB 1385+40 No utility relocation testing on this sheet	Adjacent to N side of Nu'uanu Stream Utility line constraints for other foundations and/or in Kawa or Kūwili Fishponds
Map 13 (Nimitz Hwy, on the east side of Nu'uanu Stream near the Chinatown Station to WB 1401+00)	Column foundation testing includes: a 3' by 10' trench at the column foundation at WB 1400+60 Utility relocation testing includes: 2' by 20' excavations at WB 1396+10 for a fiber optic line relocation, at WB 1397+00 for an electric manhole, and at WB 1398 +30 for a fiber optic line	Adjacent to S side of Nu'uanu Stream Area of LCAs Former shoreline extended well inland Note extensive testing at Chinatown Station
Map 14 (Nimitz Hwy. north of the Downtown Station near Nu'uanu Ave. and Bethel St. to WB 1411)	Column foundation testing includes: 3' by 10' trenches at the column foundations at WB 1405+40 and WB 1409+40 Utility relocation testing consists of a 2' by 20' trench for an electric line manhole at WB 1402+00, at WB 1404+10 for an electric line, and at WB 1407+30	Dense LCAs Major utility constraints
Map 15 (Nimitz Hwy. near the Downtown Station to	Column foundation testing on this sheet includes: a 2' by 20' trench at WB 1416+70	Dense LCAs Former shoreline extended well inland

Portion of Route (Construction Sheet #)	Proposed Testing Locations (from West to East)	Comments
WB 1420)	Utility relocation testing includes: 2' by 20' trenches for electric line relocations at WB 1411+00, WB 1412+20, and WB 1414+00	Note testing at Downtown Station
Map 16 (Nimitz Hwy. and Halekauwila St. southeast of the Downtown Station near Mililani Street to WB 1429)	Column foundation testing includes: a 2' by 20' excavation at WB 1423+20 for a guideway column foundation and a 3' by 10' trench at both of the straddle bent foundations at WB 1427+60 Utility relocation testing includes: 2' by 20' trenches at the telecommunication manholes at WB 1422+40 and WB 1426+10	Area of LCAs Major utility constraints Note testing at Downtown Station
Map 17 (Halekauwila St. at Punchbowl and South Streets, northwest of the Civic Center Station to WB 1438)	Column foundation testing includes: a 3' by 10' trench WB 1430+90, WB 1432+40, WB 1433+90, WB 1435+40, and of the mauka straddle bent at WB 1436+80 Only one proposed utility excavation (2' by 20') at WB 1436+20 for an electric manhole	Major utility constraints Note extensive testing at Civic Center Station
Map 18 (Halekauwila St. in the vicinity of the Civic Center Station to WB 1448)	Column foundation testing (in addition to the extensive testing at the Civic Center Station) includes: 3' by 10' trenches at both straddle bent foundations at WB 1438+10, at the mauka straddle bent foundations at WB 1442+40 and WB 1443+80, at both straddle bents at WB 1445+40, and at the makai straddle bent foundation at WB 1446+80 Utility relocation testing includes: a 2' by 20' trench at the electric manholes at WB 1442+60, WB 1443+50 & WB 1447+20	Area of LCAs Burials reported in vicinity Significant utility constraints Note extensive testing at Civic Center Station
Map 19 (Halekauwila St. between Cooke and Kamani Streets to WB 1458)	Column foundation testing includes: a 3' by 10' trench at the makai straddle bent at WB 1448+40 Utility relocation testing includes: 2' by 20' trenches at an electric manhole at WB 1449+60; 2' by 20' trenches for a	Area of LCAs Burials reported in vicinity Major utility constraints

Portion of Route (Construction Sheet #)	Proposed Testing Locations (from West to East)	Comments
	24" storm drain at WB 1450+00; and 8" sewer relocations at WB 1450+60, WB 1452+60, WB 1453+50, WB 1454+80, WB 1456+30, and WB 1457+80	
Map 20 (Kaka'ako Station vicinity to WB 1468)	Column foundation testing (in addition to testing at the Kaka'ako Station) includes: 3' by 10' trenches at the straddle bents at WB 1459+20 and WB 1459+30, and at the column foundations at WB 1460+70, WB 1462+10, and WB 1466+80 Utility relocation testing consists of: a 2' by 20' trench at an electric manhole at WB 1458+80	Relatively free of utility constraints but existing buildings over eastern portion Note extensive testing at Kaka'ako Station
Map 21 Queen St. and Kamake'e St. vicinity to WB 1478)	Column foundation testing includes: 3' by 10' trenches at column foundations at WB 1468+20, WB 1469+80, WB1471+30, WB 1472+80, WB 1474+20, WB 1475+70, and WB 1477+00 Utility relocation testing consists of: a 2' by 20' trench for an electric box at WB 1470+40	Relatively free of utility constraints but existing building constraints
Map 22 Queen St./Waimanu St. intersection vicinity to WB 1488)	Column foundation testing includes: 3' by 10' trenches at column foundations at the makai straddle bent foundation at WB 1478+20, and the column foundations at WB 1479+40, WB 1481+90, WB 1483+20, WB 1486+20, and at an eastern offset of a column foundation at 1487+90 Utility relocation testing includes: 2' by 20' trenches for telecommunications manholes proposed at WB 1485+00 and WB 1486+10, and a 2' by 20' trench at an electric manhole at WB 1485+20	Burials reported in vicinity Significant utility constraints
Map 23. Kona Street in the vicinity of Pensacola and Pi'ikoi Streets to WB 1498)	Column foundation testing includes: 3' by 10' trenches at column foundations at WB 1488+80, WB 1493+00, at both straddle bent foundations at WB 1494+40, and at WB 1496+00	Significant building and utility constraints

Portion of Route (Construction Sheet #)	Proposed Testing Locations (from West to East)	Comments
	Utility relocation testing includes: 2' by 20' trenches at electric manholes at 1489+00 and to the south along Pensacola St.; a 3' by 10' trench at an 8" water line at WB 1490+10 and WB 1491+60; a 2' by 20' trench at a mauka electric transformer at WB 1493+80; and a 2' by 20' trench at a 24" storm drain at WB 1497+50	
Map 24 Kona St. just northwest of Ala Moana Center Station to end	Column foundation testing (in addition to testing within the Ala Moana Center Station) includes: 3' by 10' trenches at straddle bent column foundations at WB 1498+60, WB 1499+80, WB 1500+90, and both foundations at WB 1502+00 Utility relocation testing includes: a 2' by 20' trench at a 24" storm drain at WB 1498+60, WB 1499+80, and WB 1500+90	Significant building and utility constraints Note extensive testing at Ala Moana Center Station
Map 25 Punchbowl St. makai of Pohukaina St. (utility relocations only)	Utility relocation testing includes: 2' by 20' trenches for an electric line relocation and at an electric manhole at Punchbowl St. between Pohukaina St. and Nimitz Hwy.	Utility relocations only
Map 26 Pohukaina St. near South St. (utility relocations only)	Utility relocation testing includes: 2' by 20' trenches at an electric line and at an electric manhole along Pohukaina St.	Utility relocations only
Map 27 Pohukaina St. near Keawe St., Coral St., and Cooke St. (utility relocations only)	Utility relocation testing includes: 2' by 20' trenches at two electric manholes along Pohukaina St. and at one electric manhole along Cooke St.	Utility relocations only

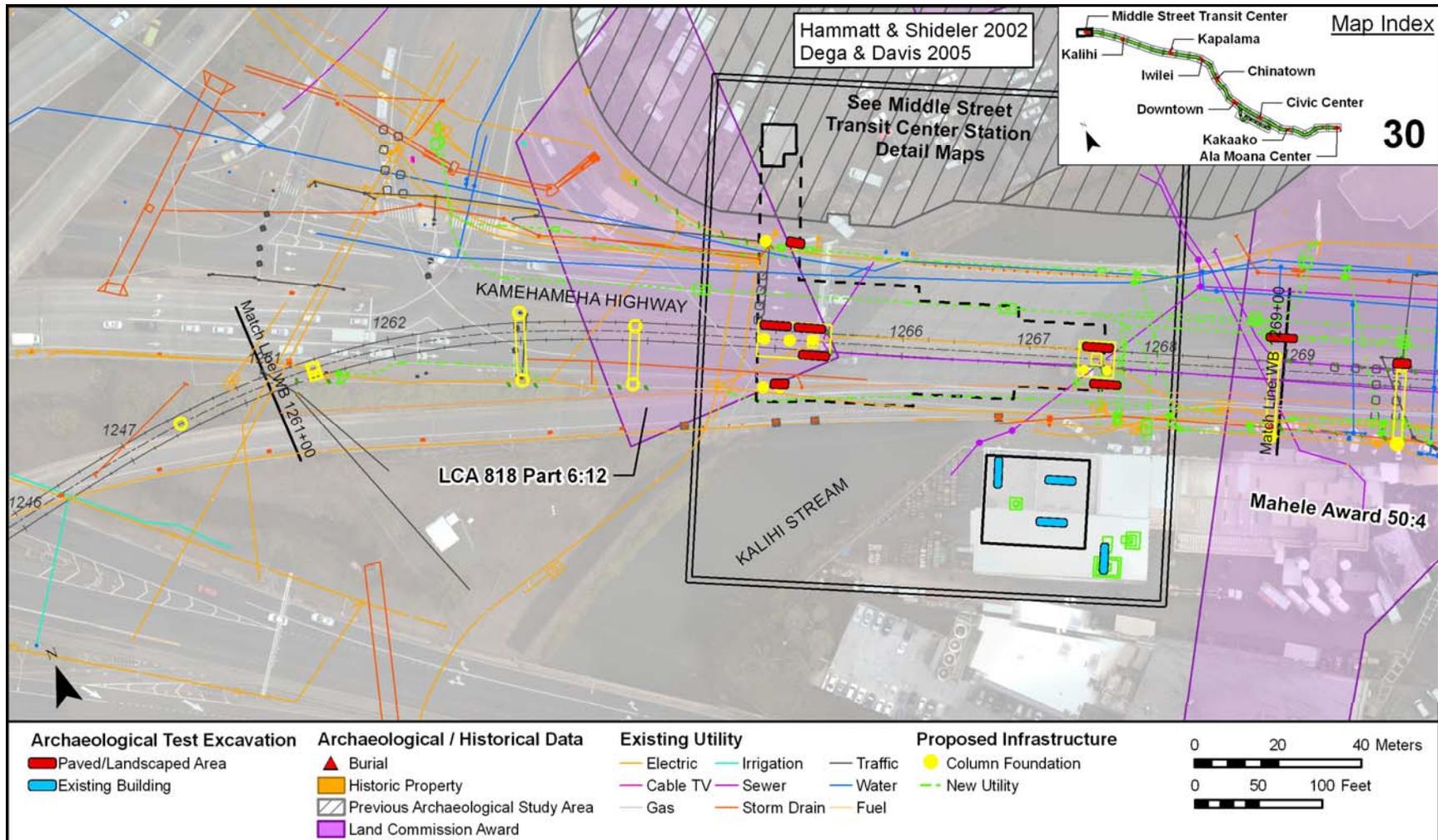


Figure 152. Map 30 (Kamehameha Highway in the immediate vicinity of the Middle Street Transit Center Station) showing proposed locations for archaeological inventory survey testing; other than excavations in the vicinity of the Middle Street Transit Center Station (see Detail Maps for proposed excavations there), there is only one proposed excavation (2' by 20') straddling the match line at WB 1269+00 to test a proposed 12" sewer line relocation

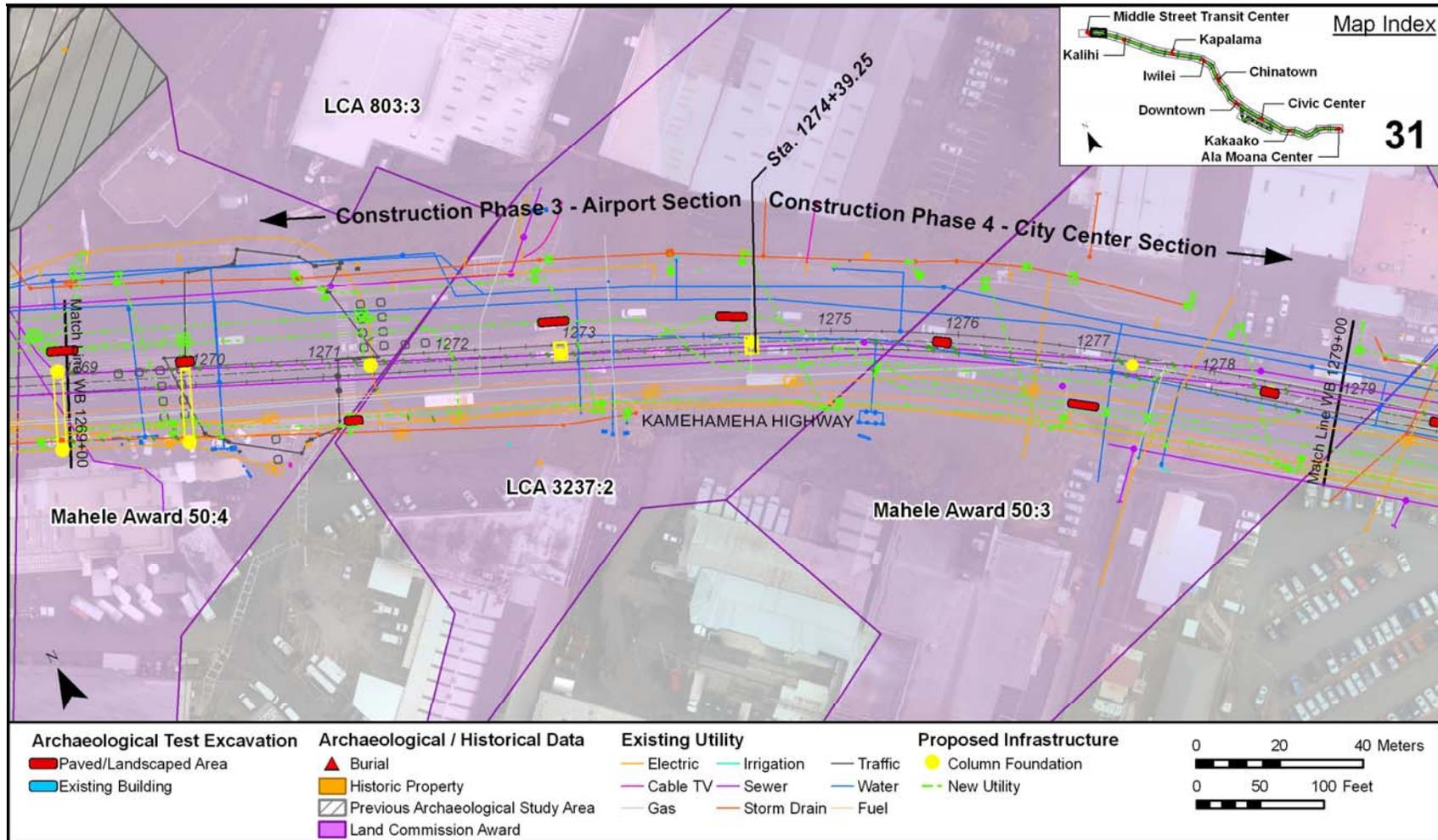


Figure 153. Map 31 (Kamehameha Highway east of Middle Street Transit Center Station) showing proposed locations for archaeological inventory survey testing including (from west to east) a 3' by 10' trench at the *mauka* straddle bent column foundation at WB 1269+90, a 3' by 10' trench at a storm drain catch basin at WB 1271+20, a 2' by 20' trench at a 12" sewer line relocation at WB 1272+80, a 2' by 20' trench at a 24" waterline relocation at WB 1274+20, a 3' by 10' trench at the column foundation at WB 1275+80, a 2' by 20' trench at a 24" waterline relocation at WB 1277+10, and a 3' by 10' trench at the column foundation at WB 1278+40

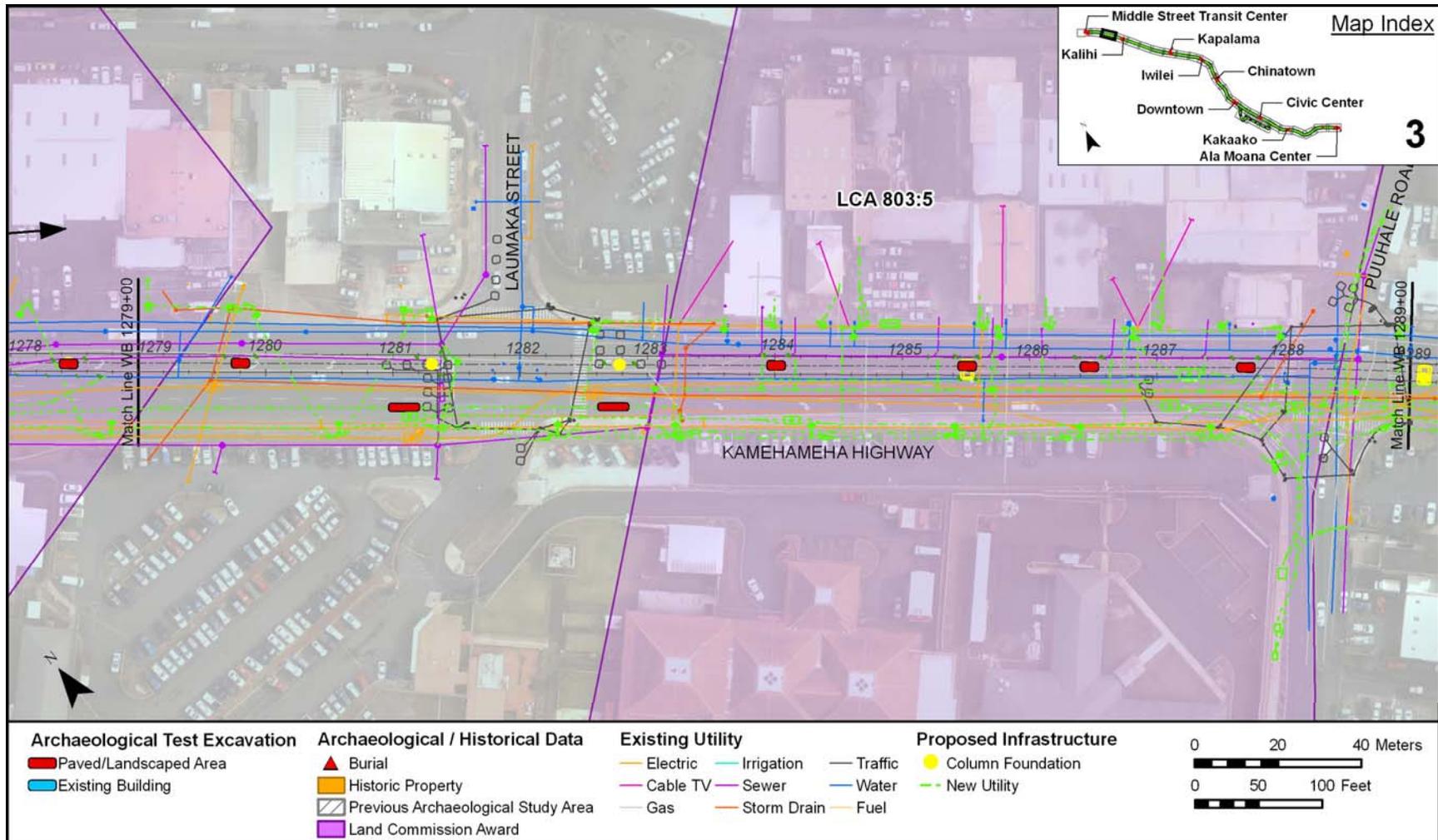


Figure 154. Map 3 (Dillingham Boulevard near Laumaka Street) showing proposed locations for archaeological inventory survey testing including (from west to east) a 3' by 10' trench at the column foundation at WB 1279+80, a 2' by 20' trench at the 6" gas line relocations at WB 1281+10 and WB 1282+80, a 3' by 10' trench at the column foundations at WB 1284+00, WB 1285+50, WB 1286+50, and WB 1287+70

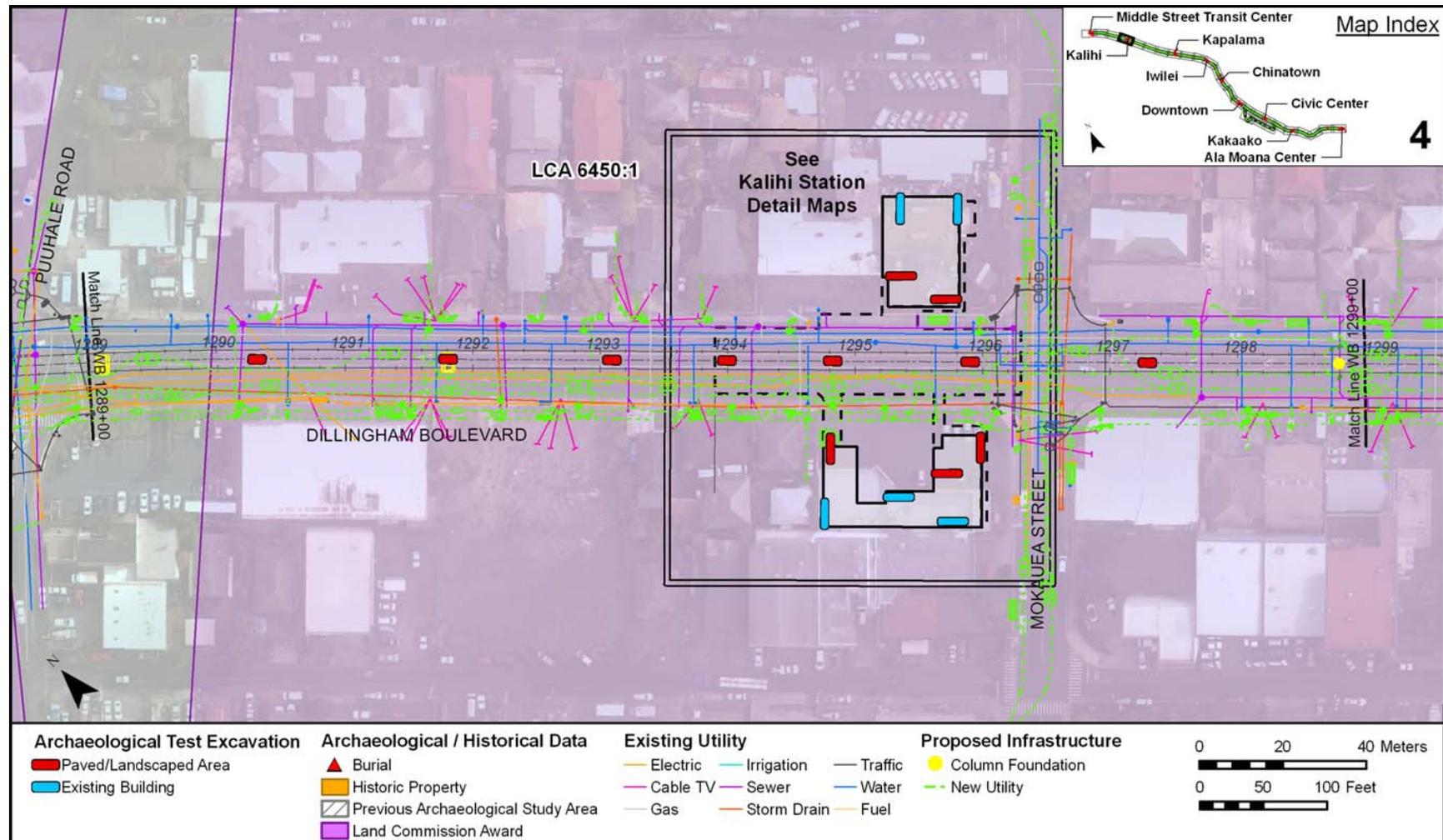


Figure 155. Map 4 (Dillingham Boulevard near Kalihi Station) showing proposed locations for archaeological inventory survey testing (see Detail Maps for proposed excavations at Kalihi Station) including (from west to east) a 3’ by 10’ trench at the column foundations at WB 1290+30, WB 1291+80, WB 1293+10, and the column foundation at WB 1297+30

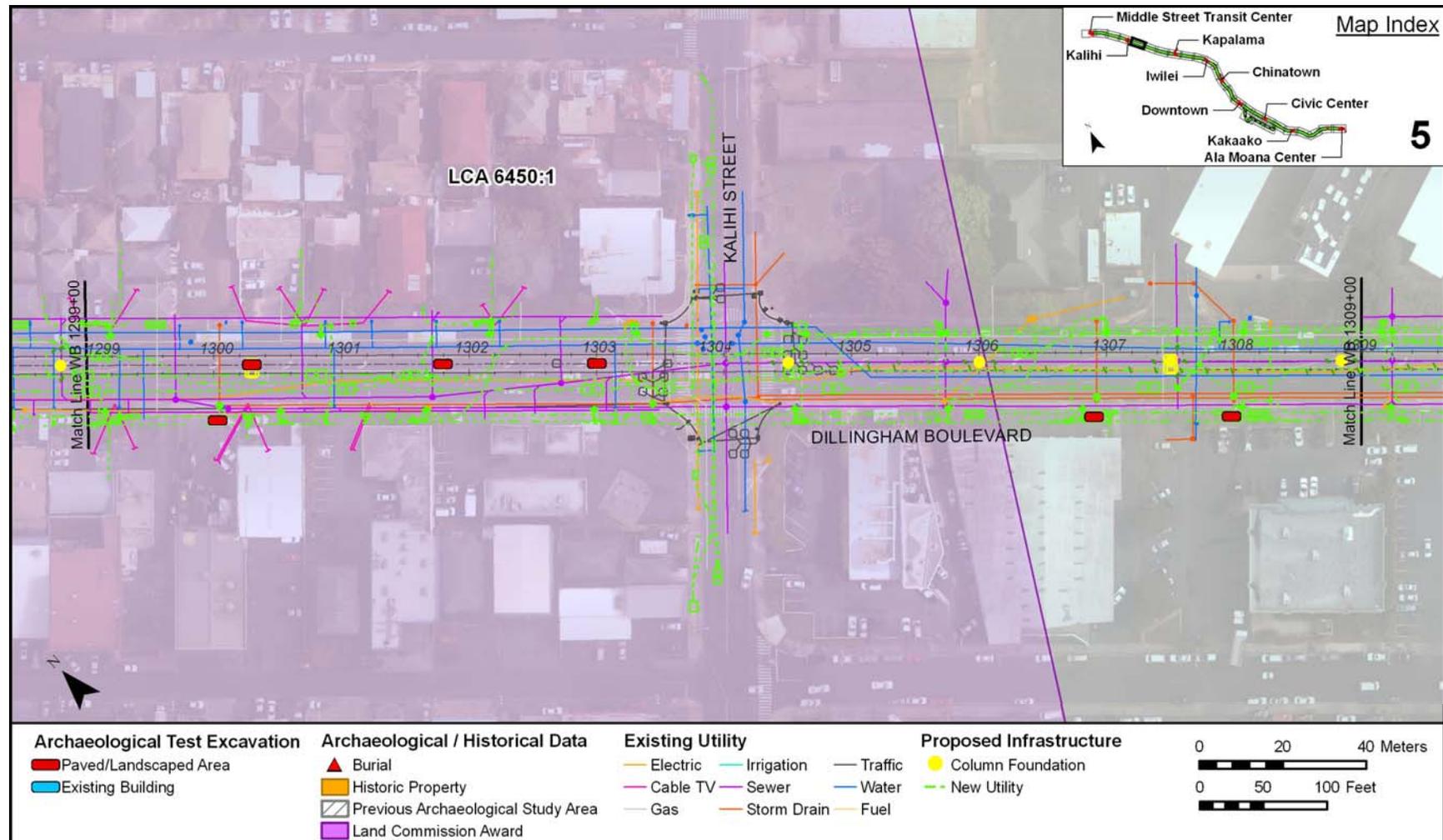


Figure 156. Map 5 (Dillingham Boulevard near Kalihi Street) showing proposed locations for archaeological inventory survey testing including (from west to east) a 3' by 10' trench at a storm drain catch basin at WB 1300+10; a 3' by 10' trench at column foundations at WB 1300+30, WB 1301+80, and WB 1303+00; and a 3' by 10' trench at storm drain catch basins at WB 1306+90 and WB 1308+00

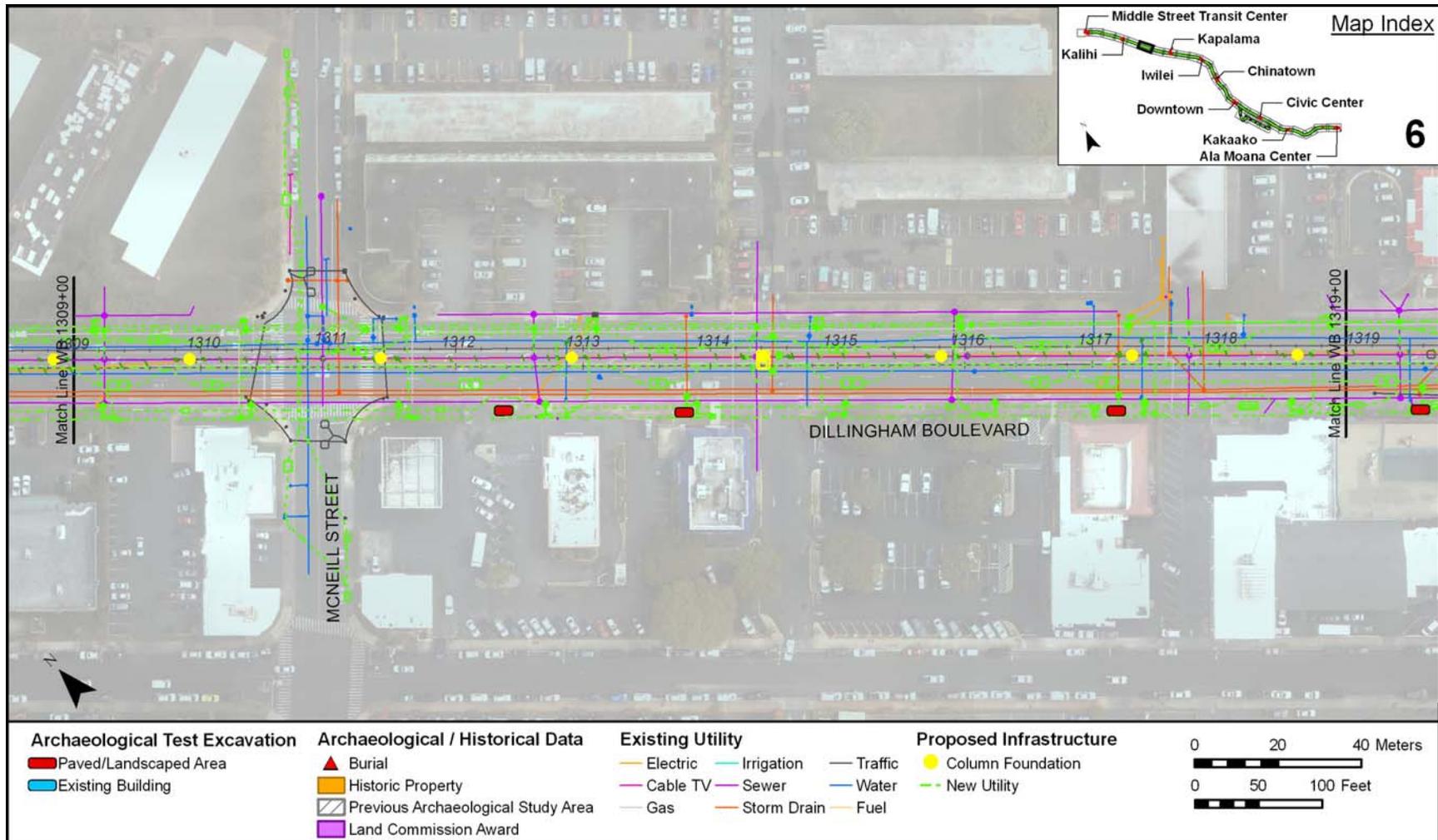


Figure 157. Map 6 (Dillingham Boulevard near McNeill Street) showing proposed locations for archaeological inventory survey testing including (from west to east) a 3' by 10' trench at a proposed electric box at WB 1312+40, and 3' by 10' trenches at storm drain catch basins at WB 1313+80 and WB 1317+20

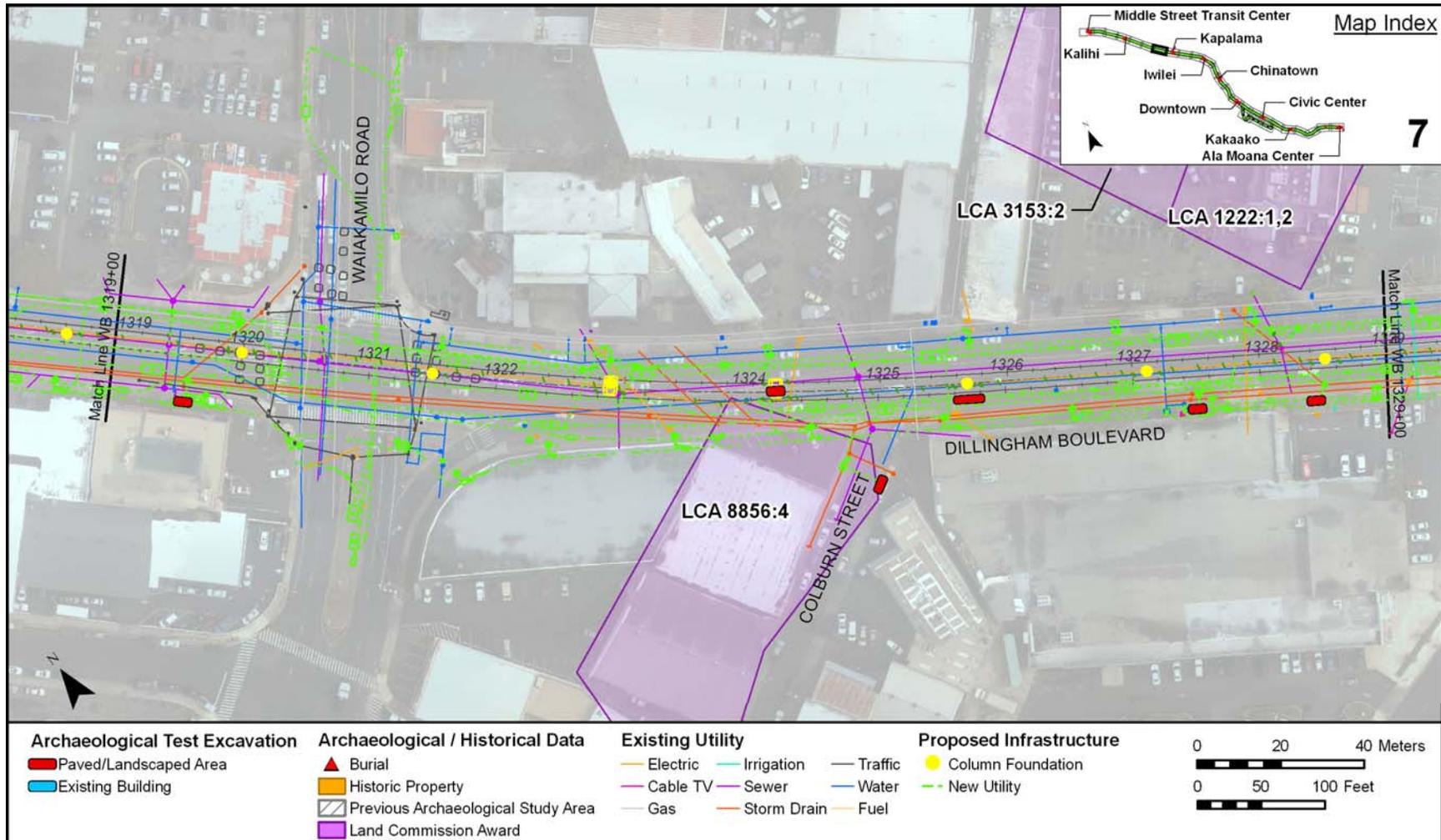


Figure 158. Map 7 (Dillingham Boulevard near Waiakamilo Road showing proposed locations for archaeological inventory survey testing including (from west to east) a 3' by 10' trench at a storm drain catch basin at WB 1319+60, a 3' by 10' trench at a column foundation at WB 1324+20, a 3' by 10' trench at a storm drain catch basin at WB 1325+10 on Colburn Street, a 2' by 20' trench at a 42" water line relocation at WB 1325+70, and 3' by 10' trenches at storm drain catch basins at WB 1327+50 and WB 1328+40

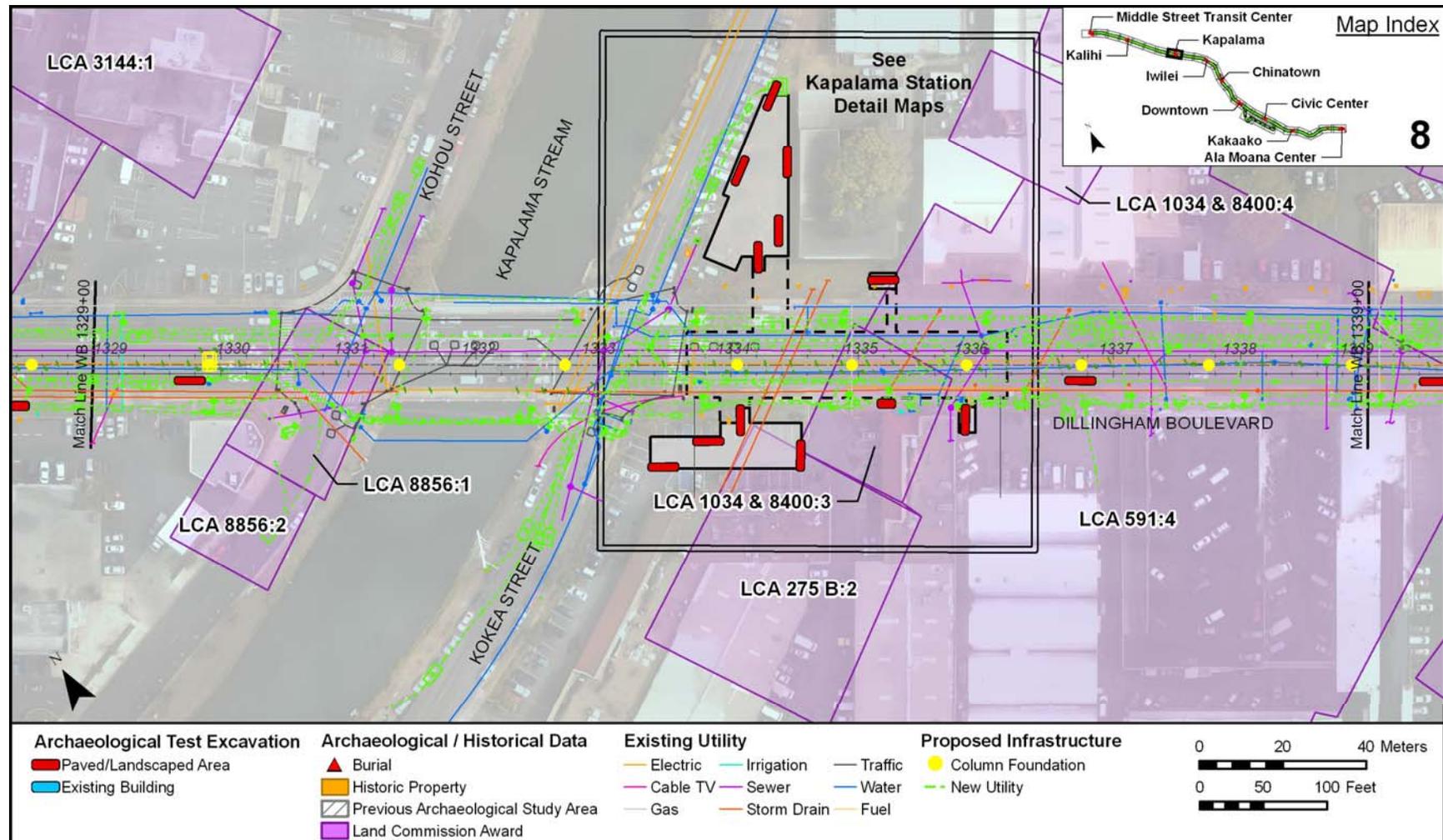


Figure 159. Map 8 (Dillingham Boulevard near Kapālama Station) showing proposed locations for archaeological inventory survey testing (see Detail Maps for proposed excavations at Kapālama Station) including (from west to east) a 2' by 20' trench at a 42" water line relocation at WB 1329+80 and a 2' by 20' trench at a 42" water line relocation at WB 1336+80

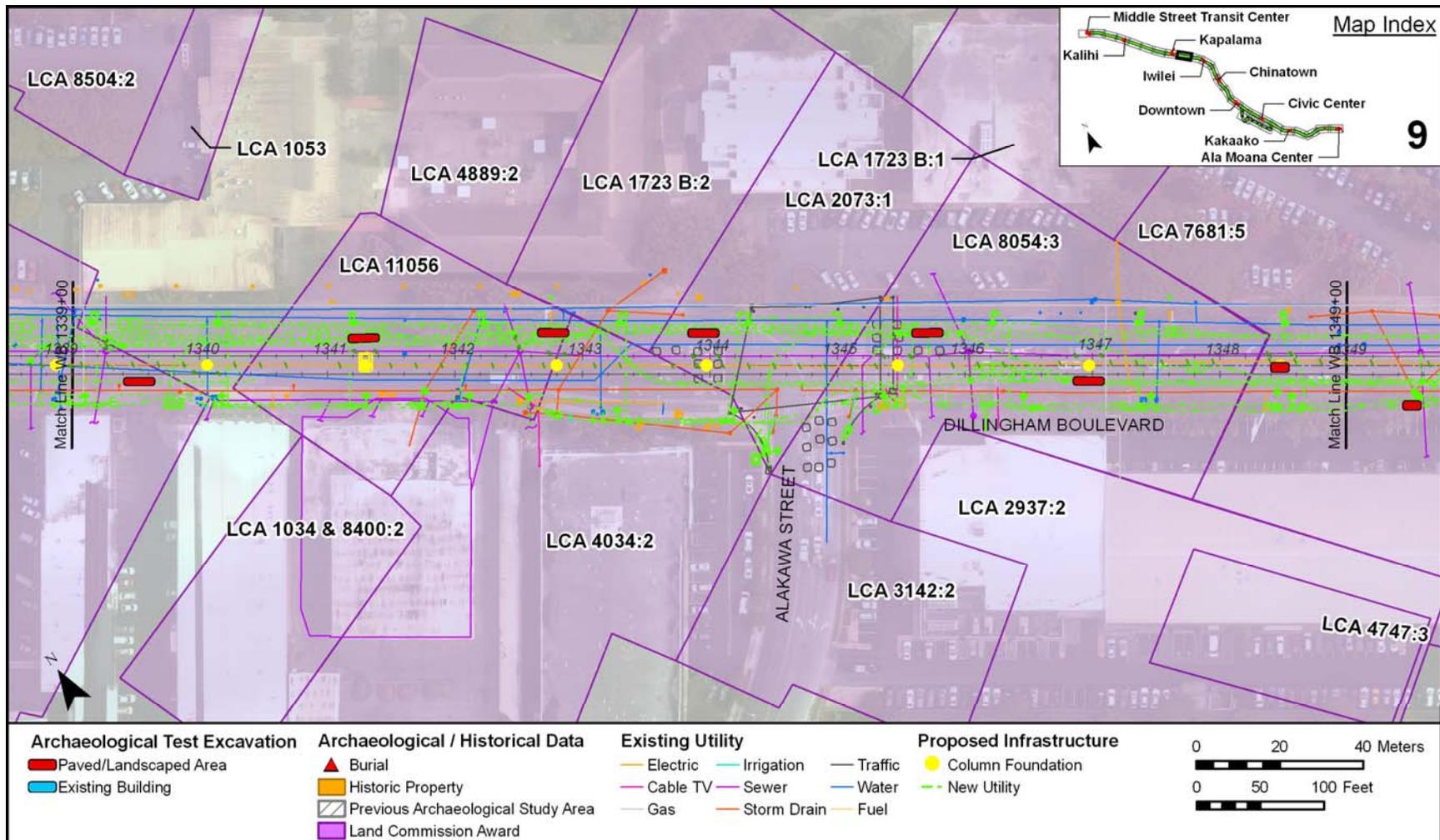


Figure 160. Map 9 (Dillingham Boulevard near Ala Kawa Street) showing proposed locations for archaeological inventory survey testing including (from west to east) a 2' by 20' excavation at a 42" water line relocation at WB 1339+60; 2' by 20' trenches for a 36" sewer line at WB 1341+20, WB 1342+80, WB 1344+00, and WB 1345+70; a 2' by 20' trench for an 8" sewer relocation at WB 1347+00; and a 3' by 10' trench at a column foundation at WB 1348+50

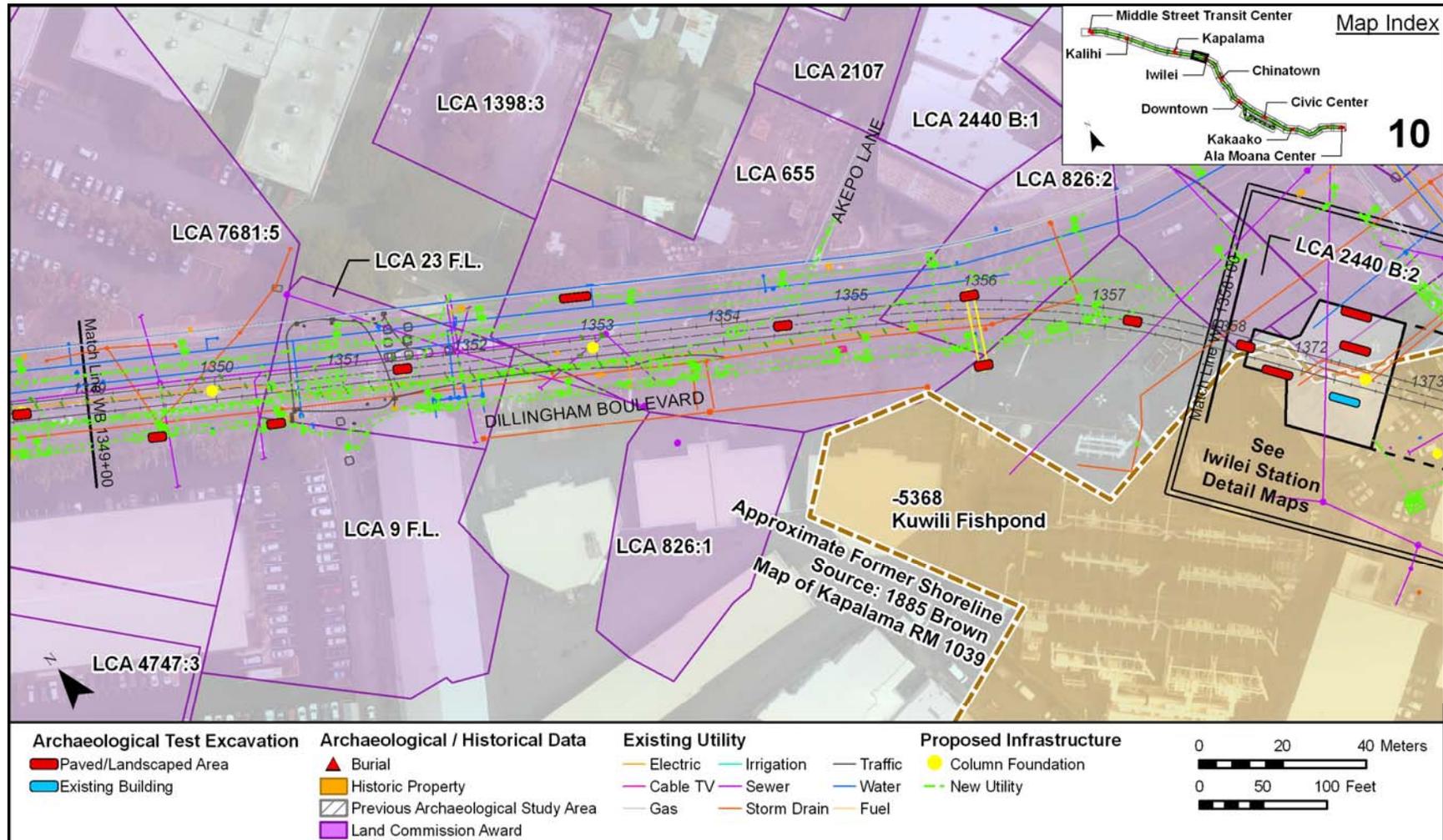


Figure 161. Map 10 Dillingham Blvd. (west of Iwilei Station) showing proposed locations for archaeological inventory survey testing (see Detail Map for proposed excavations at Iwilei Station) including (from west to east) 3' by 10' trenches for storm drain catch basins at WB 1349+50 & WB 1350+40, a 3' by 10' trench for a column foundation at WB 1351+50, a 2' by 20' excavation at a Tel Com Manhole at WB 1352+90, 3' by 10' trenches for column foundations at 1354+50, the straddle bents at 1355+90 & 1356+00 & the column foundation at WB 1357+20

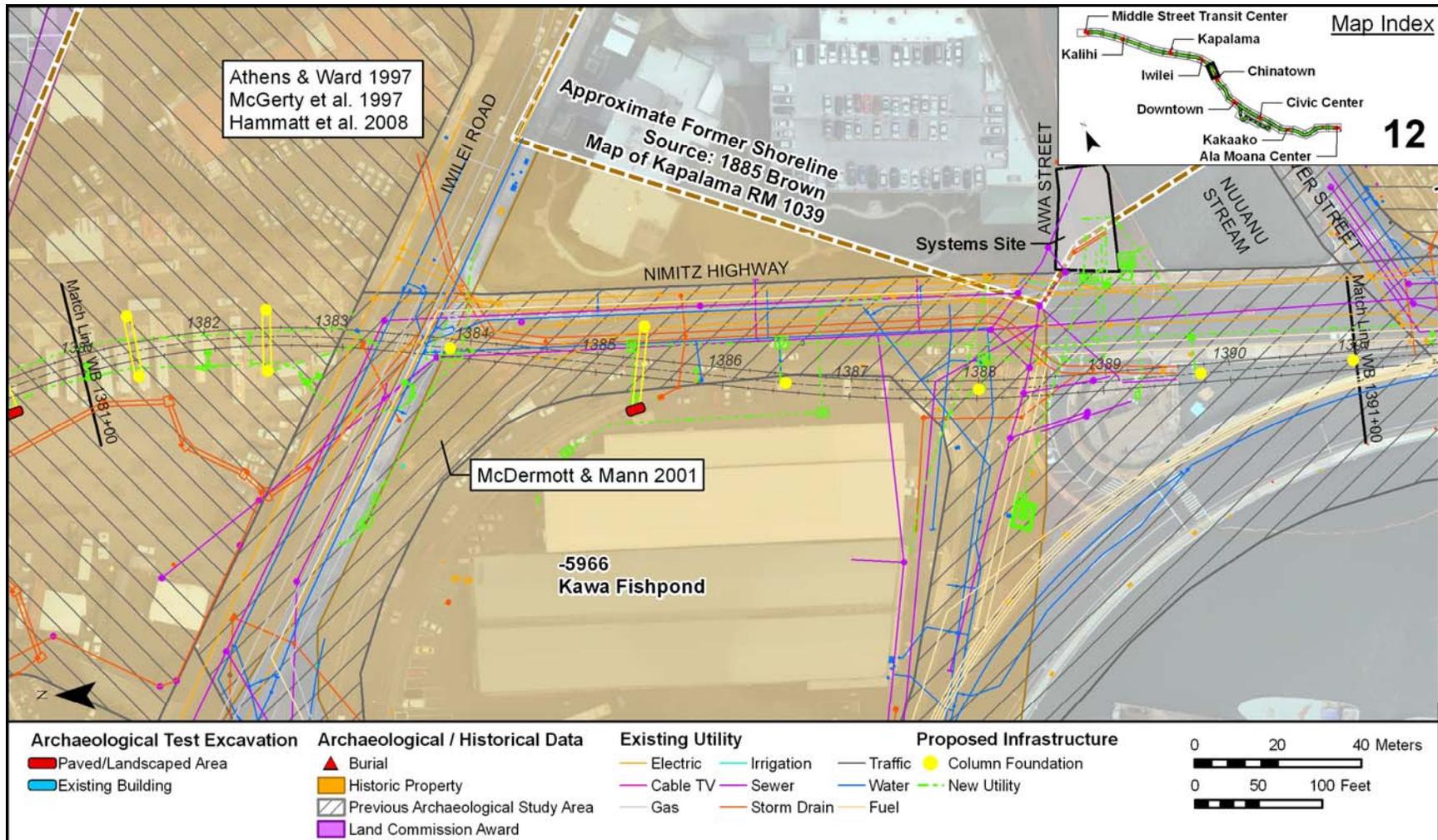


Figure 163. Map 12 near Iwilei Road and the west side of Nu‘uanu Stream showing proposed locations for archaeological inventory survey testing including a 3’ by 10’ trench at the column foundation at WB 1385+40 (Note: this entire section was in fishponds or is seaward of the former shoreline)

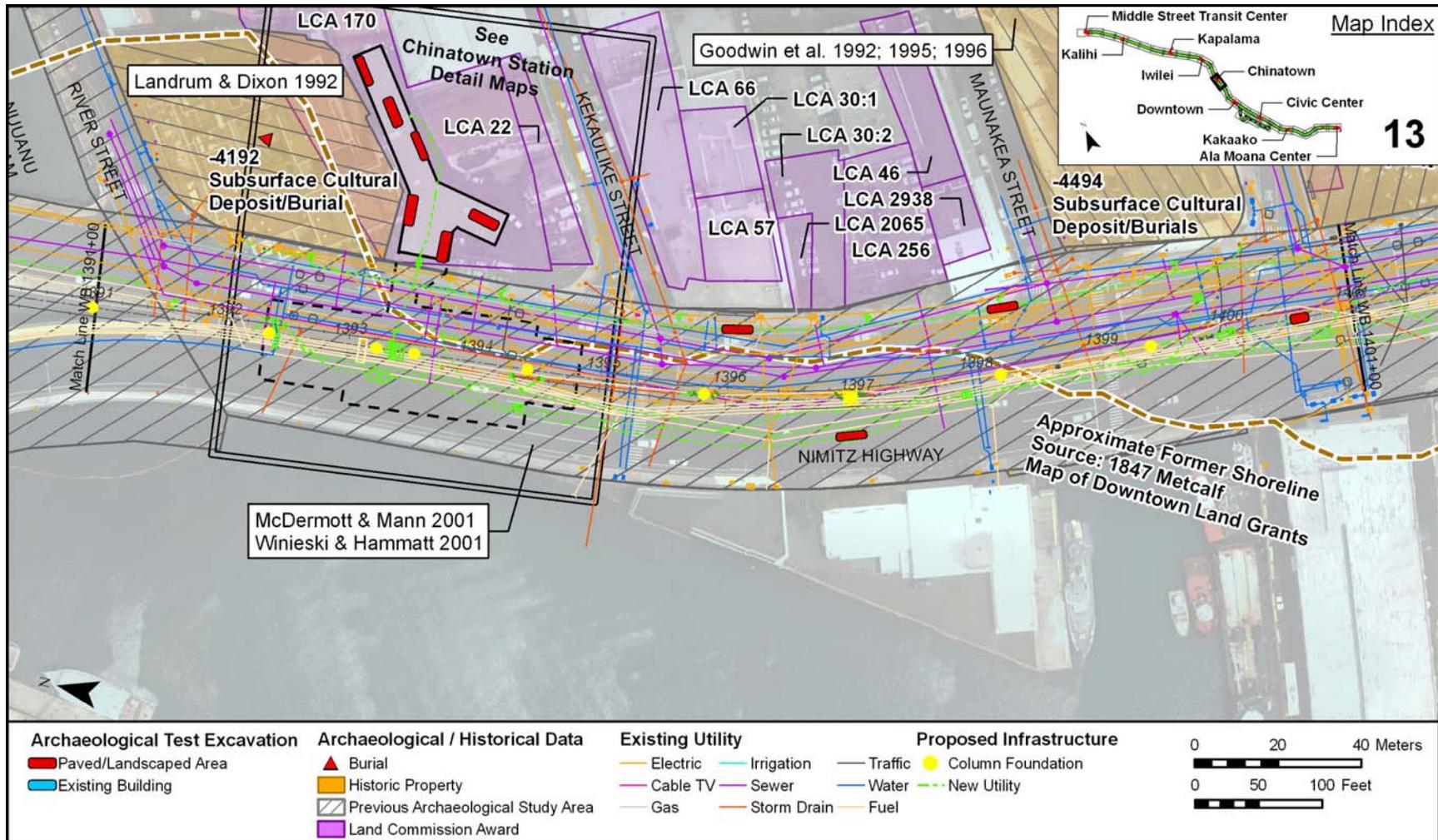


Figure 164. Map 13 Nimitz Highway on the east side of Nu'uaniu Stream (near Chinatown Station) showing proposed locations for archaeological inventory survey testing (see Detail Maps for proposed excavations at Chinatown Station) including (from north to south) 2' by 20' excavations at WB 1396+10 for a fiber optic line relocation, at WB 1397+00 for an electric manhole, at WB 1398+30 for a fiber optic line, and a 3' by 10' trench at a column foundation at WB 1400+60

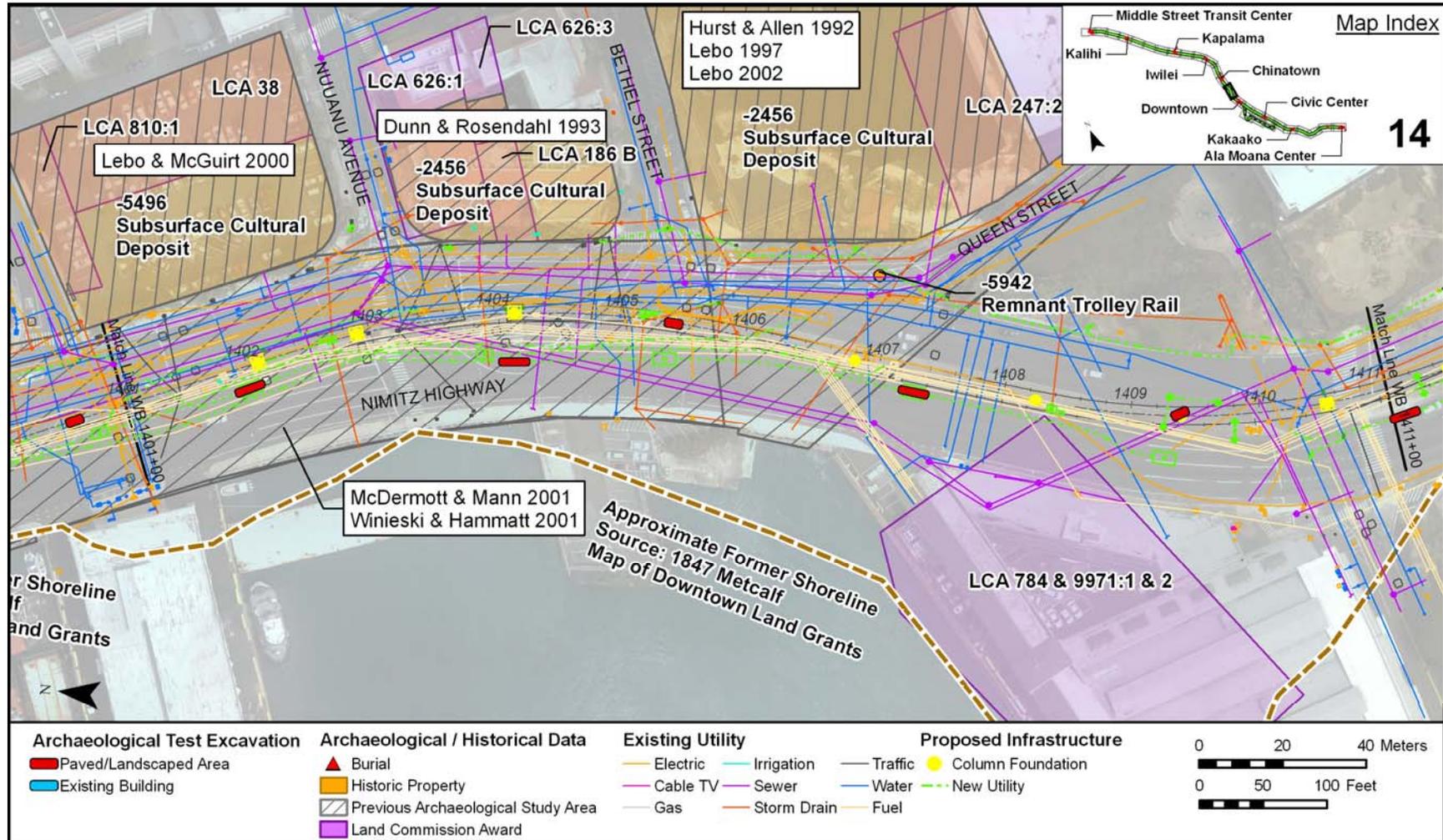


Figure 165. Map 14. Nimitz Highway north of the Downtown Station (near Nu‘uanu Avenue and Bethel Street) showing proposed locations for archaeological inventory survey testing including (from north to south) 2’ by 20’ excavations at WB 1402+00 for an electric manhole and at WB 1404+10 for an electric line, a 3’ by 10’ excavation for a column foundation at WB 1405+40, a 2’ by 20’ trench for an electric line manhole at WB 1407+30, and a 3’ by 10’ trench at a column foundation at WB 1409+40

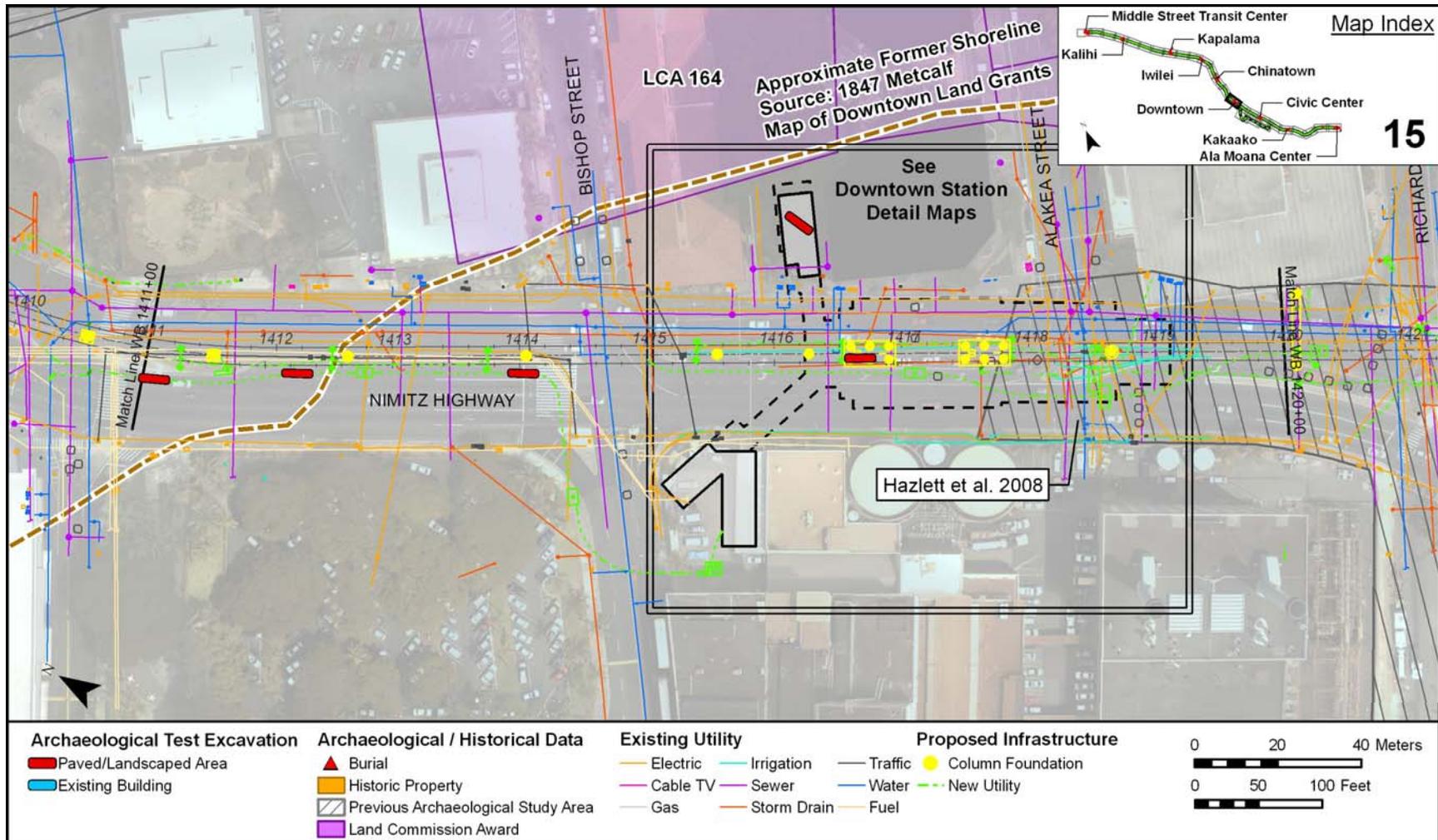


Figure 166. Map 15. Nimitz Highway near the Downtown Station showing proposed locations for archaeological inventory survey testing (see Detail Maps for proposed excavations at Downtown Station) including (from north to south) 2' by 20' trenches for electric line relocations at WB 1411+00, WB 1412+20, and WB 1414+00, and at WB 1416+70 for a station column

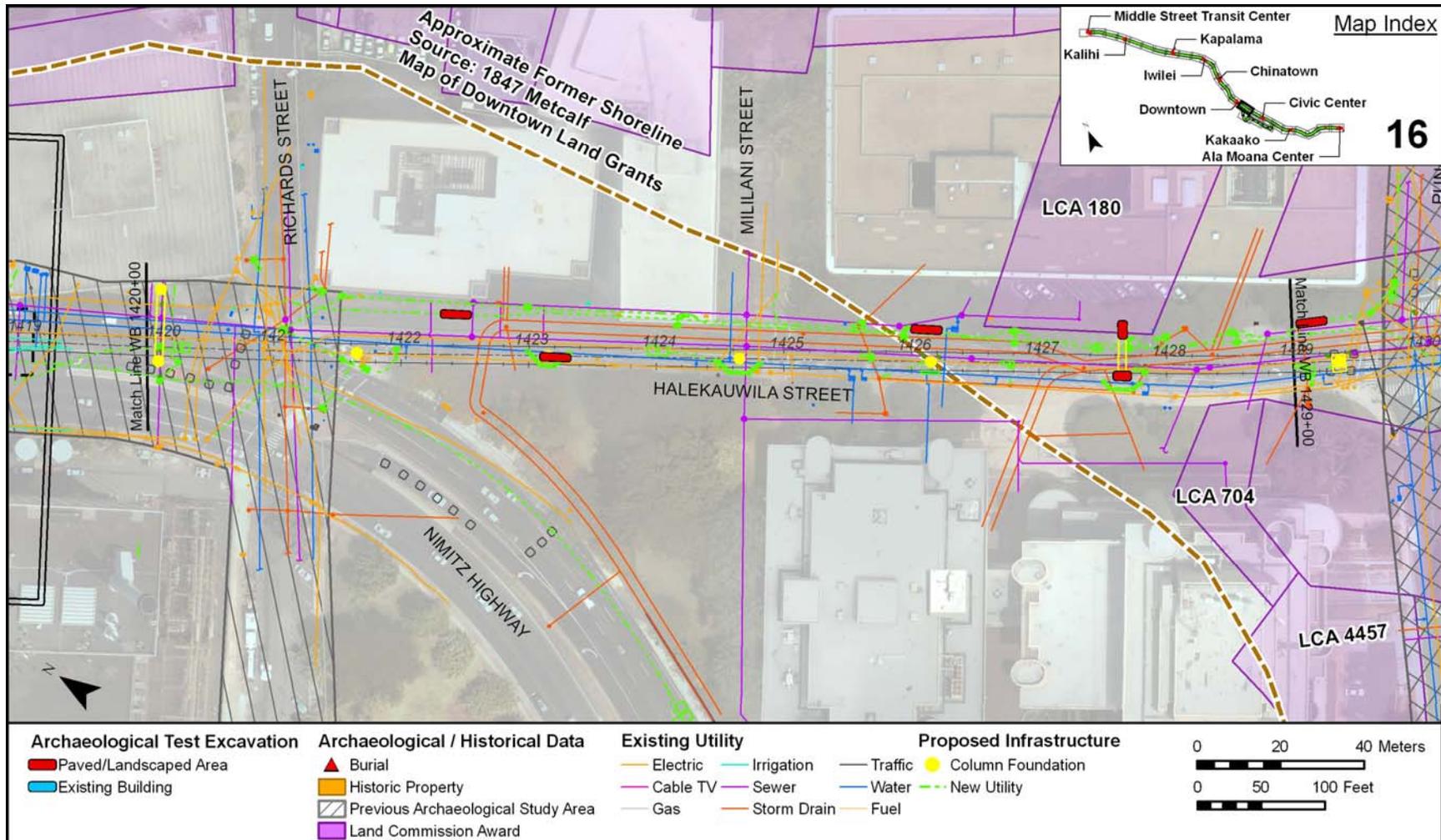


Figure 167. Map 16 Nimitz Highway and Halekauwila Street southeast of the Downtown Station near Mililani Street showing proposed locations for archaeological inventory survey testing including (from northwest to southeast) a 2' by 20' excavation at WB 1423+20 for a guideway column foundation, a 3' by 10' trench at both of the straddle bent foundations at WB 1427+60, and 2' by 20' trenches at the telecommunication manholes at WB 1422+40 and WB 1426+10

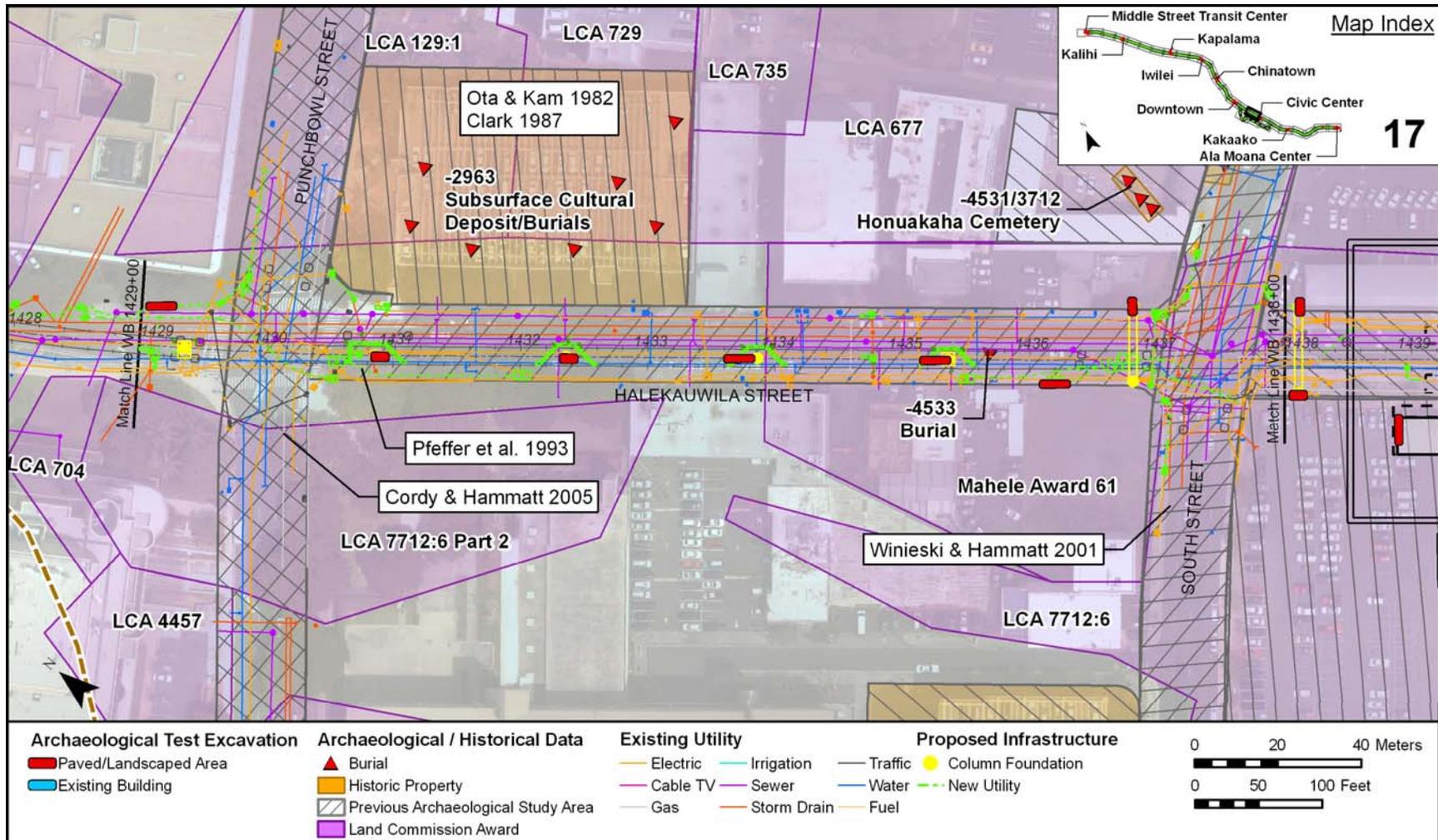


Figure 168. Map 17 Halekauwila Street northwest of the Civic Center showing proposed locations for archaeological inventory survey testing (see Detail Map for proposed excavations at Civic Center Station) including (from northwest to southeast) a 3' by 10' trench at the column foundation at WB 1430+90, WB 1432+40, WB 1433+90, and WB 1435+40; a 2' by 20' trench at WB 1436+20 for an electric manhole; and a 3' by 10' trench at the mauka straddle bent at WB 1436+80

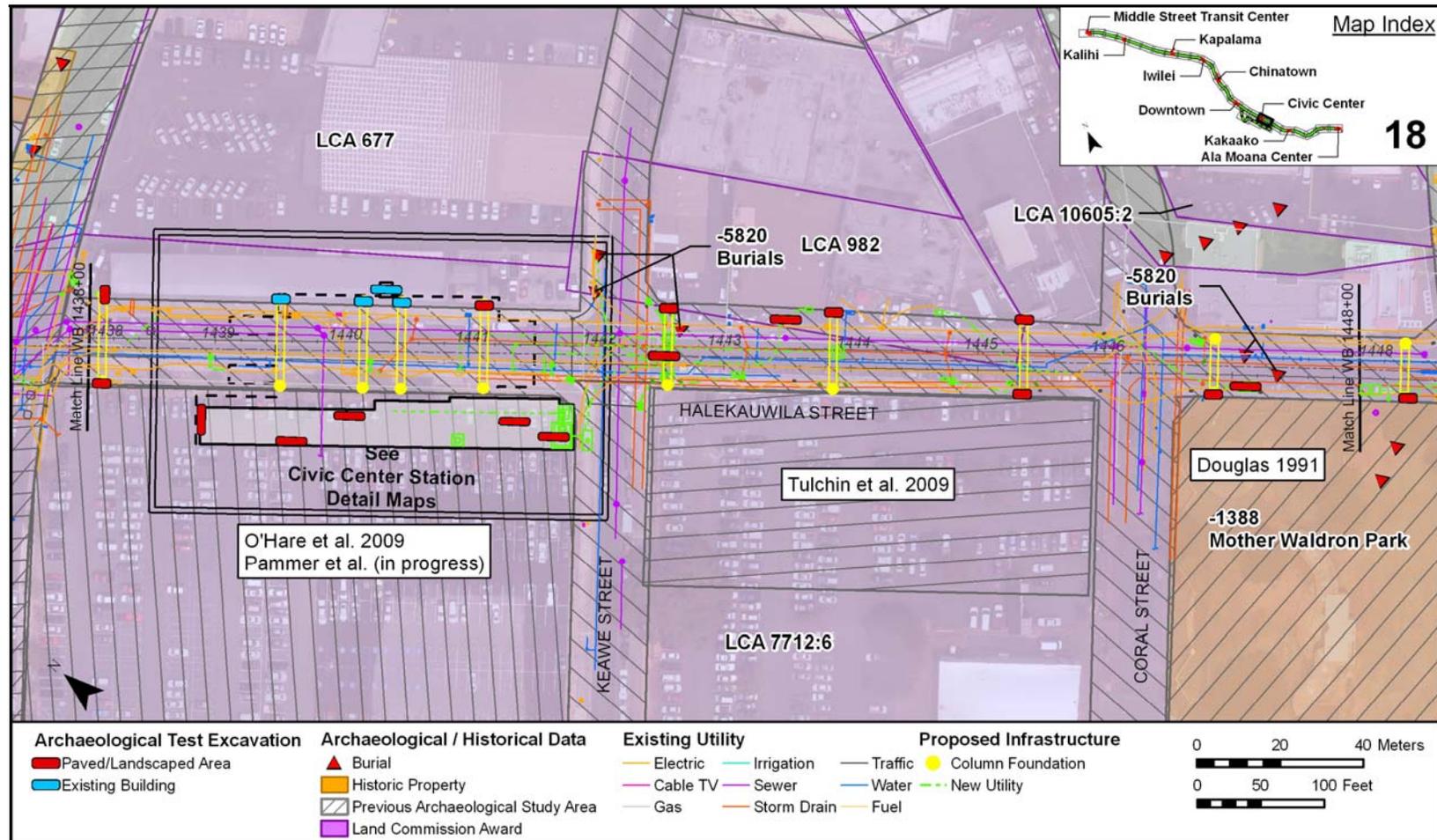


Figure 169. Map 18. Halekauwila Street in the vicinity of the Civic Center Station showing proposed locations for archaeological inventory survey testing (see Detail Maps for proposed excavations at Civic Center Station) including (from northwest to southeast) 3' by 10' trenches at both straddle bent foundation excavations at WB 1438+10, a 3' by 10' trench at the *mauka* straddle bent foundation at WB 1442+40, 2' by 20' trenches at the electric manhole at WB 1442+60 and 1443+50, a 3' by 10' trench at the *mauka* straddle bent foundation at WB 1443+80, 3' by 10' trenches at both straddle bents at WB 1445+40, a 3' by 10' trench at the *makai* straddle bent foundation at WB 1446+80, and a 2' by 20' trench at the electric manhole at WB 1447+20

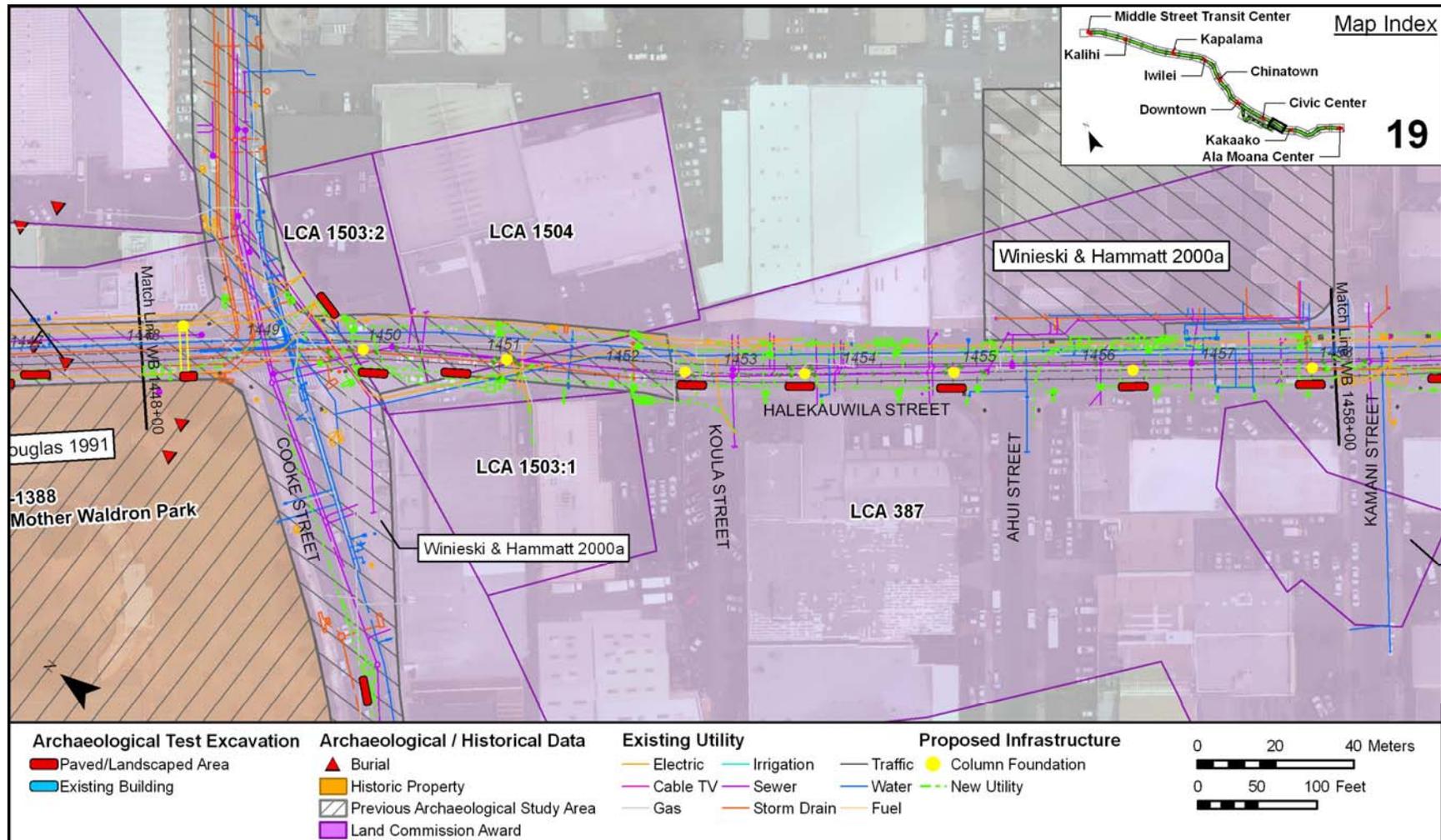


Figure 170. Map 19 Halekauwila Street between Cooke Street and Kamani Street showing proposed locations for archaeological inventory survey testing including (from northwest to southeast) a 3’ by 10’ trench at the *makai* straddle bent at WB 1448+40, a 2’ by 20’ trench at an electric manhole at WB 1449+60, a 2’ by 20’ trench at a 24” storm drain at WB 1450+00, a 2’ by 20’ trench at an 8” sewer relocation at WB 1450+60, 2’ by 20’ trenches at 8” sewer relocations at WB 1452+60, WB 1453+50, WB 1454+80, WB 1456+30, and WB 1457+80

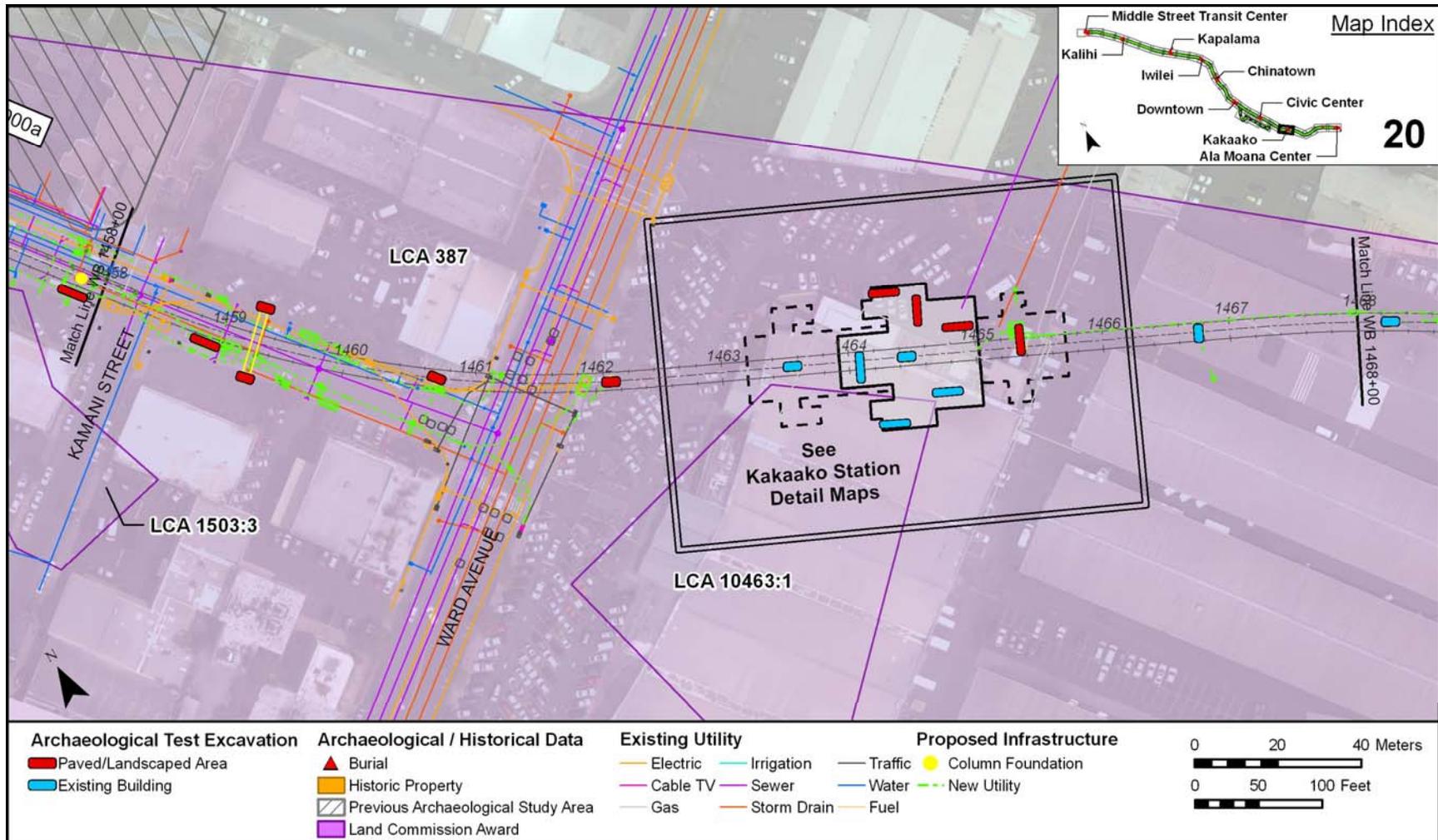


Figure 171. Map 20 Kaka'ako Station vicinity showing proposed locations for archaeological inventory survey testing (see Detail Maps for proposed excavations at Kaka'ako Station) including (from northwest to southeast) a 2' by 20' trench at an electric manhole at WB 1458+80, 3' by 10' trenches at the straddle bents at WB 1459+20 and WB 1459+30, 3' by 10' trenches at the column foundations at WB 1460+70, WB 1462+10, and WB 1466+80

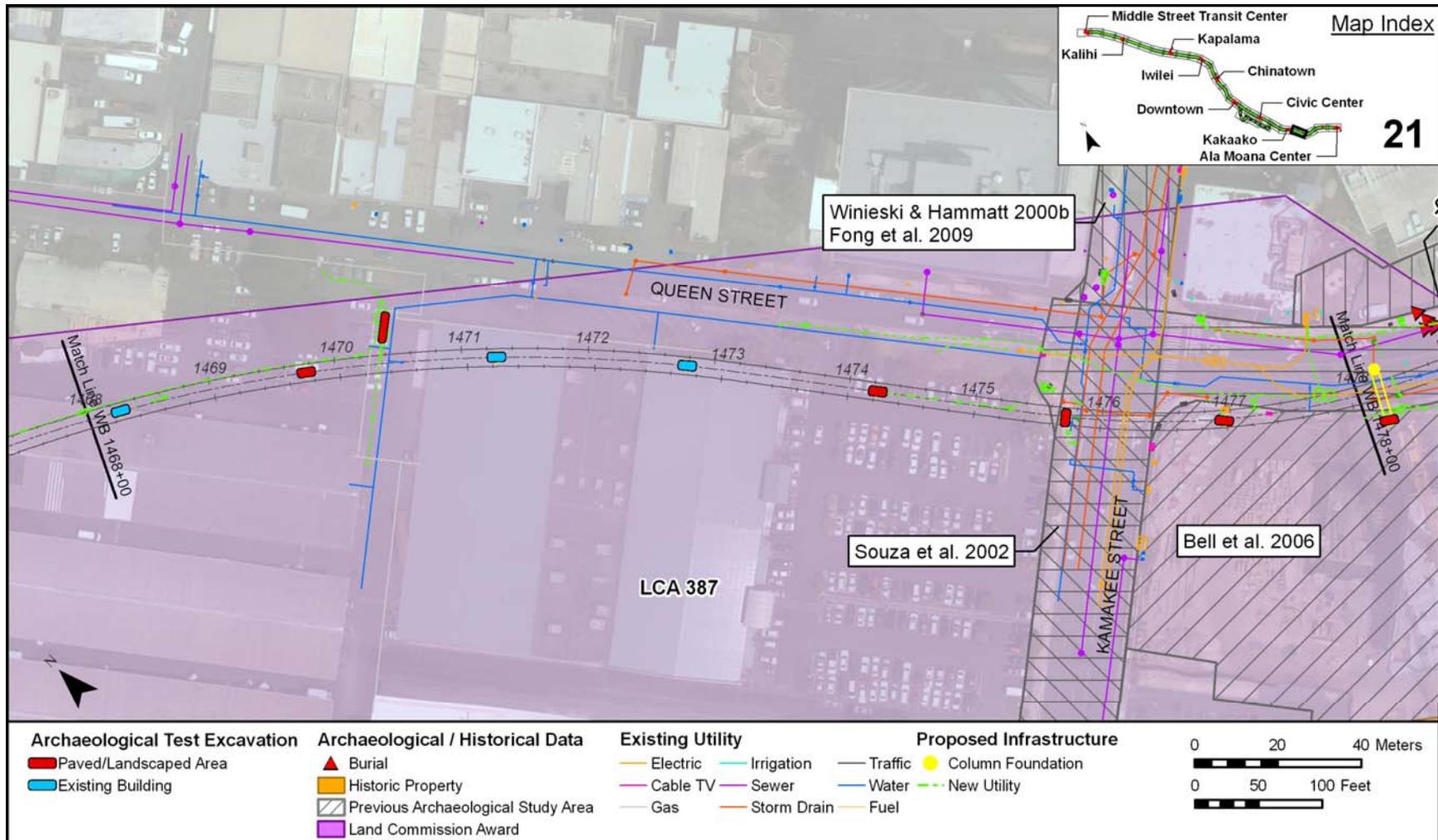


Figure 172. Map 21 Queen Street and Kamake'e Street vicinity showing proposed locations for archaeological inventory survey testing including (from northwest to southeast) 3' by 10' trenches at column foundations at WB 1468+20, WB 1469+80, WB 1471+30, WB 1472+80, WB 1474+20, WB 1475+70, and WB 1477+00; and a 2' by 20' trench for an electric box at WB 1470+40

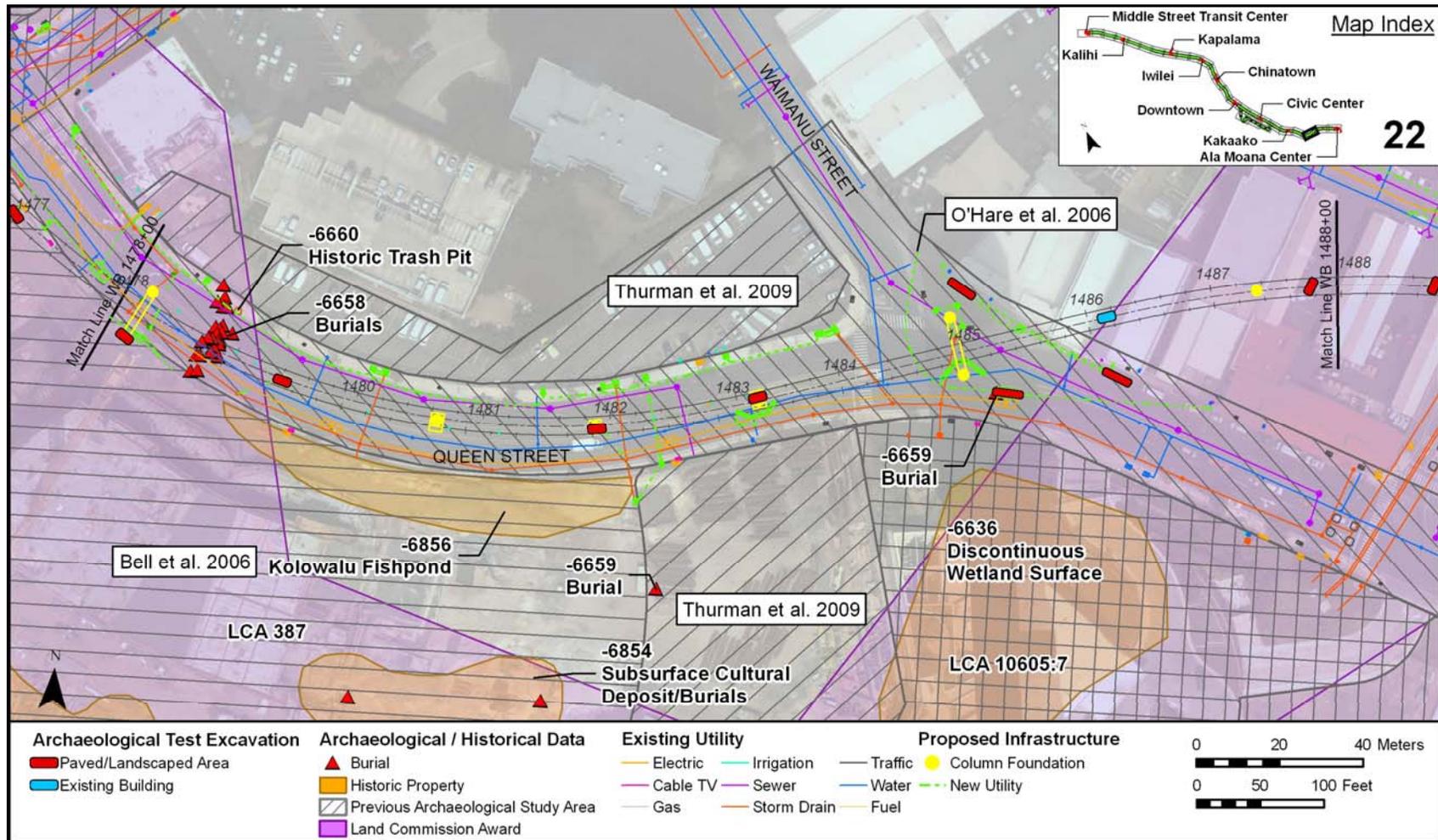


Figure 173. Map 22 Queen Street/Waimanu Street intersection vicinity showing proposed locations for archaeological inventory survey testing including (from west to east) a 3' by 10' trench at the *makai* straddle bent foundation at WB 1478+20; 3' by 10' trenches at the column foundations at WB 1479+40, WB 1481+90, and WB 1483+20; a 2' by 20' trench at the telecommunications manhole proposed at WB 1485+00; a 2' by 20' trench at an electric manhole at WB 1485+20; a 2' by 20' trench at the telecommunications manhole proposed at WB 1486+10; and 2' by 20' trenches at a column foundation at WB 1486+20 and at an eastern off-set of a column foundation at 1487+90

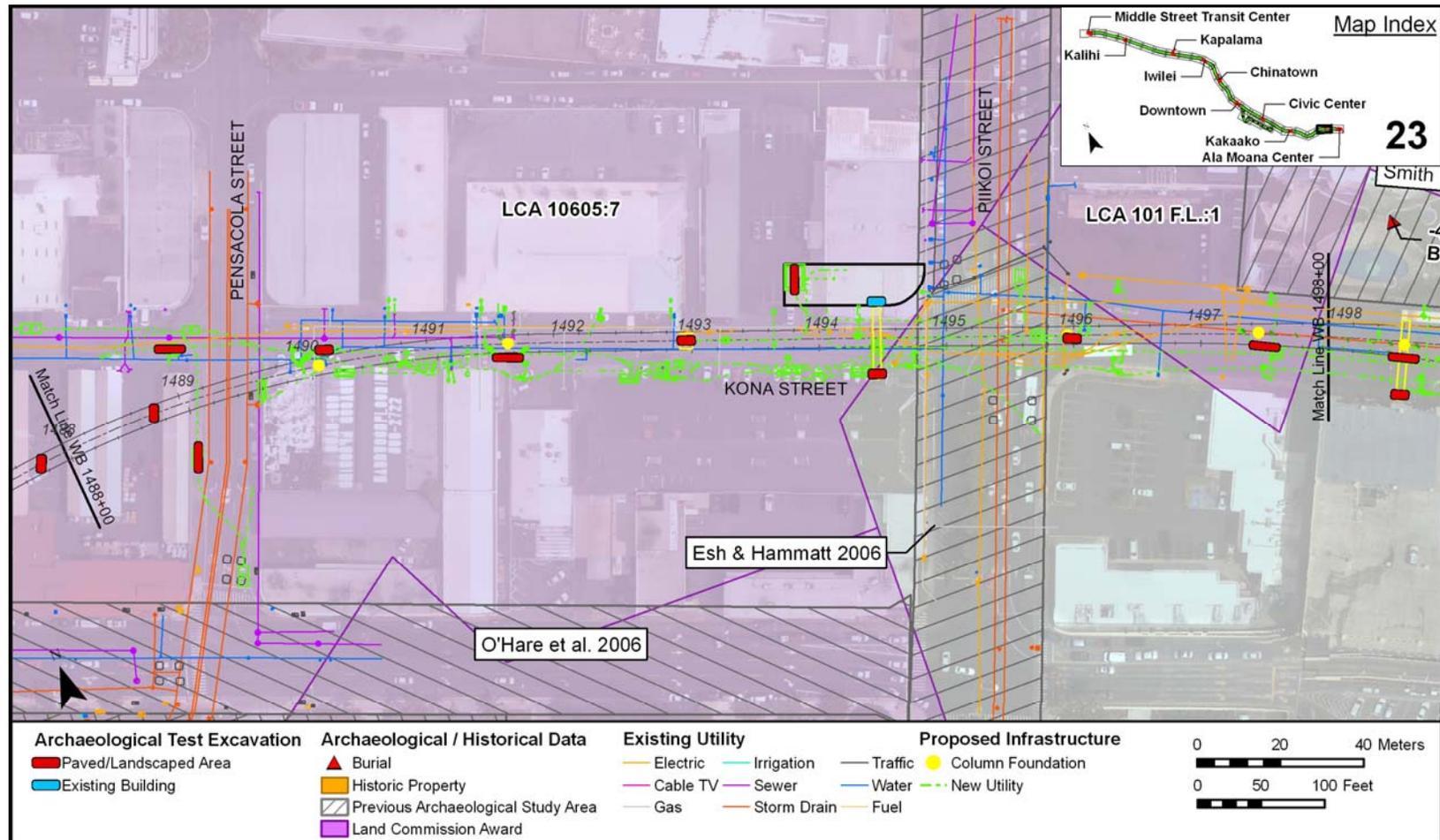


Figure 174. Map 23. Kona Street in the vicinity of Pensacola and Pi'ikoi Streets showing proposed locations for archaeological inventory survey testing including (from west to east) a 3' by 10' trench at a column foundation at WB 1488+80, a 2' by 20' trench at an electric manhole at WB 1489+00, a 2' by 20' trench at an electric manhole to the south along Pensacola Street, a 3' by 10' trench at an 8" water line at WB 1490+10, a 3' by 10' trench at the 8" water line at WB 1491+60, a 3' by 10' trench at the column foundation at WB 1493+00, a 2' by 20' trench at a mauka electric transformer at WB 1493+80, 3' by 10' trenches at both straddle bent foundations at WB 1494+40, a 3' by 10' trench at a column foundation at WB 1496+00, and a 2' by 20' trench at a 24" storm drain at WB 1497+50

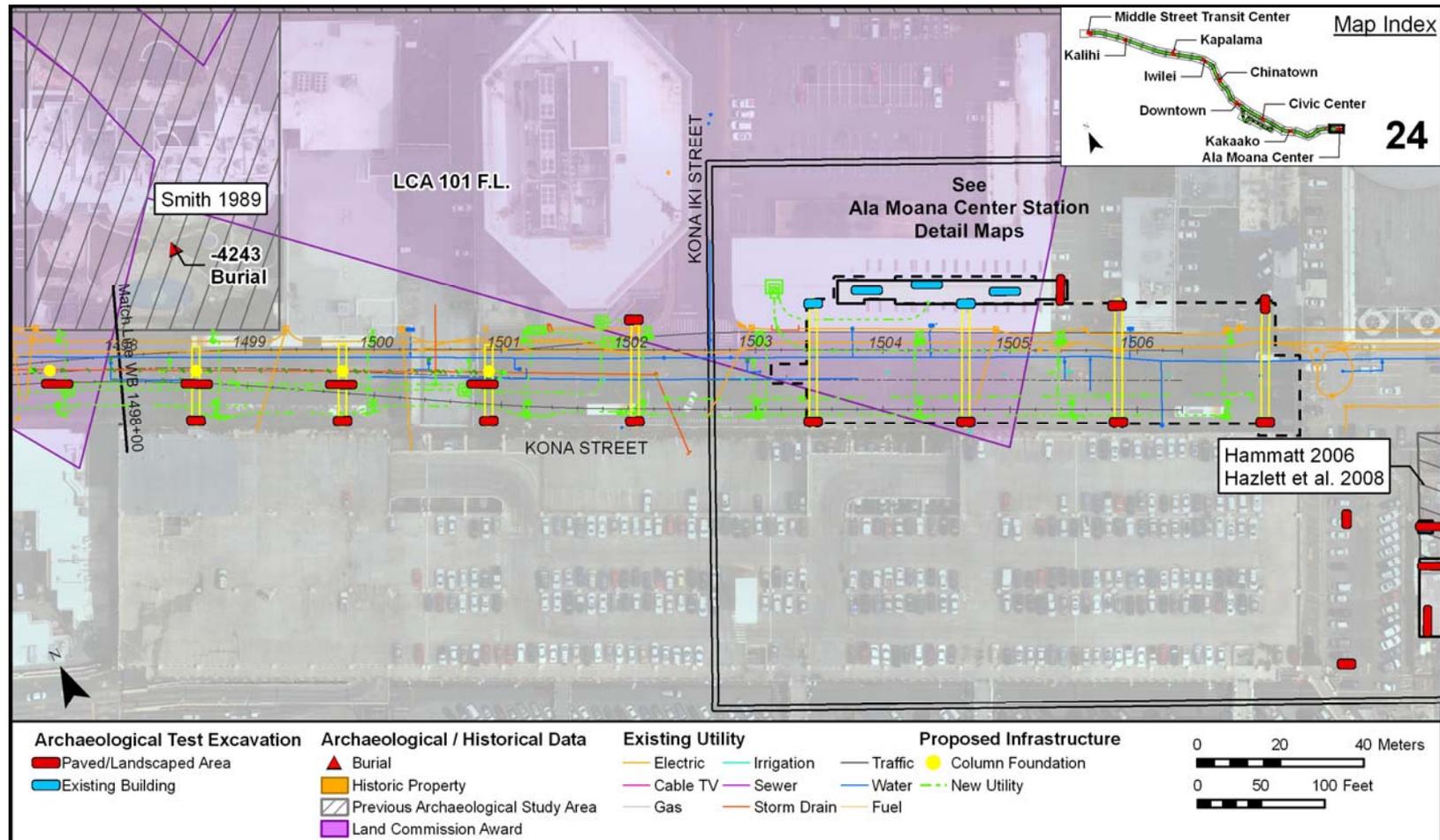


Figure 175. Map 24 Kona Street just northwest of Ala Moana Center showing proposed locations for archaeological inventory survey testing (see Detail Maps for proposed excavations at Ala Moana Center Station) including (from west to east) a 3' by 10' trench at the straddle bent column foundation at WB 1498+60, a 2' by 20' trench at a 24" storm drain at WB 1498+60, a 3' by 10' trench at the straddle bent column foundation at WB 1499+80, a 2' by 20' trench at a 24" storm drain at WB 1499+80, a 3' by 10' trench at the straddle bent column foundation at WB 1500+90, a 2' by 20' trench at a 24" storm drain at WB 1500+90, and 3' by 10' trenches at both the straddle bent column foundations at WB 1502+00, both foundations at WB 1503+40, both foundations at WB 1504+60, and both foundations at WB 1505+80

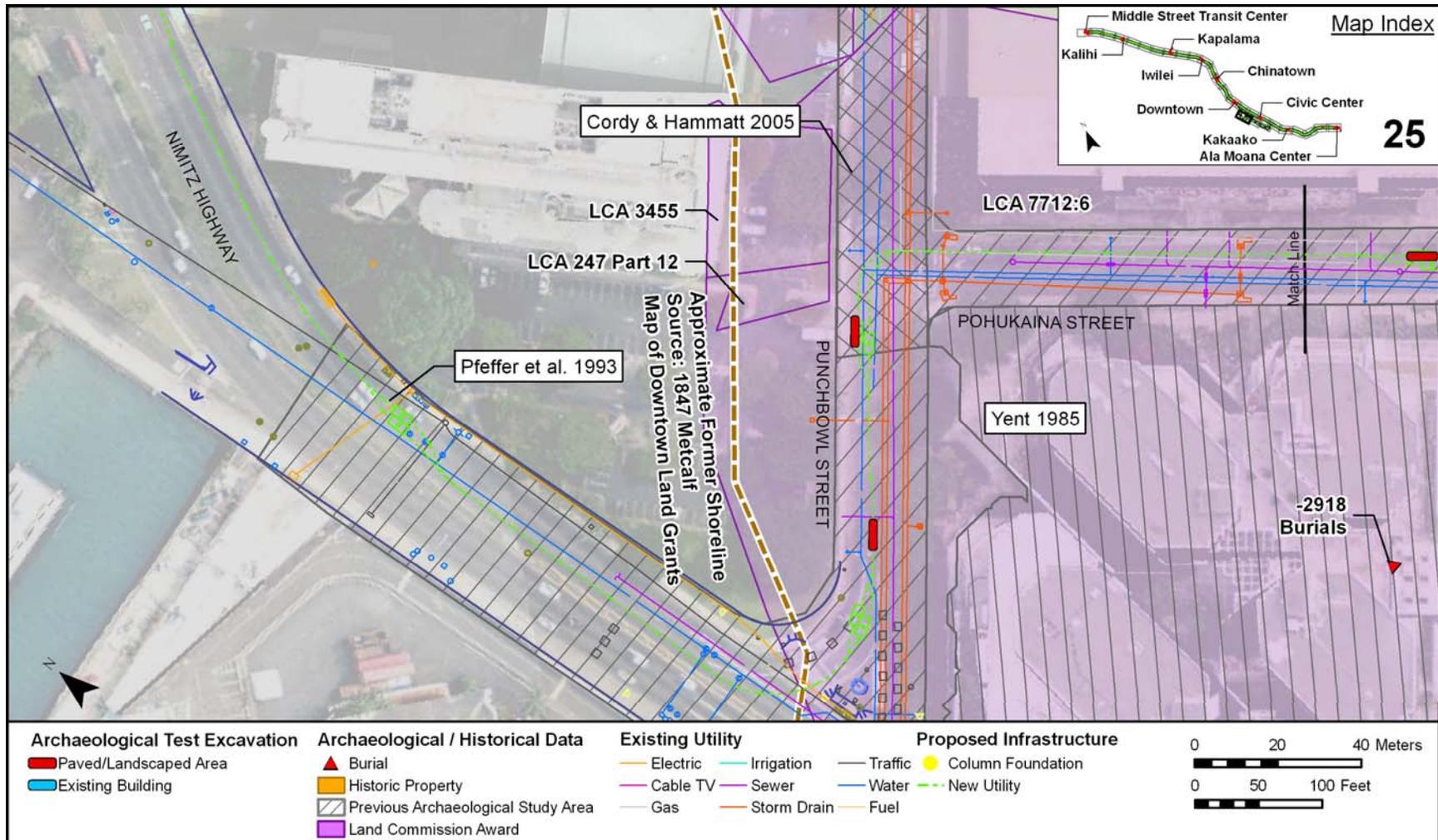


Figure 176. Map 25 showing proposed locations for archaeological inventory survey testing of a utility relocation route along Punchbowl Street *makai* of Pohukaina Street including 2' by 20' trenches for an electric line relocation and at an electric manhole

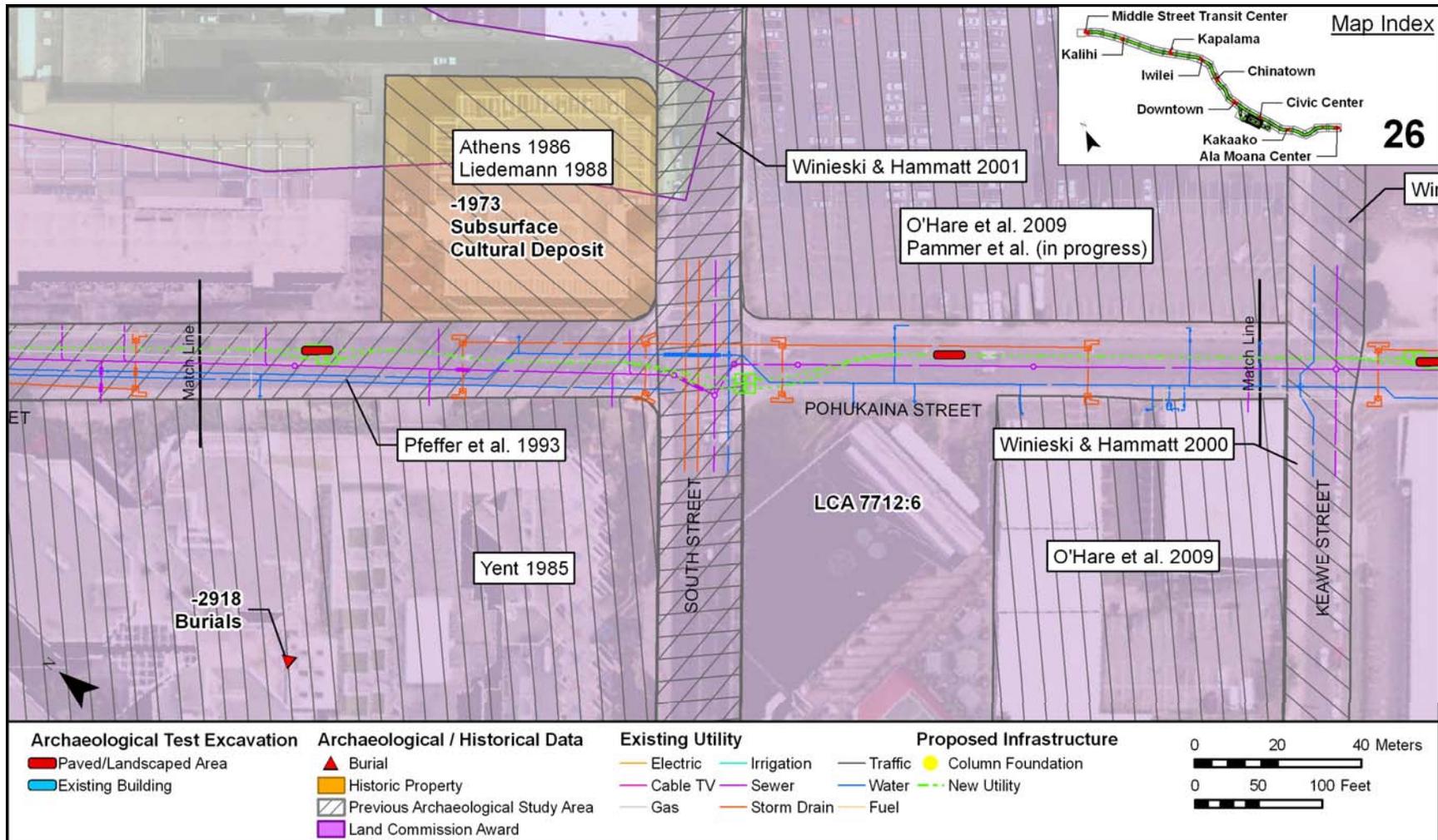


Figure 177. Map 26 showing proposed locations for archaeological inventory survey testing (from west to east) of a utility relocation route along Pohukaina Street near South Street including 2' by 20' trenches at an electric line and at an electric manhole

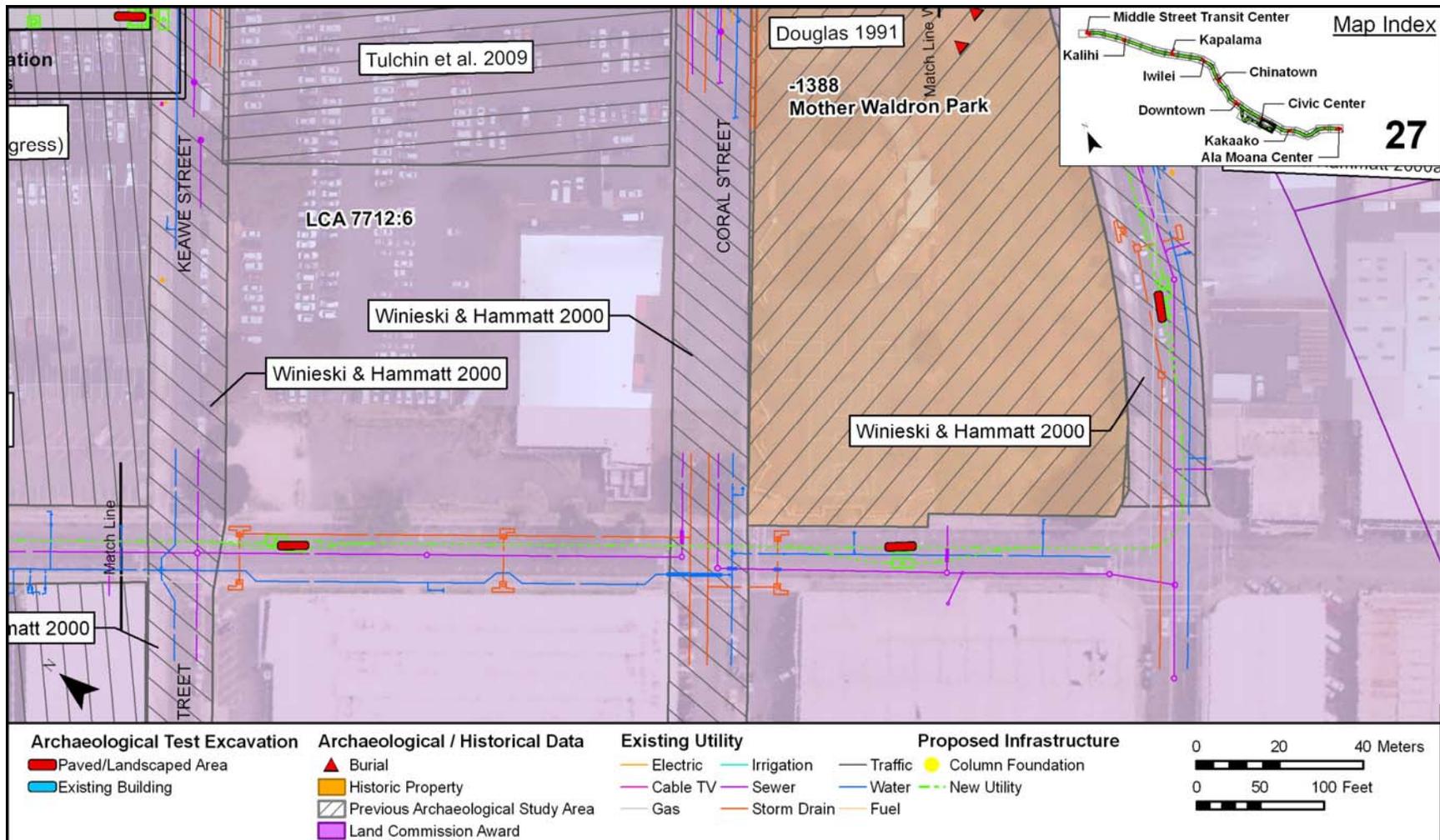


Figure 178. Map 27 showing proposed locations for archaeological inventory survey testing (from west to east) of a utility relocation route along Pohukaina Street near Keawe Street, Coral Street, and Cooke Street including 2' by 20' trenches at two electric manholes along Pohukaina Street and at one electric manhole along Cooke Street

9.2 Decisions for Additional AIS Testing

The overall objective of the archaeological cultural resource identification activities described in this AISP is to locate and document archaeological cultural resources that may be affected by Project construction. Once identified, these archaeological deposits will be investigated and recorded in sufficient detail so that their significance can be assessed and the Project's potential effect on significant archaeological deposits can be evaluated.

The AIS investigation will also strive to provide information to project engineers that will allow for the avoidance of significant archaeological deposits, particularly burials, during the City Center construction. The current sampling strategy is based on preliminary engineering, and the results of the City Center AIS will help inform the interim and final engineering. There is some flexibility in the placement of the Project's construction components, for example support columns can be shifted up to 30 feet parallel to the HHCTCP corridor alignment. Using this limited engineering flexibility for certain construction components, and the information from the AIS, the project engineers will attempt to find a design and engineering solution whereby project construction will avoid significant archaeological deposits. Only if no solution is possible will mitigation measures, such as archaeological data recovery and burial relocation, be considered.

The sampling strategy outlined above shows the locations of the planned 232 test trenches within the 13.87-acre City Center construction phase footprint. It is likely that additional testing will be required to fulfill the identification and documentation objectives of the AIS, and to provide project engineers with the information they need to consider design and engineering solutions that will avoid significant archaeological cultural resources. Additional testing will likely be required at the location of archaeological finds; it may also be required in areas of no finds, but where excavation results for that area, for example the sediment types exposed, indicate more testing is warranted.

The survey area for the City Center AIS (and the APE) is confined to the area of direct, project-related ground disturbance. The AIS investigation is limited to that area. Discussions with Native Hawaiian individuals and groups have made it clear that sediments that would not be otherwise disturbed by the Project should not be disturbed by the AIS investigation. Accordingly, additional testing beyond the initial 232 trenches, where determined appropriate, will be located within the project footprint. Trenches will not be expanded outside of that footprint.

9.2.1 Additional AIS Testing at the Location of an Archaeological Discovery

The actual number and location of additional testing locations in the vicinity of a find will depend on various factors, including the type of archaeological resource found, the surrounding existing built environment, and the location—based on preliminary engineering—of project infrastructure that is planned for the location of the find. The actual number and location of additional testing locations will need to be decided on a case-by-case basis based on these factors and in consultation with the City and SHPD.

With each discovery of archaeological features and/or human skeletal remains, a series of notifications will be made. In particular, project engineers will be notified and consulted. In

consultation with project engineers, AIS testing in the vicinity of the find will be carried out to target areas that—based on preliminary engineering—will be affected by the project (for example, the utility relocations in the vicinity or in adjacent column foundation footprints). This additional testing will provide additional information about the geographic extent of the find and will help better describe the cultural resource's characteristics.

Because of the narrowness of the project area, the focus for the AIS additional testing will be first to determine the *'Ewa/Diamond Head* (east/west axis of the rail alignment) extent of the subsurface deposit. Once this is established, it may be necessary to further test the area to determine the extent of the deposit *mauka/makai* (north/south—perpendicular to the rail alignment axis).

The additional AIS testing at discoveries will be an iterative process. The focus will be to gather sufficient information to appropriately document the resource and to allow avoidance of the resource/discovery. Determining the geographic extent of the resource within the project footprint will be a primary concern. If engineering and subsequent testing quickly determine a means of avoidance, and sufficient information has been gathered to assess significance and project effect, then AIS testing at that location will be complete. As avoidance becomes more difficult based on project engineering, existing built environment constraints, and the results of additional testing, continued AIS testing may become necessary to find an appropriate design and engineering solution. Decisions will have to be made on a case-by-case basis. Project design/engineering constraints and flexibility at each location will play a large part in the decision-making process. SHPD and City input will be part of the process.

During implementation of the AIS fieldwork, the following procedures will be followed so that informed decisions can be made regarding additional testing in the vicinity of finds:

- A. Complete the proposed trenches outlined above in the discussion of the sampling strategy for general geographic areas. This will provide at least broad-brush information regarding archaeological cultural resource locations for that geographic area
- B. When archaeological resources are discovered, provide description and location information to project engineers and the SHPD
- C. For discoveries of *iwi kūpuna*, notify appropriate parties (e.g. the OIBC, NHOs, lineal and cultural descendants) following the burial consultation protocol
- D. For the location of a find, consult GIS layers of existing utilities and the proposed project build out for that location based on preliminary engineering
- E. Consult project engineers about testing options and the flexibility of project design/engineering for that location
- F. Consult with the SHPD and ask for its input
- G. Design additional testing strategy in the vicinity of the find, focusing on areas that will be affected by project construction, including potential areas for project redesign to avoid the find, for example, a replacement column location

- H. Notify project engineers to obtain any additional permits and/or traffic control that may be needed for the additional testing
- I. Conduct additional testing
- J. Working with project engineers, compare testing results to preliminary engineering in that area to see if there is a design/engineering solution to avoid the find
- K. Evaluate whether there is sufficient information to describe, assess the significance, and determine the Project's effect on the find
- H. If a design/engineering solution is not found to avoid the find, and/or there is need for additional testing to document the find and assess its significance, repeat consultation steps above with GIS, engineers, and the SHPD
- I. Design and implement additional testing and reevaluate results in terms of a potential design or engineering solution to avoid the find
- J. Ensure sufficient information is available to evaluate the archaeological cultural resource's significance and the Project's effect on that resource
- J. If no design/engineering solution is available to avoid find, consider appropriate mitigation options, for example burial relocation or data recovery

The description and location information of a find will need to be disseminated quickly to the SHPD, consulting parties, and project engineers. With the estimated six to ten months to complete the City Center AIS fieldwork, this additional AIS testing will not need to follow immediately after the discovery and initial documentation of a find. There will be time to consult and make considered decisions regarding additional AIS testing in the vicinity of finds.

9.2.2 Additional AIS Testing at Other Areas

The need for additional AIS testing may not be limited to areas where the proposed sampling strategy documents archaeological cultural resources. Additional testing may also be required in areas of no finds, but where excavation results for that area, for example the sediment types exposed, indicate more testing is required as part of the AIS identification effort. For example, if a trench in Kaka'ako exposes a thick layer of sand—and previous archaeological research indicates that similar sand deposits in Kaka'ako have contained burials—additional testing in the vicinity of that sand layer will be completed.

Another example is in the vicinity of coastal Downtown Honolulu. Historic accounts and maps indicate that portions of the Downtown project alignment pass through areas that, until the deposition of historic and modern fill deposits starting in the second half of the 19th century, were offshore reef areas. If test trenches in these historically off-shore areas indicate that these areas were dry land and not filled-in reef deposits, then additional testing will be done in these areas as part of the AIS identification effort.

The actual number and location of additional testing locations in these “no find” areas will be decided on a case-by-case basis based on several factors, including: the surrounding existing built environment; the location—based on preliminary engineering—of project infrastructure

that is planned for that area; and the type of evidence, for example a thick sand deposit, that has triggered the need for additional testing. In consultation with project engineers, an additional testing strategy will be designed in the vicinity to identify if archaeological cultural resources are present. This additional testing will focus on areas that will be affected by project construction based on preliminary engineering. The additional testing will be designed and carried out in consultation with the City and the SHPD. If archaeological cultural resources are found during additional AIS testing, the procedures outlined above will be followed.

9.3 Sampling Strategy Summary

This AISP is to serve as a framework to guide the archaeological inventory survey work. This section details the subsurface sampling strategy that will be the primary means of archaeological cultural resource inventory.

While a great deal of cultural history detail has been provided in the present plan that informs on the specific archaeological testing work proposed, lines of additional and/or more in-depth background research may be indicated as a result of specific finds. Specific finds may also call for a more detailed study of data presented in prior archaeological studies. This additional research will be part of the AIS report.

Some 232 specific locations for archaeological test excavations are proposed arranged much like a string of pearls along the Transit corridor (Figure 179 and Figure 180). While a good faith effort will be made to carry out these specific excavations it is anticipated that 3% to 10% of these specific proposed excavations will not be feasible for whatever combination of reasons, including current built environment constraints, public safety, and traffic management requirements. The SHPD will be kept in close consultation regarding any deviations from the terms of this plan and if more than 5% of the proposed excavations prove unfeasible then replacement locations for unfeasible excavations will be proposed. The SHPD will be kept abreast of unanticipated constraints and/or opportunities that may arise during the AIS fieldwork.

The proposed 232 specific locations for archaeological test excavations are regarded as a starting place. As described above, finds of human skeletal remains, and/or any other significant archaeological finds, and/or specific types of sediments will lead to additional testing. The anticipation is that additional test excavations will be undertaken within the project preliminary engineering footprint in the vicinity of areas that require additional investigation. Specific additional testing strategies will be developed in consultation with SHPD, the City, and project engineers.

Finds of human burials and disarticulated human skeletal remains in a disturbed context will require close consultation with the SHPD, the O'ahu Island Burial Council, cultural descendants, and other concerned Native Hawaiian Organizations.

It is anticipated that finds will merit mitigation in the form of data recovery programs, archaeological monitoring programs, and/or burial treatment plans.

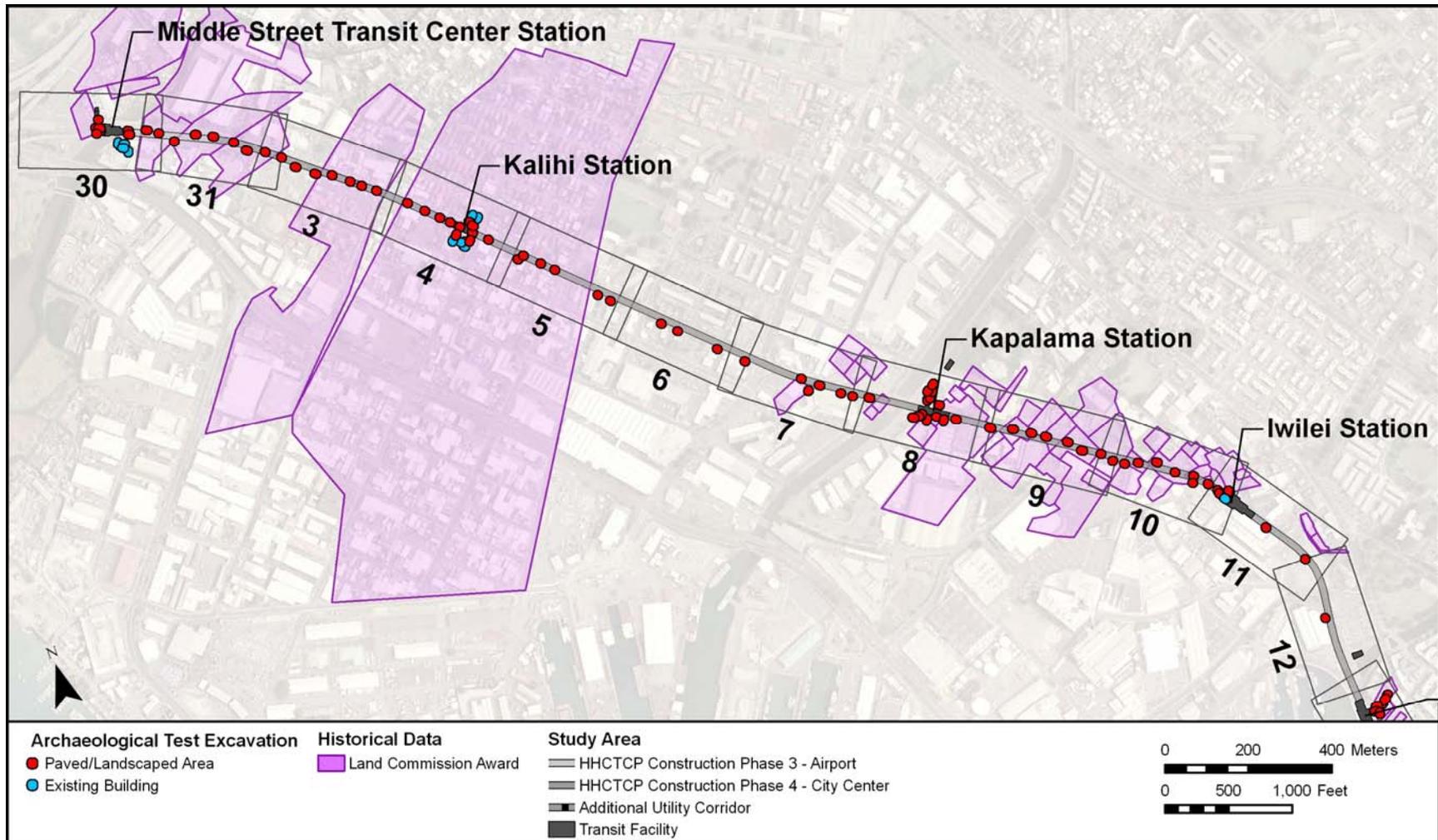


Figure 179. Summary of proposed testing locations in the west portion of the City Center Transit segment

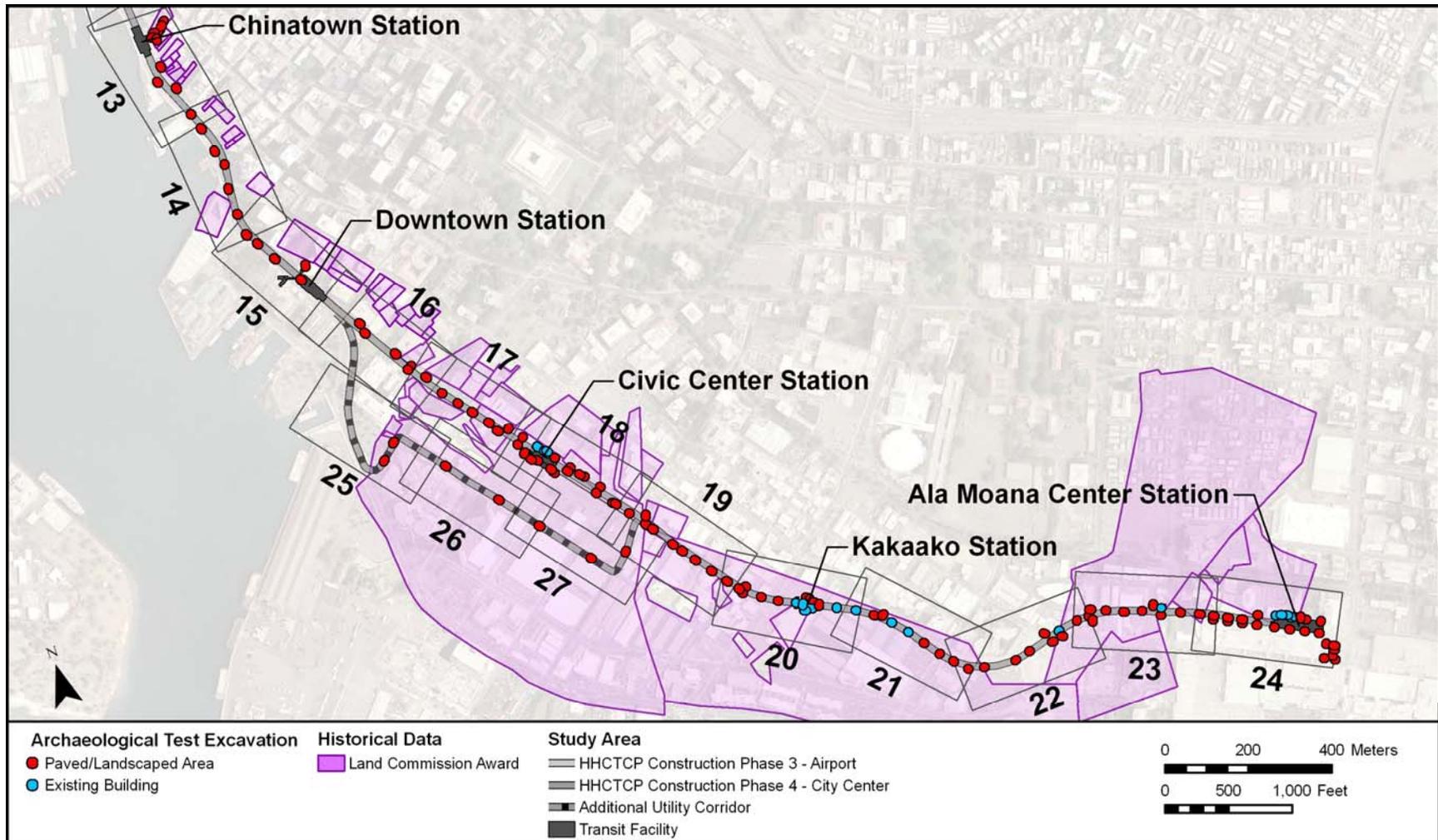


Figure 180. Summary of proposed testing locations in the east portion of the City Center Transit segment